The Impact of The United States-China Trade War on The Rest of World Economy

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Abstract
This study discusses the impact of the trade war between China and the United States due to the heating up of relations between the two countries and its impact on the Rest of the World (ROW), which will be seen based on economic performance through GDP, import exports, and employment. Using GTAP software by performing two simulations, the results of simulation 1 value of Real GDP of Rest of World decreased. The highest labor absorption was in the TextWapp sector, with the highest exports in the LightMnfc sector, in simulation 2 the value of Real GDP of Rest of the World increased, absorption the highest workforce in the TransComm sector, with the highest exports in the TransComm sector. The trade war between the United States and China affects the world economy globally, as evidenced by changes in the increase and decrease in GDP, employment and commodity exports in the rest of the world.
Keywords: trade war, economy impact, GTAP analysis, rest of world, policy

1. Introduction

In the current era of globalization, trading activities are considered very important to advance the welfare of mankind, from the existence of a trade, people will get convenience in obtaining goods and services (Hutabarat, 2016). Every trade policy, both out and into the country, has the same orientation, namely to increase the income of countries around the world. The relatively free movement of humans on this earth, in the process of producing goods and services, has not only caused interrelationships, attachments and dependencies between all social beings, but has also led to increasingly fierce global competition (Cipto, 2006), and every   Countries in the world will compete to innovate with products that are produced in order to compete in the international market. International trade can be used as a driving force for the economic growth of a country (Heppy, 2017). With this trade, it opens access for each country to do so so that international trade occurs. However, in some cases, trade also triggers a split and incompatible thoughts, due to the existence of an agreement that does not meet (Djoened, 2002).

For example, the trade war between America and China. A trade war is an economic conflict that occurs when a country imposes or increases tariffs or other trade barriers in response to trade barriers set by the other party (Giovaninho, 2020). Trade wars are caused by protectionist policies, which are usually imposed by a country to protect local producers, to return jobs from abroad, or due to the perception that other countries' trade practices are unfair and need to be balanced with tariffs (Ibnu, 2021).

After Donald Trump was elected president of the United States, Trump issued a policy: on March 8, 2018, America announced tariffs on global steel and aluminum imports (Aer, 2021). The policy serves to protect US producers and is a critical form of national security (Barratul, 2020). In this case, the United States president Donald Trump took a policy that triggered a war in the world of international trade between the United States and China with his policy of increasing steel import tariffs by 25% (BBC, 2018)

The trade war continues to heat up because China has also retaliated by looking at all of President Trump's policies towards China, the president of the People's Republic of China (PRC) Xi Jinping also responded by imposing import duties on China of 15-25% on 128 United States products if negotiations fail, and finally on 19 may 2018 the two countries announced a draft agreement in which China agreed to significantly reduce the trade surplus and on 06 july 2018 China imposed a tariff of 25% (BBC, 2018).

There is a reciprocal occurrence of the increase in import tariffs which is feared to affect the global economy, because the United States and China are superpower countries whose policies can affect the world economy. This research will be divided into two simulations, the first of which the US increases import tariffs on the steel sector by 25% to China. Second, China raised tariffs on imports of US-made motorcycles by 25%, from this simulation it will be known the extent of the influence of the trade war on countries in the world. This research will start with introduction, methodology, results and discussion.

2. Methodology

This research is a research with secondary data analysis about the impact of the trade war between the United States and China on the economic performance of the rest of the world. The main data types and sources that will be used in this research are secondary data, in the form of a GTAP (Global Trade Analysis) database from Purdue University. This research uses GTAP version 8.0. The latest version of GTAP contains data including: input and output tables for each country, trade flows between countries with many commodities, value added production sectors, bilateral trade, subsidies, taxes from 129 regions and 57 sectors (Global Trade Analysis Project , 2019).

The regional and sectoral aggregation is divided into 3 regions and 10 sectors which can be seen in Tables 1 and 2. The design simulation in this study will be divided into two. This research will be divided into two simulations, the first of which the US increases import tariffs on the steel sector by 25% to China. Second, China raised tariffs on imports of US-made motorcycles by 25%, from this simulation it will be known the extent of the influence of the trade war on countries in the world.

Table 1. Sectoral Aggregation

No	Code	Description	Members
1	GrainsCrops	Grains and Crops	Paddy rice, wheat, cereal grains nec, vegetables, fruit, nuts, oil seeds, sugar cane, sugar beet, plant-based fibers, processed rice, crops nec.
2	MeatLstk	Livestock and Meat Products	Cattle, sheep, goats, horses, animals product nec, raw milk, wool, silk-worm cocoons.
3	Extraction	Mining and Extraction	Foresty,fishing, coal, oil, gas, minerals nec.
4	Procfood	Processed Food	Vegetables oils and fats, dairy product, sugar, food products nec, beverages and tobacco products,
5	TextWapp	Textiles and Clothing	Textile, wearing apparel.
6	LightMnfc	Light Manufacturing	Wood productsm paper products, publishing, metal products, motor vehicles and parts, transport equipment nec, manufactures nec,
7	HeavyMnfc	Heavy Manufacturing	Petroleum, coal products, chemical, rubber, plastics prods, mineral prods nec, metals nec, electronic equipment, machinery and equipment nec.
8	Util_Cons	Utilities and Construction	Electricity, gas manufacture, distribution, water, construction
9	TransComm	Transport and Communication	Trade, transport nec, sea transport, air transport, communication.
10	OthServices	Other Services	Financial services nec, recreation and other services, pubadmin/defence,health,educat, dwellings.

Source: GTAP ver. 8 database

Table 2. Region Aggregation

No	Code	Description	Members
1	US	United States	Amerika Serikat
2	CHN	China	China
3	ROW	Rest Of World	Jepang, Canada, United States of America, United Kingdom, Italy, Indonesia, France, Germany, Russian Federation, Angola, Burundi, Cambodia, Democratic Republic of the Congo, Lao People's Democratic Madagascar, Malawi, Mozambique, Rwanda, Tanzania, Mayotte, Seychelles, Zambia, Ethiopia, Eritrea, Somalia, Australia, New Zealand, Cook Island, Fiji, Fench poleynisia, Guam, Marshall Islands, Micronesia Federated States of, Nauru, New Caledonia, Niue, Northern Mariana Islands, Palau, Papua New Guinea. Pitcairn, Tokelau, Tonga, United States Minor Outlying Islands, Wallis and Futuna, Hongkong, Korea, Mongolia, Taiwan, Macau, Philippines, Singapore, Thailand, Vietnam, India, Nepal, Srilanka, Maldives, Mexico, (xna), Argentina, Bolivia, Brazil, Chile, Columbia, Ecuador, Paraguay, Peru, Uruguay, Venezuela, (xsm), Costa Rica, Guatemala, Honduras, Nicaragua, Panama, El Salvador, (xca), Anguilla, Antigua & Barbuda, Aruba, Bahamas, Barbados, Cayman Islands, Cuba, Dominica, Dominican Republic, Grenada, Jamaica, Montserrat, Netherlands Antilles, Puerto Rico, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Trinidad and Tobago, Turks and Caicos Islands, Virgin Islands British, Virgin Islands U.S., Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, Greece, Hungary, Ireland, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, Norwegia, (xef), Bulgaria, Belarus, Croatia, Romania, Ukraine, Republic of Moldova, (xer), (xsu), Armenia, Georgia, Israel, Oman, Syrian Arab Republic, Egypt, (xnf), Cote d'Ivoire, Ghana, Cape Verde, Saint Helena, Congo, Kenya, Mauritius, Zimbabwe, Bostwana, Namibia, South Africa, Swaziland, (xtw), Guinea, Guinea-Bissau, Haiti, Republic, Lesotho, Myanmar, Nepal, American Samoa, Solomon Islands, Vanuatu, Bhutan, Equatorial Guinea, Liberia, Sao Tomé and Principe, Kiribati, Timor-Leste, Tuval, Bangladesh, Djibouti, Senegal, Uganda, Comoros, Sudan, Brunei Darussalam, Pakistan, Albania, Kazakhstan, Kyrgyzstan, Azerbaijan, Bahrain, Iran , Kuwait, Qatar, Saudi Arabia, Turkey, United Arab Emirates, Iraq, Jordan, Lebanon, Palestinian Territory Occupied, Morocco, Tunisia, Cameroon, Nigeria, Gabon, Chad, Gambia, Benin, Burkina Faso Central African Republic, Mali, Mauritania, Niger, Sierra Leone, Togo, Afghanistan, Yemen, Turki.

Source: GTAP ver. 8 database

3. **Result and Discussion**

1) Simulation 1

This simulation will see the impact of the United States raising import tariffs on China's steel sector by 25% against Rest Of World. The impact will be seen through the GDP of the United States, China and Rest Of World, exports of Rest Of World commodities as a whole, and employment opportunities in Rest Of World. The results are presented in Table 3.1 below:

Table 3.1. Output on Export for Sim 1

Qxw (*Rest Of World)	(Sim)	Pre	Post	Ch/%Ch
GrainsCrops	0,310935	203764,640625	204398,218750	633,578125
MeatLstk	0,494418	111366,062500	111916,679688	550,617188
Extraction	0,060996	1427133,250000	1428003,750000	870,500000
ProcFood	0,267468	463220,375000	464459,343750	1238,968750
TextWapp	0,550671	375116,687500	377182,343750	2065,626350
LightMnfc	0,557900	2129398,250000	2141278,250000	11880,00000
HeavyMnfc	-0,595687	5216316,000000	5185243,375000	-31073,00000
Util_Cons	0,120544	149899,687500	150080,375000	180,687500
TransComm	0,286223	1378643,375000	1382589,375000	3946,00000
OthServices	0,479287	1212537,375000	1218348, 8755000	5811,500000

Source: model simulation

Table 3.1 is the result of GTAP output for commodity exports to all countries from (Rest Of World) after carrying out the scenario in simulation 1, the United States increases tariffs by 25% for imported steel from China and its effect on Rest Of World, steel enters the Heavy manufacturing sector . After the United States increased tariffs by 25%, the HeavyMnfc sector decreased by -0.595687. GrainsCrops increased by 0.310935, MeatLstk 0.494418, Extraction 0.060996, ProcFood 0.267468, TextWapp 0.550671, LightMnfc 0.557900, HeavyMnfc -0.595687, Util_Cons 0.120544, TransComm 0.286223, and OthServices 0.479287. The United States' decision to increase tariffs on imports of 25% of steel from China turned out to have a negative effect on the world HeavyMnfc sector, which experienced a decline. Meanwhile, in other sectors, there was an increase, which allowed other countries in the world to have the opportunity to enter the trade market of the two countries.

Table 3.2. Output on Employment for Sim

Qfe (Rest of World)	UnSkLab	SkLab
Grainscrops	0,113637	0,114292
MeatLstk	0,099446	0,10068
Extraction	-0,034325	-0,033843
ProcFood	0,045712	0,048412
TextWapp	0,270491	0,273536
LightMnfc	0,234083	0,237126
HeavyMnfc	-0,266030	-0,263002
Util_Cons	-0,09631	-0,09303
TransComm	0,016558	0,020472
OthServices	0,015425	0,018462

Source: model simulation

The following is a table 3.2 output for Absorption of work in all rest of the world for UnSkLab (people with no work experience) and SkLab (people with work experience). From the results of simulation 1, after the United States raised the import tariff on steel made in China by 25%, the effect for Rest Of World from the UnSkLab category (no work experience) experienced an increase in employment in various sectors but there were some sectors that actually experienced a decrease in absorption. labor force as a result of the United States' decision to increase steel imports from China, with the highest increase in labor absorption in Rest Of World in the TextWapp sector, which was 0.270491, the decrease in employment occurred in the Extraction sector by -0.034325, HeavyMnfc by - 0.266030 and Util_cons -0.09631. For the SkLab category (having work experience) there has been an increase in employment in various sectors, in some sectors there has been a decrease in employment as a result of the United States' decision to increase steel imports from China, with the highest increase in employment absorption in the rest of the world sector. TextWapp 0.273536, the decrease in employment occurred in the Extraction sector by -0.033843, HeavyMnfc by -0.263002 and Util_cons by -0.09631.

Table 3.3. Output on GDP Riil for Sim 1.

Qgdp	(Sim)	Pre	Post	Ch/%Ch
US	0,009932	14061782,000000	14063179,000000	1397,000000
China	0,497736	3494057,750000	3511449,000000	17391,250000
Rest Of World	-0,006655	38275500,000000	38272952,000000	-2548,000000

Source: model simulation

The following table 3.3 is a table of Real GDP for the United States, China and Rest Of World. From the results of simulation 1, Rest Of World experienced a decrease in the value of Real GDP by -0.006655 due to an increase in China's steel import tariffs of 25%. The United States experienced an increase in the value of Real GDP by 0.009932 while China experienced an increase in Real GDP by 0.497736. In terms of the value of Real GDP, it turns out that China is still more profitable than the United States, this can be due to other influential macroeconomic factors, for example: trade balance, investment, terms of trade, etc. Meanwhile, the most disadvantaged from the increase in steel import tariffs imposed by the United States on China is Rest Of World, because the GDP value of Rest Of World experienced a deficit of -0.006655.

2) Simulation 2

In this simulation, we will see the impact of China increasing import tariffs on the United States motorcycle sector by 25% against Rest Of World. The impact will be seen through the GDP of the United States, China and Rest Of World, exports of Rest Of World commodities as a whole, and employment opportunities in Rest Of World. Here is table 3.4:

Table 3.4 is the result of GTAP output for exports of all commodities to all countries (Rest Of World) after carrying out the scenario in the 2nd shock, China increased tariffs by 25% for motorcycles made in the United States, motorcycles entered the TransComm sector After China raised tariffs 25% for motorcycles made in the United States, the export value of rest of the world has decreased in several sectors, namely GrainsCrops -0.004411, MeatLstk -0.001621, ProcFood -0.002631, TextWapp -0.060456, LightMnfc - 0.013470, HeavyMnfc -0.017063, and Util_cons -0.005067. Meanwhile, the TransComm sector increased by 0.093098 and OthServices increased by 0.001624. With the increase in tariffs by China on imported goods from the United States in the form of motorcycles by 25%, it will allow other countries in the world the opportunity to enter the TransComm and Othservices trade market in both countries.

Table 3.4. Output on Export for Sim 2

Qxw (*Rest Of World)	(Sim)	Pre	Post	Ch/%Ch
GrainsCrops	-0,004411	203764,640625	203755,656250	-8,984375
MeatLstk	-0,001621	111366,062500	111364,257813	-1,8044688
Extraction	-0,000448	1427133,250000	1427126,875000	-6,375000
ProcFood	-0,002631	463220,375000	463208,187500	-12,187500
TextWapp	-0,060456	375116,687500	374889,906250	-226,781250
LightMnfc	-0,013470	2129398,250000	2129111,500000	-286,750000
HeavyMnfc	-0,017063	5216316,000000	5215426,000000	-890,000000
Util_Cons	-0,005067	149899,687500	149892,093750	-7,593750
TransComm	0,093098	1378643,375000	1379926,875000	1283,500000
OthServices	0,001624	1212537,375000	1212557,125000	19,750000

Source: model simulation

Table 3.5. Output on Employment for Sim 2

Qfe (Rest of World)	UnSkLab	SkLab
Grainscrops	-0,001626	-0,00171
MeatLstk	0,000175	0,000013
Extraction	-0,004365	-0,004427
ProcFood	0,000421	0,000076
TextWapp	-0,037066	-0,037455
LightMnfc	-0,007198	-0,007587
HeavyMnfc	-0,010429	-0,010817
Util_Cons	0,000339	-0,000078
TransComm	0,010786	0,010285
OthServices	0,001399	0,001091

Sourch: model simulation

The following is a table of 3.5 outputs for employment in all Rest Of world sectors for UnSkLab (people without work experience) and SkLab (people with work experience). From the results of simulation 2, after China raised the import tariff of motorcycles made in the United States by 25% against Rest Of World, UnSkLab (no work experience) experienced an increase in employment in various sectors but there were some sectors that actually experienced a decrease in employment. employment, with the highest increase in labor absorption at rest of the world in the TransComm sector, which was 0.270491, the decrease in employment occurred in the Graincrops, Extraction, TextWapp, LightMnfc, Heavy Mnfc sectors. For the SkLab category (having work experience) rest of world experienced an increase in employment in various sectors but there were several sectors

that actually experienced a decline, with the highest increase in employment at rest of world in the TransComm sector of 0.010285, a decrease in opportunity work occurs in the Graincrops, Extraction, TextWapp, LightMnfc, Heavy Mnfc, and Util_Cons sectors. When compared to simulation 1 and simulation 2, the decrease in labor absorption in various sectors decreased more in the second simulation.

Table 3.6. Output on GDP Riil for Sim 2

Qgdp	(Sim)	Pre	Post	Ch/%Ch
Amerika Serikat	-0,001329	14061782,000000	14061595,000000	-187,000000
China	0,000169	3494057,750000	3494063,750000	6,000000
Rest Of World	0,000031	38275500,000000	38275512,000000	12,000000

Source: model simulation

The following is a table of Real GDP for the United States, China and Rest Of World. After conducting the 2nd simulation, China increased the tariff on imported motorcycles made in the United States by 25% and its effect on the Rest of World. Real GDP for Rest of World experienced an increase in Real GDP value by 0.000031, the United States experienced a decrease in Real GDP value by -0.001329, while China benefited the most, with an increase in Real GDP by 0.000169.

4. Conclusion

In the first simulation, the United States increased China's steel, it turned out to have a negative effect on the world HeavyMnfc sector which experienced a decline. Meanwhile, in other sectors, there was an increase, which allowed other countries in the world to have the opportunity to enter the trade market of the two countries. Meanwhile, in the second simulation, the export value of rest of the world countries decreased in several sectors, namely GrainsCrops -0.004411, MeatLstk -0.001621, ProcFood -0.002631, TextWapp -0.060456, LightMnfc -0.013470, HeavyMnfc - 0.017063, and Util_cons -0.005067. Meanwhile, the TransComm sector increased by 0.093098 and OthServices increased by 0.001624. With the increase in tariffs by China on imported goods from the United States in the form of motorcycles by 25%, it will allow other countries in the world the opportunity to enter the TransComm and Othservices trade market in both countries.

In the first simulation, the highest employment absorption at Rest of World for the UnSkLab category (no work experience) increased in the TextWapp sector, and experienced a decrease in employment in the Extraction, HeavyMnfc, Util_Cons sectors. For the SkLab category (having work experience) with the highest increase in employment opportunities, rest of the world in the TextWapp sector, the decline in employment opportunities occurred in the Extraction, HeavyMnfc, and Util_cons sectors.

In the second simulation, the highest employment absorption at Rest of World for the UnSkLab category (no work experience) increased in the TransComm sector, and experienced a decrease in labor absorption. Heavy Mnfc, and Util_Cons. For the SkLab category (having work experience) there has been an increase and decrease in employment in the same sector as UnSkLab.

In simulation 1, the GDP value of rest of world decreased by -0.006655, while in simulation 2 the rest of the world benefited from China which increased tariffs on imports of motorcycles from the United States by 25% of real GDP rest of world in the second simulation increased by 0.000031. From the two simulations that have been carried out, China still benefits more from Rest of World and the United States, this can be due to other influential macroeconomic factors, for example: trade balance, investment, terms of trade, etc.

The trade war between the United States and China affects the world economy as evidenced by changes in the increase and decrease in the value of commodity exports at the Rest of World, the value of employment and the value of Real GDP at the Rest of the world.

Reference

Aer, R. K. (2021). Pengaruh Perang Dagang China-Amerika Serikat Terhadap Hubungan Dagang IndonesiaDengan Amerika Serikat. Jurnal Politico, 10(4).

Anonim. 2018. "Trump berlakukan tarif impor, Cina siapkan 'perang dagang". https://www.bbc.com/indonesia/dunia-43341137. (Diakses, 22 Juli 2020).

Barratul, T. R. 2018. "Trump dan kebijakan kontroversial tarif impor baja dan aluminium". https://internasional.kontan.co.id/news/trump-dan-kebijakan-kontroversial-tarif-impor-baja-dan-aluminium. (Diakses, 7 Agustus 2020).

Cipto, Bambang. 2006. Dasar Teori Perdagangan Internasional, Ekonomi Intenasional Dan Globalisasi Ekonomi 2012.

Djoened, Marwati Poesponegoro. 1993. Volume 3 dari Sejarah nasional Indonesia. Jakarta: Balai Pustaka.

Giovaninho, F, D, C. 2020. Perbandingan Reaksi Pasar di AS, China dan Indonesia terhadap Perundingan Perang Dagang AS-China . Jurnal Akuntansi Vol 30 No 9

Heppy Syofya. 2017. Analisis Dampak Perdagangan Internasional Terhadap Pembangunan Ekonomi. Jurnal Ekonomi & Akuntansi Vol.7 No.1.

Hutabarat, B. F. (2016). Dampak Penurunan Hambatan dan Peningkatan Kemudahan Perdagangan Terhadap Produksi, Neraca Perdagangan Pertanian, dan Kesejahteraan Masyarakat. Jurnal Agro Ekonomi, Volume 33 Nomor 1.

Ibnu, Ismail. 2021. "Keunagan Perang Dagang". https://accurate.id/ekonomi-keuangan/perang-dagang/. (Diakses, 15 April 2021).