



XXXI International Scientific Conference
Strategic Management
 and Decision Support Systems
 in Strategic Management
Sm2026

Subotica (Serbia), May 18, 2026

Mladen Subotic

Faculty of Economics

Subotica, Serbia

suboticmladen01@gmail.com

Participation (direct/virtual):

virtual

JEL: Q00

EXPORT COMPETITIVENESS OF TOBACCO AND TOBACCO PRODUCTS OF THE REPUBLIC OF SERBIA IN THE PERIOD FROM 2014 TO 2024

Abstract: The tobacco industry represents one of the industrial sectors that attracts the attention of scientific researchers, both due to its economic significance and its impact on human health. The focus of this paper is to determine the export competitiveness of tobacco and tobacco products of the Republic of Serbia in the period from 2014 to 2024. The relevant indicators of export competitiveness used in the analysis are the Revealed Comparative Advantages (RCA) index and the Lafay index. The analysis covers the trade of Serbian tobacco and tobacco products with the EU and CEFTA countries. The results differ depending on the applied indicator, given that the Lafay index incorporates both imports and exports in its calculation, whereas the RCA index excludes the impact of imports. In the observed period, the preliminary results indicate the existence of both comparative advantages and disadvantages in relation to the observed groups of countries; however, the results vary within the period and depending on the applied indicator of comparative advantage. The conclusion is that there is an expansion in the exports of Serbian tobacco and tobacco products, accompanied by the achievement of comparative advantage, but their presence changes over the years and depending on the indicators used.

Keywords: tobacco, export, import, comparative advantage, Lafay index, RCA index.

1. INTRODUCTION

The tobacco industry represents a set of economic activities encompassing the cultivation, processing, manufacturing, packaging, distribution, and sale of tobacco-based products (World Health Organization & National Cancer Institute, 2017). It is characterized by high levels of organization and significant oversight by state institutions and regulatory bodies, high capital concentration, and the presence of several multinational companies that hold the majority market share. The tobacco supply chain is a series of interconnected activities that track tobacco from its production—namely, the raw leaf—all the way to the finished product. The primary stages of the tobacco supply chain can be outlined as follows:

1. **Tobacco production** (cultivation on agricultural farms, as well as harvesting);
2. **Processing and fermentation** (the process of treating raw, unprocessed tobacco and its preparation for distribution to tobacco product manufacturers);
3. **Industrial manufacturing** (processed tobacco is used for the production of cigarettes, cigarillos, smokeless tobacco, etc.);
4. **Packaging and distribution;**
5. **Trade, retail and marketing.**

Regarding the impact of tobacco on human health, it is essential to emphasize that despite its proven negative effects, tobacco continues to have widespread use and is a daily fixture in the consumption patterns of a large portion of the population. According to data from the World Health Organization (WHO), tobacco is one of the leading causes of premature death in humans, estimated to claim approximately 7 million lives annually, including 1.6 million non-smokers who are exposed to tobacco as secondary users (World Health Organization, 2025). Key steps in the process of reducing tobacco use include even stricter market control and oversight, professional assistance for users wishing to quit tobacco consumption, bans on the advertising of tobacco products, and tax increases. The subject of this research is the analysis of the persistence of comparative advantages in the export of tobacco and tobacco products from Serbia in the period from 2014 to 2024. The aim of the research is to identify Serbia's export position using the RCA and LFI indices. First, an analysis of scientific literature on the topic of tobacco will be conducted in the Literature Review section. The research methods and approach will be presented in the Methodology chapter. The results obtained through the observed methodology will be presented in the Research Results section. The analysis of the results and their theoretical foundation will be detailed in the Discussion section. The summary of research results and findings will be expressed in the Conclusion chapter.

2. LITERATURE REVIEW

Several studies examine various aspects of the Serbian tobacco industry. For this research, studies focusing on the export position of the Serbian tobacco industry are of greater significance; however, papers that observe the domestic tobacco market can also be relevant for the analysis and explanation. The position of the Serbian tobacco industry on the international market, as well as on the EU and CEFTA markets, was analyzed by Zekić and colleagues (Zekić et al., 2016). First, the development of production and trade performance of tobacco and tobacco products was observed. The aforementioned authors analyzed the period from 2006 to 2013 and pointed out that the average growth rate of tobacco production in the observed period was -2.46%. The highest production was recorded in 2009, when approximately 10.5 thousand tons of tobacco were produced on an area of about 6.5 thousand hectares, amounting to approximately 1.62 tons per hectare. The negative average growth rate of tobacco production is a consequence of the negative contribution of cultivated land, whose average annual growth rate in the observed period was -2.77%. The tobacco supply chain is divided into three links: tobacco growers, tobacco processors, and industrial manufacturers of tobacco products. Tobacco growers are identified as farms, most commonly family-owned holdings, which cultivate tobacco based on agreements and in cooperation with tobacco processors. In the period from 2006 to 2012, a massive decline in the number of holdings specialized in tobacco cultivation was observed, while on the other hand, the average planted area per hectare and production per farm increased (Matkovski & Đokić, 2014). The abolition of support for tobacco production is cited as the key cause of this phenomenon, which dealt a severe blow to agricultural holdings that financed their production through these funds, leading them to abandon production. Tobacco processors are enterprises engaged in the processing and fermentation of raw tobacco obtained from growers, which is then transported in its processed form to industrial manufacturers of tobacco products. The most prominent multinational companies involved in the manufacturing of tobacco products are China National Tobacco Corporation, Japan Tobacco International, British American Tobacco, Philip Morris International, Altria Group Inc, and Imperial Tobacco Group, while in Serbia, the operating companies include Japan Tobacco International, which privatized the tobacco industry in Senta, British American Tobacco, which privatized the tobacco industry in Vranje, and Philip Morris International, which privatized the tobacco industry in Niš (Vuković, Mijić & Spahić, 2015). Regarding trade performance, specifically Serbia's position in foreign markets, there was a constant increase in the value of exported tobacco and tobacco products between 2006 and 2013. In each year, the share of processed tobacco exports within the total exports of the agri-food sector was higher than the share of unprocessed tobacco exports in the same sector (Zekić et al., 2016). In the observed period, a decline in tobacco imports was recorded until 2007, after which a steady growth occurred. The abolition of the per-kilogram premium for domestic tobacco producers is highlighted as a possible reason for this phenomenon, as it led to a price increase and prompted processors and industrial manufacturers to seek cheaper imported tobacco. It is also important to note that Serbia's foreign trade position changed significantly during the observed period, given that the Stabilization and Association Agreement between Serbia and the EU entered into force on September 1, 2013, which substantially facilitated the export of Serbian products to EU member states. Furthermore, the CEFTA agreement established a free trade zone, introducing a duty-free regime with CEFTA member countries (Nuševa et al., 2024). Regarding the methodology used by Zekić and colleagues (Zekić et al., 2016), several comparative advantage indicators were employed. These indicators include the Revealed Comparative Advantage index (RCA), the Lafay Index (LFI), and the Grubel–Lloyd Intra-Industry Trade index (GLIIT). The results obtained by applying the RCA index showed that during the observed period, Serbia achieved a comparative advantage in the export of tobacco and tobacco products in all years except 2006, with a noticeable upward trend in this indicator. When focusing on specific markets, comparative advantages are present in the international market and the EU market. However, comparative disadvantages were observed in the CEFTA market, as the recorded RCA values were below the reference threshold. It is also significant to mention that despite the identified comparative disadvantages, the Serbian tobacco industry has recorded a constant growth in RCA index values within the CEFTA market. Looking at the results obtained via the LFI, a completely different situation is evident. According to this indicator, Serbia records comparative advantages in tobacco industry exports within the CEFTA market, while recording comparative disadvantages in the EU market. The difference in

results is primarily a consequence of the distinction between these two methods. On one hand, RCA only takes into account product exports and their share in the country's total exports (Balassa, 1965), while LFI examines the country's overall foreign trade position, i.e., both exports and imports (Lafay, 1992). Analyzing the trade balance, Serbia records a negative balance with the EU and a positive one with CEFTA. Therefore, the LFI points to comparative disadvantages in the EU market and comparative advantages in the CEFTA market (Zekić et al., 2016). The Grubel–Lloyd Index (Grubel & Lloyd, 1975) indicates the integration of a specific product into foreign markets. According to the research results, tobacco and tobacco products from Serbia are well-integrated into international markets, particularly the EU and CEFTA, with a steady upward trend in the indicator from 2006 to 2013 (Zekić et al., 2016). The paper concludes that the LFI is the most reliable tool for analyzing export comparative advantages due to the comprehensiveness of the method.

An analysis of the characteristics of the tobacco and tobacco products supply chain in Serbia was conducted by Tica et al. (2023). Their study covers the period from 2013 to the latest year for which data were available. This research is significant as it fills a gap in the literature regarding the tobacco industry—a gap largely resulting from pressures to reduce the consumption of tobacco and related products within the European Union. Conversely, due to less stringent regulations, literature on the Serbian tobacco industry remains accessible and diverse. The distinctiveness of this work lies in its comprehensive analysis of the entire supply chain, from production to consumption and export, further enhancing its importance. Regarding the Serbian tobacco industry specifically, a significant decline in the number of tobacco growers is observable. During the observed period, the number of producers fell from 1,781 to 775 (Tica et al., 2023), representing a substantial decrease of 56.5%. However, the same period saw a rise in total tobacco production and the average planted area per farm. This suggests that only the most productive producers—those capable of achieving economies of scale and operating independently of state support (which was abolished in 2011)—have remained in the market. Notably, Serbia is the sixth-largest tobacco producer in Europe and the only country where production is increasing, at a rate of approximately 1% annually. This trend contrasts sharply with the rest of Europe, particularly EU member states, where public policies are directed toward reducing production and consumption in accordance with EU regulations. As for other supply chain participants, there are 12 processors operating in Serbia, four of which are companies that also manufacture tobacco products. To analyze market concentration, the Herfindahl–Hirschman Index (HHI) was utilized, measuring the market share of specific companies relative to the total number of firms. The analysis determined that between 2013 and 2021, the Serbian tobacco market was highly concentrated. This resulted in significant market power for manufacturers, allowing them to offer lower purchase prices to tobacco growers while selling finished products to consumers at higher prices than those that would prevail under competitive conditions. Swinnen and Vandeplas (2010) defined this phenomenon as "double market power." However, a downward trend in the HHI was also noted during the period, indicating the entry of new market players, increased competition, and a subsequent decline in tobacco product prices. The authors also conducted a regression analysis to examine the impact of factors such as the HHI, liquidity, indebtedness, firm size, asset turnover (fixed and current), and growth on Return on Assets (ROA). The results indicated that the HHI, liquidity, and leverage exert a negative impact on firm profitability (ROA). Conversely, factors such as firm size, asset turnover, and growth positively influence this indicator. Regarding consumers, tobacco consumption remains very high and above the EU average, partly due to the relatively low price of tobacco products.

Research by Vladisavljević et al. (2020) provides insight into the price-inelastic demand for cigarettes in Serbia, suggesting that price changes do not significantly alter demand. Using Deaton's demand model (1988), the authors found that for the period 2006–2017, the price elasticity coefficient for cigarettes in Serbia was -0.639. Thus, a 1% increase in price leads to a reduction in demand of only 0.64%. Consequently, Serbian consumers lack adequate substitutes for cigarettes, a fact the state could leverage to increase excise taxes and fiscal revenue. While increasing excises could theoretically serve the social goal of reducing cigarette use and improving public health, the findings suggest that the habits of Serbian smokers do not change significantly due to price hikes, implying that the public health effect might be negligible.

The export of tobacco and tobacco products from Serbia has shown steady growth, averaging 6% annually, and accounted for approximately 8% of Serbia's total agri-food exports on the global market during the analyzed period. Furthermore, since 2014, the tobacco industry has maintained a consistent positive trade balance due to higher exports relative to imports. Regarding comparative advantage, the Lafay Index (LFI) indicates very weak (CEFTA) or non-existent (EU) advantages, resulting from increased imports during the period. From 2013 to 2022, Serbian imports of tobacco products grew by an average of 11% annually, with half of these imports originating from the EU. This explains the lack of comparative advantage in trade with the EU, as the LFI methodology incorporates imports into its calculation. However, an increase in comparative advantage was observed in exports to non-traditional trade partners (Algeria, Japan, Egypt, Israel, and Turkey), which is expected given that approximately 80% of total tobacco exports were directed to these countries. Regarding the degree of market integration, measured by the Grubel–Lloyd Intra-Industry Trade (GLIIT) index, values were above the reference threshold, indicating good integration. However, a significant decline in integration with CEFTA countries was noted, dropping from approximately 72% in 2013 to only 21% in 2022. By utilizing these methods and indicators, this paper provides a comprehensive analysis of the Serbian

tobacco industry, encompassing the entire supply chain and export competitiveness. Furthermore, it builds upon the work of Zekić et al. (2016) (covering 2006–2013), allowing for a broader perspective over an extended timeframe.

3. METHODOLOGY

The analysis of the comparative advantages of Serbian tobacco exports was conducted using the Revealed Comparative Advantage (RCA) index and the Lafay Index (LFI), in relation to the global level, the EU, and CEFTA. The selection of these two indicators is logical, considering they are the most frequently used in the available literature analyzing the comparative advantages of countries or regions. Data on Serbia's total exports and imports, as well as the exports and imports of Serbian tobacco, were retrieved from the website of the Statistical Office of the Republic of Serbia (SORS, 2025). Regarding the data on total exports and imports at the EU and CEFTA levels, as well as data on their tobacco exports and imports, they were obtained from the FAO website (2026).

In this paper, the analysis was first conducted using the RCA index. This index was first introduced by Balassa (1965) and later modified by Vollrath (1991). This study utilizes the original version of the index, which compares the share of a specific good's exports in a country's total exports to the share of the same good's exports in the total exports of the country or group of countries with which the comparison is made, or where comparative advantages are being examined. The formula for the RCA index is as follows:

$$RCA_{i,j} = \frac{\frac{X_{i,j}}{X_{i,t}}}{\frac{X_{w,j}}{X_{w,t}}}$$

Where:

- $X_{i,j}$ – exports of product j from country i
- $X_{i,t}$ – total exports of all goods t from country i
- $X_{w,j}$ – exports of product j from the group of countries w
- $X_{w,t}$ – total exports of all goods t from the observed group of countries w .

RCA index values greater than 1 signal the existence of comparative advantages in the export of the observed product compared to the reference group of countries, while index values less than 1 indicate the existence of comparative disadvantages.

The second index used is the LFI. It differs from the RCA because it takes imports into account as well, rather than just exports. It was introduced by Lafay (1992), and its formula is:

$$LFI_j^i = 100 \left(\frac{x_j^i - m_j^i}{x_j^i + m_j^i} - \frac{\sum_{j=1}^N (x_j^i - m_j^i)}{\sum_{j=1}^N (x_j^i + m_j^i)} \right) \frac{x_j^i + m_j^i}{\sum_{j=1}^N (x_j^i + m_j^i)}$$

Where:

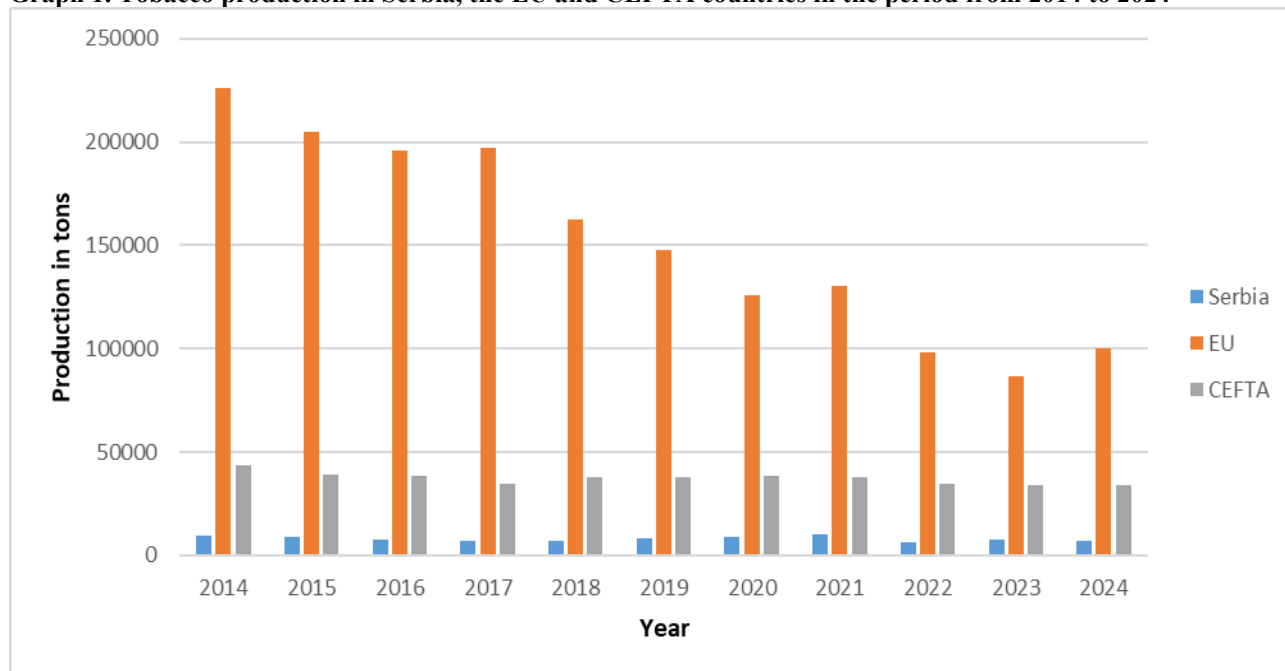
- x – export
- m – import
- i – country
- j – product
- N – number of observed units.

If the LFI values are greater than 0, it is concluded that the country achieves a comparative advantage in the export of the observed product, while values less than 0 signal comparative disadvantages.

4. RESEARCH RESULTS

In order to comprehend and accurately interpret the research findings, it is essential to analyze indicators such as tobacco production, as well as the export and import of tobacco and tobacco products. In this context, the following graph illustrates tobacco production in Serbia, the EU, and CEFTA countries during the observed period.

Graph 1. Tobacco production in Serbia, the EU and CEFTA countries in the period from 2014 to 2024

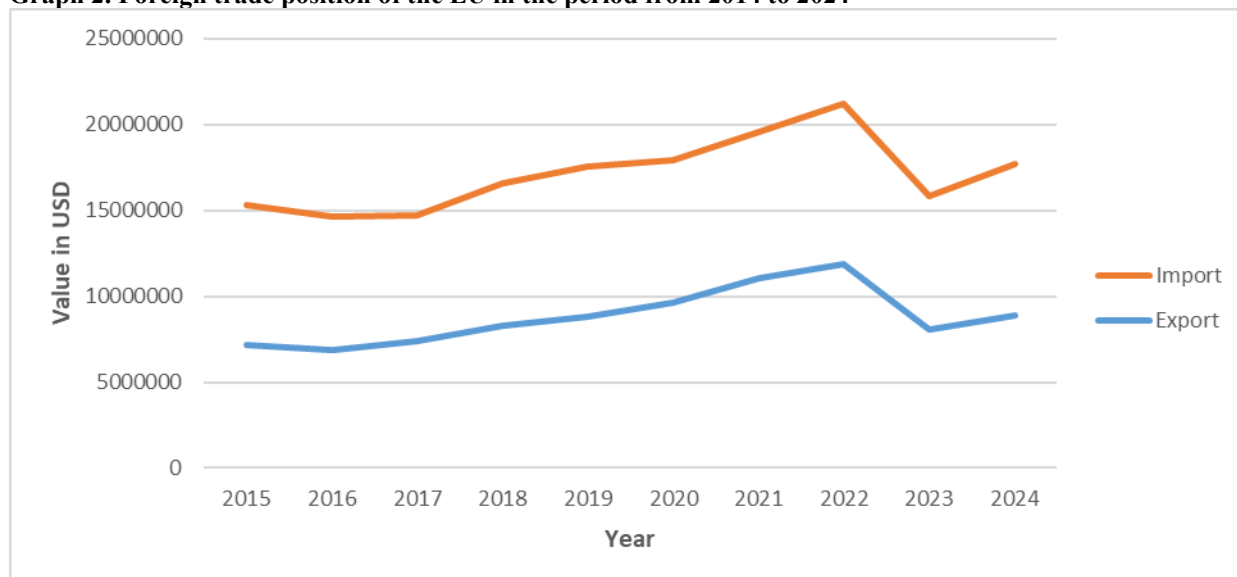


Source: Author's illustration based on FAO data (2026).

It can be observed that the EU records by far the highest quantities of tobacco produced compared to CEFTA and Serbia; however, a declining trend is evident throughout the observed period. As expected, Serbia realizes the lowest production levels, characterized by minor fluctuations over the years. A similar situation is observed regarding the CEFTA countries, whose production levels are situated between those of the EU and Serbia.

The next essential indicator is foreign trade, specifically the comparison between the export and import of tobacco and tobacco products. In this segment, the EU achieves the highest export value for tobacco and tobacco products, characterized by steady growth from 2014 to 2022, followed by a decline in 2023 and 2024. Interestingly, throughout all the observed years, the import of tobacco and tobacco products consistently exceeded exports; thus, it can be concluded that the EU maintains a negative trade balance for this product group.

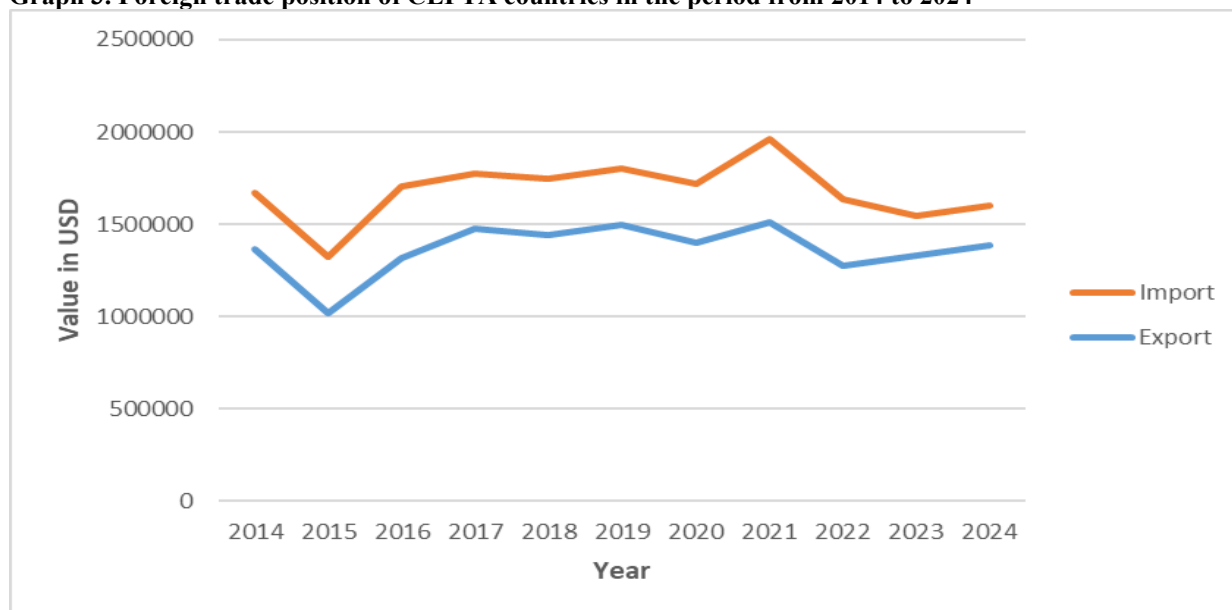
Graph 2. Foreign trade position of the EU in the period from 2014 to 2024



Source: Author's illustration based on FAO data (2026).

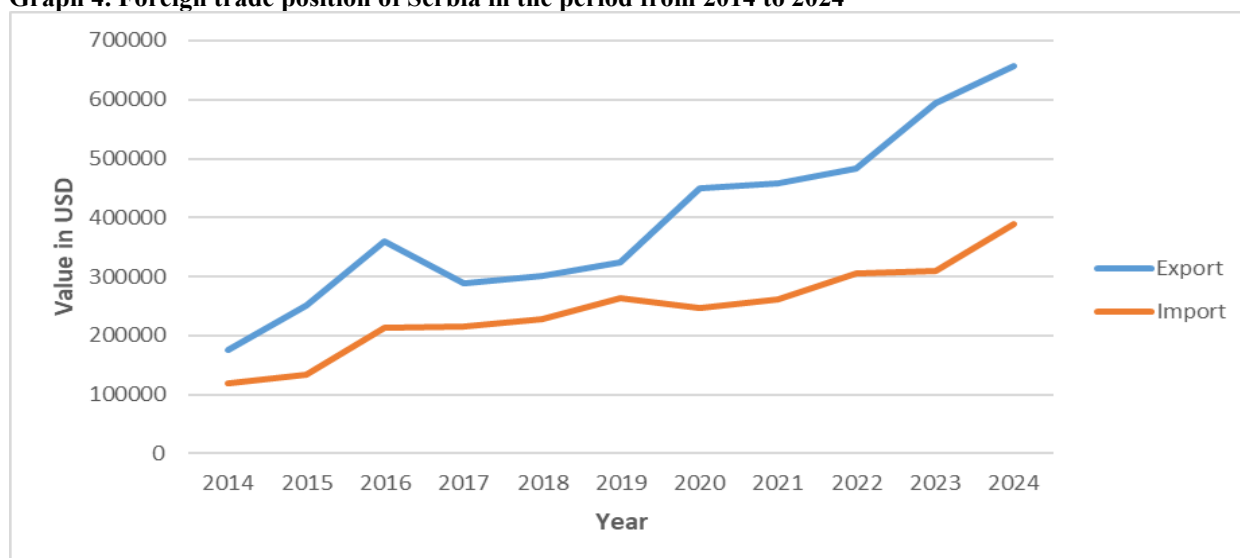
A similar situation is observed within CEFTA countries, although they record significantly lower values in both the export and import of tobacco and tobacco products. Conversely, Serbia maintained a positive trade balance in every year of the observed period, accompanied by a predominantly upward trend in exports. The only decline in exports occurred in 2017 compared to 2016, while the largest trade surplus for this product group was recorded in 2023 and 2024.

Graph 3. Foreign trade position of CEFTA countries in the period from 2014 to 2024



Source: Author's illustration based on FAO data (2026).

Graph 4. Foreign trade position of Serbia in the period from 2014 to 2024



Source: Author's illustration based on FAO data (2026).

The values presented in the graphs are expressed in USD. In view of the observed export and import trends, it is evident that Serbian exports of tobacco and tobacco products have been undergoing an expansion in recent years; consequently, the realization of comparative advantages in this field is also expected in the forthcoming period.

Regarding the research results, it is noticeable that they vary depending on the applied indicator, as well as the group of countries. This discrepancy primarily stems from the calculation methods of the observed indicators, given that the LFI considers both the import and export values of the product, while the focus of the RCA is solely on exports.

Table 1. Comparative advantages in the export of tobacco and tobacco products from Serbia relative to the EU and CEFTA in the period from 2014 to 2024

YEAR	EU/CEFTA	RCA	LFI
2014	EU	3.28	-9.93
	CEFTA	0.02	2.42
2015	EU	1.52	-21.55
	CEFTA	0.02	2.66
2016	EU	0.82	-25.94

	CEFTA	0.01	3.66
2017	EU	1.33	-6.85
	CEFTA	0.02	5.99
2018	EU	1.37	-6.21
	CEFTA	0.03	5.76
2019	EU	1.84	-15.35
	CEFTA	0.02	5.66
2020	EU	0.70	-18.59
	CEFTA	0.01	2.89
2021	EU	0.74	-19.78
	CEFTA	0.02	3.54
2022	EU	1.34	-24.14
	CEFTA	0.03	3.91
2023	EU	1.24	-29.30
	CEFTA	0.03	4.35
2024	EU	1.07	-33.77
	CEFTA	0.03	5.39

Source: Author's calculation.

Regarding the RCA index, when values are greater than zero, the existence of comparative advantages in the export of the observed product is established. Based on the table, it is concluded that comparative advantages exist in trade with the EU in all years, except for 2016, 2020, and 2021. As for the CEFTA countries, no comparative advantages are recorded. With the LFI, the situation is somewhat different. There is a complete absence of comparative advantages in exports to the EU, whereas significant comparative advantages in trade with CEFTA countries are recorded throughout all years of the observed period. The explanation for this may lie in the different methodologies used to calculate comparative advantages, given that the RCA index relies solely on export values, whereas the LFI index incorporates imports into the analysis as well. Accordingly, during the observed period, Serbia recorded a higher share of tobacco and tobacco product exports compared to the EU, except in the years where an absence of comparative advantage was noted. Conversely, when imports of these products are taken into account, the existence of comparative advantage in trade with the EU is entirely eliminated, whereas comparative advantages in trade with CEFTA are observed in every single year of the period under review. It is concluded that CEFTA accounts for a higher share of tobacco and tobacco product imports relative to Serbia. Reviewing the import-export dynamics once more, it can be stated that the obtained results are largely consistent with expectations.

5. DISCUSSION

The research findings primarily highlight the discrepancies between the methods employed to identify comparative advantages or disadvantages. The RCA index relies exclusively on the export performance of the observed country or group of countries. In contrast, the LFI incorporates import characteristics alongside exports, rendering it a more comprehensive methodology for determining a country's foreign trade position regarding a specific product or product group. In this specific case, comparative advantages in the export of tobacco and tobacco products from Serbia relative to the EU were identified for nearly every year of the observed period. This outcome is expected, considering the negative foreign trade position of the EU and the consistent growth of Serbia's tobacco industry exports. Furthermore, it is notable that Serbia did not achieve a comparative advantage over the EU in 2020 and 2021, which can be attributed to the COVID-19 pandemic and the subsequent disruptions in trade flows. Regarding the CEFTA region, the RCA index suggests the existence of comparative disadvantages in the export of tobacco and tobacco products. Much like the EU, CEFTA maintains a negative trade balance for this product group; however, the deficit among CEFTA countries is significantly smaller, which explains the RCA values being below the reference threshold. Conversely, the LFI index presents a different perspective. According to this metric, Serbia does not achieve comparative advantages in tobacco trade with the EU, while the comparative advantages in trade with CEFTA are substantial and exhibit a continuous upward trend. This discrepancy underscores the importance of including imports in the analysis; it suggests that while Serbia maintains a negative foreign trade position with the EU, it records an increasing trade surplus with CEFTA countries. It is evident that the inclusion of imports significantly alters the perception of a country's export competitiveness, particularly in instances where a negative trade balance exists with the specific country or group of countries serving as the benchmark (Akbaş & Sancar, 2021). These findings align with the results of Zekić et al. (2016), who also identified comparative advantages with the EU using the RCA index and with CEFTA through the LFI index. Due to the timeframe analyzed, this study serves as a longitudinal extension of the aforementioned research, confirming that the import-export dynamics of the Serbian tobacco industry have remained largely consistent across the observed periods. The limitation of this study lies in the relatively short observation period, which is a consequence of data

unavailability for a longer timeframe. A better insight into the existence of comparative advantages and the factors influencing them could be achieved if higher-frequency data were available, such as on a quarterly or monthly basis. Regarding tobacco production, which serves as a key determinant of export performance, it is crucial to observe that production within EU member states has experienced a continuous decline between 2017 and 2024, notwithstanding minor fluctuations. This downward trend is driven by increasingly stringent regulations aimed at tobacco control and a broader societal shift toward smoke-free environments and healthier lifestyles, complemented by frequent bans on tobacco use in both indoor and outdoor public spaces. In contrast, such regulations are notably more lenient in CEFTA countries and Serbia, where sharp declines in production have not been recorded. Furthermore, according to research by Tica et al. (2023), Serbia ranks as the sixth-largest tobacco producer in Europe and is the only country recording production growth (at a marginal annual rate of 1%). This climate fosters a favorable environment for maintaining a positive foreign trade position—primarily through exports—as evidenced by the results obtained via the RCA index. However, import values remain substantial and can significantly alter the perception of a country's trade position. For Serbia, the period following the abolition of production-based subsidies (per kilogram of tobacco) proved particularly challenging, as it led to price increases and a subsequent shift in demand toward cheaper imported alternatives. This factor contributes to the negative results yielded by the LFI index in trade with the EU. Conversely, research by Vladisavljević et al. (2020) provides a counterargument. Their study examines consumer behavior within the Serbian tobacco market, highlighting the price inelasticity of demand for this product group. The authors report a price elasticity coefficient of -0.639, implying that a 1% increase in tobacco prices results in a demand reduction of only 0.64%, which is statistically marginal. Although the study by Vladisavljević et al. (2020) covers only a portion of the period analyzed in this paper (2014–2017), its findings are instrumental in understanding the positive foreign trade position with CEFTA identified through the LFI method. In essence, despite rising prices, consumer habits among Serbian smokers remain largely unchanged, suggesting that demand persists consistently for both domestic and imported tobacco products.

6. CONCLUSION

The paper presents methods for determining comparative advantages in exports and provides an explanation of the export position of the Serbian tobacco industry regarding the EU and CEFTA markets from 2014 to 2024. Based on the available literature, the most significant indicators of export competitiveness were determined and subsequently applied in this study. The RCA index identified comparative advantages in the export of Serbian raw tobacco on both the global and EU markets, while indicating comparative disadvantages within the CEFTA market. Conversely, the LFI pointed to a lack of comparative advantages on the global market, moderate comparative advantages in the EU market, and the existence of certain comparative advantages within the CEFTA market. It was established that the discrepancy in results stems from the methodological differences between these indicators; furthermore, because the LFI incorporates imports into the analysis, it represents a more reliable measure of competitiveness.

The results demonstrate that the comparative advantage in exporting a specific product is not solely dependent on a country's export performance; rather, other significant factors fundamentally influence and reshape the foreign trade outlook of the observed country or group of nations. Foremost among these is import performance, which necessitates integration into the analysis—a core feature of the LFI methodology. By combining export data with import dependency, a more comprehensive view of the national trade balance is achieved, further validating the LFI index as a more reliable instrument for determining comparative advantages. In addition to imports, domestic production plays a pivotal role in establishing export potential. Although the number of tobacco producers in Serbia is declining, there is a concurrent increase in total output and the total area of land dedicated to tobacco cultivation, indicating a trend toward production consolidation and the emergence of fewer, larger-scale producers. Focusing on the Serbian context, the cessation of production-based subsidies (per kilogram of tobacco) led to the dissolution of smaller agricultural holdings. This underscores that state economic policies significantly dictate a country's foreign trade position and its subsequent ability to secure comparative advantages. The EU case provides further empirical confirmation, where stringent regulations aimed at tobacco control have led to a persistent decline in production, a subsequent drop in exports, and a resultant negative trade position. Furthermore, market characteristics—such as scale, concentration, and consumer behavior—are critical determinants. While the EU market is the largest and exhibits the highest demand for tobacco products, anti-tobacco policies have constrained supply, leading to price increases. It can be posited that these price hikes exert an additional positive impact on public health and the reduction of tobacco smoke emissions within the EU. Conversely, Serbia presents a distinct contrast, as evidence shows that price fluctuations have a negligible impact on consumers' decisions to cease tobacco use. The CEFTA region represents a medium-sized market relative to the EU and Serbia, characterized by a balanced demand for both domestic and imported tobacco products based on observed trade flows. In conclusion, the primary determinants for achieving comparative export advantages include exports, imports, production volume, market and consumer characteristics, and the regulatory frameworks of the observed regions. Consequently, it is not unexpected that different indicators yield diverging results; it is imperative that the aforementioned determinants of export competitiveness be carefully considered when applying any specific methodological framework.

This study could be useful to various interest groups, such as:

- State authorities and institutions – the research results can be utilized by policymakers in the fields of agriculture, economics, and trade to design and implement more effective export support strategies for tobacco and tobacco products.
- Tobacco supply chain participants – tobacco growers, processors, and manufacturers of tobacco products can utilize this analysis for production and sales planning based on the research findings.
- Economic analysts and researchers – this paper can serve as a starting point for further research on the export competitiveness of the agri-food sector, the tobacco industry as a whole, or specific products. Furthermore, since the focus is on Serbia's export competitiveness, the research findings can be used for benchmarking against other countries or for comparing tobacco with other products that hold a significant share of Serbia's total exports.

Future research could focus, provided that data is available, on the export competitiveness of tobacco products or the entire tobacco industry over a longer period; additionally, it could investigate the degree of integration of these products into international markets.

References

- Akbaş, Y. E., & Sancar, C. (2021). The impact of export dynamics on trade balance in emerging and developed countries: An evaluation with middle income trap perspective. *International Review of Economics & Finance*, 76, 357–375. <https://doi.org/10.1016/j.iref.2021.06.014>
- Balassa, B. (1965). Trade liberalization and revealed comparative advantage. *The Manchester School of Economic and Social Studies*, 33(2), 99–123.
- Deaton, A. (1988). Quality, quantity, and spatial variation of price. *American Economic Review*, 78(3), 418–430.
- Food and Agriculture Organization of the United Nations (FAO). (2026). *FAO website*. <https://www.fao.org/>
- Grubel, H. G., & Lloyd, P. J. (1975). *Intra-industry trade: The theory and measurement of international trade in differentiated product*. Wiley.
- Lafay, G. (1992). The measurement of revealed comparative advantages. In M. G. Dagenais & P. A. Muet (Eds.), *International trade modeling* (pp. 209–234). Chapman and Hall.
- Matkovski, B. (2019). Agri-food competitiveness in South East Europe. *Outlook on Agriculture*, 48(4), 326–335. <https://doi.org/10.1177/0030727019854770>
- Matkovski, B., & Đokić, D. (2014). Supporting tobacco production in Serbia. *Agroekonomika*, 43(63–64), 154–164.
- Nuševa, D., Marić, R., Đurković Marić, T., Macura, N., & Kovačević, M. (2024). The impact of CEFTA Agreement on the Republic of Serbia foreign trade improvement. *Ekonomija – Teorija i Praksa*, 17(1), 109–126. <https://doi.org/10.5937/etp2401109N>
- Swinnen, J. F. M., & Vandeplas, A. (2010). Market power and rents in global supply chains. *Agricultural Economics*, 41, 109–120.
- Statistical Office of the Republic of Serbia (SORS). (2025). *Official website*. <https://www.stat.gov.rs/>
- Tica, T., Matkovski, B., Đokić, D., & Jurjević, Ž. (2023). Characteristics of the supply chain of tobacco and tobacco products: Evidence from Serbia. *Agriculture*, 13(9), 1711. <https://doi.org/10.3390/agriculture13091711>
- Vladislavljević, M., Zubović, J., Đukić, M., & Jovanović, O. (2020). Tobacco price elasticity in Serbia: Evidence from a middle-income country with high prevalence and low tobacco prices. *Tobacco Control*, 29(5), 331–336. <https://doi.org/10.1136/tobaccocontrol-2019-055262>
- Vollrath, T. L. (1991). A theoretical evaluation of alternative trade intensity measures of revealed comparative advantage. *Weltwirtschaftliches Archiv / The Review of World Economics*, 127(2), 265–279.
- Vuković, B., Mijić, K., & Spahić, N. (2015). Concentration of tobacco market: Evidence from Serbia. *Economics of Agriculture*, 62(2), 385–398.
- World Health Organization, & National Cancer Institute. (2017). *The economics of tobacco and tobacco control* (National Cancer Institute Tobacco Control Monograph No. 21). U.S. Department of Health and Human Services, National Institutes of Health. <https://cancercontrol.cancer.gov/brp/tcrb/monographs/monograph-21>

Zekić, S., Matkovski, B., Đokić, D., & Kleut, Ž. (2016). Competitiveness of tobacco and tobacco products: The case of Serbia. *Custos e Agronegocio Online*, 12(2), 191–211.
<http://www.custoseagronegocioonline.com.br/numero2v12/OK%2010%20tobacco%20english.pdf>