
THE TRADING TREND OF TAIWAN WITH EIGHT CONTINENTS AND COUNTRIES IN ASIA

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ABSTRACT

The exporting and importing data of this paper were obtained from the public archives of Directorate-General of Budget, Accounting, and Statistics (DGBAS), Ministry of Finance (MOF), and Bureau of Foreign Trade (BFT) of the Republic of China. After analyses, the author found that Asia was the most important trading continent for Taiwan in exporting and importing. From 2014 to 2018, the average exporting values from Taiwan to Asia was accounted for 71.56% of Taiwan's total exporting amount. China was the most important area for Taiwan's exportation in Asia, and China shared an average of 56.48% of exporting values from Taiwan to the 48 countries in Asia. ASEAN (10 nations) became the second largest trading zone for the exporting of Taiwan, and it grabbed 25.43% of the exporting amount to Asia. To scrutinize ASEAN, the most important exporting country was Singapore, and it shared 31.91% of exporting values from Taiwan to ASEAN. As for the importing values, Asia grabbed champion, 58.0%, of the total importing values from the whole world. China again held the pinnacle, with 33.32% of total Asia importing values. Singapore crowned the throne in ASEAN, and it shared 25.83% of the total importing value from ASEAN to Taiwan.

China can be singled out to be the most important trading partner for Taiwan. The exporting values from Taiwan to China increased yearly, and China was accounted for 40.42% of the total exporting values from Taiwan to the whole world. However, the exporting values from Taiwan to China divided by the total importing values from the world to China in ratios (%) dwindling from 20.81% in 1997 to 6.95% in the average ratio of 2015 to 2017. The implication of these numbers means that Taiwan relied more and more on China, whereas the influence from Taiwan to China reduced gradually. The government in Taiwan should think deeply and cannot ignore the impact of mutual trade between Taiwan and China.

Key Words: Exporting, Importing, Trading, ASEAN

1. Introduction

"Trade can make everyone better off" is one of ten principles given by the well know Harvard University Professor N. Gregory Mankiw in his famous economics textbook [1]. Trade is not a zero-sum game, winner, and loser. Rather, as long as each country has its lower opportunity cost, then trade can be a win-win situation [1]. One country can select protectionism policies, to build up the high wall, levy heavy tariffs, and restriction quota on foreign goods, or be an open-bordered free trade country. History is a mirror, areas such as Taiwan, Hongkong, South Korea, and Singapore, were prosperous because of their free-trade policies. On the other hand, Argentina and China in the early 20th century closed themselves from the world, became poor

and miserable. However, after the 60s of the last century, China changed trading policies, and it became a big dragon thrusting to the sky. Based on Statistics Times, on the purchasing power parity (PPP) basis, China was the world's largest economy in 2018 [2].

Taiwan is a small Island, with limited natural resources, wisely adopted open-door free-trade policies, making this country become one of the richest nations in Asia. Based on the Directorate-General of Budget, Accounting and Statistics (DGBAS) of Taiwan, the forecasting of GDP per capita of Taiwan in 2019 can reach 24,827 USD [3]. Free-trade makes Taiwan prosperous. Trading is a life-line to Taiwan and systematically study the time history between Taiwan and the whole world become extremely important. Such a study can be adopted by governments or enterprises in their strategic business policies.

In this paper, the author used data from reliable governmental organizations of Taiwan such as Directorate-General of Budget, Accounting and Statistics (DGBAS) [3], Ministry of Finance (MOF), R.O.C. [4], and Bureau of Foreign Trade (BFT) [5] to analyze the global trading time series of Taiwan. Three sections were used to discuss the trading values and ratios (%) of Taiwan.

In the first section, exporting and importing values and ratios (%) of Taiwan and the whole world were discussed. From this section, one can find whether Taiwan was a trade surplus or deficit country.

In the second section, the trading values (exporting and importing) and ratios (%) to eight continents (Asia, Middle East, Europe, North America, Central America, South America, Oceania, and Africa), to Asia and to ASEAN were analyzed to find out the important trading partners.

In the third section, the trading relationship between Taiwan and China was single out to further discussion because that China was the most important partner both in exporting and importing values.

2. Exports and imports time series of Taiwan with the whole world

Taiwan (Republic of China, R.O.C.) is a small island, and its economic activities depend on international trade. All the trading data in this paper were obtained from the public archive of Directorate-General of Budget, Accounting and Statistics (DGBAS) [3], Ministry of Finance (MOF) [4], Bureau of Foreign Trade (BFT) [5].

2.1 Total exporting and importing values between Taiwan and the whole world

The total exporting values from Taiwan to the eight continents and total importing values between Taiwan and the whole world can be obtained from the open archives of DGBAS, MOF, and BFT [3, 4, 5]. The yearly trading time series can be traced back to 1971, but the more detailed data were available from 1981. The annual exporting and importing values between Taiwan and the world in the period of 1971 to 2018 were analyzed as follows.

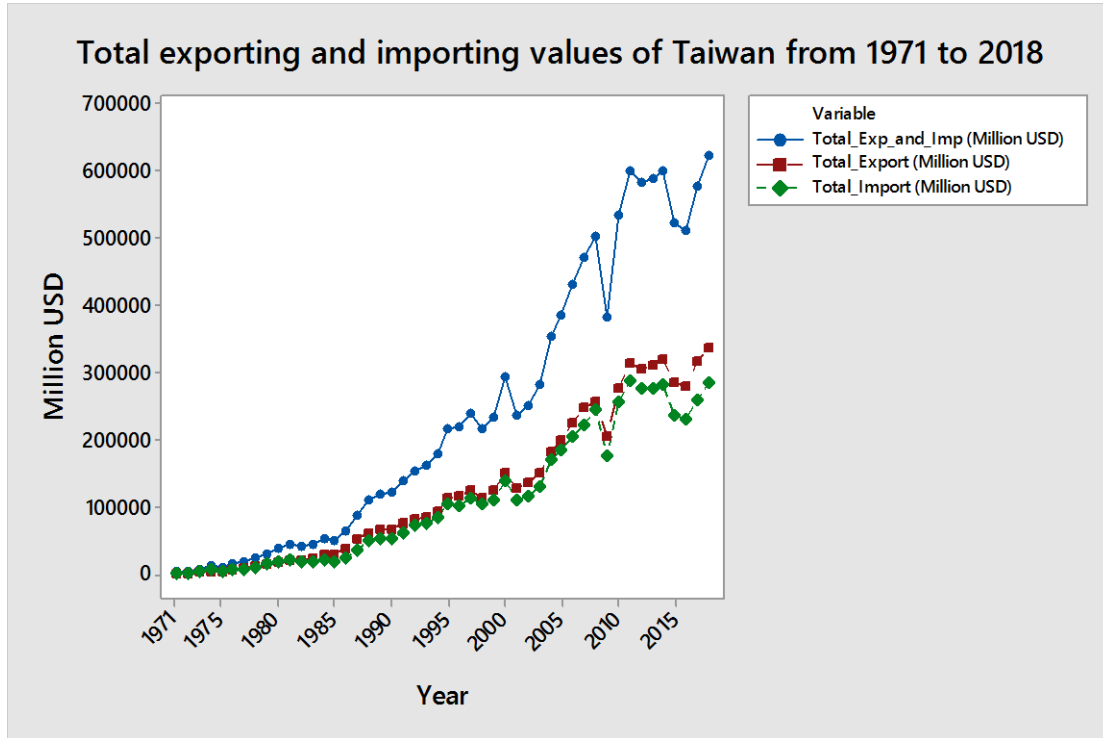


Figure 1: Total exporting and importing values of Taiwan from 1971 to 2018

The five-year average values from 2014 to 2018 of the exporting and importing values between Taiwan and the whole the world was shown in the following table.

Table 1: The five-year (2014~2018) average exporting and importing values of Taiwan with the whole world

Unit	Total exporting and importing values	Total exporting values	Total importing values	Balance
Million USD	566830.17	307782.93	259047.24	48735.69

From the above figure and table, one found the total values of exports and imports in Taiwan had a trend of increasing. A sharp drop in 2009 was due to the international financial crisis, which gave a negative impact on the whole world. Basically, Taiwan was a trade surplus country, with exporting values excelled importing amount.

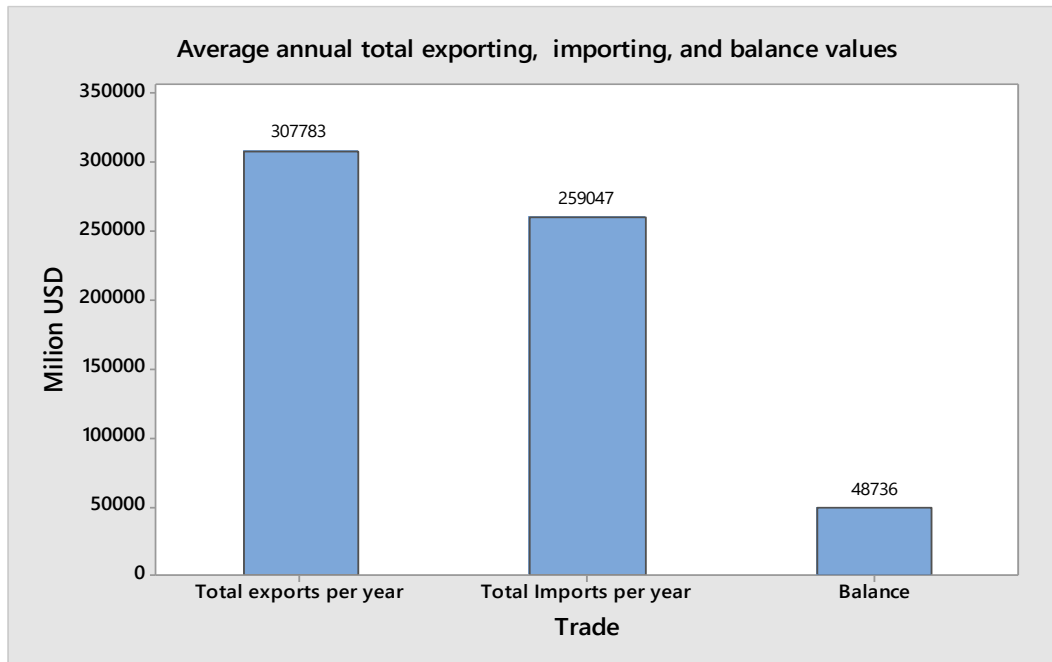


Figure 2: The average annual total exporting, importing, and balance values in million USD

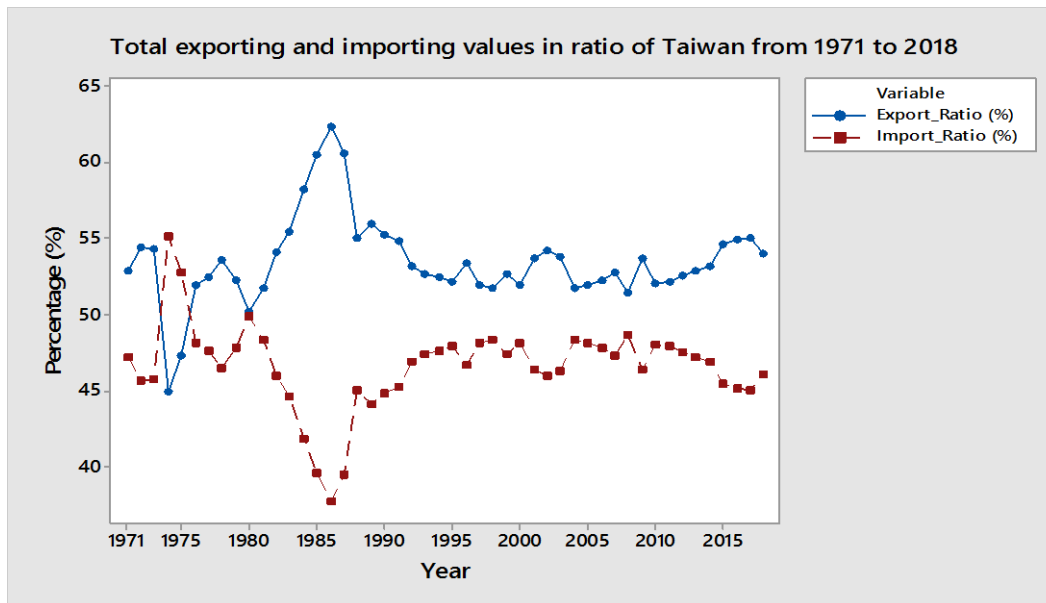


Figure 3: Total exporting and importing values in ratios (%) of Taiwan from 1971 to 2018

Basically, Taiwan is a trade surplus [1] country, which means the values of exports were greater than the value of imports. In 1974 and 1975 trade deficit appeared, which may be due to the first oil crisis [6].

Table 2: The five-year (2014~2018) export and import values in ratios of Taiwan and the world

Average ratio	Export ratio (%)	Import ratio (%)
Percentage (%)	54.33	45.67

From the table above, in the past five years (2014~2018) that the value of exports was accounted for 54.33%, and the value of imports shares the rest 45.67%.

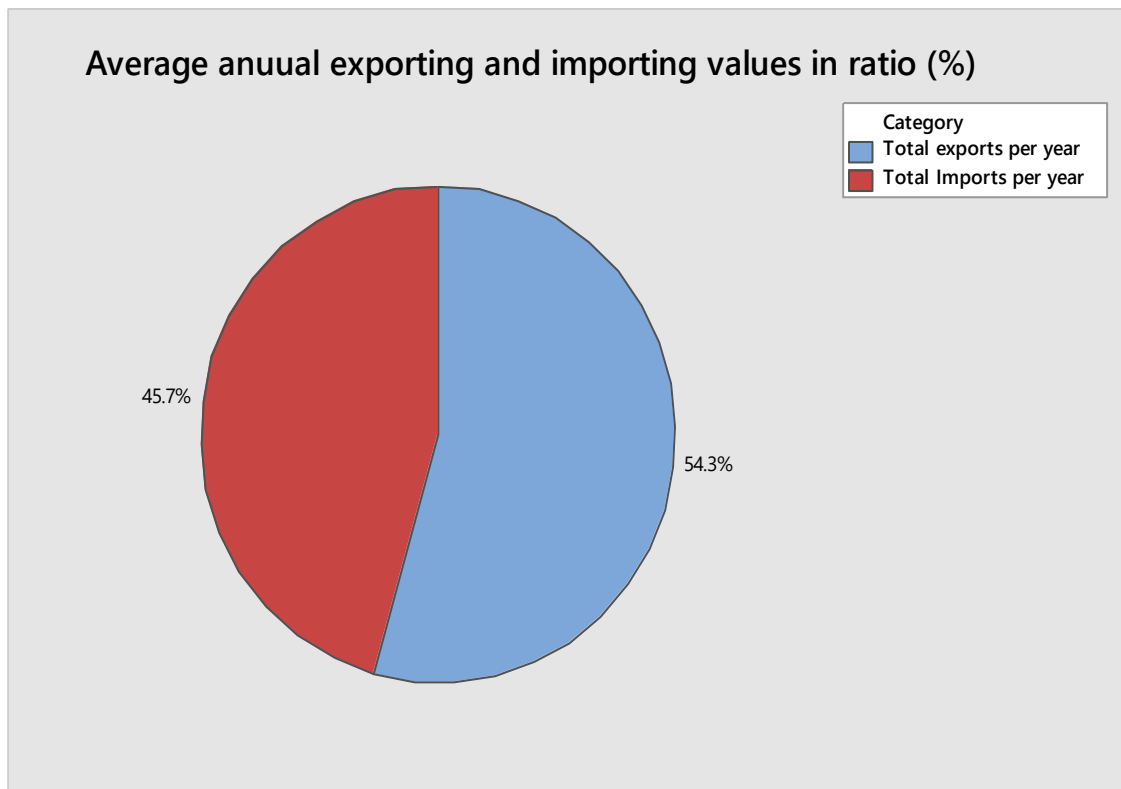


Figure 4: The average exporting and importing values in ratios (%)

2.2 Exporting analyses of Taiwan with the whole world

This section is used to analyze the exporting trade between Taiwan with all other areas of the world. First to discuss the exporting with the eight continents, then Asia and ASEAN. The annual data obtained from public archives [4, 5, 6] were in the period of 1981 to 2018.

2.2.1 Exporting values of Taiwan with eight continents

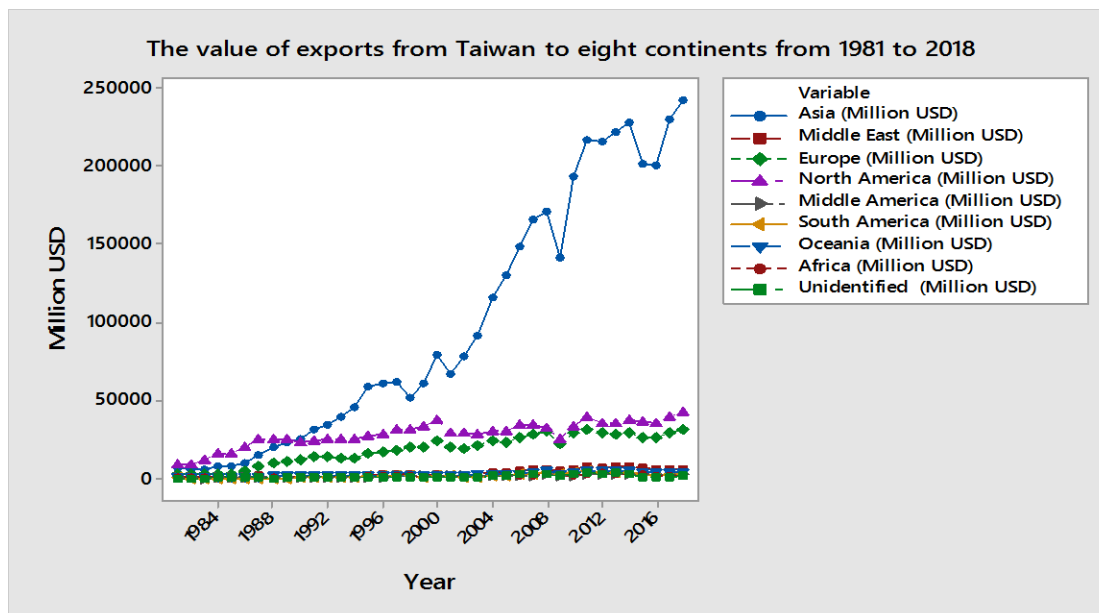


Figure 5: The exporting values (million USD) from Taiwan to eight continents of the world from 1981 to 2018

The time series of exporting values from Taiwan to eight continents from 1981 to 2018 were plotted as above. Asia was the most important exporting continent for Taiwan. Before 1990, North America was accounted for as the champion of the world, but after 1990, Asia became the leading sheep for Taiwan.

There were unidentified countries shown on the figure, and based on the explanation of FRED Economic Research is- no exports were made to the listed continent that year or a low number of exporters giving away proprietary data [5]. Nevertheless, it was only accounted for as a small amount of exporting value (approximately 1%) and can be neglected without influencing the accuracy too much.

North America and Europe were accounted for as the second and third places of the exporting values from Taiwan to the world.

Table 3: The five-year (2014~2018) average exporting values from Taiwan to each continent

Continent	Asia	Middle East	Europe	North America	Middle America	South America	Oceania	Africa	Unidentified
Million USD	220313.0	6746.9	28406.4	38283.6	3095.4	2812.4	4250.5	2239.2	1635.5

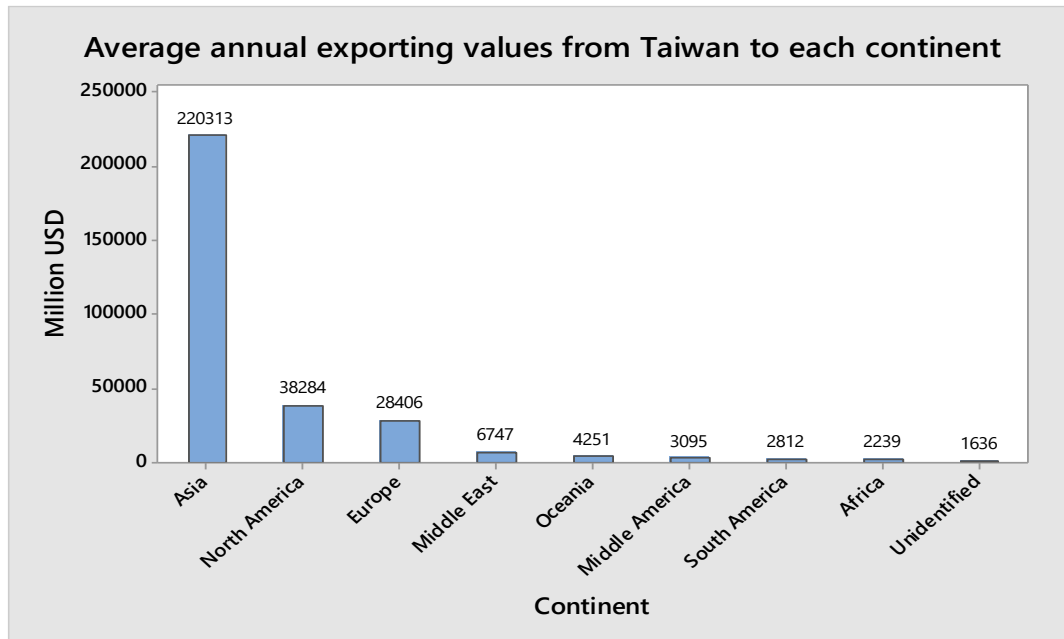


Figure 6: Average (2018~2018) annual exporting values from Taiwan to each continent

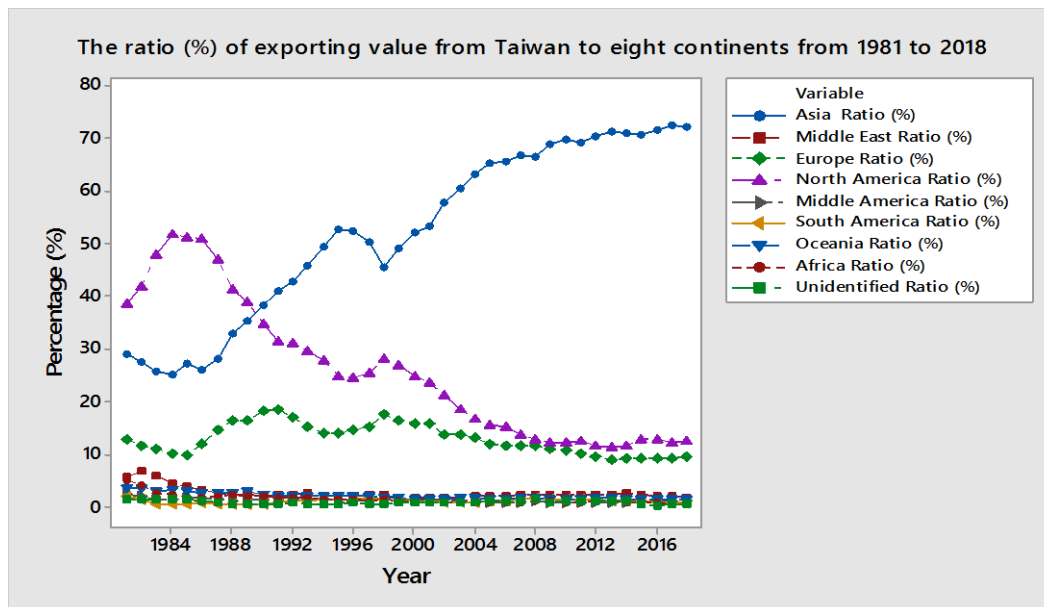


Figure 7: The ratio (%) of values of exporting values from Taiwan to the eight continents of the world from 1981 to 2018

Table 4: The average five-year (2014~2018) exporting values in ratios (%) from Taiwan to each continent

Continent	Asia	Middle East	Europe	North America	Middle America	South America	Oceania	Africa	Unidentified Countries
Percentage (%)	71.56	2.20	9.23	12.45	1.01	0.91	1.38	0.73	0.52

Asia was the most important partner in exporting for Taiwan. From 2014 to 2018, there were 71.56% of exportation from Taiwan to Asia, 12.45% to North America and 9.23% to Europe. In other words, sum these three continents together were accounted for 93.24% of Taiwan's total exports.

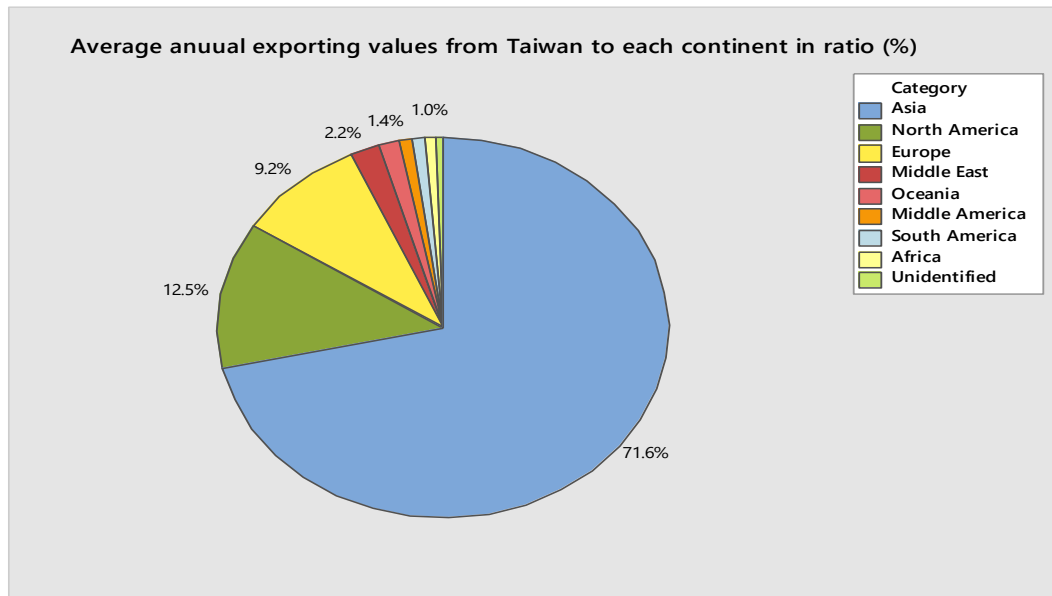


Figure 8: The average annual exporting values from Taiwan to each continent in ratios (%)

2.2.2 Exporting values from Taiwan to Asia

There are 48 countries in Asia today, according to the United Nations [6]. Based on the statistical study, China (including Hong Kong and Macau), Japan, Korea, and Association Southeast Asian Nations (ASEAN) (Brunei Darussalam, Cambodia, Indonesia, Lao PDR (or Laos), Malaysia, Myanmar, Philippines, Singapore, Thailand, Viet Nam [7]) are the four most important trade partners for Taiwan in Asia. The exporting values and ratios (%) from Taiwan to Asia were discussed in this subsection.

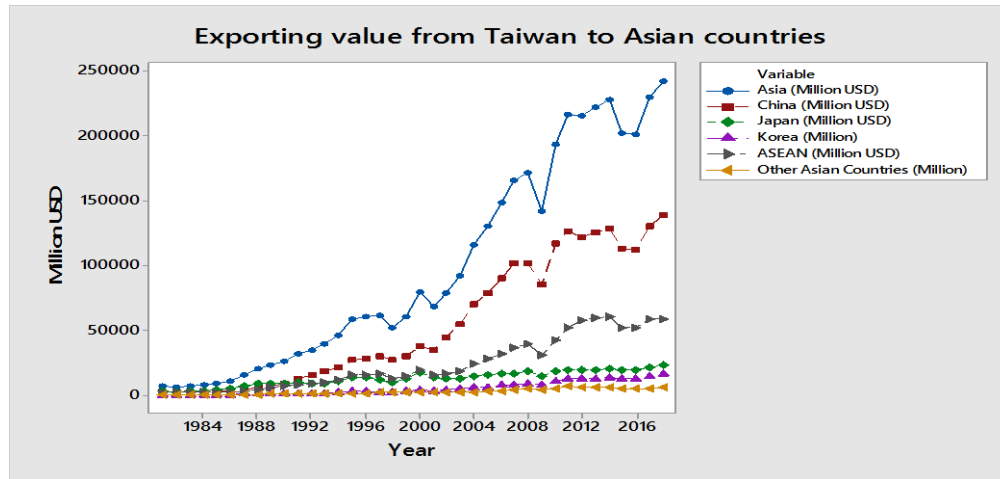


Figure 9: Exporting values from Taiwan to Asia from 1981 to 2018
 Obviously that China (including Hong Kong and Macau) was the most important exporting partner of Taiwan in Asia. ASEAN was second, followed by Japan and Korea. The trading value of the rest Asian countries (44 countries) was only accounted for a minor contribution.

Table 5: The five-year (2014~2018) average exporting values from Taiwan to the major Asian countries

Asian countries	China	Japan	Korea	ASEAN	Other Asian Countries
Million USD	124511.88	20629.86	13873.72	55975.48	5322.04

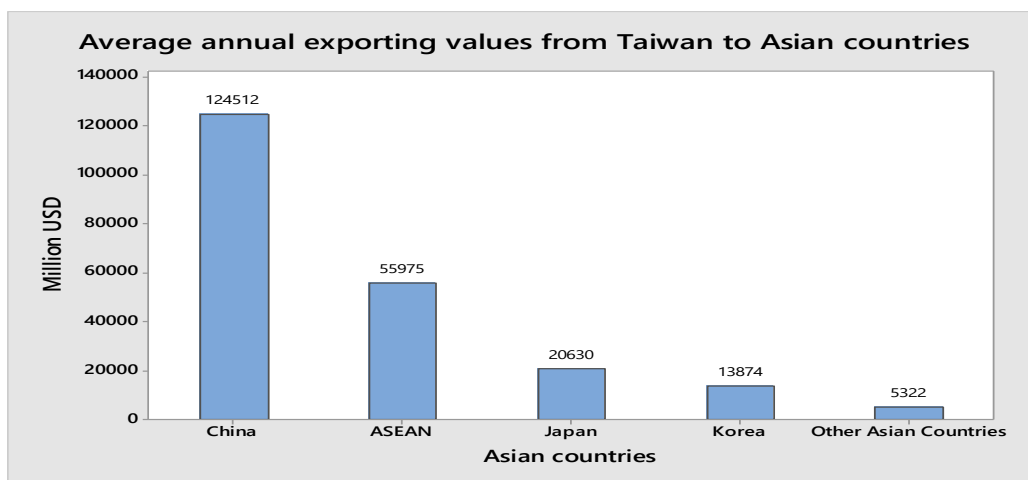


Figure 10: The average annual exporting values from Taiwan to Asian countries

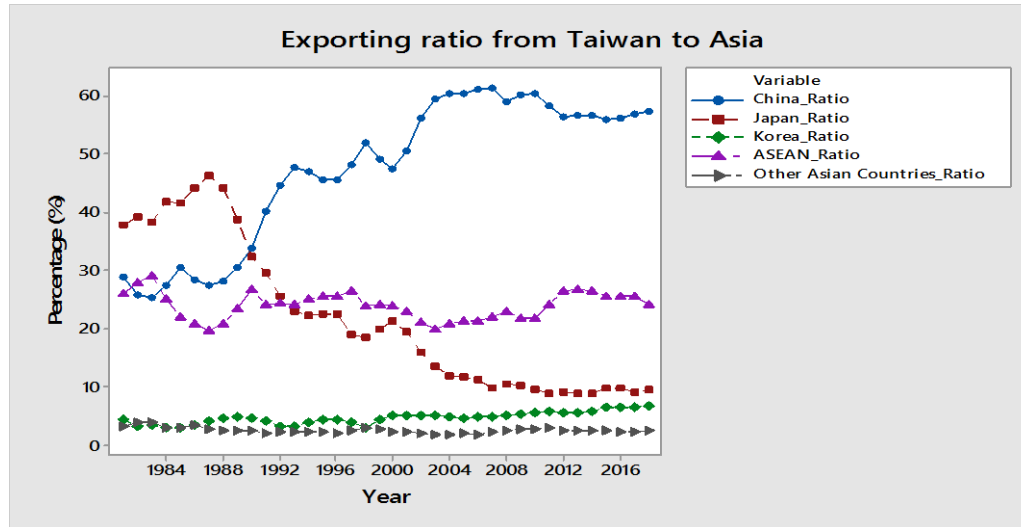


Figure 11: Exporting values in ratios from Taiwan to Asia from 1981 to 2018

From 1981 to 1989, Japan was the biggest exporting country of Taiwan, but after 1990, China took the crown. After 1993, ASEAN replaced Japan and became the second most important exporting zone of Taiwan. The exporting ratios to Japan dwindled from 1987 and reached a single digit of 9.38% in recent five years (2014~2018). On the other hand, in these five years, China shared 56.48%, more than half of the exporting values of Taiwan to Asia. ASEAN was accounted for 25.43%, more than a quarter. Korea was accounted for 6.30%, and the rest countries in Asia remained last, only 2.41%.

Table 6: The five-year (2014~2018) average exporting values in ratios (%) from Taiwan to the major Asian countries

Major Countries	Asian	China	Japan	Korea	ASEAN	Other Countries	Asian
Percentage (%)		56.48	9.38	6.30	25.43	2.41	

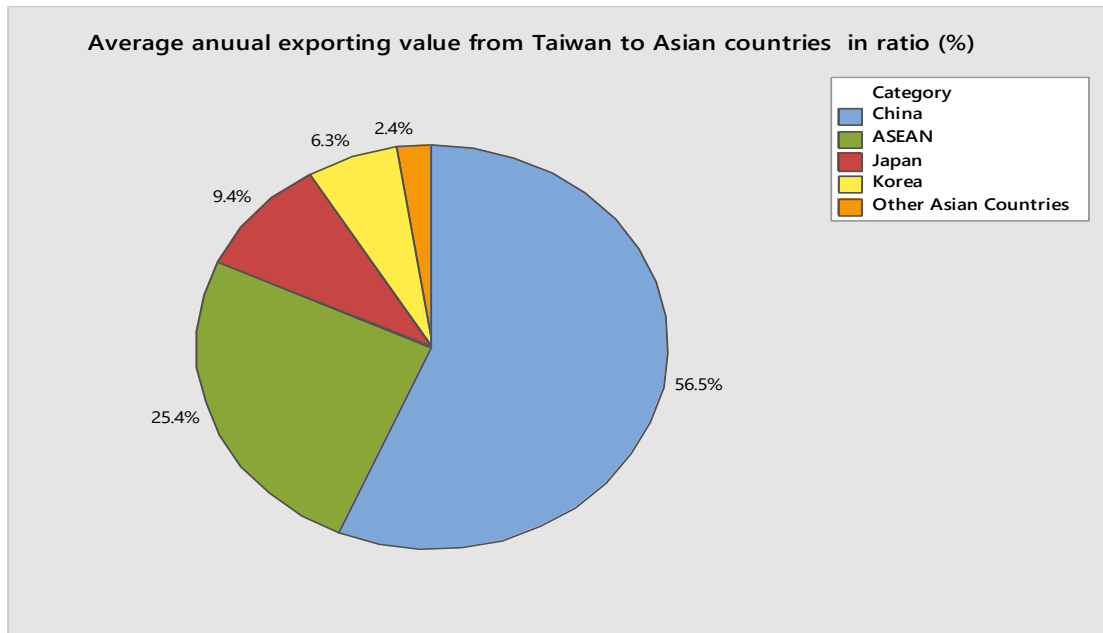


Figure 12: The average annual exporting values from Taiwan to Asian countries in ratios (%)

2.2.3 Exporting values from Taiwan to ASEAN

There are ten nations in ASEAN, and it was the second largest trade partner for Taiwan after 1993. “Go South” was one of the foreign policies of the government of Taiwan, which encourage business enterprises to set up companies in ASEAN rather than over cling to China.

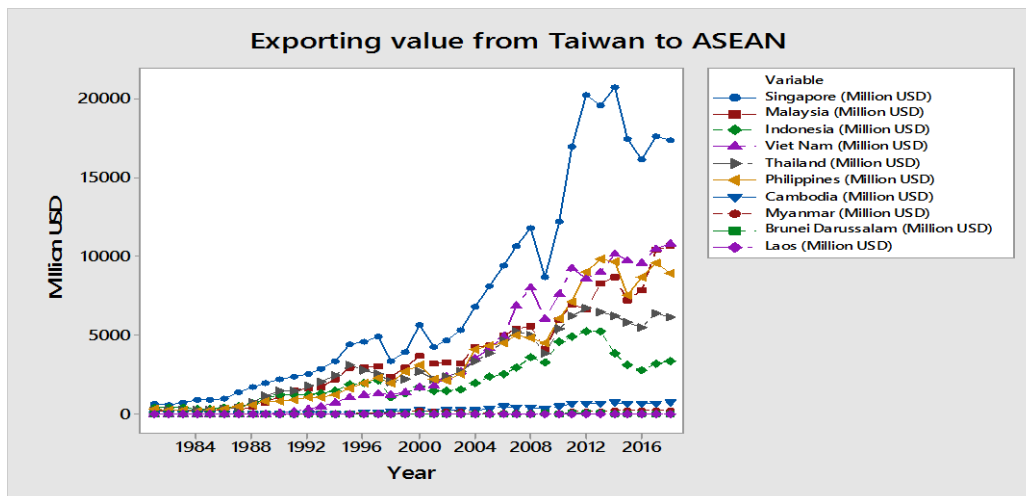


Figure 13: Exporting values from Taiwan to ASEAN from 1981 to 2018

From the above figure, Singapore outweighed other ASEAN nations as the champion for the exportation of Taiwan. Viet Nam and Malaysia were accounted to number two and three respectively. The five-year (2014~2018) average values in million USD for each ASEAN union was summarized as follows:

Table 7: The five-year (2014~2018) average exporting values from Taiwan to ASEAN

ASEAN	Singapore	Malaysia	Indonesia	Viet Nam	Thailand	Philippines	Cambodia	Myanmar	Brunei	Laos
Million USD	17849.9	8930.9	3251.0	10140.3	6001.1	8869.2	675.8	234.9	17.6	4.7

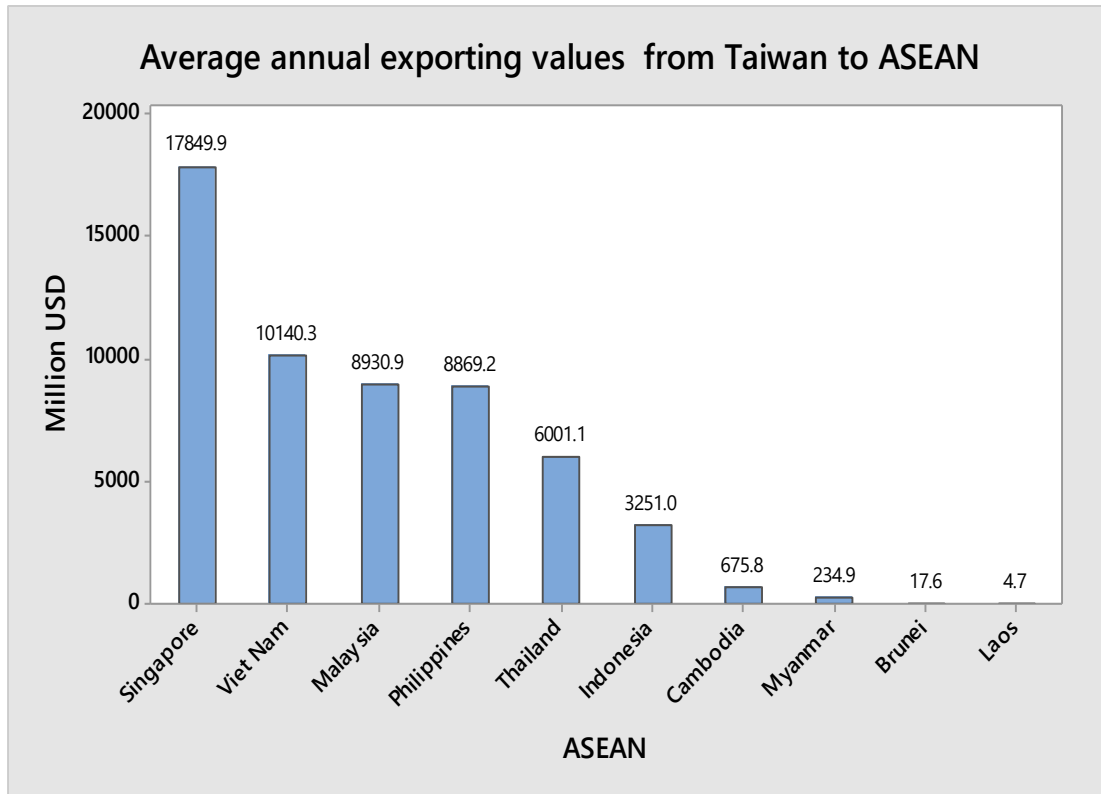


Figure 14: The average annual exporting values from Taiwan to ASEAN

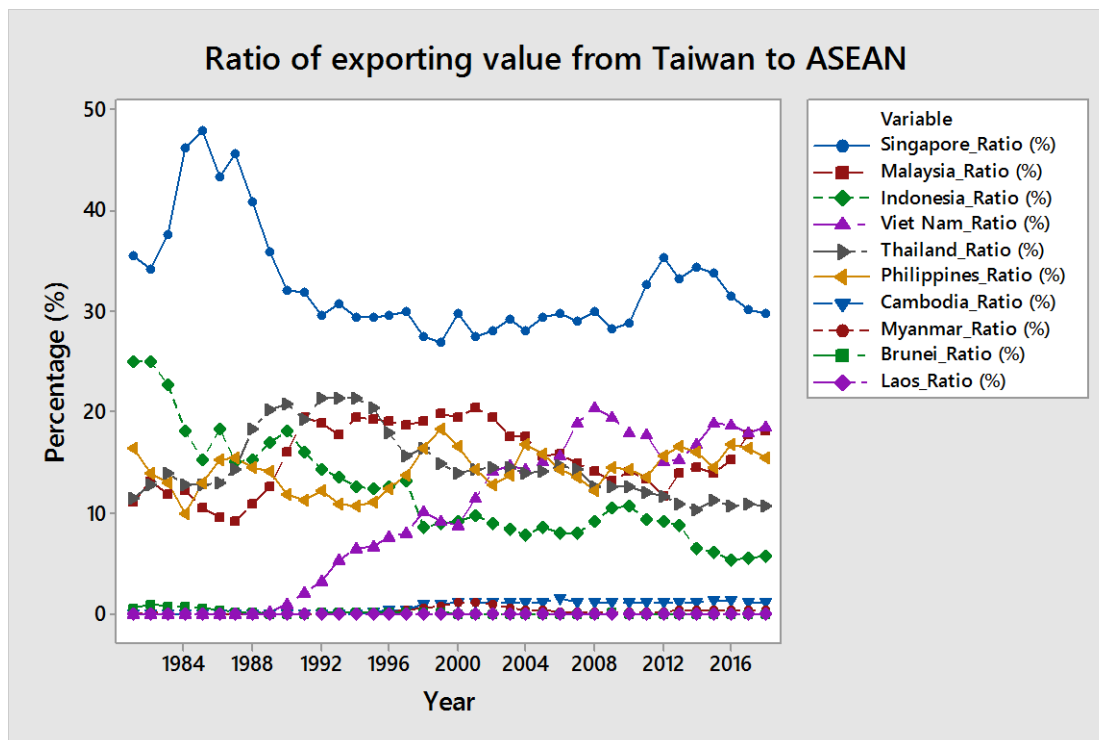


Figure 15: Ratios (%) expression of exporting values from Taiwan to ASEAN from 1981 to 2018

The ranks of the past five years (2014 to 2018) of exportation ratio from Taiwan to ASEAN were: Singapore (31.91%), Viet Nam (18.19%), Malaysia (15.90%), Philippines (15.84%), Thailand (10.73%), Indonesia (5.80%), Cambodia (1.21%), Myanmar (0.42%), Brunei Darussalam (0.03%), and Laos (0.01%). The exportation ratios to Myanmar, Brunei Darussalam, and Laos are below 1%, means there still has a big space for Taiwan to explore in these three countries.

Table 8: The five-year (2014~2018) average exporting values in ratios (%) from Taiwan to ASEAN

ASEAN	Singapore	Malaysia	Indonesia	Viet Nam	Thailand	Philippines	Cambodia	Myanmar	Brunei	Laos
Percentage (%)	31.91	15.90	5.80	18.15	10.73	15.84	1.21	0.42	0.03	0.01

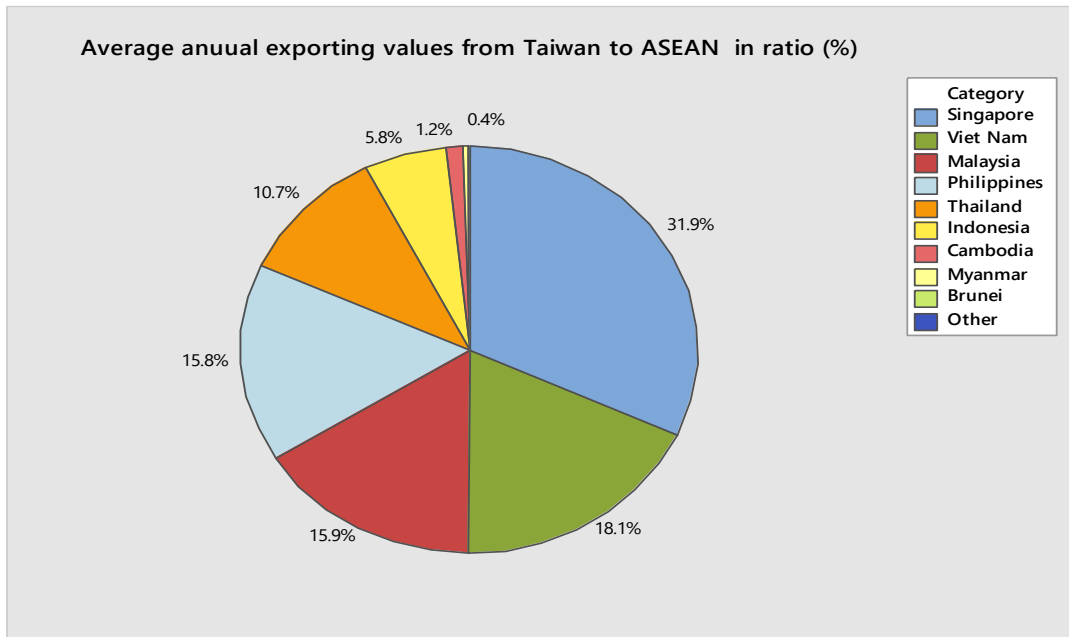


Figure 16: The average annual exporting values from Taiwan to ASEAN in ratios (%)

2.3 Importing values and ratios (%) from the whole world to Taiwan

2.3.1 Importing values from eight continents to Taiwan

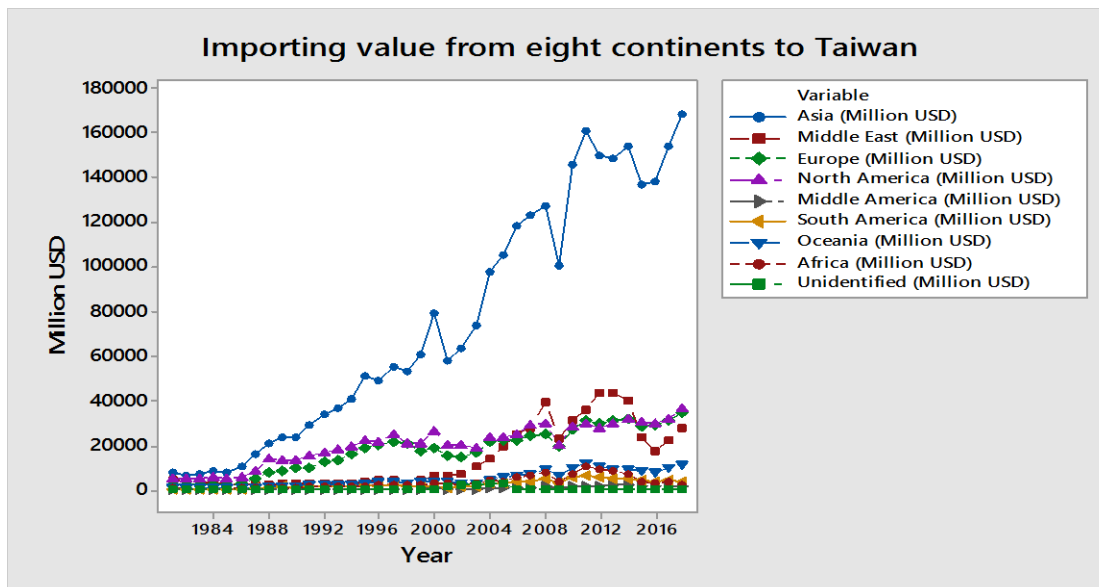


Figure 17: Importing values in million from eight continents to Taiwan

From the figure above, Asia obviously was the most important continent for importing values to Taiwan. The value of importation (in million USD) had a trend of upward. North America, Europe, Middle East intertwined together, and they were the three most import continents other than Asia.

Table 9: The five-year (2014~2018) average importing values from the eight continents to Taiwan

Continent	Asia	Middle East	Europe	North America	Middle America	South America	Oceania	Africa	Unidentified countries
Million USD	150027.8	26331.8	31093.6	32145.9	1709.7	4281.9	9352.7	4018.7	85.1

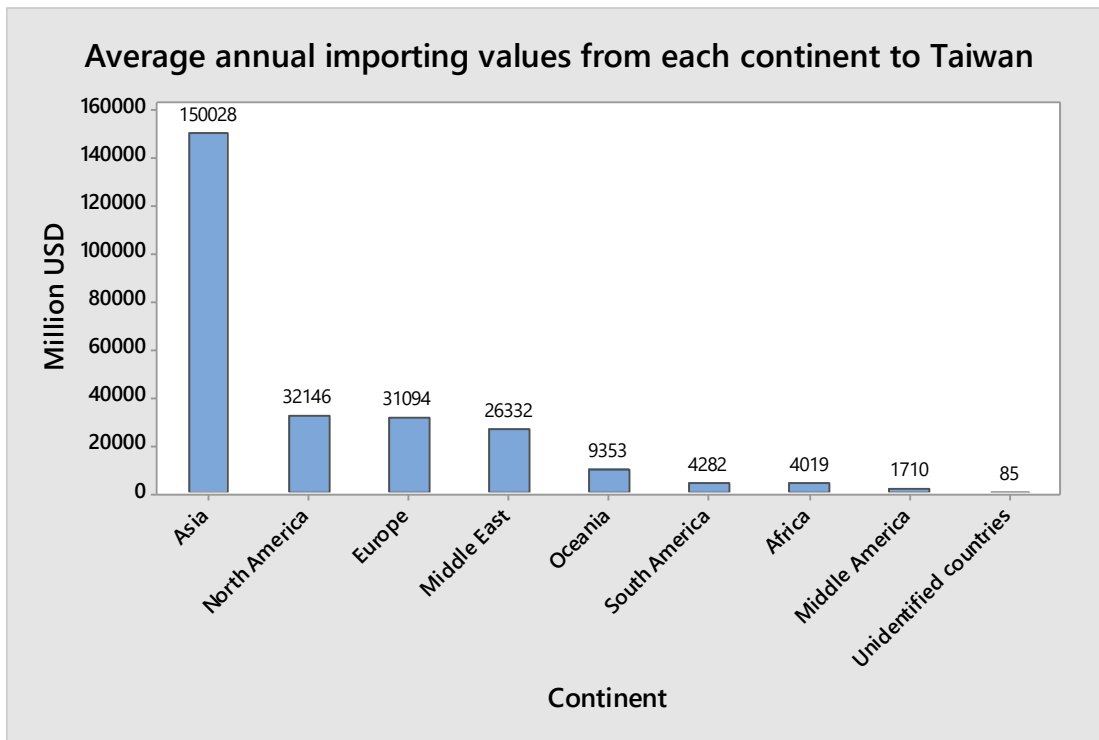


Figure 18: The average annual importing values from each continent to Taiwan

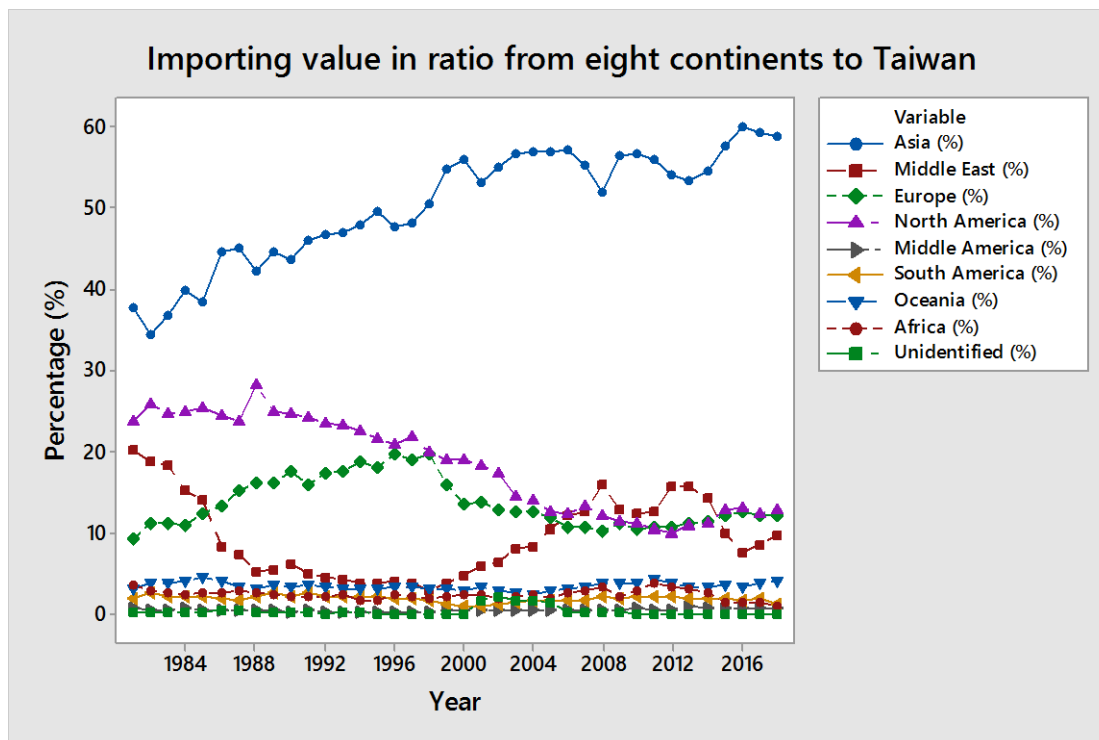


Figure 19: The importing values in ratios (%) from eight continents to Taiwan

From 1981 to 2018, the most important continent for the importing values to Taiwan was Asia, followed by North America and Europe. The average importation ratios (%) of the past five years (2014 to 2018) in ranks were Asia (58.00%), North America (12.44%), Europe (12.02%), Middle East (10.05%), Oceania (3.60%), South America (1.66%), Africa (1.54%), Middle America (0.66%), and Unidentified countries (0.03%).

Table 10: The five-year (2014~2018) average importing values in ratios (%) from eight continents to Taiwan

Continent	Asia	Middle East	Europe	North America	Middle America	South America	Oceania	Africa	Unidentified countries
Percentage (%)	58.0	10.1	12.0	12.4	0.7	1.7	3.6	1.5	0.03

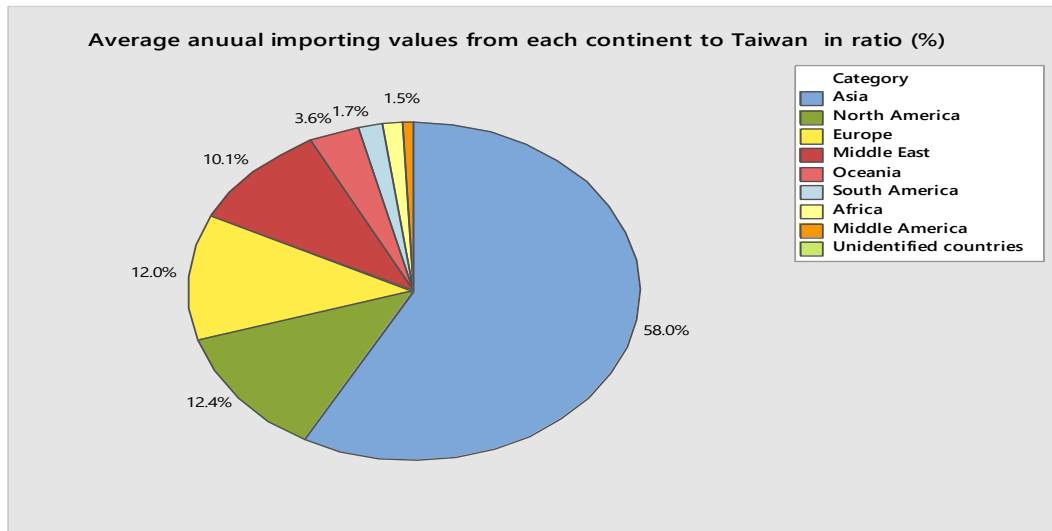


Figure 20: The average annual importing values in ratios (%) from each continent to Taiwan

2.3.2 Importing values from Asia to Taiwan

From subsection 2.3.1 one found that Asia was the most important importing trading partner for Taiwan. In this subsection, the importing values and ratios of countries in Asia were further broken down to find out the contribution of each of them. The 48 countries in Asia [6] were divided into five groups, they were, China, ASEAN, Japan, Korea, and Other Asian countries.

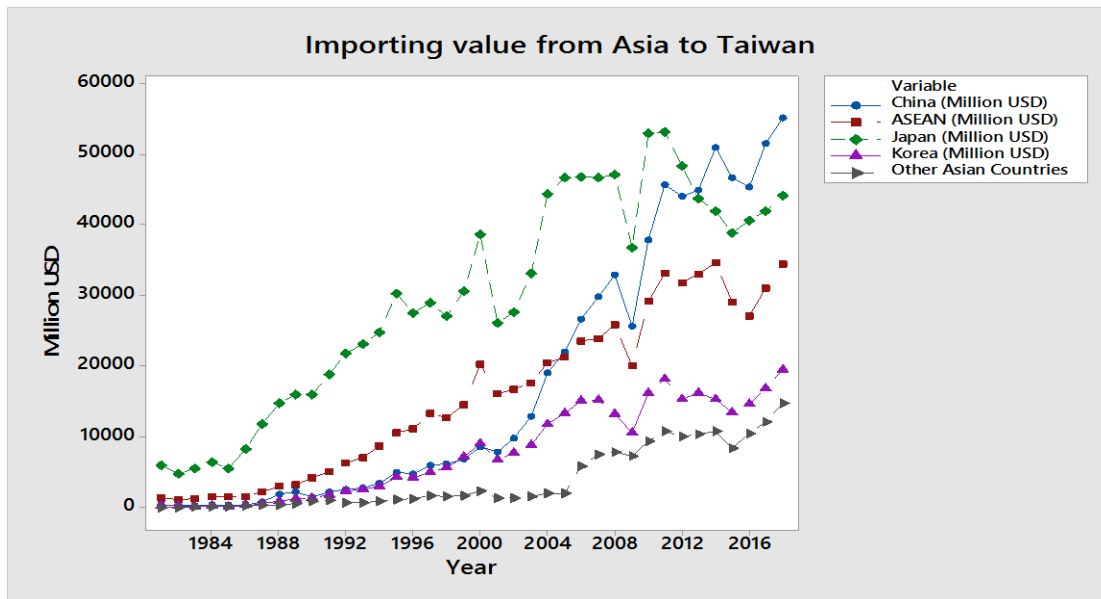


Figure 21: Importing value in million USD from major countries in Asia to Taiwan

Before 2013, Japan was the number one importing country to Taiwan in Asia, but after 2013 China took the crown. China, Japan, and ASEAN were the three most important import trading partners for Taiwan in Asia.

Table 11: The five-year (2014~2018) average importing values from Asia to Taiwan

Asia	China	ASEAN	Japan	Korea	Other Asian Countries
Million USD	49965.23	31288.43	41510.09	15962.70	11301.34

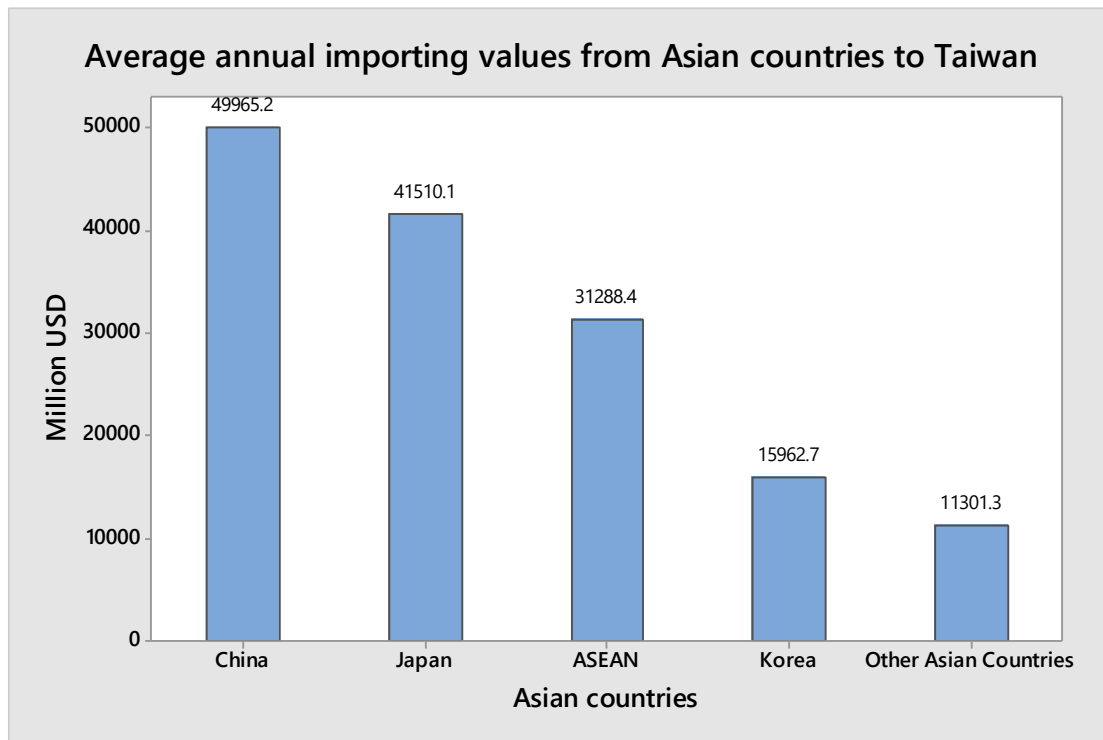


Figure 22: The average annual importing values from Asian countries to Taiwan

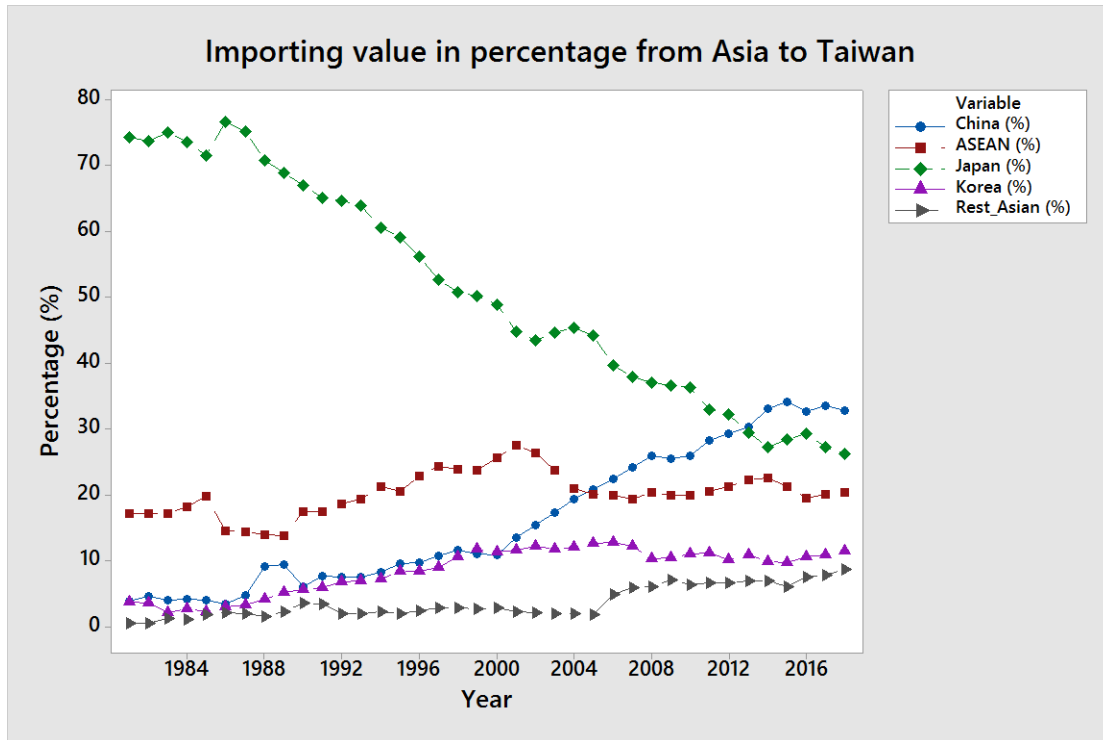


Figure 23: Importing values in ratios (%) from major Asian countries to Taiwan

Table 12: The five-year (2014~2018) average importing values in ratios (%) from Asia to Taiwan

Asia	China	ASEAN	Japan	Korea	Other Asian Countries
Percentage (%)	33.32	20.85	27.75	10.60	7.48

The five-year (2014~2018) average importing ratios of Asian countries were shown in Table 12. China shared 33.32% of the importing values of Asia, followed by Japan 27.75% and ASEAN 20.85%.

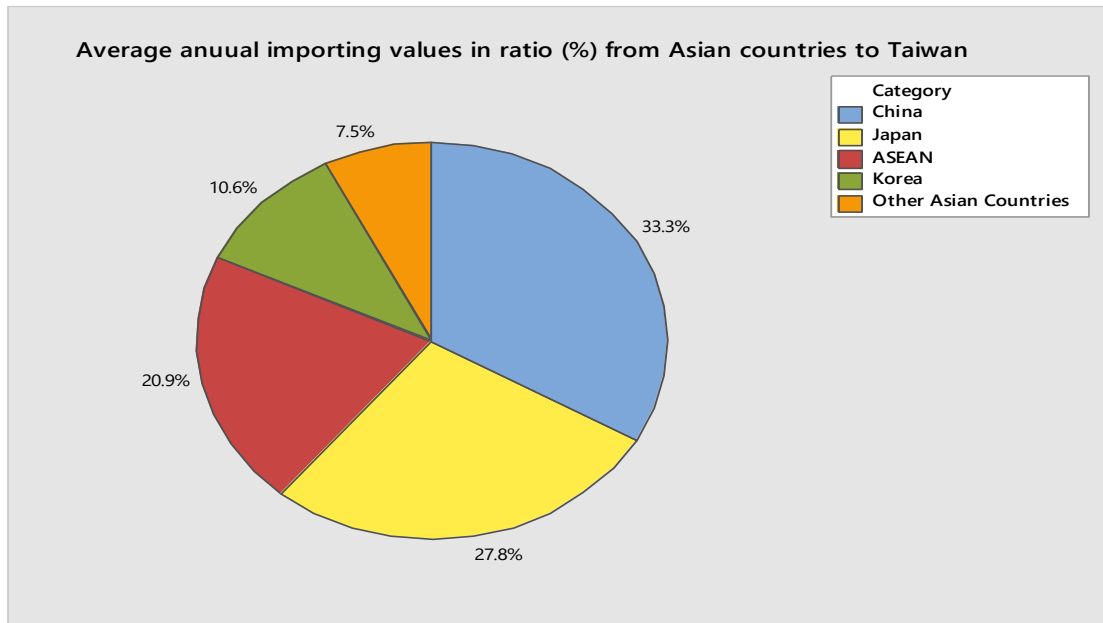


Figure 24: The average annual importing values in ratios (%) from Asian countries to Taiwan

2.3.3 Importing values and ratios (%) from ASEAN to Taiwan

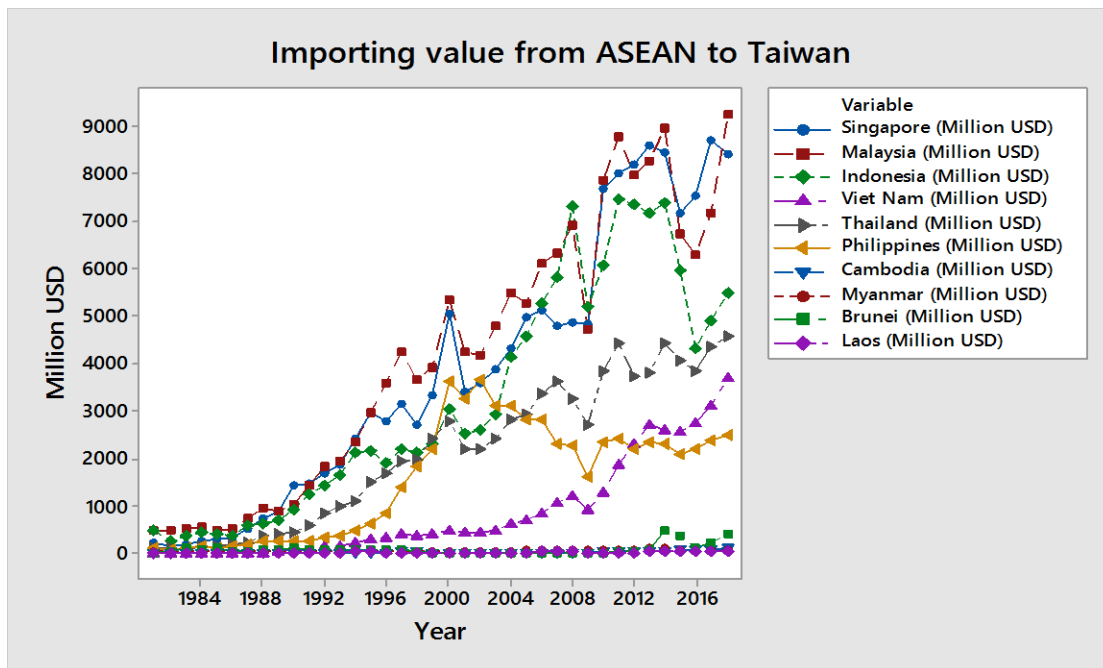


Figure 25: Importing values in million USD from ASEAN to Taiwan

Singapore, Malaysia, Indonesia were the top three countries in ASEAN to import to Taiwan. Although the annual importing values of the above figure were difficult to read because of the curves woven with each other. The five-year (2014 to 2018) mean values of the imports were calculated in Table 13, which shows that Singapore was the number one, followed by Malaysia and Indonesia.

Table 13: The five-year (2014~2018) average importing values from ASEAN to Taiwan

Countries	Singapore	Malaysia	Indonesia	Viet Nam	Thailand	Philippines	Cambodia	Myanmar	Brunei Darussalam	Laos
Million USD	8050.47	7680.65	5613.85	2939.82	4242.34	2293.33	73.16	71.46	307.86	15.48

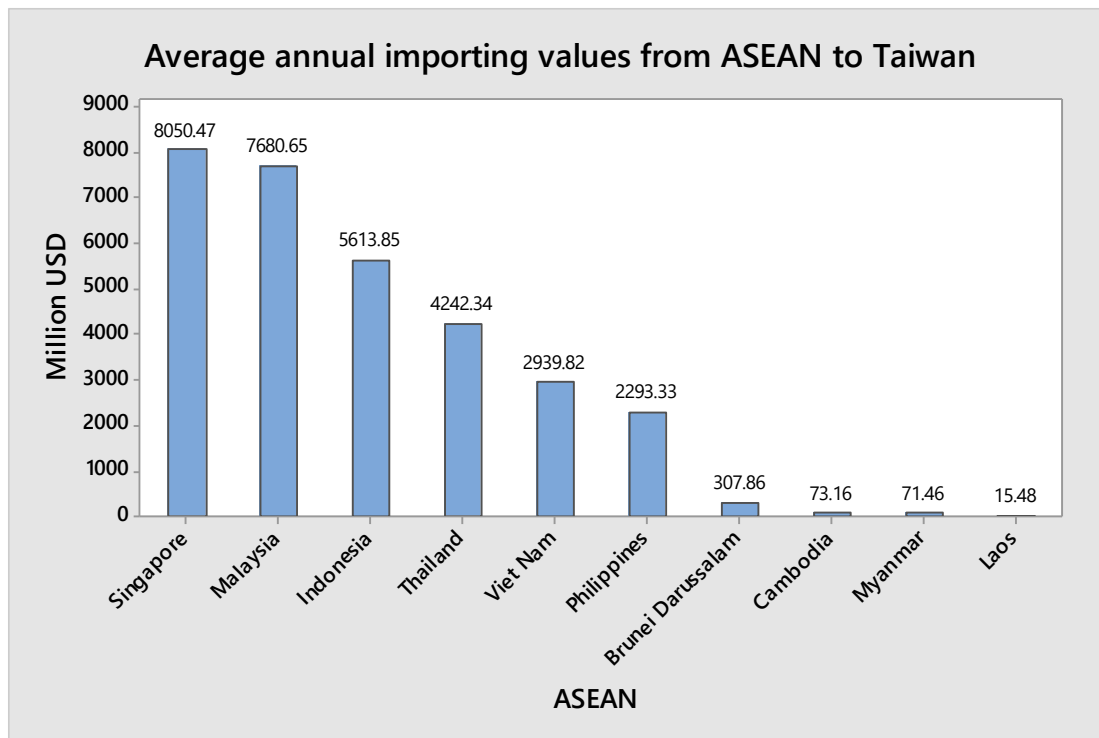


Figure 26: The average annual importing values from ASEAN to Taiwan

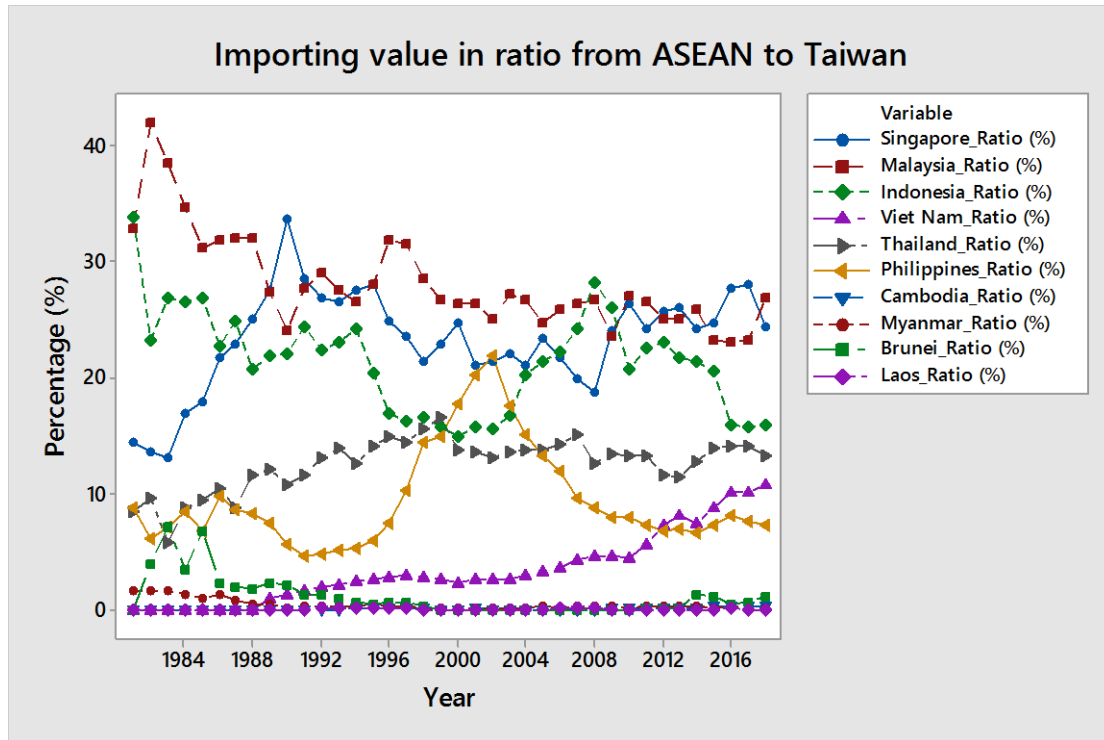


Figure 27: Importing values in ratios (%) for ASEAN

The ratios of the importing value of ASEAN from 1981 to 2018 were entangled together. The five-year (2014 to 2018) average of importing ratios of ASEAN was shown in Table 14. Importing values from Singapore to Taiwan shared 25.83% of the total importing values of ASEAN. Malaysia was accounted for 24.41%, and then Indonesia 17.89%. Each of four nations Cambodia, Myanmar, Brunei Darussalam, and Laos only shared less than one percent of importing values from ASEAN to Taiwan. It means they were highly potential countries for Taiwan to explore more deeply.

Table 14: The five-year (2014~2018) average importing values in ratios (%) from ASEAN to Taiwan

Countries	Singapore	Malaysia	Indonesia	Viet Nam	Thailand	Philippines	Cambodia	Myanmar	Brunei Darussalam	Laos
Percentage (%)	25.83	24.41	17.89	9.42	13.60	7.37	0.24	0.23	0.96	0.05

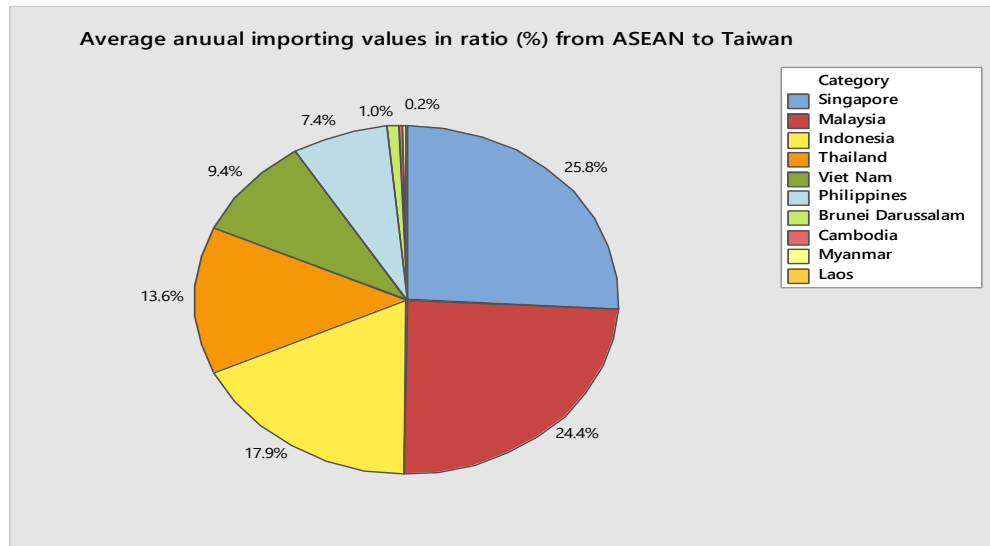


Figure 28: The average annual importing values in ratios (%) from ASEAN to Taiwan

2.4 Further discussion of the trade between Taiwan and China

From the previous analyses, China was the most important trading partner for Taiwan, how the trading values related to the total exporting and importing values of Taiwan was discussed in this subsection.

2.4.1 The exporting and importing values of Taiwan and China

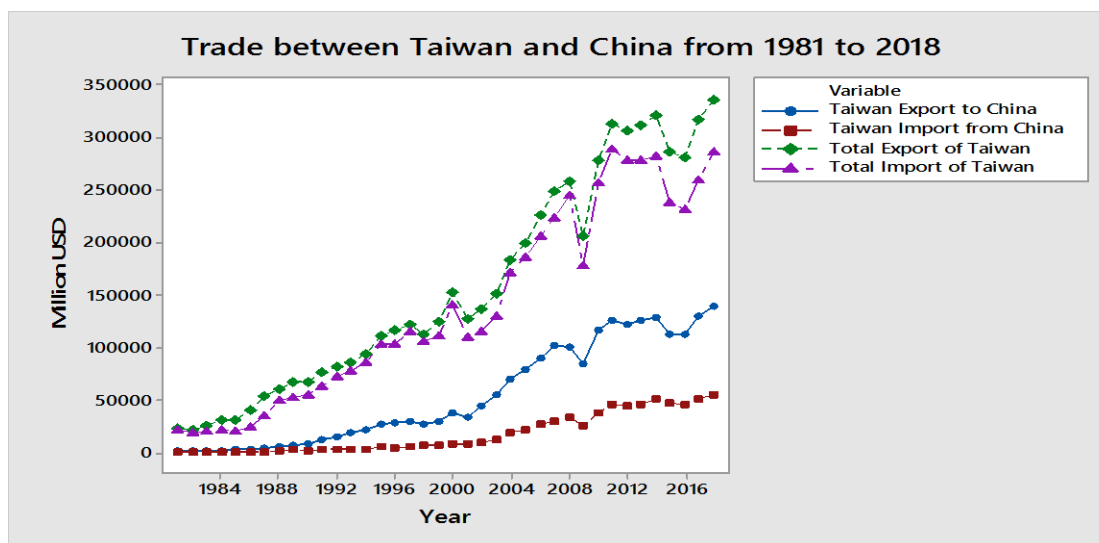


Figure 29: Exporting and importing values between Taiwan and China from 1981 to 2018

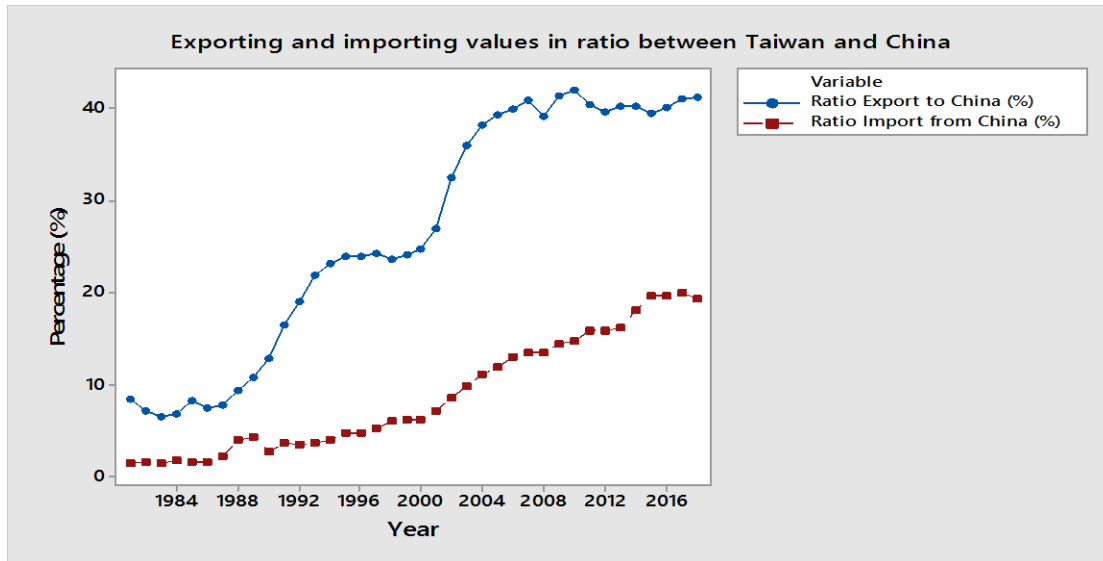


Figure 30: Ratios (%) of exporting and importing values between Taiwan and China with the total trade values of Taiwan

Table 15: The five-year (2014~2018) average trading amount and ratios between Taiwan and China

	Taiwan exports to China (Million USD)	Taiwan imports from China (Million USD)	Total export of Taiwan (Million USD)	Total import of Taiwan (Million)	Ratio export to China (%)	Ratio import from China (%)
Average (2014~2018)	124511.88	49965.23	307782.93	259047.24	40.42	19.32

China was the most important trading partner for Taiwan. From the above figures, the trading values between Taiwan and China increased yearly. The exporting values from Taiwan to China was accounted for 40.42% of Taiwan's total exporting values, and importing values from China shared 19.32% of Taiwan's total importing values. The influence of China on Taiwan was too huge to be ignored

2.4.2 Impact of the exporting values from Taiwan on China

From the previous sections, one found that China was one of the most important trading partners for Taiwan in the world. Exporting values from Taiwan to China increased yearly, and the whole world also pouring their merchandises to China. The impact of Taiwan on the importance of China was an interesting topic to study. The data of the total importing values from the world to China are obtained from the World Bank [16], with the period 1992 to 2017.

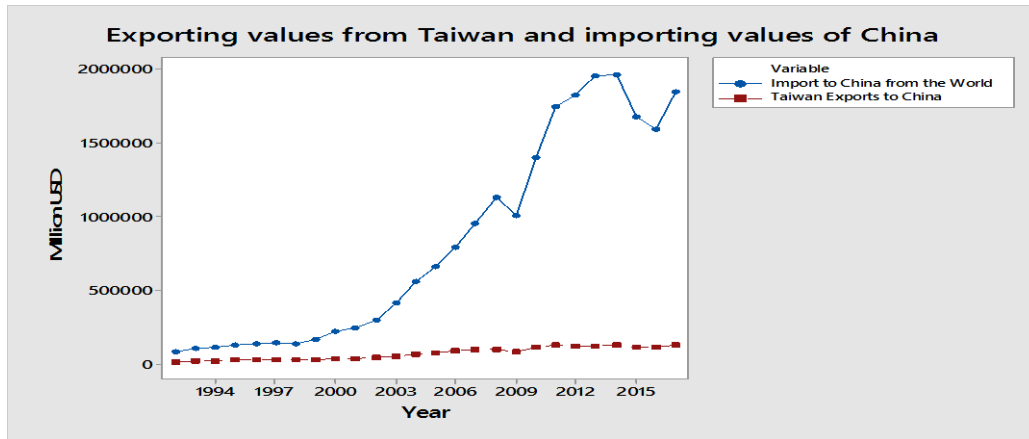


Figure 31: Exporting values of Taiwan and importing values of China from 1992 to 2017

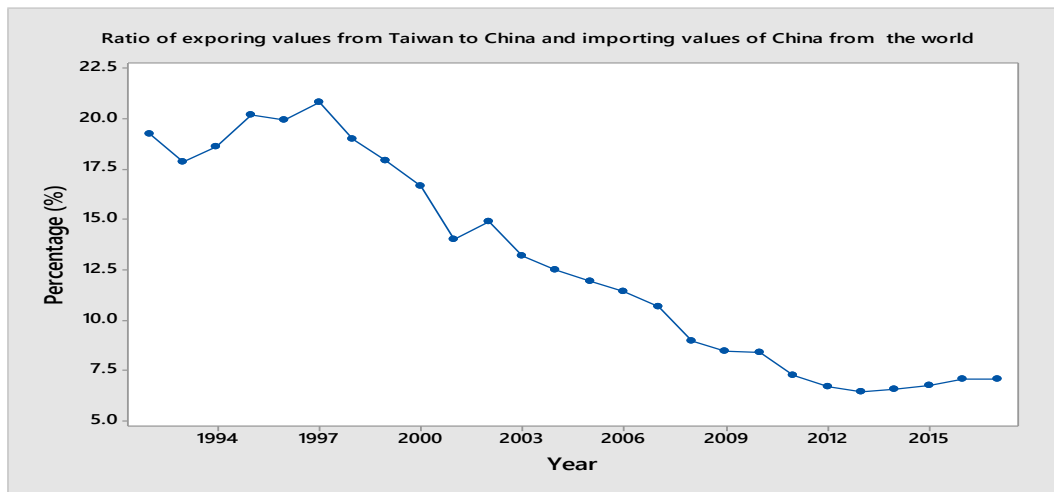


Figure 32: The ratios (%) of the exporting values from Taiwan divided by China’s total importing values from the world

Table 16: The three-year (2015~2017) average values and the ratios of exporting from Taiwan to China

Average value and ratio	Import to China from the world (Million USD)	Taiwan's exportation to China (Million USD)	Exporting values to China from Taiwan/China's total importing values from the world (%)
Average from 2015 to 2017	1703759.32	118471.62	6.95

From the above figures, one finds that the exporting values from Taiwan to China increased yearly from 1992 to 2017. However, the relative ratios (figure 32) dwindled from a peak of 20.81% in 1997 to a single digit 6.95%. In other words, the influence from Taiwan on China dwindled gradually, but Taiwan depended on China increased yearly. The three-year (2015~2017) average exporting values to China from Taiwan increased to 118471.62 million USD, but the ratio was only 6.95% of China's total importing values (Table 16).

3 Conclusions

- (1). Asia was the most important market for Taiwan in the world trading. A five-year (2014~2018) average showed that 71.56% of Taiwan's exporting values was to the Asian countries, 12.45% to North America, and 9.23% to Europe.
- (2). The exporting values from Taiwan to China was accounted for 56.48% of total exporting values of Taiwan to the whole 48 countries in Asia. ASEAN (10 nations) grabbed second place 25.43%. Japan was accounted for the third, 9.38%.
- (3). Singapore was the most important exporting country for Taiwan in ASEAN, it was accounted for 31.91% of the total exporting values of ASEAN. Viet Nam shared 18.15%, followed by Malaysia, 15.90%.
- (4). Asia was the most important importing continent for Taiwan. It accounted for average (2014~2018) 58.0% of total importing values of Taiwan. North America was the second 12.4%, followed by Europe, 12.0%.
- (5). China shared average (2014~2018) 33.32% of the total importing amount of Asia. Japan grabbed the second, 27.75%, followed by ASEAN, 20.85%.
- (6). Singapore was the most important importing country for Taiwan in ASEAN, it was accounted for 25.83% of the total importing values of ASEAN. Malaysia shared 24.41%, followed by Indonesia, 17.89%.
- (7). China was singled out as the most important trading partner of Taiwan. The exporting values from Taiwan to China was accounted for average (2014~2018) 40.42% of the

total exporting values of Taiwan. The importing values from China to Taiwan shared 19.32% of total importing values from the world.

- (8). The exporting values from Taiwan to China continued increasing from the year 1981, but after dividing them with China's total importing values, one found that the ratios continue dwindling to average (2015~2017) 6.95% only. It meant that Taiwan relied more and more upon China's market, but Taiwan became less and less significant to China's importing market.

4 References

- [1] Mankiw, N. G. *Principles of Economics*, 8th ed. Singapore: Cengage Learning, 2018.
- [2] Statistics Times <http://statisticstimes.com>. Assessed May 29, 2019.
- [3] Directorate-General of Budget, Accounting and Statistics (DGBAS), Executing Yuan R.O.C. (Taiwan). <http://www.dgbas.gov.tw>. Accessed May 1, 2019.
- [4] Ministry of Finance (MOF), R.O.C. (Taiwan). <http://web02.mof.gov.tw>. Accessed May 1, 2019.
- [5] Bureau of Foreign Trade of the Republic of China (Taiwan). <http://cus93.trade.gov.tw>. Accessed May 1, 2019.
- [6] World oil crisis – Wikipedia. https://en.wikipedia.org/wiki/World_oil_crisis. Accessed May 10, 2019.
- [7] FRED Economics Research. <https://fred.stlouisfed.org>. Accessed May 28, 2019.
- [8] WORLDOMETER. <https://www.worldometers.info/geography>. Accessed on May 31, 2019.
- [9] Association of Southeast Asian Nations (ASEAN). <https://asean.org/asean/asean-member-states> Assessed May 30, 2019
- [10] The World Integrated Trade Solution (WITS). <https://wits.worldbank.org> Accessed May 28, 2019.
- [11] The Association of Southeast Asian Nations (ASEAN). <https://asean.org> Accessed May 28, 2019.
- [12] Hanke, J. E., and D. W. Wichern. *Business Forecasting*, 9th ed. New Jersey: Pearson Prentice Hall, 2009.
- [13] Hill, R. C., W. E. Griffiths, and G. C. Lim. *Principles of Econometrics*, 4th ed. Asia: John Wiley & Sons, 2012.