
RESEARCH ARTICLE

Comparison of Production Indexes and GDP Levels of Russia and Turkey over the Years

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ABSTRACT

This research aimed to compare the production indexes and GDP levels of Russia and Turkey over the years. The study uses manufacturing and GDP statistics for Turkey and Russia from the World Bank's Country Reports for the years 2002–2023. The data was analyzed using relational and descriptive scanning techniques. The mean MVA value of Türkiye was $128.033.708.560,22 \pm 45.970.873.474,95$ with $60.042.508.306,24 - 210.698.007.198,77$ range. For Russia, the MVA mean was $164.593.974.821,70 \pm 25.737.507.037,58$ with $114.335.877.575,54 - 210.748.733.491,24$ range. The mean MVA was significantly higher in Russia ($p < 0.05$). GDP differences between Türkiye and Russia were statistically insignificant ($p > 0.05$). Manufacturing value added in Türkiye had a higher range and lower mean compared to Russia. Pearson correlation analysis results between MVA and GDP showed that in Türkiye, MVA was significantly and positively correlated with GDP ($r = 0.599$; $p < 0.01$). Similarly, MVA was positively correlated with GDP in Russia ($r = 0.729$; $p < 0.01$). Although Turkey and Russia significantly convert their value added production into economic value as GDP, Russia is more successful than Turkey in terms of correlation coefficient. In other words, Russia's value added production is more convertible to the economy than Turkey's.

KEYWORDS

Production, GDP, Russia, Türkiye.

ARTICLE INFORMATION

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1. Introduction

The most important effect of production in a country is the economy, and its transformation into prosperity is determined by GDP (Szustak et al., 2021; Gokmenoglu et al., 2015). In other words, the increase in income per capita is an indicator of the development of countries and their ability to transform their production into economic value (Aitken, 2019; Hulten and Nakamura, 2019; Jones and Klenow, 2016; Fang, 2011). Although the distribution of this economic value among individuals is important, the high GDP value in the economy in general is an important indicator that reveals the success of economic activities in the country (Tavas et al., 2016). For this, the added value in production must increase.

There are many claims that industrial design activities create high added value for the product and that the added value created is an important tool for the current account deficit and development that needs to be closed. Although the added value expressed in most discourses sometimes refers to profit, sometimes to price, and sometimes to its literal meaning, it is usually unclear what is meant by the high added value that is said to be created by a design product (Güneş et al., 2015). The banking sector makes a positive contribution to this process for both participation and conventional banks (Coşkun et al., 2024; Yılmaz and Turanlı, 2022).

Although various studies have been conducted on Russia and Türkiye, there is no sufficient study comparing the production values and GDP relationship of the two countries. This research aimed to compare the production indexes and GDP levels of Russia and Turkey over the years.

2. Methods

The research model, data set, and statistical techniques utilized in the study are described in the headings that follow.

2.1. Research model

Descriptive and relational scanning techniques were studied as a mix method. Two countries' export and import rates, as well as unemployment, were compared using statistical data and methodologies.

2.2. Data Set

The study analyzed data on unemployment and international trade for Turkey and Russia from the World Bank's Country Reports for the years 2002–2023. The following are the indicators that were used in the study:

- Manufacturing, value added (constant 2015 US\$)
- GDP per capita (current US\$)

2.3. Statistical Methods

The minimum, maximum, standard deviation and mean values were used to define the research series. The Kolmogorov Smirnov test was used to do a normalcy analysis prior to the difference analysis. For values that were regularly distributed, the Independent Sample t-test was used; for parameters that were not distributed, the Mann Whitney U test was used. Due to linearization errors in the relational screening model, Pearson correlation analysis was carried out (Yılmaz and Turanlı, 2023; Yılmaz and Turanlı, 2022). For all analyses, Windows SPSS 25.0 was utilized.

3. Results

The mean MVA value of Türkiye was 128.033.708.560,22±45.970.873.474,95 with 60.042.508.306,24-210.698.007.198,77 range. For Russia, the MVA mean was 164.593.974.821,70±25.737.507.037,58 with 114.335.877.575,54-210.748.733.491,24 range. The mean MVA was significantly higher in Russia ($p < 0.05$). GDP differences between Türkiye and Russia were statistically insignificant ($p > 0.05$) (Table 1).

Table 1. Descriptive statistics of MVA and GDP level of Türkiye and Russia

Countries		MVA	GDP
Türkiye	Mean	128.033.708.560,22	9.601,84
	Std. Deviation	45.970.873.474,95	2.433,69
	Minimum	60.042.508.306,24	3.640,76
	Maximum	210.698.007.198,77	12.985,75
Russia	Mean	164.593.974.821,70	10.205,85
	Std. Deviation	25.737.507.037,58	3.994,16
	Minimum	114.335.877.575,54	2.377,53
	Maximum	210.748.733.491,24	15.941,45
p value^a		0.002	0.549

a. Independent Samples t-test.

Manufacturing value added in Türkiye had a higher range and lower mean compared to Russia (Figure 1).

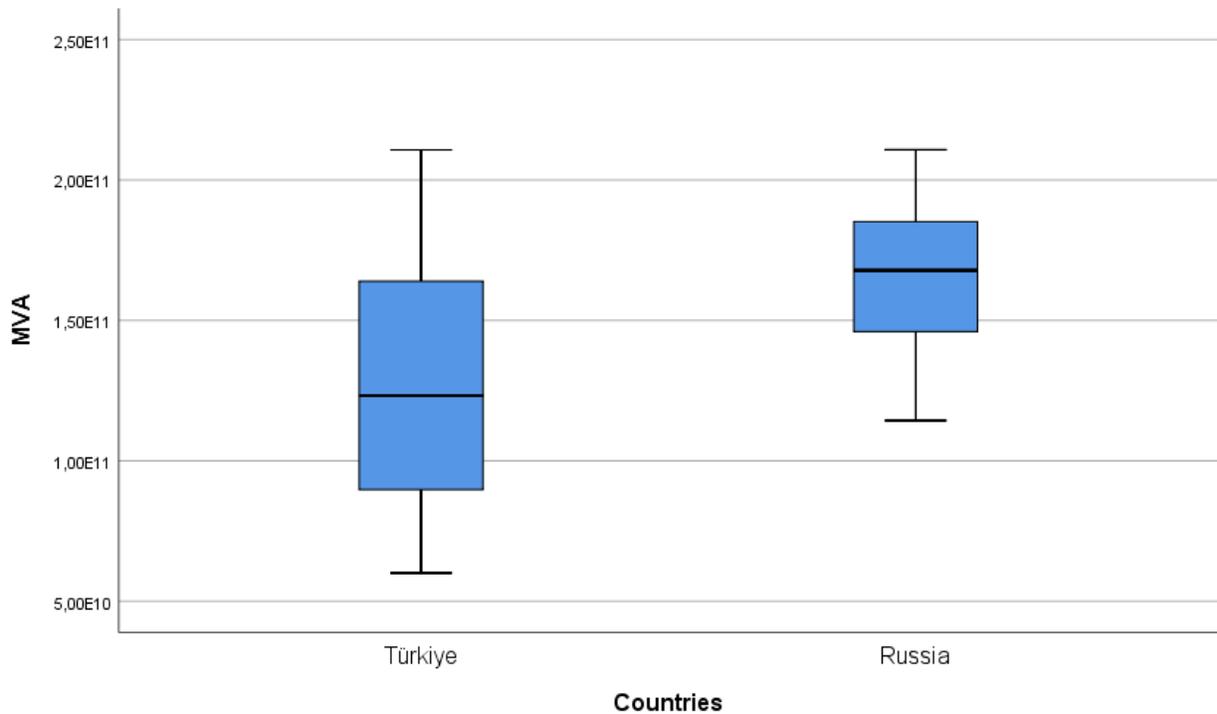


Figure 1. MVA differences between Türkiye and Russia

Pearson correlation analysis results between MVA and GDP showed that in Türkiye, MVA was significantly and positively correlated with GDP ($r=0.599$; $p<0.01$). Similarly, MVA was positively correlated with GDP in Russia ($r=0.729$; $p<0.01$) (Table 2).

Table 2. Pearson correlation analysis results between MVA and GDP

	Türkiye		Russia	
	r	p	r	p
MVA-GDP	0.599**	0.003	0.729**	0.000

** $p<0.01$

4. Discussion

In this research, the economic relationship between the value added production levels of Russia and Turkey and GDP was examined, and the analysis results using World Bank data showed that both countries' production contributed to the economy, but Russia's was higher.

Particularly where the profit culture is largely dominant, in smaller cities, where the motivation to create added value is limited, the need to focus on new ideas based on knowledge, science, and production in these areas is much greater (Bağış, 2017). Nowadays, companies are in fierce competition with each other in the use of strategic management tools in local and international markets in order to increase their competitiveness. The importance of competition in our country is now increasing as we enter the Customs Union, which allows the free movement of goods between member countries and is in the process of integration with the European Union. In our world, where globalization and technological innovations influence growing competition, companies need strategic management tools to be able to observe the factors causing the development of production technologies and take the necessary measures within their own organizations in order to gain a competitive advantage or maintain their current position (Çam, 2006).

In this research, the results of the analysis showed that value added production is converted into economic value as GDP in both Turkey and Russia to a considerable degree. However, Russia outperforms Turkey in terms of the correlation coefficient. As stated differently, Russia's value-added production can be converted into the economy more easily than Turkey's. Notwithstanding the periodic issues Russia faced throughout the conflict and throughout the world, including NATO and the USA, this MVA achievement demonstrates the significance of value added production and research and development in today's economy.

5. Conclusion

Although Turkey and Russia significantly convert value added production into economic value as GDP, Russia is more successful than Turkey in terms of correlation coefficient. In other words, Russia's value added production is more convertible to economy than Turkey's. Despite the cyclical problems experienced by Russia during the war period and all over the world, including NATO and the USA, this success experienced in MVA shows the importance of value added production and R&D studies economically today.

In the study, Turkey and Russia, which are two important countries in the world balance with Asia and Europe, were examined. More specifically, it would be useful to expand the study on other important actors, such as China and the USA, and to add different indicators for further studies. In addition, more detailed studies can be conducted examining the effect of the war in Russia on added value.

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