The key sectors driving Vietnam's economic development in the context of its participation in the global market

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Vietnam's growth has been prominent after the Đổi Mới economic reforms in 1986. These reforms put Vietnam forward as a vital participant in the global market. This paper examines the input-output tables of Vietnam from 2008 to 2021, intending to identify the sectors responsible for the country's overall economic development related to trade, foreign direct investment (FDI) and net value added to GDP. To do this a literature review and data analysis has been employed. The dominant sectors turned out to be the machinery and electronics sector and the textile, garments and footwear industry. Although exports of the machinery and electronics sector increase remarkably, the sector itself also has a high reliance on imported inputs. In contrast, there is more reliance on internal resources from the textile, clothing, and footwear industries, therefore higher value-added and fewer imports, net exports of $36 billion in 2021 against $ 17.4 billion from machinery and electronics. In 2022, this sector added $27 billion in value, while machinery and electronics contributed $13 billion. The analysis thus underlined the critical position the textile, garments and footwear industry sector holds in Vietnam's economic development process due to its higher domestic value addition and lower import dependency. Along with this, the structural change in market structure from agriculture to manufacturing and services shows that Vietnam is in the continuous process of economic transformation.

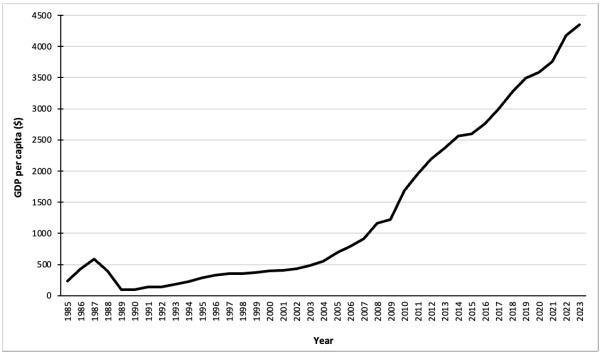

Figure 1.1 Vietnam's GDP per capita, 1985-2023
Source: World Bank[1].

Introduction

Vietnam's economic growth has been strong ever since the Đổi Mới financial reforms in 1986. This was a pivotal turning point for the country, as before these reforms, Vietnam was an underdeveloped nation that primarily focused on agricultural production, with most of its labor force employed and involved in this sector. Đổi Mới has led to profound economic development, as the country's real GDP per capita increased 3777% from $98 in 1990, placing Vietnam among the poorest nations globally, to $3,800 in 2021, situating it amid the low-middle-class nations.

This paper zooms into how Vietnam's penetration into the international market has been a substantial pillar for its growth, as it is important to explore how the country has diverted away from having a primary sector market structure to now becoming a major exporter in the electronics and machinery industry and the clothing, footwear, and garments industries. The growth will be highlighted by value addition per sector, growth in net exports and an exploration of the reliance on imported inputs and the extent of the capability of independent production.

The methods used to analyse Vietnam's economic prosperity from its participation in the global market are literature review and data analysis. The literature review is classified into two main segments. The first segment explores Vietnam's growth historically through a macroeconomic lens. The second segment examines the domestic government policies that have led to economic growth, international trade deals, and domestic financial prosperity in recent years. The literature thus far has explained why Vietnam's growth is potent, but most have only explored an overall macroeconomic point of view, as published literature concentrates on government policies driving growth without diving into significant product groups. Therefore, this paper will focus on an in-depth sectoral analysis of the country's main sectors. It is important to understand which product groups drive the growth so that the right government policy can be imposed to support or subsidise industries that aid Vietnam in further developing its evolving market structure. As such, this paper relies on both sectoral-level trade data and Vietnam's input and table (IOT). Concerning data collection, this paper

draws comparisons between sources as key trends and patterns are not only identified but also analysed. For instance, this analysis dives into the similarities and differences between the balance of payments and GDP trends, shedding light on the specific sectors propelling Vietnam's economic development. By comparing export and import shares across product groups, this paper explores the value added by each sector's contribution. Moreover, Vietnam's input-output table allows for the precise measurement of the gross contributions of individual sectors to net export and import values.The structure of the paper will include the following sections: a literature review, an overview of Vietnam's trade and GDP, an explanation of why trade deficits are detrimental, an analysis of the key sectors based on export and import product share, and a sectoral-based analysis.From the detailed analysis, insightful comparisons will be drawn to formulate clear conclusions about Vietnam's economic standing.

Literature Review

The first part of the literature review delves into a historical view of the country's growth. Vietnam's industrial development took off after the Đổi Mới economic reforms in 1986. Đổi Mới directly translates to "restoration", and it has immense significance for Vietnam's economic structure as a whole[2].

Before these reforms, the country was on the verge of an economic collapse due to its centrally planned system. Đổi Mới was instrumental in mainly bringing in foreign direct investment, reducing state-owned enterprises' reliance on government subsidies, and liberalising its domestic market. These changes initiated Vietnam's global cooperation as it became a member of the Association of Southeast Asian Nations in 1995, the Asia-Pacific Economic Cooperation Forum in 1998, and the World Trade Organization in 2007. This indicates that Vietnam's foreign policy evolved, becoming more practical and pragmatic, as the nation developed friendly relations with all the world's leading organisations. In the 20 years after these reforms, the average economic growth rate was 6.5%, which led to the removal of Vietnam from the list of the world's least developed countries in 2008, as income per capita reached $1000. Additionally, the poverty rate, considered to be when people live on less than $1.90 per day, has decreased from over 60% of the total population in the 1980s to less than 5% of the current population. It is imperative to note that these reforms are still ongoing; however, due to the deterioration of the environment, governmental corruption, inequality, and a large informal economy Vietnam, still has to overcome many hurdles to achieve further economic prosperity. This provides a clear guide to how the implementation of Đổi Mới affects Vietnam from a macroeconomic point of view, and these reforms are known to be a great starting point for Vietnam's economic development. However, the source of the first segment of the literature review, lacks up-to-date statistics, as it was published in 2009.1 Therefore, it is a good foundation for the historical knowledge of Vietnam's growth, but this more modern information needs to be included so that longer-term aspects of the reforms can be analysed.

Vietnam's GDP growth will be among the 20 fastest growing economies in the world in 2024, growing by 5.8%. This growth is underpinned by strong export activities, strong domestic consumption, and substantial foreign direct investment. FDI was one of the important components of Vietnam's economic development strategy and contributed huge capital inflows to develop and spur on many sectors of the economy. As of early 2024, the country had over 39,000 valid FDI projects with a total registered capital of over US$473.1 billion. During the first two months of 2024, over this sum, Vietnam experienced an inflow of over US$4.29 billion in FDI. This represented an increase by 38.6% over a year earlier. Major sources of FDI include Singapore, Japan, and Hong Kong, with the processing and manufacturing industry as the largest recipient accounting for 64.2% of the total FDI in 2023.The export activities have been a driving force towards the growth of Vietnam's economy. The country appropriately responded to the changes in global trade configurations, in particular, U.S.-China bilateral and geopolitical developments. The performance of Vietnam's exports has been outstanding, with very important contributions to GDP[3].

The second segment of the literature review explains how the policies of the Vietnamese government aided its country's economic well-being both domestically and with international trade deals. According to the World Economic Forum, trade liberalisation played a large role in Vietnam's economic rise after the Đổi Mới reforms in 1986. Many of these free trade policies have taken effect in the country within several decades and have made a tremendous impact on the development of its economy. Most of these policies have aimed at the integration of Vietnam into the global economy, the country's competitiveness, and growth propelled through exports and FDI.One of the most significant effects of a free trade policy in Vietnam is the great increase in exports. Vietnam has signed numerous free-trade agreements with various countries and regions. Among them are the Comprehensive and Progressive Agreement for Trans-Pacific Partnership and the EU-Vietnam Free Trade Agreement. This has been done with a view to knocking down tariff and nontariff barriers. This makes its products more competitive in international markets. For instance, the EVFTA has led to a considerable surge in exports bound to the European Union, and it became operational in August 2020. Last year at the same time, Vietnam's exports to the EU increased by 4.65%, reaching $34.4 billion. The largest increase in export turnover is recorded in the sectors of textiles, footwear, and electronics[4]

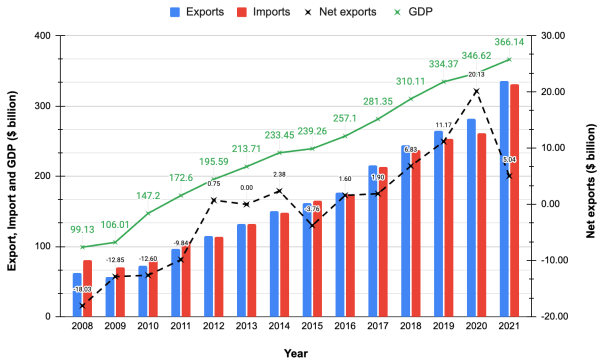

Figure 1.2 A comparison of Vietnam's trade balance and GDP, 2008-2021

Source: Adapted from World Bank[5].

Note: The World Bank derived the GDP values from the sum of the gross value added by all host producers in Vietnam and product taxes, then subtracting any subsidies not included in the value of any of the products. Furthermore, a gap-filled total aggregation method was used, and it was stated that the devaluation of fabricated assets, along with the depletion and deterioration of natural resources, were not taken into consideration when presenting the statistics. Adding onto these limitations, GDP values cannot precisely take into account the economic activity in Vietnam's informal economy. This is significant as 33.6 million workers, 68.5 % of all employed workers, participated in the informal economy in 2021[6].

Overview of Vietnam

Vietnam's GDP and Trade Explained

Figure 1.2 displays Vietnam's GDP against the total value of exports and imports in USD from 2008 to 2021. While the literature review introduces Vietnam's economic development from the 1980s, more recent years have been selected, 2008-2021, to display how this growth has sustained and flourished. These were compared to examine the effect of the country's global integration (shown by its trade) and economic growth. Figure 1.2 shows that there was a trade deficit from 2008 to 2011 as net exports were negative; on the contrary, after 2017 there was a trade surplus, and these trade fluctuations were also reflected in the growth of the country's GDP. The focus of this paper will be to examine the key sectors by product group that had meritorious contributions towards the country's balance of payments from the period of 2008 to 2021.

The Đổi Mới financial reforms in 1986 were the key that opened the country to international economic integration and this trade liberation created profound and consistent economic growth. With limited funds, the country slowly began its journey towards industrialisation and modernisation with the hope of advancing from a developing low-income nation to a low-middle-income one. However, this goal came with challenges: Vietnam suffered a persistent trade deficit from 1986 to 2011, and Figure 1.2 illustrates the deficit in more recent years from 2008 to 2011. After the reforms, the country's prosperity was reflected through a boom in exports, but a more substantial effect was present in its imports. This was due in part to the lower tariffs and the fact that the country relied heavily on imported raw materials and capital goods, as it lacked domestic capability and facilities to meet both domestic and global demand.

Why the trade deficit was significant

The situation where imports rose faster than exports was a significant problem in the country since trade shortfalls constituted the largest component of Vietnam's current account deficit. This was paid off by their foreign currency reserves for many years and added pressure on their balance of payment, adversely affecting the country's reserves management capacity if it needed to stabilise the economy. Due to a trade imbalance, Vietnam's current account deficit required external borrowing for financing because there were insufficient capital inflows and remittances. This meant that Vietnamese policymakers had to raise foreign debt levels, modify interest rates for both local and foreign currencies, and apply pressure to prevent the Vietnamese dong from devaluing[7] These measures had important ramifications for inflation and general price level; consequently, this was a major situation for the Vietnamese government.

Determination of the key sectors in Vietnam's trade

One of the key factors of Vietnam's continual rise in GDP is its export-oriented growth. The country's trade can be analysed by peering deeper into the key product groups that account for the majority of the country's exports and imports, as shown in Figure 1.3. Machinery and electronics have been a driving export factor. However, it is important to note that while the country is extremely efficient at producing these goods, most of its import basket has gradually been filled with them too. This relationship, although on a smaller scale, is similarly portrayed within the textiles and clothing product group, as there has been a progressive rise in the country's imports and exports in this sector. This shows that while there has been significant growth in export revenue it has primarily come from the backing of imported inputs. However, the extent to which these commodities rely on imports will be analysed in the in-depth sectoral analysis segment.

Vietnam, previously acknowledged as a significant exporter of fuels, presently relies on imports to fulfil domestic demand, as depicted in Figure 1.3 (a). This is evident in the data, which indicates a noticeable shift away from the nation's prior ability

to export fuels. Undoubtedly, Vietnam is trying to move away from being an exporter of agricultural products as the value of vegetables exported did not deviate substantially in the last decade. This indicates a shift in its economic structure from the primary to the secondary and service sectors, which is further supported by the evident increase in exports of textiles and clothing, a key component in its manufacturing industry. The 2008-2009 global financial crisis's toll on Vietnam is present in the fall in net exports depicted in Figures 1.3 (a) and (b), where 2009 was the only year when the total value of Vietnam's trade fell. This contributed to a minimal $6.88 billion increase in GDP from 2008 to 2009, as shown in Figure 1.2.

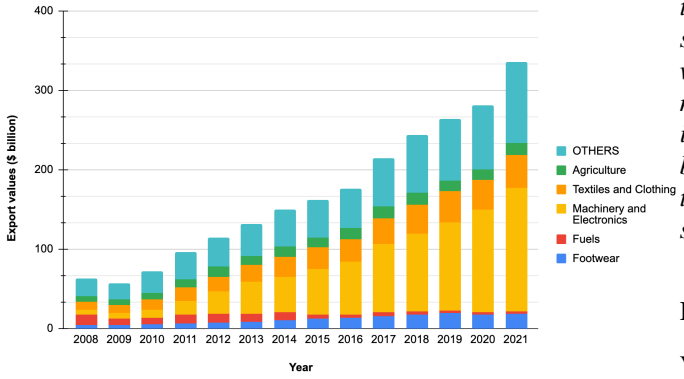

Figure 1.3 Export and Import values by product group, 2008-2021 (a) Export values of selected product groups

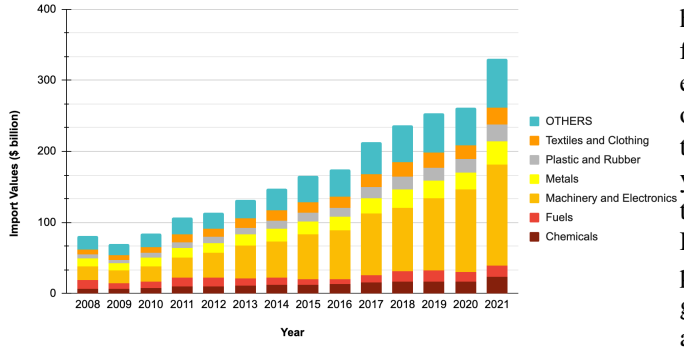

Figure 1.3 Export and Import values by product group, 2008-2021 (b) Import values of selected product groups
Source: World Bank [8]

Note: *The product groups included in Figure 1.3 (a) were selected based on their average export product share throughout the given time period above. Product share was calculated by dividing the export value of a product group by the total value of exports in a year. Only the product groups with an average product share from 2008-2021 of over 5% were selected to be analysed as individual product groups, while those less than the required percentage were grouped in the "OTHERS" category. This category included the following product groups: animals, chemicals, food, hides and skins, metals, minerals, miscellaneous, plastic and rubber, stone and glass, transportation, and wood. The selected product groups in Figure 1.3 (b) underwent the same processing as those that were not greater than the benchmark, 5% average product share, and were similarly placed into the "OTHERS" category. These products included animals, food, footwear, hides and skins, minerals, miscellaneous, stone and glass, transportation, vegetables, and wood. This analysis aimed to identify key product groups that consistently held substantial product shares in the export and import sectors so that it was possible to examine the trend and background of those commodities that propelled shifts in the balance of payments and the country's GDP as a whole. Additionally, it is important to note that Figure 1.3 does not take into account raw materials and capital, consumer, or intermediate goods, as these product groups are too broad to be defined and tend to be significant in most countries. Thus, the selected product groups are more precisely associated with shifts in Vietnam's global transactions over the years.*

Import and export share within key sectors

Vietnam's export structure from Đổi Mới's implementation in 1986 until 2011 can be classified as a rudimentary one as the country mainly focused on supplying semi-processed goods, low-technology products, and raw materials [7].Coal and crude oil accounted for approximately 32.6% of the heavy industrial products' exports from this time. On the other hand, agricultural commodities and textiles, clothing, and footwear included 38.7% and 18% of the light industrial exports respectively [6].However, the country relied immensely on imported materials to support its export demand; therefore, the value addition of exports remained low throughout these years. Without domestic production to support the global supply, they would never reap the true profits associated with trade. Figure 1.3 shows the total imports (imported inputs from production plus consumer imports) for the selected product groups, while Figure 1.4 displays the variance of imported inputs as a percentage share of total output from 2008-2022 for the selected industries in Figure 1.3. This shows that the product groups, except coke, refined petroleum, and nuclear fuel, have seen an increase in the reliance on imports to upscale their output displayed by the positive gradients in their trend lines. In the next section of the paper, there is an analysis of the individual product groups to explore why the country had to rely more heavily on imports to increase its output which in turn would contribute to a trade deficit if their export share of output does not rise relatively faster.

Note: The IOT consists of data from 2000 and 2007-2022; however, only data from 2008 onwards was selected for analysis

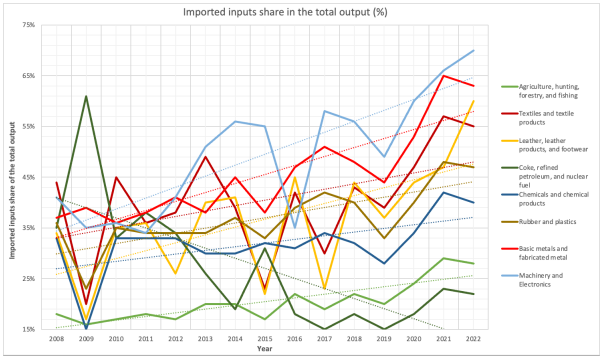

Figure 1.4 Imported inputs as a percentage share of total output in each sector, 2008-2022

Source: Author's calculations on data in Vietnam's input and output table (IOT)[9]

in this paper. The share of imported inputs of total output was derived by dividing the value of the imported inputs by the value of the total output produced domestically for a product group in a specific year. This was repeated for all product groups during this period.

Figure 1.5 presents the export share as a percentage of the total output of the key industries for Vietnam's trade. Leather and footwear products have been important drivers of Vietnam's trade surplus. In 2008, according to the author's further calculations on Vietnam's (IOT), Leather and Footwear products accounted for approximately 10% of the country's total export value, and in the same year 70% of this sector's total output value was exported. By 2022, this percentage rose to a staggering 96% and maintained a substation share - approximately 11%- of the county's total exports. These are also very high percentages as opposed to the relatively low share of imported inputs. This combination contributes to the trade surplus. Additionally, Figure 1.6(a), shows that the total output for Leather and Footwear products has displayed consistent growth. Consequently, the increase in this sector's percentage of total output value exported, underscores a significant increase in the value of this sector's exports.

Another noticeable point that arises from the figure below is that the country was not able to export much of its coke, refined petroleum, or nuclear fuel. This observation hints at the idea that the country is still developing these industries because it does not produce sufficient quantities to saturate its domestic and export demand for this particular product group. On the other hand, Vietnam sufficiently increased its export share of machinery and electronic products from a menial 31% in 2008 to 85% by 2022. However, when looking back at Figure 1.4 it demonstrates that imported inputs have also been rising, which proves that the country is dependent on the import of raw material to support their growing machinery and electronic industry; therefore, the value added by this additional output would not be very high. Thus, although its export share is rising, it cannot be concluded that this will be beneficial for the economy's trade balance. Its reliance on imported inputs speaks volumes about Vietnam's capability to be self-reliant and independent when developing its nation to improve from the primary sector to the manufacturing and service sectors of the economy.

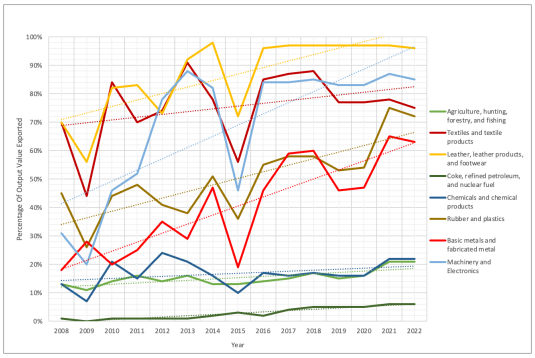

Figure 1.5 Export share as a percentage of total output in each sector, 2008-2022

Source: Author's calculations on data in Vietnam's input and output table (IOT)[9].

Gross output of key sectors

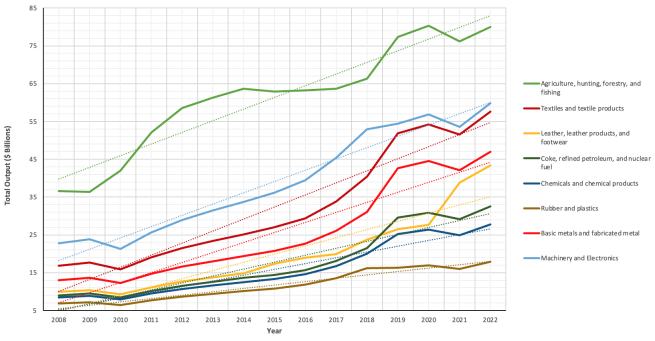

Figure 1.6 (a) Total output for selected product groups, 2008-2022

Source: Vietnam's input and output table (IOT)[10]

Note: *This output per sector includes imported inputs, intermediate inputs, and taxes less subsidies on products (net indirect taxes).*

The value in USD billion of Vietnam's total output for the product groups selected in Figure 1.3 is displayed in Figure 1.6(a). This output includes the total value of goods produced domestically, satisfying both national and international demand. This is significant, as it provides information on the growth of key sectors that are vital for the country's exports and imports. As shown in Figure 1.3, we can predict whether the growth is

export- or import-oriented; for example, from Figure 1.3(b), the persistent rise in the import value of rubber and plastic, chemical, and fuel products could be a possible explanation for their production growth. This will provide insight into the factors causing the trade deficit and surplus, as the growth of these sectors may be reliant on imported inputs, presented in Figure 1.3, and/or their export share of total output could be rising with time, which would contribute to a trade surplus, as presented in Figure 1.5. From Figure 1.6(a), it is clear that the total output from the agricultural industry grew immensely from $36.5 billion to $80.0 billion (approximate figures) from 2008-2022 respectively. However, this large surge in monetary output from this product group masks the growth of other groups. While the other sectors' monetary output is not as high, their growth multiplier is considerably more outstanding. For instance, the textile industry grew from $16.9 billion to $57.6 billion during the same period. Despite being the previous leading sector, agriculture's output has only increased by 119%. On the other hand, the textile sector grew by 241%; the noticeable difference in growth rates between sectors implies that Vietnam is focusing on diversifying its output structure. The growth in the other selected sectors is illustrated in Figure 1.6 (b).

Sector	Percentage (%) Growth from 2008-2022
Agriculture, hunting, forestry, and fishing	119%
Textiles and textile products	241%
Leather, leather products, and footwear	339%
Coke, refined petroleum, and nuclear fuel	261%
Chemicals and chemical products	231%
Rubber and plastics	163%
Basic metals and fabricated metal	260%
Machinery and Electronics	163%

Figure 1.6 (b) Percentage growth in total output for each sector, 2008-2022

In-Depth Sectoral Analysis

Agriculture

Prior to the economic reforms in 1986, Vietnam was reliant on food imports to feed the nation. However, this economic opportunity led to a profound transformation in the country's domestic food shortages, as Vietnam prioritised agricultural development and integrated itself within the global market, becoming a net exporter of rice by the late 1990s. Vietnam is one of the largest exporters of Jasmine rice, black pepper, and Robusta coffee beans on the globe; additionally, it is extremely competitive at exporting walnuts, cashew nuts, and seafood as well. The main international markets for these commodities are

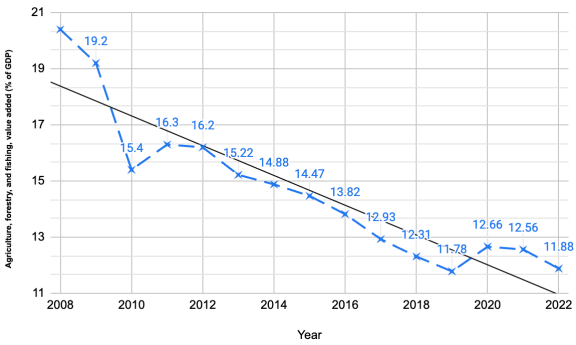

Figure 1.7 Agriculture, forestry, and fishing value added as a percentage of Vietnam's GDP, 2008-2022
Source: Author's calculations on Figure 1.6 (a).

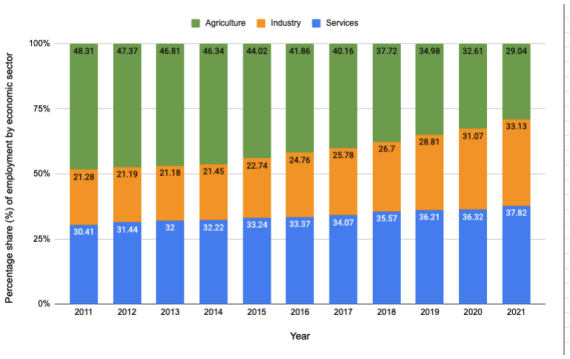

Figure 1.8 Employment by economic sector in Vietnam from 2011-2021
Source: World Bank[8].

the US, China, Japan, and South Korea. While this sector is extremely efficient at exporting, there are still key agricultural imports that Vietnam consumes: wheat, soybeans, and animal feed.

Agriculture, forestry, and fishery exports increased from 10.06 billion USD in 2008 to US$53.22 billion in 2022[6]. While there was profound growth in Vietnam's gross export value, the sector's value added to GDP consistently decreased, as shown in Figure 1.7.

Vietnam achieved agricultural development and was able to increase its agricultural output from 2008 to 2022, from approximately $36.5 billion to $80.0 billion as shown in Figure 1.6 (a). However, it was able to do so by an over-dependence on fertilisers and pesticides, planting crops on a mass scale, expanding farmland, and exploiting its natural resources, such as land, water, and forests[11] Due to their unsustainable practices, value-added as a percentage of GDP has been drastically decreasing with time, as the country is focusing more on quantity-based production rather than quality. This is problematic as quality-based production is demanded in the global market. This is further exacerbated since Vietnam

was able to export over 6.3 billion tons of rice in 2019 [12] but its success was due to unsustainable practices, specifically derived from the increased irrigated area and cropping intensities [13].

Thus, the excess quantity of rice available to international buyers was sold at low prices because its low quality meant that it was not able to fetch higher price tags. This is a struggle for Vietnam across its agricultural products, with pepper exports ranked first in the world. However, the price at which they were exported did not reflect their export ranking given to them, as their price in the export market only ranked 8th globally. There is a similar trend with other agricultural commodities such as cashew nuts, which also ranked 1st in the world but ranked sixth, coffee and rice ranked third and second respectively, but had a very low ranking, with its export price being ranked only 10th in the world. This low export value is due to the country's excessive exports of semi-processed products rather than final goods due to the lack of skilled and productive labour; to put into figures, Vietnam's exports still consist of approximately 60% semi-processed goods compared to only two percent in developed nations [14].

With the issue of quality, there is also the issue of market chain organisation. Farmers tend to struggle to make connections with millers and distributors, leading to high transaction costs, which further disincentivizes the maintenance of high-quality produce. Consequently, this disjointed supply chain has meant that it has been difficult for the country to meet quality controls from importing nations.

While enduring many difficulties, the agriculture, forestry, and fishery sectors have remained significant. In 2023, exports alone accounted for $53 billion resulting in a trade surplus of over $12 billion, constituting approximately 42.5 % of the trade surplus that Vietnam enjoyed that year [15].

Despite the abundance of labour in the country, skilled workers are in shortage due to the lack of training, which is further exacerbated by the decreasing number of people deciding to study agriculture, forestry, and fishery subjects [16].

This could be due to the low wages in this industry compared to those in the growing service and manufacturing sectors. In recent years, Vietnam has undergone major changes in its employment structure. The other two prominent sectors have been drawing surplus labour away from the agriculture sector, where labour productivity is low. This is illustrated in Figure 1.8.

Figure 1.8 displays the fact that Vietnam's economic structure is shifting away from being predominantly reliant on the primary sector, specifically the agricultural industry. This sector has indeed been growing; however, the manufacturing and service sectors have been growing at a faster pace. Labour has been reallocated to these sectors as the country has increased its focus on urbanisation and industrialisation. This shift in employment over time has been responsible for the majority of the country's exports, which carry the greatest value added being mobile phones, electronics, and textiles.

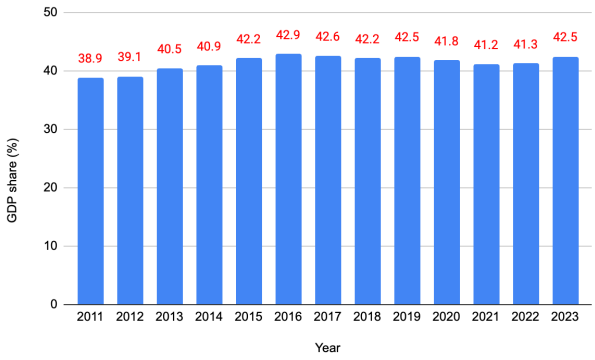

Figure 1.9 Vietnam's service sector's share of GDP, 2011-2023
Source: World Bank [8].

The shift of labour from agriculture, which initially experienced significant overemployment and very low marginal productivity, to non-agricultural sectors with much higher productivity levels, became a powerful driver of overall productivity and economic growth. Despite starting from a lower base, labour productivity in Vietnam increased by 70%, a growth rate second only to China (104%) in the region and significantly higher than other ASEAN countries such as Indonesia (31%) and Thailand (26%). The highest labour productivity growth rates were observed in manufacturing and agriculture, which is encouraging as it reflects a healthy structural change, indicating that productivity gains have reached a large portion of the workforce and their families [17].

As seen below from Figure 1.9, In 2023, Vietnam's service sector accounted for approximately 42.5% of the GDP and has consistently maintained around a 41% share of the GDP from 2011 to 2023. Recently, the service sector has been the largest, compared to other sectors: agriculture, forestry, and fishery accounted for 11.96%, industry and construction for 37.12%, and product tax minus product subsidies for 8.38% [12].

The service sector encompasses a diverse array of economic activities, including key sub-sectors such as wholesale and retail trade, finance, banking and insurance, transportation, and accommodation and catering services. Notably, the wholesale and retail trade segment constitutes the largest portion of the service sector. This prominence is partly attributed to the increasing value of retail sales of goods and services in Vietnam.In 2023, the total sales value of goods and services in Vietnam is projected to reach approximately 6.2 quadrillion Vietnamese dong, equivalent to around 263 billion USD. This represents a 9.6 percent increase from the previous year. This figure includes the sales values from sectors such as retail, accommodation and catering services, tourism, travel services, and other related services. The retail sector, in particular, has shown signs of recovery following the disruptions caused by the

Year	Number of jobs in the electronics sector (in millions)
2011	0.17
2012	0.18
2013	0.18
2014	0.23
2015	0.40
2016	0.46
2017	0.54
2018	0.62
2019	0.80
2020	0.91
2021	0.84

Figure 2.1 Employment in Vietnam's electronics sector, 2011-2021
Source: Statista [12]

COVID-19 pandemic. However, the trade in services has not yet recovered fully [12].

In 2023, Vietnam's service export turnover reached an estimated 19.59 billion USD, reflecting a substantial 44.9% increase from the previous year. Travel services were the leading contributor, generating 9.2 billion USD and accounting for 46.7% of the total service exports. This sector saw a remarkable growth, being 2.9 times higher than in 2022. Conversely, transportation services generated 5.5 billion USD, making up 28.1% of the total, but experienced a slight decline of 1.8%.On the import side, service turnover was estimated at 29.06 billion USD. This included 10.38 billion USD for transportation and insurance fees on imported goods, marking a 5.9% increase from the previous year. Transportation services imports totaled 12.6 billion USD, representing 43.3% of the total and showing a marginal decrease of 0.4%. Travel services imports amounted to 7.8 billion USD, constituting 26.9% of the total and exhibiting a 17.3% rise.Overall, Vietnam faced a trade deficit in services for 2023 amounting to 9.47 billion USD. The country also saw an estimated 12.6 million international visitors, 3.4 times higher than in 2022, surpassing the target of 8 million but only reaching 70% of the 2019 figures [6].

Machinery and Electronics

The machinery and electronics sector has become the biggest source of export revenue in recent years, and electrical products have overtaken rice, coffee, cashew nuts, textiles, and footwear, allowing them to become Vietnam's greatest export commodity. In this sector, electronics is the major component being exported as in 2022 phones and accessories accounted for $58.0 billion in export revenue, followed by $55.54 billion in computers and electronic products then in third place machinery and equipment which brought in $45.75 billion [18].South Korea's biggest conglomerate, Samsung, produces over 50% of its smartphones in Vietnam. It is heavily utilising the country's promising economic development for its production purposes, as it has two of its largest research and development networks in Ho Chi Minh City and the country's capital, Hanoi [19].This is significant because Samsung is Vietnam's largest exporter; the MNC supported the country through its long-lasting trade deficit in this sector to finally achieve a trade surplus in 2017, as shown below in Figure 2.3 (a). Samsung has made its presence clear in Vietnam through its total investment sum of $18 billion as Vietnam has been outstanding to this ubiquitous company; in 2022 it was reported that four manufacturing plants brought in over $71 billion in revenue for Samsung, which reflects 30% of its global returns [20].

As of 2021, Samsung Vietnam's revenue was $74.2 billion, which was equivalent to about 20% of Vietnam's GDP of $366 billion that year. This highlights the pivotal role Samsung plays in the Vietnamese economy, not only through its direct contributions to GDP but also by fostering an ecosystem that supports numerous ancillary businesses and local employment. In fact, as of 2022, Samsung employs over 160,000 people in Vietnam, providing stable income and benefits [21].

Another tech giant, Apple, diversified its supply chain by bringing some of its production into Vietnam. Over the years, it has become a more attractive alternative to China, especially as US–China tension escalates.Apple has significantly impacted Vietnam's economy, generating around 200,000 jobs through its supply chain and the iOS app industry. Since 2019, the tech giant has invested approximately VND 400 trillion (US$15.8 billion) in Vietnam via local supply chain partners. This substantial investment reflects Apple's confidence in Vietnam's manufacturing and technological capabilities, reinforcing the country's essential role in Apple's global supply chain [22].

Moreover, Apple's continued expansion in Vietnam, including relocating significant portions of its production from China, is expected to enhance its economic impact further. By 2025, Apple plans to produce 20% of iPads, 5% of MacBooks, 20% of Apple Watches, and 65% of AirPods in Vietnam, which will likely increase its contribution to Vietnam's GDP even more [23].

However, Vietnam's reliance on exports and foreign direct investment (FDI) has raised concerns among local policymakers and experts, such as Dr. Nguyen Dinh Cung and Dr. Vu Thanh Tu Anh, who highlighted the economy's vulnerability to global crises due to this dependence. Acknowledging the problem, the Vietnamese government has adopted measures to mitigate these vulnerabilities without reversing its international economic integration.

Key solutions include strengthening domestic corporations' production and export capabilities. Prime Minister Nguyen Xuan Phuc emphasised building a self-reliant economy through strong native private enterprises. Recent FDI policies have shifted to

ensure equality, protection, incentives, and opportunities for domestic investors. Legal and policy frameworks, such as the Law on Enterprise and Law on Investment, have been updated to ensure equal resource access, reduce business barriers, and support enterprise operations. Business environment reforms, such as cutting red tape and fighting corruption, particularly benefit smaller domestic private enterprises.Encouraging private enterprises to expand into manufacturing and high-tech sectors is another measure to bolster Vietnam's domestic industrial base. The government supports Vingroup's expansion into automobile, electronic, and high-tech industries, aiming to create "national champions"that boost GDP growth and generate more exports. These local businesses are crucial for Vietnam's self-reliance and long-term prosperity[24].

Vietnamese enterprises are encouraged to work with foreign partners in order that they can participate in the global value chain and expand themselves, contributing more to the economy. Nevertheless, the spillover effect from it is still limited after 30 years of FDI. For example, Samsung has to import most components needed for its mobile phone factories from a foreign supplier or elsewhere. Among suppliers accounting for 80% of transaction volume of Samsung Electronics, there are 28 vendors based in Vietnam but all of them are foreign ones.To deal with this issue, Vietnamese Ministry of Industry and Trade is working with Samsung towards increasing qualified local suppliers. By the end of 2019, tier-one Vietnamese suppliers for Samsung increased to 42. While many produce simple items such as printing or packaging others get help from Samsung in enhancing quality control and manufacturing more advanced goods like modern chips. Henceforth this cooperation between government, foreigners through investing and locals intends at maximising the benefits of FDI while strengthening Vietnam's manufacturing capabilities through its exports[24].

Moreover, Samsung has agreed to work alongside the Vietnamese government to build support networks to aid domestic industries[22].This aid will be key to increasing this sector's net exports in the future, as the country learns to rely less on imported inputs and more on becoming a major independent global supplier. However, as global powers such as the US and China vie for influence in Southeast Asia, Vietnam could be caught in the crossfire of geopolitical disputes. For instance, the South China Sea is a critical strategic region where Vietnam has ongoing territorial disputes with China. These disputes could escalate, leading to military confrontations or economic sanctions. According to the International Crisis Group, Vietnam's strategic location and these territorial disputes make it a focal point in Asia's geopolitical landscape[25].

There are several reasons why the country has become a major competitor when it comes to bringing in FDI. First, there is a deep sea port in northern Vietnam, specifically in the region of Hai Phong, which has introduced a great infrastructural advantage. It is an industrial gateway for many MNCs, bringing in raw materials to be processed and assembled in the country. This port has many roads and transportation railways that connect the delivered cargo directly to their designated manufacturing bases. Secondly, in recent years, the employment structure has shifted towards the industry and service sectors, as mentioned in Figure 1.8, and thus labour has been readily available in this sector. In fact, Vietnam's electronics sector has become one of the largest employers in the country. Employment in this sector is shown below in Figure 2.1. Accompanied by this,Vietnam is known for having low labour costs, which further incentivises many MNCs to place their investment in the country. In 2022, labour costs in Vietnam are approximately 50% lower than those in China, with wages at $2.99 per hour compared to $6.50 per hour, respectively. Additionally, Vietnamese labour costs are about 60% of those in Thailand and the Philippines. With the country's workforce expanding each year, Vietnamese workers are not only cost-effective but also young and increasingly skilled[22].

Figure 2.2 displays the average labour cost of machine operators in the manufacturing industry in various regions across the globe.

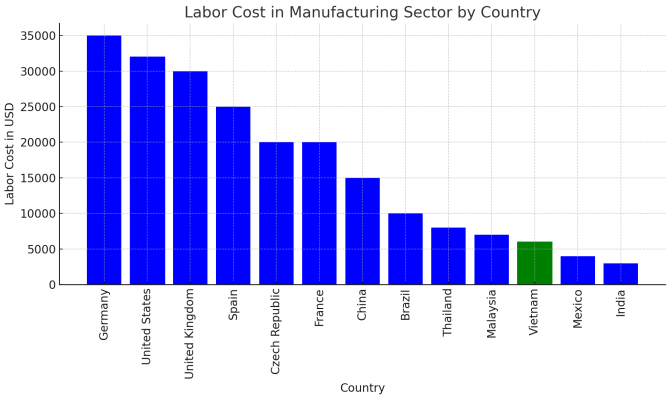

Figure 2.2 The average labour cost of machine operators in various regions across the globe
Source: ILO[17]

From Figure 2.3 (a), it is visible that there has been profound growth in the exports of these products, specifically, growing from approximately $6 billion to $155 billion from 2008 to 2021. This has been consequential for the country's export basket as well since this growth led to a dramatic rise in the export share that machinery and electronics have carried: from about 10% to an astonishing 46% during the same period, as shown in Figure 2.3 (b). Specifically, electronics, computers, and components have become the leading sub-sector in terms of export turnover; in May 2023 it generated $20.5 billion which surpasses phones and components which reached $20.2 billion[6].By 2022, Vietnam exported $55.54 billion worth of computers, electrical products, spare parts, and components. The major consumers in the global market were China, South

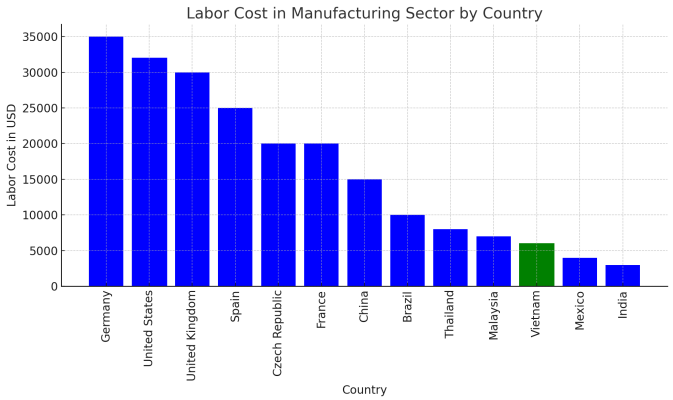

Figure 2.3 (a) Vietnam's Machinery and Electronics Trade Values 2008-2021
Source: Reshoring Institute[26]

Korea, and America, and the goods exported in particular were mainly mobile phones, TVs, cameras, and electronic integrated circuits[27].

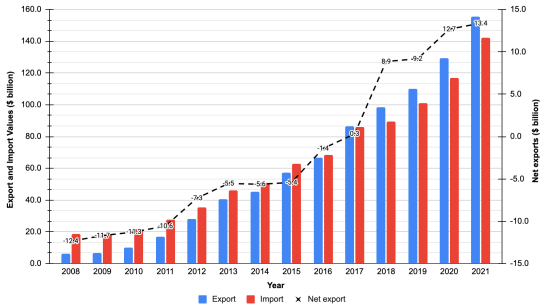

Figure 2.3(b) Machinery and Electronics trade product share in Vietnam, 2008-2021

The growth had not come domestically; rather, the country relied heavily on imported materials, as it did not contain domestic facilities to produce these high technological goods independently. This can be attributed to the sustained growth in the imported product share, as shown in Figure 2.3(b). The imported product share grew about 20% in this time period; consequently, conclusions can be drawn that the export value-added remains relatively low as the country is still primarily an assembly hub for MNCs and needs to integrate into the global supply chain effectively.

An example of a key electronic part that Vietnam imports is integrated circuits. Figure 2.3(c) depicts that the value of imported integrated circuits rose monumentally from approximately $0.6 billion in 2008 to $39.8 billion in 2021. Moreover, the nation's dependence on imported inputs of integrated circuits is displayed through the exponential trend line presented in Figure 2.3(c). Ranking 6th among global

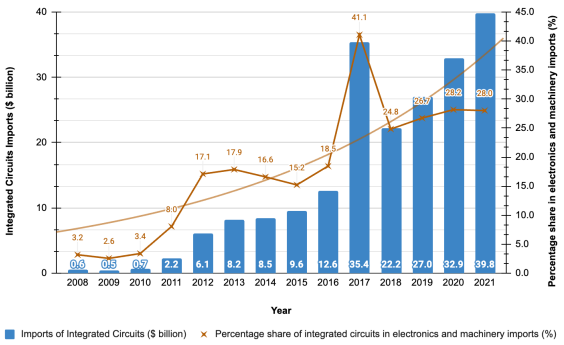

Figure 2.3 (c) The value of Vietnam's integrated circuit imports and its percentage share in machinery and electronics imports, 2008-2021
Source: World Bank[28]
Note: Figure 2.3(b) displays the share of machinery and electronics out of the total exports and imports per year.

integrated circuit importers in 2021, Vietnam demonstrates its significant reliance on these components, which accounted for a considerable 28% of its sector's imports that year. This is due to the fact that integrated circuits are a vital electronic component that Vietnam is progressively demanding more of to upscale its machinery and electronics exports. The costs of setting up factories that produce semiconductors can cost private firms tens of billions of dollars, and due to these high start-up expenses, Vietnam lacks such factories. This inhibits the nation from increasing the value-added of these products, as it is only able to take part in the last part of the supply chain: the assembly phase. The main sophisticated stages in the production process, such as the design and production of semiconductors on slices of silicon as thin as wafers, which requires advanced capital and precision, are conducted abroad, mainly in China, Taiwan, the USA, and South Korea.

Figures 2.3 (a) and (b) outline the importance of this industry to Vietnam. In recent years, the trade in these products has accounted for nearly half of the country's exports and imports. This is further supported by the evident trade deficit this sector brought forth until 2017; thus, it is clear that the country is slowly trying to become self-reliant and more productive, taking fewer imported inputs to increase the total output in the industry. The machinery and electronics sector remains promising for Vietnam, as it shows signs of bringing larger positive additions to the balance of payments. With time, this sector has the potential to play a dramatic role in the country's overall economic development, as Vietnam is already a leading exporter of mobile phones. In the future, its integration into global supply chains will deepen, allowing it to play a more meaningful role in international markets.

Nevertheless, the rapid growth of Vietnam's electronics sector has significantly impacted the environment.The electronics

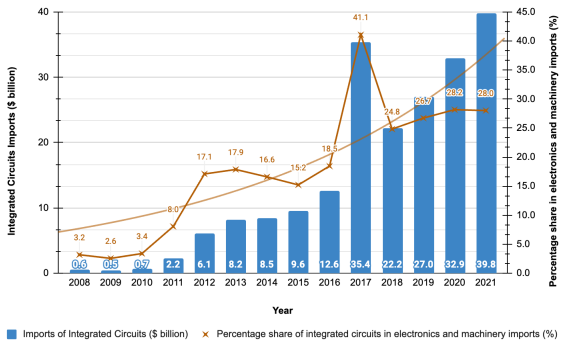

Figure 2.3 (c) The value of Vietnam's integrated circuit imports and its percentage share in machinery and electronics imports, 2008-2021

Source: Author's calculations and The Observatory of Economic Complexity[29].

Note: Percentage share was calculated by dividing the import value of integrated circuits by the total import value of machinery and electronic components.

manufacturing process often involves the use of toxic chemicals and generates significant waste. Reports have highlighted that companies like Samsung have outsourced toxic chemical-intensive processes to Vietnam, leading to numerous incidents of chemical poisoning and environmental pollution. For instance, in one incident, 37 workers were poisoned by methanol at a Samsung supplier, with one fatality and three cases of workers losing their eyesight[30]. Moreover, Vietnam's rapid industrialization has led to an increase in water and air pollution. The electronics sector, in particular, contributes to these environmental challenges. The Vietnamese government has taken steps to mitigate these impacts, such as passing the Revised Law on Environmental Protection in 2021, which mandates the use of the best available technology to control pollution and includes stricter regulations on emissions.The government is also focusing on improving water infrastructure and management to handle the increased strain from industrial and urban growth. This includes significant investments in wastewater treatment and the development of new regulations to promote private sector involvement in environmental projects[31].

Textiles, Garments, and Footwear

After the Đổi Mới reforms in the late 1980s, many enterprises in Vietnam began investing in upgrading their equipment to meet the new market demand in this industry. Vietnam has worked effortlessly over the years to make itself a prominent global competitor and its determination has paid off. Many garments and shoes across the globe have a tag that says "Made/Manufactured in Vietnam". The country's textile and garment industry thrives on exports, with major destinations being the US, Europe, Japan, and South Korea. Notably, Vietnam is a major manufacturer of many successful sportswear companies. It is the largest manufacturer of Nike and the second largest manufacturer of Adidas and Puma. In 2022, Vietnam produced 44% and 26% of Nike's footwear and garments produced that year[32].

In 2020 and 2021, Vietnam was manufacturing more Nike products; however, due to the COVID-19 pandemic, the athletic apparel leader shut down many of its factories abroad. Still, Nike lists 155 factories in Vietnam. Nike's largest investment in Vietnam is concentrated in its apparel sector, with 71 factories dedicated to garment production. The majority of these facilities are situated in the southern part of the country, although some are dispersed across other regions. In addition to apparel, Nike has a significant presence in sporting equipment manufacturing, with 13 factories in total. Of these, 11 are located in the south, while 2 are in the north of Vietnam.Vietnam also plays a crucial role in Nike's footwear production. The company operates 13 factories across the nation, producing a range of footwear from running shoes to sneakers.On the whole, Nike employs around 530,000 Vietnamese workers across its factories and this has not only benefited the company but the country as their workforce has been given training and key experiences that can be translated across the manufacturing and textiles sector from working in these Nike factories[32].

Vietnam also played a crucial role for Adidas since in 2022 produced $134.08 million worth of shoes and $81.94 million worth of apparel products for them; altogether, this accounted for 32% of their footwear products and 17% of apparel manufactured[33].

In 2022, Adidas had seven factories manufacturing accessories and employing 15,552 people. It had 24 factories producing apparel and employing 63,513 people and it had 21 factories producing footwear with 114,233 workers[34].

These large multinational companies have been economically important to the country, as the footwear, textiles, and garment sectors have been notable in the country's overall integration into international markets and economic prosperity. In particular, Vietnam was ranked as the second largest exporter of footwear products, with an export income of $18.9 billion in 2021. Moreover, in the same year, the textiles and garments industry earned a lucrative $41.3 billion in export revenue, which was ranked third in the global supply market[35].

Figure 2.4 (a) illustrates that textiles and clothing contribute significantly to the country's trade surplus, as this sector's net exports have been positive and growing steadily since 2008. In particular, net exports in this industry have grown by 433.2 % from 2008-2021 indicating that the country has been able to produce in growing quantities that not only satisfy domestic demand but have also been increasing its supply internationally. Furthermore, when comparing Figure 2.4 (a) to Figure 2.4 (b), at first it may seem that the footwear industry isn't as valuable

as a traded commodity to the country as textiles and garments: since the highest export value recorded in this time period was only $19.5 billion in 2019 for footwear, compared to the highest export value of the textile and clothing industry being $41.3 billion in 2021. Nevertheless, the net exports of the footwear industry, presented in Figure 2.4 (b), are extremely high relative to their smaller export contribution, and when compared to the textile and clothing industry, they seem very similar, even though the highest export value in the footwear industry is less than half of that of the textile and clothing industry. As shown in Figure 2.4, the highest positive trade balance recorded in the footwear industry from 2008-2021 was approximately $18.3 billion, while the highest record for the textile and clothing industry was only slightly higher at $18.6 billion.

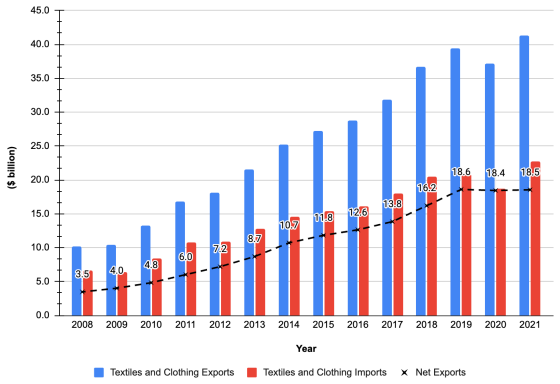

Figure 2.4 (a) Vietnam's textile and clothing exports, imports and trade balance, 2008-2021

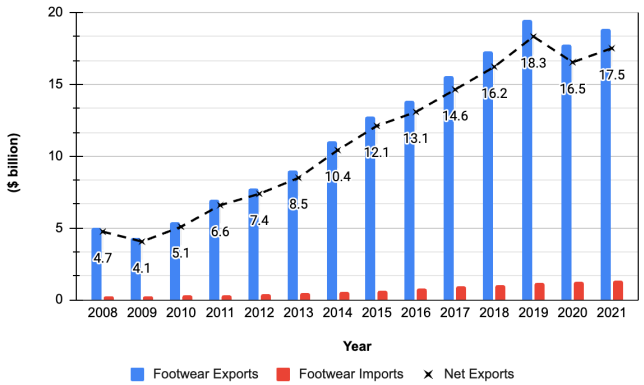

Figure 2.4 (b) Vietnam's footwear exports, imports and trade balance, 2008-2021

Source: World Bank[28].

Note: Data labels provide net export values.

Vietnam is very competitive in the global market in this industry and has been able to enjoy high net exports from this sector because it has advantages over its competitors in terms of various free trade agreements. Vietnam signed numerous FTAs that encourage exports to the United States and Europe. For example, EVFTA, which is the European Union's FTA signed with Vietnam in 2019, has been extremely beneficial to the country, as approximately 37% of the footwear products imported from Vietnam into the EU are subject to no tariffs, while the rest of these goods will be subjected to tariffs for another 3-7 years[36]. This puts Vietnam at a monumental advantage over other competitors; the country has an advantage over its biggest competitor, China, specifically of a tax difference between 3.5%-4.2% when these products are exported to the EU[36]. As a result, Vietnam has attracted many MNCs in this industry, as stated previously, to invest in the country so that they can enjoy these trade benefits.

Comparing Figure 2.4 (a) and (b), it is evident that Vietnam's imports of textiles and clothing are much greater than the imports of footwear products. Growth in the garment industry has pressured the country's demand for cotton, as this raw material is crucial for the production of these goods. While Vietnam grows cotton, its output is not sufficient to satisfy commercial demand. This has resulted in Vietnam needing to import large quantities of cotton; notably, in 2021, Vietnam imported $4.99 billion worth of cotton, which placed it as the third largest cotton importer in the world. The developing nation was behind China and Bangladesh, which placed first and second, respectively[37]. This is significant, as cotton imports account for a major share of the textile and clothing industry's total imports, which is illustrated in Figure 2.5.

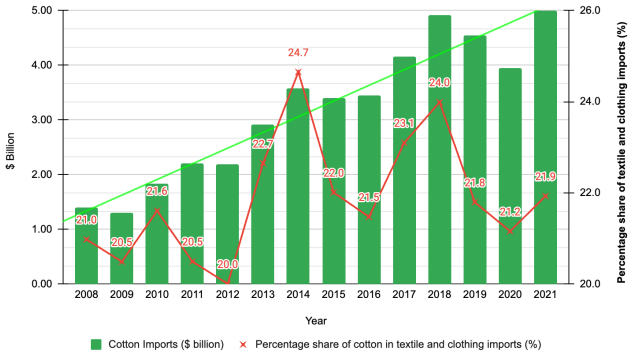

Figure 2.5 The value of Vietnam's cotton imports and percentage share of cotton in textile and clothing imports, 2008-2021

Source: Author's calculations and The Observatory of Economic Complexity[29].

From Figure 2.5, Vietnam's growing dependence on foreign cotton supply is represented by the positive linear trend line. It is evident that the country imports a much higher value of textile and clothing products, as the mean share of cotton in this

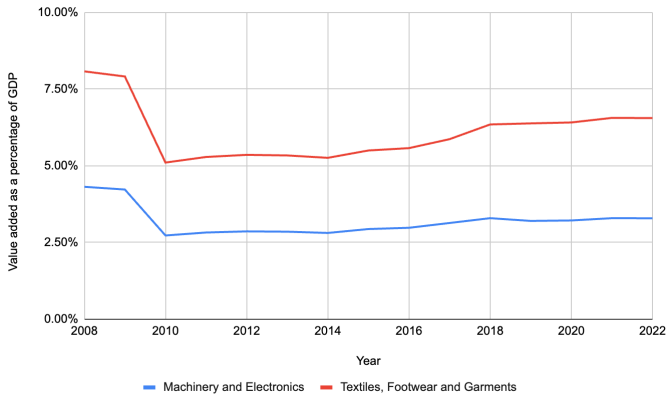

Figure 2.6 value added as a percentage of GDP in the machinery and electronics sector and the textiles, garments and footwear sector, 2008-2022
Source: Author's calculations on IOT[9]

sector's imports was 22%, without much deviation. The highest percentage share was recorded in 2014 at 24.7% and the lowest at 20.0% in 2012. This proves that Vietnam has not become any more independent or efficient when it comes to producing cotton domestically to support the growth of this industry.

Overall, Vietnam's machinery and electronic sector and its textiles, footwear and garments sector reflect the country's limit in its productive capabilities to the initial stages of the value chain. As a developing country that is relatively new as a participant in the world market, Vietnam has to progress from being an assembly station for other developed nations and carry out more advanced- value adding- tasks. From 2008-2022, the value added as a percentage of GDP (see Figure 2.6 below) in these two sectors remained relatively constant, with value added as a percentage of GDP being around 3% and 6% for the machinery and electronics sector and the textiles, garments and footwear sector respectively. This is largely due to the underdeveloped supporting industries and the low localisation rate. The country's localisation rate in 2023, at just 36%, was even lower than China and India. In the same year it was reported that there were approximately 500 firms in the supporting industry production which posed a problem as this only accounted for 0.2% of about 1 million enterprises in the country, far less than other Southeast Asian regions[38]

The machinery and electronics industry is engaged in "assembling electronic components [which] follow standardised process and detailed guidance, measuring and testing products as instructions, labelling and applying logo on electronic products, etc." Much of this activity is the assembly of imported parts and components. Viet Nam is heavily dependent on imports from China, which made up 42.7% of all electrical machinery and electronic imports, followed by South Korea (31.6 %) and Taipei (4.6%) in 2022[39].

Even though Vietnam exports large volumes of machinery and electronics products, the profitability of these industries that are only part of the final assembly stage in the supply change, tends to be between 5-10%[40]. Thus, this is a major reason that the value added in this sector was low for Vietnam in 2022, at $13.4 billion compared to the value added in the textile, garment and footwear sector at $26.8 billion.

Although the value added by the textile, footwear, and garments sector was nearly double that of the machinery and electronics sector, its contribution to GDP (in terms of value addition) has also struggled to achieve significant growth. To face this issue, the Vietnamese prime minister has set an optimistic goal of achieving a localsion rate of 51-55% of demand for the period 2021-2025 and 56-60% of demand for the period 2026-2030. Nevertheless, as of the beginning of 2024, domestic fabric production only reaches an output of about 2.3 billion metres/year, only meeting 25-30% of domestic demand[41]. The Vietnamese textile and garment industry, particularly in Ho Chi Minh City, faces challenges due to a lack of domestic supply in weaving and dyeing stages. In this city, up to 90% of the raw materials for enterprises in this sector are imported, mainly from China, with only 10% sourced locally[42]. This can be attributed to the fact that the textile and garment industry has long faced an imbalance between production stages. The initial and final stages of the chain, namely yarn production and sewing, have seen significant development, while weaving and dyeing have remained bottlenecks for years. Consequently, domestic enterprises in the textile and garment industry lack connectivity and cannot fully complete the supply chain within the country. As a result, the supply of raw materials is heavily reliant on imports at various stages of the production process[42].However, as of 2023, the textile, garment, and footwear industries employed around 2.5 million workers, or about 4.8% of the total labour force, 52.4 million. These sectors have contributed quite remarkably to employment and economic activity in Vietnam, with the garment and textile industry alone, summing up $36.9 billion in exports in 2022. The momentous value of these sectors notwithstanding, they have faced their respective challenges with declining orders and increasing layoffs due to shrinking global demand. For instance, Taiwanese footwear maker Pou Yuen cut almost 10,000 jobs in the locality. However, with the ticking up of GDP growth and perhaps aided by another push from the recently passed free trade agreements,like the EU-Vietnam Free Trade Agreement (EVFTA), there is now a general feeling of recovery[43].

Conclusion and Discussion

To conclude, the in-depth sectoral analysis reveals that Vietnam relies heavily on imported inputs despite shifting away from the primary sector. While its labour force primarily resides in service and manufacturing, export success hinges on increased

value-added products. The electronics and machinery sector has seen the most development, as its product share of exports grew the most out of any other sector from approximately 10% of the export share in 2008 to a substantial 46% in 2021; however, its import product share also saw the highest growth from 23% to 43% in the same period. This indicates that this sector may not support Vietnam's economic development in the context of its long-term participation in the global market as it is dependent on imported inputs. Conversely, the textile, clothing, and footwear industries show significant export growth, with a smaller reliance on imports, making it a crucial sector for future development. This is an important sector for Vietnam's future economic development since if the country can become even more self-sufficient and independent in the production of these goods, it will see drastic improvements in its balance of payments and enjoy an even greater surplus. In terms of the agricultural sector, due to Vietnam's factor endowments and the appropriate climate to grow crops, the government should focus on educating some of the workforce to become more productive. By cultivating self-sufficiency and improving the quality in this sector, Vietnam can improve its balance of payments and fetch higher prices in the global market. Quality issues arise from mass production and unsustainable practices, the abundance of semi-processed products with low value-addition, and a lack of skilled labour or automation. The government should invest capital in this industry so that it can increase the value-added of agricultural goods, as Vietnam can become very efficient at refining and processing these commodities due to its young and energetic workforce. This paper has analysed the contributions of key sectors, but a limitation is the inconsistency in the range of years for which data were collected. While some data used extends only up to 2022, other sections include data through 2023, as obtaining consistent trade data for 2022 and 2023 was challenging; however, such data has been included wherever possible.

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