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THE ECONOMIC IMPACTS OF THE UK-VIETNAM FREE TRADE AGREEMENT (UKVFTA) ON VIETNAM'S ELECTRONICS INDUSTRY

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ABSTRACT

This study analyses the economic impacts of the UK-Vietnam Free Trade Agreement (UKVFTA) on Vietnam's electronics industry (EI) after the UKVFTA had been signed for the period from 2017 to 2021. The TSI, GL/IIT, and CTB indexes were employed to analyze the electronics items traded between the UK and Vietnam. The results showed that Vietnam's electronics industry after the UKVFTA does not result in a significant increase. This agreement still ensures that trade flows smoothly as possible leading to economic development between Vietnam and the UK, after Brexit, especially in the context of the Covid-19 crisis. Therefore, the UKVFTA would still have a crucial role to play in Vietnam's electronics industry and the trade structure of both countries in general. In addition, Vietnam should take measures to improve its competitive position in the EI, boost trade between the two countries, and raise the welfare of Vietnam in the future

1. Introduction

In recent decades, Vietnam has achieved many benefits of globalization as well as made an effort to integrate into the international market. The benefits have been clear in terms of high and consistent economic growth and a large reduction in poverty levels. As Vietnam moves to ratify and implement a new generation of free trade agreements (FTAs), for instance, the CPTPP, EVFTA, RCEP, etc, which have a vital

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role in clearly demonstrating, in a transparent manner, the economic gains and distributional impacts (such as sectoral and poverty) from joining these FTAs. Meanwhile, it is crucial to highlight the legal gaps that must be addressed to ensure that national laws and regulations are in compliance with Vietnam's obligations under these FTAs.

The United Kingdom - Vietnam free trade agreement (UKVFTA) was signed on December 29, 2020, which took effect on 1 January 2021, just after the UK's post-Brexit transition expired on 31 December 2020. The UKVFTA is mostly based on the terms of the EU - Vietnam free trade agreement (EVFTA) with the necessary adjustments to ensure compliance with the bilateral trade framework between Vietnam and the UK and is referred to as a new generation FTAs. The UKVFTA is a proceeding step of the Vietnam - UK trade relationship when the EU - Vietnam Free Trade Agreement (EVFTA) was no longer applied to the UK after December 31, 2020, because of Brexit. With basic commitments based on EVFTA but was adjusted to be more suitable for the two countries, the UKVFTA officially took effect from 23:00 on December 31, 2020, promising to bring many benefits to both sides. Besides that, The UK is looking to Vietnam's support to join the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP). Vietnam is also a high potential market for British investors in renewable energy, education, healthcare, and infrastructure. Meanwhile, Vietnam is looking to a trade deal to increase its exports and growth targets.

The content of the UK and Vietnam bilateral trade relation has many studies and reports on this issue. Many researchers have used econometric models such as Computable general equilibrium (CGE) models, gravity models of trade, or used trade indicators (RCA, ES, IIT,...) to calculate various useful Trade Indices. Nonetheless, The UKVTA is regarded as a new agreement signed in early 2021, thereby it lacks studies to analyze the economic impacts of the UK - Vietnam free trade agreement (UKVFTA) on Vietnam's electronics industry (EI). This study applies the TSI, GL/IIT, and CTB indexes as tools for measuring the economic impact of the UK - Vietnam free trade agreement (UKVFTA) on Vietnam's electronics industry (EI) via such indicators. Simultaneously, these quantitative estimates will give perspectives and orientations to contribute to improving the balance of trade of the UK - Vietnam bilateral trade relation.

2. Overview

2.1. Overview of the UK - Vietnam Free Trade Agreement (UKVFTA)

The UK - Vietnam Free Trade Agreement (the "UKVFTA") was signed on December 11, 2020, by Vietnam's Minister of Industry and Trade and the UK Secretary of State for International Trade). The UKVFTA is intended to replicate the benefits of the EU-Vietnam FTA (EVFTA). Under the UKVFTA, trade between the 2 nations will continue to enjoy preferential treatment to pave the way for increased and continuing trade between the two countries. On 29 December 2020, the UK - Vietnam Free Trade Agreement was signed, and went into force on 1 January 2021, just after the UK's post-Brexit transition period ended on 31 December 2020. Basically, the regulated contents of the UKVFTA are similar to EVFTA, including trade in goods (including general regulations and commitments to open markets), rules of origin, customs and facilitation trade, food hygiene and safety measures (SPS), technical barriers to trade (TBT), trade in services (including general regulations and commitments to open markets), investment, trade remedies, competition, state-owned businesses, government procurement, intellectual property, trade and sustainable development, cooperation and capacity building, legal - institutional.

The UKVFTA is an agreement in accordance with WTO rules, comprehensive, high level of commitment, and ensures a balance of interests

of both sides, with appropriate consideration to the sensitive areas of each country and the development gap between the two countries. Since the EU-Vietnam Free Trade Agreement went into effect, the deal locks in 65% of all tariffs that have been eliminated. After a 6- 9 year period, this will climb to 99% of tariffs. This ensures that import tariffs on products like apparel, fabric, and footwear are eliminated, resulting in lower prices for customers and businesses. Tariffs will be cut in accordance with a plan that calls for equal annual reductions beginning with the agreement's entry into force.

The UKVFTA commits the UK and Vietnam to different levels of market openness. These are broken down by sector and can be found in Specific Commitments on Liberalisation of Investments Commitments in the EU-Vietnam Free Trade Agreement. Many of these pledges reduce market entry criteria or broaden the area of operations available to UK service providers and investors. Vietnam has unilaterally opened most non-service sectors to international investors without any WTO binding commitment, but such policies can be changed. Vietnam will open several non-service sectors to UK investors under the UKVFTA pledges, with no restrictions on the capital share, size, or forms of activity.

Vietnam has also pledged to further market liberalization, including lowering criteria and loosening some limitations for individual service providers from the UK. UK business sellers could apply for entrance and a 90-day temporary stay in Vietnam to negotiate or close a service sale. Contractual service providers are allowed to stay in Vietnam for up to 6 months to directly supply services to Vietnamese consumers, subject to specific requirements. These industries include architecture, urban planning, engineering, foreign language teaching, and the environment. UK service suppliers and investors will be treated according to the principles of non-discrimination, autonomy in business activities, and market access in all services and investment sectors that Vietnam has agreed to open to the UK. Through the UKVFTA, opening a future of more integration and development for the two sides. This Agreement brings benefits to both sides and contributes to promoting economic development and developing together.

2.2. Overview of Vietnam's electronics industry (EI)

Vietnam's electronics industry (EI) plays a vital part in the country's fast-growing economy, contributing to the country's manufacturing and export accomplishments. Furthermore, Vietnam's execution of key trade agreements, strong demographic tailwinds, and supporting government policies are likely to keep this trend going, providing investors with several options. The group of electronic technology includes Computers, electronic products, and components; Cell phones and components; Cameras, camcorders and components, Vietnam has continuously set up many miracles in terms of exports, exports are constantly increasing, an average of $5.794 billion/year. Vietnam has risen from 47th place in 2001 to 12th place in the world and third in the ASEAN region as a major electronics exporter, with a turnover of $44.6 billion in 2020. Especially, cell phones and components exports ranked second in the world in 2020, with a value of about $51.19 billion. Thanks to the impressive growth rate, electronics, computers and components have surpassed textiles and garments to become Vietnam's second-largest export group since 2019.

Foreign companies, particularly multinational corporations, dominate the EI in Vietnam. Although foreign-invested enterprises (FIEs) account for only one-third of total EI businesses, their export share accounted for over 90% of total exports and covered 80% of domestic market demand from 2016 to 2020. Some large FIEs have completed their production facility relocation to Vietnam as of June 2020. LG's smartphone manufacture has shifted entirely to Hai Phong from South Korea. Apple has moved a portion of its AirPods production to Vietnam, and Nintendo has moved a portion of its Switch

Lite game system there as well. In 2020 and 2021, due to the impact of the outbreak of Covid-19, exports faced many difficulties, especially in our country's traditional markets, but the export turnover of this commodity group still had a high growth rate. If it maintains its current upward momentum at a high rate of growth, the electronics, computers, and components group could become the leading export value group in the few years.

3. Methodologies

3.1. Overview of three methodologies

This module will analyze the implications of the UKVFTA based on three methodologies: Trade Specialization Index (TSI), Grubel Lloyd/Inter-Industry Trade Index (IIT), and Contribution to Trade Balance Index (CTB). To analyze the competitiveness of industries (products) using trade statistics, the TSI was used. While the IIT index was used to reveal trade patterns and contributions to the trade balance (CTB). The definitions of these methodologies are described below.

Indicator for Trade Specialization Index (TSI)

The definitions of these methodologies are described below.

$$TSI_{ij} = \frac{X_{ij} - M_{ij}}{X_{ij} + M_{ij}}$$

Where:

TSI_{ij} represents the trade specialization index for a product/an item j of country i

X_{ij} represents the export of a product j by country i

M_{ij} represents the import of a product/item j by country i

This index value ranged from -1 to +1. If there is only import and no export for a country and a certain commodity, the TSI will be -1. (Perfect Import Specialization). If there are only exports and no imports, the TSI would be +1. (Perfect Export Specialization). For a balanced trade, the TSI would be 0. It's a metric for measuring export competitiveness. If the value comes between 0 and 1, the commodity was assumed to have a strong competitiveness attitude or the country concerned tended to be an exporter of the commodity (domestic supply was greater than domestic demand). However, if the competitiveness was low or the country tended to be an importer (domestic supply was smaller than domestic demand), when the value was negative or it was below 0 to -1. If the index rose, it meant that competitiveness increased, and vice versa.

Indicator for Grubel-Lloyd (GL)/Intra-industry trade (IIT)

The GL index is now used to gauge how much intra-industry trade exists between countries. The intra-industry trade index of industry i between two countries is defined as:

$$IIT_i = 1 - \frac{|X_i - M_i|}{X_i + M_i}$$

Where:

IIT_i represents the Intra-Industry Trade Index of Industry i

X_i represents the exports of industry i

M_i represents the imports of industry i

The IIT Index has a value always greater or equal to zero and less or equal to one ($0 \leq IIT \leq 1$). If all commerce is intra-industry trade, the IIT index is 1, and if it is 0, all trade is inter-industry trade. The greater the degree of intra-industry trading, the closer the index value is to 1. It should be emphasized, however, that the extent of the trade imbalance has an impact on the GL index. According to Sharma (1999), the index is symmetric between the countries, and (Yoon, 2007), the index is between 0 and +1.

Indicator for Contribution to Trade Balance Index (CTB)

Sujová, Hlaváčková & Marcineková (2015) developed the CTB index to measure the

industry's contribution to the national trade balance. The CTB is calculated using the following formula:

$$CTB = \frac{100}{X - M}[(X_i - M_i) - (X - M)\frac{X_i + M_i}{X + M}]$$

Where:

X: Total exports in a given year

M: Total imports in a given year.

X_i: Export of product i

M_i: Import of product i

When CTB > 0, the actual surplus is greater than predicted or the relative trade deficit is smaller than anticipated, and the industry or commodity group contributes positively to the overall trade balance. In a more literal sense, this indicates that there is a competitive edge in trade. On the other hand, when CTB < 0 the industry and commodity group make a negative contribution to the total trade balance since the actual results are negative or lower than predicted. This actually demonstrates that commerce has a comparative disadvantage. The real competitiveness of the electronics industry, its sections and commodities were analyzed by applying the above-mentioned methods for measuring competitiveness at the level of industry with the aim to validate the correctness of the achieved results and the relevance of characteristics.

3.2. Collecting data

Research data was collected by the method of data collection from references where the data collected is secondary data. Collected data is taken from the annual report for the years from 2017 to 2021. The authors search and collect data through two stages, including (i) determine whether the required data type is present in the form of secondary data, (ii) Accurately locate the required data, (iii) Thereby, we have collected data from The General Department of Vietnam Customs (https://tongcuc.customs.gov.vn/). Collected data includes Export and Import turnover of Vietnam; Export turnover from Vietnam to the UK; Import turnover from the UK to Vietnam; Export turnover of items in the electronics industry from Vietnam to the UK; Import turnover of electronic industry products from the UK to Vietnam.

3.3. Measurement

Trade Specialization Index (TSI)

TSI is an index that can analyze the competitiveness through trade specialization levels of each country or between two countries in a specific market. The following equation is used to compute the TSI:

$$TSI_{ij} = \frac{X_{ij} - M_{ij}}{X_{ij} + M_{ij}}$$

Where:

TSIij represents the trade specialization index for a product/an item j of country i

Xij represents the export of a product j by country i

Mij represents the import of a product/item j by country i

According to Cheong (2012), the TSI analyzes the competitiveness change in CLMV (Cambodia, Laos, Myanmar, and Vietnam) manufacturing industries. The TSI evaluates the comparative advantage of industry or product exports and their competitiveness (Sujová, Hlaváčková & Marcineková, 2015). In other words, a trade specialization index is a number that reflects a product's comparative advantage based on its export and import volumes in a certain country (Kang, 2016).

Grubel Lloyd/Inter-Industry Trade Index (IIT)

The GL index is now used to gauge how much intra-industry trade exists between countries.

The intra-industry trade index of industry i between two countries is defined as:

$$IIT_i = 1 - \frac{|X_i - M_i|}{X_i + M_i}$$

Where:

IITi represents the Intra-Industry Trade Index of Industry i

Xi represents the exports of industry i

Mi represents the imports of industry i

The GL index evaluates the intra-industry trade of a single product or item, indicating macroeconomic export potential. It was adjusted for industry-level examination, and the calculation reveals the level of commodity representation in a country's intra-sectoral international commerce. The Grubel & Lloyd (1975) index is commonly used to determine the level of the IIT. The IIT is the difference between an industry's balance of trade and the overall trade of that industry. The index is given as a ratio with total trade as the denominator to make comparisons between industries or nations easier (Leitão & Faustino, 2008). Although a large number of empirical studies have contributed to the determinants of the IIT, the majority of them focus on developed countries where trade flows are similar due to similar demand structures and production technology (Łapińska, 2016). In developing countries, research on the factors influencing the IIT is still limited (Ekanayake, 2001; Kien & Thao, 2016).

Contribution to Trade Balance Index (CTB)

The CTB index measures the industry's contribution to the national trade balance (Sujová, Hlaváčková & Marcineková, 2015). The CTB is calculated using the following formula:

$$CTB = \frac{100}{X - M}[(X_i - M_i) - (X - M)\frac{X_i + M_i}{X + M}]$$

Where:

X: Total exports in a given year

M: Total imports in a given year.

Xi: Export of product i

Mi: Import of product i

The CTB index measures the contribution to the national trade balance made by the industry (Sujová, Hlaváčková & Marcineková, 2015). According to Stellian & Danna-Buitrago (2019), the CTB index is based on trade balance (i.e., net exports) comparative advantages can be measured more precisely. In addition, Rojíček (2010) states that a comparative advantage, which is expressed in the form of the CTB, represents the concept of the net trade or trade balance in commodities. It can be interpreted as an indicator of the "revealed comparative advantage", as it indicates whether an industry performs relatively better or worse than the manufacturing total, no matter whether the manufacturing total itself is in deficit or surplus (OECD, 2011).

4. Results

4.1. Comparison of the structure of trade before the UK - Vietnam Free Trade Agreement

Analysis of the Trade Specialization Index (TSI)

The data source is collected from the General Department of Vietnam Customs, 2021. The data in the table is calculated according to the formula:

$$TSI_{ij} = \frac{X_{ij} - M_{ij}}{X_{ij} + M_{ij}}$$

Table 1. Trade specialization index (TSI)

Ordinal number	Product's name	Year				
		2017	2018	2019	2020	2021
1	Computers, electronic products, and components	0.8959	0.9034	0.8795	0.8868	0.8610
2	Cell phones and components	0.9978	0.9998	0.9999	0.9999	0.9951
3	Cameras, camcorders, and components	-1	-1	-1	-1	-1

Source: Author's calculation, 2023

After the signing of the UKVFTA, the goods of Vietnam's electronics industry (EI) in 2021 tend to become less surplus than in previous years, because in general, the TSI tends to decrease slightly. Cameras, camcorders, and components have perfect import specialization. In general, in the period from 2017 to 2021, Vietnam's computers, electronic products, and components; cell phones, and components have a value of 0 to 1, so these items have a high level of export competitiveness and trade surplus. Trade exists for all the TSI values greater than 0. The Cameras, camcorders, and components have perfect import specialization.

According to the table, Computers, electronic products and components have a trade surplus and export competitiveness (TSI > 0). Before signing the UKVFTA, the TSI of Computers, electronic products and components had unstable fluctuations from 2017 to 2019 (the highest in 2018 TSI = 0.9156), although not significant but also shows that it is possible that the UK market demand for this item changes continuously, leading to a change in the value of the TSI each year. However, after signing the UKVFTA agreement, this commodity has had a slight decrease in competition as well as a surplus (the TSI 2021 = 0.8629 down compared to 2020), because of the requirements from the UK market and the Covid-19 pandemic situation caused many difficulties for exports. This shows that the UKVFTA has not had a positive impact yet.

For cell phones and components in the period from 2017 to 2021, the TSI index is all greater than 0 indicating a trade surplus and export competitiveness. And the TSI over the years has reached a threshold close to 1, specifically in 2018 the TSI = 0.9999 is approximately equal to 1, a large surplus, the cause of this surplus may be because Vietnam has gradually improved its level of education. About their electronic technology products. This shows that in the Cell phones and components category, there is near-perfect export specialization. After signing the UKVFTA, although there was a slight decrease in the TSI in 2021 = 0.9941. This change shows that the UKVFTA has not had much impact on trade between the two countries due to a slight decrease in the demand of the UK market.

Cameras, camcorders and components have perfect import specialization (TSI =-1). It shows that Vietnam still does not have an advantage in the production of this item, the supply of input materials in the production process is limited. Hopefully, in the future, Vietnam will be able to export this group of goods.

Analysis of Grubel-Lloyd (GL)/ Intra-industry Trade (IIT)

The data source is collected from the General Department of Vietnam Customs, 2021. The data in the table is calculated according to the formula:

$$IIT_i = 1 - \frac{|X_i - M_i|}{X_i + M_i}$$

Table 2. Grubel-Lloyd/Intra-Industry trade index (IIT)

Ordinal number	Product's name	Year				
		2017	2018	2019	2020	2021
1	Computers, electronic products, and components	0.086	0.084	0.131	0.109	0.137
2	Cell phones and components	0.0016	0.0001	0.0007	0.0018	0.0059
3	Cameras, camcorders, and components	0	0	0	0	0

Source: Author's calculation, 2023

In general, the Grubel – Lloyd (GL) index, which measures the intra-industry level of products ò Vietnam's electronics industry, has altered in the last five years, but not in a noticeable way. Variation in different items is different. The changes are less in the period from 2017 to 2020, but after the UKVFTA is signed, the IIT value changes more clearly.

For Computers, electronic products, and components, in the period 2017 – 2020, the IIT increased from 0.086 to 0.109 (an increase of 0.023), after the UKVFTA was signed, in just one year it increased from 0.109 to 0.137 (an increase of 0.028). This is a positive sign that the UKVFTA brings to these products. However, when analyzing closely year by year, we see that the IIT value increased to 0.131 in 2019, then decreased to 0.109 in 2020. This can be explained by the heavy impact of the covid-19 pandemic. Then in 2021, when the UKVFTA was signed, along with the quickness of the government in responding, overcoming, and minimizing the effects of the covid-19 pandemic, the IIT value returned to increase in 2021.

For Cell phones and accessories, the IIT declined from 0.0022 to 0.0013 between September 2017 and September 2020, but when the UKVFTA took effect, the IIT climbed to 0.0049, more than two times higher than in 2017, and 3.7 times higher than in 2020. As a result, the UKVFTA continues to have a favorable impact on these products. For Cell phones and components, in the period from 2017 to 2020, the IIT only increased very slightly from 0.0016 to 0.0018 (increase 0.0002), however after the UKVFTA took effect, the IIT increased to 0.0059 (increase 0.0041), increased more than 20 times compared to the increase in the previous 4 years. As a result, for these products, the UKVFTA continues to bring a more pronounced positive impact. For Cameras, camcorders, and components, the IIT is zero and remains unchanged both before and after the UKVFTA was signed, so it can be seen that the UKVFTA has not had an impact on these products.

We can observe from the above figures that the products of Vietnam's electronics industry have varied levels of intra-industry trade and are still relatively low. When $0.1 < IIT < 0.33$, products have intra-industry trade potential, when $IIT > 0.33$, products are intra-industry trade. In the case of $0 < IIT < 0.1$, the product has no intra-industry trade potential, and when $IIT = 0$, the product is inter-industry trade. Thereby, it can be seen that Computers, electronic products, and components are products having intra-industry trade potential with $0.1 < IIT = 0.137 < 0.33$. Cell phones and accessories have no intra-industry trade potential with $IIT = 0.0059 < 0.1$. As for Cameras, camcorders, and components, our country still exports to a number of other countries, but when considering the UK, all transactions related to this product are inter-industry trade (IIT =0). This demonstrates that Vietnam's electronics industry's ability to make products is still limited, relying significantly on imports from other nations.

Although the situation is still not obvious, we are beginning to observe the positive benefits of the UKVFTA on Vietnam's electronics industry (EI), particularly in two product categories: computers, electronic products, and components (IIT increased from 0.109 to 0.137), and Cell phones and components (IIT increased from 0.0018 to 0.0059). These are outstanding increases, thanks to the bounce from the UKVFTA, not just the normal increase. For Cameras, camcorders, and components, the IIT value is currently zero, and the UKVFTA has not had an impact on these products. This is clearly not a positive sign, but we can still wait a few more years to see the impact of the UKVFTA on these products, and hopefully, it will be positive.

Analysis of Contribution to Trade Balance Index (CTB)

The data source is collected from the General Department of Vietnam Customs, 2021. The data in the table is calculated according to the formula:

$$CTB = \frac{100}{X - M}[(X_i - M_i) - (X - M)\frac{X_i + M_i}{X + M}]$$

Table 3. Contribution to trade balance index (CTB)

Ordinal number	Product's name	Year				
		2017	2018	2019	2020	2021
1	Computers, electronic products and components	0.944	1.232	0.845	1.097	0.844
2	Cell phones and components	10.284	12.985	10.48	7.841	6.931
3	Cameras, camcorders and components	-0.164	-0.107	-0.23	-0.302	-0.113

Source: Author's calculation, 2023

For Computers, electronic products, and components, in the period 2017-2020, the CTB increased slightly from 0.944 to 1.097. However, in 2021, the CTB had decreased slightly to 0.844 (decreased by 0.253). This can be seen as a negative influence of the UKVFTA on these products. For Cell phones and components, the CTB had increased from 10,284 to 7,841, and in 2021, it continued to decrease to 6,931 (increased by 0.91). This demonstrates the negative impact of the UKVFTA on the contribution of this product to the overall balance of trade. Thirdly, the CTB for cameras, camcorders, and components decreased from -0.1462 to -0.3606 from September 2017 to September 2020 but increased from -0.164 to -0.302, however in 2021, although the CTB is still negative, it has increased to -0.113 (up 0.189 compared to 2020). This demonstrates that the UKVFTA has had a positive impact on these products.

Through the above data, we can see that the two groups of Computers, electronic products and components, and Cell phones and components have positive contributions to the overall balance of trade (CTB > 0), but Cameras, camcorders, and components contribute negatively, indicating a comparative disadvantage with trade (CTB < 0). The CTB of Cell phones and components is the largest in the industry for the past 5 years, showing that we have the most comparative advantage in these products in the electronics industry (EI). However, it is on a decreasing trend over the years, especially in 2020 and 2021. This is in addition to being partly explained by subjective reasons such as unsurpassed quality labor sources. However, the advantages are still not

enough to meet the requirements of high-level advantages in the production process, there is also an objective cause that has a great impact, which is the Covid-19 pandemic. The pandemic has greatly impacted both supply and demand of both Vietnam and the UK, thus affecting the balance of trade, and reducing the CTB index. Although the UKVFTA was signed in early 2021, we have not been able to take advantage and promote its advantages in the face of such a large pandemic.

The CTB of Computers, electronic products and components is the 2nd highest in the industry, it is greater than 0, indicating a positive contribution to the overall balance of trade, however the positive contribution is not clear when the CTB remains open. still relatively low. In addition, after the UKVFTA was signed, the CTB of this product suddenly decreased while the previous years increased. Thus, with this product, the UKVFTA has shown a clear negative impact, reducing our country's comparative advantage in these products. Although computers are our main export item, this item does not have a comparative advantage because our country lacks supporting industries for these items. The supporting industries are operating inefficiently, producing products of poor quality and high cost, making the supply of input materials for the production process limited, so for these products, we tend to depend on imported raw materials. As a result, the production process is interrupted, not bringing high efficiency.

4.3. Results obtained after analyzing TSI, IIT, CTB

First and foremost, regarding the TSI index, the authors found that Cameras, camcorders and components are imported specialized and Computers, electronic products and components, Cell phones and components are highly specialized in export. Through the TSI analysis, the UKVFTA has had an impact on Vietnam's electronics (EI) sector, but these impacts are still not clear. However, it is still clear that the comparative advantage of exports is in two product groups: Computers, electronic products and components, phones of all kinds, and components from Vietnam to the UK market.

Secondly, the GL index measures the level of intra-industry trade IIT between Vietnam and the UK. Through analysis, it is clear that the UKVFTA has had a good impact on Vietnam's electronics sector (EI), however, these impacts are not very noteworthy. The UKVFTA was unable to develop products from Vietnam's electronics industry (EI) into intra-industry commercial products in its first year. Furthermore, the UKVFTA has not shown its influence on cameras, camcorders, and accessories as the export turnover of these products has remained at zero for the past 5 years.

Finally, the CTB values appear to be indicating that the UKVFTA has a negative impact. Even though the CTB of the two categories of computers, electronic products and components, and Cell phones and accessories are relatively good, the CTB indexes of these items have shown signals of decline when there is the UKVFTA. The CTB has increased for cameras, camcorders, and accessories, but it is still very small and cannot be larger than 0.

The UKVFTA has helped ensure Vietnamese products on the UK market, though some indicators tend to increase, they have not had a big impact. This is not really beneficial for Vietnam because besides that, there are many surplus products but the index tends to decrease. Hopefully in the next few years, Vietnam will have solutions to make products more competitive in the UK market in particular and the world in general.

5. Research results summary

The study empirically analyses the economic impacts of the UK - Vietnam Free Trade Agreement (UKVFTA) on Viet Nam's electronics industry (EI) using the TSI, GL/IIT, and CTB index. It evaluates the comparative

advantage of industry or product exports and their competitiveness by the TSI, measures the intra-industry trade of an individual product or item showing the export potential at the macroeconomic level and the difference between the trade balance of industry and the total trade of this same industry by GL/IIT and measures the contribution to the national trade balance made by the industry by the CTB. Through this, the impact of the UKVFTA on the EI between the two countries (the UK and Vietnam) was ascertained. The authors assume that the UKVFTA is a good complementarity of the bilateral trade that has achieved significant improvements in bi-directional tariff reduction on goods and integrated many major factors making green trade freer between the two countries. Furthermore, a broad and deeper meaning of the results is discussed as follows.

The result showed that Vietnam has the EI's export turnover higher than import turnover; that is, export specialization is high. Nonetheless, within 5 years between 2017 and 2021, the surplus value has fallen which can imply the export value is reducing as well as the import value is rising. Simultaneously, the EI also keeps a positive trade balance in both countries. By using Trade Specialization Index (TSI), Grubel Lloyd (GL)/Inter-Industry Trade Index (IIT), and Contribution to the Trade Balance Index (CTB). This paper has found the main influential impact of the UKVFTA on Vietnam's electronics industry (EI).

- The overall electronics industry (EI): Such indicators showed that the EVFTA is to contribute positively to Vietnam's electronics industry (EI) and the trade balance between the UK and Vietnam. The authors, however, recognized the UKVFTA has still been limited for 12 months which took effect on 1 January 2021, and Vietnam's electronics industry (EI) is not able to deal with several sectors that have a less comparative advantage.
- The types of electronic components: As a result, the TSI, GL/IIT, and CTB indexes displayed slight changes such as some negative and positive effects of the UKVFTA on the EI in Vietnam. To be more specific, electronic products and components have gained higher export value despite the recent Covid-19 outbreak, compared to cell phones and accessories with a fall in export value. Cameras, camcorders, and accessories have not shown the impact of the UKVFTA because Vietnam is importing cameras, camcorders, and accessories from the UK as well as not exporting during the last five years.

In conclusion, economic or trade interdependence is depicted between the two countries based on the analysis of the results. The UKVFTA has unclear impacts on the trade flows of Vietnam, Electronic items and products considered under the UKVFTA are contributing little positively and negatively to Vietnam's electronics industry (EI). The impacts are expected in the future as the tariffs will be significantly reduced along with the UKVFTA roadmap. Indeed, the UKVFTA has helped secure Vietnam's position in the UK market because its competitors of Vietnam such as Malaysia, Indonesia, and Thailand are already enjoying access to FTAs with the UK. Further dynamic impacts of the UKVFTA will contribute to the overall impacts on Vietnam's economy, specifically Vietnam's electronics industry (EI) in the future as well. The suggestions for further studies, therefore, are the evaluation of these dynamic impacts and impacts on specific industries.

Research limitations and further research directions

Firstly, the economic downturn in both the UK and Vietnam due to the impact of the Covid-19 pandemic will make the "economic benefits" brought by the UKVFTA in the early stages of implementation will not as expected because the two businesses on both sides have not been able to take full advantage of incentives due to supply chain disruptions, circulation disruptions and weak demand from

the economies of both sides. As a result, it is not clear the great impacts of the UKVFTA on trade relations between the UK and Vietnam.

Secondly, the research results, after analyzing the indicators, still do not clearly show the impact of the UKVFTA on trade between the two countries, because the agreement has just been signed in 2021. Data in 2021 compared to before the agreement was signed for the same period of 2017-2020, so the results presented are still lacking in terms of time factor as well as limitations in terms of import and export data between the UK and Vietnam after the UKVFTA had been signed.

Thirdly, in this study, the authors only used three trade indicators: Trade specialization index (TSI), Grubel-Lloyd/Intra-Industry trade index (GL/IIT), and Contribution to trade balance index (CTB) to analyze and assess the industry impact of the UKVFTA, so they have not seen all the aspects that the agreement brings for Vietnam's electronics industry (EI). On the other hand, the study only focuses on researching the main and outstanding products of the electronics industry in particular, not expanding the overview of all industries in Vietnam in general.

Therefore, for upcoming studies, the authors suggest using panel data to run a regression to test the sustainability of the UKVFTA. In addition, further research is needed for the entire industry rather than assessing these impacts and impacts on specific industries. Such studies can use a variety of general research indicators such as Export Specialization (ES) and Existing Comparative Advantage (RCA). In addition, different models can be used to study trade, such as the SMART local equilibrium model, which simulates the economic impact between the UK and Vietnam.

References

Cheong, J. (2012). New Division of Labor between Korea and CLMV Countries. *In Industrial Readjustment in the Mekong River Basin Countries: Toward the AEC*, edited by Yasushi Ueki and Teerana Bhongmakapat, BRC Research Report N0.7, Bangkok Research Center, IDE-JETRO, Bangkok, Thailand.

Ekanayake, E. M. (2001). Determinants of trade: The case of Mexico. *The International Trade Journal*, *15*(1), 89-112. https://doi.org/10.1080/088539001300005468

Grubel, H. G., & Lloyd, P. J. (1975). *Intra-industry trade: the theory and measurement of international trade in differentiated products* (Vol. 12). London: Macmillan. DOI:10.2307/2230917

Kang, M. (2016). Korea's Ceramics Trade: Comparative Analysis and Policy Suggestions. *KIET Industrial Economic Review*, *21*(6), 42-54. http://dx.doi.org/10.2139/ssrn.4204280

Leitão, N. C., & Faustino, H. C. (2008). Intra-industry trade in the food processing sector: The Portuguese case. *Journal of Global Business and Technology*, *4*(1), 49-58.

Łapińska, J. (2016). Determinant factors of intra-industry trade: The case of Poland and its European Union trading partners. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, *11*(2), 251-264. DOI: 10.12775/EQUIL.2016.011

Rojíček, M. (2010). Konkurenceschopnost obchodu ČR v procesu globalizace. *Politická ekonomie*, *2010*(2), 147-165. DOI: 10.18267/j.polek.724

Kien, T. N., & Thao, T. T. P. (2016). Determinants of intraindustry trade for Vietnam's manufacturing industry. *Journal of Economics and Development*, *18*(1), 5-18. DOI: 10.33301/2016.18.01.01

Stellian, R., & Danna-Buitrago, J. (2019). Revealed comparative advantages and regional specialization: Evidence from Colombia in the Pacific Alliance. *Journal of Applied Economics*, *22*(1), 349-379. https://doi.org/10.1080/15140326.2019.1627722

Sujová, A., Hlaváčková, P., & Marcineková, K. (2015). The trade competitiveness of furniture products. *Drewno*, *58*(195), 101-115. DOI 10.12841/wood.1644-3985.104.09