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DOI <https://doi.org/10.26661/2414-0287-2021-3-51-11>**THE INFLUENCE OF THE WTO IN THE TRENDS OF INTERNATIONAL TRADE****Babmindra D.I., Slobodyanik I.M., Bagrova E.R., Vasylieva O.V.***Zaporizhzhya national university**Ukraine, 69000, Zaporizhzhya, Zhukovsky str., 66*

mizhnarodeconom@gmail.com, Yarina.slobod@gmail.com,

elizaveta.bagrova82@gmail.com, Vasileva\_komp@ukr.net

**Key words:**

international trade, World Trade Organization, tariff rate, trade liberalization, export and import of goods

In the context of globalization, it is necessary to coordinate actions in order to prevent crises and develop common rules of the behavior in the global economic environment. Increasing of the competitiveness of national manufacturing is possible only if we provide the same opportunities for competition with foreign producers, especially in the domestic market, which will increase the level of competitiveness of the country in general. The article analyzes the dynamics of the main indicators of international trade in goods and services, including their amount, the dynamics of growth in terms of geographical regions, identifies the largest exporters and importers of goods and services on the world market. It is established that the trend of stable growth of international trade is confirmed, and both goods and commercial services with an average annual growth rate for 2016-2020 of 6%. The highest growth rates of trade, among product groups, are typical for agricultural products, which is, first of all, due to the stable growth of population. The WTO's impact on international trade trends was assessed on the basis of a comparative analysis of international trade and GDP growth dynamics, and a pairwise correlation-regression model was built to assess the impact of the weighted average tariff rate on all product groups on world trade. The inverse dependence between the volume of world trade in goods and the weighted average tariff rate for all products were detected. Thus, reducing the weighted average tariff rate by 1 percentage point increases world trade in goods by 4570.99 billion US dollars.

**ВПЛИВ СОТ НА ТЕНДЕНЦІЇ МІЖНАРОДНОЇ ТОРГІВЛІ****Бабміндра Д.І., Слободяник І.М., Багорова Є.Р., Васильєва О.В.***Запорізький національний університет**Україна, 69600, м Запоріжжя, вул. Жуковського, 66***Ключові слова:**

міжнародна торгівля, Світова організація торгівлі, тарифна ставка, лібералізація торгівлі, експорт та імпорт товарів

В умовах глобалізації необхідна координація дій з метою попередження криз та вироблення єдиних правил поведінки в глобальному економічному середовищі. Підвищення конкурентоспроможності національного виробництва можливе лише за умови забезпечення однакових можливостей для конкуренції з іноземними виробниками, особливо на внутрішньому ринку, що підвищить рівень конкурентоспроможності країни в цілому. У статті проаналізовано динаміку основних показників міжнародної торгівлі товарами та послугами, у тому числі їх обсяги, динаміку зростання в розрізі географічних регіонів, визначено найбільших експортерів та імпортерів товарів та послуг на світовому ринку. Встановлено, що підтверджується тенденція стабільного зростання міжнародної торгівлі, як товарів, так і комерційних послуг із середньорічним темпом зростання за 2016–2020 роки 6%. Найвищі темпи зростання товарообігу серед товарних груп характерні для сільськогосподарської продукції, що, насамперед, пов'язано зі стабільним зростанням населення. Вплив СОТ на тенденції міжнародної торгівлі оцінювався на основі порівняльного аналізу міжнародної торгівлі та динаміки зростання ВВП, а також була побудована парна кореляційно-регресійна модель для оцінки впливу середньозваженої тарифної ставки на всі групи товарів на світову торгівлю. Виявлено обернену залежність між обсягом світової торгівлі товарами та середньозваженою ставкою тарифу на всю продукцію. Таким чином, зниження середньозваженої тарифної ставки на 1 відсотковий пункт збільшує світову торгівлю товарами на 4570,99 млрд доларів США.

### Statement of the problem

The globalization of the economy, which was intensified in the second half of the XX century and early XXI century, has led to the development of competition in world markets. Increased international competition has helped to reduce the pace of development of national markets. In modern conditions of development of the international trade system countries face a dilemma. On the one hand, trade liberalization stimulates the development of foreign trade relations, and on the other hand, it harms national manufacturing. Accordingly, there is a demand to protect it. Members of the World Trade Organization are constantly taking steps to create a fairer trading system that will expand market access and improve trade conditions around the world.

It becomes increasingly important for the competition and trade policy communities to engage in a constructive strategic dialogue to ensure that anti-competitive and trade-restrictive measures do not deny the growth and effectiveness in recent decades. At the same time, it is crucial that the experience gained by the Community on competition policy in many countries over the last decade has made an even greater contribution to sustainable trade growth. The studying of the real impact of the WTO on the development of international trade remains being a crucial problem. To solve this problem, the urgent task is to study the nature of the dynamics of key indicators of international trade and WTO decisions impact on them.

### Analysis of recent studies and publications

Significant contribution to the study of theoretical and methodological and practical aspects of current trends in international trade, as well as the role of the WTO in these processes, raise in their scientific publications, analyze the mechanisms of interconnection, scientists such as Anistratenko [1], Andriychuk [2], Burakovskiy [6], Gonchar [3], Ivanytska [5], Teremetsky [8]. Young scientists, such as Davydenko, [4], Sidenko [7], Yakovchenko [9] and others, also study this area in their works. They reveal the direction of current trends, conduct research and analyze the theoretical and methodological mechanism of the relationship. However, despite the large number of works, the issues related to the impact of the World Trade Organization on the main current trends in international trade in goods and services remain insufficiently studied, also little is known about the topic about rating of such impacts and predicting their consequences.

### Objectives of the article

The purposes of the work is to identify current trends in international trade and assess the impact of WTO activities on them.

Objectives of the study:

- to analyze the main indicators of international trade;
- evaluate the role of the WTO in the identified trends in world trade;

### The main material of the research

We begin with the analysis of current trends in international trade an rating of the dynamics of its volume in terms of value in terms of trade in goods and commercial services (Fig. 1).

According to Fig. 1, we can conclude that the amount of trade in goods traditionally exceeds the amount of sales of commercial services. At the same time, during the analyzed period the amount of international trade in both goods and services have a steady growing trend. It should be mentioned that the dynamics of international trade in goods is more volatile and is characterized by significant declines during economic crises. While for the global services market the biggest decline is characteristic of the COVID-19 pandemic in 2020. The COVID-19 pandemic has reduced trade in goods by 8% and commercial services by 21% per year in 2020 [10].

If we analyze the structure of international trade for the analyzed period, the share of trade in goods averaged 79%, and commercial services – 21%. Regarding to the growth rate of international trade, for both goods and commercial services during the analyzed period, its average value was 6%. That is, the trend of steady growth in international trade is confirmed.

The table 1 shows the dynamics of annual growth of exports and imports of goods by major geographical regions.

According to table 1 we can conclude that the largest average annual increase in exports of goods is observed in Europe and Asia in the analyzed period, which are characterized by a relatively low decline in 2020, while in other geographical regions it was significant. Asia's relatively small decline in trade has been largely due to the effective management of the pandemic in Asian economies, as well as the region's role as a major supplier of consumer and medical goods in world trade. Regarding to the imports of goods, the largest average annual increase is characteristic of the CIS countries. It should be mentioned that all geographical regions are characterized by similar

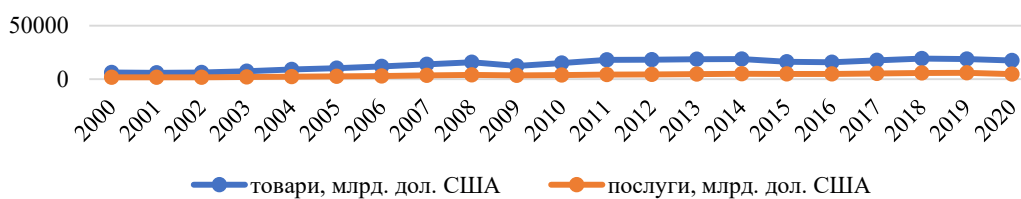


Fig. 1 – Dynamics of the amount of international trade in goods and services in 2000–2020, billion US dollars [10]

Table 1 – Dynamics of annual growth of exports and imports of goods by major geographical regions of the world, % [11]

| World region              | 2016  | 2017 | 2018 | 2019 | 2020  | The average annual rate for 2016–2020 |
|---------------------------|-------|------|------|------|-------|---------------------------------------|
| Export                    |       |      |      |      |       |                                       |
| South and Central America | -5,6  | 14   | 8,2  | -6,3 | -10   | 0,06                                  |
| North America             | -3,2  | 7,3  | 7,9  | -0,6 | -12,2 | -0,16                                 |
| Europe                    | -0,3  | 9,4  | 9,3  | -2,7 | -6,6  | 1,82                                  |
| Asia                      | -3,7  | 10,9 | 8,5  | -1,5 | -1,4  | 2,56                                  |
| Africa                    | -11,5 | 18,3 | 13,6 | -5,5 | -20,3 | -1,08                                 |
| Middle East               | -9,5  | 15,3 | 21,5 | -8,8 | -27,9 | -1,88                                 |
| CIS countries             | -16,2 | 24,6 | 23,5 | -4,3 | -19,8 | 1,56                                  |
| Import                    |       |      |      |      |       |                                       |
| South and Central America | -14,5 | 8    | 11,2 | -5,9 | -14,4 | -3,12                                 |
| North America             | -2,9  | 7,3  | 8,4  | -1,8 | -8,1  | 0,58                                  |
| Europe                    | 0,2   | 10   | 9,5  | -2,9 | -6,6  | 2,04                                  |
| Asia                      | -4,7  | 15,5 | 13,3 | -3,6 | -7,1  | 2,68                                  |
| Africa                    | -9,5  | 5,7  | 11,1 | -0,5 | -12,5 | -1,14                                 |
| Middle East               | -7,2  | 2,8  | 0,9  | -0,5 | -13,5 | -3,5                                  |
| CIS countries             | -2,6  | 21,5 | 8,4  | 5,3  | -7,8  | 4,96                                  |

dynamics, so after the fall in international trade in 2016, during 2017–2018 they recovered, and after declining in 2019 in 2020, the pandemic led to a significant reduction in international trade.

The table 2 shows the dynamics of annual growth of exports and imports of commercial services by major geographical regions.

According to table 2 we can conclude that the growth rate of the international market for commercial services is

lower compared to the commodity market. As specified by geographical regions, a positive average annual increase in exports of commercial services for the analyzed period is observed only in Europe, Asia and the Middle East, and imports – only in Europe. All geographical regions are experiencing a significant 20–35% drop in trade in commercial services in 2020 due to quarantine restrictions.

Fig. 2 shows the top 10 exporters of goods on the world market in 2020.

Table 2 – Dynamics of annual growth of exports and imports of commercial services by major geographical regions of the world, % [11]

| World region              | 2016  | 2017 | 2018 | 2019 | 2020  | The average annual rate for 2016–2020 |
|---------------------------|-------|------|------|------|-------|---------------------------------------|
| Export                    |       |      |      |      |       |                                       |
| South and Central America | 0,0   | 5,5  | 1    | -0,3 | -36,9 | -6,14                                 |
| North America             | 0,5   | 5,4  | 4,1  | 1,9  | -20,6 | -1,74                                 |
| Europe                    | 0,2   | 8,4  | 8,1  | 1,3  | -16,7 | 0,26                                  |
| Asia                      | 0,9   | 8,3  | 9,9  | 3,3  | -21,4 | 0,2                                   |
| Africa                    | -5,8  | 14,6 | 9,9  | 3,7  | -34,3 | -2,38                                 |
| Middle East               | 3,8   | 8,0  | 5,4  | 12,6 | -28,9 | 0,18                                  |
| CIS countries             | -2,2  | 13,5 | 12,1 | -0,5 | -28,5 | -1,12                                 |
| Import                    |       |      |      |      |       |                                       |
| South and Central America | -5,1  | 6,2  | 0,8  | -3,4 | -30,8 | -6,46                                 |
| North America             | 2,2   | 6,8  | 3,2  | 3,7  | -23,9 | -1,6                                  |
| Europe                    | 2,3   | 5,0  | 8,4  | 4,9  | -17,6 | 0,6                                   |
| Asia                      | 2,7   | 7    | 8,2  | -0,5 | -22,3 | -0,98                                 |
| Africa                    | -10,2 | 10,8 | 13,4 | 4    | -25,2 | -1,44                                 |
| Middle East               | -0,7  | 5,0  | 6,1  | 5,3  | -30,8 | -3,02                                 |
| CIS countries             | -12,2 | 15,3 | 17,4 | 4,8  | -33   | -1,54                                 |

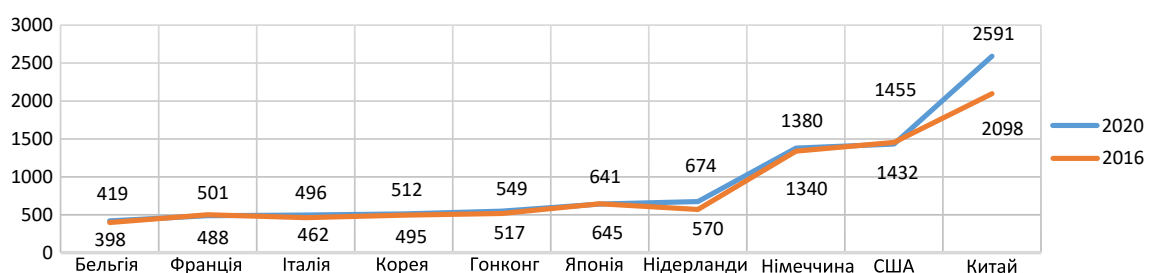


Fig. 2 – Top 10 exporters of goods in the world, billion US dollars [11]

It should be noted that the list of countries that are among the largest exporters in the world has not changed during the reviewed period. Compared to 2016, the UK moved from the top 10 to 12th due to the reduction in international trade with the EU due to the withdrawal of this integration association. Countries, such as the Republic of Korea, the Netherlands and Italy, have increased their positions in terms of merchandise exports. These countries, in addition to Belgium, are among the top importers in the world market, but, in contrast to the ranking of exporters, the largest importer is the United States, and China ranks the second position. The UK is also among the top 10 importers.

Fig. 3 shows the top 10 exporters of commercial services on the world market in 2020.

It should be mentioned that the list of countries that are among the largest exporters of commercial services in the world has not changed during the analyzed period. We should pay attention to Ireland, which in 2020 rose to 5th place compared to 10th in 2016. These same countries are world leaders in terms of imports of commercial services.

The impact of the WTO is that it contributes to the transformation of world trade. Establishing clear rules for international trade in goods and services has contributed to a sharp increase in cross-border business activity. Since 1995, the dollar volume of world trade has increased almost fourfold, and real world trade has increased 2.7 times [12]. This far exceeds the double growth of world GDP during this period.

Average tariffs have dropped significantly. In order to quantify the impact of lower average tariff rates on international trade in goods, we build a pairwise correlation-regression model, in which the dependent variable will be the volume of international trade in goods,

and independent – the weighted average tariff rate for all products (Table 3).

The following correlation dependence of the volume of world trade in goods on the weighted average tariff rate for all products is obtained (formula 1).

$$Y = 29259 - 4570,99X, \tag{1}$$

where, Y – world trade in goods, billion US dollars; X – weighted average tariff rate for all products, %.

Regression coefficients show how much the average volume of world trade in goods changes when the factor of the weighted average tariff rate for all products changes. The identified dependence is inverse. Thus, reducing the weighted average tariff rate by 1 percentage point increases world trade in goods by 4570.99 billion US dollars.

The multiple correlation coefficient is 0.8905, which indicates the presence of high density of world trade in goods and the weighted average tariff rate for all products. The coefficient of multiple determination is 0.7931. This indicates that the volume of world trade in goods due to changes in the weighted average tariff rate for all products is 79.31 %. This indicates the presence of additional factors that also significantly affect the volume of world trade in goods, but the impact of the weighted average tariff rate on all products is significant (Table 4).

Next, we analyze the quality of the coefficients of the obtained correlation-regression model, which are summarized in table 5.

According to table 5 we can conclude that the weighted average tariff rate for all products is a statistically significant factor influencing the volume of world trade in goods. We present the results of constructing a correlation-regression model graphically (Pic. 5).

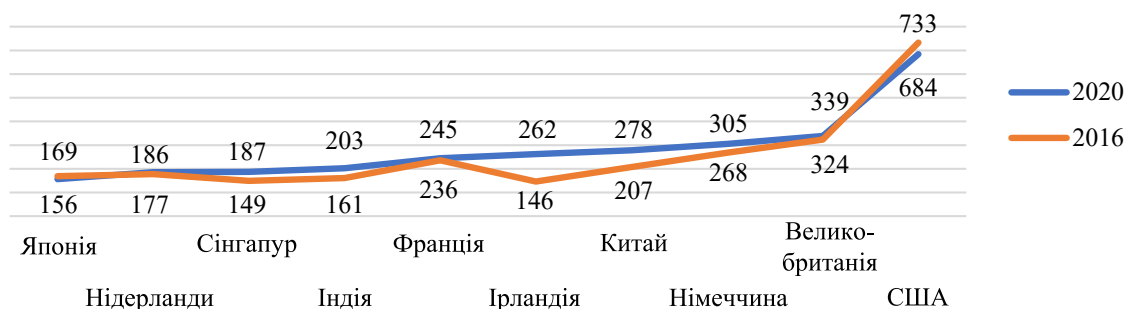


Fig. 3 – Top 10 exporters of commercial services in the world, billion US dollars [11]

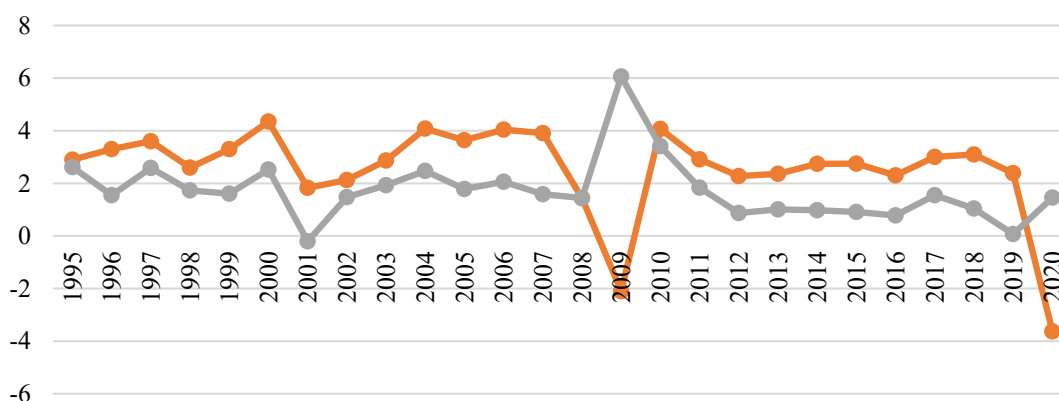


Table 3 – Initial data for constructing a correlation-regression model [11; 13]

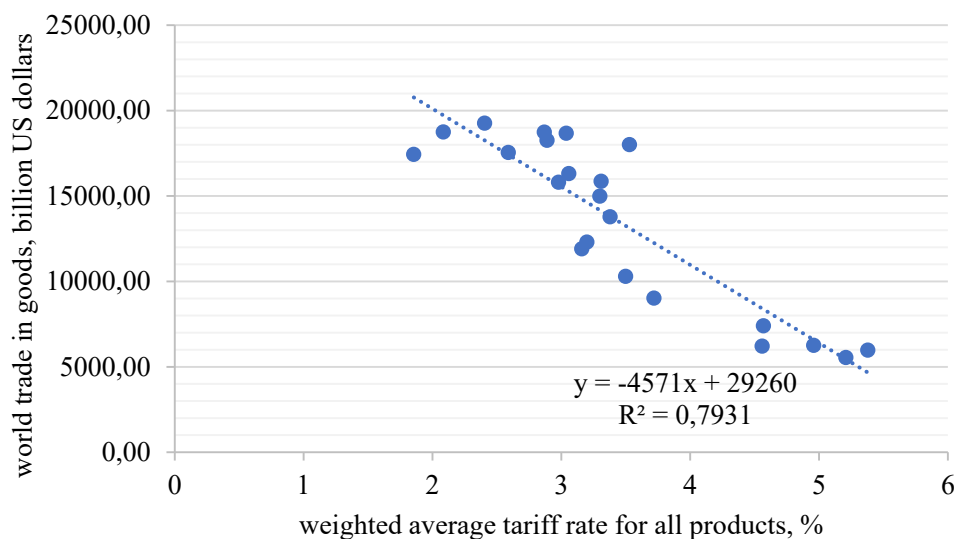
| Year | Y - world trade in goods, billion US dollars | X - weighted average tariff rate for all products, % |
|------|--|--|
| 1999 | 5545,99                                      | 5,21   |
| 2000 | 6252,55                                      | 4,96   |
| 2001 | 5979,89                                      | 5,38   |
| 2002 | 6205,19                                      | 4,56   |
| 2003 | 7397,83                                      | 4,57   |
| 2004 | 9021,78                                      | 3,72   |
| 2005 | 10298,63                                     | 3,5  |
| 2006 | 11907,33                                     | 3,16   |
| 2007 | 13779,12                                     | 3,38   |
| 2008 | 15863,59                                     | 3,31   |
| 2009 | 12301,91                                     | 3,2  |
| 2010 | 14988,75                                     | 3,3  |
| 2011 | 18005,55                                     | 3,53   |
| 2012 | 18262,49                                     | 2,89   |
| 2013 | 18676,82                                     | 3,04   |
| 2014 | 18737,08                                     | 2,87   |
| 2015 | 16309,61                                     | 3,06   |
| 2016 | 15809,61                                     | 2,98   |
| 2017 | 17547,10                                     | 2,59   |
| 2018 | 19264,64                                     | 2,41   |
| 2019 | 18745,56                                     | 2,09   |
| 2020 | 17440,50                                     | 1,86   |

Table 4 – Indicators of the correlation-regression model

| Indicator                                      | Weight  |
|--|---------|
| Multiple correlation coefficient               | 0,8905  |
| Coefficient of multiple determination          | 0,7931  |
| Adjusted coefficient of multiple determination | 0,7827  |
| Standard error                                 | 2292,61 |
| Number of observations                         | 22      |

Table 5 – Analysis of the coefficients of the correlation-regression model

| Indicator  | Coefficient | Standard error | t-statistics | Significance |
|--|-------------|----------------|--------------|--------------|
| Y – world trade in goods, billion US dollars         | 29259,95    | 1858,66        | 15,74        | 0,0000       |
| X – weighted average tariff rate for all products, % | -4570,99    | 522,13         | -8,75        | 0,0000       |



Pic. 5 – Graphical representation of the pairwise correlation-regression model of the dependence of world trade in goods on the weighted average tariff rate for all products



Fisher's F-test was used for rapid diagnosis of the adequacy of the multiple correlation-regression model. Since the significance of this criterion is 0.000000028, with a probability of 0.99 we can say that the model is accurate and adequate.

### Conclusions

Based on the analysis of the dynamics of world trade, we can conclude that the trend of stable growth of international trade is confirmed, with both goods and commercial services with an average annual growth rate of 6% in 2016–2020. The highest growth rates of trade, among product groups, are characteristic of agricultural products, which is primarily due to stable population growth.

It is established that during the analyzed period the largest average annual increase in exports of goods is observed in Europe and Asia, which are characterized by a relatively low decline in 2020, while in other geographical regions it was significant. Regarding imports of goods, the

largest average annual increase is characteristic of the CIS countries. By geographical regions, a positive average annual increase in exports of commercial services for the analyzed period is observed only in Europe, Asia and the Middle East, and imports – only in Europe. All geographical regions are experiencing a significant 20–35% drop in trade in commercial services in 2020 due to quarantine quarantine restrictions.

Regarding the impact of the WTO on international trade, it was found that the establishment of clear rules for international trade in goods and services has contributed to a sharp increase in cross-border business activity. Since 1995, the volume of world trade has almost quadrupled, and real world trade has grown 2.7 times.

The inverse relationship between the volume of world trade in goods and the weighted average tariff rate for all products. Thus, reducing the weighted average tariff rate by 1 percentage point increases world trade in goods by 4570.99 billion dollars. USA.

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