

Foreign Trade as a Main Factor to Support Economic Resilience and Sustainable Development. Case Study for Romania

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Abstract: *The analysis of the evolution of foreign trade is important for any economy, for political decision-makers to outline the development strategy in the short, medium and long term. Aspects such as the degree of commercial openness, the relationship with partner countries on intra-EU and Extra-EU dimensions, main exported and imported products, the degree of technology are very important in economic analyses and for defining the resilience and sustainable development potential of the national economy. In this research, we analyzed Romania's international trade relations in the post-accession period, with the main objective of identifying the main features, trends and structural changes of Romanian foreign trade, considering its potential for sustainable development of the national economy in the globalization context, but also the costs and efforts they entail for building resilience. The aim is to emphasize the foreign trade pattern during the last two biggest global crises, the economic crisis in 2008-2009 and the pandemic crisis in 2020-2022, as well as the structural changes and competitiveness of the foreign trade. The results show that foreign trade remains among the most important factors supporting robust recovery after a crisis.*

Keywords: *Foreign trade; export, resilience; sustainable development; crises.*

JEL Classification: *F14, O11, O24*

Introduction

The purpose of this analysis is to answer the question whether Romania's foreign trade is sustainable and resilient. For this purpose, analyzes will be carried out based on official statistical data on the evolution of export and import in the post-accession period and on two

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sub-periods defined by crises - the financial crisis and the pandemic crisis, in order to highlight the Romania's position in terms of commercial relations, as EU member state.

We will analyze the extent to which foreign trade was a factor supporting the post-crisis economic recovery, if there were major structural changes by product groups and by technological intensity, and the extent to which these changes led to the redesign of the export structure model or, on the contrary, if it was rather a conjectural/temporary change adopted in order to take advantage of the new opportunities.

Based on the results obtained, we will summarize a series of support policy recommendations to ensure resilience and economic development through foreign trade.

Research methodology

The research methods used to achieve the aim of the work start from a briefly bibliographic documentation regarding the analyzes and research results in the field of foreign trade in the crisis context and is mainly based on empirical methods, namely the statistical research of foreign trade activity on different attributes of the indicators characterizing exports and imports, the comparative study of Romania's position in the context of trade on the single market and the intensity of trade relations with the rest of the EU member states, complex analysis of foreign trade activity by geographical differentiation - the intra-EU and extra- EU.

1. Literature review

Economic exchanges between the states of the world have been taking place for several centuries. Countries are increasingly becoming an intrinsic part of the global economy (Auerbach, 1996) and the trade exchanges between them represent the main driver for globalization, together with financial flows and individuals' mobility for work and better life. The foreign trade is also a push factor for "total factor productivity increases and hence for potential growth" (ECB, 2016) and the FDI defines the export structure in less developed countries (Zaman and Vasile, 2012; Banica et al, 2018).

Moreover, international competition and the existence of commercial economic blocs (for example, the European Single Market, the North American Free Trade Agreement - NAFTA, the Association of Southeast Asian Nations - ASEAN, etc.) force firms to engage in foreign trade.

Globalization is a reality supported by technological and economic developments that cannot be compared to a strategy that may or may not be implemented (Liedtke, 2000; Ghibutiu, 2005). In order to ensure development and well-being, the states of the world must keep up with the changes imposed by the evolution of the market and technical progress. The net effect of crises on exports largely depends on countries' specialization (Banica and Vasile, 2018).

The COVID-19 pandemic and its unprecedented global public health crisis have resulted in millions of deaths, job losses, business closures and problems in the education system. The economic and social disruption exposed and exacerbated existing economic fragility, especially in emerging economies, where the poverty rate has risen and inequality has worsened (World Bank, 2022).

The impacts of the COVID-19 pandemic on global trade have varied across specific goods, services, and trade partners. The heterogeneity of changes in trade flows across products, sources and destinations signifies high uncertainty and adjustment costs, and required additional incentives to adopt new — or to intensify existing — risk mitigation strategies (Arriola, 2021).

At the macroeconomic level, the pandemic has severely disrupted world trade. Some economic areas have faced much higher demand than others (for example, manufacturers of personal protective equipment, medical supplies or hygiene products, electronic equipment needed for teleworking - PCs, laptops, tablets) while others have been able to react more quickly (OECD, 2022). At the same time, areas such as the production of vehicles and machinery have faced difficulties with the increased volume of supply and demand. Regardless of the field, companies have had to adapt, from implementing new processes to offering new products or services that reflect changes in spending behaviors. Online presence has become the key factor in meeting customer requirements, and even in reaching new ones, which is still confirmed today (FedEx, 2021).

The coronavirus pandemic which caused the disruption to world trade has also affected Romanian traders, forcing them to deal with the general lockdown through restrictions, rule changes, bans while benefiting from limited help.

2. Foreign trade of Romania in the global context

The last 15 years have been marked by some major factors, which have impacted Romania's foreign trade, among which we mention the benefits of the EU single market and the costs of adapting to the Community context, the impact of the international economic and financial crisis, triggered in September 2008, the impact of the pandemic crisis from 2020-2021 corroborated with the regional geo-political instability from 2022.

Statistical data from the Romanian National Institute of Statistics, Eurostat and the UN were used to identify the main structural trends in exports and imports.

The way by which Romanian foreign trade reacted to the previously mentioned factors can be appreciated based on the evolution of the specific indicators in the field of foreign trade, respectively export and import of goods.

Exports of goods recorded significant increases in 2021 as compared with 2007 (Table 1), especially on the following categories of goods: vegetable products (over 12 times); food (around 7.7 times); measuring and control instruments and apparatus (over 10 times), while

exports of textile and footwear decreased (up to $\frac{1}{4}$). Exports of the machines and devices, electronic equipment, means and materials of transport, etc. also registered important dynamics (over 3.3 times).

During the crises, depending on their nature (financial vs. pandemic), the total export decreased by 15% and 10% respectively, with large differences by product group. In the years of crisis 2009 and 2020-21, there was no decrease in exports of prepared foodstuffs, beverages, and tobacco. Some groups of goods were vulnerable to the nature and characteristics of crises, being more vulnerable to the financial crisis (i.e., wood and articles of wood) or the pandemic one (for example live animals; animal products). Some categories showed resilience to the shocks of the crisis, the majority of them being raw materials and semi-finished products which provided importers with opportunities for further goods-processing and support the partner's countries to get out of the crisis faster.

Table 1. The impact of major influencing factors on Romania's exports of goods (%)

CN code	Description of CN code	The impact of EU single market		The global impact of crises	
		EXPORT (% as against 2007)		EXPORT (% as against previous year)	
		2010/2007	2021/2007	2009/2008	2020/2019
	TOTAL EXPORT	126,4	252,8	86,2	90,1
I	Live animals; animal products	172,0	405,1	117,2	91,1
II	Vegetable products	369,3	1233,1	93,9	86,5
III	Animal or vegetable fats and oils	242,7	531,3	83,4	86,9
IV	Prepared foodstuffs; beverages, spirits and vinegar; tobacco	245,4	766,8	120,6	120,7
V	Mineral products	89,7	121,0	56,8	58,8
VI	Products of the chemical or allied industries	147,0	232,8	75,0	96,7
VII	Plastics, rubber and articles thereof	130,2	317,1	83,9	92,0
VIII	Raw hides and skins, leather, fur skins and articles thereof	100,8	139,8	81,7	79,4
IX	Wood and articles of wood	123,7	221,5	96,8	101,0
X	Pulp of wood or of other fibrous cellulosic material	131,3	344,2	101,7	91,3
XI	Textiles and textile articles	80,8	82,5	81,8	82,3
XII	Footwear, headgear, umbrellas,	87,7	74,2	82,7	77,1
XIII	Articles of stone, plaster, cement or similar materials	96,0	212,3	83,1	96,1
XV	Base metals and articles of base metal	92,7	164,2	59,1	88,6
XVI	Machinery and mechanical appliances; electrical equipment	154,8	328,5	95,2	92,6

CN code	Description of CN code	The impact of EU single market		The global impact of crises	
		EXPORT (% as against 2007)		EXPORT (% as against previous year)	
		2010/2007	2021/2007	2009/2008	2020/2019
XVII	Vehicles, aircraft, vessels and associated transport equipment	160,6	338,8	118,0	92,3
XVIII	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus	187,9	1040,7	111,9	89,4
XX	Miscellaneous manufactured articles	104,8	206,2	90,1	85,2

Note: CN = Combined Nomenclature

Data source: Authors' calculations based on NIS database on foreign trade in goods

Means of transport, optical, photographic, cinematographic, medical-surgical and similar instruments and apparatus, watches, musical instruments, parts and accessories thereof recorded increases in 2009 as compared to 2008 of +18.0 % and +11.9% respectively, which is explained by a favorable economic situation in the respective markets and relatively advantageous purchase prices. During crises, the highest vulnerable export groups with the largest decline were: mineral products (almost a half in both periods); products of the chemical industry; plastic materials; raw, finished hides; wood and wooden articles; textiles; footwear; articles of stone, plaster, cement; base metals and articles of base metal; electrical machinery, apparatus and equipment. These declines were a strong shock for several sectors of the national economy and highlighted the vulnerabilities of production and exports, most of them being in the "lohn".

The crisis of 2009 affected imports of goods much more strongly than exports, in all sections of the CN (Table 2).

Table 2. The impact of major influencing factors on Romania's imports of goods (%)

CN code	Description of CN code	The impact of EU single market		The global impact of crises	
		IMPORT (% as against 2007)		IMPORT (% as against previous year)	
		2010	2021	2009/2008	2020/2019
	TOTAL IMPORT	91,3	191,7	68,1	93,4
I	Live animals; animal products	113,1	257,0	93,7	100,8
II	Vegetable products	110,1	302,3	79,6	116,1
III	Animal or vegetable fats and oils	151,1	190,2	70,6	116,3
IV	Prepared foodstuffs; beverages, spirits and vinegar; tobacco	122,4	348,2	92,5	101,4

CN code	Description of CN code	The impact of EU single market		The global impact of crises	
		IMPORT (% as against 2007)		IMPORT (% as against previous year)	
		2010	2021	2009/2008	2020/2019
V	Mineral products	84,4	133,3	49,5	65,7
VI	Products of the chemical or allied industries	120,5	281,7	91,0	106,7
VII	Plastics, rubber and articles thereof	105,7	236,5	76,7	93,2
VIII	Raw hides and skins, leather, fur skins and articles thereof	83,0	103,4	80,6	79,4
IX	Wood and articles of wood	68,4	175,7	62,7	98,4
X	Pulp of wood or of other fibrous cellulosic material	109,3	163,4	92,9	92,8
XI	Textiles and textile articles	83,9	133,8	78,7	94,7
XII	Footwear, headgear, umbrellas,	101,3	216,3	80,3	90,2
XIII	Articles of stone, plaster, cement or similar materials	70,5	148,0	58,9	99,0
XV	Base metals and articles of base metal	90,3	191,3	58,7	91,5
XVI	Machinery and mechanical appliances; electrical equipment	104,3	200,6	76,7	96,0
XVII	Vehicles, aircraft, vessels and associated transport equipment	48,5	128,5	40,5	85,1
XVIII	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus	95,9	292,0	69,1	92,4
XX	Miscellaneous manufactured articles	74,7	245,5	64,3	95,6

Note: CN = Combined Nomenclature

Data source: Authors' calculations based on NIS database on foreign trade in goods

Imports reacted differently to crises compared to exports, being: a) much more affected by the crisis, unlike the financial one because most of them are imports for final consumption and therefore, depend on the purchasing power of customers and the deferred consumption model for products that are not of strict utility/current consumption; b) the effects of the crises were faster in the partner economies than in Romania and therefore imports were also

affected; c) the resilience of the Romanian economy was weaker against the financial crisis than the pandemic, at least for the groups of products dependent on imports; d) the pandemic restrictions affected imports to a lesser extent than the financial crisis, and in the case of vegetable products, animals, prepared foodstuffs and the chemical industry (mostly sanitary products, cleaning products, etc.) imports increased to cover the additional consumption needs individual.

Summarizing, in terms of recovering from the downturn caused by the economic and financial crisis, exports have recovered much faster than imports. In 2010, one year after the 2009 crisis, most sections of the CN exceeded the pre-crisis level of 2008, except for minerals, textiles, footwear and base metals, for which the recovery from the decline due to the crisis was longer, between two and five years. After the pandemic crisis, imports of goods recovered faster than exports; at the end of 2021 only two categories of goods were below the level of 2019 - the raw hides and skins, leather (-15.2%) and textiles (-2.7%) (Table 3).

Table 3. The recovery of Romania's foreign trade in goods after crises (%)

CN code	Description of CN code	The year in which the pre-crisis level was recovered/exceeded - compared to 2008 (%)		The year in which the pre-crisis level was recovered/exceeded - compared to 2019 (%)	
		IMPORT year / %	EXPORT year / %	IMPORT year / %	EXPORT year / %
	TOTAL	2014/102,2	2010/100,8	2021/114,0	2021/108,3
I	Live animals; animal products	2014/102,9	2009/117,2	2020/100,8	2021/110,0
II	Vegetable products	2011/105,1	2010/135,6	2020/116,1	2021/140,0
III	Animal or vegetable fats and oils	2011/108,1	2010/155,6	2020/116,3	2021/160,1
IV	Prepared foodstuffs; beverages, spirits and vinegar; tobacco	2011/114,5	2009/120,6	2020/101,4	2020/120,7
V	Mineral products	2021/104,2	2014/103,5	2021/114,7	2021/101,0
VI	Products of the chemical or allied industries	2010/115,4	2010/116,3	2020/106,7	2021/111,1
VII	Plastics, rubber and articles thereof	2010/119,8	2010/110,6	2021/122,0	2021/116,8
VIII	Raw hides and skins, leather, furskins and articles thereof	2010/103,1	2010/101,6	unrecovered until 2021	unrecovered until 2021
IX	Wood and articles of wood	2016/106,7	2010/129,3	2021/133,0	2020/101,0
X	Pulp of wood or of other fibrous cellulosic material	2011/105,0	2009/101,7	2021/111,2	2021/118,9

CN code	Description of CN code	The year in which the pre-crisis level was recovered/exceeded - compared to 2008 (%)		The year in which the pre-crisis level was recovered/exceeded - compared to 2019 (%)	
		IMPORT year / %	EXPORT year / %	IMPORT year / %	EXPORT year / %
XI	Textiles and textile articles	2011/101,1	2011/102,1	unrecovered until 2021	unrecovered until 2021
XII	Footwear, headgear, umbrellas,	2011/115,5	2011/111,2	2021/105,2	unrecovered until 2021
XIII	Articles of stone, plaster, cement or similar materials	2018/102,6	2010/104,9	2021/118,2	2021/117,8
XV	Base metals and articles of base metal	2015/103,6	2011/112,5	2021/124,5	2021/133,0
XVI	Machinery and mechanical appliances; electrical equipment	2011/110,1	2010/125,8	2021/110,0	2021/107,0
XVII	Vehicles, aircraft, vessels and associated transport equipment	2017/105,3	2009/118,0	2021/101,6	unrecovered until 2021
XVIII	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus	2013/108,2	2009/111,9	2021/103,2	unrecovered until 2021
XX	Miscellaneous manufactured articles	2015/106,6	2010/102,8	2021/114,9	unrecovered until 2021

Note: CN = Combined Nomenclature

Data source: Authors' calculations based on NIS database on foreign trade in goods

The post-accession period of Romania's to the EU, starting with 2007, meant for the foreign trade of our country the entry into a new competitive stage, within the European single market, featured by the free movement of goods, labor and capital, generating new opportunities to combine production factors but also requirements in terms of quality standards or other constraints, such as the volume of production or cultivated agricultural areas.

3. A global overview on the foreign trade balance during post accession period

Stronger competition from EU exporters, but also competitive imports from EU member states, the price / quality ratio and technological level are factors with a strong impact on the national economy. Since the post-accession period, as a result of the takeover of the

legislation and elimination of customs barriers, Romania has been forced to submit to new competitive standards, with less favorable effects on weaker national production in terms of efficiency and costs. The analysis of the trade balance in the period 2007-2021 highlights the continuation, in small dimensions, of the chronic character of the trade deficit which characterizes the entire transition period of the Romanian economy to the mechanisms of the competitive market.

Romania's accession to the EU has led to a negative average annual trade balance for the post-accession period (2007-2021) of -13.4 billion euros, compared to -7.1 billion euros in the pre-accession period (2000-2006). The highest levels of the negative balance of Romania's trade balance were registered in 2008 and 2021, when it reached -23.5 billion euros and -23.7 billion euros, respectively.

The structure on large groups of goods of Romania's foreign trade, in 2021, highlighted the following:

- machines and apparatus, electrical equipment, sound or image recording or reproducing apparatus have the largest share in the total volume of exports (28.8%) and imports (26.2%), which confirms that the manufacturing industry represents one of the most important branches, with a large capacity for both export and import, beside it contributes to the maintaining of a trade deficit for these groups of products and reveals the qualitative differences between national exports and imports;
- means of transport, as a share in the total volume of exports, represent the second most important group of products (16.2%), followed by base metals and articles thereof (10.6%), vegetable products (7.3%), plastics (6.2%), textiles and articles thereof (4.3%).

Table 4. The structure of foreign trade in goods in 2007, 2010 and 2021

CN section	Description of CN section	IMPORT (%)			EXPORT (%)		
		2007	2010	2021	2007	2010	2021
	TOTAL	100,0	100,0	100,0	100,0	100,0	100,0
I	Live animals; animal products	1,7	2,1	2,3	0,9	1,2	1,4
II	Vegetable products	2,0	2,4	3,2	1,5	4,3	7,3
III	Animal or vegetable fats and oils	0,3	0,5	0,3	0,2	0,4	0,5
IV	Prepared foodstuffs; beverages, spirits and vinegar; tobacco	2,5	3,4	4,6	1,2	2,4	3,7
V	Mineral products	12,0	11,0	8,3	7,8	5,5	3,7
VI	Products of the chemical or allied industries	7,5	10,0	11,1	3,8	4,4	3,5
VII	Plastics, rubber and articles thereof	6,0	7,0	7,4	4,9	5,1	6,2

CN section	Description of CN section	IMPORT (%)			EXPORT (%)		
		2007	2010	2021	2007	2010	2021
VIII	Raw hides and skins, leather, fur skins and articles thereof	1,5	1,4	0,8	0,8	0,6	0,4
IX	Wood and articles of wood	1,1	0,8	1,0	3,4	3,3	2,9
X	Pulp of wood or of other fibrous cellulosic material	1,7	2,0	1,4	0,6	0,6	0,8
XI	Textiles and textile articles	7,1	6,5	4,9	13,3	8,5	4,3
XII	Footwear, headgear, umbrellas,	1,0	1,1	1,1	4,6	3,2	1,3
XIII	Articles of stone, plaster, cement or similar materials	1,8	1,4	1,4	0,8	0,6	0,7
XV	Base metals and articles of base metal	11,1	10,9	11,0	16,3	11,9	10,6
XVI	Machinery and mechanical appliances; electrical equipment	25,0	28,6	26,2	22,2	27,1	28,8
XVII	Vehicles, aircraft, vessels and associated transport equipment	13,8	7,3	9,3	12,1	15,4	16,2
XVIII	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus	1,6	1,7	2,4	0,8	1,2	3,2
XX	Miscellaneous manufactured articles	2,0	1,6	2,6	4,6	3,8	3,8

Note: CN = Combined Nomenclature

Data source: Authors' calculations based on NIS database on foreign trade in goods

The dynamics of imports during 2007-2021 was lower compared to that of exports, reductions being recorded for textiles and articles of these materials and footwear, based on the education of processing activity in the Lohn system. The evolution of the structure of exports and imports reveals a series of favorable trends for exports, such as the increase of the share of some products with a high degree of processing, respectively electrical equipment, means and transport materials. At the same time, the share of exports of textiles, footwear, base metals and mineral products (goods with a low processing level) decreased during the analyzed period.

The analysis by product categories has shown that the positive balance of trade in the raw material groups, in the case of Romania, increased from 164.9 million euros in 2007 to 581.1 million euros in 2021, while at EU-27 level there was a total negative balance rising from -37.4 billion euros to -40.7 billion euros, respectively, most EU member states throughout the

period having negative balances, unlike Romania. This situation reveals Romania's position as a net exporter of raw materials, within intra-EU trade (Annex 1).

Both the economic and financial crisis of 2008-2009 and the pandemic crisis of 2020-2021 affected the export of mineral products the most. In the case of imports, significant reductions were registered mainly for mineral products (-59.5% and -14.9%, respectively) and means of transport (-50.5% and -34.3%, respectively).

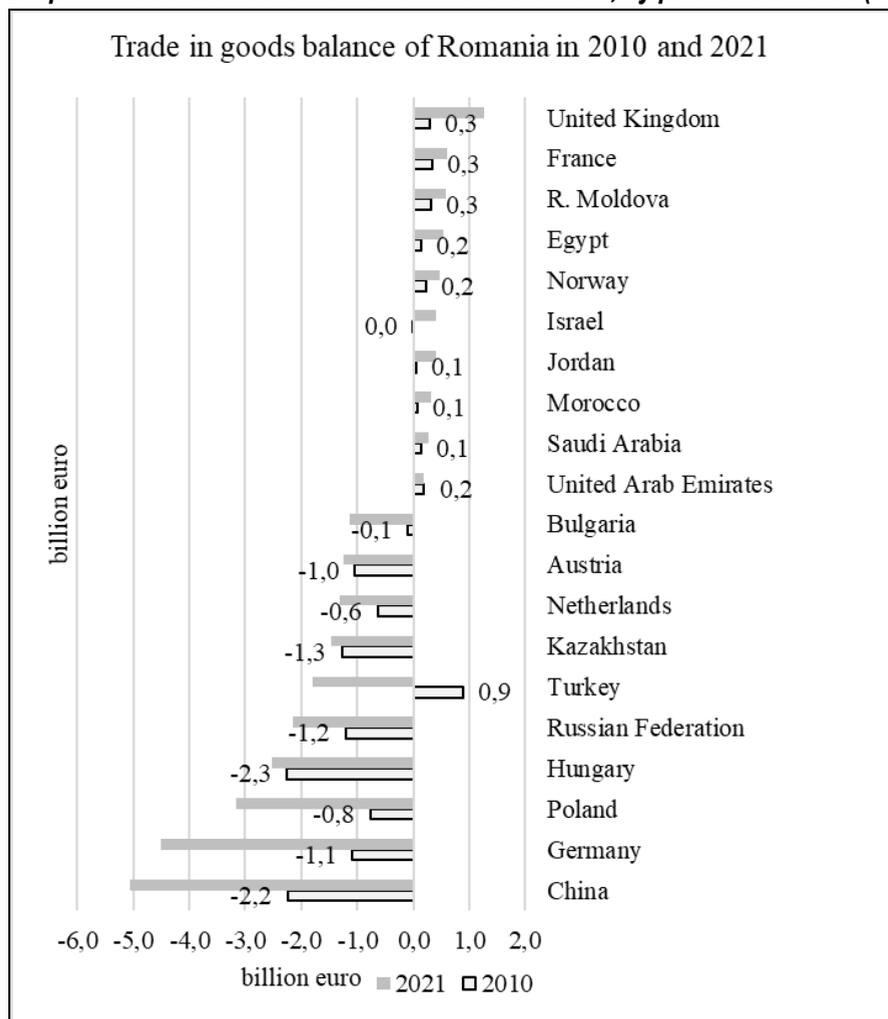
The change in the structure of export in the period under review shows a favorable trend towards an increase in the share of manufacturing products, which will need to be intensified in the future to the extent necessary and sufficient to strengthen competitiveness and ensure convergence and sustainable development.

Romania's membership to the EU, has determined that the share of most trade to take place with European countries, especially with those members of the EU-27 with which our country has traditional relations, enhanced lately by the trade creator factors.

Romania's import dependence in the period 2007-2021 targets the member states of EU-27, especially Germany, Italy and France. One of the major problems regarding the relationship between Romania's intra and extra EU-27 trade is the setting up of a strategy aiming at the maximum estimated limit to which the share of EU-27 countries in Romania's total exports and imports could reach, given that globalization offers opportunities to capitalize on comparative and competitive advantages over EU-27 relations as well.

However, the development of Romania's trade relations with non-EU countries should not be neglected, especially since Romania has trade exchanges of goods with countries such as: Turkey, the United Kingdom, the Russian Federation, China, Ukraine, USA, Japan and other developing countries in Asia, Latin America and Africa. Currently, trade relations with these countries have a share of about 30%, representing a potentially important market for Romania's exports and imports, especially of crude oil, natural gas or a number of consumer goods.

The analysis of the trade balance by countries in 2021 shows that Romania has the most significant deficits with China, Germany, Poland, Hungary and the Russian Federation. Regarding Romania's trade relations with non-EU-27 countries, we mention the persistence of major deficits with China, the Russian Federation and Kazakhstan, which represent for Romania fuel supply markets, but also a number of other products of the manufacturing industry.

Graph 1. Trade balance of Romania in 2010 and 2021, by partner countries (%)

Data source: Authors' calculations based on NIS database on foreign trade in goods

The main challenge for Romania is the very large trade deficit with EU member states, which increased throughout the analyzed period and remained at relatively high levels, including with some neighboring countries, such as Hungary and Poland. In the case of Turkey, the trade surplus in 2010 became deficit in 2021 in the context of pandemic crises. It is necessary to give priority to policies, instruments and measures to promote high value-added exports and those for which Romania has a great potential, such as, for example, the food industry, agricultural products, etc.

The disaggregation of the trade balance at the level of 2021, by activities of the economy (based on NSI data, detailed by CPA-Classification of Products by Activities), lead to the following conclusions (Annex 2):

a) the economic activities with a positive balance of trade in goods, and therefore with a favorable impact on economy, are: the production of road transport vehicles, trailers and semi-trailers; agriculture; woodworking; furniture production; production of electrical equipment; tobacco production.

b) the economic activities with a negative balance of trade (deficit), which negatively influence the growth and external economic balances of the country, are: the manufacture of substances and chemicals; manufacture of computers and electronic and optical products; food industry; crude oil and natural gas; manufacture of basic pharmaceutical products and pharmaceutical preparations; products of the metal construction industry; production of machinery, machinery and equipment.

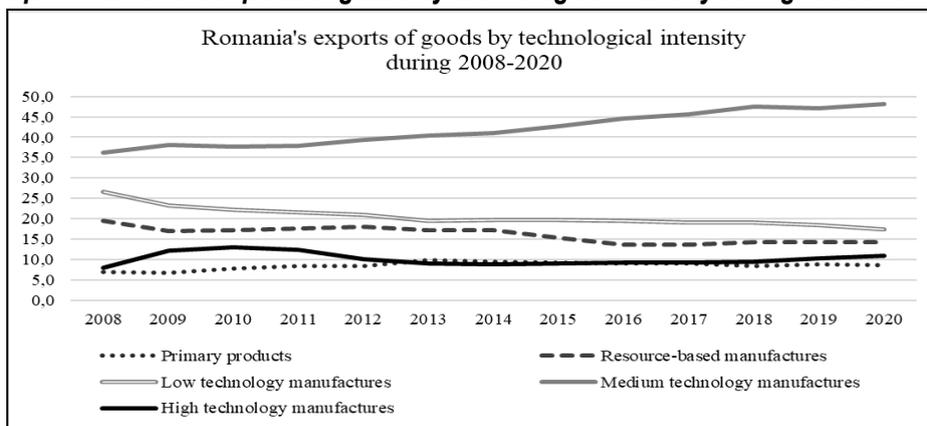
Different domains of the manufacturing industry negatively influence the trade balance of goods: food, cement, glass, ceramics, crude oil processing, chemicals, rubber and plastics. For these areas, Romania has important potential for balancing and recording trade surpluses in the future. Agriculture is another sector which has a great potential to positively contribute to the country's trade balance, compared to the contribution of only +2.9 billion euros in 2021, given the possibilities of reducing the gaps between Romania and developed countries in terms of yields per hectare.

4. Romania's export competitiveness on international markets

During the analyzed period, the increase of the competitiveness of Romanian exports was reflected by an important dynamic of exports, as well as by a more efficient structure, in the sense of increasing the share of exports of products with a slightly higher added value.

The share of exports of high-tech products in a country's total exports is one of the best indicators for the competitiveness on international markets. In Romania, the dynamics of high-tech exports (previous year = 100%), registered a decrease in the last years of the analyzed period, explainable rather by the impact of different economic factors, including a reduced spending on research and development and innovation.

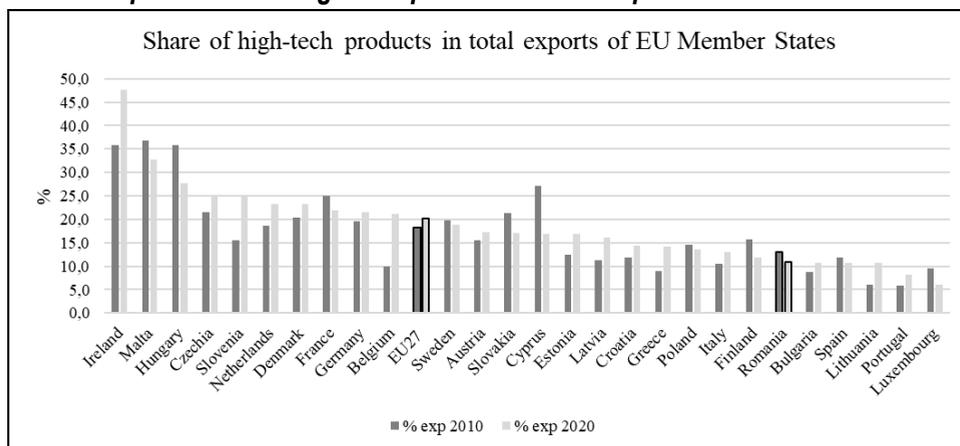
During the post-accession period there was an increase in the market share of domestic exports, due to the appreciation of the real effective exchange rate and the positive dynamics of unit labor costs, especially in industry. The decrease of the relative intensity between the price competitiveness indicator and the export dynamics reveals the importance of the non-price factors of Romania's external competitiveness, on medium and long term, including infrastructure improvement, institutional framework, innovation, and business capitalization.

Graph 2. Romania's exports of goods by technological intensity during 2008 and 2020

Note: Processing based on the Lall 2000 nomenclature (goods according to CSCI Rev.3, by technological categories) https://unctadstat.unctad.org/en/Classifications/DimSitcRev3Products_Ldc_Hierarchy.pdf

Data source: UNCTAD Database, UN

At the level of the European Union, the share of exports of high-tech manufactured products was 20.2% in 2020, Romania ranking 23, with a share of only 10.9%, about 2 times lower than the average EU. In first places there are countries like Ireland with 47.6%, Malta 32.7% and Hungary 27.8%. In the developed EU countries and at EU level, the share of high-tech exports is higher than in Romania. This gap between Romania and developed countries, in principle, is explained by the lack of interest from the Romanian private sector to finance RDI expenditures.

Graph 3. Share of high-tech products in total exports in 2010 and 2020

Data source: Eurostat

Romanian exports are characterized by the persistent high level of concentration of activities, in the sense that the first 100 companies, according to the value of international sales of goods, represented in 2021 about 50% of exports, and the first 1000 companies exporters accounted for over 80% of total exports.

The high concentration of Romania's trade at the level of a small number of companies represent a relatively limited diversification from a territorial point of view as well as on categories of goods.

**Table 5. Export concentration by companies in Romania, during 2010-2021
(% in total exports)**

	2010	2012	2014	2016	2017	2018	2019	2020	2021
The first 10 exporters	20,7	18,8	19,6	17,4	18,7	20,2	19,8	19,1	17,2
The first 100 exporters	52,5	50,8	50,3	49,9	50,9	52,4	52,2	51,3	49,6
The first 1000 exporters	82,8	83,3	82,5	82,3	82,8	83,9	84,0	83,9	82,0

Data source: Authors' calculations based on NIS database on foreign trade in goods

The geographical diversification of exports is low, more than 50% of the number of exporters address to a single market and about 30% exporters to less than five destinations. The first 100 exporters in 2021, sold on foreign markets an average 14 categories of goods on 29 markets (based on NSI foreign trade data on Combined Nomenclature-2 digits). At the level of the whole economy, on average only 2 categories of goods are exported in a single destination country. Large firms, which have a higher degree of diversification as regards to export products markets, as opposed to small ones, have higher indicators of performance and economic resilience and are more robust to vulnerabilities. Thus, the first 100 companies (according to the value of exports in 2021) export an average 8 categories of goods in a single destination country.

The promotion of policies to increase the degree of effective diversification of exports of companies with Romanian ownership may be another way to counteract the reduction of competitiveness and the revealed comparative advantage (Zaman, 2012).

The contribution of FDI in Romania to exports and imports of goods has evolved with greater or lesser variations from one branch to another. What needs to be emphasized is that both in terms of exports and imports, foreign-owned enterprises have a predominant position. The FDI contribution to Romania's exports and imports of goods has evolved with greater or lesser variations; in terms of exports and imports of Romania, foreign-owned enterprises have a predominant position.

Table 6. The structure of Romania's foreign trade, by capital ownership (%)

	2010	2012	2014	2016	2017	2018	2019	2020
EXPORT (% in total value of export)								
Romanian ownership	16,0	15,8	14,4	13,7	14,0	13,9	14,9	15,4
Foreign ownership	53,7	51,5	54,4	59,6	73,0	74,3	73,5	73,6
Mixed ownership	27,5	32,0	29,6	24,7	11,1	9,9	9,7	8,7
IMPORT (% in total value of import)								
Romanian ownership	26,8	22,3	21,2	23,1	24,5	23,6	24,3	25,9
Foreign ownership	47,4	49,6	51,0	53,5	62,0	63,7	63,0	63,1
Mixed ownership	23,6	27,9	27,4	22,7	12,7	11,8	11,5	9,9

Note: Mixed ownership = companies having Romanian and foreign ownership

Data source: Authors' calculations based on NIS database on foreign trade in goods

Holding more than 80% of total Romania's exports of goods, companies with foreign and mixed ownership offers the possibility for foreign capital to control and monitor most of the country's foreign trade, according to its interests which are not always consistent with those of the sustainable development of the national economy, which requires special research in this area. The high share of enterprises with FDI in Romania's foreign trade highlights not only the importance of this special factor of globalization, but also the contribution that foreign capital can have in terms of growing the national economy and the well-being of the population.

The balance of trade in goods of FDI companies (having foreign capital or mixed ownership) indicates a deficit of 7.6 billion euros in 2020, growing steadily from previous years. At the level of the national economy, the earnings from the exports of FDI firms fail to cover the costs of their imports, which does not have a favorable impact on the current account deficit and the external balance of payments, as opposed to the requirements of a sustainable development of the economy.

The analyses performed have shown the maintenance or increase of comparative and competitive advantages for Romania's exports of goods on world market for the following groups of goods: SITC 6 - Manufactured goods (wood and cork products, rubber products; non-metallic processed mineral products; iron and vinegar; aluminum; leather; textiles; metal goods) and SITC 8 - Miscellaneous manufactured articles (prefabricated buildings, furniture, travel goods, clothing, footwear, scientific control instruments, cameras and optics, watches). Starting with 2008, Romania also registered comparative advantages for the product groups SITC 7 - Machinery and transport equipment and 1 - Beverages and tobacco. These groups of goods represent important opportunities to consolidate Romanian exports on foreign markets, inside and outside the EU-27.

Table 7. Revealed comparative advantages (RCA) for Romania's exports of goods on world market during 2006-2010 and 2016-2020, by SITC groups of goods

SITC groups of goods	2006	2008	2009	2010	2016	2017	2018	2019	2020
0 - Food and live animals	0,444	0,658	0,703	0,861	0,977	0,963	0,988	1,062	0,975
1 - Beverages and tobacco	0,235	1,385	1,610	1,518	1,695	1,602	1,485	1,873	2,871
2 - Crude materials, inedible, except fuels	1,663	1,552	1,565	1,533	1,072	1,037	1,013	0,933	0,898
3 - Mineral fuels, lubricants and related materials	0,677	0,511	0,406	0,339	0,379	0,347	0,324	0,318	0,282
4 - Animal and vegetable oils, fats and waxes	0,606	0,520	0,515	0,692	0,491	0,478	0,588	0,635	0,505
5 - Chemicals and related products	0,550	0,583	0,433	0,528	0,365	0,375	0,372	0,389	0,399
6 - Manufactured goods	1,441	1,403	1,195	1,302	1,249	1,309	1,357	1,348	1,302
7 - Machinery and transport equipment	0,818	1,049	1,263	1,235	1,256	1,257	1,330	1,319	1,327
8 - Miscellaneous manufactured articles	2,356	1,755	1,524	1,418	1,183	1,287	1,311	1,250	1,159
9 - Other goods not else classified	0,015	0,479	0,459	0,422	0,593	0,497	0,169	0,174	0,110

Note: SITC = Standard International Classification

Data source: Authors' calculations based on Comtrade database on foreign trade in goods

Statistical data revealed an improved structure of Romanian exports, by increasing the share in total export of high-tech and medium-tech products (SITC 7) for the groups of goods electrical equipment and appliances and components (subgroup 77) and road vehicles (subgroup 78). Although there is an increase in the share of high-tech products in Romania's total exports, the level is much lower than its average level for all EU-27-member states.

For some groups of products exported by Romania, there was a loss of competitive advantages, namely: mineral fuels, oils and fats of animal and vegetable origin, chemicals and related products, inedible raw materials. In these cases, sustained efforts are needed to regain markets and external competitiveness, especially since Romania has a good tradition in terms of the quality and has the necessary potential in terms of raw material resources.

5. Conclusions and policy recommendations

The strategic dimensions of Romania's export growth, established by the National Export Strategy, emphasize the need for consolidating the competitive advantages obtained in the previous period and for creating new sustainable advantages within international value chains, by exporting goods with a high level of technological processing. At the same time, a series of measures are envisaged to increase the resilience of the national economy and exports to external shocks of the economic and financial crisis, strengthening public-private partnerships and entrepreneurial initiatives, innovative for efficient connection of Romanian exports and imports to world trade.

The strategy emphasizes the need to promote export diversification policies, especially for goods with higher added value, through knowledge-based reindustrialization, innovation and eco-efficiency.

Romania's intra-regional trade will have to consider the need to target the extra-EU-27 markets, following the emergence of new markets for organic agriculture, renewable resources, cultural-creative industries, bio and nanotechnologies, etc. International business will experience the development of new ways of doing things, such as networking partnerships and cooperation, networking, relocations and outsourcing.

Small and medium-sized companies represent a major factor in the growth of exports, their integration by large exporters in Romania, depending on contractors, but also on ensuring specific credit resources. For countries having a relatively high degree of external openness and small size, concentrating efforts on promoting high value-added exports is the main way to increase competitiveness and smart specialization.

The analysis of Romania's international trade in the period 2007-2021, leads to the following relevant conclusions:

- the volume of foreign trade increased throughout the period both for export and import, except for 2009 and 2020 when, under the impact of financial crises and international pandemics, respectively, there were significant decreases; the Romanian economy has a relatively high degree of openness to the outside world, which implies not only opportunities for foreign trade, but also concerns for increasing the resilience of the national economy to possible external shocks and vulnerabilities;
- as a result of traditional trade relations, but also of EU integration, Romania's trade with EU member states represents over 70% of the total volume of foreign trade in goods; in recent years there has been a trend of slightly increasing of trade relations also with non-EU-27 countries;
- the largest trade deficit is registered by Romania in relations with some EU member states, especially Germany, Poland, Hungary, Holland, Austria, Bulgaria, Italy, countries on which Romania's foreign trade is largely dependent;
- the structure of Romania's exports by goods reveals the high share of products with low and medium technological level, which has a negative impact on the level of added value;
- Romania's exports and imports are performed in a very high proportion by companies with foreign capital participation (foreign direct investments), mostly subsidiaries of multinational companies, which implies certain structural features and challenges; the causal relationship of FDI, exports, imports and GDP remains an open issue for research, in terms of the mutual influences between the variables explained and explanatory;
- a forward-looking project to ensure the success of Romania's foreign trade in goods and smart specialization might be based on the need for reindustrialization, especially in the manufacturing sector, based on innovation and knowledge.

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**Annex 1. Foreign trade in raw materials at EU level, in 2007 and 2021
(million euro)**

	2007			2021		
	Exports	Imports	Balance	Exports	Imports	Balance
European Union	113002,8	150444,2	-37441,4	203625,4	244310,8	-40685,4
Belgium	8898,7	15065,4	-6166,7	13763	24912,7	-11149,7
Bulgaria	944,8	1691,6	-746,8	3388,8	3757	-368,2
Czechia	2345,9	2202,3	143,6	5576,4	4364,4	1212
Denmark	2990,8	2498,1	492,7	4732,7	4017,4	715,3
Germany	20370,4	33251,7	-12881,3	31467	56035,6	-24568,6
Estonia	797,4	467,7	329,7	1776,3	1091	685,3
Ireland	1687,9	1271,7	416,2	2192,1	1401,7	790,4
Greece	1221,8	1877,3	-655,5	2622	2225,3	396,7
Spain	6335,4	12369,8	-6034,4	15289,7	20003	-4713,3
France	10475,3	12441,5	-1966,2	15517,8	17155,2	-1637,4
Croatia	590,9	371,1	219,8	1564,3	771,2	793,1
Italy	5625,6	18685,1	-13059,5	9519,4	24969,3	-15449,9
Cyprus	57,7	119,1	-61,4	109,9	115,8	-5,9
Latvia	1137,7	514,6	623,1	2931,4	1318,1	1613,3
Lithuania	728,1	647,9	80,2	2499,2	2125,9	373,3
Luxembourg	215,7	1310,5	-1094,8	280,4	1781,1	-1500,7
Hungary	1277,2	1242,6	34,6	3192,9	2835,1	357,8
Malta	14,2	35,2	-21	26,1	43,5	-17,4
Netherlands	23586,1	18250,5	5335,6	39228,6	32133,2	7095,4
Austria	3954,6	5126,9	-1172,3	6486,6	9263,2	-2776,6
Poland	2566,2	3978,2	-1412	7445,3	9870,9	-2425,6
Portugal	2240,3	2259,4	-19,1	4036,7	3909,6	127,1
Romania	1636,1	1491,4	144,7	3835,9	3270,1	565,8
Slovenia	715,5	1286,9	-571,4	1638,6	1934,5	-295,9
Slovakia	981,6	1318,1	-336,5	2074,5	2950,3	-875,8
Finland	3824,8	6227	-2402,2	8257,8	6481,9	1775,9
Sweden	7782,1	4442,6	3339,5	14172	5573,8	8598,2

Note: European Union - 27 countries (from 2020)

Data source: Eurostat

Annex 2. Romania's foreign trade in 2021, detailed by Classification of Products by Activities (CPA)

CPA code	Description of CPA code	Export	Import	Trade balance
	Total trade	74701,3	98401,2	-23699,9
01	Products of agriculture and hunting	5879,2	2928,8	2950,4
02	Products of forestry and logging	11,5	226,7	-215,2
03	Fish and other fishing products, aquaculture products	9,2	95,6	-86,4
05	Coal and lignite	0,1	78,4	-78,35
06	Crude petroleum and natural gas	266	3709,6	-3443,6
07	Metal ores	63,1	530,1	-467
08	Other mining and quarrying products	51,8	120,1	-68,3
10	Food products	2172,4	6247,1	-4074,7
11	Beverages	202,3	570,3	-368
12	Tobacco products	1345,1	325,9	1019,2
13	Textile products	1355,4	2585,5	-1230,1
14	Wearing apparel	1778,8	2058	-279,2
15	Leather and related products	1142,8	1693,5	-550,7
16	Wood and products of wood (except furniture); articles of straw and plaiting materials	2196,1	777,5	1418,6
17	Paper and paper products	531,9	1477,1	-945,2
19	Coke and refined petroleum products	1739,6	2613,9	-874,3
20	Chemicals and chemical products	2522,4	9553,4	-7031
21	Basic pharmaceutical products and pharmaceutical preparations	997,2	4247,8	-3250,6
22	Rubber and plastic products	3897	4584,6	-687,6
23	Other non metallic mineral products	531,4	1533,5	-1002,1
24	Basic metals	5007,9	6631,8	-1623,9
25	Fabricated metal products (except machinery and equipment)	2305,8	4636	-2330,2
26	Computer, electronic and optical products	4520,6	8777,6	-4257
27	Electrical equipment	9557,2	8412,1	1145,1
28	Machinery and equipment n.e.s.	6965	9245,7	-2280,7
29	Motor vehicles, trailers and semi-trailers	13318,9	9392,6	3926,3
30	Other transport equipment	1611,8	869,6	742,2
31	Furniture	2193,8	999,5	1194,3
32	Other manufactured goods n.e.s.	723,8	1913	-1189,2
35	Electricity, gas, steam and air conditioning	561,1	989,5	-428,4
	Other products n.e.s.	1242,1	576,4	665,7