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The Forecasting of Military Expenditure in Saudi Arabia in Terms of Military Security

Abstract: The study attempts to forecast military expenditure in Saudi Arabia for 2020. The research began with a comparative analysis of military expenditure in Saudi Arabia and Russia between 2000–2019. For this purpose, bar charts were used on which the calculated values of the dynamics indices with a fixed (2000) and movable (previous year) base of the considered primary data were outlined. The study was preceded by constructing a multiple regression model to evaluate the impact of the increase in military expenditure in Russia on Saudi Arabia. This model shows that as military spending in Russia increases by one million dollars, military spending in Saudi Arabia increases by $ 0.085 million. Then, data on the expenditure incurred by both analyzed countries in 2020, obtained from various internet sources, was outlined. Their analysis made it possible to select only qualitative methods in the form of expert opinions for the forecast. Saudi Arabia's military expenditure forecast was $ 57 500 million.

Keywords: *expenditure, forecasting, Russian and Saudi Arabian policy, COVID-19, military security*

Introduction

In the study, a research problem was formulated that focuses on a comparative analysis of military expenditure incurred by Saudi Arabia and Russia in dynamic terms and its forecasting in Saudi Arabia for the future.

The aim of the study is an attempt to forecast military expenditure in Saudi Arabia for 2020. The research will be preceded by a comparative analysis of military expenditure by Saudi Arabia and Russia.

For the research problem and the aim of the work, the main hypothesis was outlined, which is:

To what extent does the increase in military expenditure in Russia affect the expenditure in Saudi Arabia?

The research object will be a military expenditure in Saudi Arabia and Russia, while the subject will be Saudi Arabia and Russia.

The research method of forecasting military expenditure in Saudi Arabia for the future was used in the article. The following research methods were used: forecasting, multidimensional comparative analyses. They made it possible to achieve the main goal of the work set in the introduction to the study.

Analysis of the Literature on the Research Object

A critical analysis of the literature shows that Saudi Arabia and Russia have different views on the conflict in Syria and the importance of Iran in the Middle East region. Military cooperation between the two countries does not exist. Saudi Arabia buys weapons and equipment mainly from the United States, and this is caused by different views and interests of Russia and Saudi Arabia in the Middle East region. Moreover, Russia periodically sells weapons to Iran. For years, Saudi Arabia has been afraid of the creation by Iran of a coalition against it with the participation of Iraq, Lebanon, Syria, Yemen, and Bahrain. Hence its desire to reduce Iran's position in the Middle East. For this purpose, through the purchase of weapons and many years of cooperation in the energy sector, it wants to use the anti-Iranian attitude of the US administration (Legucka, 2017). The study attempts to perform a dynamic comparative analysis of military expenditure incurred by Saudi Arabia and Russia and forecast it in Saudi Arabia for the future using the qualitative method.

Undoubtedly, the expenditure in the two countries under consideration will be influenced by the COVID-19 infectious disease pandemic. The first case of this disease was registered in Wuhan, China (Grochot, 2020; Zhu et al., 2020). On March 11, 2020, the COVID-19 pandemic was announced worldwide (Satomi et al., 2020). The large and rapid increase in the incidence (Kozicki & Mitkow, 2020) and deaths of people led to uncertainty and general chaos (Matuka, 2020). Respective countries of the world began to introduce numerous restrictions to reduce the number of infections and ensure people's safety. These included: closing borders, wearing face masks, using disinfectants, measuring temperature, restrictions on traveling, and much more. The study examined data on military expenditure before the COVID-19 pandemic. It should be emphasized that the infectious disease will impact the amount of expenditure on the military, and it will most likely lead to their reduction in dynamic terms.

The forecasting of budget expenditure is one of the topical issues regarding the role and importance of forecasting and planning in managing the entire country in terms of security. Therefore, theoretical and practical studies concerning budget expenditures and their forecasting are significant.

From the point of view of the subject of the study, the most important publications presenting the status of the problem can be divided into studies in the field of expenditure and forecasting.

A critical analysis of the literature indicates that expenditures are funds disbursed from an account or bank account, regardless of the purpose for which they were incurred. They are considered the most important economic and financial category related only to some monetary operations (Owsiak, 2015, p. 74).

Forecasting is one of the forms of budget expenditure planning. According to P. Dittmann (2008), forecasting is a rational, scientific prediction of future events (p. 20). It should be preceded by analyzing and evaluating retrospective data (Kozicki, 2018; Rabej, 2018, pp. 43-278; Makridakis et al., 1998; Chan & Spike, 2014; Franses, van Dijk, & Opschoor, 2014). If the result of the analysis is the detection of trends in the form of regularities governing the phenomenon under consideration, then quantitative methods should be used for the forecasting. There are often situations where qualitative methods are used to forecast retrospective data for the future despite the detection of certain regularities. These premises are factors that prevent the regularities observed in the past in the original data from being repeated in the future. Qualitative forecasts may take the form of point or interval forecasts (Dittmann, 2016, p. 198). In the study, the views of future budget planners were used as an example of a qualitative method to forecast the future of military expenditure in Saudi Arabia.

Analysis and Evaluation of Military Expenditure in Russia and Saudi Arabia

The research began with creating a line graph of the raw data obtained from the website: https://tradingeconomics.com/ on the military expenditure incurred by Saudi Arabia and Russia on an annual basis between 2000-2019 in millions of USD.

The analysis of the two time series (2000-2018) presented in Figure 1 shows a growing trend in military expenditure incurred by Saudi Arabia (2003-2015) and Russia (2000–2013). In 2016, there was a decrease in military spending in Saudi Arabia, an upward trend until 2018, and a downward trend in 2019. Since 2015 in Russia, there has been an oscillation of military spending of around $ 60,000. Observation of the time series outlined in Figure 1 shows that they are well matched. It became a direct premise for examining the dynamic impact of Russia's military expenditure on Saudi Arabia's expenditure. For this purpose, a multiple regression model was built, consisting of four predictors in the form of variables: t, t^2, $\ln t$, and Saudi expenditure.
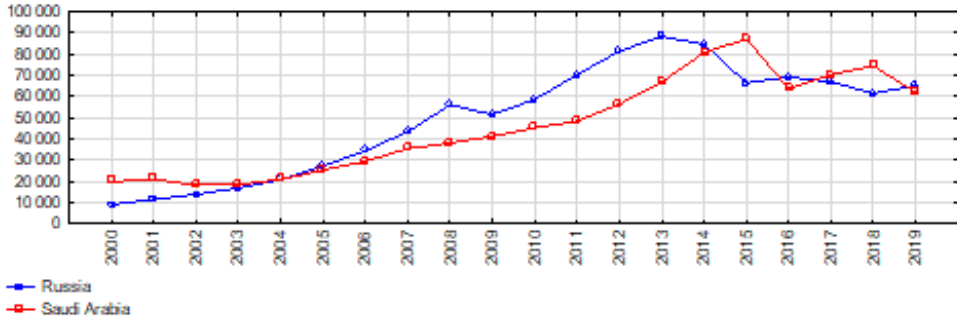
Fig. 1. Line graph of primary data on military expenditure in Saudi Arabia and Russia in millions of USD between 2000–2019
Source: own study based on data from the website: https://www.sipri.org/databases/milex [as of 9.03.2020]

Table 1. Multiple regression model

N = 19	R = 0, ,87912394 R^2 = 0,77285890 Correctness R^2 = 76023995 Standard error of estimation: 12631					
	b*	Standard error	b	Standard error	t(17)	p
Absolute term			3654,347	6553,902	0,557583	0,583997
Saudi Arabia	0,879124	0,112334	1,001	0,128	7,825976	0,000000

Source: own study based on data from the website: https://www.sipri.org/databases/milex [as of 9.03.2020]

The multiple regression model created was well matched. The multiple R ^ 2 was 0.88. This model shows that as military expenditure in Russia increases by one million dollars, military expenditure in Saudi Arabia increases by $ 0.112 million.

Then, for research purposes, a comparative analysis of dynamics indices with a constant base (2000) of military expenditure in Saudi Arabia and Russia between 2000–2019 (Figure 2) was carried out.

The information in Figure 2 allows us to conclude that the indices of dynamics with a constant base (2000) of military expenditure in the same years were, in each case, visibly higher in Russia. Additionally, negative dynamics indices were recorded only in Saudi Arabia in 2002–2003. The largest difference in dynamics indices on a constant basis (2000) of military expenditure between Russia and Saudi Arabia was visible in the following years: 2013, 2012, and 2011. The highest arithmetic mean of dynamics indices on a constant basis (2000) of military expenditure (2000–2019) was recorded in Russia and amounted to 56.43 while in Saudi Arabia, it reached the level of 23.85. The highest standard deviation of the analyzed dynamics indices was recorded in Russia. It amounted to 26.67. However, in Saudi Arabia, it was lower and amounted to 10.12.
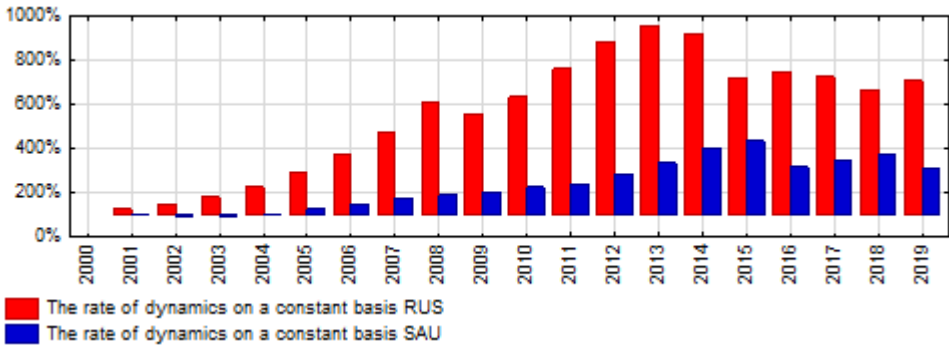
Fig. 2. Bar chart of dynamics indices with a constant base (2000) of military expenditure in Saudi Arabia and Russia in millions of USD between 2000–2019
Source: own study based on data from the website: https://www.sipri.org/databases/milex [as of 9.03.2020]

Figure 2 analyzes military expenditure in Saudi Arabia and Russia between 2000-2019, using a dynamics index with a nonconstant base (previous year). The results are summarized in a categorized bar chart (Figure 3).
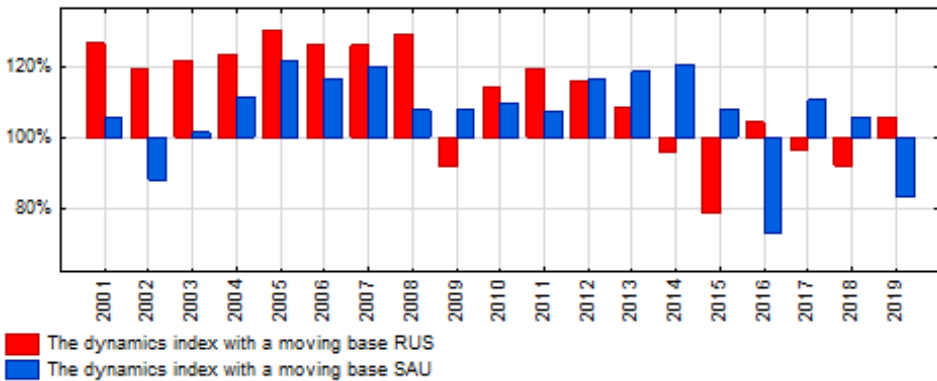

Fig. 3. Bar chart of dynamics indices with a nonconstant base (previous year) of military expenditure in Saudi Arabia and Russia in millions of USD between 2000–2019
Source: own study based on data from the website: https://www.sipri.org/databases/milex [as of 9.03.2020]

The analysis of the dynamics indices with a nonconstant base (previous year) of military expenditure in Saudi Arabia and Russia between 2000–2019 shows that they were alternately higher and lower in each of these countries every few periods. The biggest difference was visible in 2016, 2017, and 2020. In 2016, the dynamics index with a nonconstant base (previous year) in Saudi Arabia was extremely low and amounted to -26.97 percent. In contrast, the lowest one in Russia was recorded in 2015 and amounted to -21.58 percent.

The arithmetic mean of the dynamics indices with a nonconstant base (previous year) of military expenditure (2000–2019) in Saudi Arabia was 106.98%, while in Russia, it was higher and amounted to 4.91. The highest standard deviation of the analyzed dynamics indices was recorded in Russia. It amounted to 15.18. However, in Saudi Arabia, it was lower and amounted to 2.22.

The Forecasting of Military Expenditure in Saudi Arabia

A critical analysis of the literature and internet sources shows that in 2019 there was a change in the trend observed in military expenditure in Saudi Arabia and Russia (Figure 4).
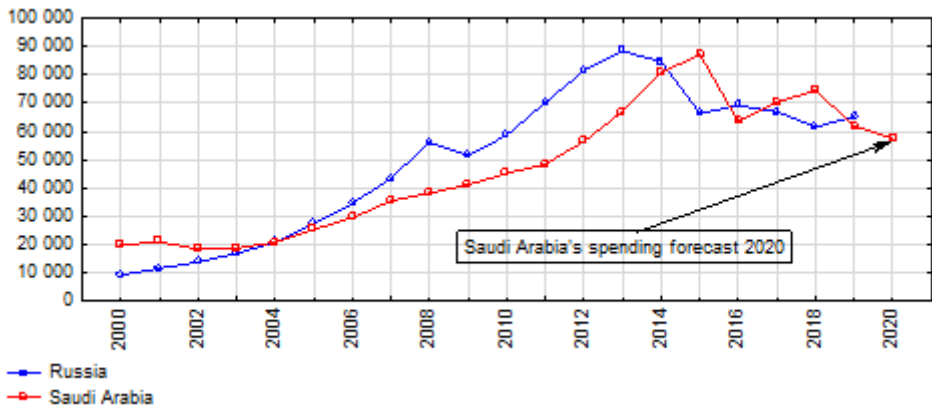

Fig. 4. Line graph of the primary data on military expenditure in Saudi Arabia and Russia in millions of USD between 2000–2019 and their forecast in Saudi Arabia for 2020

Source: own study based on data from the website: https://www.sipri.org/databases/milex [as of 9.03.2020]

The data in Figure 4 shows a sharp decline in military expenditure in Saudi Arabia in 2019 to around $ 57 500 million (Karam, 2019). In Russia, military expenditure fell to around $ 61 712 million in 2020. It should be noted that since 2019 Russia has made military expenditure secret.

The conducted analyses and own experience allow for the conclusion that forecasting military expenditure in both countries requires a qualitative method, e.g., in the form of experts' forecasts based on the knowledge resulting from the policy, adopted strategic plans, and other important factors.

Undoubtedly, one of the main aspects that will bring about major changes in military expenditure in 2021 will be the situation related to the coronavirus pandemic. Experts' forecasts (Figure 4) show that in 2020 military expenditure in Saudi Arabia will drop to $ 57

500 million (https://www.reuters.com/article/us-saudi-budget-highlights/highlights-saudi-arabia-releases-272-billion-budget-for-2020-id USK BN1YD1UG). However, it is necessary to remember that the prevailing global coronavirus pandemic may significantly change the amount of planned military expenditure in both analyzed countries.

Summary and Conclusions

It should be remembered that military cooperation between Russia and Saudi Arabia does not essentially exist. It is due to the different views and interests of the two countries in the Middle East region.

The main goal of the article has been achieved. Forecasting was performed with the use of qualitative methods. It was preceded by a multidimensional comparative analysis of the impact of military expenditure in Russia on Saudi Arabia. The forecast obtained is $ 57 500 million, which means that expenditure will decrease by 7.15 percent compared to 2019.

Analyzing data on budget expenditure forecasting is extremely important as it allows for the development of many plans at different organizational levels, including goals and methods of their implementation. The analysis and evaluation of data on budgetary expenditure are extremely important from the point of view of the main macroeconomic problems as it allows you to make many decisions related to the proper management of the country.

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