
Mizuho Economic Outlook & Analysis

June 4, 2019

Impact of US-China Trade Tensions on Asia (II)

A simulation of the risks in the event the US and China invoke punitive tariffs upon all US-China trade

< Summary >

- ◆ Following the *Mizuho Insight* report in December 2018 (in Japanese) on the impact of US-China trade tensions upon Asia, we have conducted additional simulations on the impact of full-scale punitive tariffs between the US and China upon Asia.
- ◆ The results of simulations revealed that the negative impact through the supply chain is large in particular with respect to Taiwan. Even though the positive impact stemming from export substitution will most likely exceed the negative impacts in each of the countries in the simulation, it would be necessary to keep in mind constraints upon export substitution due to supply bottlenecks.
- ◆ While negative impacts are already evident at present, the realization of export substitution is expected to be a time-consuming process even if the net positive effect were to surpass the negative impacts.

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1. US-China trade tensions are flaring up again

Trade tensions between the US and China are flaring up again. The two countries exchanged bouts of punitive tariffs upon each other on three occasions in July, August and September last year and have since been negotiating to break the deadlock. However, complications in negotiations led to the US raising tariff rates on May 10th from 10% to 25% on \$200 billion worth of imports from China which were subject to punitive tariffs in September last year. On June 1st, China retaliated and raised its tariff rate from 10% to a maximum of 25%, on \$60 billion worth of imports from the US which were subject to punitive tariffs in September last year. To sum up these measures as the "current level" of trade tensions, the US imposes punitive tariffs of 25% on \$250 billion worth of imports from China, while China imposes punitive tariffs of up to 25% on \$110 billion worth of imports from the US.

Furthermore, the US has initiated procedures to impose tariffs of up to 25% on all other imports from China worth \$300 billion. Given the imposition of such tariffs, expected to be implemented as early as the end of June, there is a risk that China will impose tariffs in retaliation on all remaining imports from the US (**Chart 1**).

In a report last year (refer to the URL at the end of this report), we conducted a quantitative analysis of the impact of US-China trade tensions on the countries of Asia, on the basis of the level of trade tensions referred to as the "current level" above.

Given the subsequent difficulties in US-China trade negotiations, we shall conduct a simulation of the impact on the basis of the assumption that the above-mentioned "risk

Chart 1: Timeline of US-China trade tensions

Timing	Punitive tariffs (country: target)	Punitive tariff rate	
Jul 2018	US: \$34 billion worth of imports from China	25%	Current level
	China: \$34 billion worth of imports from the US	25%	
Aug 2018	US: \$16 billion worth of imports from China	25%	
	China: \$16 billion worth of imports from the US	25%	
Sep 2018	US: \$200 billion worth of imports from China	10%	
	China: \$60 billion worth of imports from the US	Maximum 10%	
May 2019	same as above	25% Maximum 25%	
Jun 2019?	US: \$300 billion worth of imports from China	Up to 25%	Risk level
	China: \$40 billion worth of imports from the US?	25%?	

Source: Made by MHRl

level” materializes.

2. A simulation of the impact on Asia on the assumption of the risk that the US and China will impose full-scale punitive tariffs against each other

(1) Coverage of analysis (the negative and positive impacts of punitive tariffs through trade)

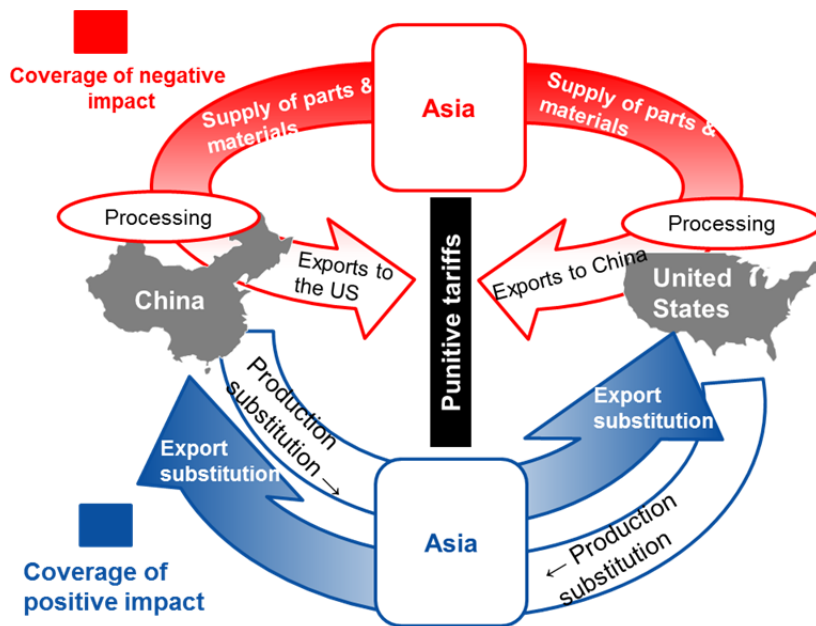
As in our report released in December last year, we shall conduct an analysis of the punitive tariffs between the US and China in terms of both their positive and negative impacts upon the countries of Asia through trade (**Chart 2**).

The negative impacts are expected to occur throughout the supply chain. The mutual imposition of punitive tariffs between the US and China not only harms exports by China to the US and exports by the US to China, but also sends negative pressures upon exports by third countries such as those of Asia which are suppliers of parts and materials to both countries.

The positive impacts are expected to occur through export substitution. This is because China's exports to the US and US exports to China will be replaced by third countries due to the avoidance of punitive tariffs. In turn, this will lead to the increase of exports to the US and China.

It is necessary to keep note of the following points with respect to the coverage of analysis. First of all, the coverage of analysis in both the negative and positive

Chart 2: Coverage of Analysis (conceptual diagram of the impact of US-China trade tensions on Asia)



Source: Made by MHRI

impacts are limited to the change in exports due to the punitive tariffs, and do not include its knock-on effect upon investment and consumption which accompany the change in exports and sentiment. Secondly, while the *de facto* embargo by the US upon Huawei on May 15th will affect US exports to China, we have put off its analysis due to data constraints at the individual company level. In this report, we shall limit the coverage of analysis to the change in exports due to punitive tariffs.

(2) Assumptions of the level of trade tensions and premises of analysis

a. Assumptions on the level of US-China trade tensions (mutual implementation of punitive tariffs upon all trade between the US and China)

With regard to trade tensions between the US and China, we assume a level of “risk level” set forth in **Chart 1**. For the sake of simplification, we assume that the US imposes a uniform 25% punitive tariff upon \$550 billion worth of imports from China and that China likewise imposes 25% punitive tariffs upon \$150 billion worth of imports from imports from the US.

b. Assumptions on negative impacts (Price elasticity = 1)

The preconditions for the analysis are the same as those in the report released last December. First, as a starting point for the negative impact through the supply chain, we assume a price elasticity of 1, that China's exports to the US and US' exports to China will be reduced by the same percentage as the punitive tariffs. For example, if the US imposes a 25% punitive tariff on Chinese products, prices in the US would increase by 25% and US-bound exports would decrease by 25%. As in the previous analysis, the elasticity was assumed to be 1 to simplify the estimation.

Next, we will use the *OECD Inter-Country Input-Output (ICIO) Tables* to simulate the impact of a reduction in exports from Asia and other third countries that supply parts and materials to both countries as a result of a reduction in Chinese exports to the US and US exports to China due to punitive tariffs.

c. Premises regarding positive impacts (full substitution in accordance with global export share)

In our simulation of the positive impacts through export substitution, we set premises where we assume a “full substitution” in which the decline of exports between the US and China will be substituted wholly by exports from third countries. For example, if China's exports to the US decline by 25% as a result of US punitive tariffs, exports from China will be substituted by exports from a third country (or US domestic production) in order to avoid US punitive tariffs. While the substitution rate can be in the range of 0 to 100%, we assume it to be 100% (“full substitution”)

to simplify the estimation. This is an optimistic premise for simulating the maximum possible export substitution.

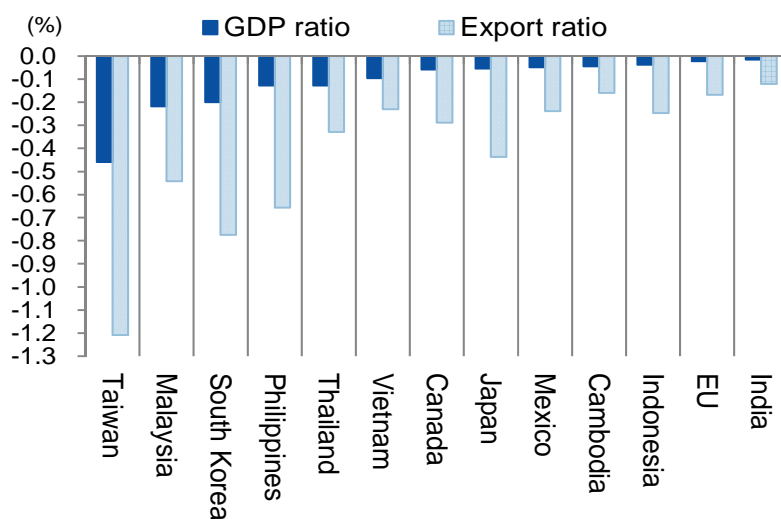
Next, we assume that export substitution is based upon the export share of world exports by country. For example, if China's exports of electrical appliances to the US decline, countries with a higher share of global exports of such products would be considered to be eligible for substitutes for Chinese exports. These premises are the same as those of ADB's previous study (refer to the reference material). The country share of world exports reflects the competitiveness of each country's exports, and it may be interpreted that the country with the higher world share has the greater potential to replace China. The world export share for each item subject to punitive tariffs is calculated by the United Nation's Comtrade.

3. Despite a net positive impact according to this estimate, it is necessary to pay attention to bottleneck constraints.

(1) The negative impact through the supply chain is large in particular for Taiwan

As a result of simulation using the above method, the negative impact through the supply chain turned out to be particularly large in Taiwan. (Chart 3).

Chart 3: Estimate of negative impact through the supply chain



Note: Exports in the denominator are on a value-added basis
 Source: Made by MHRI based upon OECD, ICIO, and others

The magnitude of the negative impact on each country's economy is influenced by its involvement in the supply chain. Under the "risk level" scenario, in which the US and China imposes punitive tariffs of 25% on all trade between the two countries, the impact upon Taiwan, which would be most adversely affected, would be nearly 0.5% of nominal GDP. In other words, nominal GDP would be almost 0.5% lower than in the case where

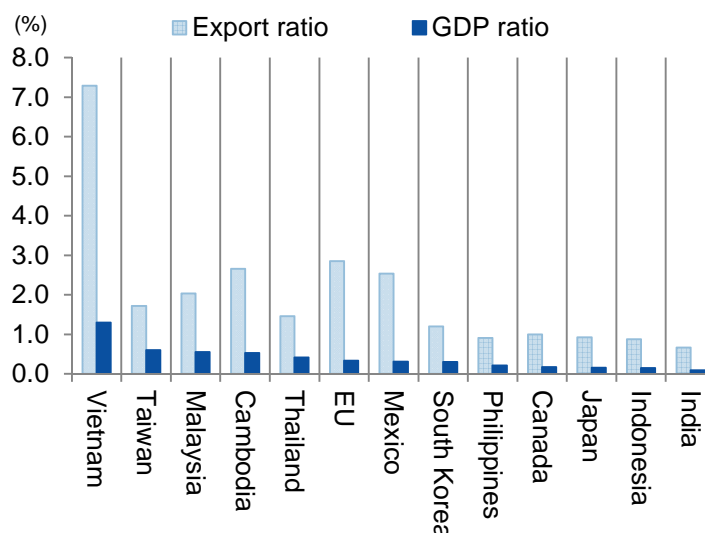
there are no trade tensions. Incidentally, it is estimated that the impact upon China's US-bound exports to the US is close to -1% of China's nominal GDP, and that the impact upon US' exports to China is approximately -0.2% of US nominal GDP. Since Taiwan is highly dependent on exports of parts and materials to the US and China, its impact on GDP is estimated to be close to that of China, which is a party in the trade friction, and even greater than that of the US. After Taiwan, Malaysia and South Korea had the largest negative impacts, with an impact of approximately -0.2% of nominal GDP. In India and Indonesia, where participation in the global supply chain is limited, the impact will be more or less nil.

Turning to Japan which ranks around the middle range among the countries analyzed in terms of the GDP ratio, Japan ranked among the top countries after Taiwan, South Korea, and the Philippines in terms of the export ratio. While domestic demand-oriented service industries are unlikely to be negatively affected by trade tensions in the case of Japan, export-related sectors are expected to be affected to some degree.

(2) The positive impact through export substitution is particularly significant in Vietnam

The simulation results reveal that the positive impact through export substitution, in terms of the GDP ratio is particularly significant for Vietnam, and is followed by Taiwan, Malaysia, Cambodia and Thailand (Chart 4). In view of the premises (full substitution

Chart 4: Estimate of positive impact through the export substitution



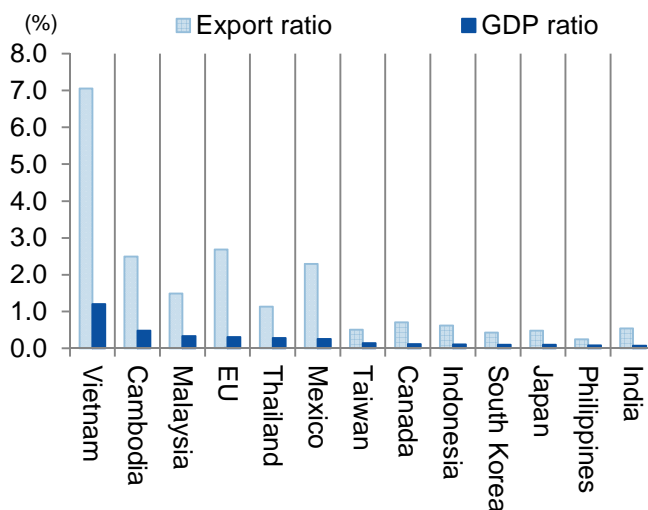
Note: Exports in the denominator are on a value-added basis
 Source: Made by MHRI based upon UN Comtrade, and others

based on country share as a percentage of global exports), countries with products that compete with Chinese products are considered candidates for substitution. Since the target of US punitive tariffs will spread from electrical appliances in the “current level” to textile products under the “risk level”, the positive effect will most likely turn out to be largest with respect to Vietnam given its large volume/value of exports of both products.

(3) Despite net positive impact upon all the countries, Vietnam may be constrained by bottlenecks

A sum of the negative and positive impacts add up to positive net impacts in all Asian countries (**Chart 5**). While the US and China, which are parties to the trade tensions, are expected to suffer negative impacts on a net basis, the simulation turned out to provide contrasting results with respect to Asia. The net impact will most likely be greatest in Vietnam, with the GDP ratio exceeding 1% and the export ratio reaching approximately 7%. Assuming that Vietnam is subject to this level of upward pressure, concerns regarding bottlenecks in production factors such as land, labor, and capital leads to our view that it in reality, would be difficult for the country to enjoy the positive impact shown in the simulation results in a short period of time.

Chart 5: Estimate of negative and positive impacts



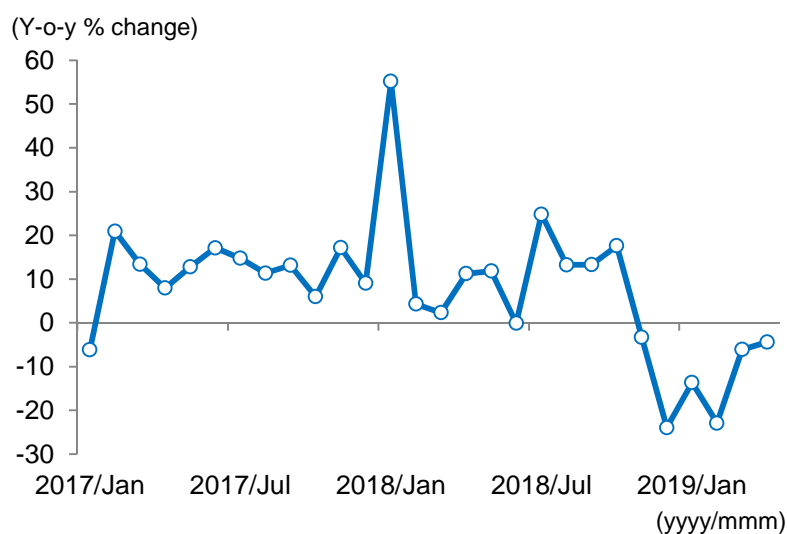
Note: Exports in the denominator are on a value-added basis
 Source: Made by MHRI based upon OECD, ICIO, UN Comtrade, and others

4. While the negative impact is already evident, the emergence of the positive impact will be a time-consuming process

As in our report last December, the above analytical framework does not provide a concept of time as to when negative and positive impacts will occur in Asia. We will thus confirm the current level of the impact of US-China trade tensions on the basis of latest statistical data.

First of all, it appears that negative impacts from the supply chain have already spread to Asian countries. According to China-side statistical data, imports of parts and materials for China's supply chain (for re-export after processing in China) have been falling below year-ago levels since last November (**Chart 6**). Since the decline started after the Jun-Sep quarter of 2018 when the US started to impose punitive tariffs upon Chinese products, this suggests that trade tensions are affecting Chinese imports of parts and materials. Even though data by country of origin is not available, we can infer that materials imports from Asia (in other words, supply of materials from Asia to China) are also decreasing, in view of the use of many Asian materials in China's exports to the US.

Chart 6: China's imports of parts for supply chain



Source: Made by MHRI based upon General Administration of Customs of the People's Republic of China

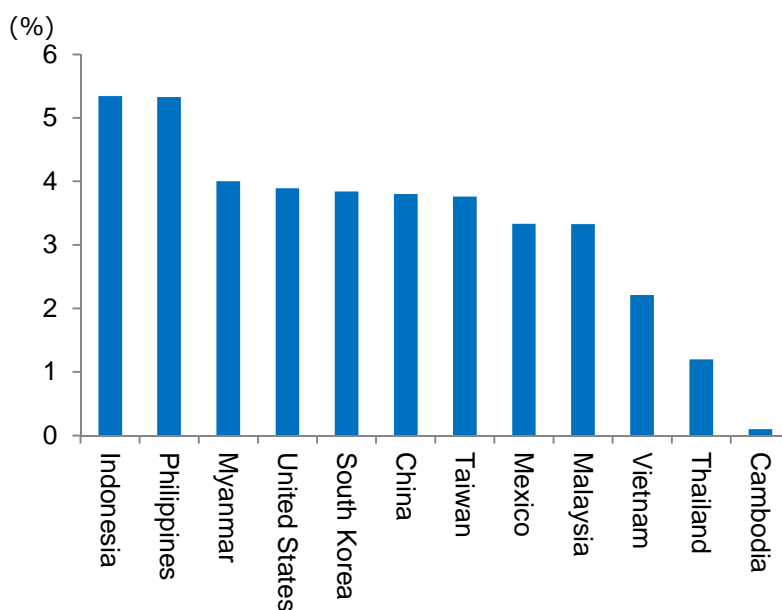
Secondly, while there have been media reports of export substitution, its progress appears to be a time-consuming process. According to analysis conducted by MHRI (Yamato (2019), refer to the URL at the end of this paper), of China's export items subject to US punitive tariffs, the percentage substituted by exports by third countries in the last six months was 30%, compared to 20% in the three months following the exercise of punitive tariffs by the US last year. Among the items subject to US punitive tariffs against China, let us focus upon those related to personal computers which are China's main export goods to the US (in terms of value). China's US-bound exports of personal computer-related products have declined, while exports of those items from

third countries to the US have increased. Although it appears that export substitution has occurred, the increase in imports from third countries is not sufficient to offset the decrease in imports from China. As expected, the “full substitution” of the decrease of China’s exports by the increase of exports by third party countries is yet to be accomplished. It should be noted that the premises set forth regarding the positive impact has been optimistic.

In our interviews conducted in Asia, many respondents commented that "export substitution is progressing on a limited scale." In other words, export substitution is occurring on the basis of the following conditions: (1) small lots, (2) low value-added items, (3) utilization of existing facilities at a higher operating rate without resorting to the construction of new plants. We also came across comments to the effect that there has been an existing trend to transfer production bases to Asia due to rising manufacturing costs in China (so-called “China Plus One” trend) and that “US-China trade tensions is only one factor that is serving to accelerate the trend."

As for a factor which is making export substitution a time-consuming process, there were comments to the effect that "even though companies intend to shift their US-bound exports from China to Asia, they are facing constraints such as the shortage of human resources and supporting industries on the part of Asia." In fact, the countries of Vietnam, Malaysia, Cambodia, and Thailand, which are expected to benefit greatly from export substitution, have low unemployment rates and tight labor markets (**Chart 7**).

Chart 7: Unemployment rates of each country



Note: Data for 2018. Some IMF projections are included. Figure for Cambodia is from 2017.
Source: Made by MHRI based upon IMF and National Institute of Statistics of Cambodia

Furthermore, there may be a wait-and-see stance in order to assess the future of the US-China trade tensions.

As in the *Mizuho Insight* report in December 2018, the negative impact of trade tensions between the US and China has started to appear in Asia. However, it should take time for the positive impact to outweigh the negative impact on a net basis. Even though the positive impact should be large in countries such as Vietnam in the event trade tensions escalate to the "risk" level, the estimation results should be viewed with a certain leeway because the scale is large enough to cause bottlenecks on the supply side.

Reference

Refer to the original Japanese report by clicking the URL below for the reference material

<https://www.mizuho-ri.co.jp/publication/research/pdf/insight/as190604.pdf>