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The Potential Effects of TPP, TTIP and Trump's Tariffs on China's Competitiveness in the US Market

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This paper analyses the potential effects of the Trans-Pacific Partnership (TPP), the Trans-Atlantic Trade, Investment Partnership (TTIP) and also tariff-related measures implemented by Trump administration against China's export. It examines the sectors in which China will be affected most in terms of its competitiveness in the US market against the countries included in these agreements. It also investigates whether China has significant price advantages in certain sectors and whether these agreements and tariff measures have the potential to erode those advantages. The 'quantity' and 'value' of US imports from the countries included in these agreements are used for calculating 'quantity similarity indexes' and 'price similarity indexes' in order to compare China to its competitors. Taking into account 'product heterogeneity', this paper reveals how Chinese exports will be affected by the elimination of tariff barriers within the context of these agreements and also by the increases in tariffs on Chinese products. The paper also presents policy implications for China to create its own trade and competition measures against these possible trade actions, along with the potential effects of Chinese competition on other countries in the US market. The results indicate that China is likely to be seriously and negatively affected from these prospective agreements and tariff measures. It is also likely that China will lose its price competitiveness against its main competitors in the US market, especially in such sectors as plastics, medical appliances and optical instruments. Last but not the least, the products whose tariffs are increased by the Trump administration are selected in a rational way from the viewpoint of the US, as those products are generally the ones in which TPP and TTIP are relatively ineffective.

JEL codes: F10, F13, F14

Keywords: China, TPP, TTIP, Export Similarity, Tariff

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1 Introduction

China has become the actor of a spectacular success story in terms of economic growth and development during the recent decades. Its annual growth rates have exhibited an unprecedentedly high trend, especially since the early 1990s, while the country has accomplished significant reductions in its poverty levels. Carefully attracting capital inflows and regulating outflows, the Chinese government has implemented selective industrial and trade policies in a fruitful way, along with the very large population that leads to an abundant labour force, which, in turn, generates a significant labour-cost advantage. Under these circumstances, China rapidly turned out to be one of the most competitive production hubs of the global economy in the last decades. Its competitive advantages and the ensuing success in productive activities made China one of the fastest rising financial actors in the world through the channel of remarkable surpluses in the current account. Behind this prominent success, the export-led growth model adopted and implemented by the Chinese government has played presumably the chief role. Along with the sheer size of its economy, which has been growing so fast for decades, China has also become one of the major leading countries in terms of its volume of exports and imports. Indeed, it is generally agreed that the dominant position of China assumed in the world economy in recent decades is most directly related to its rise as a preeminent actor in international trade.

In the case of a very large and powerful economic actor like China, its export competitiveness in the world markets should be analysed very carefully in the first place, because possible (positive or negative) changes in China's export competitiveness are very likely to affect the trade and growth performances of its trading partners and competitors at the level of the world economy.

In this paper, we focus on some specific factors those may challenge China and its competitors in terms of their competitive edges in the world economy. These specific factors are related to the US President Donald Trump's announces on some Chinese products that could face 25 per cent tariffs (FT, 2018), as well as (the recent suspension of) two major trade and investment partnerships that excluded China: The Trans-Pacific Partnership (TPP) and the Trans-Atlantic Trade and Investment Partnership (TTIP).

Among these specific factors, the new US tariffs on Chinese products has taken effect from July 2018. On the other hand, the US has formally withdrawn from the TPP agreement in January 2017, along with the start of Donald Trump's presidency[1]. However, Trump also declared via twitter on April 17, 2018 that the US will focus on bilateral trade agreements with TPP countries that provide more benefits to the US economy. On the other hand, the TPP countries except the US (the so-called TPP-11 countries) officially signed TPP on March 2018 in Santiago, Chile (CNN, 2018). In the case of the TTIP, the new US government has not yet attempted to withdraw from this free-trade agreement with the EU.

It is argued that one obvious rationale behind all these specific factors is to curb China's competitiveness. By means of increasing tariffs on Chinese goods and the implementation

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[1] It is known that this withdrawal was mainly the result of Trump's promises during his election campaign. During the campaign, he had strongly criticised TPP as it would contribute to lost jobs by Americans (Wasiński & Wnukowski, 2017, 2). In the first 2016 presidential election debate between Hillary Clinton and Donald Trump on September 26, he declared clearly that he was against multilateral trade agreements, saying that "they're taking our jobs, they're giving incentives, they're doing things that, frankly, we don't do".

of bilateral trade agreements among the US, TPP countries and the EU, these countries are said to aim at improving their competitive positions in the world economy, especially against China. Some also argue that these agreements can be effectively used to force China to adopt the global (i.e., 'Western') rules of the game, as part of a political-economic 'containment' strategy. In any case, the prospective materialisation of these partnerships and new tariff structures could pose an effective threat upon China's export competitiveness and economic growth.

The major prospective challenge that could be imposed on China by the TPP and TTIP agreements or bilateral free-trade agreements between the US and the TPP countries is related to the reductions in import tariffs and elimination of non-tariff barriers among the participants of these agreements. Another possibility is that the TPP-11 countries can decide to act together and reduce prices in the US market in order to cope with China's competition. As a result, China could rapidly start to lose its cost and price advantages in the world markets, and especially in the US market. Since the US is China's largest export market, particular attention should be paid to the prospects of China's export capability to the US. At the same time, the US has also been planning to take some trade-related measures against China's competitiveness in the US market. The first phase of these plans started as of March 2018, as President Trump declared that the US begins to impose high tariffs on imports from China, thereby launching a new heated debate on the probable consequences of a 'trade war' between China and the US.

Consequently, in order to estimate the possible outcomes of these agreements and tariff-related measures against China, in the first place, China's export competitiveness in the US market should be analysed carefully and in detail. In this paper, we analyse China's competitiveness in the US market against the EU and TPP-11 countries in terms of "export-quantity and export-price similarities"[2]. In this context, inspired by Antimiani and Henke (2007) and Erlat and Ekmen (2009), we create a quantity similarity index and a price similarity index. Based on these indexes, we determine China's main competitors in the US market, along with the degree of competition facing China in its different export sectors. We also examine whether China has significant price advantages in certain sectors and whether these agreements and tariff measures have the potential to erode those advantages. Finally, we present policy implications for China to create its own trade and competition measures against these possible trade actions along with the potential effects of Chinese competition on other countries in the US market. To our knowledge, there is no previous study that constructs such indexes and carries out such detailed analyses for assessing China's export competitiveness in the US market against the TPP and TTIP countries.

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[2] Note that this method is not able to provide some quantification of the economic effects of a free-trade agreement (FTA) and some tariff changes in the US market, such as providing precise numbers that quantify the effects of TPP on consumption decisions of US consumers. However, this method is useful at the initial stage of any trade policy decision-making process since it is important to know to what extent countries in a proposed FTA or facing some tariff change already trade with each other. Therefore, in this study, we measure existing trade interdependence between the US, China, the EU and the TPP countries. Moreover, we draw specific inferences about the potential effects of trade agreements or tariff changes. This study can constitute a basis for the future studies which are grounded on microeconomic theory and require values for certain behavioural parameters, besides trade in order to precisely quantify the economic effects of a FTA and some tariff changes in the US market on production, consumption or welfare of the US.

2 Literature Review

China's competitiveness in the world market is one of the very popular and most researched topics in the literature. However, TPP and TTIP are quite new subject-matters. Moreover, 'trade war' between China and the US is a new heated debate in international trade literature.

In the literature, some recent studies are dealing with the trade and investment relations among the US, the EU and other participant countries. For example, Ekmen-Özçelik (2016) analyses the potential effects of the TTIP on Turkey's trade patterns in the US market against the EU based on export product similarity and price similarity indexes. She determines the sectors in which Turkey is likely to lose competitiveness against the EU after the implementation of TTIP. However, there are only a few studies that analyse in detail the potential impacts of these relations on China, which accounts for nearly 22 per cent of US imports in 2017. Whereas, China's competitiveness in the US market against the members of those agreements is worth analysing because China has a strong competitive power in this market.

In the literature, there are few studies on this relatively new yet important subject-matter, and they generally utilise aggregate data to analyse the potential effects of these agreements on China's GDP or total exports in a broader macroeconomic context, especially in the context of a computable general equilibrium model.

Li et al. (2014) examines the case of China under the possibilities of inclusion in and exclusion from the TPP and TTIP agreements. They regard the TPP and the TTIP as "mega deals" and conclude that China will be negatively affected in the case of exclusion from these deals, even though the prospective tariff reductions in these "mega-deals" are not so large. In order to get rid of the negative consequences, they argue, China should participate in these mega deals, which is more likely in the TPP or alternatively should build its own mega deals with other countries.

Tentori and Zandonini (2014) show that trade relationships between the US and China, and also between the EU and China, have deepened much more than that between the US and the EU. In the face of this situation, the TPP and the TTIP can well have negative effects on China. These authors call China "the elephant in the room" in the sense that these agreements intend to leave China alone. Indeed, the TPP is said to be an agreement to include ABC – abbreviation for "All But China".

According to Hamilton (2014), the TTIP and the TPP negotiations can provide the US with stronger leadership qualities vis-à-vis the emerging market economies. However, these agreements can bring about uncertainties and concerns for the third countries, as it is not clear whether these agreements will result in 'trade creation' or 'trade diversion'. Aslan et al. (2015) analyse the potential effects of the TTIP and the TPP on the Chinese economy by developing several scenarios in the context of a computable general equilibrium model. Their main conclusion is that China's GDP will be negatively affected if China is excluded from these agreements. However, if China is included in the TPP while being excluded in the TTIP, the decrease in its GDP due to TTIP will be compensated by the increase in its GDP due to TPP.

Chandra (2016) examines the impact of the US temporary trade barriers (TTBs) on Chinese exports for the period 2002-2008. Chandra (2016) finds that US TTBs against China causes China to export more to the EU and other trade partners.

On the other hand, Trump's China tariffs is a new heated debate in the literature. Therefore, there are only a few studies in this subject. Li et al. (2018) evaluate the economic impacts of the possible China-US tariff war based on a multi-country global general equilibrium (GE) model. Their results show that China will most probably hurt by the US tariffs. However, if Chian takes retaliation measures, the loss for the US will also be significant.

Liu and Woo (2018) analyse the causes and possible implications of US-China trade war for both the US and China. They also suggest economic and industrial policies to the US and China to solve the problems efficiently and fairly. They claim that one of the reasons for this war is China's large trade surplus, which has hurt employment opportunities in the US. They suggest the US and China to change their economic policies in order to solve this problem. They also mention the fact that the countries invest significantly in China through Joint-Ventures. Then, this gives a way to China to transfer the technology and to strengthen its market share via increasing exports. Liu and Woo (2018) suggest that the large countries should merge and force China to find different ways other than joint-venture to improve its technological capacity. They claim that China's market power can be removed by this way. They also suggest to China to have more reciprocity in its trade and investment relations with the advanced economies. On the other hand, they suggest to the US, especially to President Trump, to implement a fair economic competition so that having a win-win outcome in the long-run.

Rosyadi and Widodo (2018) the potential impact of the US's plan to impose import tariff increase against China based on a GTAP model. They conclude that these trade protectionism plans by Donald Trump may result in a decline in GDP, terms-of-trade, and welfare both in the US and in China. They also claim that these policies might lead to a decrease in bilateral trade between the US and China while an increase in export toward their third trading partners.

As different from the other studies, we carry out our analyses in a more detailed microeconomic framework by focusing on China's exports at the sectoral level, using disaggregated data. We compare exports of China and its competitors in the US market in terms of both quantity and price. As far as we know, our study is the first in the literature to analyse this subject-matter by calculating 'quantity similarity index' and 'price similarity indexes' in order to compare China and its competitors in the US market in terms of both quantity and price. Therefore, this study contributes to this literature by analysing 'product heterogeneity' within industries and focusing on price and quantity differences. Comparing China in detail with the other competitors, this paper fills this gap by examining the export products and prices across countries within each industry.

3 Methodology and Data

In this study, we analyse China's competition in the US market vis-à-vis its main competitors via "similarity indexes". The main idea that incorporates export similarity into the analysis of 'export competitiveness' is the following reasoning: Given two countries exporting to the same market; the more similar the 'export structures' of the two countries, the higher the degree of competition between these two countries in that market. Of course, conversely, dissimilarity of export structures suggests a lower degree or absence of

competition[3].

For the purpose of this study, we utilise 'Quantity Similarity Index' ($QNSI$) and the 'Price Similarity Index' ($PRSI$) between China and other countries. Based on $QNSI$, we determine China's export similarity/dissimilarity with respect to the competing countries in the US market and the degree of competition in each of its export products. By constructing $PRSI$ besides $QNSI$, not only can we determine China's strongest competitors in the US market, but also we are able to see whether or not the competition arises from price differentials. Moreover, we can determine the direction of price differences as well.

$QNSI$ and $PRSI$, inspired by Antimiani and Henke (2007) and Erlat and Ekmen (2009), are somewhat different from the conventional 'export similarity index' (ESI) which was developed by Finger and Kreinin (1979) and used by the studies in the literature. ESI does not consider the 'level of exports'. Hence, it may not provide sufficiently useful information in the case of two competing countries that are very different in terms of the volumes of their exports and the sizes of their economies. Our calculations of the $QNSI$ and $PRSI$, which involve absolute export quantities and values, can be considered as a response to this potential limitation of the ESI. Moreover, $QNSI$ is not affected by 'prices', such as tariff rates, exchange rates etc., and hence it enables us to examine competition on a 'real' basis. Therefore, by means of the $QNSI$, we analyze the competition between China and other countries based on the production and export capacities of these countries. By calculating the $PRSI$, we are able to compare the prices of China to those of its competitors. We carry out this comparison with current tariffs. In other words, we compare tariff-added Chinese prices to the tariff-added prices of its competitors. All in all, we evaluate quantity as well as price competition between China and others in the US market based on $QNSI$ and $PRSI$.

3.1 Quantity Similarity Index (QNSI)

$QNSI$ is inspired by some existing studies in the literature. For example, an earlier, well-known version is the "Intra-Industry Trade Index". It was developed by G. and J. (1971) in order to analyse intra-industry trade between two countries. Antimiani and Henke (2007) modified this index as "Product Similarity Index (PSI)" to analyse the export similarity between two countries. PSI was also used been used by Erlat and Ekmen (2009) to analyse the similarity of Turkish exports against the non-EU-15 countries in the EU market. In these earlier studies, the PSI was calculated by using export and import 'values' rather than 'quantities'. However, export and import values can be affected by such factors as the exchange rates, inflation, varying transportation costs due to geographical distance, etc. To get rid of these effects that are not directly related to the production and export capabilities of the countries, we prefer to create the $QNSI$ for analysing export similarity in 'real' terms by using the 'quantities' exported by China and other countries to the US market.

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[3] The utilisation of export similarity indicators and using it in the analysis of 'export competitiveness' can be traced back to Finger and Kreinin (1979). It should be noted that the academic interest in 'export similarity' has accelerated in recent years, especially in line with China's outstanding performance in exerting increasingly higher competitive pressure on export markets worldwide. Some examples that utilize the concept of 'export similarity' in analyzing export competitiveness for different countries and regions are: Xu and Song (2000); Caetano et al. (2002); Zhiyu (2003); Crespo et al. (2004); Langhammer and Schweickert (2006); Benedictis and Tajoli (2007); Antimiani and Henke (2007); Schott (2006, 2008); Loke (2009); Yunxia (2009); IMF (2011, 27-31).

$QNSI$ measures the similarity in 'export structures' between two competing countries. It is computed by the following formula:

$$QNSI_i = 1 - \frac{\sum_j |Q^i_{j(a,c)} - Q^i_{j(b,c)}|}{\sum_j \left(Q^i_{j(a,c)} + Q^i_{j(b,c)}\right)} \tag{1}$$

where $QNSI_i$ is the 'quantity similarity index' for countries a (China) and b (China's competitor) in the common market c (US). $Q^i_{j(a,c)}$ stands for the quantities of product j exported from the country a to market c in sector i, and similarly, $Q^i_{j(b,c)}$ refers to the quantities of product j exported from country b to market c. Finally, $\sum_j |Q^i_{j(a,c)}$ and $\sum_j |Q^i_{j(b,c)}$ are the total quantities exported from countries a and b to market c, respectively. Here, i may also stand for a country as a whole, or it may represent any categorisation chosen to present the results.

The index takes values between 0 and 100. If the $QNSI$ is 100, there is a perfect similarity between the exports of the two competitors, that's to say, the two countries (a and b) are perfect competitors in the common market (c); and if it is 0, there is perfect dissimilarity, so there is no competition at all between the two countries.

3.2 Price Similarity Index (PRSI)

"Price Similarity Index" ($PRSI$) was developed by Erlat and Ekmen (2009), as a modified and expanded version of the "Quality Similarity Index" by Antimiani and Henke (2007). $PRSI$ classifies products which are similar in terms of quantity according to their prices. Actually, $PRSI$ involves decomposition of $QNSI$ according to the relative unit-prices of products; i.e., the products that (i) China has higher prices than its competitor, (ii) China's prices similar to its competitor's price (iii) China has lower prices than its competitor. Therefore, it is possible to determine whether or not the competition arises from price differentials and the direction of price differences. Formally:

$$PRSI_{i,q} = \frac{\sum_{j=1}^{n_{iq}} \left(Q_{j(a,c)} + Q_{j(b,c)}\right) - \sum_{j=1}^{n_{iq}} |Q_{j(a,c)} - Q_{j(b,c)}|}{\sum_{j=1}^{n_i} \left(Q_{j(a,c)} + Q_{j(b,c)}\right)} \tag{2}$$

where i may again stand for a country as a whole or any one-digit HS sector, and n_{iq} are the 6-digit HS products in one-digit HS sectors that fall into a price category indicated by q as given by the three expressions given below.

We denote the three conditions that yield these categories as 'higher-price-similarity' ($PRSI - H$) (2a), 'medium price-similarity' ($PRSI - M$) (2b), and 'lower-price similarity' ($PRSI - L$) (2c) which are:

$$\frac{UV^j_{X_{j(a,c)}}}{UV^j_{X_{j(b,c)}}} > 1 + \alpha \tag{2a}$$

$$1 - \alpha \leq \frac{UV^j_{X_{j(a,c)}}}{UV^j_{X_{j(b,c)}}} \leq 1 + \alpha \tag{2b}$$

$$\frac{UV^j_{X_{j(a,c)}}}{UV^j_{X_{j(b,c)}}} < 1 - \alpha \tag{2c}$$

Letting j indicate 6-digit HS-products, the unit-value (UV) for $X_{j(a,c)}$ is denoted by $UV^j_{X_{j(a,c)}}$ and the UV for $X_{j(b,c)}$ is denoted by $UV^j_{X_{j(b,c)}}$. Their ratio, $UV^j_{X_{j(a,c)}}/UV^j_{X_{j(b,c)}}$, is then used to categorize exports as to whether they satisfy one of the above inequalities. The coefficient α is generally positioned between 0.15 and 0.25. In our case, we select the coefficient to be equal to 0.15.

Calculating the $PRSI$ together with the $QNSI$, we will be able to see whether China's competition in the US market against the EU and TPP countries concentrated on the products (i) for which Chinese exports have higher prices, (ii) whose prices lie within the same range, or (iii) for which Chinese exports have lower prices. In this way, the prospects of China's competitiveness in the US market against the EU and TTP countries can be predicted more safely.

The data used in this study comprise mainly the imports of the US from China, the EU, TPP countries and the world. We utilise US import data instead of exports of the partner countries in order to have a harmonised and consistent dataset. Also, using import data is superior to using export data because in our case we are interested in the prices that the American consumers face, and import data which include transportation costs represent those prices more realistically. Our main data source is the United Nations Commodity Trade Statistics ("UN-COMTRADE"). Our analysis is based on 6-digit product data in Harmonized System 2007 (HS-2007) classification, and it covers the period from 2010 to 2017. We present our results in the form of one-digit HS sections and two-digit HS chapters. The HS is organised into 21 sections, with 96 chapters in each section, with each chapter divided into around 5,000 headings and subheadings.

We also use the most-favoured-nation (MFN) tariff rates on US imports. The Tariff rate data are taken from the World Bank's World Integrated Trade Solution database (WITS). The MFN values are reduced to two-digit chapters by the author, taking the weighted averages of the 6-digit HS codes over the 2010-2016 period. Tariff data for 2017 is missing for all countries, hence it is assumed that tariffs remained the same at their 2016 levels in 2017. This set of data can be used to envisage the potential tariff components of the TPP and TTIP agreements as well as US's tariff measures on Chinese exports.

4 Results

This section presents the results for the $QNSI$ and the $PRSI$ at the country level ('overall') and for each export sector, separately. Table 1 below presents the 'overall' results for $QNSI$ between 2010 and 2017. The ranking in the table is according to the average of $QNSI$ coefficients.

According to Table 1, China's export structure, in terms of the quantities exported to the US, is similar to the EU's export structure by 22 per cent on average. Also, this similarity increased from 17.2 per cent in 2010 to 23.3 per cent in 2017. Actually, there is no clear-cut criterion as to whether the computed $QNSI$ is high or low. Hence, we interpret the index according to the ranking in the table. So, based on these coefficients, the EU is the most similar country to China in terms of export patterns to the US. Therefore, we can consider the EU as China's main competitor in the US market. Moreover, we can claim that any change in the tariff rates in favour of the EU or against China could pose a much more serious threat to China compared with the TPP countries.

Table 1: QNSI between China and its competitors in the US market, 2010-2017

	Average	2010	2011	2012	2013	2014	2015	2016	2017
EU	**22.0**	17.2	19.8	21.5	22.4	24.4	24.1	23.1	23.3
Japan	**13.6**	12.8	13.1	13.3	12.9	14.4	12.7	14.7	14.7
Mexico	**13.5**	10.9	11.2	12.9	13.4	15.0	14.3	14.4	16.0
Vietnam	**8.3**	8.0	7.5	8.4	8.5	8.4	8.5	8.6	8.8
Canada	**6.9**	6.0	5.9	6.9	7.1	7.0	7.4	7.2	7.4
Malaysia	**5.0**	5.4	4.8	4.5	4.2	4.3	4.1	6.1	6.1
Chile	**2.8**	1.8	2.0	2.1	2.7	2.4	2.5	4.0	4.8
Australia	**1.9**	2.9	2.4	2.1	1.8	1.5	1.5	1.3	1.9
Peru	**2.3**	2.5	1.7	1.8	1.9	2.0	2.3	3.0	3.2
Singapore	**1.9**	1.3	1.7	1.1	1.2	1.4	1.1	3.4	3.6
New Zealand	**0.9**	0.8	1.1	0.7	1.0	0.6	0.7	1.0	1.1
Brunei	**0.1**	0.0	0.0	0.4	0.1	0.0	0.0	0.0	0.0

The table also shows that Japan (13.6) and Mexico (13.5) are the other strong competitors of China in the US market. In addition, China's competition with these countries is stronger in 2017 than in 2010. Although not as much as the main competitors, the export similarities between China and Vietnam (8.3), Canada (6.9) and Malaysia (5.0) are also relatively higher. So, the results show that the threat on China created by those TPP countries currently exists, regardless of any tariff changes. Moreover, this threat may be more harmful if tariff rates change against China significantly.

Table 1 also shows that the export similarity between China and, Chile, Peru and Singapore also increased in the last two years. However, the low levels of export similarity between China and those countries on average make it suspicious to say that those countries may become potentially important competitors of China in the US market.

Table 2 below shows $QNSI$ coefficients in terms of technological categories between China and its competitors in the US market. Exports are classified as primary sectors, low-tech sectors, medium-low-tech sectors, medium-high-tech sectors and high-tech sectors according to OECD (2003) classification. Highlighted numbers show highest $QNSI$ coefficient for a country among the all technological categories.

Table 2: QNSI for China in terms of technological categories, average of 2010-2017

	Overall	Primary	Low	Medium-Low	Medium-High	High-Tech
EU	**22**	11.2	15.1	21.6	29.9	17.8
Japan	**13.6**	5.6	2.6	16.2	20.5	20.9
Mexico	**13.5**	1.3	15.6	26.7	25.8	30.9
Vietnam	**8.3**	7.9	15.2	3.9	1.9	4
Canada	**6.9**	0.5	10.6	16.1	14.9	5.3
Malaysia	**5**	3.7	5.4	3.6	4	10.2
Chile	**2.8**	1.2	4.7	1	0.6	0
Australia	**1.9**	14.6	0.8	1	2	0.4
Peru	**2.3**	7.4	1.7	1.8	0.4	0
Singapore	**1.9**	1.7	0.7	1.1	1.9	3.8
New Zealand	**0.9**	1.7	3.9	5	5.5	5.8
Brunei	**0.1**	1.6	0	0	0.1	0

According to Table 2, China's competition with its most prominent competitor, the EU, is concentrated on the products in the medium-high category. More specifically, China's export structure in medium-high level products is similar to the EU's export structure

in the same technological level by 29.9 per cent on average. China's competition with the other prominent competitors, Japan Mexico, and Malaysia is also concentrated on high-tech products. Considering that exports of relatively higher-tech products provide China with higher 'values added', it can be claimed that China is under serious competitive pressure in the US market in terms of higher value-added products. On the other hand, China competes with Vietnam mainly in low-tech products.

The table above also shows that China competes with countries such as Chile, Australia, Peru and Brunei in the low value-added products such as primary or low-tech product categories. When this result is evaluated together with the low export similarity between China and those countries in overall, we can claim that there seems to be no potential severe threat posed in China by those countries.

Based on the information given in Table 1 and Table 2, from now on, we focus on China's prominent competitors in the US market, i.e. EU, Japan, Mexico, Vietnam, Canada and Malaysia. We analyse China's competition with those countries at the sectoral level in detail.

Table 3 below shows the values of the $QNSI$ for each one-digit HS section and each country. Highlighted numbers show relatively higher $QNSI$ coefficients (and hence the highest competitive pressures) among the one-digit HS-sections.

According to Table 3, China's competition with the EU in the US market is significant in "chemicals (HS-6)", "plastics and articles thereof (HS-7)", "articles of stone (HS-13)", "precious metals (HS-14)" and "optical photographic and medical instruments (HS-18)". China's competition with Japan is concentrated on "vehicles, aircraft and vessels (HS-17)", "base metals (HS-15)" and "plastics and articles thereof (HS-7)" while that with Mexico is concentrated on "articles of stone (HS-13)", "pulp of wood and paper (HS-10)", "machinery and mechanical appliances (HS16)", "vehicles, aircraft and vessels (HS-17)" and "plastics and articles thereof (HS-7)". China's competition with Vietnam is strong only in "live animals and animal products (HS-1)", while that with Canada is strong in "plastics and articles thereof (HS-7)", "precious metals (HS-14)", "machinery and mechanical appliances (HS-16)" and "optical photographic and medical instruments (HS-18)". China has strong competition with Malaysia only in "precious metals (HS-14)".

When we evaluate Table 3 in a cross-country comparison for each of the HS-sectors, we can conclude that in "live animals and animal products (HS-1)", Vietnam is the only and the strongest rival of China. On the other hand, in "chemicals (HS-6)" and "precious metals (HS-14)", the EU is the most prominent competitor of China while in "pulp of wood and paper (HS-10)", Mexico's competition with China is significantly stronger as compared to the other countries. On the other hand, it seems that in certain sectors such as "plastics and articles thereof (HS-7)", "machinery and mechanical appliances (HS-16)" and "optical and "optical photographic and medical instruments (HS-18)", China strongly competes in the US market with more than one country such as the EU, Japan, Mexico and Canada in the US market.

Up to now, we have not considered prices at all as far as competition is concerned. Therefore, we have only evaluated the competition between China and the other countries based on the production and export capacities of these countries. However, in order to gain market share and increase the competitiveness, the factors affecting the demand of the consumers for the product are also important. Moreover, the price of the product is the most important factor among them.

Table 3: QNSI for China, one-digit HS sections, average of 2010-2017

	HS-Sections	EU	Japan	Mexico	Vietnam	Canada	Malaysia
1	Live animals; animal products	3.8	3.9	4.3	38.1	3.5	5.3
2	Vegetable products	17.2	1.9	4.1	4.9	4.3	0.2
3	Animal or vegetable fats or oils	3.2	13.6	10.7	7	0.7	0.2
4	Prepared foodstuffs; beverages and tobacco	12.3	7.2	9.4	10.1	10.3	8.8
5	Mineral products	7.6	8.4	1.2	6.4	1.2	4.7
6	Products of the chemical or allied industries	37.3	14.2	15.6	1	12	4.7
7	Plastics and articles thereof; rubber and articles thereof	35.9	23.8	30.1	3.1	31.6	5.1
8	Raw hides and skins, leather, fur skins, and articles thereof;	10.7	9.7	7.6	9.9	3.1	0.6
9	Wood and articles of wood;	19.1	2.1	8.1	3.3	11	9.2
10	Pulp of wood and paper and paper-board	17.6	8.9	41.5	5.6	8.5	1.4
11	Textiles and textile products	12.4	6.2	21	19.7	8	1.9
12	Footwear, headgear, umbrellas, walking-sticks, seat-sticks, article flowers; articles of human hair	7.7	0.5	3.8	20.4	1	0.1
13	Articles of stone, plaster, cement, asbestos, mica or similar materials; ceramic products; glass	58	4.7	46.4	2.7	16.9	1.2
14	Natural or cultured pearls, precious or semi–precious stones, precious metals; imitation jewellery	56.8	10	22.5	0.5	27.5	34.1
15	Base metals and articles of base metal	26.4	26.4	20.1	5.1	17.7	3.3
16	Machinery and mechanical appliances; electrical equipment; sound recorders and reproducers	26.9	18.4	16.8	3.4	22.6	6.8
17	Vehicles, aircraft, vessels, and associated transport equipment	21.7	31.9	36.7	1.9	21.4	0.8
18	Optical, photographic, cinematographic, measuring, checking, precision, medical instruments	33.9	18.4	32.6	1.3	21.5	6.7
19	Arms and ammunition; parts and accessories thereof	26.9	9	4.6	0.5	7.2	0
20	Miscellaneous manufactured articles	20	1.6	15	15.6	18.8	7.9

Therefore, from now on, we consider the prices of the products together with their quantities. Since the raw data we use is based on the import price, it already includes the China and other exporters' pays costs, freight and insurance against the US importers' risk of loss or damage in transit to the US. However, the data do not include tariff rates which are the main concern in the discussion of FTAs such as TTIP and TPP as well as recent tariff rate changes by the US on Chinese goods. In order to see the effects of tariff rates on China's competition with the EU and TPP countries, we construct prices that include tariffs, and then we calculate price indexes based on those prices.

The next tables evaluate China's competition with its prominent competitors in the US market, based on both the quantities and the prices. The tables show the coefficients of $QNSI$ and the decomposition of $QNSI$ into its $PRSI$-components at the two-digit HS-chapters, which are detailed categories of HS-sections. The results are presented only for products with the highest-$QNSI$ coefficients and the products which are subject of recent tariff change discussions. Highlighted numbers show the highest $PRSI$ coefficients among the $PRSI$-medium, $PRSI$-high and $PRSI$-low categories for each chapter. The tables also show the simple average US MFN tariff rates on these chapters for 2016. Moreover, the

HS-chapters on which tariff rates are increased in 2018 by Trump administration are stated by a star "*".

Table 4.1 shows decomposition of $QNSI$ into its $PRSI$-components for the EU products. According to Table 4.1, in Chapter 14 (Vegetable plaiting materials), the competition between China and the EU is concentrated on the products on which China has a higher relative price. At the same time, tariff rates on Chinese and EU exports are relatively lower compared to the other sections. Therefore, the prospective tariff reductions on US imports from EU in the context of TTIP will not create a serious threat to China in this HS-chapter.

Table 4.1 also shows that in Chapter 17 (Sugars and sugar confectionery), Chapter 69 (Ceramic products) and Chapter 70 (Glass and glassware), the strong competition between China and the EU concentrated on the products whose prices lie within the same range. At the same time, tariff rates on EU in these chapters, especially in Chapter 17, are relatively higher compared to those in other chapters. Therefore, we can argue that, in these chapters, China will most probably lose its competitiveness against the EU if the TTIP is implemented and the tariff rates of the EU exports to the US fall to zero.

Among the chapters whose prices lie within the same range in China and the EU, tariff rates are relatively lower in Chapter 40 (Rubber and articles thereof) and Chapter 90 (Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus). Therefore, it seems that the implementation of TTIP will not create a serious threat to Chinese competition in these chapters. However, Trump administration compensates this situation by planning to increase the tariff rates on China in these chapters by 25 per cent. In this case, China will most probably lose its competitiveness in these chapters against the EU.

On the other hand, according to the table, in Chapter 50 (Silk), Chapter 68 (Articles of stone, plaster, cement, asbestos, mica) and in Chapter 71 (Natural pearls, precious stones, precious metals, imitation jewelry) China's competition with the EU is concentrated on the products for which Chinese exports have lower prices. In other words, China has a significant price advantage on these chapters. But at the same time, tariff rates on EU exports in these chapters are quite low. Therefore, it seems that even if tariff rates on EU drop to zero, China will not lose it price advantage against the EU in these chapters. However, in Chapter 28 (Inorganic chemicals) and in Chapter 86 (Railway or tramway locomotives, rolling-stock and parts thereof), even China has a significant price advantage currently, Trump administration plans to get rid of this advantage by imposing additional 25 per cent tariff on these chapters in 2018.

According to Table 4.1, China has also a significant price advantage on Chapter 56 (Wadding, felt and nonwovens; special yarns). However, the tariff on EU exports in this chapter is relatively higher. So, it is unclear whether China will lose its price advantage in this chapter in the context of TTIP.

All in all, TTIP will be effective to decrease China's competitiveness in the US market in favor of the EU only in Chapter 17 (Sugars and sugar confectionery), Chapter 69 (Ceramic products) and Chapter 70 (Glass and glassware) among the chapters given in the table. However, Trump's decision on increasing China's tariffs on some specific products will be more effective to decrease China's competitiveness in the US market.

We should also note that Trump administration decided to increase the tariffs on European steel (Chapter 72-73) and cars (Chapter 86) by nearly 25 per cent, and European aliminium (Chapter 76) by 10 per cent. But these decisions do not affect China's compe-

Table 4.1: QNSI, PRSI and MFN rates, China and EU, 2010-2017

HS			QNSI	PRSI			MFN Simple Average (%) 2016		Products with tariff increase in 2018	
Sections		Chapters	Total	High	Medium	Low	China	EU	China	EU
2	14	Vegetable plaiting materials	56.6	38	18.2	0.1	1.7	1.7		
4	17	Sugars and sugar confectionery	75	12	58.6	4.7	31.3	31.3		
6	28	Inorganic chemicals	50.5	8.3	20	22	2.6	2.6	*	
7	40	Rubber and articles thereof.	48	1.2	39.3	7.5	2.1	2.1	*	
11	50	Silk	53.6	0.4	2.5	50.7	1.1	1.1		
	56	Wadding, felt and nonwovens; special yarns	53.3	0.6	0.6	52.1	5.6	5.6		
13	68	Articles of stone, plaster, cement, asbestos, mica	54.9	0.6	23.7	30.6	1.9	1.9		
	69	Ceramic products	59	0	55.4	3.6	5.7	5.7		
	70	Glass and glassware	59.8	0.2	55	4.6	7.7	7.7		
14	71	Natural pearls, precious stones, precious metals, imitation jewellery	56.8	0.2	12.7	43.9	3.1	3.1		
17	86	Railway or tramway locomotives, rolling-stock and parts thereof	49.2	0	16.9	32.4	5.3	5.3	*	
18	90	Optical, photographic, cinematographic instruments	40.2	0	40.2	0	2.3	2.3	*	

tition with the EU in the US market because China's competition degree with the EU in these products are significantly low.

Table 4.2 below shows the decomposition of $QNSI$ into its $PRSI$-components between China and Japan.

According to Table 4.2, in Chapter 22 (Beverages, spirits and vinegar) and in Chapter 88 (Aircraft, spacecraft, and parts thereof), China's competition with Japan is concentrated on the products for which Chinese exports have lower price. However, in Chapter 22, it is unclear whether China will lose its price advantage against Japan as a result of tariff reductions enjoyed by Japan in the context of TPP or a bilateral FTA between Japan and the US. On the other hand, in Chapter 88, we can claim that tariff reductions on Japanese exports would be ineffective to curb China's competitiveness since current tariff rates are already zero. However, it is likely that Trump's decision to increase tariff rates on Chinese exports by 25 per cent in this chapter will remove its price advantage in favour of Japan.

On the other hand, Table 4.2 shows that in Chapter 75 (Nickel and articles thereof) competition between China and Japan is concentrated on the products with similar prices. Also, MFN tariff rates on both Chinese and Japanese exports are not so high. So, it seems that the TPP or an FTA in which the tariff rates on Japanese exports fall to zero will most likely

Table 4.2: QNSI, PRSI and MFN rates, China and Japan, 2010-2017

HS			QNSI	PRSI			MFN Simple Average (%) 2016		Products with tariff increase in 2018	
Sections		Chapters	Total	High	Medium	Low	China	Japan	China	Japan
4	22	Beverages, spirits and vinegar.	53.1	0	21.4	31.7	4.9	4.9		
7	40	Rubber and articles thereof.	50	0.1	43.1	6.8	2.1	2.1	*	
15	75	Nickel and articles thereof.	50.5	3.9	25.9	21	1.8	1.8		
16	84	Nuclear reactors, boilers, machinery and mechanical appliances	31.3	0	21	10	1.5	1.5	*	
17	86	Railway or tramway locomotives, rolling-stock and parts	54.7	0	44.6	10	5.3	5.3	*	
	88	Aircraft, spacecraft, and parts thereof.	46.4	0.2	0.3	46	0	0	*	
18	90	Optical, photographic, cinematographic instruments	31.4	0	31.3	0.1	2.3	2.3	*	

not affect the competition between China and Japan in this chapter. Actually, this result could be valid for Chapter 40 (Rubber and articles thereof), Chapter 84 (Nuclear reactors, boilers, machinery and mechanical appliances), Chapter 86 (Railway or tramway locomotives, rolling-stock and parts) and Chapter 90 (Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus). However, after Trump's decision to increase the tariff rates on China in these chapters by 25 per cent, China will most probably lose its competitiveness in these chapters against Japan.

As in the case of EU, we should also note that Trump's administration decided to increase the tariffs on Japanese steel (Chapter 72-73) by 25 per cent, and Japanese aluminium (Chapter 76) by 10 per cent. However, Trump's decision do not provide an advantage for Chinese exports, because China's competition with Japan in these chapters are negligible. All in all, due to the price decomposition of competition between China and Japan, TPP or an FTA between Japan and the US will be ineffective to curb China's competitiveness in the chapters in which China and Japan strongly compete. However, Trump's decision to increase the tariff rates on China will most probably negatively affect China's competitiveness in favour of Japan.

Table 4.3 shows the decomposition of $QNSI$ into its $PRSI$-components between China and Mexico. According to Table 4.3, the competition between China and Mexico is generally concentrated on the chapters with similar prices. More specifically, they are in strong competition in Chapter 40 (Rubber and articles thereof), Chapter 69 (Ceramic products), Chapter 70 (Glass and glassware), Chapter 85 (Electrical machinery and equipment and parts thereof), Chapter 88 (Aircraft, spacecraft, and parts thereof) and in Chapter 90 (Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus). And these chapters, competition between China and Mexico concentrated on the products with similar prices (including tariffs). Also, tariff rates on

Mexican exports on these chapters are already zero due to the North American Free Trade Agreement (NAFTA) between the US and Mexico. Therefore, we can claim that TPP will be ineffective curb China's competitiveness in favour of Mexico in these chapters. However, increase in tariffs on Chinese exports by 25 per cent in 2018 will most likely change the competition between these countries in favour of Mexico in Chapters 40, 85, 88 and 90.

Table 4.3: QNSI, PRSI and MFN rates, China and Mexico, 2010-2017

HS			QNSI	PRSI			MFN Simple Average (%) 2016		Products with tariff increase in 2018	
Sections		Chapters	Total	High	Medium	Low	China	Mexico	China	Mexico
2	14	Vegetable plaiting materials	53	0.6	0.1	52.2	0.5	0		
7	40	Rubber and articles thereof.	32	1.8	26.9	3.3	2.1	0	*	
	69	Ceramic products	55.7	0.2	53.9	1.6	5.7	0		
13	70	Glass and glassware.	60.2	0.2	56.4	3.7	7.7	0		
16	85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, and parts and accessories of such articles.	40	2.1	35	2.9	2.3	0	*	
17	88	Aircraft, spacecraft, and parts thereof.	77	18	44	15	0	0	*	
18	90	Optical, photographic, cinematographic instruments	41.1	0	41.1	0	2.3	0	*	

Table 4.4 shows the decomposition of $QNSI$ into its $PRSI$-components between China and Vietnam. According to the table, competition between China and Vietnam in the US market is strong in live animals and animal products e.g. Chapter 1 (Live animals) and in Chapter 3 (Fish and crustaceans and other aquatic invertebrates); in prepared foodstuffs e.g. Chapter 16 (Preparations of meat, of fish or of crustaceans); in textile and textile articles e.g. Chapter 61 (Articles of apparel and clothing accessories, knitted or crocheted) and Chapter 62 (Articles of apparel and clothing accessories, not knitted or crocheted); and also in Chapter 64 (footwear). Among these chapters, in Chapter 1 and Chapter 16, China and Vietnam compete in products with similar prices. Also, tariff rates are relatively lower on these products. Therefore, any tariff reduction on Vietnam products via TPP would not be effective to change the competition between China and Vietnam in these chapters. However, in Chapters 61 and 64, even they compete in products with similar prices, the current tariff rates on Vietnam exports are significantly higher. Therefore, we can claim that TPP or an FTA between Vietnam and the US in which the tariff rates on Vietnam exports fall to zero will most likely affect the competition between China and Vietnam in favour of Vietnam.

Table 4.4 also shows that, in Chapter 3, China and Vietnam is similar in products for which Chinese exports have already higher prices. Therefore, we can claim that the US consumers may have a special preference for Chinese products in this sector against the products of Vietnam, and that consumer demand is mainly determined by non-price factors.

Table 4.4: QNSI, PRSI and MFN rates, China and Vietnam, 2010-2017

	HS		QNSI	PRSI			MFN Simple Average (%) 2016		Products with tariff increase in 2018	
Sections		Chapters	Total	High	Medium	Low	China	Vietnam	China	Vietnam
1	1	Live Animals	26.1	0	26.1	0	0.9	0.9		
	3	Fish and crustaceans, molluscs and other aquatic invertebrates	38.4	31.9	1	5.5	0.9	0.9		
4	16	Preparations of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates	50.1	0.9	24.7	24.5	5.6	5.6		
11	61	Articles of apparel and clothing accessories, knitted or crocheted	39	2.7	23.2	13	17	17		
	62	Articles of apparel and clothing accessories, not knitted or crocheted	30.8	4.9	9.1	16.8	15.1	15.1		
12	64	Footwear, gaiters and the like; parts of such articles	25	0	24.9	0	20.9	20.9		

In other words, TPP or an FTA between Vietnam and the US will most probably not pose a threat on China in this chapter.

Table 4.5 shows the decomposition of $QNSI$ into its $PRSI$-components between China and Canada.

Table 4.5: QNSI, PRSI and MFN rates, China and Canada, 2010-2017

	HS		QNSI	PRSI			MFN Simple Average (%) 2016		Products with tariff increase in 2018	
Sections		Chapters	Total	High	Medium	Low	China	Canada	China	Canada
	33	Essential oils and resinoids; perfumery, cosmetic or toilet preparations	48	16.8	23.9	7.3	1.8	0		
6	37	Photographic or cinematographic goods	74.8	0	21.8	52.9	2.9	0		
7	40	Rubber and articles thereof	55.1	4.2	48.5	2.5	2.1	0	*	
11	59	Textile articles of a kind suitable for industrial use	58.2	0.7	3.8	53.7	4.8	0		

According to Table 4.5, the competition between China and Canada is strongest in Chapter 33 (Essential oils and resinoids; perfumery, cosmetic or toilet preparations), Chapter 37 (Photographic or cinematographic goods), Chapter 40 (Rubber and articles thereof) and Chapter 59 (Textile articles of a kind suitable for industrial use). Among these chapters, Chinese and Canadian prices (including tariffs) lie within the same range in Chapter 33 and in Chapter 40. On the other hand, China has strong price advantage over Canadian goods in Chapter 37 and in Chapter 59.

Also, tariff rates on Canadian exports are zero due to NAFTA while Chinese exports have subject to tariffs on these chapters. So, TPP will be ineffective to change the competition degree between China and Canada in the US market. However, Trump's decision to increase the tariffs on Chinese exports in Chapter 40 will most likely decrease competition between China and Canada in favour of Canada in this chapter.

Table 4.6 shows the decomposition of $QNSI$ into its $PRSI$-components between China and Malaysia. According to Table 4.6, China competes with Malaysia in Chapters 22, 23, 51, and 71. Among these chapters, in 22, 23 and 51, competition between China and Malaysia rely on the products in which China has higher prices. In other words, US consumers prefer Chinese products even they have higher prices as compared to Malaysian products. Therefore, TPP or an FTA between the US and Malaysia that results a decline in prices of Malaysian products will be ineffective to erode China's competitiveness in these chapters.

Table 4.6: QNSI, PRSI and MFN rates, China and Malaysia, 2010-2017

HS		QNSI	PRSI			MFN Simple Average (%) 2016		Products with tariff increase in 2018	
Sections	Chapters	Total	High	Medium	Low	China	Malaysia	China	Malaysia
4	22 Beverages, spirits and vinegar	66.3	51.8	14.5	0	4.9	4.9		
	23 Residues and waste from the food industries; prepared animal feed	45.2	45.2	0	0	5.3	5.3		
11	51 Wool, fine or coarse animal hair; horsehair yarn and woven fabric	26.3	26.3	0	0	9.6	9.6		
14	71 Natural or cultured pearls, precious or semi-precious stones,precious metals,	34.2	0.6	15.7	17.9	3	3		

Table 4.6 also shows that, in Chapter 71, competition between China and Malaysia is concentrated on the products for which China has lower prices. Therefore, it is unclear whether China can still have a price advantage in this chapter after TPP or not.

All in all, we analysed and discussed the prospective implications of the recent tariff increases as well as TPP and TTIP agreements on China's exports in the US market. China is likely to be seriously and negatively affected by these prospective agreements and tariff measures. Moreover, it is likely to lose its price competitiveness against its main competitors in the US market, especially in such sectors as plastics, medical appliances and optical instruments. On the other hand, its competitiveness is likely to remain unchanged in primary products like paper and live animals.

5 Concluding Remarks

In this paper, we examine how China's competitiveness in the US market against the members of TPP and TTIP can be affected by those agreements as well as by Trump's recent decisions to increase tariff rates on China's products. Our research question is whether those agreements and tariff changes may challenge China effectively and prospectively in terms of maintaining its competitive edges in the world economy.

To do so, we analyse China's price and quantity competition against its competitors in the US market. Our results show that the EU is the most prominent competitor of China in the US market. The competition between China and the EU is concentrated on the products that are in medium-high technology. Moreover, it is significant in "chemicals (HS-6)", "plastics and articles thereof (HS-7)", "articles of stone (HS-13)", "precious metals (HS-14)" and "optical photographic and medical instruments (HS-18).

Our results also show that in some particular sectors such as "Sugars and sugar confectionery", "Ceramic products" and "Glass and glassware", tariff-added prices of Chinese and European products lie within the same range despite the higher tariff rates on EU exports. Therefore, we conclude that China will most probably lose its competitiveness against the EU if the TTIP is implemented and the tariff rates on the EU exports fall to zero. On the other hand, in some sectors such as "Rubber and articles thereof", "Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus", implementation of TTIP will not create a serious threat on Chinese competition in these chapters. However, Trump's decision to increase the tariff rates on these Chinees products by 25 per cent will most probably be effective to curb China's competition against the EU in these sectors. This conclusion is also valid for most of the other sectors in which China strongly competes with the EU in the US market. Therefore, we can conclude that Trump's decision on increasing China's tariffs on some specific products will be more effective to decrease China's competitiveness in the US market as compared to the effectiveness of TTIP.

We also reveal that among the TPP members, Japan, Mexico, Vietnam, Canada and Malaysia are the most prominent competitors of China in the EU market. Moreover, China's competition with Japan Mexico and Malaysia are concentrated on high-tech products. The competition between China and those countries are generally concentrated on the "plastics and articles thereof", "articles of stone", "natural and cultured pearls", "vehicles, aircraft and vessels" and "optical photographic and medical instruments". The results of price and quantity competition analysis concluded that in most of the sectors such as "Aircraft, space-craft, and parts thereof", "Nuclear reactors, boilers, machinery and mechanical appliances", "Rubber and articles thereof", "Railway or tramway locomotives, rolling-stock and parts", "Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus", the tariff reductions on exports of TPP members via TPP agreement would most probably be ineffective to curb China's competitiveness in the US market. However, after Trump's decision to increase the tariff rates on the Chinees products in these chapters by 25 per cent, China will most probably lose its competitiveness All in all, we can claim that the products, whose tariffs are increased by the Trump administration, are selected from a rational perspective, among the product groups in which TPP and TTIP are relatively ineffective. Moreover, it seems that these trade-related measures against China's competitiveness seem to affect China more or less.

On the other hand, China seems to have felt the potential threat over its competitiveness, as implied by its increasing efforts to form its own trade and investment partnerships, multinational lending organisations, as well as the 'new silk road' project. Indeed, China's recent effort to upgrade its currency, the yuan, to the status of a reserve currency is also directly related to its intention of avoiding loss of competitiveness. Moreover, China has already begun to lay the foundations of a regional economic integration partnership, known as the Regional Comprehensive Economic Partnership (RCEP). RCEP includes The Association

of Southeast Asian Nations (ASEAN), along with Brunei, Indonesia, the Philippines, Cambodia, Laos, Malaysia, Myanmar, Singapore, Thailand, Vietnam, Australia, India, Japan, South Korea, New Zealand, and China. However, China's counter-measures might not have sufficed to maintain its competitiveness in the face of such mega-regional blocs as the TPP and TTIP as well as recent tariff increases on China by Trump administration.

Under these probable circumstances, it should be kept in mind that, not only China's exports and the Chinese economy can be adversely affected by these trade-related measures. Since China has been functioning as the engine of the world economy for about the last two decades, possible repercussions at the global level should also be taken seriously. Indeed, significant reductions in China's export competitiveness have the potential to cause long-lasting and deep recessions in almost all economies in the world, including the participants of the TPP and TTIP agreements.

Finally, it should also be noted that new developments, such as 'Industry 4.0', 'robotisation', 'smart production' etc., introduce a new dimension that needs to be considered in a discussion of competition. Also, China's counter-measures against the trade-related sanctions of the US have a technological dimension. More specifically, China's research and development activities in terms of 'Industry 4.0' and development of new technologies (such as advanced robotics and 3-D printing) have the potential to support its competitiveness in the US market. However, not only China but also some of its main competitors in the US market (such as Japan, Brazil, Malaysia, and Mexico) have been adopting more advanced technologies like industrial robots. Besides, a recent World Bank Report by Hallward-Driemeier and Nayyar (2017) states that the robotisation process in the context of Industry 4.0 technology would favour North America, at the expense of China. In other words, robotisation will tend to affect China's price-competition adversely by reducing labour costs significantly. Nonetheless, according to the Report, China has the highest number of installed industrial robots in the world, and it is expected that China will sustain this leading position in the future. All in all, such prospective developments should also be taken into account in the analyses of competition. We intend to carry out such analyses in detail in future research.

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