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The United States–China Trade War: Timeline, Consequences, and Prospects for the US Economy. An Analysis Based on the Textile Industry

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Abstract

In this paper, we investigate the scale of the drop in American imports after it imposed punitive tariffs on Chinese goods. Our analysis spans the whole period of Donald Trump's presidency (January 2017 – January 2021). In contrast to existing studies, which are mainly devoted to the impact of reduced trade flows on the key macroeconomic indicators, we focus on the specific market of textile products, which was among the most affected by the protectionism measures. The quantitative analysis allows us to conclude that the imposed duties severely hit the textile industry, bringing a noticeable drop in US imports of selected groups of products from China. Furthermore, the review of long-term consequences indicates that the ongoing trade war has not only adversely affected the macroeconomic fundamentals of the US economy, but it is also likely to have a long-lasting impact on global supply and production chains.

Keywords: trade war, trade barriers, protectionism, tariffs, US–China relations, international trade, US textile industry

JEL: F13, F14, F16

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Introduction

Donald Trump's presidency (January 2017 – January 2021) was marked by economic nationalism, with the idea of "America First" as a leitmotif of his leadership. Admittedly, the Trump administration fought in the economic field with many foreign partners, including the European Union (EU) and the North American Free Trade Agreement (NAFTA), but the fiercest battle took place between the US and China. It is often referred to as the China–United States trade war. Within its framework, the US imposed four rounds of tariffs, which affected thousands of Chinese goods, and made China employ similar retaliatory measures.

At the same time, it is worth noting that reduced trade flows were not the only symptom of the US–China decoupling. It also embraced technology protectionism, reduced approvals for export licenses, imposed sanctions and restrictions on partnering companies, and saw a drop in foreign direct investment flows and a deceleration in people mobility. Some of these trends were observed as far back as 2008, which is attributable to the Global Financial Crisis. Nonetheless, they clearly accelerated under Trump's presidency (García Herrero and Tan 2020).

Finally, at the time of this study, it seems that the transition of power to Joe Biden at the beginning of 2021 has not changed US policy or attitudes towards China. The first hundred days of his presidency did not bring a relaxation in the tensions between the two nations, mainly due to the complexity of these relations, different objectives, the issue of human rights, and intellectual property rights, among others. The latest Gallup survey reveals that only 20% of Americans hold a favourable view of China, which is the lowest level since the questionnaire was first carried out (Younis 2021). Such a perception of China also legitimates the confrontational attitude presented by Biden at the 2021 Virtual Munich Security Conference: "We have to push back against the Chinese government's abuses and coercion that undercut the foundations of the international economic system" (The White House 2021).

In this study, we concentrate on the highly topical subject of the China–United States trade war, which will undoubtedly determine the shape of the global economy in decades to come. In contrast to existing studies, which are mainly devoted to the impact of reduced trade flows on key macroeconomic indicators, we focus on the specific market of textile products, which was among the most affected by the protectionism measures. The textile industry has a significant share in the China-United States exchange, and plays an equally important role in Chinese production and international trade (a detailed explanation can be found in section *US–China trade in textiles*).

In particular, we take the US perspective and investigate the scale of the drop in American imports after it imposed punitive tariffs on Chinese goods. Our approach allows us to disaggregate groups of textile products into individual Harmonized Tariff Schedule

(HTS) codes on an eight-digit detail level (or higher). That way, we are able to more accurately identify the market's exact response to tariff (protectionism) decisions and the time delay between the announcement and the potential changes in the trade pattern. Our analysis spans the whole period of Donald Trump's presidency. Although the effects we try to identify are revealed in the short term, such a sharp change in the trade policy, especially when continued for years, has the potential to bring long-term consequences. We also try to provide a scenario for such changes.

At the same time, though the last months of our sample period coincide with the outbreak and the spread of the COVID–19 pandemic, we do not put it at the centre of our research. The pandemic has been a gamechanger in different dimensions, including international trade; thus, it merits separate analyses. However, they should be based on longer time series than those that were available at the time of this study. The COVID–19-induced crisis started in China at the end of 2019, and the resulting lockdowns in both economies must have played an important role in determining their mutual trade volumes. Nonetheless, our aim is to highlight the effects of the trade war that started well before the outbreak of the pandemic and that dominated the period under analysis.

The rest of the paper is structured as follows. The next section discusses the literature on free trade and protectionism. It also refers to recent studies on the implications of the China–United States trade war on the latter's economy. Section 3 presents a detailed timetable of the Trump administration's measures implemented within the trade war. Section 4 introduces the dataset and lays down the methodology and estimation procedure we use in this paper. The results of the empirical model and the discussion are provided in Section 5. The last section concludes.

Literature review

Free trade and protectionism. Theoretical discussion

A country defining its trade policy might choose free trade or a policy of interventionism. Usually, limitations are applied selectively towards certain partners and/or products. These restrictions comprise tariff and non-tariff measures. The first group includes duties and tariff quotas, while the second includes, among others, sanitary and phytosanitary measures, technical barriers to trade, rules of origin, and subsidies (UNCTAD 2012).

Regardless of the measure applied, its economic effect[1] is similar – a reduction in the total welfare of the country imposing such a measure and the welfare of its trading partners. Usually, studies on the impact of a specific policy tool are conducted with a fo-

1 Although the economic effect is similar, the mechanism in which it occurs is different.

cus on duties, as they are considered to be the "lesser evil" by the General Agreement on Tariffs and Trade/World Trade Organisation (GATT/WTO), but also due to their transparency in imposition and ease of execution.

The starting point for theoretical considerations is the analysis conducted by Krugman and Obstfeld (2003), who tried to quantify the benefits and costs of tariffs from the point of view of both the importing and exporting country. They demonstrated that a tariff increases the prices in the importing country and reduces it in the exporting one. Thus, as a consequence of price changes, consumers in the importing country lose while those in the exporting state profit. From the perspective of producers, the distribution of benefits and costs is contrary. Another winner of such a trade policy is the government of the country imposing duties and collecting revenues.

From the point of view of the importing country, duties increase domestic prices (by the value of the duty) but lower foreign export prices. Thus, domestic production rises while consumption falls. The benefits for producers in the importing country result from the higher surplus (redistributive effect). For the same reason, consumers lose as the surplus falls (consumer effect). Another outcome is related to the diversion of the source of supply. Prior to the introduction of a duty, part of the demand for a given good was covered by foreign producers. However, after imposing a tariff, it is satisfied by domestic producers who, in the previous period, due to high production costs, sold smaller quantities (protective effect). As mentioned before, a third actor, the government, collects the duties, thus increasing its revenues (fiscal effect).

Krugman and Obstfeld (2003) noticed that these gains and losses accrue to different economic agents. As a result, the overall cost-benefit evaluation of a tariff depends on how much we value a monetary unit worth of benefit to each group. It should be noted that losses to the consumer might be accompanied by benefits to the domestic producers and the government. Otherwise, these become so-called *deadweight losses*. Krugman and Obstfeld (2003) distinguish two groups of losses: (1) production distortion losses, which result from the fact that the tariff leads domestic producers to produce too much of this good; (2) domestic consumption distortion losses, which result from the fact that a tariff leads consumers to consume too little of a good. However, when considering the economic consequences of tariffs, it is also important to distinguish whether the imposing country can or cannot affect world prices and thus change its terms of trade. Depending on the size of the country (its ability to change global prices), it may achieve the terms of trade gain that result from the decline in foreign export prices caused by a tariff. If the country is small, the second effect drops out, so the costs of an import tax exceed the benefits, thus reducing its welfare.[2]

2 Graphical illustration of the economic effects of tariffs are available in Krugman and Obstfeld (2003).

Furceri et al. (2019) analysed the impact of an increase in tariffs on selected macroeconomic indicators of the domestic economy. They stated that such a policy leads to a decline in domestic output and productivity, increased unemployment, and higher inequality, but also real exchange rate appreciation, while the effect on the trade balance is relatively small.

Gorman (1958; 1959) and Leith (1971) analysed the impact of tariffs on trade volumes, emphasising the role of elasticity for imported goods as a factor that determines their harmfulness. Gorman (1958) constructed reference models to quantify the impact of an import tax and argued that if the goods in question do not differ in quality and the demand for them is fairly elastic, the volumes of trade with no restrictions are approximately three times higher than in the final tariff equilibrium.

Surprisingly, a country may gain from a trade war, even if its imports are highly elastic compared to its exports. Such an advantage can be achieved when the foreign income elasticity of demand for imports is sufficiently more significant than its own exports. Tokarick (2004) considered the impact of the country on global prices, differentiating big and small states that can or cannot influence their terms of trade. He also considered the role of elasticity, trade shares, and the size of the distortion triggered by the duties. He concluded that a small country, which has no influence on its terms of trade, bears the costs of duties, while for a big country, there is no theoretical basis to claim that most of the costs of the duties will be borne by the country imposing them.

Tokarick (2004) addressed two issues: (1) What would the distribution of the welfare effects across countries be from a marginal change in the home country tariff? And (2) What is the distribution of the cumulative welfare effects of a tariff change in the home country, perhaps relative to free trade, across countries? His research demonstrates that "the home country would be hurt more from a tariff increase if its actual tariff rate exceeded twice its optimal rate, while the foreign country would be hurt more if the home tariff were less than twice its optimal rate. Regarding the second issue, the home country would be hurt more than the foreign country, relative to free trade, if its actual tariff rate exceeded four times its optimal tariff; if the home tariff is less than four times its optimal tariff, the foreign country is hurt more than the home country" (Tokarick 2004, p. 20).

The US–China trade war. Implications for the US economy

The existing literature on the United States–China trade war points to negative consequences for the US economy. These include, among others, an increase in prices, wealth losses, and a deterioration in competitiveness.

Flaaen and Pierce (2019) investigated the impact that the 2018 US tariffs, as well as the retaliatory tariffs imposed by its trading partners, had on the US manufacturing sector.

Their results indicate that the tariffs have not increased domestic activity. On the contrary, they have led to relative increases in producer prices via rising input costs, reduced competitiveness from retaliation, and reductions in manufacturing employment.

Amiti, Redding, and Weinstein (2019) found that import tariffs were costing US consumers and the firms that import foreign goods an additional $3.2 bn per month in added tax costs, and another $1.4 bn per month in deadweight welfare (efficiency) losses. Tariffs have also changed the pricing behaviour of US producers by protecting them from foreign competition and enabling them to raise prices and markups. They estimated that the combined effects of input and output tariffs had raised the average price of US manufacturing by 1 percentage point. Finally, they showed that the rise in tariffs had reduced the variety of products available to consumers.

Fajgelbaum et al. (2019) analysed the short-run effects of the return of protectionism on the US economy and found a large impact of the trade war on imports and exports. In particular, their estimates point to an annual loss of $51 bn for the US (0.27% of GDP). After accounting for tariff revenue and gains to domestic producers, the aggregate real income loss amounted to $7.2 bn (0.04% of GDP). Finally, they demonstrated that Republican states were most negatively affected due to the retaliatory tariffs.

Finally, the Tax Foundation (2019) investigated the Economic Impact of US Tariffs and Retaliatory Actions. Their results point to largely negative effects, including reduced economic output (0.23%), income, and employment (by 180,300 full-time equivalent jobs).

The US–China trade war. Background and measures implemented by the US administration

The changes in the American administration held at the beginning of 2017 were followed by promises or actions to protect the domestic market with import duties. Because all the announcements had the power to shape the bilateral relations, we have collected and classified all the communications by type and the potential positive (+) or negative (–) effect on trade. Press releases not followed by any further changes in the trade policy were tagged ***Statement***. When the communication was an ***Administrative decision***, it received such a tag, supplemented with information about whether any actions were taken or not. Finally, some communications informed about changes in import taxes, and were tagged ***Tariff change***. All the communications with tags and expected effects on goods exchange are listed in Table 1 below.

Table 1. Trade war timeline (US perspective)

Date	Announcement/decision	Category
11/05/2017	A joint statement announcing the initial actions of the US-China Economic Cooperation 100-Day Plan under the framework of the *US-China Comprehensive Economic Dialogue*.	Statement (–)
14/08/2017	President Trump asks the United States Trade Representative (USTR) to investigate potential consequences of the Chinese violation of intellectual property rights, innovation, or technology development, justifying actions taken under Section 301 of the 1974 Trade Act.	Administrative decision – no action yet (–)
1/01/2018	The USTR submits a report stating that the US made a mistake in supporting Chinese accession to the WTO.	Statement (–)
22/03/2018	Following the investigation from August 2017, President Trump signs a Memorandum to increase tariffs on Chinese imports.	Tariff change (–)
26/03/2018	The USTR reports to the WTO a case against China's discriminatory technology licensing requirements, which are suspected to be inconsistent with Trade-Related Aspects of Intellectual Property Rights (TRIPS).	Administrative decision – followed with action (–)
3/04/2018	The USTR releases a list of Chinese products that might be subject to the retaliatory tariff under Section 301.	Administrative decision – no action yet (–)
5/05/2018	President Trump announces that he had instructed the USTR to consider $100 bn in additional retaliatory tariffs on China.	Administrative decision – no action yet (–)
6/05/2018	The USTR confirms the decision to impose new retaliatory measures.	Tariff change (–)
19/05/2018	The United States and China release a statement with an obligation to increase Chinese imports from the US and improve efforts regarding intellectual property protection and boost engagement in trade and investments.	Statement (+)
29/05/2018	President Trump announces that the US would impose a 25% tariff on goods worth $50 bn imported from China while the USTR would continue its dispute with China on the forum of the WTO. When acquiring industrially significant technology, the United States will implement specific investment restrictions and enhanced export controls.	Statement (–)
19/06/2018	The Office of Trade and Manufacturing Policy (OTMP) releases a report about the potential threat of Chinese policy and laws.	Statement (–)
19/06/2018	President Trump announces that the USTR was asked to identify Chinese goods worth $200 bn for a potential additional 10% tariff to respond to the Chinese plan to raise duties on American goods worth $50 bn. If China further implements import taxes, the US may respond with duties imposed on goods, worth $200 bn.	Statement (–)
6/07/2018	The US imposes additional import duties on Chinese goods covered by Section 301, which came into effect the following day. It affects goods worth $34 bn. China announces retaliatory measures.	Tariff change (–)

Date	Announcement/decision	Category
6/07/2018	The USTR releases the product exclusion process for Chinese products subject to Section 301 tariffs.	Statement (+)
10/07/2018	The USTR announces the intention to impose a 10% additional tariff on Chinese goods, worth $200 bn.	Administrative decision – no action yet (–)
26/07/2018	At the WTO forum, the US presented the document "China's trade-disruptive economic model" about the Chinese policy's threats to the global economy.	Statement (–)
1/08/2018	The USTR reveals that President Trump was considering increasing the proposed additional tariff from 10% to 25% on Chinese goods, worth $200 bn.	Statement (–)
7/08/2018	The USTR releases the final list of Chinese goods, worth $16 bn, which will be covered with an additional 25% tariff. In response, The Ministry of Commerce of the People's Republic of China (MOFCOM) declared it would impose an additional 25% tariff on American goods, worth $16 bn.	Statement (–)
23/08/2018	The U.S. Customs and Border Protection (CBP) covers goods worth $16 bn with additional import duties. The decision enters into force the following day. China implements retaliatory tariffs on $16 bn worth of American goods.	Administrative decision – followed with action (–)
13/09/2018	President Trump signs the Miscellaneous Tariff Bill (MTB) Act of 2018 with an effective date of 13/10/2018. It is temporary (until December 2020), and lowers or eliminates import tariffs on selected products.	Administrative decision – followed with action (+)
17/09/2018	President Trump carries into effect formerly declared duties on Chinese goods. The first step includes a 10% import tax imposed on goods worth $200 bn, effective 24/09/2018; the second means 25% duties on goods worth $200 bn, effective 1/01/2019. The announcement was followed by retaliatory tariffs varying from 5% to 10% imposed on goods worth $60 bn and effective 24/09/2018.	Tariff change (–)
20/11/2018	The USTR releases a report updating its investigation into Chinese policies and practices in intellectual property rights, technologies, etc., concluding that it had not changed its policy.	Statement (–)
28/11/2018	The USTR releases a statement criticising China's high tariffs on automobiles originating from the US with a declaration of further examination of possible retaliatory actions.	Statement (–)
1/12/2018	President Trump announces that the 10% tariffs imposed on Chinese goods worth $200 bn would not be raised to 25% as planned. China will try to reduce the American trade deficit, and if it fails, those tariffs will be increased to 25%.	Administrative decision – followed with action; duties not increased (+)
19/12/2018	The USTR announces that the Section 301 punitive tariffs on Chinese goods worth $200 bn would not be, at that moment, increased.	Administrative decision – followed with action; duties not increased (+)

Date	Announcement/decision	Category
21/12/2018	The USTR grants exclusions for some requested products worth $34 bn, which were on the 25% tariff list (exclusion is retroactive to 6/07/2018 and effective until 28/12/2019.	Administrative decision – followed with action; duties not increased (+)
25/02/2019	President Trump delays increasing the Section 301 tariffs on $200 bn imports from China from 10% to 25%.	Statement (+)
13/05/2019	The Trump administration proposes considering up to 25% Section 301 tariff on additional $300 bn imports from China. In response, China announces retaliatory tariffs.	Statement (–)
28/05/2019	China remains on the "monitoring list" due to its currency practices.	Statement (–)
29/06/2019	President Trump announces that trade talks with China will resume, withholding the imposing of new 301 section tariffs.	Statement (+)
01/08/2019	President Trump announces the US will impose 10% section 301 punitive tariffs on approx. $300 bn imports from China.	Statement (–)
05/08/2019	China is to be designated a "currency manipulator".	Administrative decision – followed with action (–)
13/08/2019	The Office of the US Trade Representative releases a list of "Tranche 4" products subject to additional 10% tariffs.	Administrative decision – followed with action (–)
23/08/2019	The Trump administration announces it will increase the Section 301 tariffs by 5 pp to 30% for around $250 bn of Chinese goods as of October 1, 2019, as a response to previous retaliatory measures on the side of China.	Administrative decision – followed with action (–)
11/09/2019	President Trump announces a delay in increasing the Section 301 punitive tariffs by 5pp from 25% to 30% on approx. $250 bn of Chinese goods as a response to previous Chinese concessions.	Statement (+)
11/10/2019	President Trump announces that a "phase 1" trade agreement with China has been reached.	Statement (+)
13/12/2019	The Trump administration announces that the "phase one" trade deal with China has been reached.	Statement (+)
01/01/2020	President Trump announces that the "phase one" trade deal between the US and China will be signed on 15 January, 2020.	Statement (+)
13/01/2020	China's designation as a currency manipulator is removed; however, it remains on the US Treasury's "Monitoring List".	Statement (+)
15/01/2020	The United States and China officially sign the "phase one" economic and trade agreement; the Trump Administration announces a reduction of the 15% punitive tariffs on Tranche 4A products from 15% to 7.5%, effective on February 14, 2020. Meanwhile, the scheduled tariffs for Tranche 4B products are suspended.	Tariff change (+)

Source: authors' own compilation based on Lu 2021.

In general, Trump's administration, following his election premises, imposed tariffs on selected goods imported from China. This process was divided into four stages. In the first one, which came into force July 6, 2018, the US enforced a 25% tariff on 818 products from categories such as machinery, manufacturing, inputs, elevators, and aircraft parts, accounting for $34 bn (Shapiro n.d.).

In the second tranche, it imposed an import tax of the same rate on 279 products, including soybeans, automobiles, and chemicals, worth $16 bn. The catalogue of products affected in stages 1 or 2 does not contain goods from section XI: Textile and Textile Articles.

The third tranche came into force on September 24, 2018, with an initial tariff of 10%, increased to 25% on May 10, 2019. It hit 5745 products, from categories like food, beverages, chemicals, wood, and fabrics, representing $200 bn.

In stage 4, the United States Trade Representative (USTR) released two lists: 4A and 4B. Tranche 4A came into effect on September 1, 2019. Initially, products included in list 4A faced an additional tariff of 15%. Due to the US–China Phase One trade deal, it was reduced by half to 7.5% on goods worth $120 bn, effective February 14, 2020. List 4A included items such as food, beverages, chemicals, glasses, blinds, and clothing. At the same time, List 4B, which included goods like electronics, chemicals, food, sports equipment, clothes, and wooden hangers, worth $160 bn, which was planned to come into force on December 15, 2019, was suspended. The detailed schedule of the import tax levy is presented in Table 2.

Table 2. Plan of US tariffs imposed on China

Round	Effective day	Rate of tariff	Number of categories affected*	Value of the products affected ($ bn)
1	July 6, 2018	25%	818	34
2	August 23, 2018	25%	279	16
3	September 24, 2018	started at 10% and escalated to 25% on May 10, 2019	5745	200
4(A)	September 1, 2019	15%	3250	175
4(B)	December 15, 2019	15%	555	160

* products according to the 8-digit HTS codes.
Source: authors' own compilation based on: Shapiro n.d.; V. Alexander & Co., Inc. 2020; Bryant 2022; Lee, Varas 2022.

Data and methodology

US–China trade in textiles

The textile industry was chosen for this research for a few reasons. First, China is the leading global clothing supplier, so levying import taxes should impact its economy. In 2019,[3] China's share in global clothing exports was 30.8%, worth $152 bn. The second most dominant supplier was the EU–27, which accounted for 27% and $136 bn (see Figure 1). Both China and the EU faced an increase in US import taxes, also within textiles. On the other hand, the EU–27 ($180 bn) and the US ($95 bn) are the top importers of these goods. The difference is that nearly half of the EU–27's imports were intra-EU trade (47%).

The US has a trade deficit not only in terms of clothing but generally. In 2019, it was equal to $834 bn (not seasonally adjusted), while for the first three quarters of 2020, it was almost $650 bn. The top three trading partners of the US are Mexico, Canada, and China. With the first two, the US has a trading agreement – the United States–Mexico–Canada Agreement (USMCA), formerly NAFTA, while with the last one, it has the most significant trade deficit (see Figure 2).

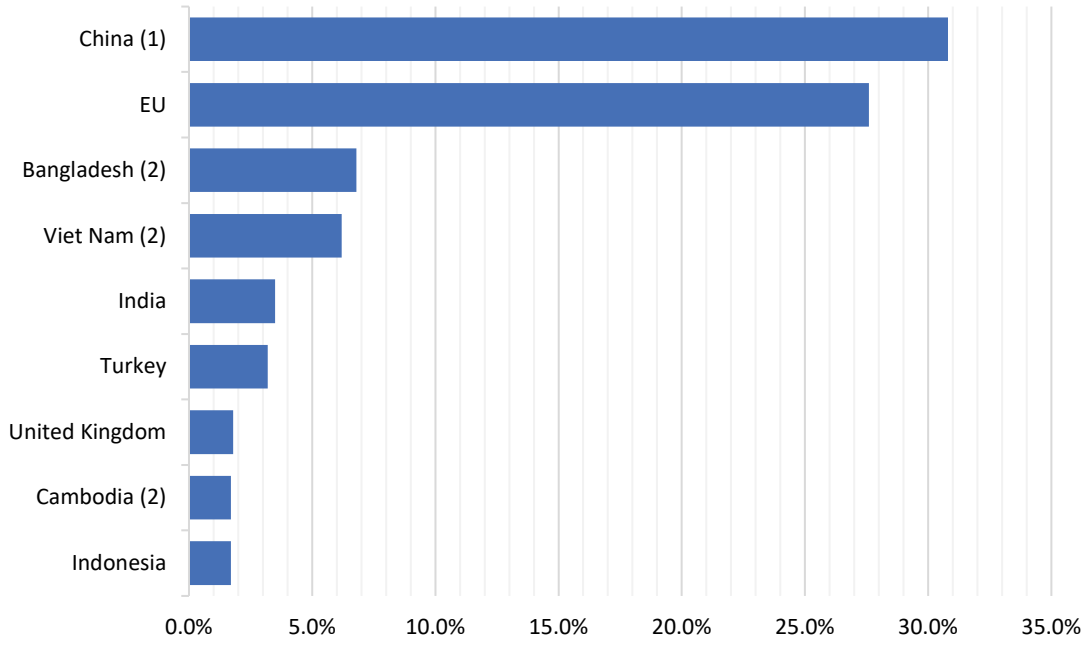

Figure 1. Top exporters of clothing, shares in world exports 2019 (in %)

Note: (1) includes significant shipments through processing zones; (2) estimates
Source: authors' own elaboration based on World Trade Organization n.d.

3 The most recent, full year data available.

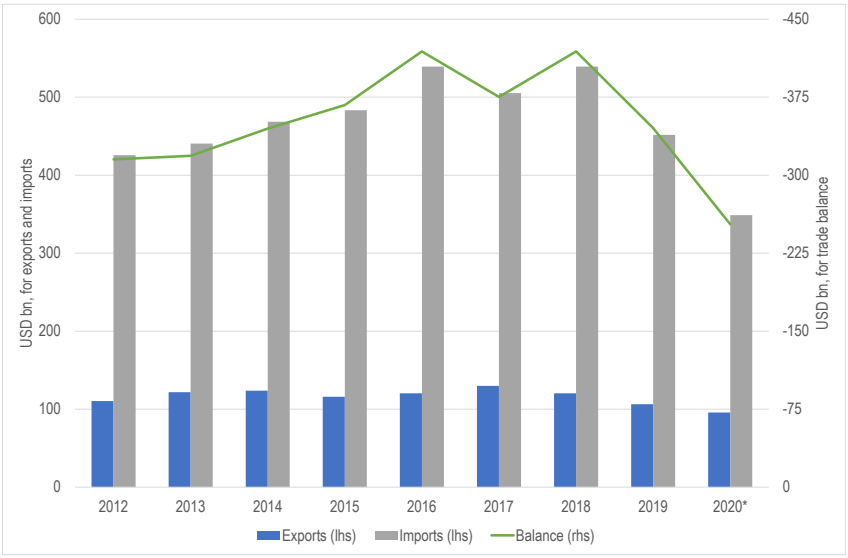

Figure 2. US exports, imports, and trade balance with China, 2012–2020 ($ bn)

Source: authors' own elaboration, based on United States Census Bureau n.d. – data for 2020 covers Q1-Q3.

China is also the US's leading supplier of textiles, with an average share in the analysed period (2012–2020) equal to 36% (Figure 3).

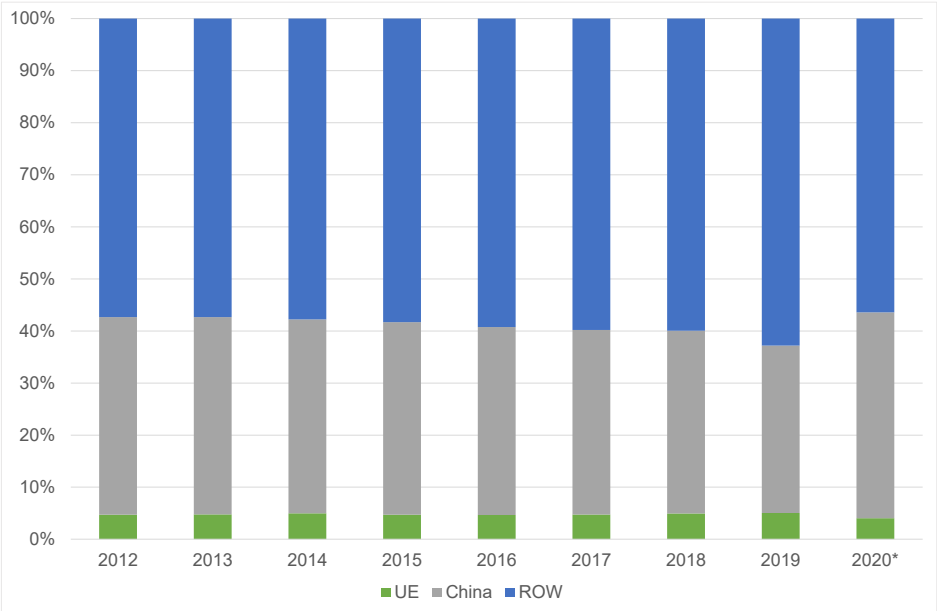

Figure 3. Share in US imports in textile and textile articles (HTS section XI)

Note: ROW stands for Rest of the world.
Source: authors' own elaboration, based on DataWeb n.d. – data for 2020 covers Q1-Q3.

When analysing US–China bilateral trade in textiles, we consider Section XI: Textile and Textile Articles from The Harmonized Tariff Schedule of the United States (HTS), which was enacted by Congress and made effective on January 1, 1989, replacing the former Tariff Schedules of the United States.

The HTS comprises a hierarchical structure for describing all goods in trade for duty, quotas, and statistical purposes. This structure is based upon the international Harmonized Commodity Description and Coding System (HS), administered by the World Customs Organization in Brussels; the 4- and 6-digit HS product categories are subdivided into unique 8-digit US rate lines and 10-digit non-legal statistical reporting categories. Classification of goods in this system must be done in accordance with the General and Additional US Rules of Interpretation, starting at the 4-digit heading level, to find the most specific provision, and then moving to the subordinate categories (United States International Trade Commission 2022).

Methodology

Our study focuses on a group of 30 products with the highest share in US imports of Articles of apparel and clothing accessories, knitted or crocheted (henceforth, textiles). To save space, we present the results for the top 10 products in terms of shares in the US import of textiles. The result for the remaining 20 products (with lower shares) are available upon request.

Table 3. Products with the highest shares in US imports of textiles – top 10

Tariff code	Product	Import share (% of total)
6111.20.10	Blouses and shirts, except those imported as parts of sets (Babies' garments and clothing accessories, knitted or crocheted, of cotton)	12.7
6111.20.50	Trousers, breeches and shorts, except those imported as parts of sets (Babies' garments and clothing accessories, knitted or crocheted, of cotton)	7.3
6217.90.90	Other (Other made-up clothing accessories; parts of garments or of clothing accessories, other than those of heading 6212: Parts)	4.2
6207.91.10	Bathrobes, dressing gowns and similar articles (Men's or boys' singlets and other undershirts, underpants, briefs, nightshirts, pyjamas, bathrobes, dressing gowns and similar articles: of cotton)	3.8
6305.39.00	Other (Sacks and bags, of a kind used for the packing of goods)	3.6
6208.92.00	Of man-made fibres (Women's or girls' singlets and other undershirts, slips, petticoats, briefs, panties, nightdresses, pyjamas, negligees, bathrobes, dressing gowns and similar articles)	3.1
6112.11.00	Of cotton (Track suits, ski-suits and swimwear, knitted or crocheted: track suits)	3.1
6104.44.20	Other (Women's or girls' suits, ensembles, suit-type jackets, blazers, dresses, skirts, divided skirts, trousers, bib and brace overalls, breeches and shorts (other than swimwear), knitted or crocheted: of artificial fibres)	2.6

Tariff code	Product	Import share (% of total)
6209.90.90	Other (Babies' garments and clothing accessories: of other textile materials)	2.4
6114.30.30	Other (Other garments, knitted or crocheted: of man-made fibres)	2.0

Source: authors' own calculations based on DataWeb n.d.

In order to check whether implementing tariffs had a significant impact on the level of imports, the parameters of the following model were estimated for the period before the tariffs were implemented:

$$y_t = \boldsymbol{x}_t \beta + \varepsilon_t, \tag{1}$$

where *yt* denotes the level of imports and ***xt*** consists of monthly dummies and a time trend (if it is significant).

In the next step, counterfactual ex-post forecasts are calculated for the period after the implementation of tariffs based on the formula:

$$\hat{y}_{T'+s} = \quad _{T'+s}\hat{\beta}\,, s = 1, 2, \ldots, S, \tag{2}$$

where *T'* is the period of implementing tariffs.

Next, differences are plotted between the observed and forecasted values:

$$\hat{y}_{T'+s} - y_{T'+s}, \tag{3}$$

where $\hat{y}$ denotes the forecasted value of y and $\hat{\beta}$ is the vector of estimates of β.

Results and discussion

In the first step of our quantitative analysis, the parameters of trend models (with seasonal variables) that explain the development in the US imports of textile products from January 2012 – June 2018 (i.e. before the tariff introduction) were estimated. Then, in the second step, the value of imports[4] was forecast for the period starting in June 2018,

4 Entry data represents Imports for consumption, which measures the total merchandise that has physically cleared through US customs immediately or after withdrawal for consumption. These statistics are calculated with the customs value formula, representing the value of imports as appraised by US Customs and Border Protection (Customs). This value is defined as the price actually paid or payable for merchandise excluding U.S. import duties, freight, insurance, and other charges.

assuming that the imports behaved in the same way as before the introduction of the duties (i.e. under the hypothetical no-tariff assumption).

Figures 4 through 13 present the development of the empirical values of US imports (blue lines) and forecasted values (orange lines) for the period July 2018 – September 2020. In addition to the point forecast, its 95% confidence interval is presented. A careful analysis of the figures allows us to draw a clear-cut conclusion. For the majority of the top 10 goods, a significant decrease in the value of imports is observed in relation to the forecasted values. Moreover, the empirical values are outside the 95% confidence interval. The strongest declines in imports, both in absolute values and with regard to the forecast, were observed for the following categories: 6208.92.00 (of man-made fibres); 6112.11.00 (of cotton); 6104.44.20 (other (Women's or girls' suits, ensembles, suit-type jackets, blazers, dresses, skirts, divided skirts, trousers, bib and brace overalls, breeches and shorts) (other than swimwear), knitted or crocheted: of artificial fibres)). The category "Other (Sacks and bags, of a kind used for the packing of goods)" is the only one for which we identified only marginal deviations of the empirical values from the forecast. It is obvious that after the Trump administration introduced the tariffs, a reduction in US imports from China was recorded. This reduction proved to be statistically significant compared to what would be expected under the alternative scenario of no trade barrier.

In the first quarter of 2020, the deviation between the empirical and forecasted values increased. It is very likely related to the COVID–19 outbreak, which started in China and was followed by a lockdown for both individuals and businesses. The first restrictions were implemented in Wuhan on 23 January 2020 and gradually spilled over into the other cities and provinces. Factories and other business units restored their relatively normal operations in April 2020. Unfortunately, when the supply part was ready to provide their products for exports, the demand side was struggling with the continuously worsening situation, which also resulted in lockdowns or other restrictions.

This fight with the pandemic based on restrictions and shutting down business activities can be observed in all the analysed product groups. However, although we do not attempt to estimate the part of the deviation that the "COVID–19 effect" was responsible for, we still believe that our results regarding the trade war effects hold. This is because the significant differences between the forecasted and empirical values were observed well before the outbreak of the pandemic.

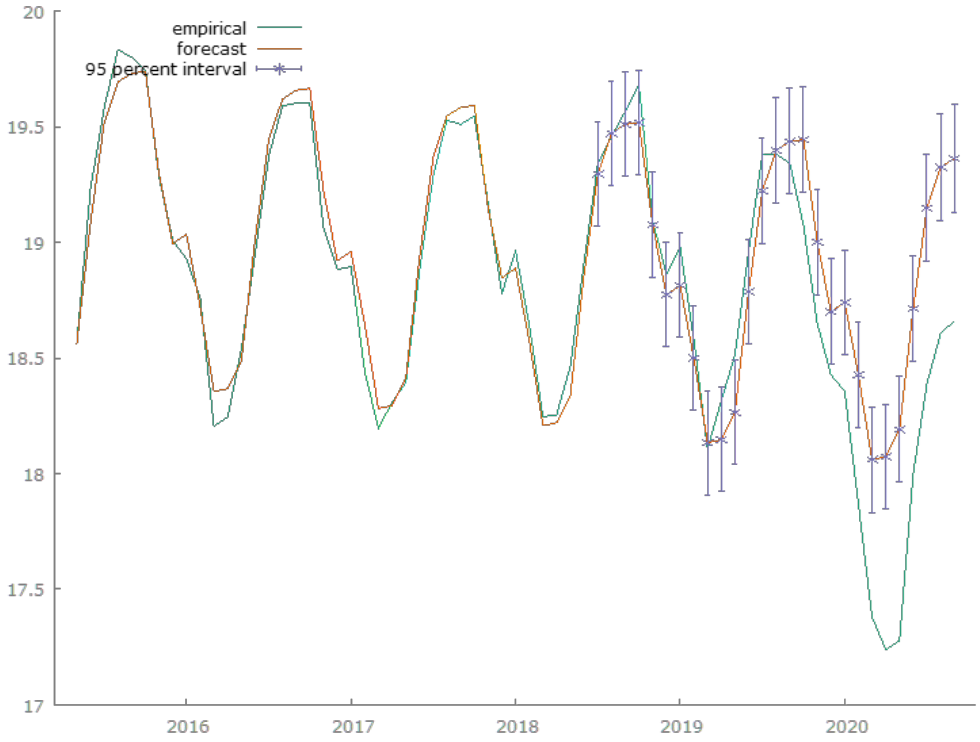

Figure 4. Tariff code 6111.20.10

Source: authors' own calculations conducted in Gretl. Logarithms of imports are presented.

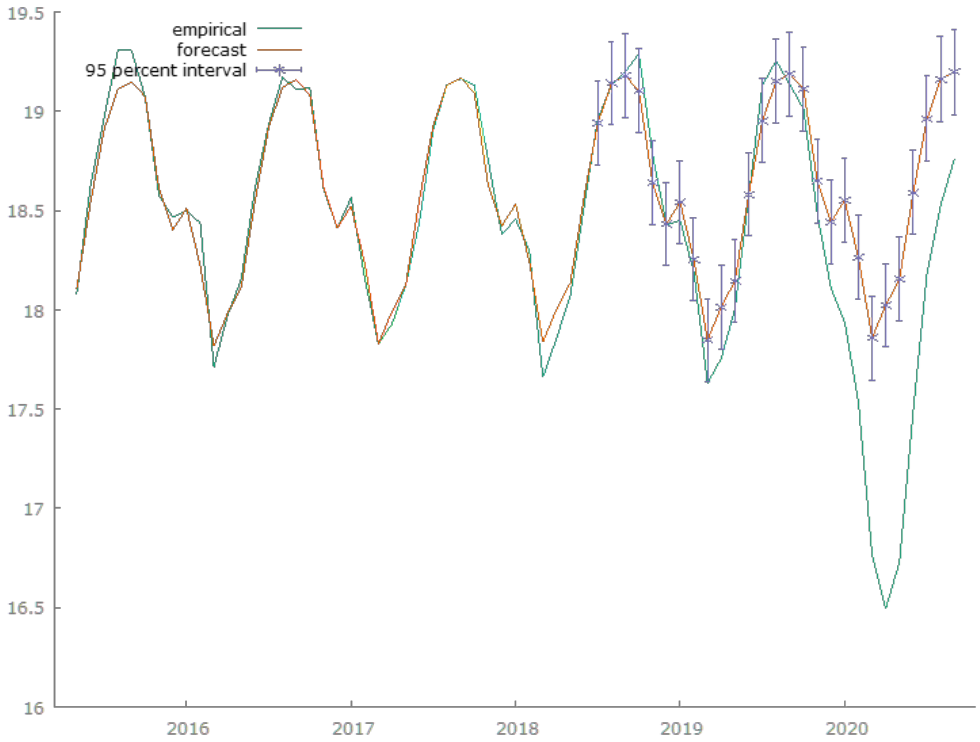

Figure 5. Tariff code 6111.20.50

Source: authors' own calculations conducted in Gretl. Logarithms of imports are presented.

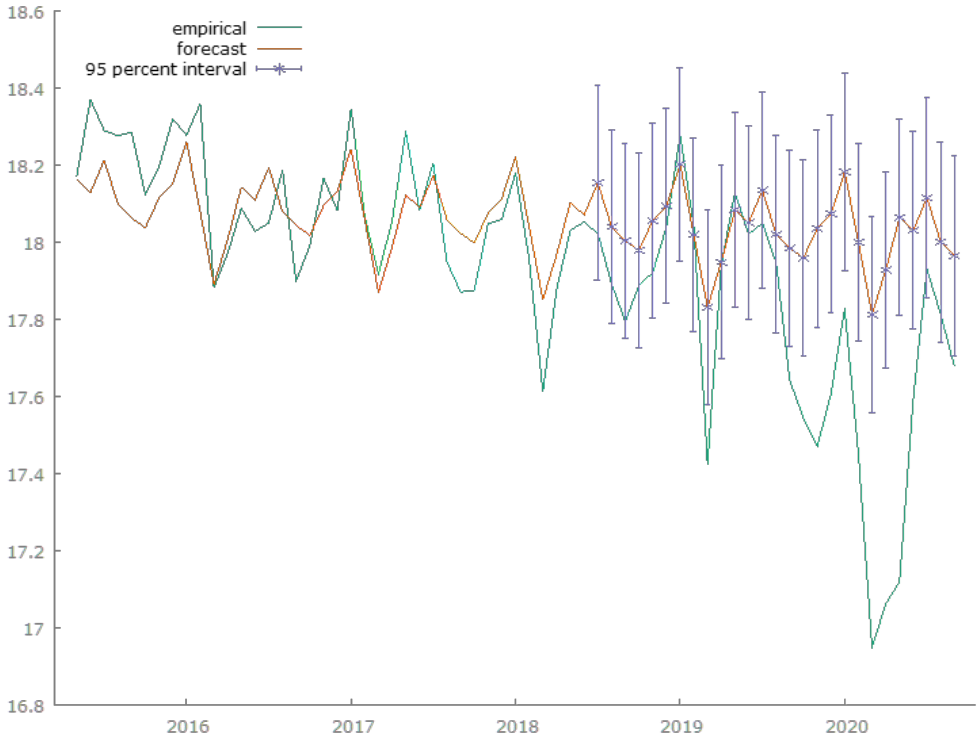

Figure 6. Tariff code 6217.90.90

Source: authors' own calculations conducted in Gretl. Logarithms of imports are presented.

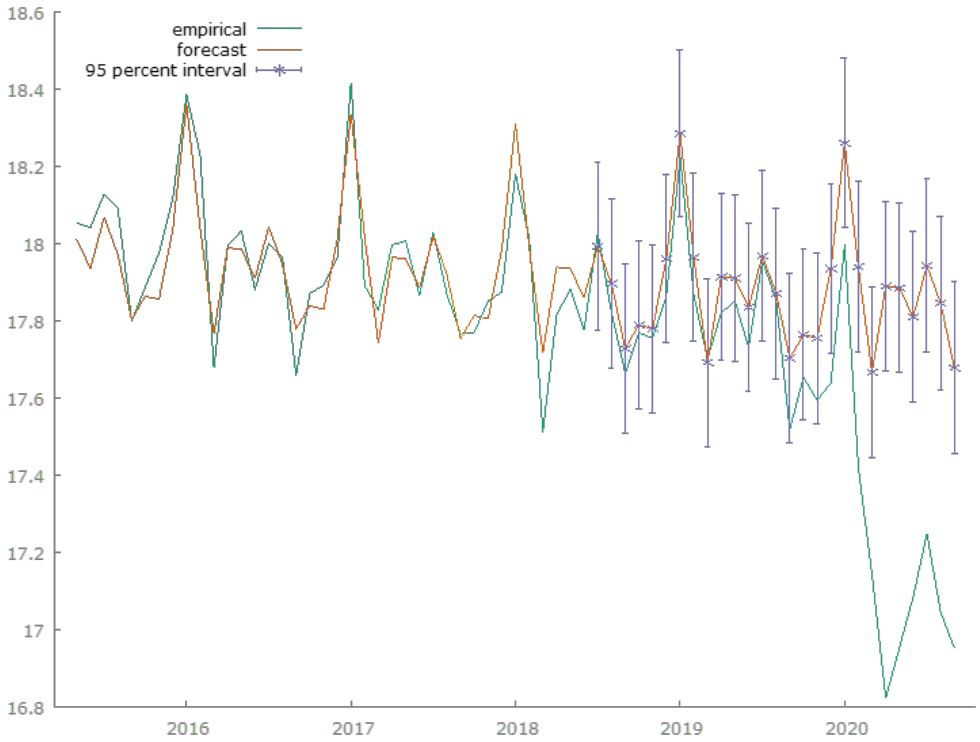

Figure 7. Tariff code 6207.91.10

Source: authors' own calculations conducted in Gretl. Logarithms of imports are presented.

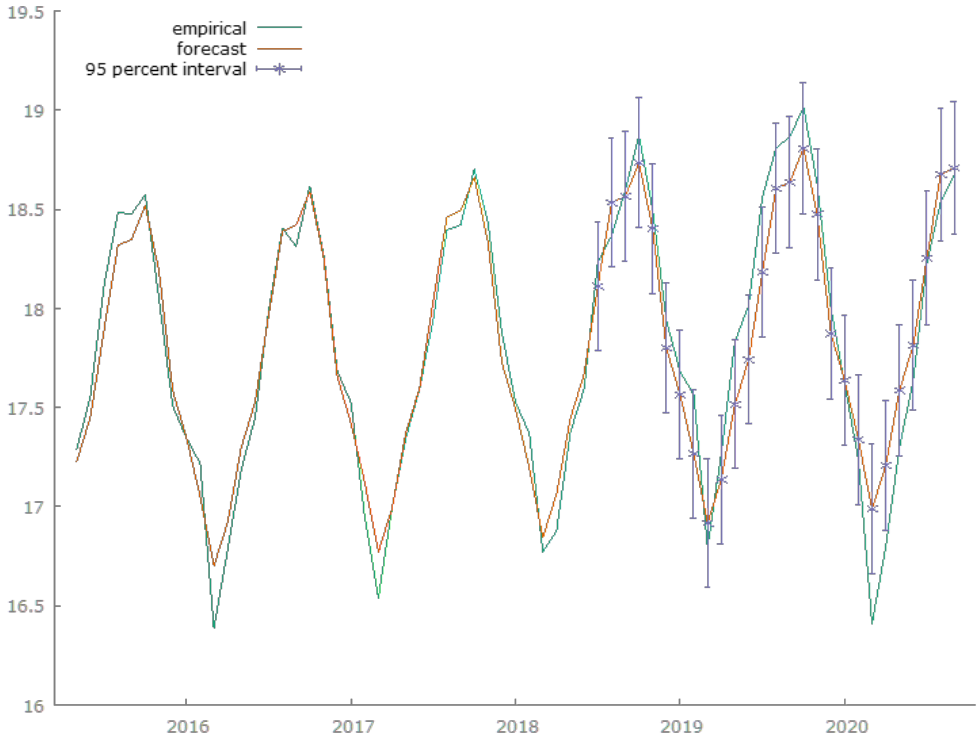

Figure 8. Tariff code 6305.39.00

Source: authors' own calculations conducted in Gretl. Logarithms of imports are presented.

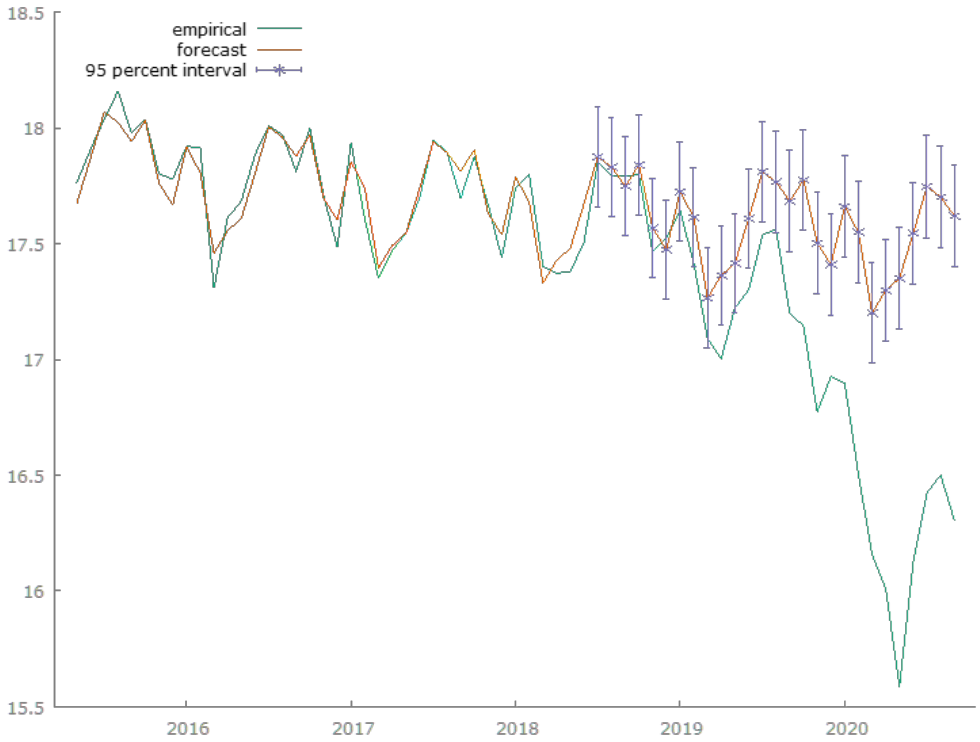

Figure 9. Tariff code 6208.92.00

Source: authors' own calculations conducted in Gretl. Logarithms of imports are presented.

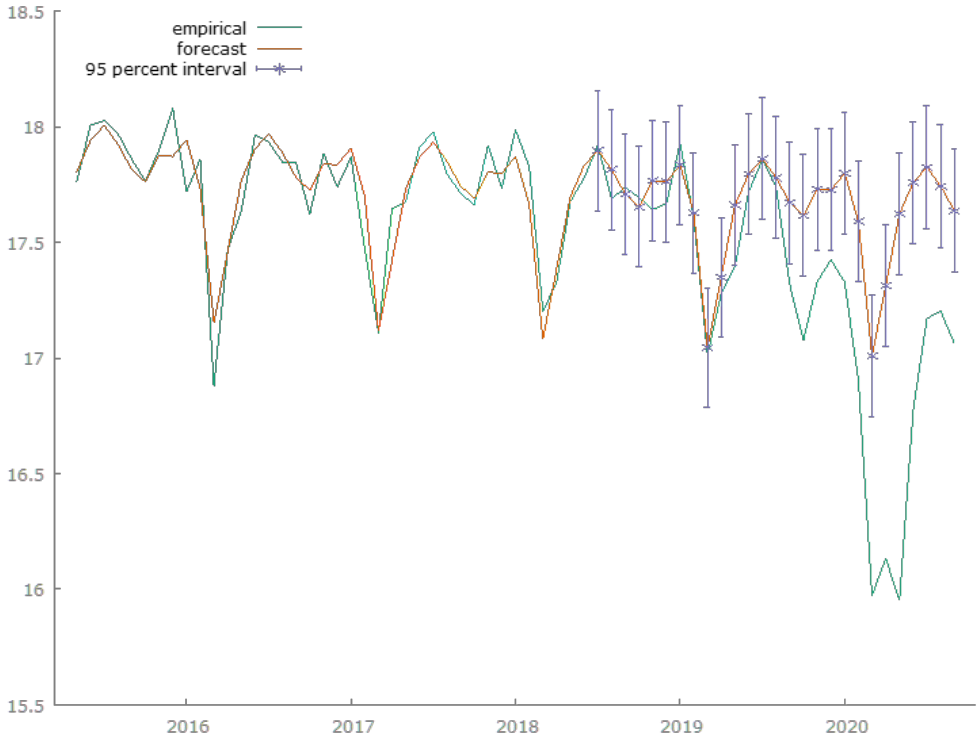

Figure 10. Tariff code 6112.11.00

Source: authors' own calculations conducted in Gretl. Logarithms of imports are presented.

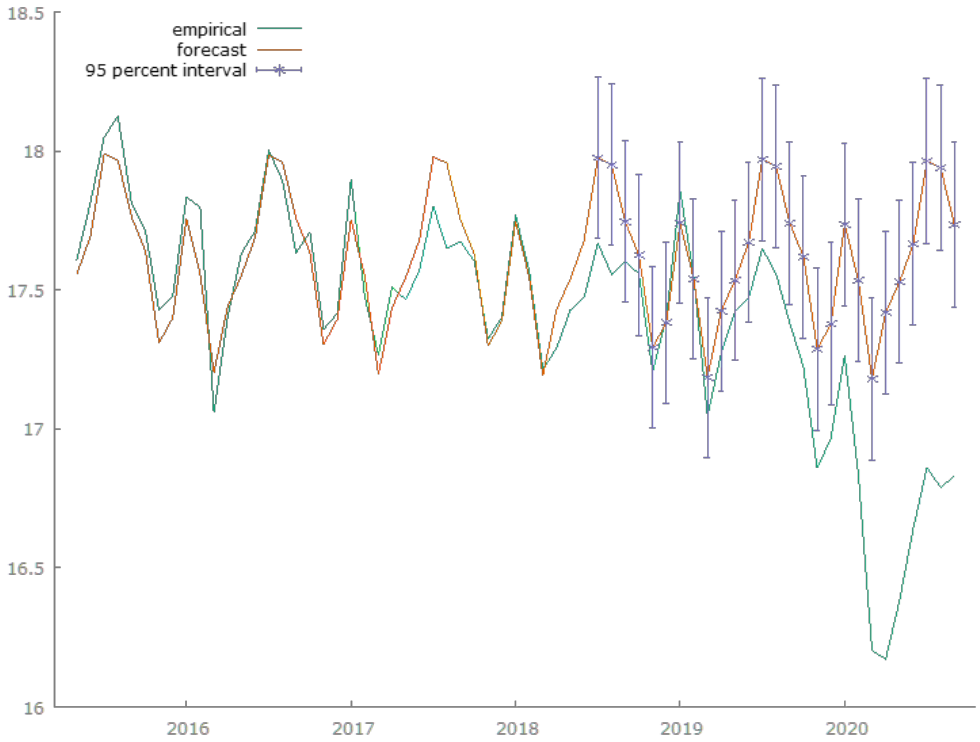

Figure 11. Tariff code 6104.44.20

Source: authors' own calculations conducted in Gretl. Logarithms of imports are presented.

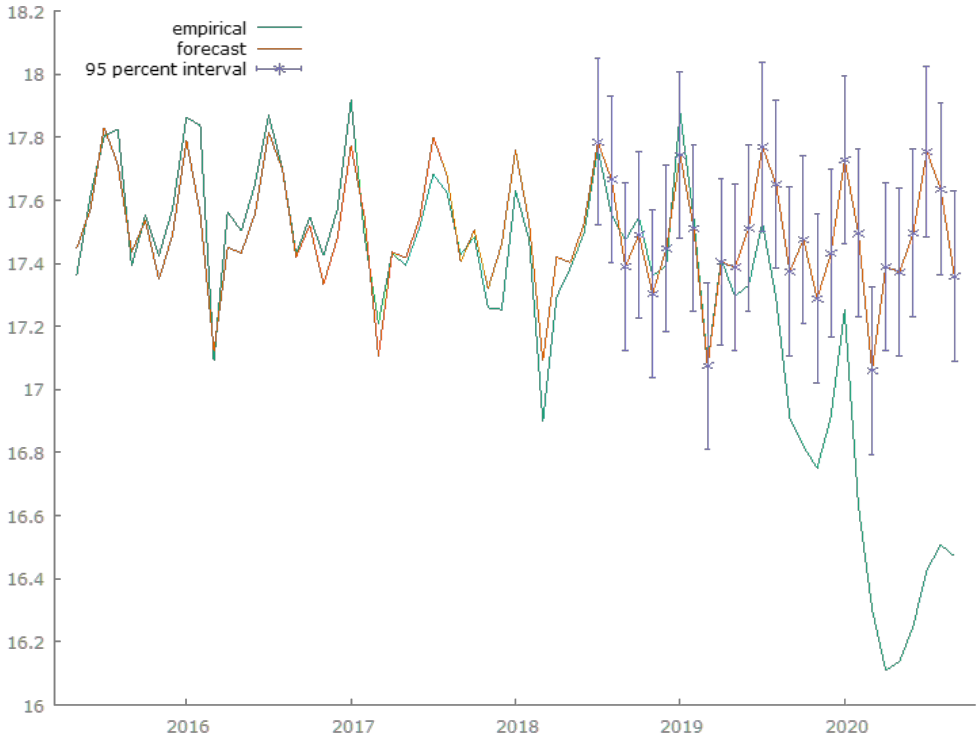

Figure 12. Tariff code 6209.90.90

Source: authors' own calculations conducted in Gretl. Logarithms of imports are presented.

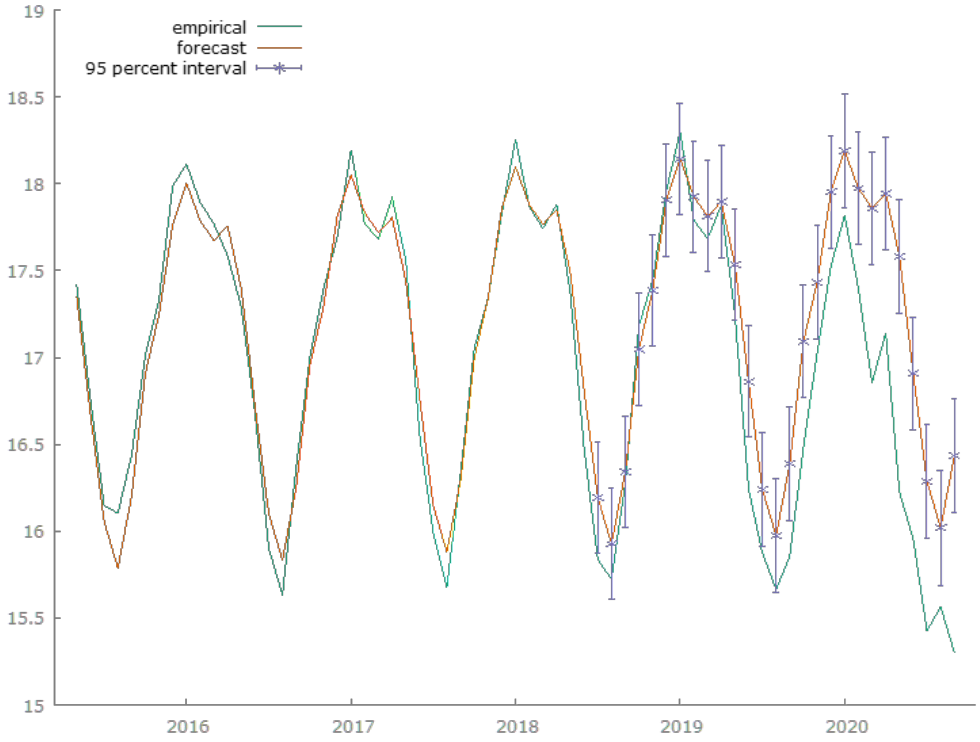

Figure 13. Tariff code 6114.30.30

Source: authors' own calculations conducted in Gretl. Logarithms of imports are presented.

Regarding the changes in trade patterns, long-term consequences, and possible scenarios, the imposed duties might affect the industry threefold. One option is trade diversion, i.e., a shift towards low-cost suppliers from workforce-abundant countries like Bangladesh, India, Vietnam, or Cambodia, accompanied by a relocation of factories from China to those states. The second one assumes price adjustment performed by both Chinese and American parties, whereby Chinese suppliers will lower their selling price while American importers will give up a part of their profit margin to minimally transfer the increased duties to the customers, thus not triggering a fall in demand. The third scenario, and the least possible one, is a shift in demand from imported goods towards American-made ones.

As noted by Rapoza (2020), the first possibility became a reality. Although many US companies are leaving China, they are not coming back home. The American Apparel and Footwear Association (AAFA) stated that increased duties would raise prices on the American market. According to the Organization's CEO, Rick Helfenbein, the average American consumer buys eight pairs of shoes and 68 garments annually (Helfenbein 2019). With additional duties, a family of four would pay at least $500 more to buy basic consumer products and thus face the choice of whether to pay more or buy less. In its statement, the Association emphasised that these duties would affect not only final goods, but also semi-products and equipment used by American manufacturers, thus increasing prices not only of goods "made in China," but also those "made in the USA."

The consequences of the trade war could also bring long-term effects. In August 2019, the yuan-dollar rate was the lowest since 2008, and as the "Wall Street Journal" headline proclaimed, Trade War Becomes Currency War (*Trade War Becomes Currency War* 2019). The Wharton School of the University of Pennsylvania offered potential and not-so-potential consequences for the American economy (Knowledge at Wharton 2019). According to the institution, the trade war with China would lower output for the US economy, and there could be a shift towards households financing US debt. As there would be a reduced inflow of dollars from China, customers would be forced to finance the debt. Additionally, they predicted that the trade war might result in reduced foreign investment flows into the US. The imposed duties would increase the prices of electronics, which would affect businesses, households, and universities. Meanwhile, American farmers could be forced to bear the cost of the conflict, as China suspended purchases of US agricultural products, meaning they would lose that market.

Finally, US importers are moving away from sourcing from China and increasing their investments in other countries. The shift towards more expensive suppliers who were not the first choice has become a permanent tax on US firms and consumers, reducing the consumer's buying power and reducing American firms' competitiveness on the global market. Finally, uncertainty drives US importers to prepare by stockpiling.

Conclusions

The China–United States relations affect the global economy, regardless of the countries' cooperation with a third-party partner. Thus, tensions in these relations and the ongoing trade war are closely observed phenomena.

This paper investigated the scale of the drop in American imports after it imposed punitive tariffs on Chinese goods. Our research focused on the textile industry, which is important from the point of view of the bilateral relations. For the purposes of the study, it was narrowed to a group of 30 products with the highest share in the US import of textiles.

By disaggregating groups of textile products into individual HTS codes on an eight-digit detail level (or higher), we uncovered a clear pattern in the US textile market, i.e., after the Trump administration introduced the tariffs, a reduction in imports from China was recorded. With such detailed analysis, we managed to avoid the risk of drawing overly general conclusions or erroneous conclusions.

Although the quantitative research focused on the short-term consequences, we also provided a review of the effects of the China–United States trade war on the latter's economy in the long perspective. These include, among others, an increase in the Consumer Price Index (CPI), lower economic growth, issues regarding the sustainability of government debt, and reduced foreign investment flows to the US economy.

To the best of our knowledge, our study is the first that concentrates in detail on a particular industry instead of formulating conclusions at the general macroeconomic level. Further analyses could span other industries that account for large shares in mutual trade, or provide cross-industry comparisons. Future research should also bring the impact of the COVID–19 pandemic to the forefront. In particular, using longer time series, an attempt could be made to estimate and compare the effects of the COVID–19 and the trade war in dragging down American imports, or bilateral trade in general. Additionally, the long-term implications of the ongoing trade war formulated in this paper should be enriched by the likely overlapping effects that stem from the pandemic experiences.

References

Amiti, M., Redding, S., Weinstein, D. (2019), *The Impact of the 2018 Tariffs on Prices and Welfare*, "Journal of Economic Perspectives", 33 (4), pp. 187–210, https://doi.org/10.1257/jep.33.4.187

Bryant, D. (2022), *Trump's China Tariffs – The List of Products Affected and What You Can Do*, https://www.ecomcrew.com/trumps-china-tariffs/ (accessed: 7.11.2020).

DataWeb (n.d.), https://dataweb.usitc.gov/ (accessed: 5.08.2020).

Fajgelbaum, P., Goldberg, P., Kennedy, P., Khandelwal, A. (2019), *The Return to Protectionism*, "NBER Working Paper Series", 25638, National Bureau of Economic Research, Cambridge, https://doi.org/10.3386/w25638

Flaaen, A., Pierce, J. (2019), *Disentangling the Effects of the 2018–2019 Tariffs on a Globally Connected U.S. Manufacturing Sector*, "Finance and Economics Discussion Series", 086, https://doi.org/10.17016/FEDS.2019.086

Furceri, D., Ahmed Hannan, S., Ostry, J., Rose, A. (2019), *Macroeconomic Consequences of Tariffs*, "IMF Working Papers", 19 (9), https://doi.org/10.5089/9781484390061.001

García Herrero, A., Tan, J. (2020), *Deglobalisation in the context of United States-China decoupling*, "Bruegel Policy Contribution", 21, https://www.bruegel.org/wp-content/uploads/2020/12/PC-21-2020-211220.pdf (accessed: 12.04.2021).

Gorman, W. (1958), *Tariffs, Retaliation, and the Elasticity of Demand for Imports*, "The Review of Economic Studies", 25 (3), pp. 133–162, https://doi.org/10.2307/2295983

Gorman, W. (1959), *The Effect of Tariffs on the Level and Terms of Trade*, "Journal of Political Economy", 67 (3), pp. 246–265, https://doi.org/10.1086/258174

Helfenbein, R. (2019), *Post Hearing Comments. Office of the U.S. Trade Representative Hearing on Docket USTR 2019–0004–0001*, https://www.aafaglobal.org/AAFA/AAFA_News/2019_Letters_and_Comment/AAFA_Submits_Post_Hearing_Comments_to_Administration_on_Section_301_Tranche_4_Tariffs.aspx (accessed: 15.06.2021).

Knowledge at Wharton (2019), *What Are the Long-term Costs of the China-U.S. Trade War?*, https://knowledge.wharton.upenn.edu/article/u-s-china-tariffs/ (accessed: 15.06.2021).

Krugman, P., Obstfeld, M. (2003), *International Economics: Theory and Policy*, Pearson Addison-Wesley, Berkeley.

Lee, T., Varas, J. (2022), *The total cost of U.S. tariffs*, https://www.americanactionforum.org/research/the-total-cost-of-trumps-new-tariffs/ (accessed: 7.11.2020).

Leith, J. (1971), *The Effects of Tariffs on Production, Consumption, and Trade: A Revised Analysis*, "American Economic Review", 61 (1), pp. 74–81.

Lu S. (2021), *Timeline of Trade Policy in the Trump Administration (2017–2021)*, https://shenglufashion.com/timeline-of-trade-policy-in-the-trump-administration/ (accessed: 20.09.2020).

Rapoza, K. (2020), *Trade War Update: U.S. Companies Not Coming Home, But Many Are Leaving China*, https://www.forbes.com/sites/kenrapoza/2020/01/13/trade-war-hasnt-brought-us-companies-home-but-it-has-taken-them-out-of-china/?sh=79faaf683ce0 (accessed: 10.06.2021).

Shapiro (n.d.), *Tariff News*, https://www.shapiro.com/tariffs/tariff-news/ (accessed: 7.11.2020).

The Tax Foundation (2019), *Tracking the Economic Impact of U.S. Tariffs and Retaliatory Actions*, https://taxfoundation.org/business-taxes/tariffs-and-trade/ (accessed: 3.03.2021).

The White House (2021), *Remarks by President Biden at the 2021 Virtual Munich Security Conference*, https://www.whitehouse.gov/briefing-room/speeches-remarks/2021/02/19/remarks-by-president-biden-at-the-2021-virtual-munich-security-conference/ (accessed: 2.06.2021).

Tokarick, S. (2004), *What do we know about tariff incidence?*, "IMF Working Paper", WP/04/182, https://www.imf.org/external/pubs/ft/wp/2004/wp04182.pdf (accessed: 5.03.2021).

Trade War Becomes Currency War (2019), "Wall Street Journal", 5 August, https://www.wsj.com/articles/trade-war-becomes-currency-war-11565047706 (accessed: 15.06.2021).

UNCTAD (2012), *International classification of non-tariff measures*, United Nations, New York–Geneva, https://unctad.org/en/PublicationsLibrary/ditctab20122_en.pdf (accessed: 5.03.2021).

United States Census Bureau (n.d.), *International Trade Data*, https://www.census.gov/foreign-trade/data/index.html (accessed: 5.08.2020).

United States International Trade Commission (2022), *Harmonized tariff information*, https://usitc.gov/harmonized_tariff_information (accessed: 5.11.2020).

V. Alexander & Co., Inc. (2020), *Update on China Section 301 (List 4A) Products*, https://www.valexander.com/2020/09/02/president-trump-announces-additional-10-duties-on-china-list-4-products/ (accessed: 7.11.2020).

World Trade Organization (n.d.), *World Trade Statistical Review 2020*, https://www.wto.org/english/res_e/statis_e/wts2020_e/wts20_toc_e.htm (accessed: 5.03.2021)

Younis, M. (2021). *China, Russia Images in U.S. Hit Historic Lows*, https://news.gallup.com/poll/331082/china-russia-images-hit-historic-lows.aspx (accessed: 17.07.2021).

Amerykańsko-chińska wojna handlowa: przebieg, konsekwencje i perspektywy dla gospodarki USA Analiza na przykładzie przemysłu tekstylnego

W niniejszym artykule badana jest skala spadku amerykańskiego importu po nałożeniu ceł na chińskie towary w kontekście tzw. wojny handlowej. Analiza obejmuje cały okres prezydentury Donalda Trumpa (styczeń 2017 – styczeń 2021). W przeciwieństwie do dotychczasowych badań, które poświęcone były głównie wpływowi zmniejszonych przepływów handlowych na kluczowe wskaźniki makroekonomiczne, koncentrujemy się na specyficznym rynku wyrobów tekstylnych, który był jednym z najbardziej dotkniętych środkami protekcjonizmu. Przeprowadzona analiza wraz z badaniem ilościowym pozwala stwierdzić, że nałożone cła istotnie uderzyły w przemysł tekstylny, przynosząc zauważalny spadek importu do USA wybranych grup produktów z Chin. Ponadto przegląd długoterminowych konsekwencji wskazuje, że trwająca wojna handlowa nie tylko negatywnie wpłynęła na makroekonomiczne podstawy gospodarki amerykańskiej, ale prawdopodobnie będzie miała długotrwały wpływ na globalne łańcuchy dostaw i produkcji.

Słowa kluczowe: wojna handlowa, bariery w handlu, protekcjonizm, cła, relacje USA–Chiny, handel międzynarodowy, przemysł tekstylny w USA