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## **GEOGRAPHICAL CONCENTRATION AND GEOGRAPHICAL SUSTAINABILITY OF FURNITURE EXPORTS FROM BULGARIA**

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**Abstract:** The paper analyses the geographical concentration and sustainability of furniture exports from Bulgaria for the period 2015-2024. The focus of the research is on the main trading partners and the dynamics of foreign trade relationships. The methodology used is based on the application of geographical concentration (GCr) and geographical sustainability (GSr) indicators. The findings of the analysis indicate that a balanced structure, sustainability over time, and limited dependence on external shocks characterise the export of furniture from Bulgaria. Major trading partners account for approximately 51% of total exports, with 74% of them maintaining their positions in the top 5 over the entire analysed period.

**Keywords:** furniture trade, export concentration, trade stability

### **1. INTRODUCTION**

The global furniture market is experiencing steady growth, with forecasts to reach \$1.04 trillion by 2029. The expansion of manufacturers' access to new markets globally, the development of online trade, and the adoption of innovative environmental practices are contributing to the sector's increasing competitiveness and sustainable development (Furniture Global Market Report, 2024). Europe plays a leading role in the global furniture industry in terms of production, consumption, and international trade. It is the second-largest furniture market in the world, valued at USD 262.03 billion in 2025 (Europe furniture market). In EU member states, along with the UK, Norway, Switzerland, and Iceland, around 75% of furniture trade is intra-regional (CSIL World Furniture Outlook). The woodworking and furniture industry in Bulgaria is considered a traditional sector, generating approximately 3% of GDP (NSI 2024). The Bulgarian furniture market is projected to reach USD 790.2 million by 2025, with an annual growth rate of 1.84% forecasted for 2029 (Statista). The sector is considered sustainable due to its strong market integration, dominant retail chains, and stable internal linkages (Research reports, furniture sector, forecasts). However, due to geopolitical and economic uncertainties, there is a decline in new building permits issued in 2024 compared to 2023 (NSI), reducing the demand for new furniture. Potential threats to the development of Bulgaria's furniture industry include legislative constraints, weak innovation and investment capacity, and a heavy dependence on a limited number of markets (Nikolova & Petrova, 2025, p. 253). Sustainable development is crucial for achieving competitiveness, as the European Green Policy mandates the introduction of sustainable design, repair and recycling options of goods, and the sharing of responsibility through a digital product passport. According to Sultanova & Naser (2025), export diversification helps reduce the environmental footprint in both developed and developing economies, with effects influenced by the specifics of the export structure and the energy mix utilised. Consequently, understanding the geographical distribution and sustainability of furniture exports is of critical importance. The main goal of the paper is to analyse the geographical structure, concentration, and sustainability of Bulgaria's furniture

exports from 2015 to 2024. This has been achieved through an assessment of dependencies on key trading partners and the degree of diversification, to minimise external trade risks and boost sector competitiveness.

## 2. RESEARCH METHODOLOGY

To clarify the status and trends of furniture exports from Bulgaria, the most recent foreign trade data published as of 1 July 2025 in the Eurostat foreign trade databases is considered. Furniture exports are classified mainly in the Combined Nomenclature sections of Chapter 94 Furniture; Bedding, etc. The occurrence of significant foreign trade events in recent years allows for a clear identification of the sustainability of trade partnerships. Consequently, the research period is set to cover the last ten years (2015–2024). As "an expression of the external sector of an economy, foreign trade is indicative of its openness, its participation in the international division of labour, its international trade specialisation and competitiveness" (Marinov, 2017). Therefore, in analyses of such topics, it is important to monitor the status and dynamics of a country's exports. The geographical structure is particularly important because "the development of foreign economic relations can be assessed from the location and structure of the main trading partners" (Panushev, 2017). In light of the stated objective to track the state and dynamics of Bulgaria's furniture exports, the following statistical methods have been employed: First, a description of export values and trends in their development is presented. For this purpose, the tools of descriptive statistics are utilised. Second, a detailed analysis of the geographical structure of foreign trade is conducted by examining two key parameters – geographical concentration and geographical sustainability.

In practice, when calculating the concentration of foreign trade, the Herfindahl-Hirschman Index – HHI (Hirschman, 1964) is often applied. In the study of Galabova and Nestorov, the authors discuss HHI's index shortcomings and suggest that "when examining the geographical distribution of foreign trade, the Geographical Concentration of the Export/Import rate (GCr) should be used" (see Galabova, Nestorov, 2018). It is calculated as a coefficient (or as a percentage), representing the relative share of the sum of the first three countries in the geographical distribution of exports or imports, with the total volume of transactions with all countries. Its mathematical expression is represented by the following formula:

$$GCr = \frac{\sum_1^5 topD}{\sum_1^n D}, \text{ where: } \quad (1),$$

*GCr* is the geographic concentration ratio of exports/imports;  
*D*, the foreign trade transactions with *n* number of countries;  
*top* - the members of the ranked order of transactions.

Galabova and Nestorov suggest that the coefficient of geographical concentration should be calculated for the top five countries - leading partners, and it can be calculated for each time period studied, for example, a year. Due to the advantages outlined by the authors regarding the proposed new coefficient, we accept to apply it for the current study. The interpretation of the indicator provides analytical and cognitive information on the degree of dependence of a country on its foreign trade partners and on their market conjuncture, political, social and

economic environment. The analysis of a country's foreign trade linkages is important to consider and includes their persistence over time. Resilience in an economy can be defined as "the ability of a system to maintain its basic quantitative and qualitative characteristics with relatively little change in a given parameter" (Voycheska, 2013). To measure the persistence of foreign trade transactions, Galabova and Nestorov propose a "geographic export/import persistence coefficient - GSr" (Galabova, Nestorov, 2018), which reflects changes in the structure over time. Its mathematical notation is expressed by the following formula:

$$GSr = \frac{\sum_{i=1}^5 \frac{C}{m}}{5}, \text{ where:} \quad (2)$$

GSr is the geographic export/import sustainability ratio;

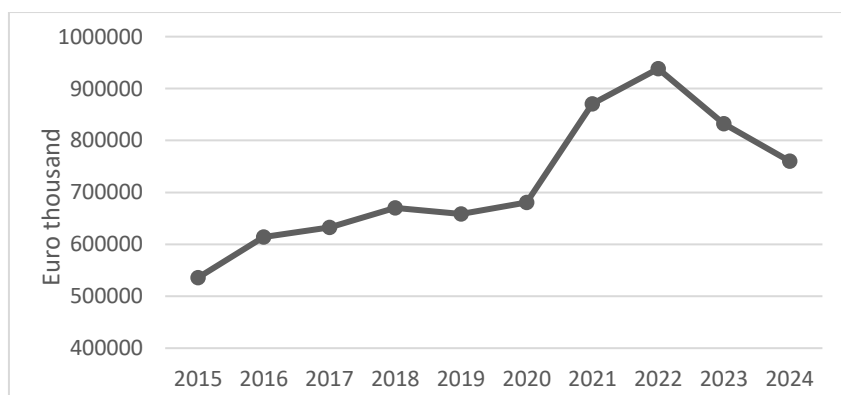
C is the number of orders of the partner country in the top five places in the geographical structure by period;

M - the number of periods examined.

Foreign trade theory and practice argue that greater persistence over a long period is a favorable development scenario because it indicates relative stability and predictability

### 3. RESULTS AND DISCUSSIONS

The total furniture exports from Bulgaria for the period 2021–2024 – covering all goods under Chapter 94 "Furniture and parts thereof" – represent approximately 0.3% of the country's merchandise exports. With this export value, Bulgaria ranks 35<sup>th</sup> in the world in terms of furniture exports. The values for the individual years are graphically presented in Figure 1.



*Figure 1. Value of furniture exports from Bulgaria in the period 2015-2024*

*Source: Eurostat data*

The values show a clearly defined upward trend until 2022, when the trend reverses. From just over EUR 500 million in 2015, export revenues increased to over EUR 900 million in 2022. The following two years are marked by a decline, reaching around EUR 760 million in 2024. Due to the heterogeneity of the goods included in Chapter 94, the analysis continues by types of furniture. The goods with significant export value are from the following categories: 9403 – "Other furniture and parts thereof," 9401 – "Seating furniture," 9404 – "Bed springs and

mattress supports," and 9405 – "Lamps and lighting fittings and parts thereof" (see figure 2). The remaining goods in the furniture group have a negligible export value.

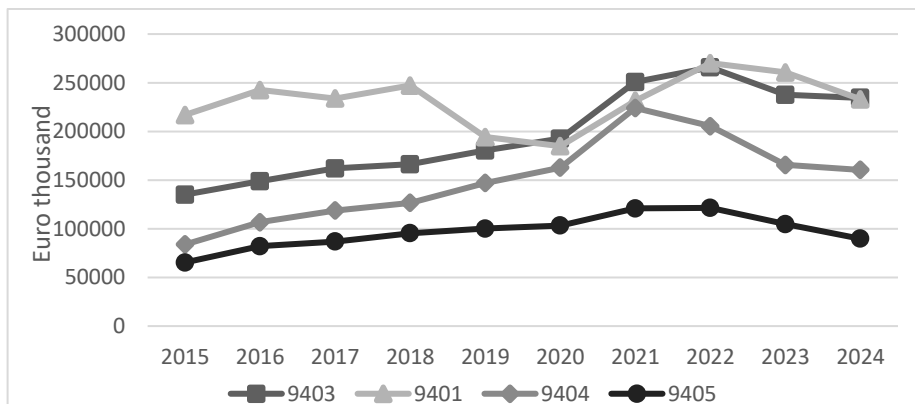


Figure 2. Value of furniture exports from Bulgaria, by Combined Nomenclature section, 2015-2024 Source: Eurostat data

The results of the calculations for the coefficients of geographical concentration and geographical sustainability are presented in Table 1.

Table 1. Results of the application of the geographic concentration and geographic stability coefficients for furniture exports from Bulgaria in the period 2015-2024

| Commodity |  | GCr<br>(2015-2024 average) | GSr<br>(2015-2024) |
|-----------|--|----------------------------|--------------------|
| 9403      | Other furniture and parts thereof                | 0,52                       | 0,82               |
| 9401      | Seating furniture                                | 0,58                       | 0,76               |
| 9404      | Bed springs and mattress supports...             | 0,53                       | 0,72               |
| 9405      | Lamps and lighting fittings and parts thereof... | 0,42                       | 0,66               |

Source: Eurostat own calculations

The highest export value is recorded for the category "Other furniture and parts thereof," amounting to just over EUR 230 million in 2024. In recent years, the leading trade partners have been Romania (22%), Greece (13%), France (9%), Germany (7%), and the Netherlands (5%). Altogether, these five leading countries annually account for around 55% of the export transactions in this category. This value of the Geographical Concentration Coefficient indicates a balanced geographical structure. Throughout the observed period, in 82% of the cases, the same five countries remained the top partners. This coefficient demonstrates a stable geographical structure of exports for these goods. A similar trend is observed with Seating furniture. Transactions involving these items total nearly EUR 230 million in 2024. The top five trade partners collectively account for an average of 58% — Poland (19%), Romania (15%), Greece (10%), the Czech Republic (9%), and Germany (5%). The GCr again suggests a balanced market share among the leading five countries. Over the past decade, these countries have appeared among the top five in 76% of cases. The situation is comparable for Bed springs and mattress supports. In 2024, exports of these reached €160 million. The top five countries

together make up 53% of the exports, dominated by Romania (21%), Germany (13%), Italy (8%), Greece (7%), and Turkey (7%). A balanced geographical structure is also evident for these goods. Over the last ten years, these countries have been among the top five 72% of the time, signifying a stable export structure for this category of furniture. The scenario differs somewhat for Lamps and lighting fittings and parts thereof. Compared with other types of furniture, lighting exports are the smallest, amounting to €90 million in 2024. Established trading partners include Italy (15%), Romania (9%), Greece (8%), Germany (6%), and Slovakia (4%). The top five countries together account for 42% of exports. The similar GCr value suggests a balanced but somewhat near-diversified structure. These five countries have been in the top five 66% of the time over the past decade, again indicating a stable geographical export structure.

#### 4. CONCLUSIONS

Overall, furniture exports from Bulgaria are characterised as balanced in terms of geographical concentration. As can be seen from the values of the geographical concentration ratio for the period 2025-2024, the top five trading partners account for around 51% for the different commodities. This does not indicate a high degree of concentration, as it is unfavourable because it shows a stronger dependence and linkage on fewer foreign trade partners and their terms of trade, and vice versa. At the same time, a balanced structure implies a greater degree of diversification. It is rather favourable because it reflects greater independence and a lack of strong interdependence. Moreover, it indicates less vulnerability of exports of these goods to external shocks and shocks that can substantially alter the geographical distribution of foreign trade.

#### Annex 1. List of full names of Combined Nomenclature headings

| Code | Name   |
|------|--|
| 94   | Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; luminaires and lighting fittings, not elsewhere specified or included; illuminated signs, illuminated nameplates and the like; prefabricated buildings                                    |
| 9401 | Seats (other than those of heading 9402), whether or not convertible into beds, and parts thereof  |
| 9403 | Other furniture and parts thereof  |
| 9404 | Mattress supports; articles of bedding and similar furnishing (for example, mattresses, quilts, eiderdowns, cushions, pouffes and pillows) fitted with springs or stuffed or internally fitted with any material or of cellular rubber or plastics, whether or not covered             |
| 9405 | Luminaires and lighting fittings including searchlights and spotlights and parts thereof, not elsewhere specified or included; illuminated signs, illuminated nameplates and the like, having a permanently fixed light source, and parts thereof not elsewhere specified or included: |

Source: Commission implementing regulation (EU) 2024/2522.

In terms of sustainability over time, furniture exports from Bulgaria are characterised by the sustainability of foreign trade partners. On average, 74% of countries were always present in the top five, for the period 2015-2024 (highest in persistence in Other Furniture, and lowest in Lighting). When partners do not change significantly over the years, it can be argued that Bulgarian manufacturers have established themselves in the value chains. Transactions are not episodic, and the established foreign trade links are sustainable. Also, the establishment of long-lasting relationships with one group of trading partner countries shows that Bulgarian furniture is characterised by high competitiveness.

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