

The Dynamics of Trade in Vegetables in Romania

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Abstract: *The aim of the study was to identify current and future trends in terms of trade in vegetables in Romania starting from the analysis of imports and exports of horticultural products. The results of the research highlighted a significant imbalance in the trade in vegetables at the national level. The net higher values of imports compared to those of exports indicated that Romania presented an increased demand for vegetables imported from countries such as: Turkey, Holland, Germany, Poland and Spain, compared to exported values. This situation led to the registration of a deficit in the trade balance, which increased by 104 million euros in the last 3 years. The forecasts made for 2032 indicated a continuous increase in imports, reaching one million euros. At the same time, an increase in exports was anticipated, which will tend to reach 175 thousand euros, reflecting an attempt to compensate for the current imbalance.*

Keywords: trade, trade balance, vegetables, trends, forecasts

Introduction

The purpose of the paper is to present the dynamics of the vegetable trade in Romania and to make a forecast, with the help of the forecast function, based on the data provided by ITC regarding the import and export values of horticultural products.

The hypothesis of the research that is the basis of the substantiation of the study is the downward trend of trade flows with vegetables, which led to a deficit of the trade balance in Romania.

Horticulture is one of the traditional activities in Romania, a country that presents a very high potential in terms of growing vegetables, due to the climate and pedoclimatic conditions favorable to the cultivation of a wide variety of crops. The tradition of growing vegetables is proven by the large number of horticulturists, as well as by the areas cultivated with vegetables at the national level (Soare et al. 2012; Popescu, 2013).

Cultivating vegetables was one of the main activities of Romanian farms, which were strongly affected, both by the process of nationalization/collectivization in the communist period, and by the deficient retrocession in the post-communist period. But, starting in 2007, with

Romania's accession to the EU, investments in the agricultural field, including those in the vegetable sector, played an essential role, both by establishing new agricultural holdings and by modernizing existing ones (Tudor, 2018).

Cultivation of vegetables can be done both in the field and in protected spaces (solar). According to Micu et al. (2017), cultivation in protected spaces is much more efficient and ensures better production, both quantitatively and qualitatively, in addition it allows the production and marketing of products in the off-season.

The vegetable market in Romania has several particularities, such as: the atomization of demand and supply; the homogeneity, seasonality and perishability of the products as well as the existence of a poorly developed collection system at the regional level (Drigă, 2018).

Also, the offer of vegetable products has a seasonal character, due to which the phenomenon of price volatility appears for these categories of products. At the same time, due to the seasonal nature of production, the supply cannot cover the consumption needs of the population (demand). In this case, the solution is represented by imported goods. Studies show that approx. 40% of the vegetables consumed by Romanians are imported products (Ion & Dobre, 2015; Giucă & Petre, 2022).

Literature review

The vegetable sector has a very important role in ensuring food security, both globally and nationally. For this reason, trade flows with vegetables have become one of the major concerns of Romania, which is facing a deficit in the trade balance, which is increasing from year to year (Horning et al., 2021)

The research results of Constantin et al. (2022), validated the following hypothesis: an increase in the quantity of vegetables imported into Romania causes a sharp decrease in the national production of vegetables. In other words, the national production of vegetables is directly and negatively influenced by the imports of vegetable products, which are increasing and leading to a dependence of the country on the large global vegetable chains.

The results of the study carried out by Alboiu (2015), show a very low level of integration of small producers in the fruit and vegetable supply chain, determined by several constraints such as: high transaction costs and the lack of participation in collective actions for commercial purposes. Worldwide, especially in developing countries such as Romania, agricultural cooperatives are recognized as institutional commitments that support small farmers and help them overcome the constraints they face (Dumitru et al., 2023; Enthoven et al., 2023).

Currently, the Romanian horticultural chain is characterized by uncertainty regarding the production and marketing of vegetables, and this has a negative impact on farmers' incomes and investment decisions. In the research developed by Soare et al. (2012), a series of problems faced by producers, processors and distributors of vegetables in Romania were identified, among them are: difficulties in marketing vegetables in an optimal period of time, so that they do not it breaks down; low endowment of farms with modern technical means of production and harvesting, which causes poor productivity; fragmentation of agricultural land on which vegetables are grown, as well as the use of non-performing seeds.

According to Drigă, (2018), one of the most important problems faced by Romanian horticulturists is the difficult adaptation to the new production and marketing standards, following the model of developed EU countries, such as Germany, Denmark and the Netherlands.

In the specialized literature, studies present the gaps in terms of the development of the horticultural sector between Romania and EU countries. Many researches present the advantages

of different forms of cooperation of producers established in developed countries, which aim to defend the interests of producers, to achieve a better yield of production through its planning, to capitalize on production, economic growth and at the same time local development.

Another problem often encountered in the horticultural sector in Romania is represented by the practice of subsistence agriculture. In the vegetable sector, more than 90% of the producers practice small-scale agriculture, cultivating areas smaller than 3 ha, and their penetration into the large markets is very difficult. This fact has the effect of a weak development of exports, leaving room on the market for imported products (Bădan et al., 2020).

Also, another factor that influences the growth of imports of horticultural products in Romania is represented by the change in the consumption behavior of the population. Consumers have become much more informed and aware of the importance of eating healthy food, turning to organic vegetables (Küçük et al., 2023).

In recent years, the demand and supply of organic food products has registered a continuous growth, with fresh vegetables being the most sold product category on the European market. The results of a study by Rădulescu et al. 2021, shows that consumers' attitude towards the consumption of organic vegetables is directly influenced by: the information provided to them regarding the benefits of consuming organic products, personal needs and motivations, and other external influences.

Regarding the value chain of organic vegetables in Romania, the research developed by Dan & Jitea (2023) shows that it is quite simple and short. In approx. 50% of cases, there is a distributor only between the producer and the consumer, and the processing function is very poorly developed, approximately 90% of the vegetables end up being sold in their natural state.

With regard to the activity in the organic vegetable sector, the data presented in the study developed by Soare & Micu (2018), indicated in 2018 an average certified area of 252,752.08 ha, an average number of operators of 11,161 units and an average area of 22.64 ha per operator.

Methodology

This paper is based on data provided by International Trade Centre (ITC), examining the import and export of vegetables in Romania, with a focus on the main partner countries and the country's trade balance. Using the FORECAST forecasting method in SPSS, we developed estimates for Romania's vegetable imports and exports until the year 2032, based on the data recorded between 2010 and 2022. The purpose of this research is to determine the forecasts for Romania's vegetable imports and exports in the 2022-2032 range, thus contributing to the understanding and anticipation of market evolution in the coming period.

Results and discussions

In Romania, the situation of vegetable imports and exports shows a significant imbalance. The net higher values of imports compared to export values indicate that Romania has an increased demand for imported vegetables compared to what it manages to export. This situation can have economic and strategic implications, which requires a careful approach and the development of appropriate strategies for each group of vegetables. In this context, the Ministry of Agriculture and Rural Development (MADR) decided to grant a minimum aid for the cultivation of certain groups of vegetables, in order to ensure, as much as possible, a year-round market for vegetables produced in Romania.

It can be seen that the value of vegetable imports in Romania increased constantly until 2019. In 2010, the value of vegetable imports was 144 million euros, and in 2022 it reached the level of 632 million euros, representing an increase impressive over 338%.

During 2022, according to the TradeMap database, Romania imported vegetables worth 632.2 million euros and exported more than 4 times less, worth 142.6 million euros (Figure 1).

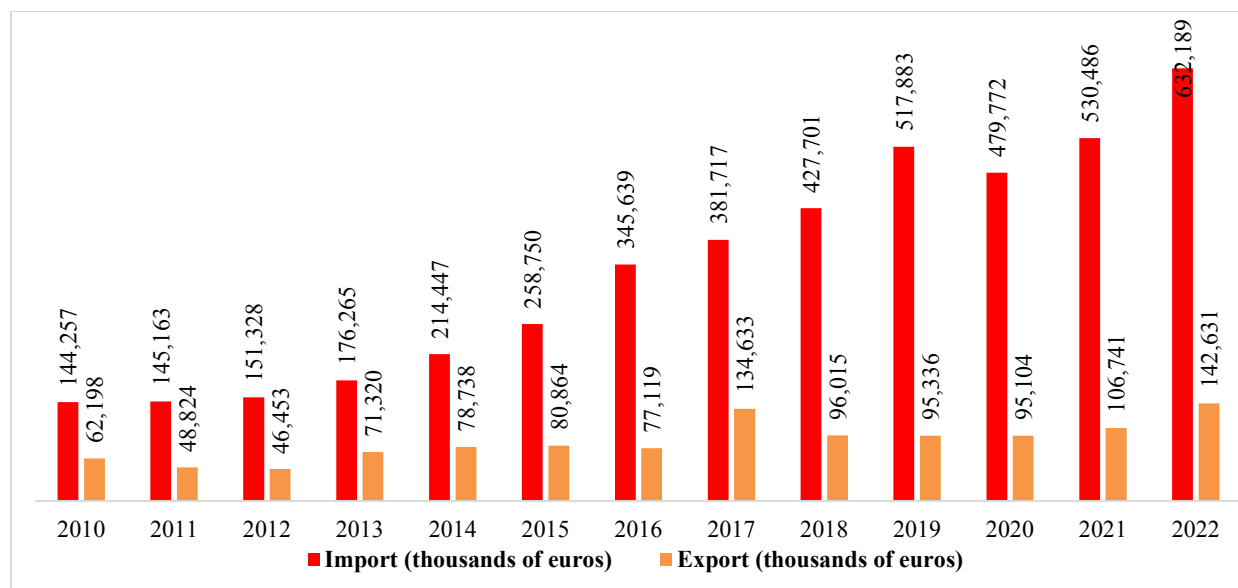


Figure 1. The evolution of import and export of vegetables in Romania in the period 2010-2022 (thousands of euros)

Source: TradeMap database, accessed October 2023.

As for the value of exports, it fluctuated in the time frame 2010-2022. The fluctuations can be explained by the variations in the total production of vegetables obtained in different periods, which influenced the selling price of vegetables and, implicitly, the volume of exports. In 2010, the value of vegetable exports was 62 million euros, and in 2022 it reached the level of 142 million euros, representing a significant increase of over 129% (Figure 1).

According to the trade data provided by the TradeMap database, the main countries from which Romania imports vegetables are Turkey, from where vegetables worth 134 million euros entered in 2022, the Netherlands (92.4 million euros), Germany (90.8 million euro), Poland (52.8 million euro) and Spain (40.8 million euro). Vegetable exports in 2022 are lower in value, with Romania exporting to Italy (66.5 million euros), Germany (13.5 million euros), Poland (11.1 million euros), Ukraine (10.1 million euros) and Hungary (97.8 million euros) (Table 1).

Table 1. The main countries from which Romania imported/exported vegetables in the period 2010-2022 (thousands of euros)

	Romania	IMPORT					Romania	EXPORT				
		Turkey	Netherlands	Germany	Poland	Spain		Italy	Germany	Poland	Ukraine	Hungary
2010	144,256	43,539	16,076	6,647	7,622	3,860	62,197	34,903	5,458	611	0	2,801
2011	145,161	26,370	19,354	11,646	8,045	5,479	48,822	19,345	6,067	306	0	3,984
2012	159,366	23,578	20,398	13,920	15,060	7,987	51,254	22,276	4,880	397	7	5,288
2013	184,477	16,570	25,924	14,597	20,754	14,807	80,092	37,089	7,516	1,823	51	7,401
2014	229,443	30,252	29,755	14,553	18,772	16,457	88,037	40,204	11,550	1,355	0	4,934
2015	273,492	34,306	35,761	24,551	22,904	24,404	90,798	47,063	12,483	1,423	9	3,720
2016	364,921	55,478	46,273	34,320	36,551	26,738	86,781	37,459	10,943	1,761	16	3,364
2017	403,333	69,380	47,537	41,493	44,366	28,034	143,306	50,904	11,265	2,467	29	3,935
2018	427,704	81,127	46,706	46,302	48,476	28,454	96,016	44,859	11,375	3,047	5	4,167
2019	517,882	75,916	73,037	62,408	56,258	42,006	95,338	45,307	10,641	4,418	15	4,285
2020	479,775	92,225	67,570	58,928	41,626	35,549	95,104	48,953	8,387	6,437	832	5,754
2021	530,486	113,442	71,445	70,216	42,563	37,020	106,738	51,026	12,143	9,034	1,043	6,537
2022	632,188	134,119	92,418	90,798	52,785	40,823	142,631	66,512	13,564	11,162	10,158	7,816
2022/2021	19.17	18.23	29.36	29.31	24.02	10.27	33.63	30.35	11.70	23.56	873.92	19.57
2022/2010	338.24	208.04	474.88	1266.00	592.53	957.59	129.32	90.56	148.52	1726.84	-	179.04

Source: TradeMap database, accessed October 2023.

Romania's vegetable trade balance deficit increased by 104 million euros in the last 3 years (2020-2022). In 2022, the trade deficit with vegetables was 489.5 million euros, 15% more than the previous year (Figure 2).

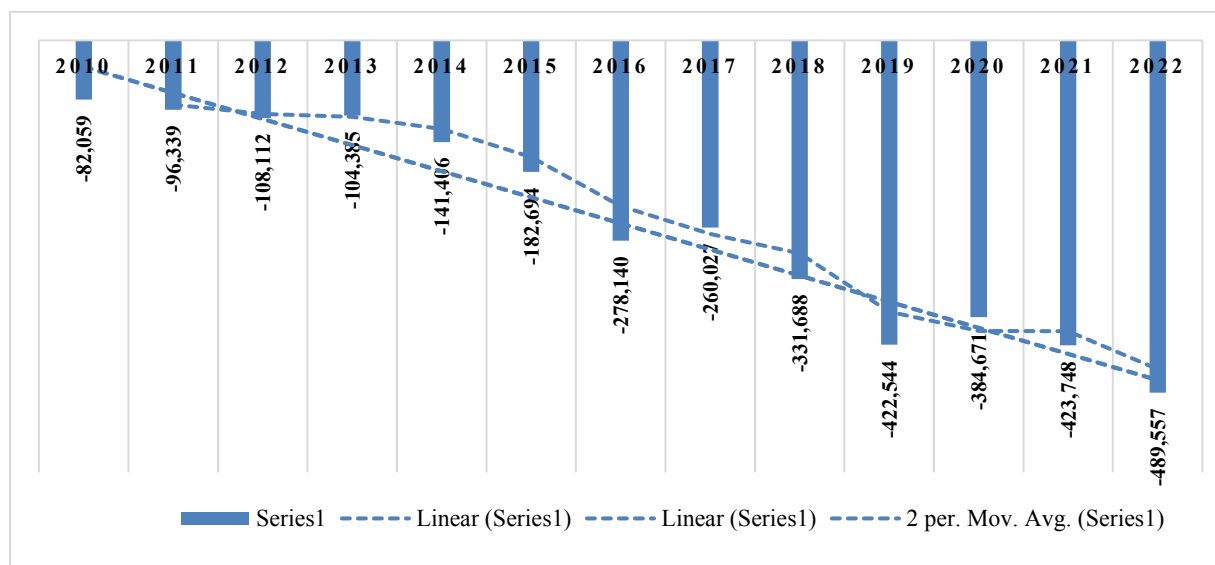


Figure 2. Trade balance with vegetables in Romania in the period 2010-2022 (thousands of euros)

Source: TradeMap database, accessed October 2023.

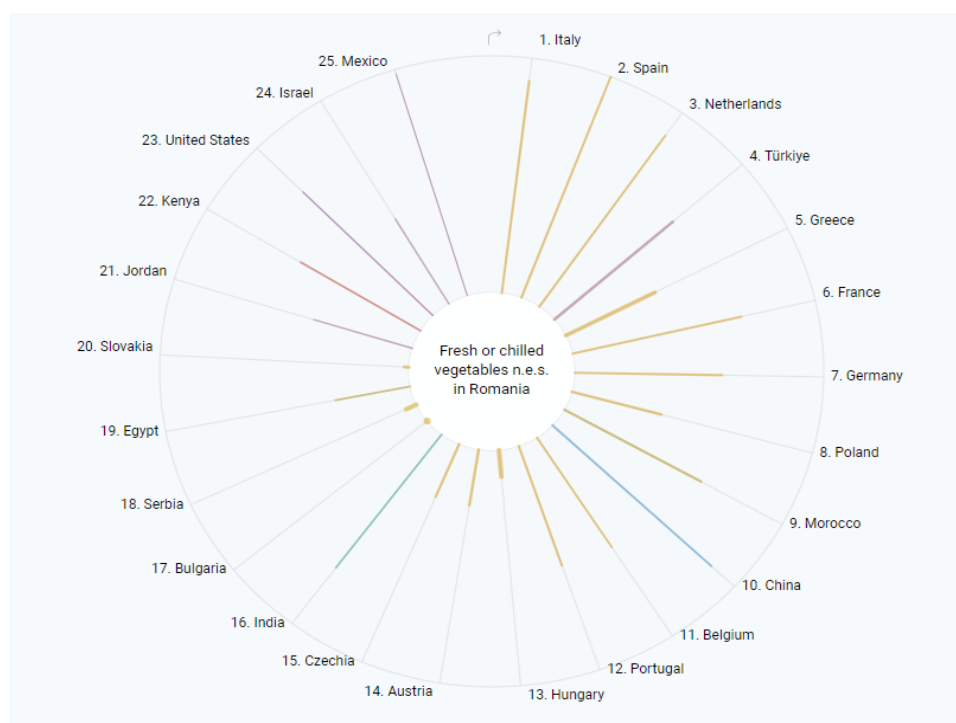


Figure 3. The suppliers with the greatest export potential in Romania of fresh or refrigerated vegetables

Source: Intracen.org.

The suppliers with greatest potential to export Fresh or chilled vegetables to Romania are Italy, Spain and Netherlands. Bulgaria has closest export links with Romania. Spain has the highest supply capacity in 0709Xb Fresh or chilled vegetables (Figure 3).

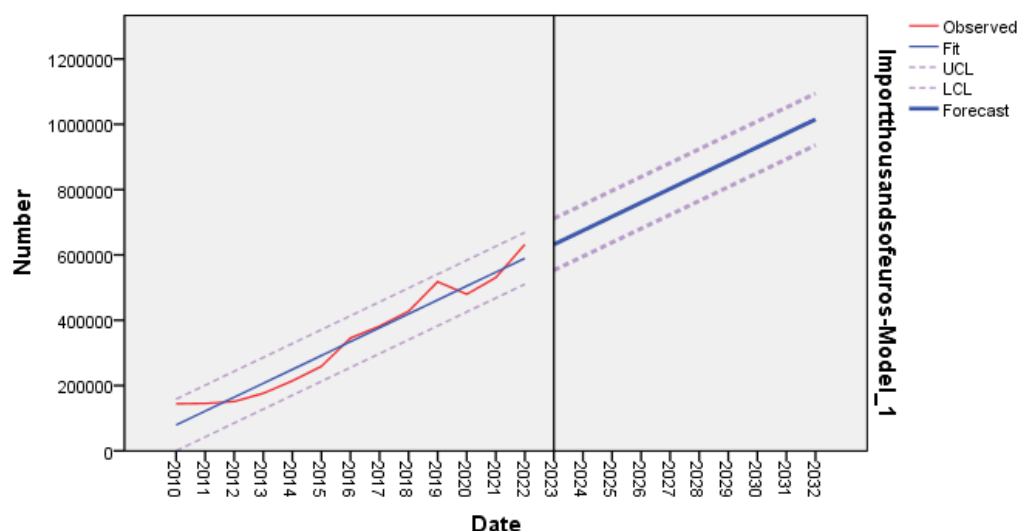


Figure 4. Forecasts regarding Romania's vegetable import

Source: Own processing based on Trademap data.

Romania's vegetable import in 2010 was 144.2 thousand euros, reaching in 2022 to import vegetables worth 632.2 thousand euros. According to estimates, in 2032, imports will reach one million euros, where the pessimistic version estimates imports worth 13 million euros, and the optimistic version estimates imports worth 90 thousand euros (Figure 4).

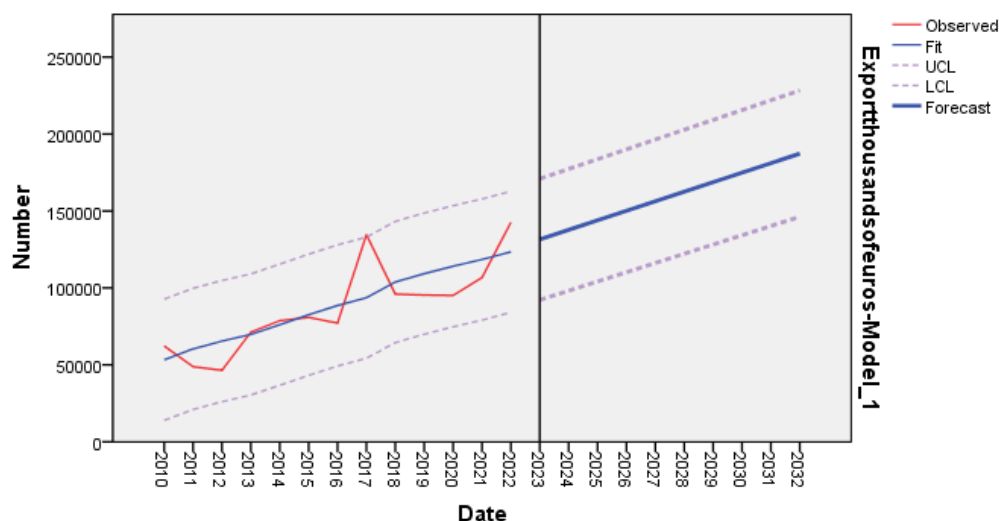


Figure 5. Forecasts regarding Romania's vegetable export

Source: Own processing based on Trademap data.

Regarding exports, in 2010, Romania exported vegetables worth 62.2 thousand euros, reaching in 2022 to export vegetables worth 142.6 thousand euros. According to estimates,

vegetable exports will reach 175 thousand euros; the pessimistic version estimates exports worth 140 thousand euros, while the optimistic version estimates exports worth 123 thousand euros (Figure 5).

The foreign trade forecast was made based on the time period, in addition to the time factor, it can also be influenced by: the volatility of prices for horticultural products, extreme weather phenomena (temperature and amount of precipitation), the degree/level of productivity.

Conclusion

Vegetable import values have seen steady growth through 2019, reaching a remarkable level in 2022, showing a significant increase of over 338% between 2010 and 2022. This underlines a trend of increasing import dependence. In parallel, vegetable exports recorded significant fluctuations in the period 2010-2022, influenced by the variability of total vegetable productions. With an increase of over 129% over the same period, exports reflect the market's ability to adapt and diversify its destinations.

Analysis of trade data reveals that the main partner countries for vegetable imports include Turkey, the Netherlands, Germany, Poland and Spain. Instead, exports are mainly directed to Italy, Germany, Poland, Ukraine and Hungary. There is also a deficit in the trade balance with vegetables that has grown steadily in recent years, reaching 489.5 million euros in 2022. Projections for 2032 suggest a continuation of this trend, having a significant impact on the national economy.

Estimates for 2032 indicate a continuous increase in imports, reaching one million euros. At the same time, exports are expected to reach 175 thousand euros, reflecting an attempt to compensate for the current imbalance. These developments underline the importance of a careful approach and effective strategies to manage this discrepancy and sustain trade balance in the vegetable sector.

Acknowledgment

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