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Impact of World Trade Conflicts on Thailand and CLMV: A General Equilibrium Modeling Analysis

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Abstract

We have run a model simulation with GTAP Model with its data of 2011. The structure of data is assumed to represent the US and Rest of the world trade relationships. We analyze the impact of the U.S. government imposition 10-20% of tariff on imports from China. Firstly, the unilaterally imposition of tariff by U.S. (SIM1 10%) will hurt China and even the U.S. growth of GDP. The unilaterally imposition of tariff by U.S. will gain by trade partners through GVC relationships. Japan, EU and ASEAN have positive growth performance after the unilaterally imposition of tariff by U.S.

We have tried to see China will response by imposing in retaliation of increase tariff on US goods by 10% (SIM3). The result is clear that China will have deeper negative growth of GDP with the U.S. The trade war does not produce any gain for the two trade partners. The other trade partners still gain from this scenario but with a lesser extent. We have China's reduction of tariff for all World trade partners (SIM2, 10%) while facing US tariff increases of 10% simultaneously. Clearly it will gain all other trade partners but with the cost of Chinese GDP decreases more than the retaliation episode. U.S. will not gain so much form this tariff reduction by China as her GDP is negatively responded.

As the model is a general equilibrium in comparative static, it is still accurate to conclude that trade diversion i.e., Trade War between US-China would hurt the China, while make no-gain for the US. The rest of the world would be likely to gain in short-run. However, without a dynamic simulation we may be too early to conclude the net gain or loss on World's welfare. We would wait until last negotiation is done by end of November 2019 and analyze the dynamic result again.

Keyword U.S. trade tension with China, Tariff imposition by U.S. on Chinese import, GTAP model comparative static simulation of economic impact.

JEL Classification: International trade Modeling

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1. Introduction

The United States of America under President Trump has activated his policy on 'America First'. The most visible policy was perhaps U.S. revoked her protectionism in trade of goods and services. Firstly, President Trump has withdrawn from a free trade agreement, namely the Pacific Rim Economic Partnership Agreement (TPP) after won the election in 2016. He has also reviewed the North American Free Trade Agreement (NAFTA). But the most counter trade liberalization is perhaps the imposition of high rate import duties on Chinese goods into the U.S. as counter act on the claim that Chinese has infringement of the U.S. intellectual property rights. This is a very counterproductive implementation of the protectionist trade policy. The similar but a lesser degree can be seen from threats to penalize imports of goods from Japan, Canada, EU, Mexico and other trade partners. The series of acts by the United States has developed into a trade war between US-China as China has cautiously imposed a tit-for-tat tariff increase on U.S. import into China as well. The trade war has actually started and seems to have a world-wide trade diversion effect. The rising trend of protectionism in trade policy of the U.S has calculable impacts on main trading partners both developing and developed economies.

The U.S. and China trade tensions have escalating as the retaliation by China is expected after the president's direction. The Office of the United States Trade Representative (USTR) had finalizes tariffs on $200 billion of Chinese imports in response to claims that China's unfair trade practices. It is part of the United States' continuing response to China's 'theft' of American intellectual property and forced transfer of American technology. Finally, the USTR had released a list of approximately $200 billion worth of Chinese imports that will be subject to additional tariffs the additional tariffs will be effective starting September 24, 2018, and initially will be in the amount of 10 percent. Starting January 1, 2019, the level of the additional tariffs will increase to 25 percent.

The list contains 5,745 full or partial lines of the original 6,031 tariff lines that were on a proposed list of Chinese imports announced on July 10, 2018. Changes to the proposed list were made after USTR and the interagency Section 301 Committee sought and received comments over a six-week period and testimony during a six-day public hearing in August. USTR engaged in a thorough process to rigorously examine the comments and testimony and, as a result, determined to fully or partially remove 297 tariff lines from the original proposed list. Included among the products removed from the proposed list are certain consumer electronics products such as smart watches and Bluetooth devices; certain chemical inputs for manufactured goods, textiles and agriculture; certain health and safety products such as bicycle helmets, and child safety furniture such as car seats and playpens. In March 2018, USTR released the **findings of its exhaustive Section 301 investigations** that found China's acts, policies and practices related to technology transfer, intellectual property and innovation are unreasonable and discriminatory and burden or restrict U.S. commerce. It is worrisome to learn that the Section 301 investigation had accused China has used joint venture requirements, foreign investment restrictions, and administrative

review and licensing processes to require or pressure technology transfer from U.S. companies. China has further deprived U.S. companies of the ability to set market-based terms in licensing and other technology-related negotiations. China has directed and unfairly facilitated the systematic investment in, and acquisition of, U.S. companies and assets to generate large-scale technology transfer. Most serious accusation is that China has conducted and supported *cyber intrusions* into U.S. commercial computer networks to gain unauthorized access to commercially valuable business information. The hush criticism was pretext to release two lists of Chinese imports, with a combined annual trade value of approximately $50 billion, with the goal of obtaining the elimination of China's harmful acts, policies and practices. It is not verified whether China has been unwilling to change its policies involving the unfair acquisition of U.S. technology and intellectual property.

The U.S. imports from China which are subjected to tariffs by end use capital goods, automotive vehicles, industrial supplies, consumer goods and military goods respectively. They are subjected to full and partial imposition of tariff coverage. The estimated values of fully and partially tariff coverage valued are $54 billion and $23 billion respectively. The tariffs value covered for automotive, industrial supplies, consumer goods and military goods are $52, $32, $17 and $5 billion respectively.[3] In terms of category classification by NAICS, the imports from China subjected to tariffs imposition are machinery ($37.8 billion), electrical machinery ($25.1 billion), furniture ($23.0 billion), vehicles ($11.4 billion), Iron and steel ($7.7 billion), leather ($7.3 billion), plastic ($5.6 billion), metal ($3.3 billion). The import tariff would be partially lifted on Chinese goods of organic chemical, electrical machinery and furniture ($29.3 billion), etc., respectively.

China is cautious to response to the U.S. move. It is expected that China will also retaliate by raising the differential tariffs (25%, 20%, 10% and 5%) on $60 billion U.S. export of capital goods, industrial supplies, automotive vehicles consumer goods and food and feeds respectively to China. Two trade partners may try to avoid the negative sum game of trade tension through resumption on trade negotiations.

Although, there have been many attempts to conjecture the economic impact of U.S.-China trade conflict by medias and among the academic society. It is estimated that Asian countries that are on the stage of supply chain of Chinese exports would hurt and some gain benefit. The tariff increase on the Chinese imports to U.S. will hurt Taiwan, Singapore and Korea for example. Countries which may gain from trade tension are Vietnam, Thailand, Mexico and Canada. The substitution effect of import from these partners by the U.S. may be expected. Thus, these exporters will gains from trade tension at the cost of China.

This conjecture would in fact need a formal analysis with proper mathematical and or numerical approach. The question is whether the trade tension would finally escalate into world recession. A unilateral imposition of tariff by the U.S. would hurt the U.S. and China to large extend as cost of trade

[3] Source from USITC, USTR, and Citi Research (September 2018) accessed on

will induce higher import price may not help the U.S. so much in her export attempt. Moreover, it is wonder what would be the best option for China in trade war. Should Chinese raise import tariff in retaliation and finally hurt oneself and/or the U.S simultaneously. Should China instead unilaterally *decrease* her import tariff to reduce cost of importable goods into China to avoid economic slowdown? Will there be option for the U.S. who may have a net loss from this tariffs war via negotiations rather to increase export to China and reduce trade deficit with main trade partners by seeking trade negotiations to reach a positive sum game between them. The question could not be answered without formal analysis especially the numerical model simulation.

In our study, we will apply a multi-regional, multi-sector, general equilibrium model[4] of trade and industries to evaluate the economic impact of trade tensions via tariff escalation and search for feasible solution to reverse back to gain from trade creation. We would expect to obtain the relevant trade policy recommendation for discussion.

2. Development of The U.S. Trade Deficit

In fact, the trade deficit of the U.S. had been developed since early 1980's. It has deteriorated acutely later 1995. During 1995-2000, the trade deficit in goods and service on Balance of Payment basis has been out of controlled. The depth of trade deficit has bottomed out during 2005. The Global Financial Crisis in 2008-09 has short-term fluctuation as total export of goods and services has dipped down deeper than the U.S. export. The trade deficit has continued to deteriorate again from 2010 and seems to have chronic level of untenable from the policy of the U.S. government. The U.S. trade in services had a surplus position since 1980's showing the strength of U.S. economy.

We have selected the U.S. trade partners which have trade surplus in Table 1. It is found that U.S. has huge trade deficit with China $375.57 billion dollar in 2017. The second group of countries comprises Mexico, Japan, and Germany has roughly 70.9, 68.8 and 63.6 billion U.S. dollars of trade surplus with the U.S. The Asian countries which has trade surplus with the U.S. are for example Vietnam ($38.3 billion), Malaysia ($24.4 billion), Korea ($23.1 billion), India ($22.9 billion), Thailand ($20.1 billion), Taiwan ($16.7 billion), and Indonesia ($13.3 billion) respectively.

During 2000's the import-GDP ratio of China has emerged and surpassed Mexico as dominant trade partner with the U.S. On the other hand, import – GDP ratio of Japanese origin, peaked in 1985 had been subsided after the 'Plaza Accord' agreement. The appreciation of Japanese national currency vis-à-vis the U.S. dollar had cooled down the trade surplus of Japan over the U.S.

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[4] The model is a general equilibrium model with economic data base both national and international accounts. We will apply a GTAP world data base and run the model via 'Run GTAP module'. This is official licensed to Dr. Kitti Limskul

It should be noted that the U.S. who had shown evidence of trade liberalization over decades, especially after the WWII. Her average tariff on imports during 1940-2015 had decreased substantially from the past. Thus, the U.S. market was main destination of partners' export. The domestic resource cost of production in the U.S. has become higher than the cost of production of imports. There are several debates on the pro-cons of protectionism of infant industry, agriculture policy as well as speed of technological changes in trading partners. This is not mention the Global Value Chain of Chinese production among Asian countries. Moreover, it might be also the imbalance of trade in the U.S. caused by the foreign direct investment of American firms in China. The profit may be booked elsewhere other than the U.S. owing to tax management.

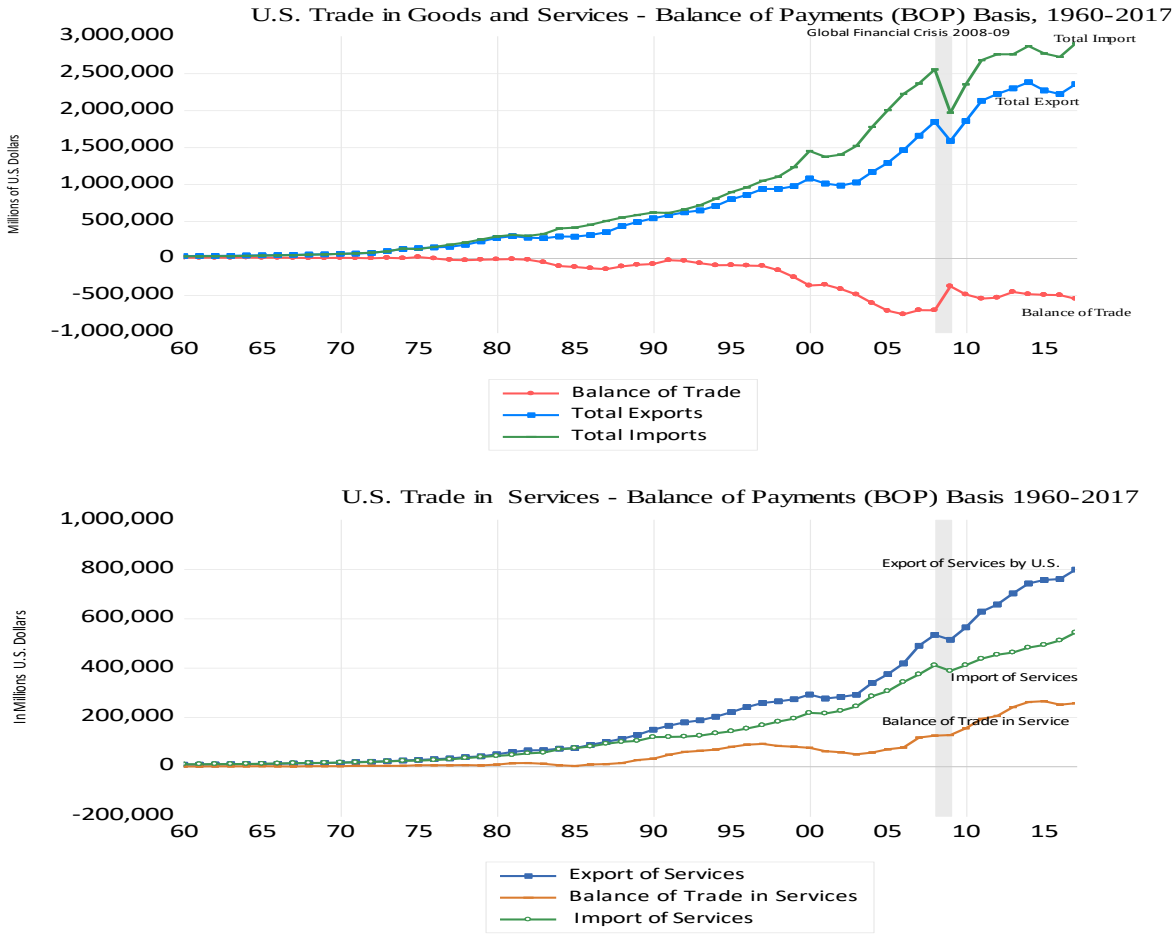
The real threat was felt by the U.S. when China has overtaken the Mexico and Japan during 2000's (see Fig. 2). The trade penetration was measured in terms of import-GDP ratio. This means China has captured significant portion of U.S. GDP. More importantly, the rise of China is too rapid and worrisome to the policy makers. The US.-China favorable bilateral relationships, the investment from U.S. in to China may be reason to sharp penetration of Chinese product to U.S. as well. It is wonder how to measure the backward import of U.S. firms invested in China with U.S. transferred technology. The question is how to book such profit in the U.S. or China or third country where firms have low tax incidence.

2.1 Recent Overall Outlook of U.S. Trade in Goods and Services (Census Basis).

The U.S. Census Bureau and the U.S. Bureau of Economic Analysis (2018)[5] has announced that the U.S.'s goods and services deficit was $43.1 billion in May, down $3.0 billion from $46.1 billion in April 2018. The U.S. exports were $215.3 billion; with $4.1 billion more than April exports. The import in May 2018 was $258.4 billion surpassed April import by $1.1 billion U.S. As a result, U.S. still suffered a deficit in goods and services. The deficit of goods has decreased $2.6 billion to $65.8 billion U.S., while the services have shown surplus of $0.5 billion to $22.7 billion respectively. In sum, a Year-to-date, the goods and services deficit have increased $17.9 billion, or 7.9 percent of the same period in 2017. Here, the exports have increased $84.5 billion or 8.8 percent while the imports have increased $102.4 billion or 8.6 percent respectively.

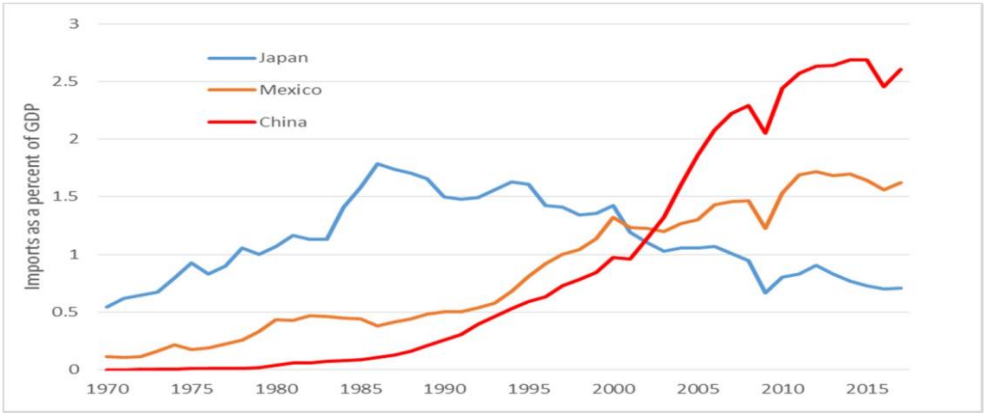
[5] U.S. Department of Commerce (2018), Economics and Statistics Administration U.S. CENSUS BUREAU, eid.international.trade.data@census.gov, and Bureau of Economic Analysis, U.S. Department of Commerce, InternationalAccounts@bea.gov

Fig. 1 Trade Balance of U.S. in Goods and Services



Source: U.S. Census Bureau, Economic Indicator Division

Fig. 2 Chinese Import Trend as Compared with Japan and Mexico 1970-2015
(Measured by import-GDP ratio, %)



Source: Douglass Irwin (2018) Economic Consequences of Trade Policy, Dartmouth College and NBER

2.1.1 Components of the U.S. Trade Balance in May 2018

In order to explore the component of trade balance of the U.S. we describe the data as follows: The exports of goods on Census basis increased $3.6 billion comprised the capital goods increased $2.0 billion; the civilian aircraft increased $1.9 billion; the foods, feeds, and beverages increased $1.7 billion; the soybeans increased $2.0 billion; and other goods increased $0.9 billion; the industrial supplies and materials decreased $1.3 billion; the other petroleum products decreased $0.9 billion respectively. In sum, the net balance of payments adjustments increased $0.1 billion.

The exports of services increased $0.4 billion to $70.4 billion; the transport increased $0.1 billion; the other business services, which include research and development services; professional and management services; and technical, trade-related, and other services increased $0.1 billion. The financial services increased $0.1 billion respectively. We should note also that in economics, we may interest in the constant price export and import to arrive at real goods measured in 2012 Dollars. The real goods deficit decreased $2.2 billion to $75.3 billion as result of re-evaluation of real exports of goods increased $2.6 billion to $153.2 billion and real imports of goods increased $0.4 billion to $228.5 billion respectively.

2.2 U.S. Trade Surplus/Deficit by Selected Countries and Areas: Monthly – Census Basis[6]

May 2018 figures show surpluses, in billions of dollars, with South and Central America ($3.6), Hong Kong ($2.8), Singapore ($0.9), Brazil ($0.8), United Kingdom ($0.6), and Saudi Arabia (less than $0.1).

The deficits were recorded, in billions of dollars, with **China** (**$32.0**), European Union ($11.9), Japan ($6.0), Mexico ($5.8), Germany ($5.7), Italy ($2.6), Canada ($2.2), India ($1.9), Taiwan ($1.4), South Korea ($1.4), France ($1.2), and OPEC ($0.2) respectively. The deficit with members of OPEC decreased $3.1 billion to $0.2 billion in May 2018. Exports increased $1.3 billion to $5.8 billion and imports decreased $1.9 billion to $6.0 billion. The deficit with the European Union decreased $1.3 billion to $11.9 billion in May. Exports increased $0.2 billion to $27.5 billion and imports decreased $1.2 billion to $39.3 billion. The *deficit with China increased $1.2 billion to $32.0 billion in May* 2018. Exports increased $0.6 billion to $11.7 billion and imports increased $1.8 billion to $43.7 billion.

Three-Month Moving Averages of goods and services deficit have decreased $4.2 billion to $45.4 billion for the three months ending in May 2018. Here the average exports have increased $3.1 billion to $212.4 billion while the average imports have decreased $1.1 billion to $257.9 billion. In terms of the year-over-year, the average goods and services deficit have increased $0.2 billion from the three months ending in May 2017.

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[6] www.census.gov/foreign-trade/Press-Release/current_press_release/index.html or www.bea.gov/newsreleases/international/trade/tradnewsrelease.htm. The full schedule is available in the Census Bureau's Economic Briefing Room at www.census.gov/economic-indicators/ or on BEA's Web site at www.bea.gov/newsreleases/news_release_schedule.htm.

This is result of the average exports increased $19.9 billion from May 2017 as compared with the average imports which have increased $20.1 billion from May 2017 respectively.

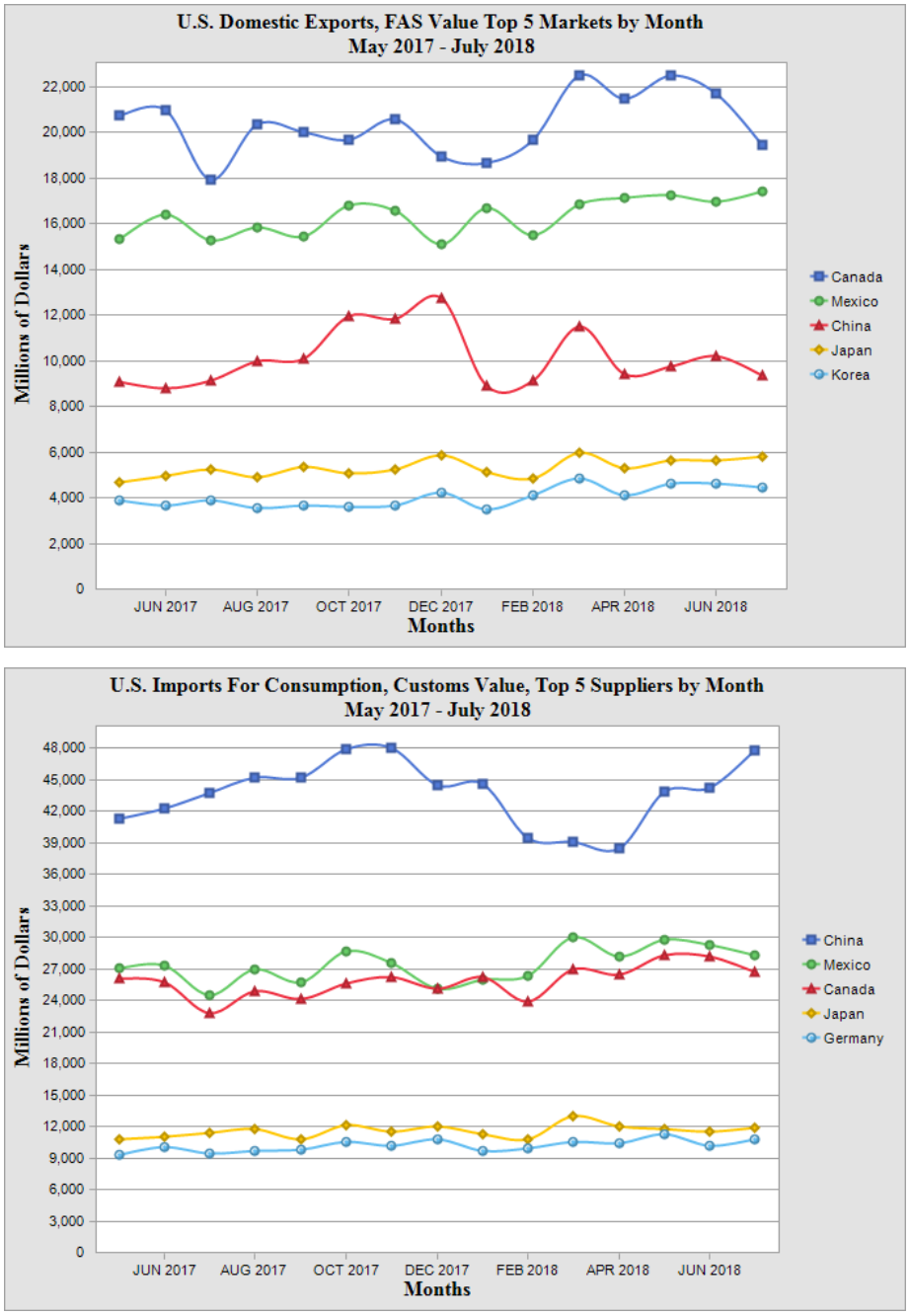
Table 1 has shown how the U.S. has her merchandise trade balance in deficit with trade partners. The claims by USTR and directives by the government may be here to say. In 2017, U.S. had trade balance deficit with China in a very large portion as compare with the second biggest and third trade partners like Mexico and Japan. The magnitude of trade deficit with China was 375.57 billion U.S. dollars as compared with 70.9 and 68.8 billion U.S. dollars with Mexico and Japan respectively. As Fig. 3 has signified that the U.S. tariff rates

Table 1 U.S. Merchandise Trade Balance by Partner Country 2017, in descending order of Trade Balance Deficit
(in Million U.S. Dollars)

	Partner Country	General Imports	Total Exports	Merchandise Trade Balance (-)
1	China	$505,470.00	$129,893.60	($375,576.40)
2	Mexico	$314,267.30	$243,314.40	($70,952.90)
3	Japan	$136,480.80	$67,605.10	($68,875.80)
4	Germany	$117,575.20	$53,896.80	($63,678.50)
5	Vietnam	$46,488.50	$8,133.40	($38,355.10)
6	Ireland	$48,796.80	$10,707.60	($38,089.30)
7	Italy	$49,917.50	$18,404.70	($31,512.80)
8	Malaysia	$37,395.50	$12,964.50	($24,431.00)
9	Korea	$71,444.30	$48,326.40	($23,117.80)
10	India	$48,603.00	$25,688.90	($22,914.10)
11	Thailand	$31,151.90	$10,991.60	($20,160.30)
12	Canada	$299,319.40	$282,265.10	($17,054.30)
13	Taiwan	$42,461.80	$25,729.50	($16,732.30)
14	France	$48,898.70	$33,595.50	($15,303.20)
15	Switzerland	$35,997.00	$21,684.80	($14,312.20)
16	Indonesia	$20,209.40	$6,863.80	($13,345.60)
17	Russia	$17,021.40	$6,998.50	($10,022.90)

Source: https://dataweb.usitc.gov/trade-data-reports/trde-by-partner
https://search.usa.gov/search?affiliate=www.usitc.gov&query=tariff%20on%20chinese%20import
Accessed November 9, 2018

Fig. 3 Movement of U.S. Domestic Exports and Imports with Top Trade Partners



It is clear from Fig. 3 that Canada and Mexico are two top market destinations for U.S. domestic exports in terms of values. The Chinese market as destination for U.S. export is in the third rank. On the contrary, the U.S. has to rely so much on Chinese import for her consumption. Import from China is much higher than the second rank by Canada and Mexico. Import from China has shown an upswings and downswings according to seasonality and cyclical movement. It is the gap between import and export which would alarm the rising trade tension between the U.S. and China if such large value of deficit is not remedied voluntarily. The U.S. government demands a more opening to import and self-restraint or stiff

tariffs imposition on China. The trade tension cannot be easily solved without negations. The option of retaliations would be devastated for both U.S.-China and other trade partners mention above.

It is interesting to see the evidence of trade deficit of the U.S. with countries by an economic integration. For example, during January to May 2018, the U.S. trade deficit is $55.6 billion with APEC, $30.1 billion with OECD, and $8.6 billion with ASEAN.[7] The deficit counted as a year-to-date or January-May of these economic groups would be multiplied to much large extent. It seems that the U.S. has her trade surplus only with the countries in the South and Central America (See Table 2).

Table 2 Trade Balance of Selected Economic Integration Regions in May 2018 (in million U.S. dollars)

Trade Partners	**Balance**		**Exports**		**Imports**			
	(Customs imports)		Domestic & Foreign, F.A.S. basis		Customs basis		C.I.F. basis	
	May	Year-to-Date	May	Year-to-Date	May	Year-to-Date	May	Year-to-Date
APEC	-55,660.80	-240,612.50	79,556.90	390,051.20	135,217.70	630,663.70	139,093.50	648,822.70
ASEAN	-8,656.90	-35,536.80	6,336.00	31,921.00	14,992.80	67,457.80	15,452.90	69,594.10
Asia - South	-2,966.70	-12,573.80	2,546.20	12,201.60	5,512.90	24,775.40	5,737.10	25,768.80
Asia Near East	-1,014.50	-2,951.90	5,276.50	26,396.60	6,291.00	29,348.40	6,507.70	30,409.30
Euro Area	-11,454.70	-49,132.90	17,243.80	87,405.00	28,698.50	136,537.90	29,352.20	139,578.00
Europe	-15,085.50	-66,481.40	27,911.20	136,075.50	42,996.70	202,557.00	44,004.30	207,263.50
European Union	-12,798.10	-57,363.80	23,714.10	116,517.30	36,512.20	173,881.10	37,343.20	177,759.00
North America	-8,756.60	-39,908.60	44,763.80	212,194.80	53,520.40	252,103.40	54,398.70	256,403.10
OECD	-30,113.40	-138,438.40	85,525.30	411,054.80	115,638.60	549,493.20	118,017.80	560,987.70
OPEC	-1,353.40	-8,138.70	5,107.60	24,181.00	6,461.10	32,319.70	6,744.00	33,778.70
Pacific Rim Countries	-41,173.80	-174,900.00	31,046.30	158,986.20	72,220.10	333,886.30	74,827.00	345,732.30
South/Central America	2,376.10	11,844.30	12,505.00	60,377.60	10,128.90	48,533.30	10,574.60	50,938.90
Twenty Latin American Republics	-5,714.40	-21,805.70	31,144.40	152,128.50	36,858.80	173,934.20	37,547.90	177,461.70

Source: www.census.gov/foreign-trade/Press-Release/current_press_release/index.html, and www.census.gov/economic-indicators/ or on BEA's Web site at www.bea.gov/newsreleases/news_release_schedule.htm.

2.3 Should China Enter into Trade Retaliation

[7] Members are not exclusive, one country can belong to more than one economic groups.

The Ministry of Finance of the People of Republic of China has drafted a retaliation list in response to the United States tariff announcement the same day. China will impose tariffs on the first list consists of ***545 items worth $34 billion to be implemented July 6, 2018***[8]**.** They are agricultural products, cars, and aquatic products respectively. The second list of 114 products (similar group with list 1) will face tariffs in the future, likely when the United States finalizes and implements its own second phase of tariffs.

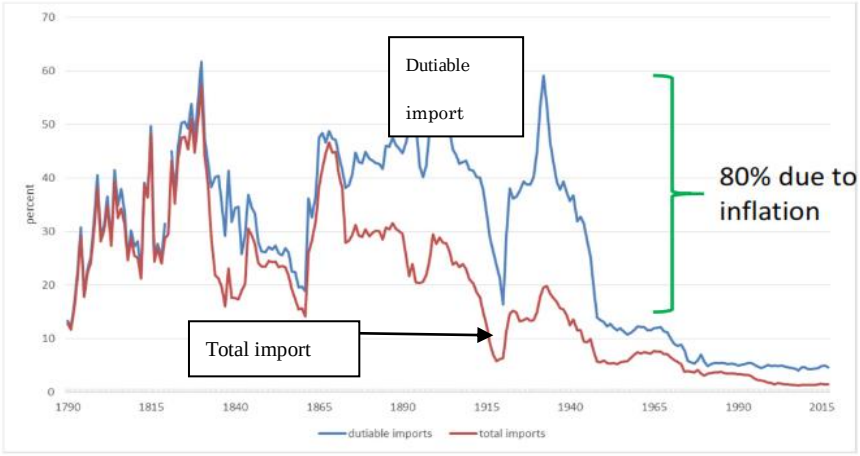
The preparation by Chinese government to counter the tariff increased by the U.S. was mainly concentrated in primary products except for cars. On the U.S. side, the differential tariff rates were imposed on steel, aluminum and solar panels as well as washing machine in the first round. There is threatening to raise tariff for the second round. Not only product import from China will be affected, it may hurt Canada and other trade partners to some extent. It is wonder if this tariff escalation would be the best policy to benefit the U.S. and her trade partners.

It may be unfair to the U.S. on the recent policy move to create trade tension unilaterally. If we see Fig. 4, Irwin (2018) has shown a long term average tariff rates adjustment of the U.S over last centuries 1770-2015. It should be clear that the U.S. average tariff trend had been declined over centuries. This has reflected the commitment to free trade led by the U.S. Especially. After WW II, the U.S. average tariff was as low as 10% and declined subsequently. The accusation of 'unfair' trade practice by trade partners may have some ground of evidence. We do not have the comparable Chinese tariff schedule but we guess that the rate would be much higher than the free trade in par with the U.S. provision. This accusation may imply case-by-case with other trade partners as well. In Fig. 5, Irwin (2018) has showed the estimated tariff rates imposed on products imported from China and other trade partners. They ranged from 10% on steel products, 25% on aluminum products (from China, Japan, and Russia). .The solar panel from China was subjected to 30% tariff, washing machine 20-50% of tariff. The U.S. has turned the tide from free trade hero to threatened shut door policy to cure her cute trade imbalance in 2018.

Rojas Cesar (2018) of CiTi has estimated the $200 billion tariffs are roughly 1% of US GDP and equivalent to 1.7% of Chinese GDP. It would impose on 42% of capital and 31% of consumer goods imports from China. If trade tensions escalated the economic damage could raise US inflation by 0.1pp and lower global growth by 0.2pp over a year. The list is mostly on the semiconductors, auto parts, and electrical equipment among main targets. In sum, the tariffs list focused mostly on capital goods (about 40% of the 6031 tariff lines, consisting 42% of total capital goods imports from China in 2017). It followed by consumer goods (30.5%, 30.9%; Figure 3). By NAICS categories, the tariffs list covers electrical machinery (24.5% of the 6031 tariff lines), mechanical machinery (19.7%), furniture (14.9%), vehicles (5.8%), iron and steel (3.9%), chemicals (2.4%), among others. By size of imports, the products that were most affected were semiconductors and electronic components ($37.2bn affected, 85% of total US imports from China), furniture and kitchen cabinets ($16.2bn, 99.9%), motor vehicle parts ($12.2bn, 88.8%), as well as electrical equipment and components (8.3bn, 60%).

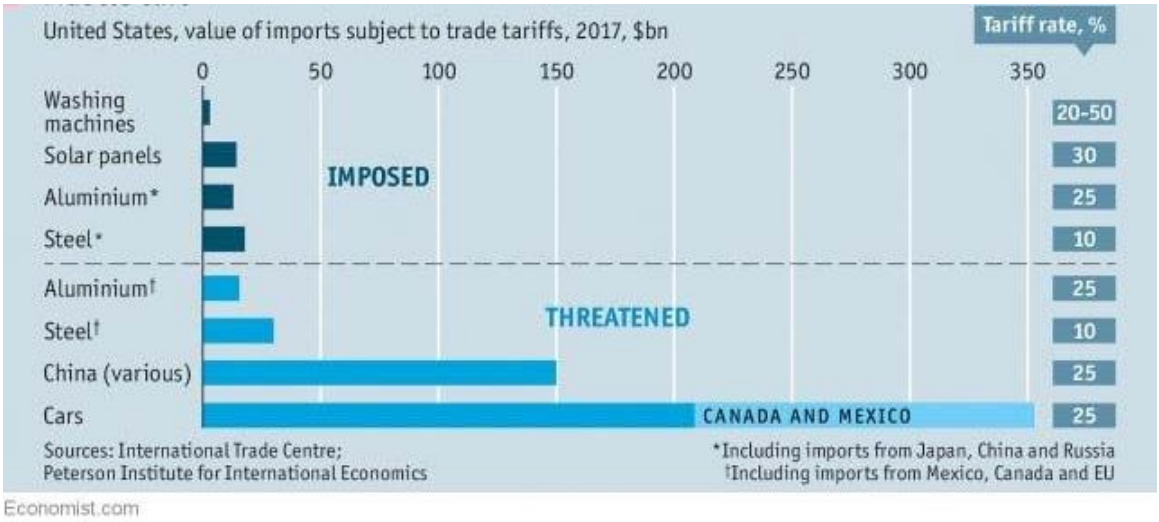
[8] The US-China Business Council released as of June 15, 2018.

Fig. 4 Average U.S. Tariff on Imports 1790-2015



Source: Douglass Irwin, Economic Consequences of Trade Policy, Dartmouth College and NBER, from Slide of Robert Fenestrate (2018)

Fig. 5 Tariff Imposed on Target Imports and Threats



Source: Douglass Irwin Economic Consequences of Trade Policy, Dartmouth College and NBE. Slide in Robert Feenstra (2018)

Rodrik (2018) a professor of international political economy at Harvard university has expressed his views after the July 6 where the U.S. government has imposed the trade restrictions – 25% tariffs on about $34 billion of Chinese imports, threaten further measures and withdrawing from the NAFTA. He has conjectured that China would softly retaliate to avoid full trade war. In fact, neither China nor EU has any gain from doing so. EU and China do not play the game of 'terms-of-trade' effects of tariffs by manipulating the export prices for the sake of their public policy on tax revenue or to stimulate employment. Main fiscal and monetary policy can do better than the protectionism instruments. This is the time for

Europe and China to stand tall. If retaliation is done world trade will shrink by $1 trillion U.S. dollars or 6 % of global trade volume. This need not be the case if goods are close substitutes. There are beneficiaries on the export side of some other countries. Thus, China and EU should not overly react to the threats.

2.4 The Re-Emergence of the CPTPP

Since the U.S. president has retreated from the ratification of TPP after his role in government. There is however a trade liberalization moved led by Japan, Canada, Australia, Mexico, New Zealand and Singapore namely the Comprehensive Pacific Rim Economic Partnership (CPTPP). Unlike the US's protectionism attitude, this CPTPP aims to restore the trade liberalizations, establishment of an open trade and investment system to expand the production network and investment. It has been withdrawn by the U.S. after changing policy.

The strengthened economic partnership in ASEAN has partially enlarged the market size of open regional and international trades. Thailand as one the main production cores of ASEAN has been benefited from free trade arrangement both at the multilateral level under the WTO as well as from regional integration of ASEAN in the name of AEC. Thailand has enjoyed the privileges of the agreement of the regional economic cooperation partnership (RECP) of the ASEAN10 plus 6[9].

The ASEAN10 and her 6 negotiation partners have been aware of the world trade protectionism trend and have concluded the 'market accesses in the Singapore meeting as of August 2018. This is how the negotiating partners will reduce tariff among themselves. The negotiating partners with FTA agreement will aim to reduce tariff by 90-92 percent of the whole tradable items, while those partners without FTA will try to reduce tariff schedule by 86 percent of whole tradable items respectively. The 2018 meeting has agreed to open the 'trade in service' and 'investment' access of sub-100 sectors in addition to the major 7 sectors. The sensitive issue like intellectual property right protection will be discussed in 2019 when Thailand will resume a chairman of the ASEAN10. Although Thailand has not been included in the negotiation of the TPP since the beginning, she has expressed her interest to join the new version of TPP led by Japan and the EU. As the ASEAN plus 6 (have been adopted as framework) have aimed for the trade liberalization in 2019. This may have further benefit from the impact of capital investment flow from China according to her "Belt and Road Initiative or BRI" vision. The re-emergence of the TPP or CPTPP initiative led by Japan may be able to counter the trade diversion by protectionism led by the U.S and may lead to negotiable Chinese position in further tariff reduction. This point will be further study in future.

3 Methodology of Analysis

[9] The 10 ASEAN member countries with the 6 negotiation partners namely the China PRC, India, Japan, Korea, Australia and New Zealand respectively.

In our study, we will apply a general equilibrium model of world trade to perform a comparative statics analysis. The model is run under the GTAP[10] license. The structure of model set and variables as well as explanatory documents can be found in Coronga and Hertel, et al (2017) an overview of the gtap 9 data base by Angel Aguiar (2018). al.

3.1 Model Structure[11]

In our model, we follow the GTAP 9 notations, structure, and data of trade matrices 2011. There are 6 regions with 10 economic sectors.

1) Regions Classification

No	G1:Selected Trade Partners/ Countries 6 from 140	G2:Regroup 6/140	Description
1	USA	USA	United State of America
2	JPN	KOR	Japan, Korea
3	CHN	CHN	China
4	ASEAN	THA	South East Asia (ASEAN), Thailand
5	-	CLV	Cambodia, Laos, Vietnam
5	EU	-	European Union
6	ROW	ROW	Rest of the world

2) Sector Classification

No	Selected 10 Sector out of 57 sectors	Description
1	GrainsCrops	Wheat, Cereal, Grains, Vegetables and Fruits
2	MeatLstk	Meat and Meat Products
3	Extraction	Extraction
4	ProcFood	Processes Food
5	TextWapp	Textiles and Wearing Apparel
6	LightMnfc	Light Manufactures
7	HeavyMnfc	Heavy Manufactures
9	Financial	Financial Services and related
10	OthServices	Other Services

[10] GTAP stands for Global Trade Analysis Project by the University of Purdue. The GTAP run in this study is under the single license to Kitti Limskul, Saitama University.

[11] https://www.gtap.agecon.purdue.edu/models/setsVariables.asp

3) Primary Factor Composition

No	factors market variables	ETRAE (Mobility)
1	Land	Sticky Mobile
2	Unskilled Labor	Mobile
3	Skilled Labor	Mobile
4	Capital	Mobile
5	Natural Resource	Immobile

Note: the closer is to set 'ETRAE' to zero. It is the condition where the immobile of factors between alternative uses is in equilibrium.

Equilibrium Condition in Goods market, the '*Numeraire*' and Closure

There is a single equilibrium condition for the goods market that determines the domestic market price after the Domestic supply of good across domestic agents (firms, private households, government and investment—excluding margin services exporters) plus the sum of exports to all export destinations. The equilibrium market price of commodity *c* in region *r is finally determined when the demand is equated with the* commodity supply *QCc,r*.

Any single price, or price index, could be chosen as the model price anchor or the numeraire. *Here GTAP selects the* global price index of factor remuneration which is aggregated over all endowments, activities and regions. It represents the average global return to endowments, where the weights represent the base level endowment remuneration shares in global factor remuneration. The Walras' Law enforced by the global saving=global investment identity.

Since we concentrate in the trade tension impact, the GTAP model just fits our objective. The model represents the Circular flow of inter-regional economy within World trading system. The main drivers of model are agents such as private household, and producers with government policy regime. Households are holders of saving and invest in production activities. The producer and suppliers of goods and services act on behalf of households who are both consumers and investors. The government who act as public provider of public goods will manage the economy with tax revenue from consumption and investment. The world would have both world saving equalizes with world investment, the current account would be balanced in equilibrium despite there would be trade deficit or surplus of goods and services. The price mechanism would be working to clear all markets of goods and services, factors markets in the real economy. Clearly, the trade deficit by U.S. would result in the trade surplus by trading partners. The current account balance at world level does not guarantee the current account balance by one or many trade partners. The model is structured in this setting such that we can perform a 'comparative statics analyses of different tariff regime of the trade tension scenarios between U.S, China as well as other trade partners using GTAP.

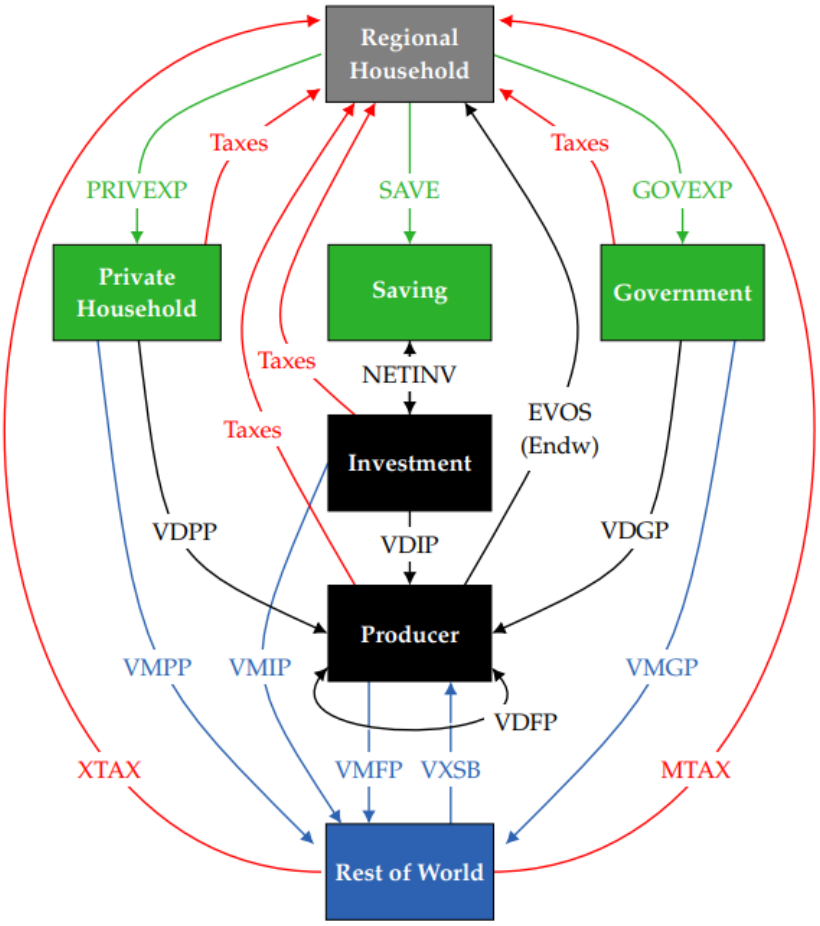


Fig. 6 Model Structure and the Circular flow of inter-regional economy

3.2 Key Macro Variables in the Base line 2011

In this section, we show the base line data of GTAP as of 2011. We extrapolate the consistent structure of world trade and those of all trade partners with the U.S. This assumption is important for interpretation of direction of change (not level) of economic impact after the imposition of tariff by the U.S. in 2018.

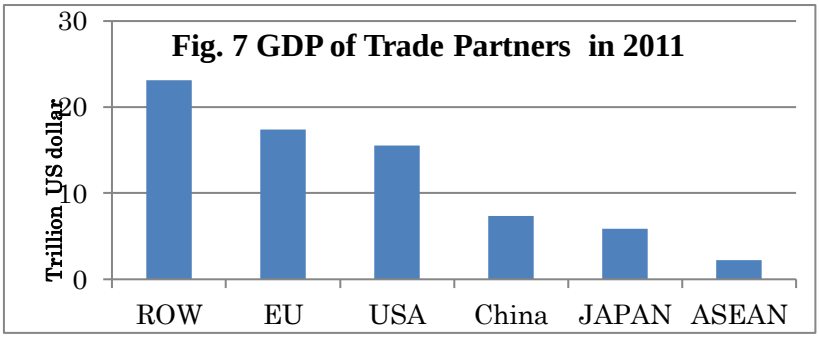


Table 3 Component of Aggregate Demand, GDP in 2011 (measured in million U.S. dollars)						
Trade Partners	**1 consumption**	**2 investment**	**3 government exp.**	**4 export**	**5 import**	**GDP**
1China	2,658,237	3,375,387	988,370.1	1,951,878	-1,651,997	7,321,875
2 USA	10,887,626	2,874,598	2,567,570	1,880,767	-2,676,776	15,533,785
3 Japan	3,523,851	1,203,860	1,191,584	943,337.1	-956,998	5,905,634
4 ASEAN	1,281,183	624,398.6	239,719.5	1,229,284	-1,165,776	2,208,810
5 EU	10,373,491	3,282,404	3,854,809	6,820,418	-6,962,533	17,368,589
6 Rest of World	13,399,410	5,434,147	3,716,501	7,328,251	-6,739,856	23,138,453

Trade Partners	**POP in 2011** (million persons)
China	1,344.13
USA	311.5826
Japan	127.8173
ASEAN	602.2189
EU	475.9868
Rest of the World	4,093.375

Source: GTAP2011

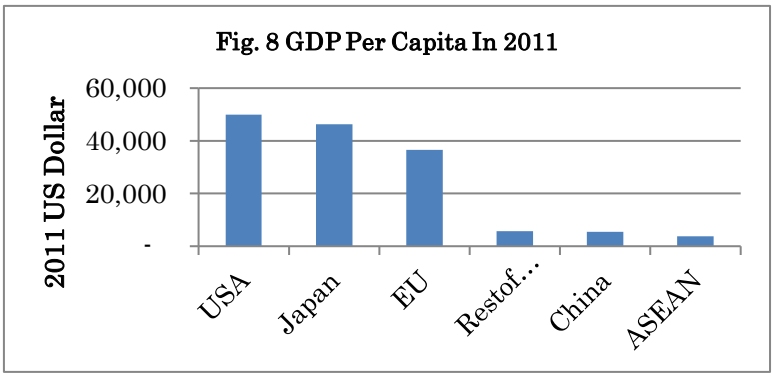


Table 4 Factor Input in the Base line 2011						
Factors/Primary	China	USA	Japan	ASEAN	EU	Rest of the World
1 Land	157,422.5	43,399.9	9,358.1	93,250.1	33,496	332,392.3

2Unskilled labor	2,630,077	42,03842	1,423,169	525,692.5	3,474,979	5,082,232
3 Skilled labor	1,075,252	616,0267	1,594,205	341,773.8	5,037,883	5,122,305
4 Capital	2,662,098	4,021,949	2,349,900	1,063,938	6,249,752	9,773,808
5Natutal Resource	112,455.8	83,493	5,252.3	56,851.2	45,876.2	717,136.3

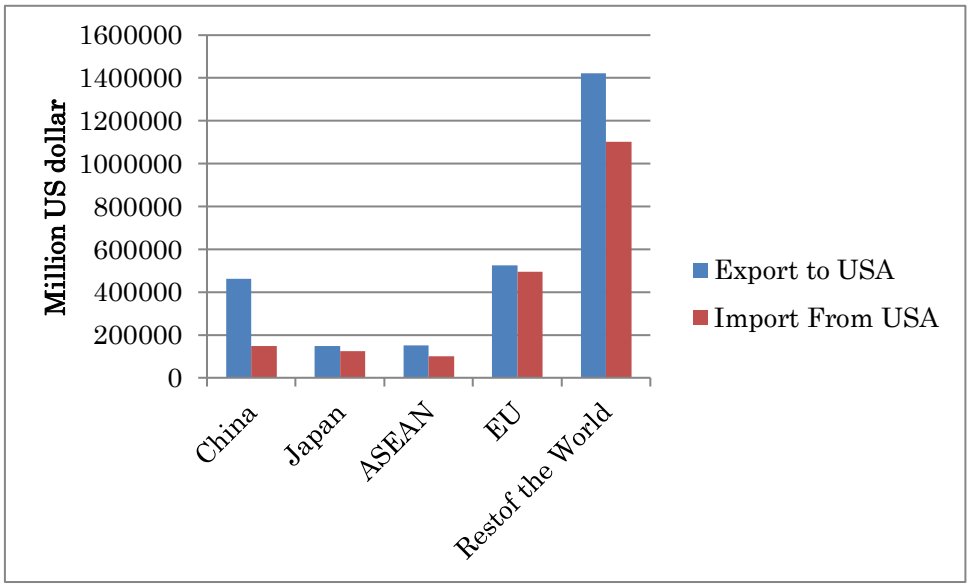
Note: Factor Inputs are measured with respect to GTAP units of measurement.
Source: GTAP2011

Table 5 Current Account in the Base Case 2011

Trade Partners	1 export	2 imp	Total
China	1,951,878	-1,651,997	299,881.1
USA	1,880,767	-2,676,776	-796,009
Japan	943,337.1	-956,998	-13,660.8
ASEAN	122,9284	-1,165,776	63,508.13
EU	6,820,418	-6,962,533	-142,115
Rest of the World	7,328,251	-6,739,856	588,394.5

Source: GTAP2011

Trade Matrix of USA by Trade Partners



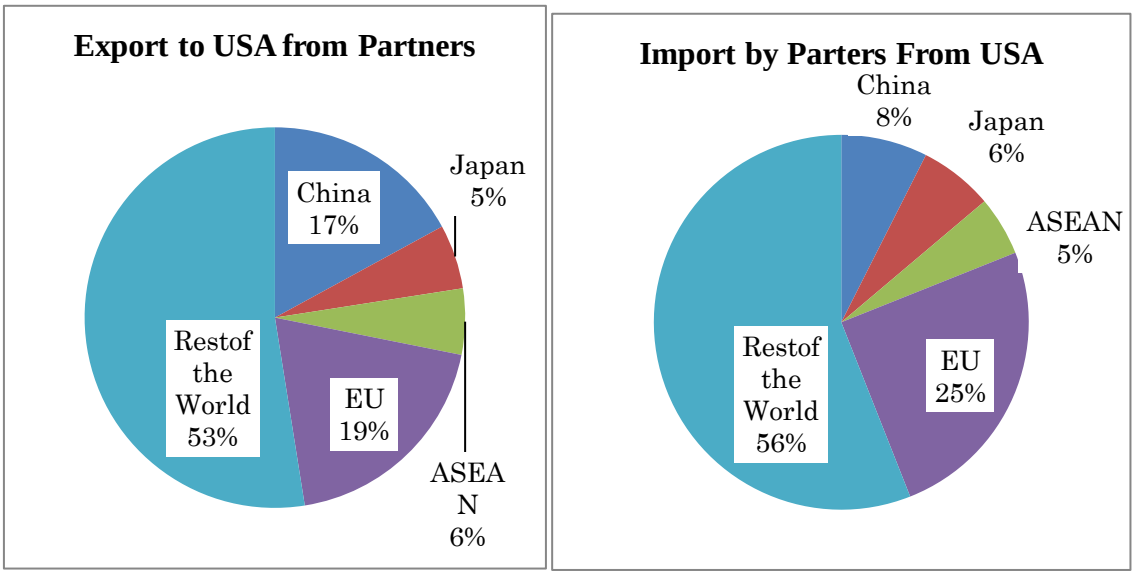


Fig. 9 Bilateral Trade Matrix between US and Trade Partners in 2011 GTAP Data Base

Table 6.1 Export From Partners to the U.S. by Sector/Commodities Group in GTAP 2011 (million U.S. dollars)

Sector	China	Japan	ASEAN	EU	Rest of the World	**Total**
1 GrainsCrops	874.1	40.1	2,127.3	1,257.6	36,298.7	**40,597.8**
2 Meatlstk	589.7	10.4	163.4	915.1	9590.8	**11,269.5**
3 Extraction	793.4	90.3	1,856.3	1,712.3	351,792.8	**356,245.1**
4 ProcFood	6,392.7	852.5	12,681.5	20,630.9	46,283.4	**86,841**
5 TextWapp	52,600.3	755.8	23,672.4	6,599	54,628.3	**138,255.7**
6 LightMnfc	97,022.8	49,516.3	12,310.5	79,511.3	254,382.3	**492,743.2**
7 HeavyMnfc	288,852.2	82,778.5	80,915.5	257,503.4	481,562.5	**1,191,612**
8 Financial	5403.9	6733.8	7359	80704.6	82659.1	**182860.4**
9 OthServices	9239	7318.4	10780.9	74707.5	103950.4	**205996.1**
Total	**461768**	**148096.1**	**151866.7**	**523541.7**	**1421148**	**2706421**

Table 6.2 Partners Import from USA by Sector/Commodities Group in GTAP 2011 (million U.S. dollars)

Sector	China	Japan	ASEAN	EU	Rest of the World	**Total**
1 GrainsCrops	20,779.1	1,1782	6,495.3	6,016.4	59,345.5	**104,418.2**
2 Meatlstk	3,254.1	6,024.8	660.4	1,138	18,670.7	**29,748.1**
3 Extraction	4,695.1	2,534	256.1	8,169.4	19,889.3	**35,543.9**
4 ProcFood	3,836.2	8,200.9	4,501	7,139.1	43,322.6	**66,999.8**
5 TextWapp	1,448.6	670.8	586.5	2,819.5	16,224.5	**21,749.8**
6 LightMnfc	24,273.4	7,460.5	8,019.1	49,234.2	193,737	**282,724**

7 HeavyMnfc	77,667.4	48,049.8	624,46.2	234,203.8	578,460.1	**1,000,827**
8 Financial	3,937.2	20,873	7,538.1	99,129.7	61,950.2	**193,428.2**
9 OthServices	6,979.1	20,054.5	10,242.2	85,754.4	111,223.8	**234,254.1**
Total	**146,870.1**	**125,650.2**	**100,744.8**	**493,604.5**	**1102,824**	**196,9693**

Source: GTAP2011

Table 7 TOP 5 Trade between China and USA in GTAP2011

Sector	**Export to USA**	Sector	**Import from USA**
40 Electronic equipment	29.29%	41 Machinery and equipment nec	18.49%
41 Machinery and equipment nec	18.06%	33 Chemical, rubber, plastic products	16.84%
42 Manufactures nec	7.55%	5 Oil seeds	10.72%
33 Chemical, rubber, plastic products	7.16%	40 Electronic equipment	7.06%
29 Leather products	6.56%	38 Motor vehicles and parts	6.01%
Others	31.38%	Others	40.88%

Note: Sector name follows sector number

Source: GTAP2011

3.3 Model Simulations

Guideline for Trade Tension Reconciliation Scenarios

In order to draw simulation scenarios, we have rather listen to what is rationale policy to solve the Chinese-American tension by middle of the road think tank. We have quoted the proposal from the Chinese side. According to the Center for China & Globalization (2018), they views China-US Trade Relations and Challenges from the past, present, and future. They seek for feasible policy options. Here is the quotation of their executive summary.

'...anniversary of China Reform and Opening-up and 40 years since the establishment of US-China diplomatic ties. The trade and economic relationship has served as ballast in US-China relations, helping the two countries navigate through difficult waters and providing great prosperity to both societies. Cooperation between the two countries on trade and investment is built on their respective comparative This year marks the 40'

'. ... witnessed the continued growth of interdependent and mutually beneficial ties between China and the United States. The relations between the world two largest economies, however, are now at a crossroads, beset by the escalating trade conflict. ..... So far, the crosshairs between the two sides have generated damage to both China and US jobs and economies .

The CCG has foreseen three options. The first (best-case) scenario will be when the two sides reach an agreement and subsequently halt the tariff measures. . The second (medium) scenario forecasts a longer-term trade conflict and contained; and the third (worse-case) scenario projects continued escalation into an all-out trade war. The CCG puts forward the following recommendations for both China and US policymakers:

1. Build on the agreements already reached through bilateral negotiations and work to increase Sino-US bilateral trade and opportunities in *services trade*. As the world of two largest economies, the US and China collectively account for almost half of global GDP, underwriting global prosperity. A trade war between the two will inevitably lead to a global decline. 2. Forge a new bilateral agreement on intellectual property rights (IPR). 3. Increase opportunities for US companies in China Manufacturing 2025. Washington should not lose sight of the fact that China is not adopting a more confrontational stance toward the US and is always seeking ways to foster win-win cooperation with America to serve its development goals. 4. Seek further tariff reduction through bilateral negotiations and re-engage in BIT talks. 5. Build on the foundation of domestic reforms to rebalance the Chinese and US economies as ways to achieve trade balance. 6. Update the way that Sino-US trade is measured to more accurately reflect the value derived by each side. 7. Expand cooperation in infrastructure and explore creating a Sino-US infrastructure investment fund. 8. China and the US can work together to reform the WTO. 9. Strengthen Sino-US cooperation between provinces and states. 10. Develop the role of Track II diplomacy and promote bilateral dialogue.

BASE Line Scenario:

Business as Usual Assuming Trade and Industrial Structure as of 2011 will prolong to the 2017. That is to say, the trade coefficients i.e., constant elasticity of substitution (CES) between factors of production in , utility and demand, and choices between the pairs of import substitutions of goods between countries of trade partners in Armington's specification, the Constant Elasticity of Transformation (CET) respectively. The price ratio of any goods pair will be consistently changed with the relative prices in the base period. In short, the rate of change, the ratios are proportional and still indicate trade and industrial structure. However, as the competitiveness of the U.S. has been deteriorated over time especially after 2010-2017, it is assumed that the domestic resource cost (DRC) has been increased to earn additional dollar from export. The Relative Comparative Advantage of the Chinese imports implies a relatively low import price compared with the import price from rest of the world and in particular the local production by U.S. firms. The favorable U.S. fiscal and monetary expansion has induced more consumption of imported Chinese product (the *income effect*) that works to support the *price effect* of Chinese product in U.S. If nothing would be done the U.S. will face chronic trade deficit ballooning over controlled limit. The choices are *either* trade restriction of import from China i.e., restrictive quota of Chinese import into U.S. the amount of which

exceed the optimal scale that U.S. can compete or imposition of tariff on Chinese import and perhaps on the other trade partners with exploding trade surplus with U.S.

The rationale we mentioned above is to confirm that our model has a well-defined structure with parameters, consistent matrices representing the 2017 trade and industry of trading partners used for our analysis. Thus, the comparative statics of results would be sufficed to explain the direction as well relative magnitude. The level magnitude can be calibrated when it is necessary.

The **SIM1** in our analysis is scenario when the U.S. has decided to *unilaterally* impose the tariff of 10% on the import of the heavy manufacturing (heavyMnfc) goods from China to U.S. A '10%' implies an increase of 10 percentage point from the origin base rate in 2017 (replication of the 2011 rate in the data base).

The **SIM2** in our model is the scenario when only China plays a compromised game by reducing her import tariff *unilaterally* 20% from previous existing tariff schedule. This is to follow the essence of CCG and has been tried by Ju, J. et al (2018).

The **SIM3 is a scenario of trade tension escalation as a tit-for-tat between two trade partners. China will now push her retaliation**. The Chinese will raise a 10% of tariff from its base line to counter the U.S. moves. We assume that China will impose tariff the grains and crops import to China 'GrainsCrops' and the heavy manufacturing goods 'heavyMnfc'.

Model's parameter shocks are formally done in numerical values as in the SIM1 SIM2 and SIM3 Scenarios[12]**, we** then measure the Effect on the Real GDP in percentage change from Base Scenario. We also show the level of changes in million U.S. dollars as well.

SIM1 Scenario: U.S. Imposed Tariff on Import of Heavy Manufacturing Goods from China's (Variable= 'heavyMnfc') an increase of *10% from base rate*. (rTMS, %)

Sectors	rTMS, %	Increase %	Sector	rTMS, %	Increase %
1 GrainsCrops	1.4		6 LightMnfc	5	
2 Meatlstk	0.7		7 HeavyMnfc	1.1	→10
3 Extraction	0.3		8 Financial	0	
4 ProcFood	2.8		9 OthServices	0	
5 TextWapp	10.4		Total	21.7	

[12] We have shock parameters tms ("HeavyMnfc","chn","usa"), tms (TRAD_COMM,REG,"chn") , tms("HeavyMnfc","chn","usa")

4. Simulation Result of Scenario SIM1

Fig . 10 Model Simulation SIM1 measured as % of GDP Change from Base Case

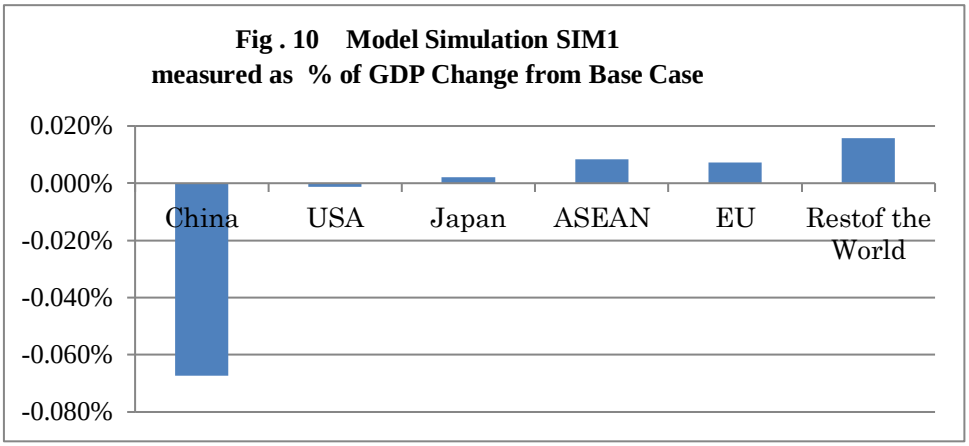
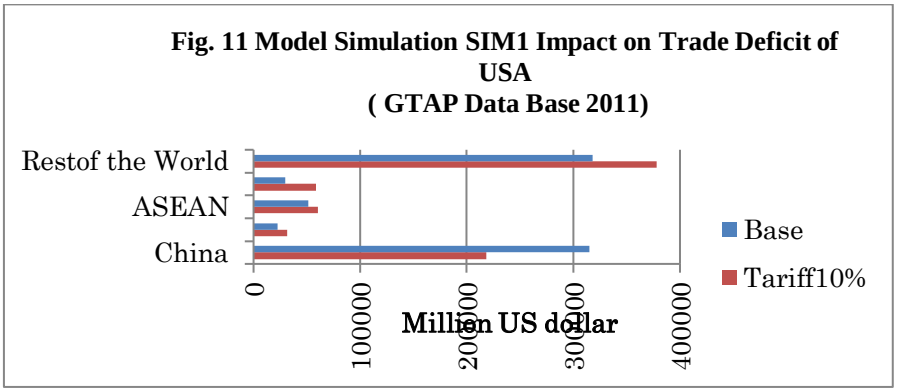


Fig. 11 Model Simulation SIM1 Impact on Trade Deficit of USA (GTAP Data Base 2011)



4.1 Simulation Result of SIM1 SIM2 and SIM3

Table 8 Model Simulation Impact SIM1 SIM2 SIM3 on Real GDP of Trade Partners, measured in % change from the Base Case

Trade Partners	U.S. raises Tariff10% unilaterally (SIM1)	U.S. raises Tariff10% China unilaterally tariff cut (SIM2)	U.S. raises Tariff 10% China retaliation with tariff increase (SIM3)
China	-0.067%	0.001%	-0.090%
USA	-0.001%	0.000%	-0.005%
Japan	0.002%	0.004%	0.004%

ASEAN	0.008%	0.005%	0.009%
EU	0.007%	0.009%	0.008%
Rest of the World	0.016%	0.017%	0.018%

Note: Applied GTAP model with data base of 2011. The simulation result is applied for the Trade Tension of 2018 assuming no Trade structural change 2011-2018.

Fig. 12 Model Simulaiton SIM2 SIM3 Impact on the Real GDP, measured in % change compared with Base case

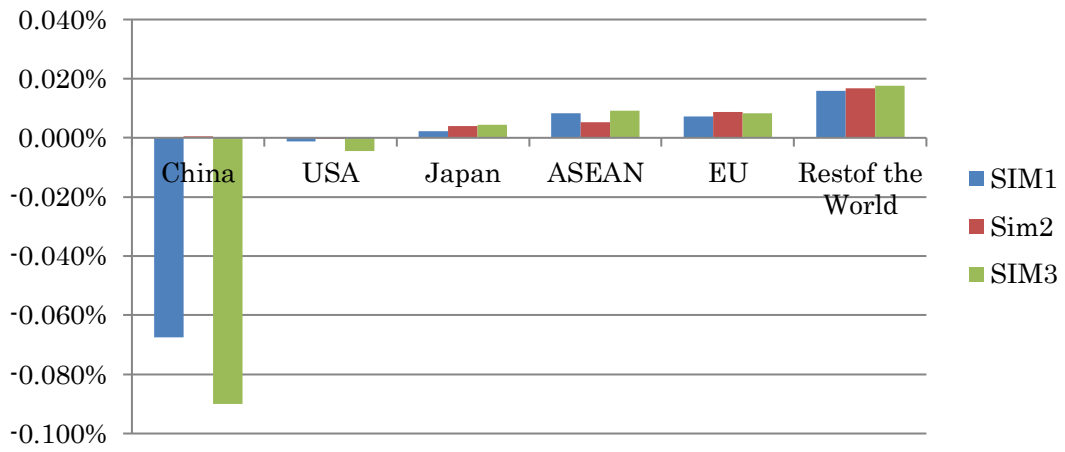


Table 9 Economic Impact of Trade Tension on Private Consumption (% Change from base case)

Scenarios	China	US	Japan	ASEAN	EU	Rest of the World
U.S. raises Tariff10% unilaterally (SIM1)	-1.32%	0.38%	0.15%	0.16%	0.15%	0.18%
U.S. raises Tariff10% China unilaterally tariff cut (SIM2)	-1.59%	0.37%	0.30%	0.09%	0.16%	0.16%
U.S. raises Tariff 10% China retaliation with tariff increase (SIM3)	-1.18%	0.13%	0.29%	0.25%	0.21%	0.25%

Note: Applied GTAP model with data base of 2011. The simulation result is applied for the Trade Tension of 2018 assuming no Trade structural change 2011-2018.

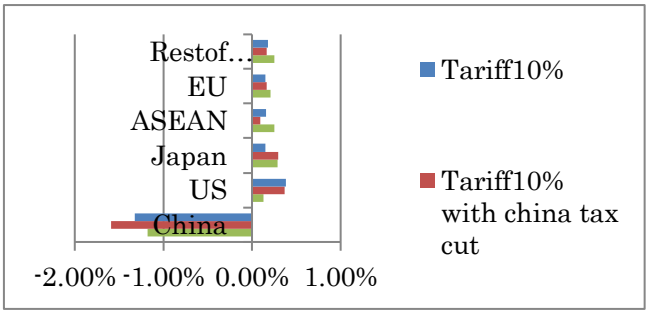


Table 10 Economic Impact of Trade Tension on Price: Inflation (measured by % change in GDP Deflator from base case)			
Trade Partners	U.S. raises Tariff10% unilaterally (SIM1)	U.S. raises Tariff10% China complies with tariff cut (SIM2)	U.S. raises Tariff 10% China retaliation with rising tariff (SIM3)
China	-1.332%	-1.594%	-1.194%
USA	0.350%	0.342%	0.088%
Japan	0.160%	0.308%	0.296%
ASEAN	0.169%	0.102%	0.265%
EU	0.156%	0.173%	0.217%
Rest of World	0.179%	0.166%	0.254%
Note: Applied GTAP model with data base of 2011. The simulation result is applied for the Trade Tension of 2018 assuming no Trade structural change 2011-2018.			

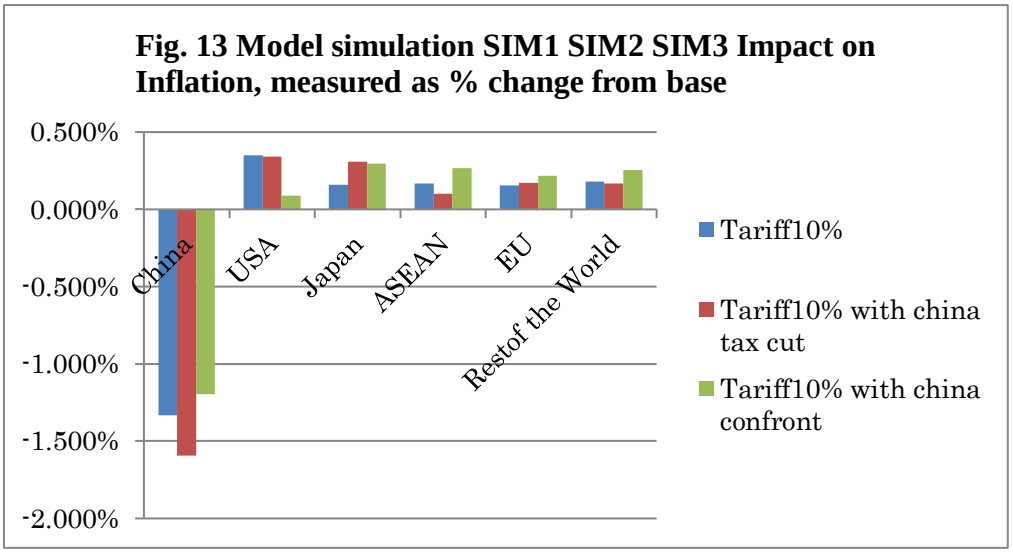


Table 11 Effect to Current Account of Trade Partners based on GTAP Data base in 2011 (in Millions US Dollars)							
Trade Partners	BASE	SIM1	SIM2	SIM3	SIM1	SIM2	SIM3
	Impact on the Current Account in Million US dollars				In% change from Base case		
China	299,881.1	305,651.6	299,623.5	308,475.1	1.92%	-0.09%	2.87%
USA	-796,009	-779,371	-777,891	-771,226	-2.09%	-2.28%	-3.11%
Japan	-13,660.8	-17,100.4	-17,417.4	-18,991.6	25.18%	27.50%	39.02%
ASEAN	63,508.13	62,214.4	62,650.3	61,705.8	-2.04%	-1.35%	-2.84%

EU	-142,115	-150,079	-148,461	-153,834	5.60%	4.47%	8.25%
Rest of the World	588,394.5	578,684	581,494.5	573,870	-1.65%	-1.17%	-2.47%

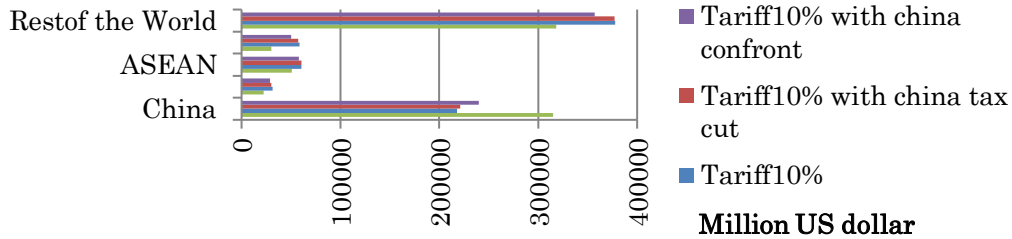
Note: 1) This current account amount is value in 2011 not 2017. It is for references. The relevant simulation result is percentage change from base line before tension. The negative % change would imply the decrease of current account deficit if base scenario is in deficit. For example, the US current account was in deficit 796.009 billion US dollars. The SIM1 percentage change is -2.109 would imply a decrease of deficit by 2.09 percent from base case.
2) SIM1, SIM2, SIM3 definition see previous tables above.

4.2 Effect to Trade deficit of USA with trade partner: Regrouping countries with Thailand and CLV

Simulation Impact after the U.S. imposed a 10% tariff increase from base rate on heavy industrial import from China

Given the BASE case scenario (Business as Usual) now after regrouping the trade partners to explicitly include Thailand, Cambodia-Laos-Vietnam, Taiwan, Korea and China we perform model simulation. We assume the unilaterally increase tariff by 10% (SIM1) as before on Chinese import of heavy industrial manufacturing into the U.S. and further conjecture that U.S. may threaten further by imposing a 20 % tariff on heavy industrial products. The product coverage in GTAP may be broader than those in the USTR's target goods. But the direction may be sufficient to see the impact.

Fig. 14 Model Simulation SIM1 SIM2 SIM3 on Trade Deficit of USA with Partners



It is interesting to see that the unilateral tariff imposed on Chinese product in our analysis as instructed by the U.S. policy direction has caused more harm to China's growth and employment (not shown) in both scenarios. As we have expected, the Chinese created GVC has favorable impact to Thailand, CLV trade partners. The higher tariff imposed on Chinese imports of manufacturing goods, cost of tariff would be transferred to intermediate goods' price and finally to consumers. The importers would avoid this dwindle profit and business size by importing from other trade partners especially the developing countries who is in the global supply chain. Chinese will lose her GDP growth, Korea and rest of the world will gain a little

while Taiwan would be in status quo. Remarkable gain can be seen from Vietnam and other two neighbors. The U.S. economy has not gain from this trade tension. Her GDP growth was not change from the base case. In other words, the trade policy of the U.S. may help partial group of industry but the overall GDP growth has been cancelled out to the nil. The size of current account deficit has been decreased as expected. This is occurred at the cost trade diversion and slows down of U.S. economy. U.S. policy may be successful with China but it has indirect repercussion of increase imbalance with other trade partners. The U.S. policy is evaluated with fewer gains on growth and employment but less trade deficit with China and improvement of the current account.

China is heavily affected by the U.S. policy in terms of negative GDP growth. But, this does not mean the overall Chinese trade and current account would be deficit. China has current account improvement position even having shrinking economy. As result of the slowed down, her demand for import is expected to decrease faster than the decrease in her export. This surely will have repercussion on the export of goods to Chinese market from her GVC partners. Here, Thailand, Korea and Taiwan still have current account from previous surplus position after the U.S. action. But their surplus has been declined as imports growth increase more rapidly than export growth. The Cambodia, Laos, and Vietnam have their current account deterioration from previous deficit position. The rest of world has incurred a lower current account surplus owing as GDP still increases minimally.

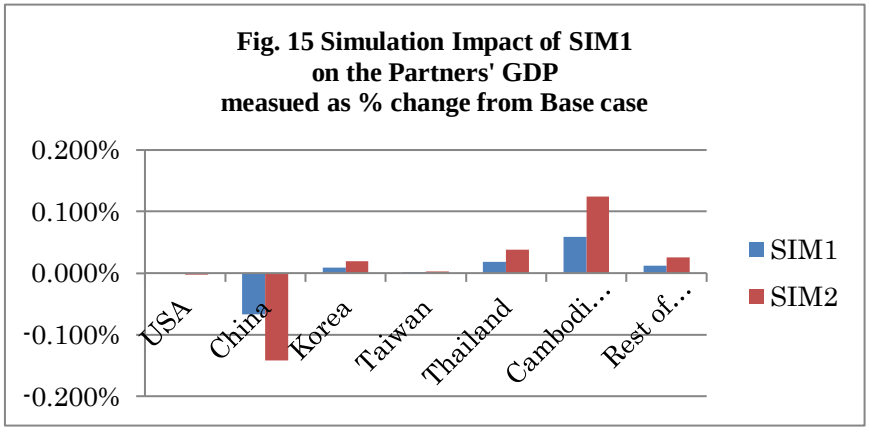


Table 12 Simulation Impact of SIM1 and SIM12 on GDP Growth		
Trade Partners	**SIM1**	**SIM12**
USA	-0.001%	-0.002%
China	-0.067%	-0.142%
Korea	0.009%	0.020%
Taiwan	0.001%	0.003%
Thailand	0.018%	0.038%

Cambodia, Laos, and Vietnam	0.059%	0.124%
Rest of the world	0.012%	0.026%

Note: SIM1-SIM12: Increase tariff on import of China's heavy manufacturing goods to USA at 10% -20% from base rate.

Table 13 Export and Import of Trade Partners as Result of SIM1 and SIM12

	Export		**Import**	
Trade	**SIM1**	**SIM 12**	**SIM1**	**SIM 12**
USA	-1.36%	-2.88%	-1.57%	-3.33%
China	-2.14%	-4.54%	-2.88%	-6.10%
Korea	0.05%	0.10%	0.15%	0.32%
Taiwan	0.04%	0.09%	0.09%	0.18%
Thailand	0.09%	0.18%	0.22%	0.46%
Cambodia, Laos, and Vietnam	-0.26%	-0.55%	0.20%	0.42%
Rest of the world	0.11%	0.22%	0.25%	0.53%

Table 14 Current Account Deficit of Trade Partners

	Million US Dollar			% Change from base case	
Trade Partners	BASE	SIM1	SIM12	SIM1	SIM12
USA	-796,008	-779,507	-761,028	-2.073%	-4.394%
China	299,881	305,640	312,089	1.920%	4.071%
Korea	22,743	22,129	21,442	-2.699%	-5.722%
Taiwan	76,776	76,675	76,563	-0.131%	-0.277%
Thailand	6,885	6,565	6,207	-4.645%	-9.848%
Cambodia, Laos, and Vietnam	-26,141	-26,698	-27,322	2.131%	4.517%
Rest of the world	415,864	395,196	372,049	-4.970%	-10.536%

Note: if country is in current account deficit such as U.S., and CLV the *negative* % change of trade deficit means the current account improvement for U.S. but the positive % change would mean a deterioration of current account for CLV respectively. The Country who has current account surplus like Korea, Thailand, and Taiwan, the *negative* % change means on the opposite that is current account deterioration from base surplus. The country like China which has current account surplus a positive % change implies an improvement.

4.3 Policy Discussion

We have performed a model simulation with GTAP Model with its data of 2011. We have assumption that the international trade structure between 2011 and 2017 is not abruptly different in structure. That is to say the U.S. has been a free market for rest of the world. She has never before trade deficit at alarming size. Especially, the U.S. has critical position with ballooning trade deficit with China. The U.S. government has

imposed 10-20% of tariff on imports from China. We have done a model simulation with GTAP model to seek for possible solutions. Firstly, the unilaterally imposition of tariff by U.S. (SIM1 10%) will hurt China and even the U.S. growth of GDP. Interestingly, China although has her GDP growth decreased from base period (pre tariff imposition) China still has overall current account surplus with rest of the world. The unilaterally imposition of tariff by U.S. will gain by trade partners through GVC relationships. Japan, EU and ASEAN have positive growth performance after the unilaterally imposition of tariff by U.S.

We have tried to see China will response by imposing in retaliation of increase tariff on US goods by 10% (SIM3). The result is clear that China will have deeper negative growth of GDP with the U.S. The trade war does not produce any gain for the two trade partners. The other trade partners sill gain from this scenario but with a lesser extent. We have followed the positive response by China via the reduction of tariff for all trade partners (SIM3, 10%). Clearly it will gain all other trade partners but with the cost of Chinese GDP decreases more than the retaliation episode. U.S. will not gain so much form this tariff reduction by China as her GDP is negatively responded.

We have tried to regroup the trade partners to see impact on Thailand, Vietnam-Laos-Cambodia, Korea, Taiwan, and Rest of the world. It is clearly shown that these countries although may gain in their GDP growth position after the U.S. penalizes China. The effect on current accounts has several results. (see above discussion in 4.2).

We have not taken into account the effort of the CPTPP led by Japan. The new round of talks and ratifications of agreement if proceeding would mean a counter to the U.S. move towards protectionism. This is trade liberalization that will have positive impact on world trade and growth. The magnitude of which is still not clear but positive. Only the U.S. position of trade tension if she continues will induce a trade diversion effect at the world scale. If the trade negotiation between China and the U.S. is not effective as soon as by early next year, 2019, we may see a higher degree of trade tension. It may be expanding towards trade war. This is a devastated scenarios that finally causing a world recessing and depression.

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