

EFFECTS OF CHINA TRADE WAR ON SINGAPORE ECONOMY IN 2020

Lalita Pornjantuek¹, Suppanunta Romprasert^{2,*}, and Akhilesh Trivedi³

Abstract

The objective of this study was to understand how the trade war has affected Singapore's economy by comparing trade between Singapore and China using comparative advantage and trade specialization. Moreover, the money market and capital market are used for comparing the interest rate as the main effect on the trade war for both short-term and long-term bonds. The methodology uses comparative advantage and trade specialization during the year 2020, and 2015 – 2019 as the period of interest rate, via a Revealed Comparative Advantage Index (RCA Index) calculation. The results of this study include (1) China has a comparative advantage with the lowest cost in intensive labor, while Singapore has a comparative advantage regarding the lowest cost of intensive capital, (2) the gain from the trade war is that Singapore sends these products to China for labor intensive production and (3) China imports these goods from Singapore and produces electronic goods such as telephones, exporting them to the US. The implications of this study regarding the comparative advantage and trade specialization used by RCA for calculation between China and Singapore can illuminate the ideas for academic, government, and private sector planning of management strategies in terms of trading cooperation. However, the interest rate also benefited (can also benefit?) to show the effects along with money market and capital market in Singapore for helping the investors on the investment plan for both short terms and long terms.

Keywords: Singapore Economy, GDP, Internationalization, Trade War

INTRODUCTION

The US - China Trade War has created both benefits and losses to other countries. The positive effects mainly go to US neighbors such as Mexico. Due to trade disputes with lower GDP countries, such as Vietnam, Malaysia, and Taiwan, the US is required to import products such as cell phones, computers, furniture, clothing, toys, shoes, and car parts from its neighboring countries which then benefit from increased trade (Schacht, 2020). However, there are also

negative impacts which cause economic suffering, bringing trade flows away from both the US and China, including other countries. In the US, the trade war costs US firms by causing additional losses regarding the price of their input factors of production, and baring China because of the US tariffs imposed on imports from China (Hass & Denmark, 2020). Moreover, the tariffs also affect firms by reducing profit margins, prompting them have cut costs by lowering wages or laying off workers. In addition, global trade is affected by the US – China

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trade war. Fajgelbaum, Goldberg, Kennedy, Khandelwal & Taglioni (2021) mentioned that many countries export products that complement the US and substitute Chinese products which have been downsized in their supplies.

Many countries have slowed spending due to uncertainty. Increases in global uncertainty has led to suffering via investments in developing countries because the real incomes from the rest of the world have dropped with the relative loss on exports in East Asia and the Pacific because of the trade diversion mentioned by Freund, Maliszewska, Mattoo & Ruta (2020). Most developing countries are primarily exporting products, especially those depending on manufacturing. Without having much in terms of exports, there is a drop in the export earnings of these countries due to the trade flow decline. Imported goods from China total around \$34 million, leading to the situation that China cannot export to the US as much as in the past (Zhou, 2019). The trade war has reflected the reduction in foreign trade, especially regarding China's goods imports. The lower demand and the dissolution of the production chains has had the effect of downsizing foreign trade flows of goods from China's neighboring countries. Due to increased uncertainties and decreased confidence resulting from the trade war, there has been an associated weakening in the global economy and deterioration in investments. With these disadvantageous impacts on the global scale, the biggest impacts have been felt by producers, the labor force, and households in Asian countries, particularly Singapore. Everyone knows that economically Singapore is one of the most opulent nations in the world (A Singapore Government Agency Website, 2021). The logistics and transportation industry is the primary industry sector which has brought Singapore up to the rank of a developed country. If one looks at the situation geographically, one thing to point out is that Singapore is surrounded with sea, allowing the country to develop as a hub for trading. In terms of trade, China is the country that has

the best partner relation with Singapore as an export collaboration, besides Hongkong and Malaysia. The highest product exports to China are in the area of electrical machinery which contributes 20 to 25 percent of the Singapore's GDP (Leelapornchai, 2007). However, in terms of the trade war, electronic goods are one of products for which the US has imposed a high tariff on imports of Chinese product. This has a significant impact on Singapore's exports to China (Paszak, 2021; Wong & Koty, 2021). Additionally, a review of the literature and updated information indicates that these negative effects impact directly to all Asian countries. Singapore has also been affected in terms of the trade war for its complementary goods exports to China. The objective of the current research study is to understand how the trade war has affected the Singaporean economy. The concept is explained considering trade between Singapore and China by using comparative advantage and trade specialization comparisons. Moreover, the study uses the money market and capital market to compare the interest rate as the main indicator of the outcomes of the trade war through both short-term and long-term bonds.

LITERATURE REVIEW

Empirical Review

Singapore's economy emphasizes exports due to its geographical background, as already mentioned. Having many ports led to the country's development of fantastic export vessels since 1970. In that time, the main part of Singapore's export consisted of textiles, garments, and basic electronics (Zhou, 2019). Besides this, Singapore has focused on developing human resources as human capital, particularly involving training of unskilled labor, for Singaporean citizens to learn about technology and electronics. In the 1990s, Singapore started to engage in logistics and trade with China, Hongkong, and Malaysia, exporting mainly electronic machinery. When the US imposed a tariff on

imported goods from China, this caused a drop in Singapore's exports leading to a decrease in the country's GDP. Donald Trump declared that "the tariffs will be imposed on \$50 billion of Chinese goods, coming into effect on July 6, 2018" (Hawksford, 2017, and Choudhury, 2021). Before 2018, Trump had announced that he "will impose the tariff on goods from China of around \$34 million" but later changed the value as China imposed a tariff on US imports of around \$34 million, meaning that China imposed a tariff equal to that imposed by the US. Both countries then further increased their tariffs on each other's goods up to the new value of \$50 million. These tariffs include electronic machines, innovations, and agricultural products (Workman, 2018; Myers, 2018). Regarding the previous information, this article explains how Singapore's GDP graph has changed in response to the effects of the trade war, covering the duration from before the tariffs were imposed to the period after they were imposed.

Theoretical Review

Comparative Advantage

The theory and concept of a comparative advantage was provided by David Ricardo to determine the relative prices between two countries before a trade. The main principle of comparative advantage is that a country's comparative condition will show any specialization in producing and exporting goods to other countries at the lowest cost. It relates to an ability to build a specific good or / and service at a lower opportunity cost than other trade partners. It also provides firms with the capacity to exchange goods and services at a lower price than the competitors and comprehends stronger sales margins. A man has a comparative advantage at manufacturing something if he or she can make it at lower cost than anyone else. In today's economy globalization, boundarylessness, interconnectivity, and technological innovation all have deep effects

on international trade patterns and supply chain dynamics over the last few years (Christopher & Daco, 2012).

Revealed Comparative Advantage Index (RCA Index)

The Revealed Comparative Advantage Index (RCA index) calculates the relative advantage or disadvantage of a certain country and is used in international economics. It indicates the trade flow on the level of goods or services based on the "Ricardian comparative advantage" concept. It is defined as the ratio of two shares of a country's total export of goods among its total exports (Luo, Han & Wei, 2018; Danna-Buitrago & Stellian, 2021).

If the price of Singapore's products is lower than those of China, then the country who has the lowest of opportunity cost has a comparative advantage regarding these products (Jayadi & Aziz, 2017). In international trade theory, comparative is an important concept to explain trade patterns. The country that has a comparative advantage will export and import goods to others which do not have the comparative advantage. According to Jayadi & Aziz (2017), who researched the Comparative Advantage Analysis and Product Mapping of Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam's Export Products found that the endogenous comparative advantage is determined by changing technology and innovation caused by the dynamics of the role of the trade in inputs. Moreover, the RSCA index was used to compare the type of product group that had a comparative advantage or trade specialization. In addition, according to Ervani, Widodo & Purnawan (2019), who investigated the comparative advantage and trade specialization of East Asian Countries, the East Asian Countries, including Indonesia, China, Japan, Hongkong, South Korea, and Singapore, were shown to have the highest exports and an excellent standing in the exports sector during 1995 to 2015. Moreover, these researchers found that Hongkong, South Korea, and Singapore had

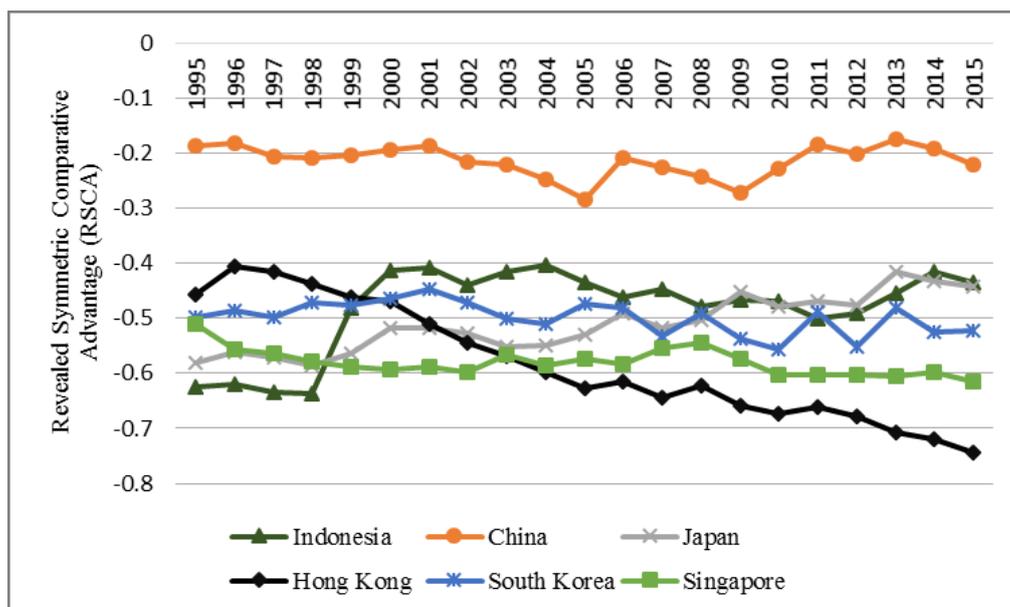


Figure 1 Revealed Symmetric Comparative Advantage (RSCA) for 6 Countries

changed from unskilled labor intensive to skilled labor intensive, and even beyond to capital intensive employment, via the provision of education and training in areas such as technology. Accordingly, it can be said that these countries have focused on manufacturing products and exporting to other countries which is labor intensive.

The graph above shows the comparative advantage of each country in the East Asian region using the RSCA index. The result shows that there has been a change in the pattern of comparative advantage among the ASEAN+3 countries.

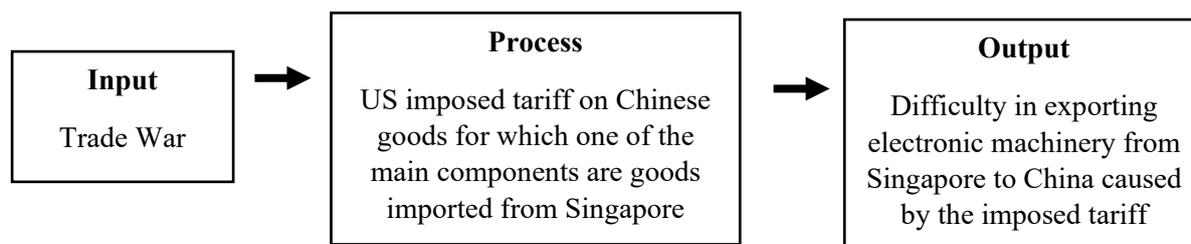
From the graph, it can be easily seen that China has the highest comparative advantage when compared with the other countries in the region. The comparative advantage for Hongkong shows a steady decline between 1996 to 2015. In the 1995 to 1999, Hongkong held a high rank regarding its comparative advantage when compared to South Korea, Japan, Singapore, and Indonesia. However, in 1995 to 2015, Japan increased its comparative advantage and continues to do so. Indonesia’s comparative advantage has fluctuated over the period from 1995 to 2015, but has fluctuated in some period and experienced a significant increase in other periods. In 1995 to 2015, South Korea, and Singapore, have a decreasing comparative advantage. However,

the trend of South Korea’s comparative advantage was stronger than that of Singapore. An increasing comparative advantage is supported by a higher increase in the comparative advantage within a particular product group which has had a low comparative advantage in the past. Moreover, the pattern of comparative advantage of the ASEAN countries is similar to that of Japan. The “catching-up” process is supported by the changes in the pattern of the comparative advantage in both the ASEAN countries and Japan.

METHODOLOGY

Concept Framework

After the trade war began, Singapore was affected, as the war led to a decrease in Singapore’s GDP. Considering the export sector, exports are significant within Singapore’s GDP as around 20-25 percent of Singapore’s GDP comes from the export sector (Heritage, 2019). The country which Singapore exports to most is China. However, Singapore can no longer export to China as much as before, as the US imposed tariffs on goods from China mean that China can no longer export in high volume to the US. Consequently, China requires fewer imports



from Singapore, such that the outcome of the trade war between the US and China has had a large effect on Singapore. Singapore's exports of electronic machinery such as thermionic components and microcircuits, are used by China as inputs used in the production of electronic products sent to the US (Jayadi & Aziz, 2017). The trade war has not only affected China, but also other countries who export goods to China.

This article aims to explain the impacts on Singapore which exports to China according to its comparative advantage and trade specialization during the year 2020, considering a period of interest rates declared during 2015 – 2019 as shown into the diagram above.

This study uses RSCA Index calculations along with the following variables for both China and Singapore, comparing:

RCA_{ij} : the comparative advantage of the group of products i from country j

$RSCA_{ij}$: the revealed symmetric comparative advantage of the group of products i from country j

X_{ij} : the exports for the group of products i from country j

X_{Tj} : the total exports from country j

X_{iw} : the world exports of product i

X_{Tw} : the total world exports

Theoretical Explanation

Ervani, Widodo & Purnawan (2019) researched the changing dynamics of Asian countries, comparing the ASEAN+3, including China, the Republic of Korea, and Japan by using the RSCA index. Their results showed that a change of pattern in the comparative advantage of the ASEAN+3 increased the overall comparative advantage, for which the pattern of the comparative advantage of the Asian countries is similar to

Japan, increasing from time to time. They used Revealed Symmetric Comparative Advantage (RSCA) to measure the comparative advantage of East Asian countries and their export specialization, calculated by the percentage of export value for a particular product group, to identify the country which should export that particular product, using the following formula:

$$RCA_{ij} = \frac{(X_{ij}/X_{Tj})}{(X_{iw}-X_{ij})/(X_{Tw}-X_{Tj})} \quad (1)$$

$$RSCA_{ij} = (RCA_{ij} - 1)/(RCA_{ij} + 1) \quad (2)$$

$$Export\ share = (X_{ij}/X_{Tj}) \times 100 \quad (3)$$

Where,

RCA_{ij} is the comparative advantage of the product group i from country j

$RSCA_{ij}$ is the revealed symmetric comparative advantage of product group i from country j

X_{ij} is the exports for product group i from country j

X_{Tj} is the total exports from country j

X_{iw} is the world exports of product i

X_{Tw} is total world exports

According to this formula, the RSCA index is in the range $-1 \leq RSCA \leq 1$ which will give a symmetrical value. When the export commodities of each country have values of RSCA greater than zero, then the product group has a comparative advantage. In contrast, if the value of the RSCA index is less than zero, the country does not have a comparative advantage for this product group. A higher export share means that the product group is produced in a greater proportion than other product groups. The higher the export share value of the product group, the higher the trade specialization of the product group

in that country. In this article, the year 2020 was used as the period for calculation of the RSCA index for both China and Singapore.

DISCUSSION

The article’s concept explains the trade between Singapore and China by using a comparison of the (A) comparative advantage and trade specialization. Moreover, the study uses (B) the money market and capital market to compare interest rates as the main effect of the trade war through both short-term and long-term bonds.

(A) Comparative Advantage & Trade Specialization

The comparative advantage is measured by calculating the RSCA index of China and

Singapore according to the following equation:

$$RCA_{ij} = \frac{(X_{ij}/X_{Tj})}{(X_{iw}-X_{ij})/(X_{Tw}-X_{Tj})} \tag{1}$$

$$RSCA_{ij} = (RCA_{ij} - 1)/(RCA_{ij} + 1) \tag{2}$$

$$Export\ share = (X_{ij}/X_{Tj}) \times 100 \tag{3}$$

The higher the RSCA index value for each product group, the higher the comparative advantage for this product group. Moreover, the trade specialization is calculated by the value of the export share. The higher the value of the export share for each product group, the higher the trade specialization of this product group in the respective country.

Table 1 Chinese Data for 2020 (in billion US dollars) Used in Making the Comparative Advantage Calculated Through Equations (1), (2) and (3):

	Exports for the product group from China (X _{ij})	Total exports from China (X _{Tj})	World exports of the product group (X _{iw})	Total World exports (X _{Tw})
Automatic data processing machines and computers	1.4599		458.763	
Textile yarns, textile articles	1.0695		353	
Mobiles and telephones	0.952		125	
Integrated circuits	0.8647		789	
Plastic products	0.8056		0.35	
Total		2.59112		17.58299

Table 2 Singapore’s Data for 2020 (in billion US dollars) Used for Making the Comparative Advantage Calculations Through Equations (1), (2) and (3):

	Exports for the product group from Singapore (X _{ij})	Total exports from Singapore (X _{Tj})	World exports of the product group (X _{iw})	Total World exports (X _{Tw})
Electrical machinery, equipment	0.01831		132.2	
Machinery including computers	1.5898		58.2	
Mineral fuels including oil	0.00345		30.3	
Optical, technical, medical apparatus	0.0153		20.8	
Gems, precious metals	0.30918		20.3	
Total		172		17.58299

“Export trade in China – statistics & facts” (Ma, 2021) shows that the top 5 product groups of Chinese exports are:

1. Automatic data processing machines and computer
2. Textile yarns, textile articles
3. Mobiles and telephones
4. Integrated circuits
5. Plastic products

“Singapore Exports” (Trading Economics. (2020) shows that the top 5 product groups of export to China are:

1. Electrical machinery, equipment
2. Machinery including computers
3. Mineral fuels including oil
4. Optical, technical, medical apparatus
5. Gems, precious metals

The data in Table 3 shows that out of the top 5 Chinese exports, the highest comparative advantage is found for plastic products according to the RSCA calculated in equation (2). These products can be categorized in terms of unskilled worker, as the production of plastic products does not need advanced skills such as technology or innovation. China’s comparative advantage product groups are dominated by unskilled-labor intensive products.

However, the findings for export share show that China also has a trade specialization

in automatic data processing machines and computers. Even though the country is dominated by unskilled labor, the Chinese trade specialization contrasts to China’s comparative advantage. Chinese and exports are dominated by technology intensive products caused by cheap labor costs which lead to cheaper costs of production when compared to other countries.

The data in Table 4, shows that of the top 5 product group exports of Singapore, the highest comparative advantage is found for mineral fuels including oil, according to the RSCA expressed in equation (2). These products can be categorized in terms of skilled labor intensive as the production of mineral fuels including oil must use advanced skills among the laborers who produce it. It can be concluded that Singapore’s comparative advantage product groups are dominated by capital intensive products.

Alignment of the outcomes indicates that Singapore has trade specialization in machinery, including computers. This confirms that Singapore’s exports are dominated by technology intensive products much like China. In contrast Singapore’s industry is seen as capital intensive as the country has provided significant training for their labor market and is human capital intensive, pushing up skills to produce higher technology products.

Table 3 Calculation of the Top Five Categories According to the RSCA of China’s Comparative Advantage in 2020, Following the Above Equations (1), (2) and (3)

		Equation (1)	Equation (2)	Equation (3)
		RCA_{ij}	$RSCA_{ij}$	$Export\ share$
		$= \frac{(X_{ij}/X_{Tj})}{(X_{iw} - X_{ij})/(X_{Tw} - X_{Tj})}$	$= (RCA_{ij} - 1) / (RCA_{ij} + 1)$	$= (X_{ij}/X_{Tj}) \times 100$
2020	1 Automatic data processing machines and computer	0.0184	-0.9637	56.3424
	2 Textile yarns, textile articles	0.0175	-0.9654	41.2455
	3 Mobile and telephones	0.0444	-0.9149	36.7408
	4 Integrated circuits	0.0063	-0.9873	33.3716
	5 Plastic products	-10.2307	1.2166	31.0908

Table 4 Calculation of the Top Five Categories According to the RSCA of Singapore’s Comparative Advantage in 2020, Following the Above Equations (1), (2) and (3)

			Equation (1)	Equation (2)	Equation (3)
			RCA_{ij}	$RSCA_{ij}$	<i>Export share</i>
			$= \frac{(X_{ij}/X_{Tj})}{(X_{iw} - X_{ij})/(X_{Tw} - X_{Tj})}$	$= (RCA_{ij} - 1) / (RCA_{ij} + 1)$	$= (X_{ij}/X_{Tj}) \times 100$
2020	1	Electrical machinery & equipment	-0.0001	-1.0002	0.0106
	2	Machinery including computers	-0.0252	-1.0517	0.9243
	3	Mineral fuels including oil	-0.0001	-0.0001	0.0020
	4	Optical, technical, and medical apparatus	-0.0006	-1.0013	0.0088
	5	Gems, and precious metals	-0.0138	-1.0281	0.1797

This supports the previously mentioned ideas of the previous section; the launch of This supports the previously mentioned ideas of the previous section; the launch of China’s plan for further steps of technological self-reliance to a global online platform has made the US unsatisfied regarding China’s actions, particularly regarding intellectual property (IP) protection (Qu & Zhang, 2021). Even though China’s comparative advantage has pointed to unskilled labor-intensive products, the main product groups of China do not have a trade specialization. Consequently, the Chinese trade specialization is actually dominated by technology intensive products.

To understand how the trade war has affected Singapore’s economy in 2020, the discoveries exhibited in this study are based on Singapore’s comparative advantage and trade specialization in 2020. Singapore’s comparative advantage and trade specialization are classified as technology intensive products, but not all of the product groups have developed a comparative advantage through trade specialization.

From the results, China can be seen to have a comparative advantage due to having the lowest costs for labor intensive products, while Singapore has a comparative advantage

with the lowest costs in capital intensive products. Singapore trade gains by sending these products to China, causing labor intensive products as China imports these goods from Singapore to produce electronic goods such as telephones to export to the US. Furthermore, following the international trade perspective, the graph from CEIC (2019) shown in both Figure 1 and Figure 2 can be used to convey the information for Singapore’s exports, especially affecting other trade partners besides China, such as Malaysia and Hong Kong.

The CEIC data shown in Figure 1 and Figure 2 indicates the effects on the period of the trade war which can be summarized as:

Considering the rank of each country as a trade partner during 2018 – 2019, it appears that in 2018 the export value dropped from \$7,000 million to \$6,300 million in the year following the trade war, leading to a net export value of negative 4.2 percent. However, in 2019, the net exports changed from negative 4.2 percent to positive 1.7 percent. Net exports increased as Singapore switched the direction of its exports from China to other trade partners, leading to an increase its exports to Hongkong, and Malaysia, due to the effects from the trade

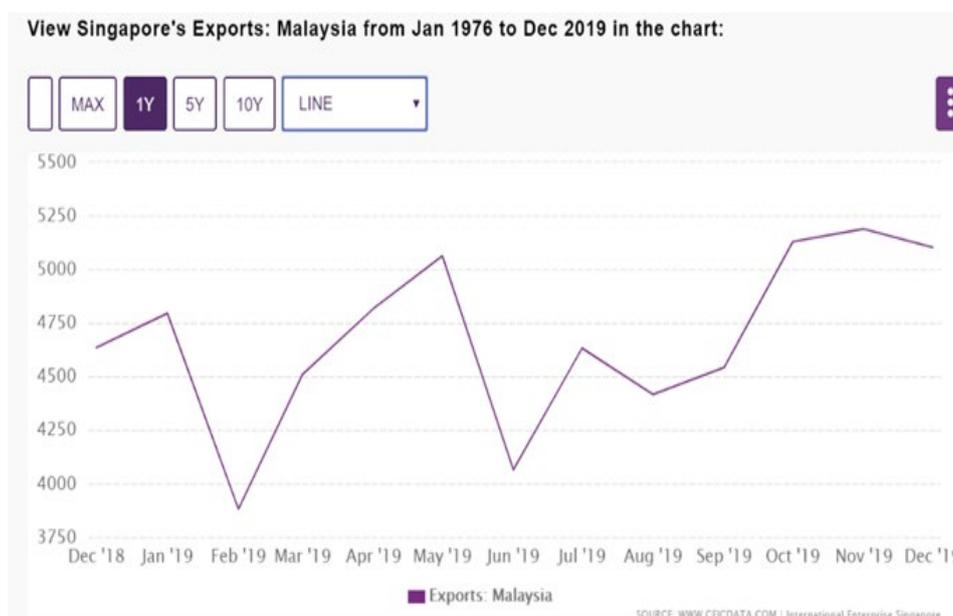


Figure 1: View of Singapore’s Exports: Malaysia



Figure 2: View of Singapore’s Exports: Hong Kong

war. This strategy can make Singapore’s GDP and GDP per capita better than in 2018.

Before the trade war, both countries - Malaysia and Hong Kong - had less contact with Singapore because Singapore believed that China was the most attractive trade partner as one of the biggest markets in the world, especially regarding consumption and investment. Moreover, China exports more computer equipment to the US. It is therefore

necessary for China to order machinery from Singapore as intermediate products, which in turn cause Singapore’s GDP to grow.

(B) Money Market & Capital Market

To understand Singapore’s economy, the GDP per capita (Trading Economic, 2020) was compared to determine if Singaporeans are wealthy according to their GDP in 2019.

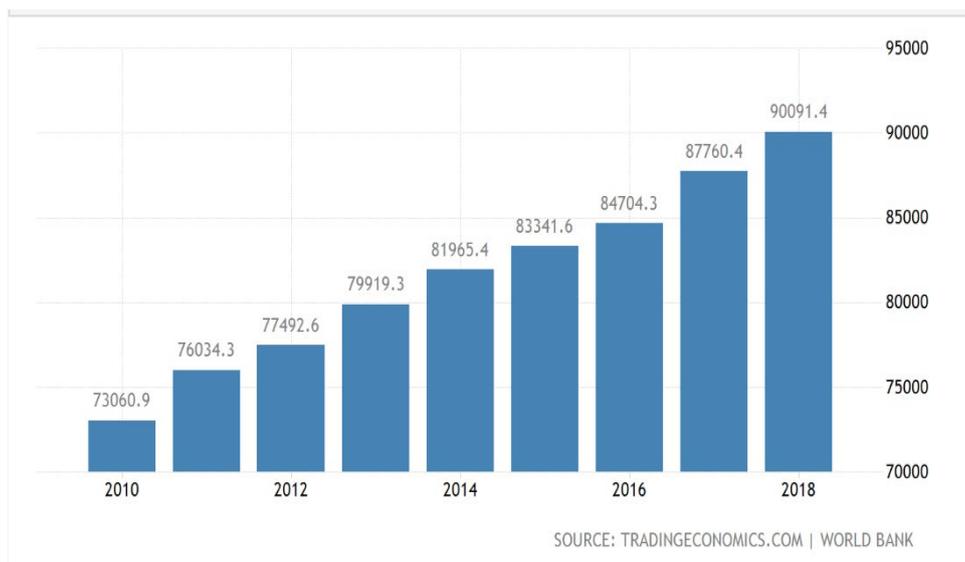


Figure 3: Singapore's GDP per capita



Figure 4: Interest rates in Singapore

Figure 3 shows Singapore's GDP per capita, which has increased continuously each year even with the impacts of the trade war. This might affect the process of money and the capital market. Regarding the money market and capital market, this article focuses on interest rates in Singapore as shown in Figure 4 (Trading Economic, 2020).

According to the interest rates before trade war, the interest rate increased from time to time, increasing from 0.16 to 0.19 percent over the measured period before the trade war. After the trade war began, the interest rate dropped to 0.14 percent for almost one year, which can be seen as a key impact caused by the trade war. When the

trade war ended in 2018, the interest rate continually increased until it stabilized at 0.2 percent. Figure 5 and Figure 6 show the interest rates of short-term and long-term bonds (CEIC Data, 2019).

Considering the money market of Singapore, Figure 5 displays short-term interest rate bonds including certificates of deposit, commercial papers, and repos. However, the attractive interest rate is concentrated on short-term interest rate bonds. Before the trade war, the interest rate was 1 percent, while after the trade war the interest rate grew continually up to 1.9 percent.

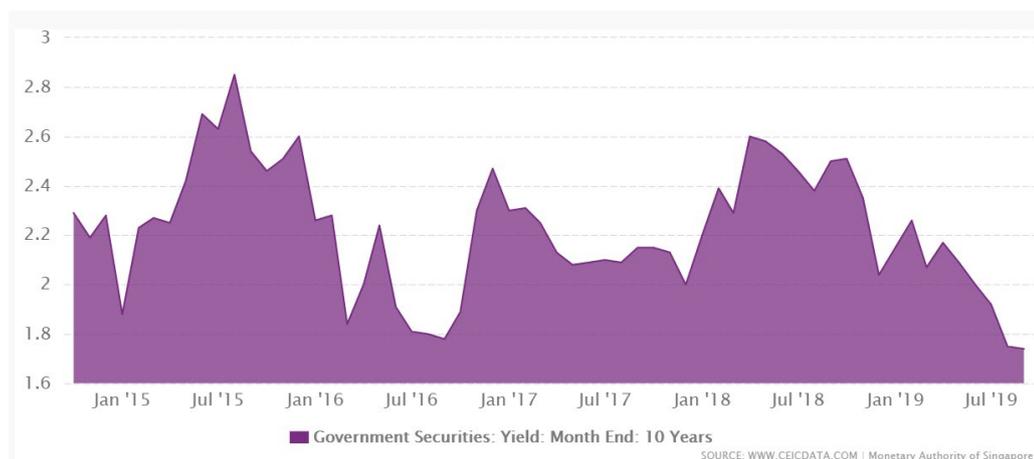


Figure 5: Short Term Interest Rate: SIBOR

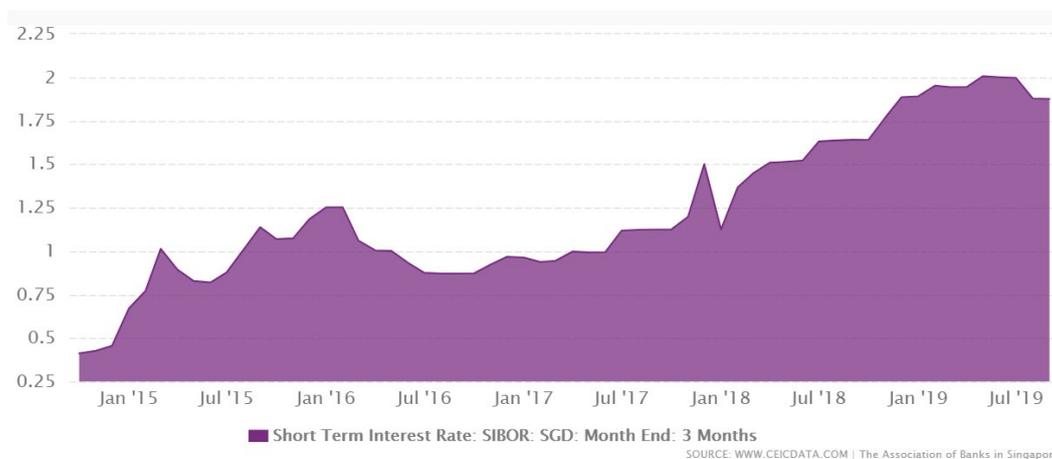


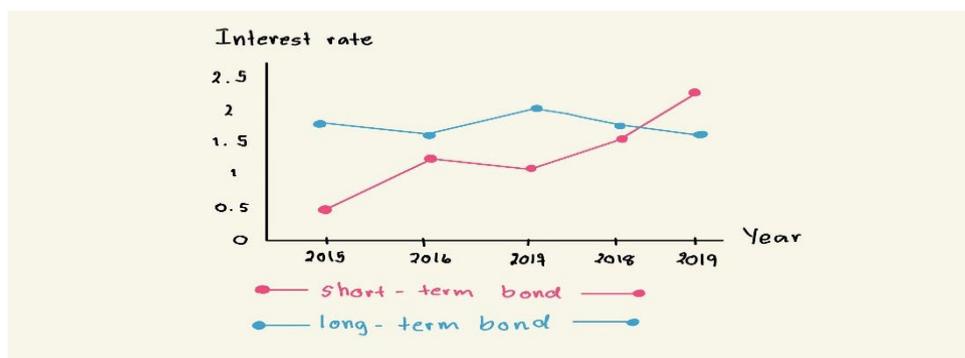
Figure 6: Government Securities

Figure 6 shows the capital market for long-term interest rate bonds, which demonstrates significant fluctuations in the interest rate. Before the trade war, the highest interest rate was 2.9 percent. When the trade war occurred, the interest rate continued to fluctuate. This means that the interest rate increased and decreased in that particular time, eventually settling on a long-term interest rate of 1.7 percent.

The interest rate for the short-term bonds, mostly relates to investments in the money market. The results of this study indicate that the interest rate continually increased over time, even with the effects from the trade war. It can be concluded that investors are still concerned about future interest rates, which is identified as maturity risk. Furthermore, investors are not aware of what will happen in the future. They therefore invest in short term

bonds as the government can guarantee the investment by making coupon payments each year. The risk of short-term bonds is lower than that of long-term bonds because long-term investments have duration of 5 to 10 years. However, long-term bonds can also provide a means for investors to default certain risks, such as during the trade war era. A person who identifies as a “Risk Lover” is likely to have intentions to invest in short-term bonds more than long-term bonds, as such behavior can lead to benefits regarding the interest, such as when the rate temporarily increases.

In order to form a clear picture of the interest rates, this study gathered information regarding both short-term and long-term bonds in Singapore, during the period from 2015 to 2019. Figure 7 indicates which type of bond should be invested in.



Source: Authors Illustrate

Figure 7: Comparing Short- and Long-Term Bonds

As shown in Figure 7, the line of the short-term bonds continued increasing even during the trade war. In contrast, the line for long-term bonds begins with a higher interest rate, but drops during the trade war, and fluctuates thereafter. This makes some groups of investors lose confidence in the government's securities. To motivate investors, the government can offer default payments, removing one type of risk for investors, and allowing them to hold long-term bonds.

CONCLUSION AND IMPLEMENTATION

The trade war might not have much affect to Singapore's economy as the GDP has decreased; meanwhile, the GDP of the country per capita has increased continually. This contrast that means that the economy of Singapore has received insignificant effects from the trade war. As Singapore has adapted it strategies, exporting less to China, similarly to in the past, and cooperating more with another rank of new trade partners, particularly regarding exports to Malaysia, and Hongkong instead. This strategic plan has led to the continuing increase in Singapore's GDP per capita. Regarding the comparative advantage, Singapore's trade with China has caused the lowest opportunity cost. The findings show that China is labor intensive in producing products, making use of cheap unskilled labor. This is in contrast to Singapore, which concentrates on capital

intensive production, producing electronic machines using advanced skilled labor. Moreover, the trade war has had a significant impact on interest rates, in both the capital and money markets. Investors should invest in short-term interest rate bonds due to the fact that these interest rates have increased continually. For long-term interest rate bonds, the interest rates are less attractive when compared with those of the short-term bonds. Investors cannot expect anything in the long-term. Consequently, the government might not paid-out on the maturity dates as it is possible to default on interest payments, which are connected with Singapore's GDP.

The implications of this study are suitable for individuals in the academic sector, government sector, and industry sector, who want to know about the resulting impacts of the trade war on Singapore's economy. The findings on comparative advantage and trade specialization used RCA for calculation between China and Singapore and can highlight ideas of their management operations in terms of trading cooperation. However, interest rates have also benefited when considering the effects of the trade war, along with the money market and capital market in Singapore, and should be considered when planning investment in both the short and long term. The case of the trade war shows that China is taking a growing role in the world economy, also being a significant recipient of foreign aid, and has become an outstanding borrower in international capital markets. Moreover, regarding the benefits of

other countries in a domestic capital market, international capital markets provide perspective through higher returns and cheaper borrowing costs. These grant organizations and governments value in foreign markets and access to new sources of funds.

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