

Economic Implications of US-China Trade War for Pakistan Economy

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Abstract

The global economy is based on trade, which is the exchange of products between nations. A number of variables, including global events, exchange rates, and protectionism, can have an impact on pricing. Production costs and labor pay in one nation may be impacted by political change in another. Since the 2018, the two world largest economies, the USA and China, exchanged rounds of imposing of import tariffs against each other, and this escalated into the US–China trade war. This trade war highly impacted the all our world. The main purpose of present study was to highlight the impact of the trade war on welfare of world and also check the macro level impact on the world. Secondary data used in this study which collected from United Nation Commodity Trade Statistics Database. The researcher took six factors for the present study such

as real GDP, imports, exports, market prices, real factor wages and terms of trade. In this study Computable general equilibrium model and GTAP model were used to find out the war impacts. Overall finding shows that there is a significant war impact on global world. There is positive and strongly significant impact on macroeconomics variables. There is a tough competition between both economies United State and China. The study suggested that this trade war is opportunity as well as challenge for Pakistan therefore; prudent and efficient policy making is anticipated for smooth and sustained growth.

Key words: Global welfare, macro impacts, CGE Model, trade war

1. Introduction

One of the modern approaches to defenseless battle is the trade war, which involves using a variety of tools to depict foreign occupations. The trade war is considered an advanced war that could have wide-ranging and far-reaching implications for the monetary, financial and political context. It might effect in extreme costs such as shutdowns of businesses, great joblessness, currency disaster and global great depression (Zhang, 2018). The US-China trade war is the one current topic in international business. The USA and China's ongoing trade war, which started in 2018, is a significant uncertainty for global commerce and economic growth. The two primary protagonists are the USA and China, two of the biggest economies and merchants in the world. In the world, the United States and China account for two-fifths of the GDP and around a quarter of commerce (Abiad *et al.*, 2018).

When the United States imposed tariffs on Chinese goods, the Chinese government reacted and caused a trade war. Numerous investigations were carried out in this regard, i.e. (Amiti *et al.*, 2019; Cavallo *et al.*, 2021) reported that the tariffs placed on China by the US President are being paid for by American consumers and financial institutions. The US has contested a 51 billion US dollar loss to welfare as a result of tariffs (Fajgelbaum *et al.*, 2020).

The United States and China, the two most powerful economies in the world, are engaged in a trade war as they prepare to lead the global economy into the twenty-first century. The outcome of these two's economic dispute will influence both the U.S.'s standing as a worldwide power and the global policy that is recognised by the United States. The trade conflict sparked economic strife

between the two economies and resulted in trade flows being diverted away from both China and the United States. The trade war has had significant global repercussions. Trade conflicts are usually detrimental to everyone, says Jim Rogers, co-founder of Quantum Fund & Investment (Dawn, 2018).

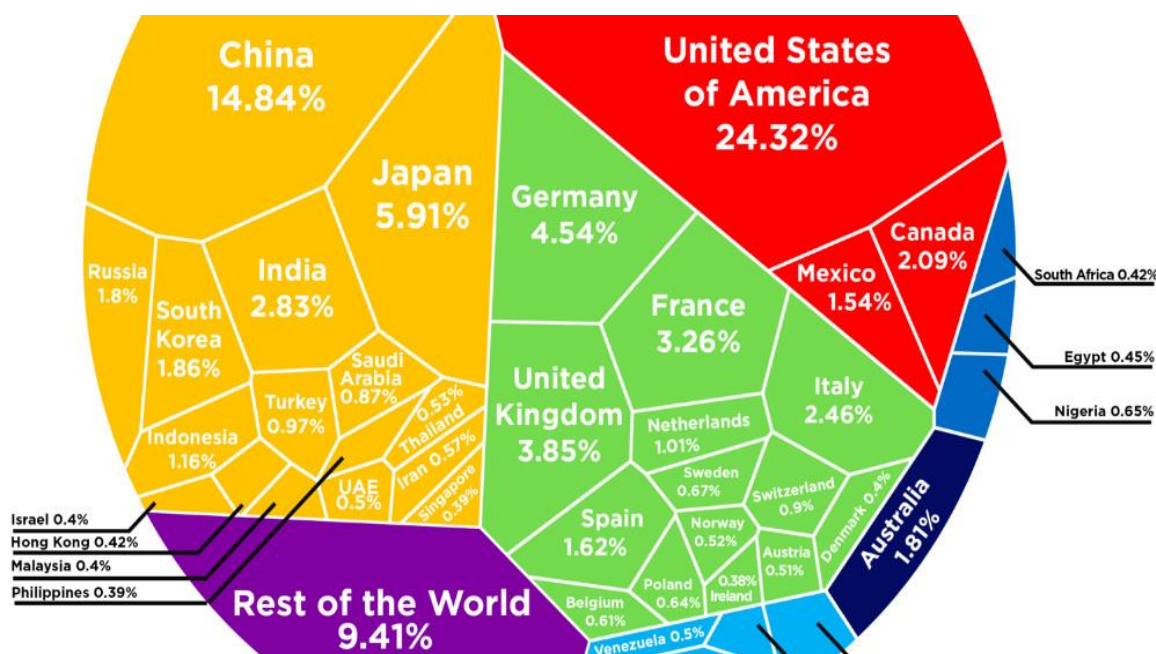


Figure 1: US –China trade share in world GDP

Figure 1 illustrate that the share of US in global world is 24.32 percent and China is the second largest economy with share of 14.84 percent in the world GDP adding up to 38.16 percent. According to the IMF, Pakistan has the world's fifth-largest population and is the 42nd-largest economic power. Pakistan's top export market is the United States, while its top import market is China. Pakistan wants to have positive relations with both nations. The Pakistani leadership has made it obvious that China is our only option for the future of the nation's economy. Meanwhile, China is increasing its investment in Pakistan. From a defense and security perspective, China has always wanted to established good relations with Pakistan and, as a result, various investments in soldierly trainings to fight worldwide safety tasks.

2. Overview of US-China and Pakistan trade

2.1. Top two Imports/ Exports destinations of Pakistan

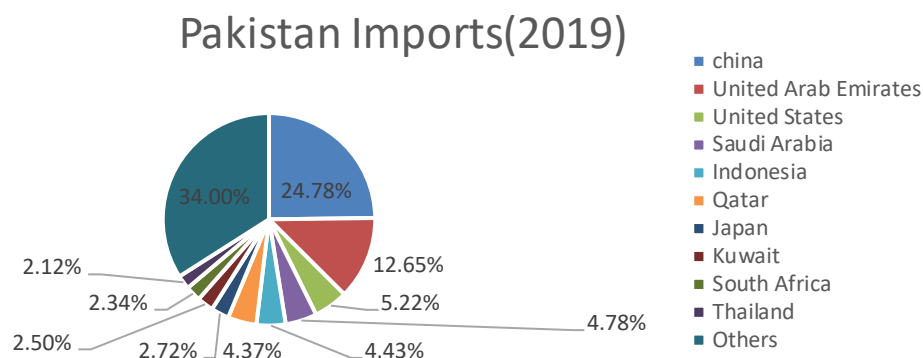


Figure 2: Share of United State and China in Pakistan Imports (2019)

Source: United Nation Commodity Trade Statistics Database

2.1.1. Explanation

In 2019, Pakistan imported US\$ 50.06 Billion from the world, with top sources being China (24.78%), and United States (5.22%). Hence, valued at US\$ 12.41 billion, China is the top import source and valued at US\$ 2,611 million, United State is the third top import source (by trade value) for Pakistan.

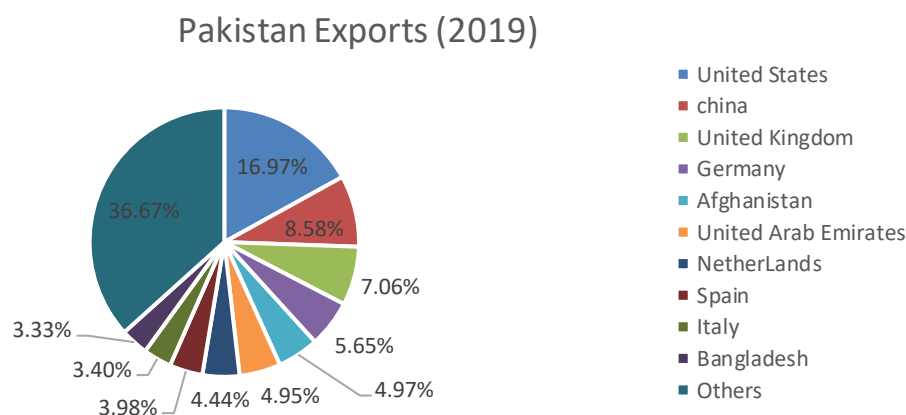


Figure 3: Share of United State and China in Pakistan Exports (2019)

Source: United Nation Commodity Trade Statistics Database

2.1.2. Explanation

Pakistan exported US\$ 23.75 billion to the world, with top sources being United State (16.97%), and China (8.58%). Hence, valued at US\$ 4,030 million, United State is the top export source and valued at US\$ 2,037 million, China is the second top import source (by trade value) for Pakistan.

The main objective of Pakistan's foreign policy has always been the development of positive ties with China. Pakistan frustrated to pursue multilateral policies with China, the Soviet Union, and the United States, but was unsuccessful. Chinese-Pakistani affairs refer to the bilateral relations between Pakistan and China. In 1950, when One of the first nations to assist the People Republic of China (PRC) government on Chinese soil was Pakistan's Dominion, which severed its formal diplomatic ties with the China. Since that time, the two nations have given utmost priority to keeping their particular relationship extremely tight and cooperative (Khan, 2006).

2.1.3. Problem statement

The US-China trade conflict has shocked many countries around the world. The rise in China's economic authority over the last few decades, coupled with the declining share of the United States in international production and international trade in the early 21st century, has transformed the geopolitical landscape of the world. Trade disputes between the US and China are affecting the world, especially Pakistan as well as developing countries.

2.1.4. Significance of the study

The current study will assess the Pakistan's current situation and future prospects, as well as the effects of the US-China trade war on Pakistan's imports, exports, and trade balance. Pakistan which is attempting to achieve a significant improvement by leading in excessive imports and raising languid exports to restore the sputtering economy is expected to partially achieve the aim, in the consequences if the US-China trade war appears. The present study is conducted to achieve the following objectives.

- To study the impact of US China trade war on global trade welfare.
- To study the macro level impact of US China on world economy.
- To identify a combined policy that can reduce possible negative impacts of trade war on Pakistan.

3. Literature Review

A comprehensive summary of previous research on a topic is called literature review. To determine the nature of our research it gives a theoretical base for the research and helps us (the author). In this chapter we have discussed a comprehensive summary of previous research on the topic.

Devarajan *et al.*, (2018) utilized the CGE model to simulate a trade war between the USA and Canada, Japan, Mexico, the EU, and China while also considering how emerging nations would react to the trade war. For the USA and China, the trade war has a GDP impact of 0.1% and 0.3%, respectively. Huang *et al.*, (2018) concluded that there was significant anxiety due to "Trade Conflict" between the United States and China in 2018, when Trump proposed imposing tariffs on up to \$50 billion of Chinese products. Due to their significant trade overlap, these two economies influence not just those of China and the United States, but also the rest of the global.

Iqbal *et al.*, (2019) explained that Trump's tariff war on tens of billions of dollars' worth of Chinese goods will have an unavoidable impact on global trade operations and activities as a whole. The trade conflict between the two countries has the spill-over effects on other countries. This trade conflict is not merely intended to improve the US's trade balance. Yean *et al.*, (2019) points out that Malaysia's commerce might be impacted by the US-China trade spat. Malaysia's solar exports to the US will be impacted by the US imposing tariffs, albeit the exact impact is questionable due to the complicated implementation of these levies.

Balistreri *et al.*, (2020), narrated that the US-China trade war has a negative impact on the economy and welfare of the US and China by 1.02 percent and 1.7%, respectively, while having a little but accumulative welfare impact on other nations. Goulard (2020) examined that the effects of the US-China trade dispute are not just felt by China and the USA; they also threaten the majority of nations and create uncertainty, which may discourage investors from funding projects abroad. It is explained by the (Rahatmawati and Muryantini, 2020) that trade wars actually involve many related countries as part of the supply chain, namely raw material suppliers and target markets for US and Chinese products. This trade war for the Indonesian people is a challenge and opportunity in efforts to maintain and strengthen Indonesia's national resilience.

Anwar (2021) stated that the economic conflict between the United States and China exposed an opportunity vacuum for Bangladesh. Many commentators are also concerned that Bangladesh's government may fall into a longer-term debt trap similar to other nations due to its excessive and careless borrowing from China. Kumagai *et al.*, (2021) estimated the economic effects of the US-China trade conflict by using IDE-GSM, a computational general equilibrium (CGE) simulation model. They evaluate the economic impacts of a "full confrontation" scenario in which both countries impose 25% additional tariffs on all goods imported from each other for three years starting in 2019.

4. Research Methodology

The term "methodology" can be defined as "the method of scientific analysis." Methodological approaches are more dependable and significant for analyzing social empirical studies since they show researchers how to complete the data collection, analysis, and explanation process. With the use of a computational general equilibrium (CGE) model, this study evaluated the economic effects of the US-China trade war on the global economy as well as on the economy of Pakistan in this study. It creates a comprehensive multi-country, multi-region, and multi-sector computable general equilibrium (CGE) model of the global economy. Then, using the recently published GTAP 10 Database, we standardize the model and assess the potential repercussions of the US-China trade war on global market structure, aggregate real productivity, and Pakistan's trade balance.

4.1. Computable general equilibrium (CGE) model

A computed general equilibrium (CGE) model is an economic model. The CGE model evaluates how policies or shocks influence the economy by calculating economic theory using actual economic data. CGE analysis is commonly used to analyze the economic impacts of policies and occasionally shows their unanticipated or dependent consequences. The CGE model is a popular and useful method for analyzing welfare, particularly inequality and scarcity. As demonstrated by Winters *et al.*, (2012) and Harrison *et al.*, (2019), economic theory is inadequate in comparison because it cannot account for the distributional implications across sectors and families. It is also like an abstract that cannot give in-depth study of government policy improvements. Khan (2021) used the CGE model to examine how Pakistan will be affected by the Comprehensive and

Progressive Agreement for Trans-Pacific Partnership (CPTPP) using the two databases Global Trade Analysis Project (GTAP) and social accounting matrix (SAM).

4.2. The Global trade analysis project (GTAP)

A global network of academics and decision-makers known as the Global Trade Analysis Project (GTAP) quantifies global policy challenges. The GTAP database facilitates current economic study of global policy concerns relating to trade, energy, and the environment. It is utilized in a collection of comparative static and dynamic general equilibrium computer models. The study utilized GTAP version 10 data, which were also used in the preceding four investigations by (Aguiar *et al.*, 2016 Bollen and Romagosa, 2018; Tsutsumi, Rosyadi and Widodo 2019) the base year differs depending on the data set, but adjustments are made to national accounts and trade statistics to replicate the regional balance.

4.3. Dataset

The GTAP version 10 database was employed in this work, and the created model was calibrated using a CGE model data set derived from the just-released GTAP 10 database. GTAP version 10 includes 141 areas and 65 goods, with 2014 serving as the base year. Earlier research used the original information to produce regional and sectoral aggregations, which facilitated our analysis. For instance, Itakura (2020) used the GTAP 7.1 database (base period 2004) to create a CGE model with 22 regions and 23 sectors to examine the economic effects of liberalizing trade in commodities and services in the ASEAN area Kui et al, (2019) constructed a CGE model with 13 sectors and 4 regions using the GTAP 9.0 database (base period 2011) to calculate the effects of free trade zones connecting China, Japan, and Korea on the economy and the environment. We utilize 2014 as our most recent base year.

Table 1: Lists the nations, regions, and industries.

Country / Region	Industry
Pakistan	GrainsCrops
China	VegFruit
UAE	MeatLstk
Bangladesh	Textile
Indonesia	LightMnfc
UnitedState	HeavyMnfc
Vietnam	Motorparts
RSAsian	Electricity
RestofAsia	TransComm
EU_27	Services
Rest of the world	

The 11 countries and regions are Pakistan, China, USA, UAE, Bangladesh, Indonesia Vietnam, Rest of South Asia, Other OECD, Europe 27, Rest of Asia, and Rest of World (Appendix 2). The 10 sectors include Grains Crops, Vegetables/Fruit, Meat Livestock, Textile, Light Manufacturing, Heavy Manufacturing, , Motor parts, Electricity, Transportation Commodities, Services (Appendix 3).

This Study used newly developed MyGTAP model developed by Minor and Welmsley (2012b). We link the Standard global GTAP model to the latest available comprehensive Pakistani SAM developed by Debowicz *et al.*, (2012) under Pakistan Strategy Support Program (PSSP) from fiscal year 2010-11. As discussed earlier this is the latest and comprehensive SAM available which is used in this study.

5. Results And Discussion

5.1. Spectrum of Study and Organization of Results

In this study, we made use of the GTAP 10 database and a global computable general equilibrium model framework. By adjusting the relevant parameters once the Computable General Equilibrium model employed in this work has been thoroughly calibrated, several policy investigations have been carried out. This chapter will go into great depth on the effects of the 25% tariff that both China and the US modeled for Pakistan while keeping in mind the goals of the research.

5.2. Impact of US-China trade war on real GDP of the world

The effects of the US-China trade war on the economies of 12 different nations are shown in Figure 4.1 the findings indicate that the 25 percent tariffs imposed by both countries on each other's goods had a marginally beneficial effect on Pakistan's real GDP, virtually having a 0.002 percent monetary change of US\$ 5.2969 million. China's real GDP was negatively impacted by the trade conflict by 0.020 percent with a shift in currency of US\$ -2091 million. The GDP of the UAE increased of US\$ 1.4375 million, or 0.0004 percent, Bangladesh's real GDP increased by 0.0074 percent as a result of monetary adjustments of US\$12.7031 million.

The real GDP of Indonesia changed by 0.0018 percent, or 16.125 million US dollars. United States affected by changes in currency by 0.0053 percent US\$ -924 million, while Vietnam was affected by movements in currency by 0.0382 percent. US\$ 71.2188Mn, EU 27, Rest of World, Rest of Asia, and Rest of South Asia were each affected by monetary adjustments by 0.0019 percent, -0.0001 percent, -0.0014 percent, and 0.0017 percent, respectively USD 0.8633 million, USD -1.875, USD 230 million, and USD 2,037 million.

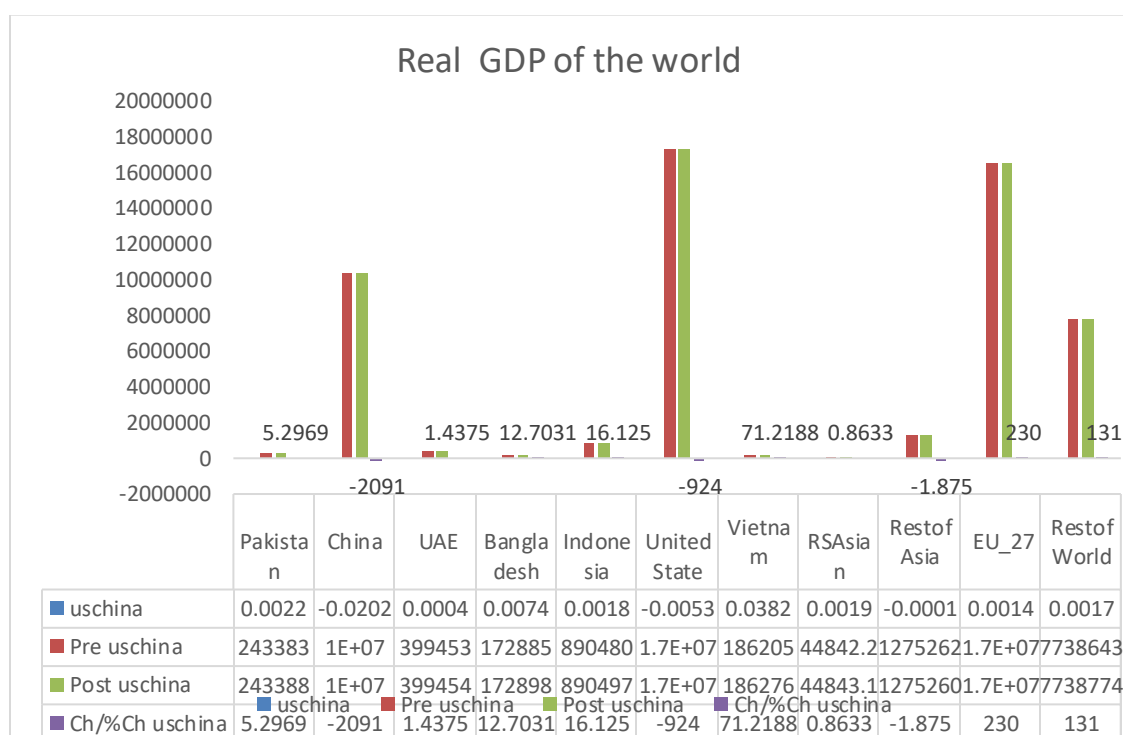


Figure 4: Impact of US-China trade war on real GDP of the world

Source: Authors Simulation

5.2.2. Impact of US-China trade war on real Imports of the world

Figure 4.2 shows that due to imposing the 25% tariff of both nations the real imports of different countries/regions highly impacted. In Pakistan the real imports are small positively impacted. The imports of Grain Crops 0.21%, Vegetables/Fruit 0.22%, Meat Livestock 0.27%, Textile 0.37%, Light Manufacturing 0.18%, Heavy Manufacturing 0.17%, Motor parts 0.07%, Electricity 0.08%, Transportation Commodities 0.13%, Services 0.16% impacted. The real imports of both nations china and US have small negatively impacted however other region/countries UAE, Bangladesh, Indonesia Vietnam, Rest of South Asia, Europe 27, Rest of Asia, Rest of World are small positively impacted.

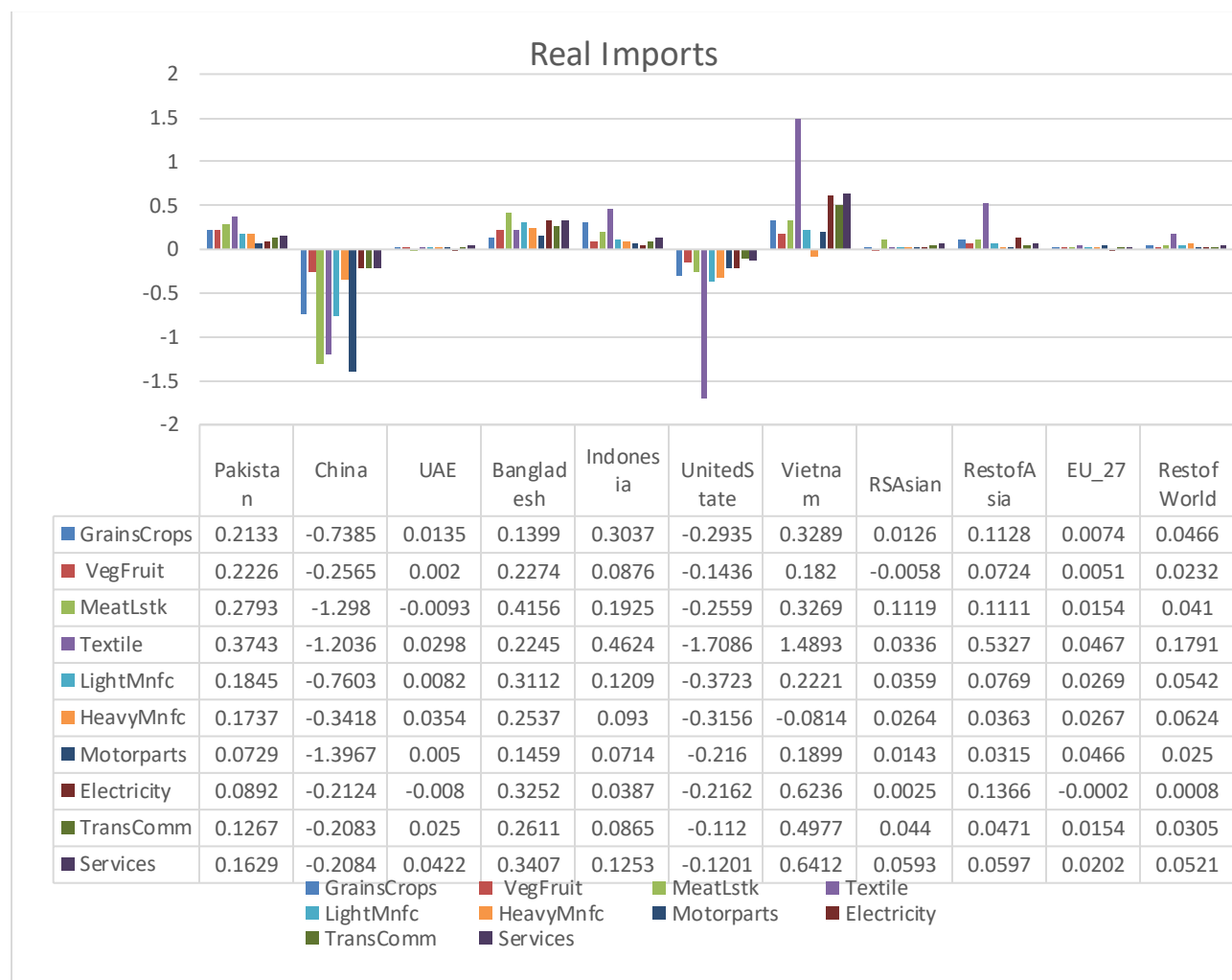


Figure 5: Impact of US-China trade war on real Import of the world

Source: Authors Simulation

5.2.3. Impact of US-China trade war on real exports of the world

Figure 4.3 shows that due to imposing the 25% tariff of both nations the real imports of different countries/regions highly impacted. In Pakistan the real exports are small negatively impacted. The exports of Grains Crops -0.28%, Vegetables/Fruit -0.24%, Meat Livestock -0.51%, Textile -0.04 %, Light Manufacturing -0.37%, Heavy Manufacturing -0.38%, Motor parts -0.07%, Electricity -0.17%, Transportation Commodities -0.22%, Services -0.28% impacted.

The real exports of both nations china and US have small negatively impacted however other reg/countries UAE, Bangladesh, Indonesia Vietnam, Rest of South Asia, Europe 27, Rest of Asia, Rest of World are partially negatively impacted.

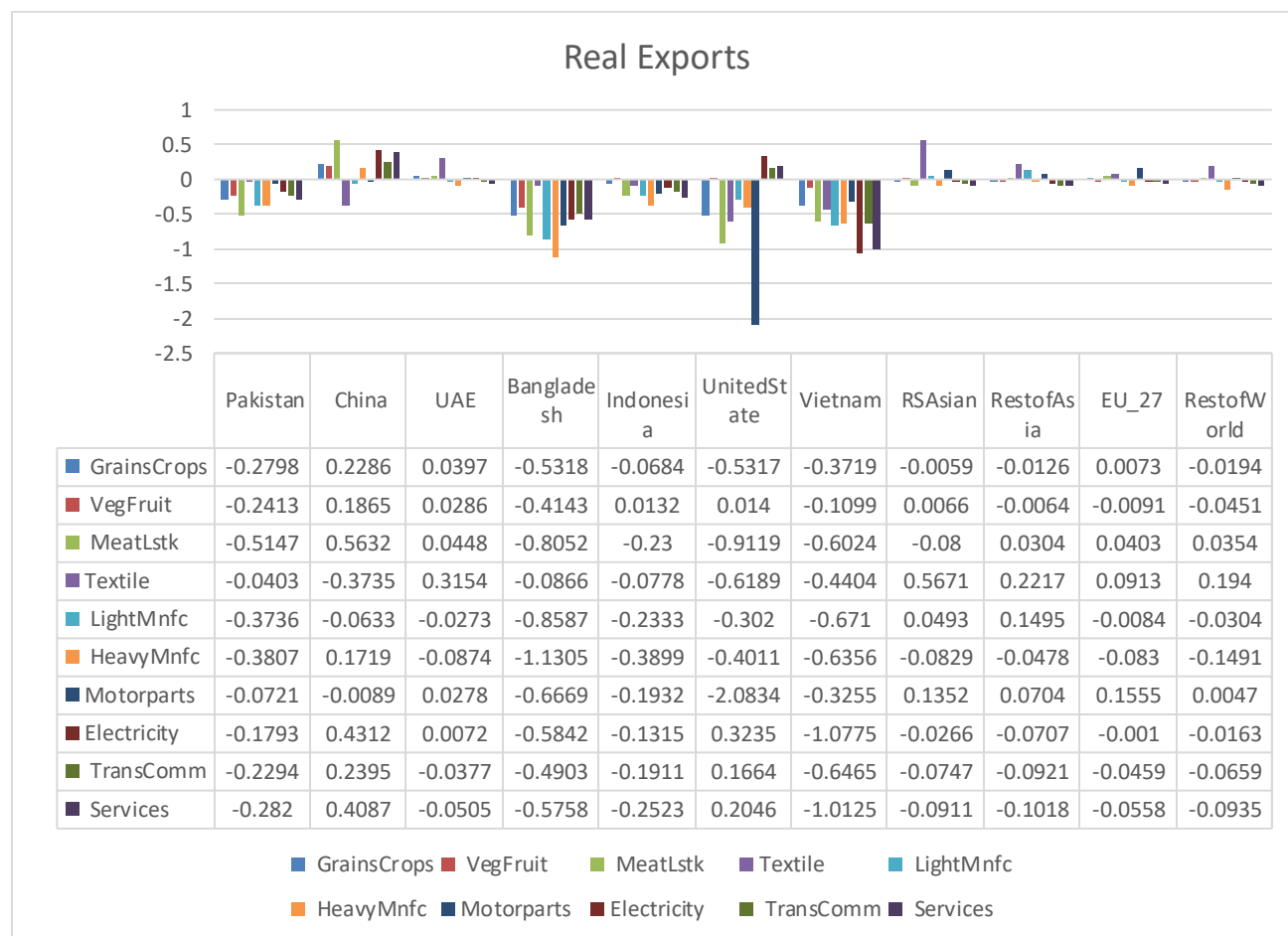


Figure 6: Impact of US-China trade war on real exports of the world

Source: Authors Simulation

5.2.4. Impact of US-China trade war on Real market price of the world

In international market this trade war brings substitutional impacts on different sectors of production and goods and services. Figure 4.4 shows that the market prices positively impacted Pakistan, UAE, Bangladesh and other regions and countries but both nations China-US have negatively impacted to imposition of their own tariff and trade restrictions, however in Indonesia, Vietnam, Rest of Asia some factors and goods/services are negative effected.

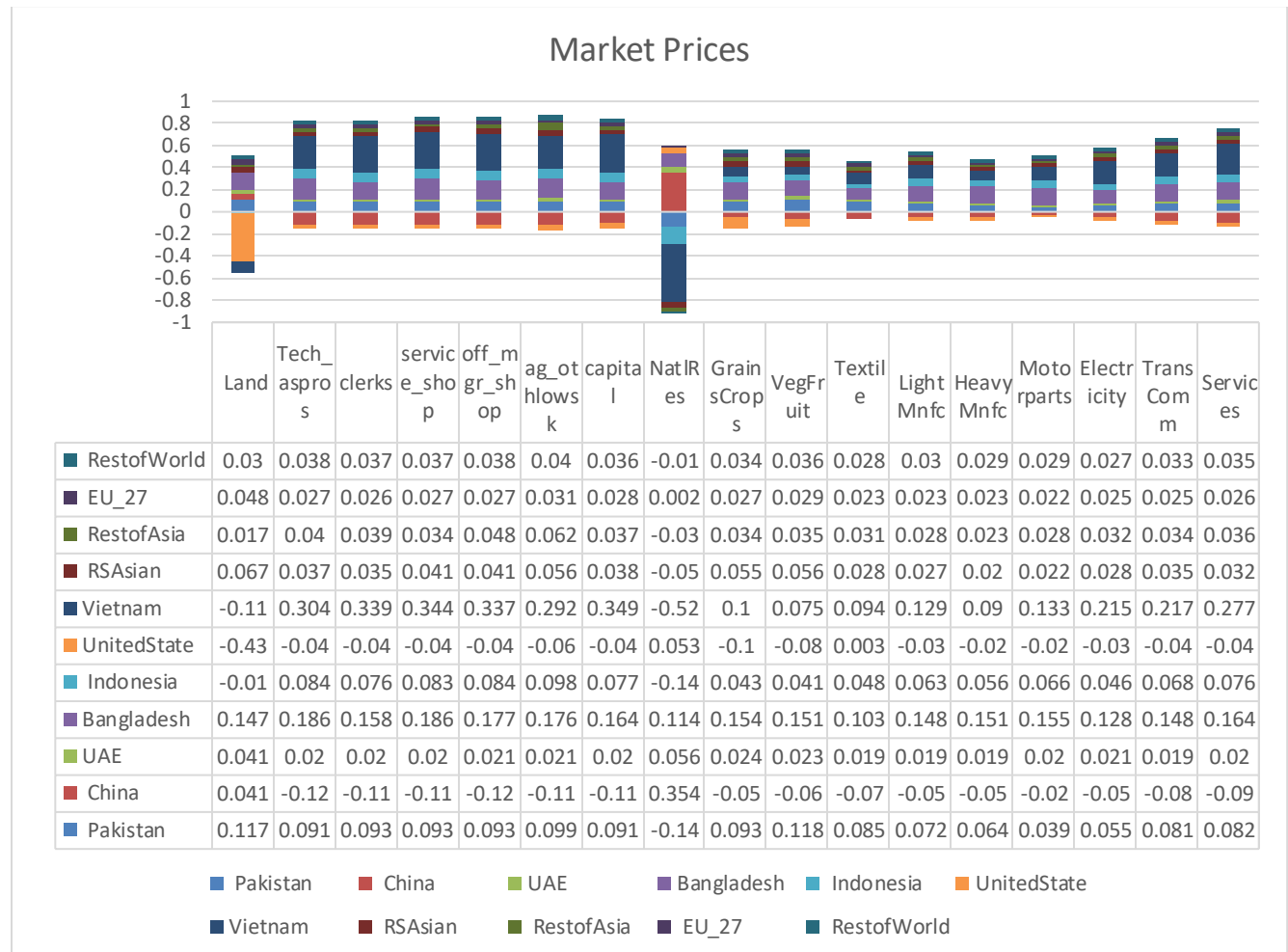


Figure 7: Impact of US-China trade war on Real market price of the world:

Source: Authors Simulation

Figure 7 shows that due to the imposition of 25% tariff results the real market price of goods and services impact negatively. Because when both nations increased tariff upon each other the other countries/regions increased their exports which results the quantity of goods and services in their

domestic markets decreased and demand of g/s increased when demand increased prices also increased. The price of land 0.12 increased in Pakistan and the prices of Tech_aspros, clerks, service_shop, off_mgr_shop, ag_othlowsk, capital, NatlRes, GrainsCrops, VegFruit, Textile, LightMnfc, HeavyMnfc, Motorparts, Electricity, TransComm, and Services are affected due to US-China trade war.

5.2.5. Impact of US-China trade war on Real Factor Wages of the world

In this figure, results shows that the trade war affected marginally positively to Pakistan, UAE, Bangladesh and other regions and countries/regions. Due to imposition of 25% tariff of both nations negatively impacted the real factors wages of goods and services.

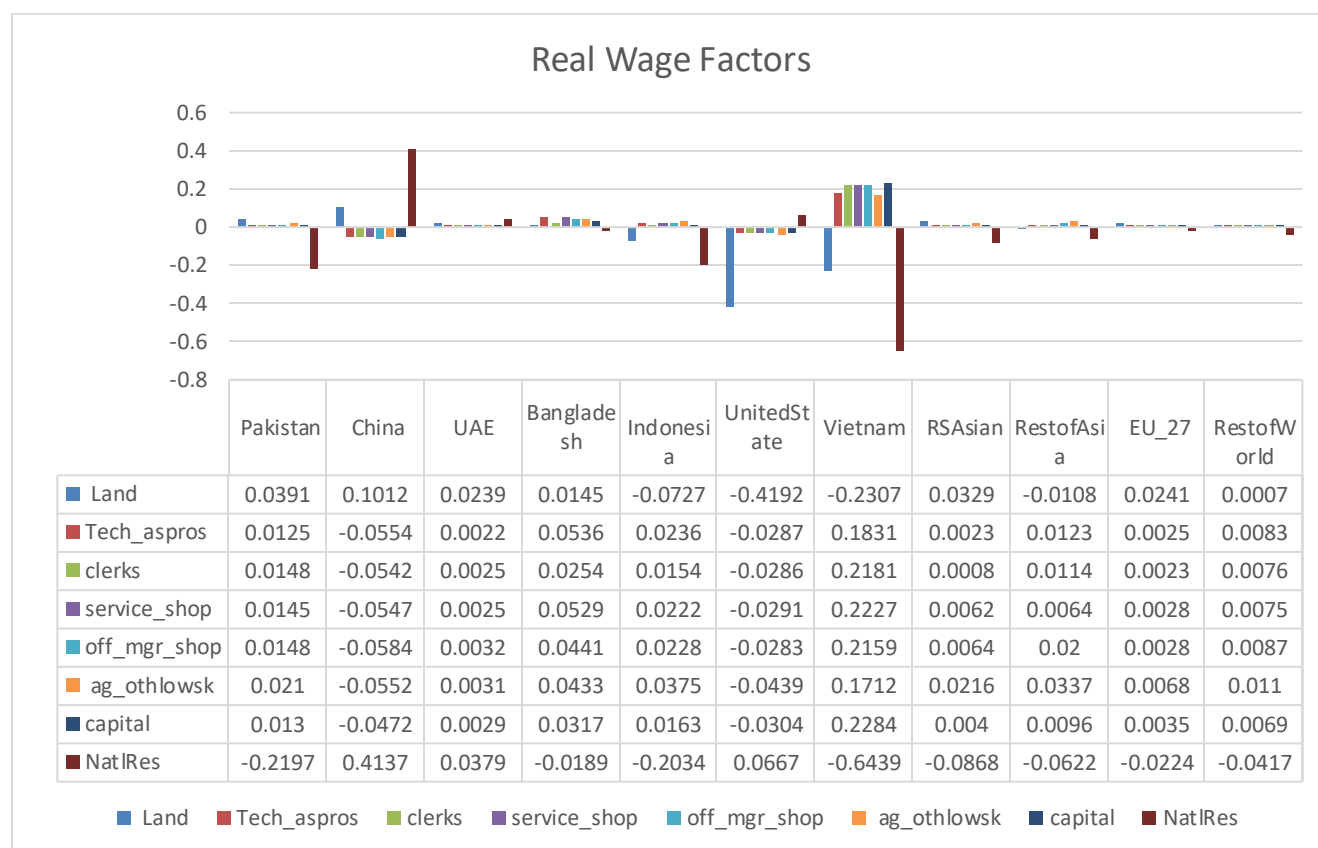


Figure 8: Impact of US-China trade war on Real Factor Wages of the world

Source: Authors Simulation

5.2.6. Impact of US-China trade war on terms of trade of the world

The Terms of Trade (TOT) is well-defined as the proportion of a country's import and export prices.

$$TOT = P_{\text{exports}}/P_{\text{imports}} \times 100 \quad (4.1)$$

Terms of trade is a way in which the results mention that the prices which received from exports and the price which you paid for imports. Figure 4.7 shows that the trade war impacted on Pakistan overall trade positively as well as other countries/regions are also impacted. However, this trade war negatively impacted the trade of China and US.

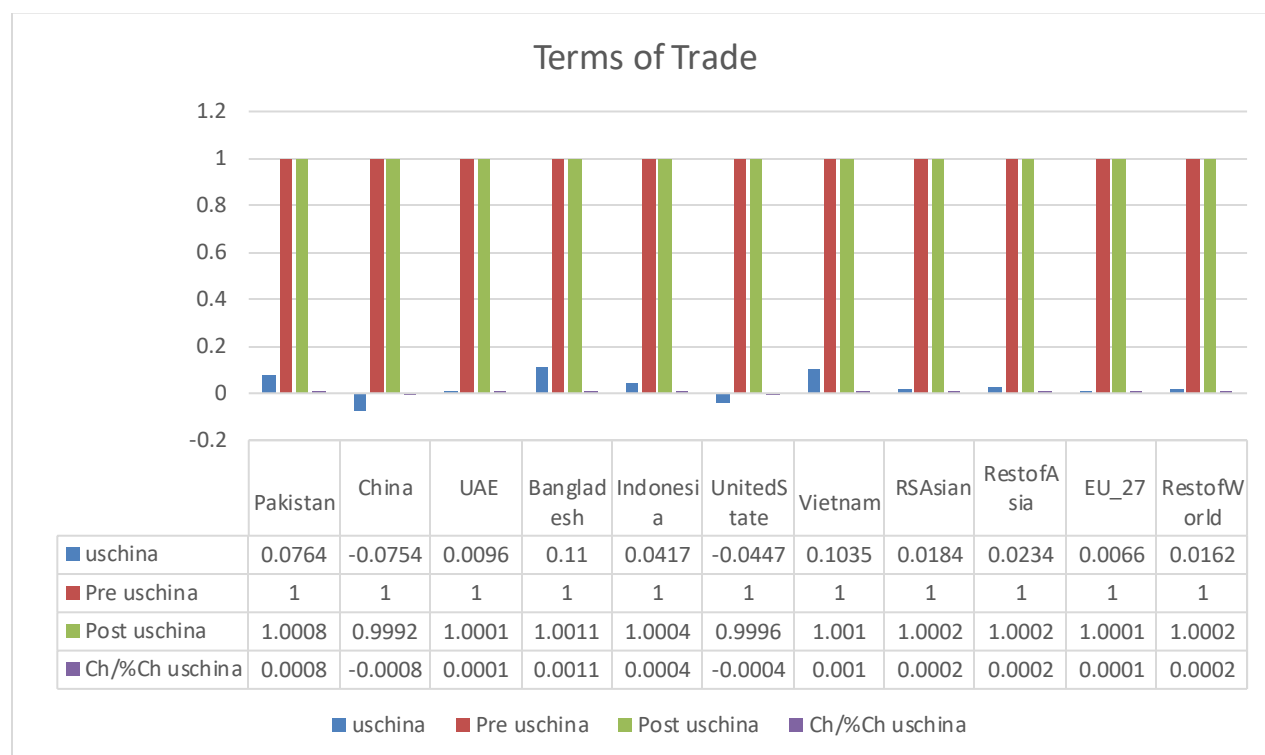


Figure 9: Impact of US-China trade war on terms of trade of the world

Source: Authors Simulation

Pakistan's terms-of-trade deteriorate primarily through changes in its export prices with respect to prices it pays for the imports. However, due to trade war Pakistan Terms of trade will appreciate as after the imposing 25 percent tariff of both nations Pakistan exports negatively affected. Pakistan terms-of-trade appreciate by 0.076 percent from base line. This trade war negatively

impacted the US- China terms of trade as -0.075 and -0.045 impacted. However, other countries/regions are also impacted.

6. Results

6.1. Real GDP of the world

Real GDP (gross domestic product) measures of all the goods and services produced in a nation adjusted for inflation or deflation, expressed in dollars.

Table 2: Real GDP of the world

Real GDP	USChina	Pre USChina	Post USChina	Ch/%Ch USChina
Pakistan	0.0022	243382.9219	243388.2188	5.2969
China	-0.0202	10351106	10349015	-2091
UAE	0.0004	399452.875	399454.3125	1.4375
Bangladesh	0.0074	172885.0625	172897.7656	12.7031
Indonesia	0.0018	890480.4375	890496.5625	16.125
United State	-0.0053	17348108	17347184	-924
Vietnam	0.0382	186205.2188	186276.4375	71.2188
RS Asian	0.0019	44842.2188	44843.082	0.8633
Rest of Asia	-0.0001	1275262.25	1275260.375	-1.875
EU_27	0.0014	16550986	16551216	230
Rest of World	0.0017	7738643	7738774	131

6.1.1. Explanation

Table 2 shows that due to 25% increase the tariff of USA and China impacted not only their own economies however the welfare of the global world also affected. When 25% tariff imposed the real GDP of Pakistan increases US\$ 5.2969 billion from base line 243382.9219 billion. The China real GDP decreased US\$ -2091 billion from base line 10351106 billion. United Arab Emirate real GDP increased US\$ 1.4375 billion from base line 399454.3125 billion, Bangladesh GDP increased US\$ 12.7031 billion from base line 172897.7656 billion, Indonesia GDP increased US\$ 16.125 billion from base line 890496.5625 billion, United State real GDP decreased US\$ -924 billion from base line 17348108 billion, Vietnam real GDP increased US\$ 71.2188 billion from base line 186205.2188 billion, Rest of South Asia real GDP increased US\$ 0.8633 billion from base line 44842.2188 billion, Rest of Asia real GDP decreased US\$ -1.875 billion from base line

1275262.25 billion, EU_27 real GDP increased US\$ 230 billion from base line 16550986 and Rest of World real GDP increased US\$ 131 billion from base line 7738643.

6.1.2. Impact of trade war on real Exports and Imports

Table 3: Impact of trade war on real Imports

qiw	Pakistan	China	UAE	Bangladesh	Indonesia	UnitedState	Vietnam	RSAsian	RestofAsia	EU_27	RestofWorld
GrainsCrops	0.2133	-0.7385	0.0135	0.1399	0.3037	-0.2935	0.3289	0.0126	0.1128	0.0074	0.0466
VegFruit	0.2226	-0.2565	0.002	0.2274	0.0876	-0.1436	0.182	-0.0058	0.0724	0.0051	0.0232
MeatLstk	0.2793	-1.298	-0.0093	0.4156	0.1925	-0.2559	0.3269	0.1119	0.1111	0.0154	0.041
Textile	0.3743	-1.2036	0.0298	0.2245	0.4624	-1.7086	1.4893	0.0336	0.5327	0.0467	0.1791
LightMnfc	0.1845	-0.7603	0.0082	0.3112	0.1209	-0.3723	0.2221	0.0359	0.0769	0.0269	0.0542
HeavyMnfc	0.1737	-0.3418	0.0354	0.2537	0.093	-0.3156	-0.0814	0.0264	0.0363	0.0267	0.0624
Motorparts	0.0729	-1.3967	0.005	0.1459	0.0714	-0.216	0.1899	0.0143	0.0315	0.0466	0.025
Electricity	0.0892	-0.2124	-0.008	0.3252	0.0387	-0.2162	0.6236	0.0025	0.1366	-0.0002	0.0008
TransComm	0.1267	-0.2083	0.025	0.2611	0.0865	-0.112	0.4977	0.044	0.0471	0.0154	0.0305
Services	0.1629	-0.2084	0.0422	0.3407	0.1253	-0.1201	0.6412	0.0593	0.0597	0.0202	0.0521

Table 4: Impact of trade war on real Exports

qxw	Pakistan	China	UAE	Bangladesh	Indonesia	UnitedState	Vietnam	RSAsian	RestofAsia	EU_27	RestofWorld
GrainsCrops	-0.2798	0.2286	0.0397	-0.5318	-0.0684	-0.5317	-0.3719	-0.0059	-0.0126	0.0073	-0.0194
VegFruit	-0.2413	0.1865	0.0286	-0.4143	0.0132	0.014	-0.1099	0.0066	-0.0064	-0.0091	-0.0451
MeatLstk	-0.5147	0.5632	0.0448	-0.8052	-0.23	-0.9119	-0.6024	-0.08	0.0304	0.0403	0.0354
Textile	-0.0403	-0.3735	0.3154	-0.0866	-0.0778	-0.6189	-0.4404	0.5671	0.2217	0.0913	0.194
LightMnfc	-0.3736	-0.0633	-0.027	-0.8587	-0.2333	-0.302	-0.671	0.0493	0.1495	-0.0084	-0.0304
HeavyMnfc	-0.3807	0.1719	-0.087	-1.1305	-0.3899	-0.4011	-0.6356	-0.0829	-0.0478	-0.083	-0.1491
Motorparts	-0.0721	-0.0089	0.0278	-0.6669	-0.1932	-2.0834	-0.3255	0.1352	0.0704	0.1555	0.0047
Electricity	-0.1793	0.4312	0.0072	-0.5842	-0.1315	0.3235	-1.0775	-0.0266	-0.0707	-0.001	-0.0163
TransComm	-0.2294	0.2395	-0.038	-0.4903	-0.1911	0.1664	-0.6465	-0.0747	-0.0921	-0.0459	-0.0659
Services	-0.282	0.4087	-0.051	-0.5758	-0.2523	0.2046	-1.0125	-0.0911	-0.1018	-0.0558	-0.0935

The simulated changes in Pakistan's imports and exports as a result of the trade war are shown in Tables 3 and 4. They demonstrate that overall changes in imports and exports are about equal, with no discernible change in the trade balance. The most significant changes on the imports side occurred for Pakistan's import of grains crops (0.2133 percent), veg. fruit (0.2226 percent), meat (0.2793 percent), textiles (0.3743 percent), light manufacturing (0.1845 percent), heavy manufacturing (0.1737 percent), Motor parts (0.0729 percent), electricity (0.0892 percent), Transcom (0.1267 percent), and services (0.1629 percent). This is due, in large part to tariff changes and imports from worldwide. The results show that over all small positive impact on Pakistan imports.

On the exports side, imposing 25% tariff of both parties is for Pakistan's exports of GrainsCrops (-0.2798 percent), VegFruit(-0.2413 percent), MeatLstk(-0.5147 percent), Textile(-0.0403 percent), LightMnfc(-0.3736 percent), HeavyMnfc(-0.3807 percent) , Motorparts(-0.0721 percent), Electricity(-0.1793 percent) , TransComm (-0.2294 percent), Services(-0.282 percent) change. The result shows that over all negative impact on Pakistan exports.

6.1.3. Market Prices

The market price are the current price at which a goods or service have been bought or sold. Table 4.4 shows that the market prices are also impacted. When 25% tariff increased resulted in Pakistan and other countries/ regions are overall positive impacts however, United State and China are negatively impacted because when 25% tariff increased the overall prices of goods and services are also increased when prices increased the real market prices also increased.

Table 5: Impacts of US-China trade war on Market Prices

qds	Pakistan	China	UAE	Bangladesh	Indonesia	UnitedState	Vietnam	RSAsian	RestofAsia	EU_27	RestofWorld	Total
Land	0.1174	0.0414	0.0414	0.147	-0.012	-0.433	-0.1103	0.0674	0.0169	0.0483	0.03	54
Tech_aspros	0.0907	-0.115	0.0197	0.1861	0.0844	-0.0425	0.3041	0.0368	0.0401	0.0266	0.0376	11.3
clerks	0.093	-0.1139	0.02	0.1579	0.0761	-0.0424	0.3392	0.0352	0.0392	0.0264	0.0369	29.2
service_shop	0.0927	-0.1144	0.02	0.1855	0.083	-0.0429	0.3438	0.0407	0.0341	0.027	0.0368	1439
off_mgr_shop	0.093	-0.1181	0.0207	0.1767	0.0835	-0.0421	0.337	0.0409	0.0478	0.027	0.038	406
ag_othlowsk	0.0993	-0.1149	0.0206	0.1759	0.0983	-0.0577	0.2922	0.0561	0.0615	0.0309	0.0403	171
capital	0.0912	-0.1069	0.0204	0.1643	0.0771	-0.0442	0.3494	0.0384	0.0374	0.0276	0.0362	81.7
NatlRes	-0.1416	0.3537	0.0555	0.1136	-0.1428	0.0529	-0.5239	-0.0523	-0.0344	0.0017	-0.0125	37.8
GrainsCrops	0.0929	-0.0546	0.0243	0.1538	0.0427	-0.0995	0.0995	0.0547	0.0341	0.0273	0.0343	24.8
VegFruit	0.1183	-0.0568	0.0225	0.1512	0.0413	-0.078	0.0752	0.0563	0.0345	0.0286	0.0355	480
Textile	0.0847	-0.065	0.019	0.103	0.0477	0.0034	0.094	0.0277	0.0305	0.0234	0.0281	43.3
LightMnfc	0.0721	-0.0541	0.0192	0.1476	0.0629	-0.0287	0.1289	0.0274	0.0276	0.0233	0.0296	55.2
HeavyMnfc	0.0639	-0.0498	0.019	0.1506	0.0561	-0.0242	0.0902	0.0204	0.0232	0.0225	0.0293	42.7
Motorparts	0.0386	-0.0239	0.0199	0.155	0.0655	-0.0158	0.1331	0.0217	0.0278	0.0224	0.0285	
Electricity	0.0548	-0.0543	0.0205	0.1276	0.0462	-0.033	0.2146	0.0275	0.0317	0.0246	0.0274	
TransComm	0.0814	-0.0825	0.0192	0.1482	0.0676	-0.0354	0.2174	0.0346	0.034	0.0254	0.033	
Services	0.082	-0.0925	0.0199	0.1641	0.0761	-0.0394	0.2772	0.0323	0.0363	0.0261	0.0345	

6.1.4. Real factors wages

Table 5 shows that the factor of production prices is also impacted in the global world. In Pakistan the real factors wages are positively impacted land 0.0391%, Tech a spros 0.0125%, clerks 0.0148%, service shop 0.0145%, off mgr shop 0.0148%, ago thlowsk 0.021%, capital 0.013%, NatlRes -0.2197%. How ever in USA and China the real factor wages are negatively impacted.

Table 6: Impact on Real factors wages

prefactreal	Pakistan	China	UAE	Bangladesh	Indonesia	UnitedSta	Vietnam	RSAsian	RestofAsia	EU_27	RestofWorld
Land	0.0391	0.1012	0.0239	0.0145	-0.0727	-0.4192	-0.2307	0.0329	-0.0108	0.0241	0.0007
Tech_aspros	0.0125	-0.0554	0.0022	0.0536	0.0236	-0.0287	0.1831	0.0023	0.0123	0.0025	0.0083
clerks	0.0148	-0.0542	0.0025	0.0254	0.0154	-0.0286	0.2181	0.0008	0.0114	0.0023	0.0076
service_shop	0.0145	-0.0547	0.0025	0.0529	0.0222	-0.0291	0.2227	0.0062	0.0064	0.0028	0.0075
off_mgr_shop	0.0148	-0.0584	0.0032	0.0441	0.0228	-0.0283	0.2159	0.0064	0.02	0.0028	0.0087
ag_othlowsk	0.021	-0.0552	0.0031	0.0433	0.0375	-0.0439	0.1712	0.0216	0.0337	0.0068	0.011
capital	0.013	-0.0472	0.0029	0.0317	0.0163	-0.0304	0.2284	0.004	0.0096	0.0035	0.0069
NatlRes	-0.2197	0.4137	0.0379	-0.0189	-0.2034	0.0667	-0.6439	-0.0868	-0.0622	-0.0224	-0.0417

6.1.5. Terms-of-trade Impact

This study uses 12 regions/countries, which generally result in two balancing effects. The impact of the trade war on Pakistani imports will reduce Pakistan's production costs, increasing the supply of exports to world markets. In this way, you can expect that for each unit of production you will receive a lower price for export. Both the US and China have lowered Pakistani export prices, which will increase demand for Pakistani exports, which will drive up Pakistani export prices. The net effect depends on which of the two effects is higher.

Table 7: Impact on Terms-of-trade

Terms to Trade	USChina	Pre USChina	Post USChina	Ch/%Ch uschina
Pakistan	0.0764	1	1.0008	0.0008
China	-0.0754	1	0.9992	-0.0008
UAE	0.0096	1	1.0001	0.0001
Bangladesh	0.11	1	1.0011	0.0011
Indonesia	0.0417	1	1.0004	0.0004
United State	-0.0447	1	0.9996	-0.0004
Vietnam	0.1035	1	1.001	0.001
RS Asian	0.0184	1	1.0002	0.0002
Rest of Asia	0.0234	1	1.0002	0.0002
EU_27	0.0066	1	1.0001	0.0001
Rest of World	0.0162	1	1.0002	0.0002

According to Table 7, which shows the impact of the US-China trade war on the terms of trade in the global market, Pakistan's terms of trade have declined principally as a result of changes in the prices it charges for imports relative to the prices it charges for exports. though China After the trade war, terms of trade will deteriorate by -0.07. UAE terms of trade improve by 0.009% from the starting point. Bangladesh has had the greatest decline, down 0.11 percent from the baseline. United States and Indonesia's terms of trade declined by -0.45 percent from the baseline (0.042%). From the baseline, Vietnam (0.10), RS Asian (0.018%), Rest of Asia (0.023%), EU 27 (0.006%), and Rest of World (0.016%) all had increases.

7. Conclusion and Policy Recommendations

This study aim is to evaluate the effects of US-China trade war on global trade, welfare and the macro level impacts on world economy and also checked these trade war implications for Pakistan balance of trade using the newly developed GTAP model 10. The methodological framework used for examining the impact of Trade war on global economy and welfare is based on neo classical theories like the standard global GTAP model. The model is solved using the software GEMPACK.

The real GDP results illustrates that this trade war bring small positive impact on Pakistan, UAE, Bangladesh, Vietnam, RSAsian ,EU-27 and other Rest of the world. The removal of tariffs caused changes in the ratios of relative import and domestic prices, which in turn led to imports and locally produced items being substituted for one another. The simulation results shows that the imposition of tariff results in Pakistan that real import of Grain crops trade war will increase up to 0.21 percent. The market prices impacted due to this trade war in every region/ countries may some are positively or negatively as show in results. There is a Small positive changes measures relative wages in every region/countries including wages of eight important factors of productions and selected industries. Some recommendations for further research are as follows:

The database should include some of the key features, for instance, regional level industry and macro data – regional IO tables, industry level capital stocks data and time series forecasts for different exogenous variables in the present model. It is ideal to enlarge the Pak-GTAP to include features, such as regional Extensions in tracking regional disparities, recursive dynamics in making conditional forecasts, and to include features of imperfect competition in some of the markets - in order to better capture the ground realities in Pakistan markets.

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