

# Possible impact of the green economy requirements on the furniture industry development in Kaliningrad region

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**Abstract.** The article discusses the possible impact of the requirements of the “green economy” on the furniture industry development in Kaliningrad region. The main question posed in the article – whether furniture manufacturers from Kaliningrad region can withstand future changes related to the “green economy”. The authors collected and examined data on the main factors affecting the Kaliningrad furniture industry earlier (changes in customs regulations) and now (impact of the COVID-19 pandemic). Along with the general analysis, the authors considered the manufacture of individual products. No sharper drop in the furniture manufacture for home use compared with the furniture manufacture for offices was found as a result. As vendors, component suppliers, and furniture manufacturers have formed a regional cluster, its role in overcoming current challenges was also examined. Taking into account the current situation, the authors come to a rather negative conclusion about the contribution of the Kaliningrad Association of Furniture Manufacturers to the general anti-crisis actions. The requirements of the “green economy” are expected to lead to a significant increase in capital expenditures for Kaliningrad furniture manufacturers. Taking into account the current problems caused by changes in customs regulations and the COVID-19 epidemic, Kaliningrad furniture manufacturers will not put these costs at the top of their priorities in the next 3-5 years.

## 1 Introduction

The problem of sustainable development and the spread of the "green economy" (and circular economy) is becoming more and more urgent every year due to the depletion of the base of non-renewable resources, the growing contradictions between the rate of renewable resource recovery and consumption, the impoverishment of nature, the inaccessibility of resources for all segments of the population. The principles of the “green economy” are not yet clearly defined, but individual ideas and provisions are mentioned in documents, reports, speeches of politicians in various countries of the world. Experts and specialists of UNEP (United Nations Environment Programme) declare the goal of long-term socio-economic development based on the balance of human activity and the natural environment, on improving the quality of life of modern generations without harming future generations on the basis of nature conservation [1].

In the Russian Federation, the ideas of “green economy” development are not conceptually enshrined in a specific document, but they find support at the state and regional levels in strategies and laws, and in public opinion. [2].

In Kaliningrad region, since 2012, the Strategy of Social and Economic Development of the Kaliningrad region is being implemented, “the development of which took into account global development trends and experience of building a socially oriented society with a sustainable economy”, “green economy”. [3]

The furniture industry of Kaliningrad Region is one of the successful examples of using the advantages of the Special Economic Zone established by federal legislation. [4] In this regard, the question of the possibility of early adaptation of this manufacture sector to the requirements of the “green economy” is regular and relevant.

## 2 Materials and methods

When considering the impact of factors affecting the state of the regional industrial sector, appropriate sources should be used to take into account the peculiarities of location, economic development, history and object potential of the study.

The sources of information for writing this material were based on data from the territorial body of the Federal State Statistics Service in Kaliningrad region. Additional information on furniture industry state was taken from local Internet information resources and publications on the relevant topic. Information on goals, long-term and medium-term plans and activities for the development of “green economy” approaches were obtained from the Internet resources of the United Nations (environmental unit). [1] Standard methods of statistical data collection and processing were used to present information in a relevant form.

## 3 Results and discussion

Many industrial enterprises of Kaliningrad region have experienced various stressful factors in the last 10 years, which makes it difficult to implement the idea of developing the “green economy”. This is reflected in the dynamics of manufacture indices for the type of economic activity “Manufacturing” (Table 1).

**Table 1.** Manufacture indices by type of the economic activity “Manufacturing” (as a percentage of the previous year), Kaliningrad region [5]

Years	2010	2011	2012	2013	2014	2015
Index	130.2	168.3	103.2	101.4	113.7	91.2
Years	2016	2017	2018	2019	2020	2016
Index	101.5	102.4	106.6	101.2	93.8	101.5

As can be seen from Table 1, the peak of industrial development occurred in 2011, when the growth rate of manufacture in Kaliningrad region was 168.3% in the economic activity “Manufacturing” compared to the previous year. From 2010 to 2014, the manufacture volume increased by more than 2 times (a total of 216.8%). From 2015 to the present, the growth rate has been negative or insignificant. The total cumulative growth from 2015 to 2020 was minus 3.3%.

This trend was typical for most types of manufacture. The furniture manufacture was no exception. This is demonstrated by the indicator of the volume of shipped goods of own manufacture, works and services by own forces by months for 2020 (see Table 2).

**Table 2.** Shipped goods of own manufacture, works and services performed by own forces by economic activities of the full range of organizations of producers for 2020 by months, thousand rubles. [6]

Month	February	March	April	May
Manufacturing industries	46,199.7	43,468.4	40,276	35,186
Furniture manufacture	1,145.7	1,003.3	988.3	807
Month	June	July	November	December
Manufacturing industries	42,557.8	44,792.6	56,378.6	58,109
Furniture manufacture	639.6	779.2	1,176.6	1126.8

A serious negative impact on the volume of furniture production was caused by changes in customs clearance rules for products shipped from Kaliningrad region to the territory of the Russian Federation. After the abolition of the relevant benefits [7], all enterprises focused on the manufacture of furniture supplied to other regions of Russia have undergone significant logistical and tax difficulties.

Another important negative factor was the COVID-19 epidemic. According to the results of February-December 2020, the total value of the reduction of the indicator of the volume of shipped products by furniture enterprises was 555.9 thousand rubles, which exceeded the total growth of the indicator by 18.9 thousand rubles. The highest value of the indicator fall was in May and June 2020, which coincides with the time frame of anti-epidemic measures to COVID -19.

The modern furniture industry in Kaliningrad region has gradually formed into a cluster, combining the production of end products, semi-finished products, supply of special equipment, furniture logistics, wholesale and retail trade in furniture. Whether such an organization of the furniture community can help it survive is problematic.

A large number of furniture manufacturing enterprises started to appear in Kaliningrad region in the 1990s (Maksik LLP - 1992, Lazurit -1996, InterDesign -1997, and many others). By 2021, the industry has hundreds of businesses, mostly small and microenterprises. Manufacture of furniture takes 4-5 positions by the main indicators characterizing the scale of activity in the industry of Kaliningrad region (Table 3). The share of furniture production by volume of shipped goods is 2.1%, by number of employees – 6.9%.

**Table 3.** Furniture manufacture in the structure of manufacturing industries in Kaliningrad region in 2019, % [8]

	Structure of the volume of shipped goods	Structure of fixed assets of large and medium-sized enterprises and organizations	Structure of investments in fixed capital from all sources of funding	Structure of the average number of employees employed in enterprises and organizations
Manufacturing industries – total	100	100	100	100
food production	29.6	46.9	31	31
manufacture of computers, electronic and optical products	3.3	5.3	3.8	4.6
manufacture of motor vehicles, trailers and semi-trailers	47	3.2	31	6.3
manufacture of other vehicles and equipment	2	8.4	9.9	11
<b>furniture manufacture</b>	<b>2.1</b>	<b>1.2</b>	<b>1.07</b>	<b>6.9</b>
Other manufacture facilities	16	35	23.23	40.2

Currently, such well-known enterprises as Mebel'naya fabrika Interdizayn LLC, Mann-group LLC, Daedal LLC, Verona LLC, Lazurit LLC, Dallas LLC, Pragmatika LLC, Maxik LLC, Falco LLC are engaged in the furniture manufacture. According to the website of the Government of Kaliningrad region, the largest manufacture volumes are the enterprises MEBEL STIL LLC (Lazurit), Logistika LLC (Interdesign), Akvella Invest LLC, MAGO RUS LLC [9]

Semi-finished products producers include enterprises Pikom, Mann Group. Suppliers of special raw materials and particleboard are enterprises DSPlit, Mebelshchik, Baltlaminat. Suppliers of leather raw materials and textiles for the manufacture of furniture - Art Textile; glass - Eurosteklo, Steklotsentr; accessories - Mebelshchik, Baltlaminat.

Some types of furniture produced by enterprises of Kaliningrad region are presented in Table 4.

**Table 4.** Furniture manufacture in Kaliningrad region [7,8]

	2017	2018	2019	2020
Seating furniture, mainly with a wooden frame, thousand pieces.	20.9	15.5	11.0	11.5
Growth rate, in % compared to the previous year	-	74.2	71	104.1
Kitchen cabinets, for bedroom, dining room and living room, thousand pcs.	144.4	126.3	114.1	106.02
Growth rate, in % compared to the previous year	-	87.5	90.3	93
Sofas, couches with a wooden frame, transformed into beds, thousand pcs.	6.3	6.1	6.1	6
Growth rate, in % compared to the previous year	-	96.8	100	98.4
Wooden beds, thousand pcs.	49.5	41.4	36.6	25.3
Growth rate, in % compared to the previous year		83.6	88.4	69.1
Kitchen tables, for dining room and living room, thousand pcs.	41.5	57.6	52.9	44.7
Growth rate, in % compared to the previous year	-	138.8	91.8	84.5

According to the results of 2017-2020, most types of goods show a drop in manufacture indicators: furniture for seats with a wooden frame by an average of 17%; kitchen cabinets, for bedrooms and living rooms by 9.7%; wooden beds by 19.6%. The data presented do not indicate that the manufacture of furniture for home use decreased at a significantly different rate compared to the manufacture of office furniture. Not all furniture manufacturers withstood the impact of stressful factors and ceased their activities (for example, in August 2020, the well-known enterprise Fabrika mebeli 555 LLC ceased its activities) [10]. From this, apparently, we can draw a disappointing conclusion about the furniture cluster effectiveness of Kaliningrad region. Somewhat more easily, if this can be said, the impact of changes in customs regulations and restrictions due to COVID-19 were endured by large furniture companies. Small and medium-sized furniture companies had a much harder time.

Modern demands from the state, the public, and consumers make furniture manufacturers naturally move in the direction of the development of the "green economy". Finished products are covered with a plastic edge, for the manufacture of which waste-free technologies are used (Furniture Factory Pragmatika). The majority of Kaliningrad furniture makers use environmentally friendly materials in their manufacture, laminated chipboard that does not contain phenol, edge glue of the company Henkel (Furniture factory Pragmatika,

Furniture factory Lazurit). Furniture manufacture technologies involve the use of environmentally friendly raw materials supplied by companies that comply with the requirements of ISO 14 000, ISO 14 001. Waste from manufacture activities is efficiently disposed of.

## 4 Conclusions

Kaliningrad furniture manufacture, which received certain advantages in the initial stage of its development, experienced serious difficulties due to changes in the customs rules for the export of products to the territory of the Russian Federation and the COVID-19 pandemic.

Despite the difficulties created by the COVID-19 epidemic, there are furniture enterprises in Kaliningrad region that follow the advice about a balanced attitude towards the surrounding community. [11] Nevertheless, expansion of requirements and approaches of the “green economy” to the most part of furniture enterprises of Kaliningrad region will require significant financial investments from small and medium enterprises, which experienced the impact of the above described negative factors. From this point of view, the next 3-5 years will most likely take them to restore their pre-crisis economic condition, taking into account the increasing competition from enterprises from other regions of Russia.

On the other hand, this situation can be used for a radical renovation of manufacture and logistics in accordance with the requirements of the “green economy”. This will certainly require financial assistance from regional and federal authorities.

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