REGIONAL PROCESSES

The GATT/WTO Participation and Asia-Pacific Regional Trade: Long-Term Effects[1]

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Abstract

The purpose of this study is to assess the impact of participation by Asia-Pacific countries (APCs) in the General Agreement on Tariffs and Trade/World Trade Organization (GATT/WTO) on their reciprocal trade from 1993–2021. The reduction of various barriers due to the APCs' participation in the GATT/WTO, as well as in trade agreements, has contributed to the fact that, over the past three decades, trade in the Asia-Pacific region (APR) has become predominantly intra-regional. The estimates developed by the author point to the long-term, positive impact of membership in the GATT/WTO on the trade of the APCs, explaining the dominance of the effect of globalization over the effect of regionalization. The processes of globalization and regionalization in the APR were neither conflicting nor complementary to each other. The results show that the effects of the APCs' participation in the GATT/WTO contributed to an increase in intra-regional trade by 129% and to an 11% increase in the entry into force of trade agreements. The results also show that bilateral (direct) participation of APCs in the GATT/WTO led to an increase in intra-regional trade by 46%, and unilateral (indirect) participation—by 110%. These results prove the importance of countries' participation in the GATT/WTO for creating a relatively free area for trade in the APR, reducing various restrictive measures and intensifying intra-regional trade. Estimates of the border effect confirm the reduction of total barriers in interactions between the APCs in the long term. The article shows that the discussion and creation of various trade formats, including the largest in terms of coverage of the participating countries, on the one hand, can contribute to the fragmentation of the trade and economic system of the APR; on the other hand, it creates conditions for further liberalization of trade relations, complementing the functions of the WTO. The author suggests that participation in the WTO may allow Russia to use the mechanisms of globalization to discuss the easing of restrictions, as well as to increase trade with countries that do not implement strong restrictions on the Russian economy, including some of APCs.

Keywords: trade, integration, integration effect, globalization, regionalization, WTO, GATT, trade agreement, Asia-Pacific region

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Introduction

Trade and economic integration[2] follow agreements between countries/groups of countries in the world. From the viewpoint of reducing certain barriers between countries/groups of countries, integration can be shallow or deep.[3] Shallow integration implies removal of trade barriers following the principle of non-discrimination. Deep integration, in addition to the removal of barriers, is manifested in the formation of new institutions and instruments or the changing of existing ones [Tinbergen, 1965, p. 79]. As to its geography, integration can have global, sub-global and cross-country (international) dimensions.[4]

It is considered that the General Agreement on Tariffs and Trade (GATT) was the first multilateral trade agreement in the world [Grossman, 2016, p. 380]. This agreement was signed in 1947 by 23 countries accounting for 61% of global trade. By 1994, the number of GATT member countries had reached 128, generating 91% of global turnover [McCulloch, 2012, p. 2]. The core GATT principles are as follows: non-discrimination (most-favoured-nation (MFN) treatment[5] and national treatment);[6] transparency (publicity of trade policy); reciprocity (reciprocal reduction to trade barriers); flexibility (looking for compensatory adjustment for prejudice); and consensus-based decision-making [Anderson, 2016; Baldwin, 2016].

The membership status of the majority of developing GATT member countries (64 total) was based on specific terms, according to Article XXVI 5 (c), that were less rigid compared to the common process of accession according to Article XXXIII [Anderson, 2016]. After the negotiations of 1986–94 under the Uruguay round of GATT, the World Trade Organization (WTO) was established and the agreements on trade of services (General Agreement on Trade of Services, GATS[7]) and on regulation of intellectual property rights (Agreement on Trade-Related Aspects on Intellectual Property Rights, TRIPS) came into force. The WTO, which was created in 1995, has expanded its activities to the many types of services, harmonization of intellectual property regulations, and improvement of dispute settlement procedures [Grossman, 2016, p. 380].

The majority of countries were WTO signatories—there were 164 member countries [WTO, n.d.b] as of 29 July 2016, which by 2021 accounted for about 97% of the global turnover, and most non-aligned countries had observer status at different stages of accession. According to international law, the WTO functions as a sole international institution dealing with regulations of global trade between countries, while its operations are based on respective agreements that regulate the basic legal norms of international commerce and trade.

This research focuses on the involvement of different countries in GATT/WTO, first considering the reduction of barriers for trade and economic interaction between them that has led to liberalization of trade. GATT and the WTO can be merited for a significant reduction of a tariff and partially a non-tariff load on trade in the global economy, setting an example of "surface" integration for the global level. Hence, exceptionally, in view of international integration

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[2] The term "trade and economic integration" is used in this study to describe the convergence of national economies and their groups in the levelling out of tariff, non-tariff, and institutional barriers to trade and economic interaction between them.

[3] The trade and economic interaction between countries can grow without a meaningful reduction of barriers between them and corresponds to "economic cooperation" as such.

[4] This research characterizes the integration process at the global level as globalization; between groups of countries at the sub-global level as regionalization; and between two countries as reciprocal integration.

[5] Each promising party grants no less favourable treatment to the other party than it granted to any other third GATT member country.

[6] Equal treatment of foreign and locally made products in the domestic market.

[7] All WTO member countries are GATS signatories.

theory and political economy of trade policy, this research employs the term "global integration format" for dealing with GATT/WTO participants.

The multilateral trade system confronts challenges, among which is the crisis in the WTO decision-making system [Portanskiy, 2019], enhancing protectionism and trade wars [Afontsev, 2020]. Lack of progress in the WTO's Doha round in 2001, which dealt with liberalization of global trade of agricultural products, finance services, and enforcement of intellectual property in relations between developed and developing economies, promoted strong motivation for countries to sign bilateral and multilateral trade agreements [Baldwin, 2016]. The active process of entering bilateral and multilateral trade agreements aims at reduction of trade and economic barriers in a particular sub-global economy.

The process defined as "regionalism" (further on, as regionalization) compensates for certain accumulated disparities in GATT/WTO policies. Initially, according to the GATT norms, bilateral and multilateral preferential agreements in general were understood as violating the MFN regime;[8] still, these were optional if free trade agreements were signed between countries [Lipsey, Smith, 2011, p. 98]. Later, from 1990s, there gradually emerged open trade blocs that set a goal of levelling out barriers between the member countries and reducing restrictions in interaction with third parties employing WTO mechanisms [Bagwell, Staiger, 2016]. Integration effects for national economies are generated in the processes of globalization and regionalization in their turn that are designed by GATT/WTO mechanisms and bilateral and multilateral trade agreements.

A significant number of ex-post and ex-ante estimates of GATT/WTO membership trade effects for the respective countries have been accumulated [Anderson, 2016; Singh, 2010]. The efficiency of GATT/WTO impacts on the trade of member economies of interest are long-term ex-post trade effects, they in their turn are assessed primarily by gravity modelling. On the one hand, the estimates indicate an ambiguous GATT/WTO effect on national trade from the 1950s and 1960s to the end of the 1990s: there was no meaningful difference in the rates of import tariffs between their member countries and other countries [Rose, 2004]. Only a slight influence on stability of trade flows was found [Rose, 2005b], and that influence was much lower than in other international organizations that do not refer directly to trade regulation [Rose, 2005a]; a positive influence of GATT/WTO was discovered only on trade in certain types of goods, for instance in capital-yielding production [Engelbrecht, Pearce, 2007].

On the other hand, there is much more empirical evidence of GATT/WTO's positive impact on trade of member countries both for analysis of aggregate reciprocal export flows [Anderson, 2016; Herz, Wagner, 2011] and of extensive and intensive components of export [Gil-Pareja, Llorca-Vivero, Martínez-Serrano, 2016; Liu, 2009]. Despite varying effect estimates obtained for different time periods and on the basis of different gravity dependence, at the methodological level the controversial GATT/WTO impact on member countries' trade and that of other countries overall was overcome by inclusion of domestic trade in the analysis [Larch, Piermartini, Yotov, 2019]. This instrument enabled a more precise identification of the long-term effects of GATT/WTO's impacts on international trade with regard to its bias toward the domestic market.

The integration processes facilitating trade liberalization in the global economy are most vividly seen in the Asia Pacific region (APR), which accounts for over half of the global gross domestic product (GDP) in the last three decades; the share of trade in this sub-global region has approached 40% of the global turnover, outperforming any other world region on this indicator.

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[8] This process is seen as forming exclusive trade blocs.

The APR is the key generator of global economic and trade growth. The economies of the APR are rather diversified, which no doubt stands behind the multi-directionality of regional integration processes, thus forming the foreground for fragmentation of the regional economic space. Nevertheless, over the past three decades of high economic growth rates, real incomes of the population in most of the APR countries have grown significantly thus increasing their markets' capacity.

Notable effects from expanding the APR's trade were generated by a significant reduction of barriers linked to integration processes. On the one hand, the majority of APR countries and economic territories acceded to GATT/WTO, while on the other hand bi- and multilateral trade agreements between the region's countries are actively being signed [Solís, Wilson, 2017], some with a broader membership range [Bown, 2017]. Despite the large number of studies of integration effects in the APR, their analysis is aimed at assessing the effects of regionalization rather than globalization [Nguyen, 2019; Jugurnath, Stewart, Brooks, 2007].

The Russian Federation is among the APR countries. In the past decade, Russian leadership targeted diversification of trade and economic relations, diverting them from the European market to other markets that prioritize the APR and the strategy of the "turn to the East" [Valdi Club, 2019]. Russia is bound to take into account a close interdependence of policy and economy in the APR [Fedorovsky, 2019].

The current exogenous restrictions imposed on the Russian economy to some extent reduce the potential for external trade and economic interaction, including with some APR countries that are formally associated with sanctions against the Russian Federation. Nevertheless, it is important for Russia to determine its role in the economic processes of the sub-global region as a potential beneficiary.

Based on earlier studies [Izotov, 2020; 2021], participation of APR countries in GATT/WTO has a lasting positive impact on trade in the sub-global region, explaining the dominance of the globalization factor over the regionalization effect. Despite insufficient knowledge of GATT/WTO's membership influence on long-term trade interactions in the APR, it can be assumed that the global trade format renders both an immediate positive effect on trade in the member countries as well as a mediated one by shaping the common institutional "background." Its tools enhance trade interaction of the member countries with the rest of the region's economies [Larch, Piermartini, Yotov, 2019].

Thus, this study addresses the following tasks: first, an analysis of the APR's integration process in dynamics is undertaken to understand the role of globalization and regionalization; second, the selected methodology and collection of statistics is discussed; third, integration effects of the APR countries are assessed for the period of 1993−2021.[9] Countries and economic territories of Eastern Asia,[10] Australia and Oceania[11] as well as the Pacific shore countries in North, Central and South America[12] are understood forming the APR in this study.

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[9] Despite the fact that assessment of integration effects will refer primarily to the WTO, it is expected that membership of countries in GATT also rendered a positive effect on trade of the APR countries.

[10] Brunei, East Timor, Vietnam, Hong Kong, Indonesia, Cambodia, China, Laos, Macau, Malaysia, Mongolia, Myanmar, Papua New Guinea, Korea, Russian Federation, Singapore, Thailand, Taiwan, Philippines, and Japan.

[11] Vanuatu, Kiribati, Marshall Islands, Nauru, New Zealand, New Caledonia, Palau, Samoa, Solomon Islands, Tonga, Tuvalu, Wallis and Futuna, Federated States of Micronesia, Fiji, and French Polynesia.

[12] Guatemala, Honduras, Canada, Colombia, Costa Rica, Mexico, Nicaragua, Panama, Peru, Salvador, the U.S., Chile, and Ecuador.

APR Integration Processes:
The Role of Globalization and Regionalization

In about three decades, the trade turnover between APR countries increased 7.5-fold, from $2,210 billion in 1993 to $16,657 billion in 2021 (Figure 1).[13]
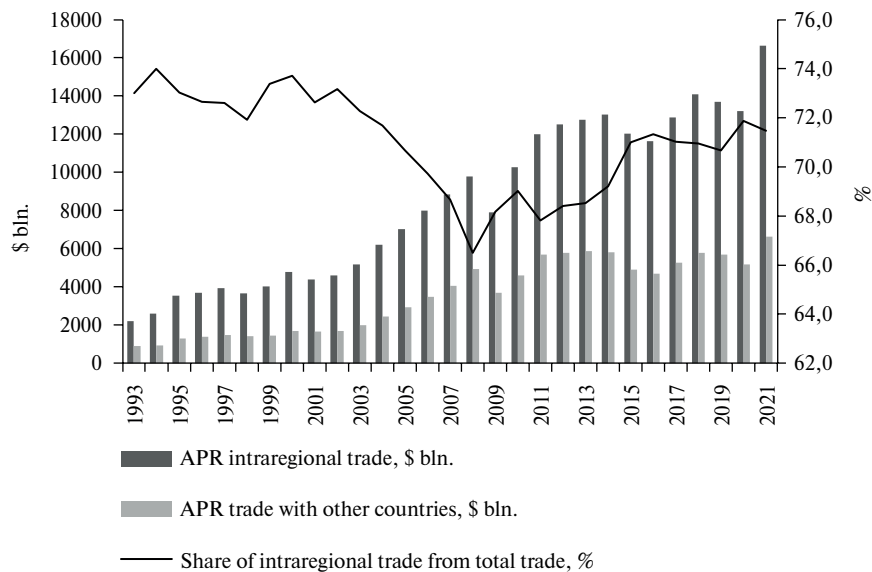

Fig. 1. APR Intraregional Trade and Trade With Other Countries

Source: Calculated by the author based on data from UNCTADstat [n.d.] and WITS [n.d.a].

In the long-term period there were changes in the APR connected with fast economic growth and expansion of trade with the global and sub-global economy, primarily in Eastern Asia. In the 1990s, in close interaction in industrial cooperation between developed and developing countries the share of intraregional trade of APR countries in their turnover with the global economy approached 73%. Later, in the 2000s, some shrinking of the APR's intraregional trade was caused by high energy products prices and also by the transfer of industrial enterprises to developing countries of Eastern Asia for growing global exports of finished products, parallel to the localization in production of intermediate goods, primarily in the People's Republic of China (PRC) and Southeast Asian countries. In the 2010s, the share of the APR's intraregional trade grew, reaching 71.5% in 2021. The size of markets in most developing APR countries has grown, greatly incentivizing the intraregional trade of finished products.

The PRC's economy became the main source for the APR's trade, its GDP ranking second in the world. From the second half of 2010s, commodity flows acted as the source for intensifying trade in the APR and became increasingly oriented toward intraregional demand. By 2021, the reduction of operating costs for the movement of raw materials over long distances between different parts of the Pacific Ocean accounted for the increase in the share of the APR's intraregional trade in raw materials to 65.3%, up from 60.0% in the 2000s. Finally, between 1993−2021, the intraregional turnover in the overall APR trade reached almost 71.0%.

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[13] Calculated by the author based on data from WITS [n.d.a].

During the surveyed period, the entry of APR countries into the GATT and WTO, as well as the conclusion of trade agreements between these countries promoted growth in the APR tax-free product groups for intraregional trade as well as a notable decrease in the average import duty for the APR's intraregional trade: from 12.2% in 1993 to 3.1% in 2021 (Figure 2).
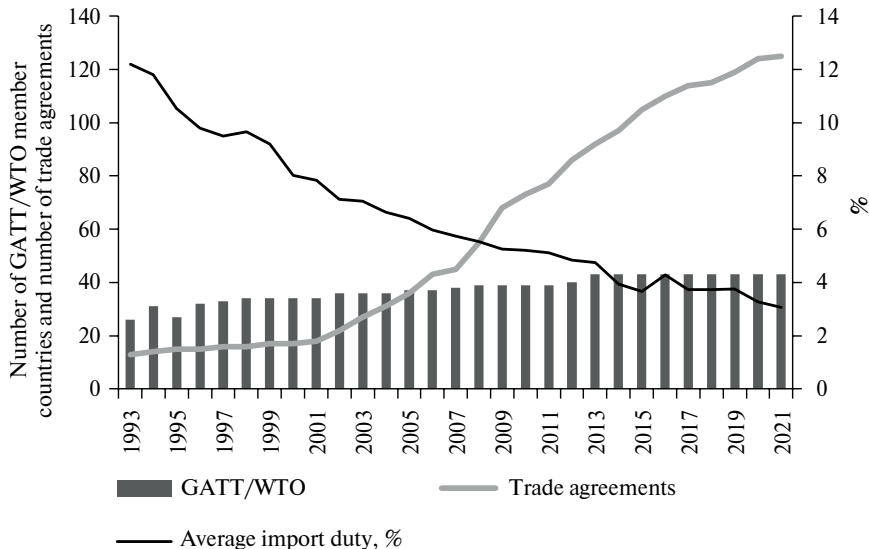

Fig. 2. Number of GATT/WTO Member Countries, Number of Trade Agreements and the APR's Average Import Duty

Note. Trade agreements are shown in different format: partial scope agreement (PSA);[14] free trade arrangement (FTA);[15] customs union (CU).[16] The effective import duty applied is reflected.[17]

Source: WITS [n.d.a]; WTO Regional Trade Agreements Database [n.d.].

By the end of 1980, fewer than half of the APR's countries and economies were GATT members: there were 18 countries (Australia, Canada, Chile, Hong Kong, Columbia, Indonesia, Japan, Korea, Malaysia, Mexico, Myanmar, New Zealand, Nicaragua, Peru, Philippines, Singapore, Thailand, and the U.S.) and three overseas territories of France.[18] In the early 1990s, another nine economies (Brunei, Macao, Costa Rica, Salvador, Fiji, Guatemala, Honduras, Papua New Guinea, and the Solomon Islands) joined GATT. By the time the new global format of the WTO was signed, the majority of the APR's countries and economic terri-

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[14] PSA covers reduction of various restrictions between economies that is valid for only certain product groups.

[15] FTA means a considerable liberalization of trade between the member countries through cutting down on tariff measures and non-tariff restrictions as well as the right to set a trade arrangement toward third countries.

[16] CU is based on a common customs tariff and a system of common non-tariff regulation measures toward third countries.

[17] The size of an effective average import duty applied in the amount as set by the World Bank equal to the preferential rate. When the preferential rate is not applied in a particular case the size of the effective import duty applied equals the MFN duty. See WITS [n.d.b].

[18] French Polynesia, Wallis and Futuna, and New Caledonia.

tories had become GATT members. Some GATT members did not automatically become WTO participants but within a year and a half they had acceded to it. By 2021, another 13 countries and economic territories had joined the WTO, Russia among them (on 22 August 2012). The key moment in the APR's trade intensification was the PRC's ascension to the WTO in 2001, contributing to a broader scale of intraregional turnover. Thus, by 2021, with the exception of the Democratic People's Republic of Korea (DPRK) and some small island economies (East Timor, Marshall Islands, Kiribati, Nauru, Palau, Tuvalu, and the Federated States of Micronesia), the vast majority of APR economies (43 out of the 50 surveyed countries and economic territories) had joined WTO.

As for regionalization, in the process of "linear" integration [Balassa, 1961, pp. 1−5] "deep" forms of integration built on analogy with the European Union did not succeed in the APR despite the attempts of some South American countries in the 1960s−80s to follow that track. From the second half of 1990s, the APR, without any ground for a more advanced integration format for regionalization, witnessed a mass signing of bilateral and multilateral trade agreements, and a free trade zone (FTA) was chosen as the key format for them.

Trade agreements acquired a mixed, "non-linear," integration character, with certain traits of a common market.[19] Finally, by 2021, over a third of the APR's trade agreements (125 out of 356) followed world practices: 11 partial scope agreements (PSA), 112 FTAs (out of which 106 were FTA+), and two customs unions (CU). As the overwhelming majority of the region's countries are WTO members and the trade agreements signed by them can impact trade interaction in different ways, it is important to clarify their role in the APR's processes of trade globalization and regionalization.

Methodology of Assessment and Database

Methodology of Assessment

In the past century and a half, great progress has been made in ex-post assessment of integration effects by gravity modelling. With inclusion of dummy variables in the gravity model to reflect the participation/non-participation of countries in certain agreements, the assessment does not clearly regard the actual distance, GDP, available overland border, common language, or colonial linkages [Baier, Bergstrand, 2007; Baier, Yotov, Zylkin, 2019].

As a result, to obtain correct estimates of integration effects by gravity modelling, the basic dataset is seen as panel data; multilateral resistance is controlled by fixed effects for the exporter/importer country with regard to time; the endogenous character of trade policy and impact of all time-irrelevant reciprocal costs by fixed effects for trading country pairs; the equation is solved by the method of Poisson pseudo maximum likelihood (PPML) [Santos Silva, Tenreyro, 2006] to escape heteroscedasticity and model specification errors caused by incorrectly selected functional form, and so as to include "zero" trade flows. Another key component for obtaining correct estimates of integration effects is observing domestic trade in the panel data array to register trade fluctuations in favour of the domestic market [Larch, Piermartini, Yotov, 2019].

Finally, to assess the unilateral and reciprocal trade effects for APR countries from GATT/WTO membership, dependence was presented in the multiplicative form [Larch, Piermartini, Yotov, 2019]:

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[19] An FTA in the format of FTA+ encompasses spheres of more "deep" integration forms such as liberalization of trade of services.

$$X_{ij,t} = \exp\left[\pi_{i,t} + \chi_{j,t} + \mu_{ij} + \beta_0 + \beta_1 ONE\_GATTWTO_{ij,t} + \beta_2 BOTH\_GATTWTO_{ij,t}\right] \times$$

$$\times \left[\beta_3 RTA_{ij,t} + \sum_{T=1}^{T=n} \beta_T INTL(T)_{ij}\right] \times \exp\left[\varepsilon_{ij,t}\right], \tag{1}$$

where X_{ij} is export from country i to country j (to this indicator also belongs X_{ii} trade within the country i); π_i—fixed effects for the exporting country based on the year; χ_j—fixed effects for the importing country based on the year; μ_{ij}—fixed effects for pairs of trading countries; $ONE\_GATTWTO_{ij}$—a dummy variable taking a value equal to one if country i is a member of GATT/WTO and zero otherwise; $BOTH\_GATTWTO_{ij}$—a dummy variable taking a value equal to one if countries i and j are GATT/WTO members and zero otherwise; RTA_{ij}—a dummy variable taking a value equal to one under a trade agreement between country i and j and zero otherwise; $INTL(T)_{ij}$—a dummy variable taking a value equal to one for international trade for each year T and zero for trade on the national market reflecting the border effect, for example, aggregate barriers in trade between countries; β_0—a constant; t—time period.

Data for Assessment

The data on domestic trade of APR countries and their reciprocal trade regarding the total value was surveyed as a variable. To avoid incorrect assessment [Baldwin, Taglioni, 2007] the cost value indicators were given at current prices. The available domestic trade statistics is a key parameter for correct calculation of the above-mentioned integration effects. Collecting statistics on domestic trade in APR countries is most labour-intensive in presenting the overall data array. In the present study, a common method to calculate the cost values of domestic trade in national economies was employed which identified the difference between the cost value of manufactured goods in the national economy and exports [Bergstrand, Larch, Yotov, 2015]. The cost value of production manufactured in APR economies was collected from data on commodities (codes 11−29 ISIC) and manufactured goods (codes 31−39 ISIC, also 4101) from special databases (UNIDO [UNIDO Statistics], CEPII [CEPII Database], CEIC [CEIC Data Global Database], FAO [FAOSTAT]), and national statistical agencies of the sub-global region. The special databases concerning raw materials in a number of cases offer statistics exclusively in physical volume. Hence for presenting these statistics at cost value, average prices were used for raw materials on the global, regional, and national markets based on the information from FAO, CEIC, UNCTAD [UNCTADstat], the World Bank [WITS, n.d.a], and some statistical bureaus of the APR.

Nevertheless for some APR countries and economic territories the cost value of their domestic trade was not identified: Vanuatu, East Timor, Kiribati, DPRK, Marshall Islands, Nauru, New Caledonia, Palau, Samoa, Solomon Islands, Tuvalu, Wallis and Futuna, and French Polynesia. Their economic data was excluded from the assessed panel, which is not fundamental since their total share in the aggregate turnover of the APR does not exceed 0.1%. As a result, to form the data array 36 APR economies were selected: Australia, Brunei, Vietnam, Guatemala, Honduras, Hong Kong (SAR PRC), Indonesia, Cambodia, Canada, PRC, Columbia, Costa Rica, Laos, Macao (SAR PRC), Malaysia, Mexico, Mongolia, Myanmar, Nicaragua, New Zealand, Panama, Papua New Guinea, Peru, Korea, the Russian Federation, Salvador, Singapore, the U.S., Thailand, Taiwan, Tonga, Fiji, the Philippines, Chile, Ecuador, and Japan.

Statistical data on trade between APR countries was taken from the databases of UNC-TAD, the World Bank, RIETI [RIETI-TID], CEPII, and CEIC. When the export statistics from some APR countries was not available, the mirror import statistics of their partner coun-

tries in cost, insurance, and freight (CIF) prices was used at free on board (FOB) less average transportation and insurance costs.

This study employs dummy variables that reflect the participation of APR countries in GATT/WTO and in trade agreements, the value for which was set with the help of information from the WTO databases. If, at the span between 1993 and 2021, the country entered GATT/WTO, or the bi- or multilateral trade and economic agreement signed by the country came into force in the first half of the current year, then the country's participation in the global or sub-global integration formats was registered for the current year, with the second half in the following year's statistics.

The majority of the APR's countries were GATT members [WTO, n.d.a]: Australia (from 1948); Canada (1948); the U.S. (1948); Myanmar (1948); New Zealand (1948); Chile (1949); Nicaragua (1950); Indonesia (1950); Peru (1951); Japan (1955); Malaysia (1957); Korea (1967); Singapore (1973); Philippines (1979); Columbia (1981); Thailand (1982); Hong Kong (1986); Mexico (1986); Costa Rica (1990); Macao (1991); Salvador (1991); Guatemala (1991); Brunei (1993); Honduras (1994); Fiji (1994); and Papua New Guinea (1994). Almost all acceded to the WTO in 1995 except Fiji and Papua New Guinea, which acceded to this new global format in 1996, along with Ecuador.

The remaining APR countries became WTO members later: Mongolia (29 January 1997); Panama (6 September 1997); the PRC (11 December 2001); Taiwan (1 January 2002); Cambodia (13 October 2004); Vietnam (11 January 2007); Tonga (27 July 2008); the Russian Federation (22 August 2012); and Laos (2 February 2013) [WTO, n.d.b]. The array shows data on available/lacking FTA[20] and CU trade agreements in the APR that came into force, as an example, and those that were left behind [WTO Regional Trade Agreements Database] and agreements of a lower level, for instance partial scope trade agreements (PSA) that were not taken into consideration [Dai, Yotov, Zylkin, 2014] (Addendum).

To facilitate assessment of long-term integration effects, interval panel data was used [Olivero, Yotov, 2012] with a four-year time lag (1993, 1997, 2001, 2005, 2009, 2013, 2017 and 2021). Domestic and bilateral trade data was given in USD billion for simplification of the multiplicative model. The descriptive statistics of the data array are given in Table 1.

Table 1. Descriptive Statistics of The Employed Data Array

Variables	Average	Standard deviation	Min	Max
Export (x_{ij}), \$Bn	3.31	0.20	0	577.13
Domestic trade (x_{ii}), \$Bn	541.73	114.33	0.03	17245.77
Participation in GATT/WTO for exporter ($ONE\_GATTWTO_{ij}$)	0.85	0.004	0	1
Both GATT/WTO participation ($BOTH\_GATTWTO_{ij}$)	0.76	0.004	0	1
Trade agreements (RTA_{ij})	0.20	0.004	0	1

Source: Author's calculations.

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[20] Both in the traditional and extended format of FTA+.

Result of Assessment

In the course of assessment it was discovered that due to multi-collinearity between the variables $ONE\_GATTWTO_{ij}$ and $BOTH\_GATTWTO_{ij}$ their concurrent inclusion in the model (1) is incorrect as they may merge. For that very reason, separate estimates for variable $ONE\_GATTWTO_{ij}$ and $BOTH\_GATTWTO_{ij}$ were obtained, also for joining these indicators, i.e. $ONE\_GATTWTO_{ij}+BOTH\_GATTWTO_{ij}$. In this case, calculations showed satisfactory econometric assessment (Table 2).

Table 2. Assessment of Integration Effects in APR Countries

Variable	1	2	3	4	5
$ONE\_GATTWTO$	0.74* (0.08)	—	—	110	-17
$BOTH\_GATTWTO$	—	0.38* (0.04)	—	46	-9
$ONE\_GATTWTO+BOTH\_GATTWTO$	—	—	0.83* (0.16)	129	-19
RTA	0.11* (0.03)	0.11* (0.03)	0.11* (0.03)	11	-3
$INTL_{1993}$	-0.60* (0.06)	-0.61* (0.06)	-0.60* (0.06)	-46	16
$INTL_{1997}$	-0.26* (0.05)	-0.27* (0.05)	-0.26* (0.05)	-24	7
$INTL_{2001}$	-0.18* (0.04)	-0.18* (0.04)	-0.18* (0.04)	-17	5
$INTL_{2005}$	-0.26* (0.04)	-0.26* (0.04)	-0.26* (0.04)	-23	7
$INTL_{2009}$	-0.43* (0.04)	-0.43* (0.04)	-0.43* (0.04)	-35	11
$INTL_{2013}$	-0.28* (0.03)	-0.28* (0.03)	-0.28* (0.03)	-25	7
$INTL_{2017}$	-0.24* (0.03)	-0.24* (0.03)	-0.24* (0.03)	-21	6
Constant	-4.48* (0.56)	-11.60* (0.39)	1.63* (0.53)	—	—
Number of observations	10176	10176	10176	—	—
Pseudo log-likelihood	-7159	-7166	-7158	—	—
RESET-test (Prob > chi2)	0.09	0.15	0.10	—	—
Pseudo R^2	0.99	0.99	0.99	—	—

Note. *$p < 0.01$. In brackets are robust values of standard errors. For variable *INTL* reflecting the value of the boundary effect year 2021 was basic. 1-3—are different dependencies within model (1). 4—is change in the reciprocal trade, taken as %, i.e. $[e^{\hat{\beta}} - 1] \times 100$; 5—is the tariff equivalent of trade barriers in %, i.e. $[e^{\hat{\beta}/(1-\theta)} - 1] \times 100$, $\theta = 5$ [Anderson, van Wincoop, 2003].

Source: Author's calculations.

In accordance with the obtained estimates the unilateral participation of APR countries in GATT/WTO promoted their trade by 110% and caused a reduction of barriers in the tariff equivalent by 17 p.p. The bilateral participation of the APR countries in GATT/WTO increased their trade by 46% and consequently reduced the barriers between them by 9 p.p. in the tariff equivalent. The obtained values of effects are comparable with earlier estimates made for the global economy scale [Felbermayr et al., 2020].

Assuming that integration effects of a unilateral and reciprocal participation of countries in GATT/WTO in the analyzed period to some extent duplicated each other, their joint assessment (Column 3 of Table 2) was somewhat lower than the total sum of their values (Columns 1 and 2 of Table 2), contrary to the earlier studies [Larch, Piermartini, Yotov, 2019]. Still, the effects of the APR countries' participation in GATT/WTO promoted trade in the sub-global region by 129% and the reduction of barriers by 19 p.p. in the tariff equivalent. This assessment fits into the scope of earlier assessments of a cumulative impact of global formats on world trade [Chang, Lee, 2011].

The obtained results lead to the conclusion that the globalization process, manifesting itself in common regulations under GATT/WTO for reduction of different barriers that restrain the exchange between the APR countries, was central to the growing trade in the sub-global region. Also, the participation of the APR countries in GATT/WTO promoted bilateral trade, not only between the participants in the above global format, but also between member countries and those that were not yet participants. It justifies the supposition of a positive role of GATT/WTO in shaping a "common background" for reducing trade barriers in the APR, and this background in its turn incentivized trade interaction in the region as a whole.

The obtained estimates are confirmed by theoretical studies [Bagwell, Staiger, 1997; Wonnacott, Wonnacott, 2011] indicating that GATT/WTO mechanisms help country participants to avoid negative aftermaths of the so-called prisoner's dilemma: every party wins from the restriction of its freedom if their partners agree to the same terms in negotiations. If there is a great number of such country partners, as is the case with GATT/WTO, the overall integration effect is notable.

The positive influence of GATT/WTO on the APR's trade has the following aspects [Anderson, 2016]: reduction of costs for trade negotiations, participation in drafting regulations for international trade, access to an unbiased and obligatory mechanism of dispute settlement, improvement of the business environment for domestic producers and foreign investors, and promotion of domestic regulatory and administrative reforms. Also, after negotiations, the GATT/WTO participants reach Pareto efficiency, an equilibrium due to an "acceptable" level of tariffs and mutual benefits in the process of moving production factors between countries [Ossa, 2011].

The WTO's regulatory environment, aspects such as intellectual property enforcement, regulation of trade of services, mechanisms of technical regulation, and sanitary and phytosanitary measures basically contributed to enhancing the efficiency of the participant country institutions and to a foreign direct investment (FDI) influx in the process of vertical trade of transnational corporations deploying production facilities in different regional countries, primarily in the developing economies of Eastern Asia that was typical for the APR.

Further calculations demonstrated that signing trade agreements in the FTA, FTA+ and CU format between the APR countries from 1993–2021 promoted their trade increase by only 11% and reduced long-term barriers between them by only 3 p.p. in the tariff equivalent. Actually, signing long-term trade agreements complimented and enhanced the APR's integration processes based on common reduction of trade and economic barriers while implementing the GATT/WTO mechanisms. This fact testifies to non-complementarity and non-antagonicity of two forms of integration in the APR, globalization and regionalization.

As a result, from 1993−2021, the APR's regionalization process did not present any threat to a global multilateral trade system such as the WTO, since the enforced sub-global trade agreements, especially in the FTA+ format, went beyond the principle of preferential tariff arrangement to concentrate on deeper integration [Pomfret, 2021]. The discussion and creation of different trade formats, on the one hand, generates the process of systemic fragmentation of the APR's trade and economic system and, on the other, shapes the environment for further overall liberalization of trade, thus complementing the WTO's functions.

The estimation of the border effect (*INTL*)[21] reflecting total costs in the trade interaction between the countries showed its decrease in the APR by 46% in 2021 against 1993. The conditions for a comparatively barrier-free environment in the APR's turnover by 2021 were formed in an oblique manner. In particular, by 2021 the border effect was equivalent to 16% of 1993, falling to 5% in 2001, rising to 11% in the crisis year of 2009, and then shrinking to 6% in 2017. Apparently, the cyclic dynamic of the border effect's shrinking demonstrates quality changes in the APR's trade connected with the asynchronous transfer of regional economies from trading in intermediate goods to reducing barriers in exchange of finished products caused by the mass entry of Chinese producers to the sub-global market.

Conclusion

Integration processes and economic interaction in the APR have their specifics. Notable broadening of trade and economic linkages between the key APR countries is owed to a greater effect of scale in cost reduction, levelling out restrictions and isolation. From 1993−2021, the APR's trade acquired a primarily intra-regional character with a high degree of connectivity of the regional economies, and it was enhanced by, among other things, the reduction of different barriers caused by globalization and regionalization processes. By the time the WTO was formed, the majority of APR countries and economic territories were GATT participants. By 2021, 43 out of 50 APR economies had joined the WTO, the Russian Federation among them. The APR's regionalization in its turn took place after the non-linear integration model. The signing of trade agreements between APR countries had a mass character: by 2021, 125 such agreements were signed between APR countries and economic territories. Participation of APR countries in GATT and WTO, as well as in reciprocal trade agreements, was behind a notable reduction of tariff barriers in the sub-global region.

The estimates obtained by gravity modelling prove the supposition of a current long-term positive influence on APR countries' trade by their participation in GATT/WTO, thus explaining the domination of the globalization effect over the regionalization one. The participation of APR countries in GATT/WTO promoted trade in this sub-global region by 129%. In its turn, signing trade agreements between APR countries expanded their reciprocal trade only by 11%. Based on the overall reduction of trade and economic barriers under the GATT/WTO mechanisms, trade agreements complemented and enhanced the APR's integration processes.

Globalization and regionalization processes in the APR did not substitute one another explicitly, nor were they conflictual. The discussion and invention of various trade formats, some of which were very large as to the scope of participating countries,[22] on the one hand, promoted fragmentation of the APR's trade and economic system, while on the other, nourished the conditions for further liberalization of trade complementing WTO functions. From

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[21] The assessment of this effect was practically identical for models 1−3 in Table 1, hence their impact on the APR's trade and their tariff equivalent were calculated as the average for these three regressions.

[22] ASEAN, Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), Regional Comprehensive Economic Partnership (RCEP).

the viewpoint of harmonization of the extended interaction sphere, the liabilities of the parties were transformed as common special provisions and statements beyond the WTO.

The obtained estimates justify the supposition that the APR countries' participation in GATT/WTO produced both direct and indirect impacts on the participants' reciprocal trade and also on trade with the regional economies that are not parties to these multilateral trade agreements. The immediate positive influence of GATT/WTO on the APR's trade is seen in the fact that the bilateral participation of the regional countries in these multilateral trade agreements has led to a growth in their reciprocal trade by 46%.

According to the obtained estimates of unilateral participation of the countries of the region in the above multilateral trade agreements, the indirect impact of GATT/WTO on the APR's trade enhanced regional trade by 110%. The dominating effect from indirect participation in GATT/WTO on the APR's trade confirms the importance of multilateral trade agreements for shaping a comparatively barrier-free environment for trade in the region manifesting itself in the general background of reducing restriction measures and enhancing intra-regional trade.

The assessment of total barriers in the interaction of APR countries shows their long-term reduction. The conditions for a comparatively barrier-free environment under the APR's trade exchange did not take shape steadily, reflecting the quality changes in regional trade. These changes in the APR can be connected to a transfer from vertical trade of intermediary products of the global corporate sector to an overall reduction of barriers in the commodity exchange of finished products due to an emerging specialization of regional countries that aim to fill product niches in the sub-global market. One has to note the growing exports to the APR's market by the PRC corporate sector, which results from deeper mechanisms of trade and economic integration from the viewpoint of enhancing the regionalization process supported by the WTO's mechanisms.

This study shows a long-term positive role played by GATT/WTO in enhancing trade in the APR, a large, sub-global region of the world to which the Russian Federation belongs. The share of the RF in APR trade flows is not big and is notable only in some product groups. The Russian side had a wait-and-see attitude in the APR's integration processes; it was not active in signing a broad number of trade agreements with APR countries and did well employing the globalization mechanisms, especially after joining the WTO, supplying primarily raw materials to the sub-global market. In connection with the broad-scale current restrictions laid on the Russian economy from early 2022, the barriers to interaction between the Russian Federation and a number of APR countries have started growing.

Such restrictions act as a barrier to trade and economic interaction between the APR countries and the Russian market; they are also connected with direct bans on supply of required investment and innovation products, suspension of the MFN clause concerning the Russian Federation, and risks of potential secondary sanctions. In this environment, the Russian Federation can switch to a stand-by mode in the APR's integration processes of regionalization, waiting for relaxation of sanctions, or it can pivot to the Chinese market. Nevertheless, one can suppose that WTO membership can help the Russian Federation resort to globalization mechanisms for discussion of the relaxation of exogenous restrictions, as well as for growing trade with those APR countries that do not follow the policy of a tight sanctions pressure on the Russian economy.

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Appendix

List of Trade Agreements of Asia-Pacific Countries Used in the Study

Trade Agreement	Year in the panel
Pacific Agreement on Closer Economic Relations Plus (Australia, New Zealand, Tonga, etc.)	2021
Republic of Korea-Central American Countries (Costa Rica, El Salvador, Honduras, Nicaragua, Panama)	2020
Indonesia-Australia	2020
USMCA[23] (U.S., Canada, Mexico)	2020
Peru-Australia	2020
Chile-Indonesia	2020
Hong Kong-Australia	2020
Comprehensive and Progressive Trans-Pacific Partnership (Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, Vietnam)	2019
ASEAN-Hong Kong	2017
Peru-Honduras	2017
Hong Kong-Macau	2017
Russia (as a member of the Eurasian Economic Union)-Vietnam	2016
Pacific Alliance (Chile, Colombia, Mexico, Peru)	2016
Costa Rica-Colombia	2016
Republic of Korea-Colombia	2016
Mexico-Panama	2016
Japan-Mongolia	2016
Chile-Thailand	2015
Republic of Korea-Vietnam	2015
PRC-Republic of Korea	2015
Australia-PRC	2015
Republic of Korea-New Zealand	2015
Canada-Republic of Korea	2015
Japan-Australia	2015
Chile-Vietnam	2014
Canada-Honduras	2014
Republic of Korea-Australia	2014
Hong Kong-Chile	2014
Singapore-Taiwan	2014
New Zealand-Taiwan	2013

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[23] *Note*. The dummy variable for the membership of the three North American countries in NAFTA was continued from 2020 under the USMCA.

Trade Agreement	Year in the panel
Costa Rica-Singapore	2013
Costa Rica-Peru	2013
Malaysia-Australia	2013
Canada-Panama	2013
Chile-Nicaragua	2012
Mexico-Central America (Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua)	2012
Chile-Malaysia	2012
U.S.-Panama	2012
U.S.-Colombia	2012
Panama-Peru	2012
Republic of Korea-U.S.	2012
Japan-Peru	2012
Peru-Mexico	2012
China-Costa Rica	2011
Canada-Colombia	2011
Peru-Republic of Korea	2011
Hong Kong-New Zealand	2011
Chile-Guatemala	2010
New Zealand-Malaysia	2010
ASEAN-Republic of Korea	2010
ASEAN-Australia-New Zealand	2010
Peru-PRC	2010
Panama-Guatemala	2009
Peru-Chile	2009
Colombia-Northern Triangle countries (El Salvador, Guatemala, Honduras)	2009
Panama-Nicaragua	2009
Japan-Vietnam	2009
Chile-Colombia	2009
Canada-Peru	2009
Peru-Singapore	2009
Australia-Chile	2009
China-Singapore	2009
U.S.-Peru	2009
Panama-Honduras	2009
Chile-Honduras	2008
El Salvador-Honduras-Taiwan	2008
ASEAN-Japan	2008

Trade Agreement	Year in the panel
Nicaragua-Taiwan	2008
China-New Zealand	2008
Panama-Costa Rica	2008
Japan-Philippines	2008
Brunei-Japan	2008
Japan-Indonesia	2008
Panama-Chile	2008
Japan-Thailand	2007
Chile-Japan	2007
Chile-PRC	2006
Trans-Pacific Strategic Economic Partnership (Brunei, Chile, New Zealand, Singapore)	2006
Panama-Singapore	2006
Guatemala-Taiwan	2006
Japan-Malaysia	2006
Central America (Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua)-U.S.	2006
Republic of Korea-Singapore	2006
Thailand-New Zealand	2005
ASEAN-PRC	2005
Japan-Mexico	2005
Thailand-Australia	2005
U.S.-Australia	2005
Panama-Taiwan	2004
Republic of Korea-Chile	2004
U.S.-Singapore	2004
U.S.-Chile	2004
Panama-El Salvador	2003
Trade agreement between the Pacific island states (Fiji, Papua New Guinea, Tonga, etc.)	2003
China-Macau	2003
China-Hong Kong	2003
Singapore-Australia	2003
Chile-El Salvador	2002
Canada-Costa Rica	2002
Japan-Singapore	2002
Chile-Costa Rica	2002
New Zealand-Singapore	2001
Chile-Mexico	1999
Canada-Chile	1997

Trade Agreement	Year in the panel
Colombia-Mexico	1995
NAFTA - North American Free Trade Area (U.S., Canada, Mexico)	1994
ASEAN FTA[24] (Brunei, Vietnam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Singapore, Thailand and Philippines)	1993
Australia-New Zealand	1989
Andean Community of Nations (Colombia, Ecuador, Peru)	1988
Australia-Papua New Guinea	1977
Central American Common Market (Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama)	1961

Source: Compiled by the author based on the WTO Regional Trade Agreements Database [n.d.].

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[24] *Note*: Vietnam joined the ASEAN FTA on July 28, 1995, Laos and Myanmar on July 30, 1997, Cambodia on April 30, 1999.