MERCOSUR in trade policy clusters: challenges and prospects

MERCOSUL em clusters de política comercial: desafios e perspectivas

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RESUMO: O forte aumento no número de ALCs coloca as uniões aduaneiras em uma situação ambígua, questionando sua eficácia. Nesse sentido, o Mercosul poderia atrair atenção especial, pois parece apoiar a intenção de retomar a integração dentro do bloco após um longo período de estagnação. Este artigo identifica assimetrias e semelhanças na política comercial dos estados-membros e apresenta uma nova perspectiva sobre a integração regional por meio da análise de *cluster*. Os resultados do estudo respondem à questão de saber se os países do Mercosul têm padrões de comércio comuns e podem atuar como um único bloco no comércio internacional.

PALAVRAS-CHAVE: Mercosul; integração regional; política comercial; medidas não tarifárias; análise de cluster.

ABSTRACT: The sharp increase in the number of FTAs puts customs unions in an ambiguous situation questioning their effectiveness. In this view, MERCOSUR could attract special attention as it seems to support the intention to revive integration within the block after a long period of stagnation. This paper identifies asymmetries and similarities in the member states' trade policy and presents a new perspective on the regional integration by means of cluster analysis. The results of the study provide the answer to the question of whether MERCOSUR countries have common trade patterns and can act as a single block in the international trade.

KEYWORDS: Mercosur; regional integration; trade policy; non-tariff measures; cluster analysis.

JEL Classification: F13; F15.

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INTRODUCTION

Southern Common Market (MERCOSUR) has been one of the most ambitious projects in Latin America and gained significant experience in integration among developing countries. Throughout MERCOSUR development there were golden years of great success and periods on the verge of collapse. However, it continues to operate and make steps towards deeper cooperation and increase of its weight in the international trade.

Currently, under the conditions of trade conflicts and the rise of protectionist policies, there is a tendency to increase bilateral trade agreements which pose customs unions in an ambiguous situation. Nevertheless, MERCOSUR could attract special attention as its members seem to support the intention to revive and deepen integration within the block. Recently concluded trade deals with the EU and EFTA (the European Trade Association) are the obvious proof of this course of opening the regional market previously known as one of the most protected. Uruguay's Foreign Minister Ernesto Talvi stated that the sweeping deal with the EU has shown that MERCOSUR is open to business and it significantly increases the interest of the new potential trade partners among "very important" economies (Parks and Spinetto, 2020). However, the deal is still not ratified and the process of free trade agreements negotiations with third countries on the rather wide MERCOSUR's agenda is complicated by the latest withdrawal of Argentina from some of the union's obligations.

Another turning point is the current political changes inside member states against the backdrop of the external unprecedented shock caused by the COVID-19 pandemic. Left-wing governments have given way to right-wing political elites in Brazil, Paraguay, and Uruguay while in Argentina left-wing politician Alberto Ángel Fernández won the 2019 elections and has become the new president in 2020. That has polarized the two leading economies of the block in political terms. Thus, the present period is essential for MERCOSUR in both political and economic sense and its future will highly depend on whether the new leaders are willing to find consensus on the elaborating common integration course and strategies.

This paper is aimed at identifying common patterns in the international trade among MERCOSUR members and to define prospects for deepening the current level of integration. The question this research tries to answer is whether MERCOSUR countries could act as a single block while protecting their national interests in the international markets.

This paper presents a new perspective on regional integration studies by means of cluster analysis. The cluster analysis identifies explicit features and attributes of the MERCOSUR trade policies and distinguishes its member states as a grouping in the two international dimensions: the WTO trading system and the region of Latin America and the Caribbean. This comparison addresses the current obstacles to development of MERCOSUR and discovers the prospects for integration, taking into consideration the asymmetries among group members. The analysis provides

two perspectives. First, it focuses on trade patterns of the MERCOSUR member states. Second, it estimates particular patterns of their non-tariff policy.

MERCOSUR TRADE POLICY: ANALYTICAL FRAMEWORK

The initial idea of MERCOSUR was to create a customs union in Latin America in the same manner as the European Union. From this perspective, MERCOSUR failed to have a successful integration process (Ferrer, 2007). However, the analysis of the regional integration among developing countries seems to be based on other theoretical concepts. From the perspective of the political economy, asymmetries between member states as well as the particular Governments' decisions play an essential role in the success of the MERCOSUR integration.

Mansfield, Milner and Rosendorff (2002) argued that the type of domestic regime of a country substantially impacts the willingness to cooperate on trade policies. States with democratic regimes are more likely to enter trade and integration agreements. Thus, the rapprochement between two natural rivals, Argentina and Brazil, became possible only after the establishment of democratic regimes in both countries, and democratic values have formed the basis for the integration (ensured by the Ushuaia Protocol on Democratic Commitment). Malamud (2010) also highlighted the prevalence of the focus of presidential institutions on a domestic level rather than a regional one, as they are used as means of reflecting national interests and leaders' goals. This fact has led to one of the most significant constraints for MERCOSUR integration: the lack of coherence among member countries reflected in the absence of coordination in macroeconomic and trade policies.

The theory of economic integration implies that deeper integration requires common rules and effective supranational mechanisms to ensure their implementation in order to eliminate different regulatory practices in member states. Substantial institutional heterogeneity is necessary for trade agreements to succeed (Mansfield and Milner, 1999). Different regulatory practices needed to be addressed including coordination of tax, competition and investment policies; administrative procedures; product, environmental, and labor standards (Lawrence, 1997). In case of MERCOSUR, the problem occurs on the stage of putting all the decisions, directives and resolutions into force: before they have any legal power within the block they should be ratified and incorporated into domestic law by each of the member states (Franca Filho, Lixinski and Giupponi, 2010). This process could take years in practice. Consequently, the massive MERCOSUR legislation lacks actual implementation, and several agreements and resolutions concluded during the 30 years' history of the block still exists only on the paper.

Mattli (1999) also studied why State leaders enter integration agreements and ultimately distinguished between two sides of the phenomena: demand and supply. Demand implies that economic gains from integration deepen inter-dependence and, therefore, create the demand for supranational institutions. Supply identifies wheth-

er state leaders are able to satisfy this demand by giving up political autonomy and sovereignty since, as long as their economies flourish, they are unwilling to expand vertical integration. In the case of MERCOSUR, the deeper involvement of Brazil into international markets and its dynamic economic development has caused tensions and strengthened the asymmetries in the union. In this sense, the role of Brazil as a leader in the MERCOSUR seems crucial in the further development of the regional integration (Campos, 2006).

According to the Balassa theory (1961), the integration moves through four different stages: free trade area, customs union, common market, and economic union (the fifth stage is a total economic integration). One could find characteristics of all stages in the MERCOSUR integration, but none of them is completed. There is no harmonization in monetary and fiscal policies, but certain elements of the economic union can be found in MERCOSUR. For instance, member states have granted preferences to each other in the distribution of State contracts and orders. Furthermore, as part of the implementation of the de-dollarization concept in mutual trade relations in 2007, member states had decided to conduct foreign trade transactions in local currencies. Two years later a system of cross-border payments in national currencies started to operate between Argentina and Brazil, later joined by Uruguay. Over five years, the total volume of foreign trade transactions made in national currencies exceeded $17 billion (Kostyunina and Kozlova, 2018).

The stage of a common market implies free movement of goods, labor and capital as well as free supply of cross-border services. In the Southern Common Market, the mobility of citizens is facilitated by the simplification of formalities for individuals crossing borders. A document of identity (ID-card) is sufficient for movement within MERCOSUR. Member states established joint customs posts at the borders and signed the agreement on the mutual recognition of documents on primary and secondary education (Sherov-Ignatev, 2012). However, existing barriers to the cross-border circulation of goods as well as substantially different national standards for third-country products do not allow to consider MERCOSUR as a common market.

MERCOSUR is represented as a customs union in official documents. Nevertheless, it is still not a single customs territory and member states have their own customs borders. The common customs code approved in 1994 is still not implemented completely: the new customs code was agreed in 2010 but it remains pending national ratifications. A common external tariff system has numerous exceptions, the lists of which is expanded under conditions of economic and political crises and shocks. Redistribution of import duties also needs to be addressed as there is no unified system: member states collect duties and keep them in the country of goods' destination (Mukhametdinov, 2019).

The latest withdrawal of Argentina from some MERCOSUR obligations including involvement in the negotiations with third countries in order to focus on the domestic economic crisis adds even more uncertainty for the customs union (Nessi, 2020). The decision has affected the block's negotiations on free trade agreements with India, Canada, South Korea, Lebanon and Singapore (Koop, 2020). Argentina

has still expressed its intentions to continue the work with MERCOSUR to push forward deals with European countries. The refusal of Buenos Aires to participate in those negotiations was negatively perceived by other participating countries. According to the current rules of functioning of the block, no negotiations can be held if at least one of the Mercosur participants objects them. Under the same rules, participating countries are not allowed to enter into bilateral free trade agreements. Brazil, Uruguay and Paraguay are currently trying to soften the strict conditions for the functioning of the block as well as to reduce the customs union's common external tariff.

The regime of free trade raises doubts as it still has its exceptions. The level of non-tariff barriers in intra-regional trade is still high: each member state may implement different criteria and standards for imports from other member states, including the implementation of rules of origin. However, despite all the imperfections and asymmetries, MERCOSUR continues to make steps towards a stronger integration. Thus, Brazil and Argentina have already started to discuss the reduction of the common external tariff (CET) in June 2019 and the discussion is still among of the key questions on the table (Gaier and Misculin, 2019). The Argentine proposal implies the reduction of CET on a total of 1,900 items and eliminating it thoroughly for capital goods and accessories. The country highlights the necessity to take into consideration the capacities of specific sectors to put up with a lower CET and overall asymmetries of MERCOUR members' economies. Economy Minister Martín Guzmán proclaimed "the need to understand integration in terms of what it gives and what it takes away in terms of jobs, improved productivity and macro-economic stability" (Buenos Aires Times, 2021). The Uruguayan initiative calls for allowing members to negotiate with third countries separately as well as common external tariff reduction by around 10 percent this year and by a similar percentage next year. This proposal was highly supported by Brazil.

Currently, CET covers about 85% of tariff lines. MERCOSUR member states may individually impose different tariff rates on a certain number of products (higher or lower) to mitigate difficulties related to the CET entry into force for extra-block imports up to the maximum bound under the WTO. Additionally, the CET mechanism allows member states to reduce import duties on a pre-determined lists of capital goods and IT equipment which have no domestically produced equivalent, in order to foster innovation and competitiveness, and to boost technological exchange and investments (Trade policy review. Brazil, 2017). A common regime for sugar has been subject to negotiations and it is still not in force while trade of automotive products is regulated by bilateral agreements as a common automotive policy has not entered into force either. Rules of origin are still applied in intra-trade and have a December 2023 deadline for abolition.

The structure of MERCOSUR CET was largely influenced by the structure of the economy of each specific member, whose legislative representatives protect the interests of companies that play a key role in the regional industry. Thus, on average, industries that are of great importance at the subnational level have tariffs almost 20% higher (Pezzola, 2018). That has laid the basis for future trade policies

in the region by creating incentives for cooperation with the protected industries and, at the same time, it has strengthened the resistance to further liberalization.

Non-tariff measures (NTMs), such as non-automatic licenses and quotas, are the most common trade policy instruments for MERCOSUR. Paraguay and Uruguay limit about 2% of production lines, mainly through non-automatic licenses, but the products affected are much more relevant for trade. Thus, in Paraguay restrictions are applied to certain seeds, sugar, meat, textiles and clothing, petroleum derivatives, and used vehicles. These sectors account for 19% of total MERCOSUR imports. Uruguay regulates mainly mineral fuels, sugar, and motor vehicles. Their import value is equivalent to 27% of the total imports for MERCOSUR. Brazil limits imports for about 8% of product lines. Among them, there are goods such as machinery and vehicles, mineral and biofuels, chemicals and plastics, some textiles and sugar. Argentina also restricts imports of used cars, paper, machinery and equipment by special non-automatic licenses (Non-Tariff Measures in Mercosur: Deepening Regional Integration and Looking Beyond, 2017).

Technical measures aimed to protect the health, safety, and environment are applied by MERCOSUR countries to a wide range of goods, especially agricultural products, food, and drugs. The important chemicals sector (including pharmaceuticals and fertilizers) is heavily regulated by the regional leaders. Most other manufacturing sectors have a relatively moderate level of technical regulations, except for Paraguay, where regulation is minimal. Technical barriers to trade are higher in sectors of greater concern for domestic industries: vehicles and machinery sectors in Argentina and Brazil as well as clothing and footwear sector in all MERCOSUR member states (Global Trade Alert, 2020).

Noteworthy, the intra-regional share in the total number of measures applied by MERCOSUR countries is relatively high. After the world financial crisis of 2008--2009 MERCOSUR countries have imposed 422 restrictive non-tariff measures on each other. The most active initiators were Argentina and Brazil which together account for 84% of all imposed restrictive NTMs (Chupina, 2017). The leading NTMs in the intra-regional trade are export-related measures, subsidies, and trade-related investment measures.

High levels of protective measures and practices prevent deeper integration for MERCOSUR. Although the elimination of NTMs represents one of the key issues in the negotiation agenda, a reliable program or road map is still missing. Harmonization of norms and rules on technical standards, including sanitary and phytosanitary measures, has had a little effect due to the protracted process of adaptation of the national legislation.

MERCOSUR needs to strengthen both external and internal mechanisms of its regulatory convergence. The first category implies bottom-up coordination process with such important practices as compliance with the principles of transparency, regulatory impact assessments and stakeholders' involvement into regulatory process. External mechanisms are responsible for strong supranational regulation which have a top-down control over integration processes (Polanco Lazo and Sauvé, 2018). At the moment, MERCOSUR still does not have a permanent structure to ensure the

harmonization of the rules. In addition to the existing imbalance of institutional framework, there is a lack of social and market actors' participation in the integration shaping. The Socio-Economic Advisory Forum is designed to solve this problem comprising representatives of industry, labor, and academic society. They are expected to provide the Common Market Group with proposals on integration strengthening and information on its shortcomings. However, they do not have any direct influence on the decision-making process. The key role in the formation of the Southern Common Market's policy agenda belongs to State leaders who are interested in integration as long as it corresponds to their national policy priorities. It largely explains the failures and constraints of the union integration regardless the existence of a great potential and common patterns in international trade.

MERCOSUR countries need to liberalize their trade policy for the development of regional integration. However, this task seems to be complicated today due to the following reasons: first, contemporary turbulence of the world economy makes it difficult to expand the focus of foreign policy from domestic to regional interests; second, the global increase of protectionism prevents trade negotiations among States. Nevertheless, regional integration could play a crucial role in the economic development of Latin America, especially in post-pandemic times (Dimensionar los efectos del COVID-19 para pensar en la reactivación, 2020). Also, the inability for WTO to deal with trade wars and the rise of protective measures increases bilateral, regional and multilateral trade talks. The history of trade relations obviously demonstrates that the slowdown of the WTO negotiations led to certain steps in the development of MERCOSUR (Dantas and Koval, 2010).

Moreover, many trade partners of MERCOSUR member states perceive them as a single actor in trade negotiations. For instance, Russia builds its dialogue with MERCOSUR members in the context of the customs union (Koval and Dantas, 2019). This perception encourages further integration. A vivid example is in the EU-MERCOSUR talks. The negotiations on the EU-MERCOSUR Agreement are likely to be a significant incentive to revive integration processes. The Agreement, once ratified, will establish the most sophisticated free trade area. Moreover, the Agreement will cover not only trade issues. It will also involve the regulation of migration, digital economy and e-commerce, corporate responsibility, sustainability, and environmental protections (Gabriel, 2019). Under the Agreement, MERCOSUR would eliminate import duties on 91% of EU imports over a period of 10 years (15 years for more sensitive sectors). The EU, in return, would remove import duties on 92% of imports originated from MERCOSUR. The main beneficiaries of the future free trade for goods will be producers of meat (mainly, beef), poultry, sugar, ethanol, honey, and rice (Grieger, 2019). In this sense, certain European farmers oppose the Agreement. When the Agreement enters into force it will still remain an open question.

The absence of political coordination among members significantly complicates trade negotiations. However, despite the ideological and political tensions among the leaders of MERCOSUR member states, they recognize their interest in integration and joint trade policy course. Thus, Brazil's Foreign Minister Ernesto Araújo told in an interview that the goal is for Mercosur "to be an efficient negotiating

block". Uruguayan President Lacalle Pou recognized that "unless everybody agrees, Mercosur does not advance". In his welcome speech at the 25th Conference of the Argentine Industrial Union (UIA), Argentinian President Alberto Fernández stressed that "the fact that Mercosur now has presidents that think differently doesn't take away from the importance of Mercosur". Paraguayan Deputy Foreign Minister Raúl Cauno expressed more support to the Argentinean position saying that the Uruguayan initiative "is not the right way because it attacks the fundamentals of a customs union, which is the prior stage to forming its end goal to achieve – a common market" (Buenos Aires Times, 2021).

Argentinean and Paraguayan leaders name the COVID-19 pandemic "as an unprecedented shock causing a huge uncertainty" explaining the importance for MERCOSUR to develop joint economic and trade policies. The current crisis caused by the COVID-19 indeed has its influence on the union which can be defined as rather ambiguous. MERCOSUR has not elaborated a common strategy or program of concrete actions to struggle negative social and economic consequences of the virus. The production of medicaments and vaccine is absent within MERCOSUR countries, that makes them seek trade cooperation and financial resources beyond the region (Korolev, et al., 2021). It hinders integration process within Southern Common Market and deteriorates the interest of member countries in further rapprochement as they are widely captured by their own economic difficulties.

On the contrary, the COVID-19 pandemic has not undermined the legitimacy of integration institutes in the block. It has not happened because of the absence of supranational authority responsible for countering global challenges or developing common policy in general which reveals one more significant constraint of MERCOSUR integration. The situation caused by the pandemic could be used to eliminate this constraint starting with the field of healthcare. The work on the creation of the common drug and vaccine certification and mechanisms to restore regional markets could be named as one of the possible triggers for reactivation of integration processes.

The main concern for the MERCOSUR customs union today is to overcome contradictions and to elaborate new approaches to the regional integration. The following empirical analysis will identify coherence and disparities in the development of MERCOSUR.

METHODOLOGY OF CLUSTER ANALYSIS

Cluster analysis is statistical data analysis, which identifies set of groups (clusters) and provides certain classification of data. There are two main types of cluster analysis: hierarchical and non-hierarchical cluster analysis. Large data sets require non-hierarchical clustering (Cleff, 2019). The non-hierarchical cluster analysis involves k-means and fuzzy c-means algorithms as well as more sophisticated artificial neural networks (Mingoti, Lima and 2006). One of the most popular neural networks is Kohonen self-organizing maps.

This current research applies Kohonen self-organizing maps. This method allows data mining and searching patterns of interest in a particular representation form or a set of such forms (Abonyi and Feil, 2007). The scholars use Kohonen self-organizing maps to model, forecast, reveal patterns in large data sets and identify independent sets of attributes as well as to compress the information.

Cluster analysis is a relatively new method for the studies of international trade policy. Diaz-Bonilla et al. (2000) used this methodology in order to identify categories of countries within the WTO framework in terms of their food security policies and their impact on agricultural trade negotiations. Disdier and Van Tongeren (2010) applied cluster analysis to find out the correlation between the occurrence and coverage of NTMs and the incidence of trade frictions for agri-food products. Montalbano and Nenci (2014) used a multidimensional approach through cluster analysis to study the trade competitiveness of emerging economies (China, India, Brazil, and South Africa) with respect to their global partners. Pioch (2017) considered further the prospects for trade policy convergence of BRICS States.

There is an obvious gap in the application of cluster analysis in regional integration studies. Dorruchi et al. (2002) used hierarchical cluster analysis for the comparison of the integration in Europe and Latin America. Some scholars applied also hierarchical and c-means clustering for regional integration studies in other regions (Tsangarides and SaeedQureshi, 2008). For the first time this research evaluates the regional integration in Latin America by the means of Korhonen self-organizing maps.

This research provides two cluster analyses. The first one focuses on the trade patterns of MERCOSUR countries. The second cluster analysis relates to the non-tariff regulations as NTMs represent a crucial obstacle in furthering the integration process. The clustering will be organized according to these two perspectives: first, the research will identify MERCOSUR in the framework of the WTO; second, it will study MERCOSUR in its dimension with Latin America.

In order to represent valid results, self-organizing maps should include enough variables correctly selected that belong to the same property. The coefficient of correlation among such variables should not indicate a strong relationship or interdependence. Therefore, this cluster analysis uses six variables for trade clusters and seven variables for non-tariff regulation clusters, which are described and discussed below.

In the first cluster analysis, which represents MERCOSUR in trade clusters, the input data contains information about 147 of the 164 WTO members. The EU is not considered as a separate member of the WTO in order to avoid duplication since data from the individual EU member states is included in the sample. The data about the other 16 individual countries provided by the WTO is incomplete and, therefore, cannot be used in the calculations. These 16 countries are Afghanistan, Cabo Verde, Cuba, Democratic Republic of Congo, Djibouti, Dominica, Grenada, Guinea-Bissau, Haiti, Liberia, Liechtenstein, Mauritania, Papua New Guinea, Solomon Islands, and Vanuatu. Their exclusion from the data set does not significantly affect the final results. The analysis within Latin America and the Caribbean includes 28 countries from the general sample that geographically belong to this region.

Variables for trade clusters represent main indicators of the countries' trade in goods. The six input variables provide the following information about each country: MFN applied simple average (as %), trade openness (as ratio of export and import over GDP as %), the balance of trade in goods (in USD millions) and shares of the main categories of goods in total exports (as %), namely: agricultural products (4a), manufactures (5a) and fuels and mining products (6a). Initially, the input data set al.,so included the volumes of total export and import as well as nominal GDP, but these indicators were later excluded due to a very high correlation coefficient between export and import indicators as well as between them and GDP (more than 0.8).

The data source for these variables is the WTO Data portal for the year 2018. The exception is the MFN applied simple average. Due to the lack of relevant data for some countries from the sample, the analysis applies the information for the latest years recorded (2012, 2014-2017), with 85% of the data sample related to 2018.

The rationale for these selected variables is based on the main research question. The analysis shows the difference between the trade activities of individual countries as well as the difference in the commodity structure of their foreign trade. The first three trade-related variables – the balance of trade, trade openness, and MFN applied simple average – are included in the analysis to identify similarities among countries depending on their position in relation to the world market and the state of trade in goods. The second three indicators, which characterize exports of the main categories of goods, are used to identify common trade interests and comparative advantage. In the case of MERCOSUR countries, this stage of analysis is intended to show whether its members have a common position in the world market and what their priorities are with regards to national exports.

In the analysis of MERCOSUR in the non-tariff regulation clusters, the available input data contains information about 82 WTO member states, where the European Union is considered as a separate member. The sample does not include individual EU member states. The data source for this analysis is the UNCTAD Global Database on Non-Tariff Measures (TRAINS) for the last available year (2017). It includes frequency and coverage ratios in the non-tariff regulation. Frequency ratio means the percentage of products to which one or more NTMs are applied. Coverage ratio measures the percentage of trade that is subject to NTMs for importing country.

Variables for non-tariff regulation clusters are linked to the main indicators of non-tariff regulation concerning export and import flows for each country. The set of specified variables is used for both the analysis within the WTO and for the research conducted within the Latin American region. The seven input variables provide the following information about each country: NTMs frequency index for import; NTMs frequency index for export; non-technical measures coverage ratio; sanitary and phytosanitary coverage ratio; technical barriers to trade coverage ratio; coverage ratio of export-related measures; coverage ratio of quantity control measures. Initially, the input data set al.,so included technical NTMs coverage ratio, but this indicator was later excluded due to a very high correlation coefficient with

other variables such as NTMs frequency index for import and technical barriers to trade coverage ratio (more than 0.85).

The selected variables characterize MERCOSUR non-tariff regulation in depth. The analysis includes the detailed study of coverage ratio for specific types of NTMs, namely, sanitary and phytosanitary (SPS) measures, technical barriers to trade (TBT), export-related and quantity control measures. The clustering also reflects the share of products subject to non-tariff regulation by means of NTMs frequency indices of import and export. The results of this cluster analysis identify whether MERCOSUR member states have a common policy with regards to non-tariff regulation and which differences and to what extent can be distinguished among them.

The next section reveals main findings for both trade and non-tariff regulation clusters. The clustering results are represented in maps built in the analytical software Loginom. The location of Argentina, Brazil, Paraguay, and Uruguay on the maps is marked with the first letters correspondingly. Differences among each variable on the corresponding variable map are indicated by different shades of gray, where light gray nodes indicate a lower value of the variable; medium gray nodes indicate higher values and the darker gray shade points to the average value among them. However, it is worth mentioning that the real value is not required for the analysis as the normalization of variables makes their actual values irrelevant. Conclusions are drawn based on visual differences among them.

MAIN FINDINGS

MERCOSUR in international trade clusters

The first analysis of trade patterns identifies five clusters for WTO members (Figure 1) and four clusters for Latin America and the Caribbean (Figure 2).

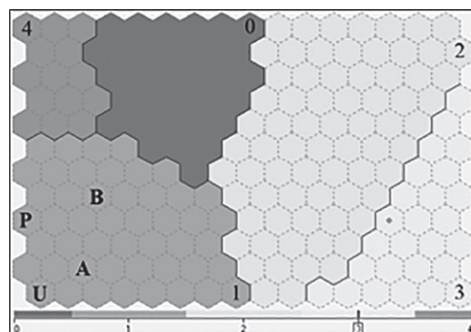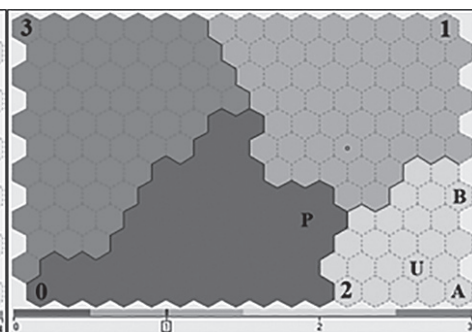Figure 1: The WTO framework   Figure 2: Latin America and the Caribbean

Figure 1 shows that all MERCOSUR member states belong to Cluster 1 which is characterized by a high share of agricultural products in total volume of exports, low or negative trade balance, and rather closed economies. It is possible to derive some obvious conclusions already at this initial stage of clusters consideration. Namely, Argentina, Brazil, Paraguay, and Uruguay are in the same country group within the international trading system. They do not form a definite unit and are situated on a particular distance from each other, but at the same time, they are not scattered within opposite areas of the cluster. Within the region (Figure 2) the divergence between MERCOSUR member states manifests itself in a brighter manner: only 3 out of 4 members, namely, Argentina, Brazil, and Uruguay, belong to the same cluster, Cluster 2. Paraguay is included in Cluster 0, however, its location within the area is close to the border with Cluster 2.

As for the rates of MFN applied simple average, the analysis within the WTO framework indicates a slighter lower level of trade liberalization for Argentina and Brazil. Trade openness map shows relatively low openness to trade for all member states, but Paraguay and Uruguay are more open in comparison with the traditionally more closed economies of regional leaders.

Trade balance two-dimensional map has several nodes of extreme values that reflect a significant trade surplus or trade deficit. The former is concentrated around highly efficient and technologically advanced industrial economies as well as others significantly dependent on energy resources export. The latter delineates the particular case of the United States of America with a strongly negative trade balance volume. MERCOSUR countries have a similar position, with Brazil having a slightly darker shade. It shows that MERCOSUR trade is relatively balanced with regards to the relation between exports and imports. Average values of this indicator do not allow to define MERCOSUR economies as export or import oriented. Also, they don't allow to make a conclusion about brightly pronounced comparative advantage in the context of the international market which would put them in an exclusive position. Moreover, the level of economic development of Argentina, Brazil, Paraguay, and Uruguay explains why these countries cannot be assigned to high consumption economies.

Within the Latin American and Caribbean region, the results reveal the existing asymmetries that separate Paraguay from other members of the Union. Argentina, Brazil, and Uruguay are represented as relatively more closed economies with a slightly lighter color for Uruguay's node. Paraguay is pictured as a much more open market and hence, has a relatively lower MFN applied simple average rate while Brazil and Argentine have the highest tariff protection in both their cluster and their region. Uruguay is closer to Paraguay by this indicator.

The analysis also identifies discrepancies in the countries' national trade interests explained with the differences in their trade composition.

Figures 3-5 show the segmentation depending on the export portfolio of the WTO members. In the context of the international trading system, MERCOSUR is considered to have a comparative advantage in the agricultural sector. However, it is clearly seen that Uruguay is the most dependent on the agricultural export. This

share is highly significant for Paraguay as well but its location and color shade correlate to the higher value of fuels and mining indicator, which is inferior only to Brazil among MERCOSUR economies. The location of the node, where Paraguay belongs to, is closer, in comparison with Uruguay and Argentina, towards Cluster 0 and 4 uniting fuels and mining exporters.

Having a significant share of agricultural export, Argentina is second to Brazil on its way to industrialization according to the shade and location within the cluster, but the share of manufactures is still not very considerable. Brazil, on the contrary, has a more diversified export portfolio with the prevalence of agricultural goods but noticeable shares of manufactures and fuels and mining products.

The results of regional analysis with respect to export priorities of MERCOSUR member states do not differ much from the WTO dimension. Nevertheless, it provides even more evidence that Uruguay depends on agricultural export more than its counterparts in the block while for Brazil the manufactures share is more considerable, however, this fact loses its distinctive significance at regional level.

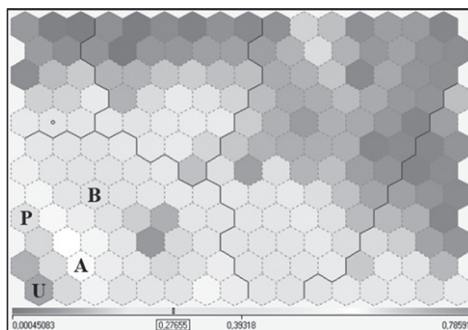Figure 3: Agricultural products share in total export

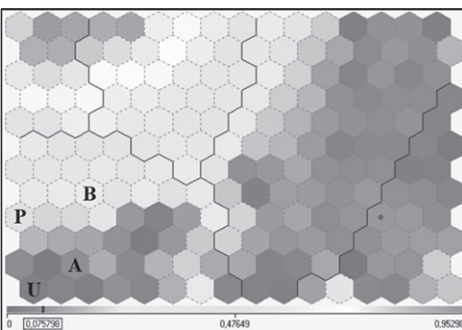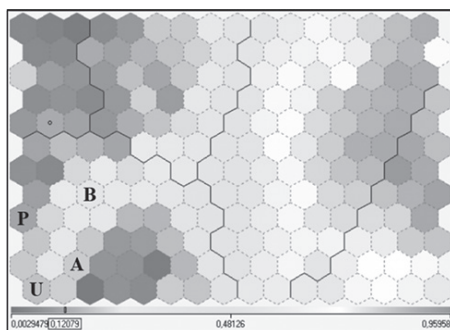Figure 4: Fuels and mining products share in total export

Figure 5: Manufactures share in total export

All in all, regional clustering does not allow to derive satisfactory conclusions as the maps can be characterized as divided into a number of colorful constellations.

This is why they do not give a clear picture of countries' distribution. Comprising the outcomes of both global and regional stages does not provide a definite answer on whether MERCOSUR countries have a single pattern in international trade. On the one hand, all four member states are incorporated in the same trade cluster within the international trading system and, hence, MERCOSUR can be considered as a sort of trade alliance in the global market, however, regional analysis proves the existence of significant diversity. Therefore, a more detailed study of the MERCOSUR trade policy is required. As its countries, as a customs union, have similar tariff policy and CET, though with a significant number of exceptions, it seems appropriate to conduct the analysis of non-tariff regulation.

MERCOSUR IN NON-TARIFF REGULATION CLUSTERS

The analysis of the international trading system for non-tariff regulation indicators conducted with Loginom software has countries distributed in the sample in 5 clusters. Figure 6 presents five clusters and the location of MERCOSUR countries within them. Interestingly, Brazil and Argentina not only belong to the same Cluster 3 but also take the same node. Cluster 3 unites countries with a significant coverage ratio of quantitative control and non-technical measures. Paraguay and Uruguay are included in the largest Cluster 2 together with the majority of other Latin American and Caribbean countries. It is worth paying attention to the fact that they are located in neighboring nodes.

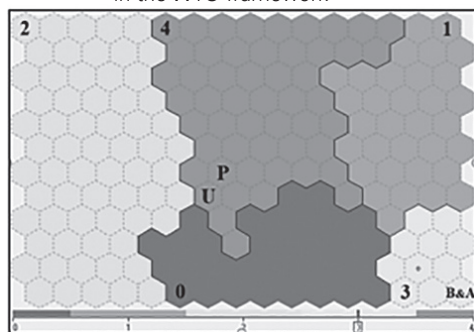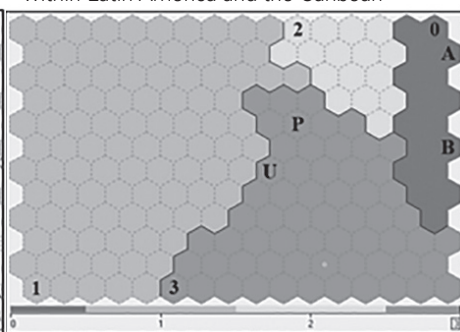Figure 6: Non-tariff regulation cluster in the WTO framework

Figure 7: Non-tariff regulation cluster within Latin America and the Caribean

The non-tariff regulation cluster analysis conducted within the region of Latin America and the Caribbean has shown the optimal division of countries in the sample into four clusters illustrated in Figure 7. Most sample has been spread between Clusters 1 and 3. The latter one includes two MERCOSUR member states, namely Paraguay and Uruguay, located very close to each other and, thus, are deemed to have certain similarities in terms of non-tariff regulation. Argentina and Brazil are in Cluster 0.

The international dimension maps show that Argentina and Brazil are among

leading economies within the cluster in terms of frequency of NTMs implementation for both exports and imports. The regional analysis shows that Argentina has a bigger value of import indicator and Brazil has a greater export variable. However, from a global perspective, Argentina and Brazil are not deemed as frequent adopters non-tariff regulation over exports; as for imports, this indicator is considerably higher but inferior to the values of the European Union and Canada. The colors of Paraguay's and Uruguay's area of allocation indicate low frequency index for export and an average one for import NTMs appliance with a slightly lower level for Uruguay in the first case and Paraguay in the second in both global and regional dimensions.

Technical non-tariff measures two-dimensional maps consider coverage ratios of SPS and TBT regulation. The international dimension of SPS coverage ratio is presented in Figure 8. One can see the prevalence of gray color shades on the map which leads to the conclusion that the percentage of trade subject to SPS measures is rather low for the majority of WTO members. There are several groups of nodes with higher values with absolute leadership attributed to Argentina and Brazil. Paraguay and Uruguay have significantly lower SPS barriers.

Figure 9 shows a more colorful picture and, therefore, a more diversified distribution of TBT measures coverage ratio among international trade actors. All MERCOSUR members have average or, in case of Argentina and Brazil, a slightly higher than average percentage of trade subject to technical measures.

Figure 8: Coverage ratio of SPS measures   Figure 9: Coverage ratio of TBT measures
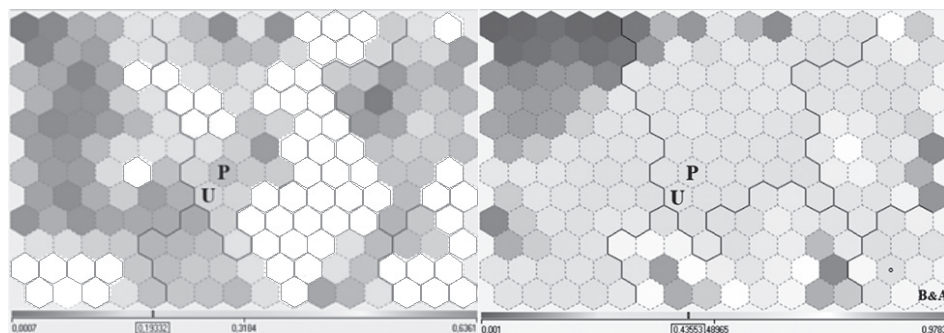
As for technical regulations within the region, Argentina and Brazil have the largest shares of trade covered with this kind of measures. The percentage of trade subject to SPS is lower in Paraguay and Uruguay than the one of the same indicator for TBT regulation. These outcomes correspond to the conclusions derived from the analysis conducted within the international framework.

The percentage of trade subject to non-technical regulation is average for Paraguay and Uruguay, but again more significant for the two MERCOSUR leading economies.

Among non-technical barriers to trade, the analysis has included a coverage ratio of export-related and quantity control measures (Figures 10 and 11 correspondingly). Brazil and Argentina have even more considerable share of trade cov-

ered by quantity control restrictions than in the case of export-related regulations, while Paraguay and Uruguay location area prevails with gray shades pointing to rather low values of this indicator.

Noteworthy, that quantity restrictions are forbidden under WTO rules, the areas of warmer colors comprising a bigger coverage ratio of quantity control measures are represented, mainly, by developing and emerging economies.

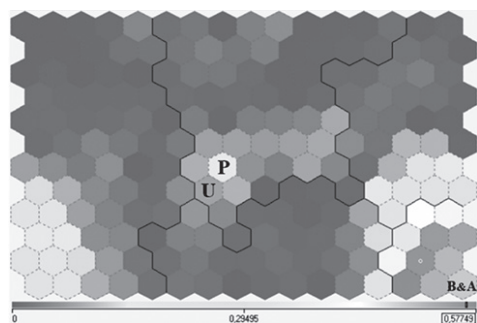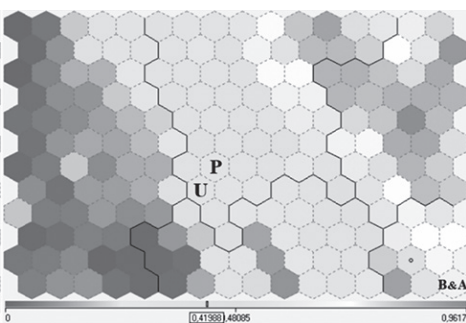Figure 10: Coverage ratio of quantity control measures

Figure 11: Coverage ratio of export-related measurest

The coverage ratio of export-related measures within Latin America and the Caribbean shows the clear leadership of Argentina and Brazil in line with Guyana and Jamaica located in Cluster 3. Paraguay and Uruguay have average values of this indicator.

The two-dimensions regional map of the quantity control measures coverage ratio, as an international analog, reveals that this kind of NTMs does not cover a significant share of trade for the analyzed sample with notably low values for Paraguay and Uruguay but considerably higher ones for Argentina and Brazil. However, between these two countries, that are also the MERCOSUR leaders, the difference appears to reflect a higher coverage ratio for Brazil.

Contrary to the trade patterns analysis within WTO member states, non-tariff clustering does not allow to draw explicit conclusions. Here, the picture is quite ambiguous: one can notice clear polarization in the customs union of MERCOSUR with similar vectors of non-tariff trade policy for the two smaller economies, Paraguay and Uruguay, and for the two leading ones, Brazil and Argentina.

Therefore, the two cluster analyses show the following results. On the one hand, a rather close location of MERCOSUR members in international trade clusters proves the existence of a common trade pattern. It means that the reduction of constraints to the current level of regional integration may contribute significantly to strengthening the position of the union globally. The important outcome is the recognition of the strong potential in MERCOSUR and trade coherence of the member states. On the other hand, non-tariff barriers have a strong negative impact on integration and contribute to significant asymmetry. Argentina and Brazil, when compared to Uruguay and Paraguay, conduct one of the most protective trade policies both in the region and in the world. The main concern for the customs

union today is to overcome this contradiction and develop a proper framework for non-tariff regulation.

CONCLUSION

The MERCOSUR's integration model shows the sharp need for its conceptual restructuring. The members of the block should develop a form of collaboration that would allow them to find a way out of the regional crisis and provide the financial resources and dynamic development for regional markets and national economies. The important step is to respond to the need for conceptual changes in order to overcome the crisis. The two most probable scenarios with the opposite vectors of further development could be derived in a view of the current perspective. The first scenario implies the full common external tariff reset that would allow the block to keep the status of the customs union. The second one occurs in case if MERCOSUR rejects its current integration stage coming back to a free trade area level and granting the opportunity to its members to enter trade negotiations with third countries separately.

However, the current situation, which is unstable due to the pandemic and internal economic difficulties, could be used to intensify the interaction towards further integration among MERCOSUR members on the basis of issues on which a consensus can be reached. Joint actions could be aimed to address the needs of the region and to soften the consequences of pandemic for national economies. The common drugs and certification system mentioned above, can be named among the new directions for regulatory convergence as well as common efforts for establishing the vaccines production or the creation of working groups responsible for realization of joint anti-crises program.

It is an indisputable fact that the extension of talks on trade liberalization, ratification of the agreement with the EU countries, and negotiations of new trade deals should be among the priorities of MERCOSUR common policy. It could stimulate the block's integration by adopting regulations that would ensure new ecological and labor standards, measures to improve investment and business climate. However, the problem is not a lack of regulatory convergence itself, but the absence of a supranational body to implement common legislation and standards. Thus, one of the vital issues to be addressed would be the establishment of an independent, fully completed, and functioning supranational executive body.

The current transformation of the international trading system encourages the revision of MERCOSUR and regional integration. The increased number of inter-regional FTAs as well as their scope of obligations forces MERCOSUR to be more involved in the widespread FTA network. The negotiations with the EU, EFTA and other trade partners clearly demonstrate the intention for MERCOSUR to integrate more deeply in the international trade linkages and be more open to the world. However, before MERCOSUR can live with other FTAs, it has got to live on his own.

The cluster analysis reveals that, from an economic perspective, MERCOSUR member states could represent a strong trade block both in Latin America and on the world stage due to significant coherence in trade patterns. However, asymmetry in the trade policies of its members represent a substantial obstacle to future integration. The political economy explains the shortfall of regional integration in MERCOSUR mainly due to the political polarization and institutional weakness. The cluster analysis proves this statement to some extent. Brazil and Argentina, when compared to Uruguay and Paraguay, conduct a very distinctive protectionist policy with a broad implementation of NTMs. The main challenge for MERCOSUR so far is to deal with this disparity and to shorten the distance between each member in the non-tariff regulation cluster maps.

MERCOSUR member states should evidently seek to reconcile their trade policies with the major steps expected from Brazil and Argentina. These countries are the main drivers of the integration process, for that they need to reconsider their non-tariff regulations and make them more coherent with other member states. That will help not only MERCOSUR development, but also encourage the cooperation inside the Latin American region.

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