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RESOURCE-BASED ECONOMY – DETERMINANTS OF ECONOMIC GROWTH AND SUSTAINABLE DEVELOPMENT IN SAUDI ARABIA

Abstract

Purpose: This paper examines the determinants of long-term economic growth and sustainable development of the Kingdom of Saudi Arabia as a chosen one-resource economy that relies on massive oil production.

Methodology is based on the econometric methods of multiple regression analysis and the multicollinearity test for the period from 2010 to 2020. The research was conducted on the basis of a model of 13 variables, where the dependent variable is the annual rate of GDP, and the independent variables are inflation, budget deficit, oil exports, imports, unemployment rate, foreign direct investment, labour productivity, public debt, labour force, GDP per capita, HDI index, total rent of natural resources and adjusted net savings.

Results indicate a strong connection between gross domestic product and the selected variables and the existence of factors that are of strategic importance for the growth of the Saudi economy, but on the other hand, the negative effects of certain factors on sustainable development.

Conclusion: Based on the results, it is suggested that investment in human capital is an urgent step to achieve long-term sustainability and reduce reliance on natural resource operations in the future.

Keywords: Resource-based economy, economic growth, sustainable development, Saudi Arabia

1. *Introduction*

In theory, countries whose natural resources make up more than 10% of GDP, or 40% of exports, are considered single-resource economies. Although certain indicators of economies that possess natural resources confirm economic growth and development, the question is whether the same growth can encompass sustainable development in the long term, depending on the determinants of economic activity measurement. Economic growth and development are complex macroeconomic terms. Long-term economic growth represents a continuous increase in production over a longer period of time (more than 10 years), and economic development represents an increase in the quality of life of resi-

dents and business operations of economic entities and institutions. It is assumed that the planet Earth abounds in resources; however, the long-standing human practice of rationing with economic measures is counterproductive for the long-term survival of resources. The new society has access to advanced technology that can provide the use of some non-renewable resources and develop the supply of those resources that potentially do not jeopardise human life and economic development, and do not destroy the Earth's surface. However, such an efficiently designed economy that would give each individual the opportunity to coexist with ecology in the framework of a high standard of living and achieve long-term growth in a sustainable economy requires not only restrictions on the bearing capacity of natural resources but also radical changes in their production, industrial implementation and within the very economic systems of the said resource-based economies. Unfortunately, changes in the economy's structure are relatively slow since, according to Ahrend (2006), such economies are based on available resources for a longer period regardless of sectoral development or policy. Their development could be achieved once a diversification of the economy has been carried out, which would, in the long run, increase the level of salaries, expand sectors not intended for export orientation, achieve cheaper import, contribute to the flow of investments, and ultimately enable a better standard of living. However, research has shown that development in such economies often brings multiple problems in practice. Auty's research (1998) highlighted the analyses of Sachs and Warner from 1995, who, while studying market prices and the share of exports and investments in GDP, established the negative effects of the use of resources on the structure of non-export GDP and GDP per capita that determine the levels of economic growth. Although resource industrialisation would promote better growth, the question is whether economic governance would enable a better standard of living, i.e., retain sustainable development in the long run.

Some experts believe that the oil industry is more advantageous for resource-based economies than other non-renewable resources and more important than other activities because of its high productivity rate, the durability of the industry, price volatility, and universal consumption, since oil is used in the form of fuel, inputs in industries, and dominant energy sources mainly in industrial sectors (according to the IMF, amounting to as much as 30%). Some countries are becoming the wealthiest members of the world economy, such as Saudi Arabia, whose market advantage stems from possessing the cheapest oil raw material and huge oil supplies. Since other economic activities have not been developed for a number of reasons, Saudi Arabia chooses to turn to an economy with highly profitable exploitation, production, and export of oil. The Saudi oil sector accounts for about 45% of budgetary revenues, 70% of export revenues, and about 50% of gross domestic product (OPEC, 2022). Many colloquially call it the "Energy Superpower" of the modern age since it alone owns 31% of the OPEC production structure, with a total value of us $34.4 billion (World Atlas, 2022), owns as much as 24% of the worldwide proven reserves, and is the most significant player in terms of total revenues of as much as $136.2 billion, which is best seen in its 20.1% share in the world market, just ahead of Russia (10.9%), Iraq (6.8%), and Canada (5.8%) (Bankar.me, 2017).

Although many macroeconomic indicators, such as oil prices and exports, point to the positive impact of natural resources as determinants on Saudi economic growth, factors such as the unemployment rate, the underdevelopment of industrial sectors, foreign investment, and GDP per capita in the 21st century show that Saudi Arabia suffers from excessive dependence on a single sector whose existing economic growth does not necessarily involve sustainable development.

1.1 Literature review of the concepts of economic growth, sustainable development, and their measurement determinants

Although different at first glance, economic growth and sustainable development are very complex concepts. While Samuelson and Nordhaus (2007) explain economic growth as an expansion of GDP or overall output in a situation where the output limit moves beyond the maximum output, Elkan (1973) assumes that the same growth sets aside economic development as the process of increasing the satisfaction of the needs of natural persons and economic entities, the quantities of available goods, and the spectrum of available choices. In addition, Todaro and Smith (2006) argue that in the modern era, economic development is best presented in the form of changes in the economy, human needs, and state institutions, while reducing inequalities and

poverty, and increasing well-being of the population.

The same concept underlines sustainable development that creates conditions for economic well-being and reduces resource consumption for better long-term production and balanced ecosystem capacity. The concept of sustainability or sustainable development was formed as part of the report "Our Common Future" (known as the Brundtland Commission), according to which it is defined as "development that meets the needs of the present without jeopardising the ability of future generations to meet their own needs" (World Commission for Environment and Development, 1987). Sustainable development is driven by three dimensions, i.e. ecological, economic, and social, from which eponymous systems are singled out (Kaimuri-Kyalo & Kosimbei, 2017). Since it is impossible to analyse them simultaneously, each system is singed out and observed as a separate factor considering the IISD criterion (Bossel, 1999) that "sustainable development is possible only if component systems, as well as the entire system, are sustainable. Despite uncertainty regarding the direction of development, it is necessary to identify components and define indicators that can provide information about the sustainability of each system." Furthermore, due to the failure to use GDP and income as economic development factors, sustainable development indicators are also compiled according to social, economic, and environmental impacts.

New theories of economic growth have postulated that technology leads to knowledge production so that development itself is created from a return to knowledge that has the potential for unlimited development and high investment. Sustainable development can only be ensured through the constant advancement in technology, which is evident today in the rate of GDP growth per capita. Since it is impossible to expect a steady increase in labour factors, and greater capital growth leads to a decrease in return on capital and a drop in economic growth compared to the labour force, a country must continuously improve technology, scientific and research development, and education through economic measures in order to achieve intensive growth (Sarel, 1995).

The role of sustainable development indicators was first considered at the UN Conference on Environment and Development in 1992, which called on countries to develop sustainability indicators to create a basis for decision-making. Phimphanthavong (2014) conducted a study on determinants of sustainable development in the Laos example by regression analysis using GDP variables, income inequality, environmental pollution, etc., to achieve a level of sustainability. The analysis confirmed the thesis about sustainable development as a combination of economic and social development and environmental protection, and it was concluded that the same development could be achieved once inequalities in society are minimised and business operations that condition the protection of natural resources are maintained. Borozan (2006) argues that the aggregate function of production grows in the case of the existence of capital, natural resources, technology, and general social infrastructure, i.e., a set of economic and non-economic determinants affecting the quality of life. The labour force and labour productivity, investments in the form of capital, technology, and human resources are singled out within the set of economic determinants, while the selected non-economic determinants represent institutions, entrepreneurial ventures, and macroeconomic policies.

Labour productivity is closely related to the rate of GDP per capita since long-term growth stems from increased labour productivity, and its quantity is determined by human capital, technological changes, and economies of scale. Although the labour force determines the productivity level, the population is not significant for economic activity because a part does not participate in activities, and excessive growth hinders growth (Miller, 2016). As a more mobile production factor, investments affect annual GDP and aggregate demand function changes. "The most pressing problem for developing countries with economies of scale is too low savings facing low or non-existent investments in the manufacturing sector" (Tilinger, 2015). In a resource-based economy, investments in capital procurement are often not marginalised due to the non-implementation of infrastructure changes, and to increase investments and accelerate growth, they resort to borrowing. If not used transparently, the borrowed funds will cause reduced growth rates, a drop in capital investments, and a slowdown in economic development, which is best seen in countries with high GDP and public debt (Aizenman et al., 2017).

The two indicators most frequently used in the economic dimension of sustainable development

are the Human Development Index (HDI) and the Index of Sustainable Economic Welfare (ISEW). While the HDI is measured in a range from 0 to 1, where 1 denotes the highest level of human development under the items of longevity, knowledge, and resource use measured by adjusting GDP per capita and purchasing power parity, the ISEW considers environmental degradation and is calculated based on the adjustment of the consumption index with the distribution of inequalities and the breakdown of environmental protection measures such as non-renewability of natural resources (Kaimuri-Kyalo & Kosimbei, 2017). International trade affects the distribution of income between countries and its increase conditions a replacement of an export quantity for an import quantity. However, its revenues do not mean that the country's well-being has increased but can show critical changes in the economic system depending on the change in the prices and quantity of exports or imports of outputs or real national income. Currently, some countries use the ratio of adjusted net savings (ANS) to gross national income to quantify development, which may best show genuine economic sustainability. If savings are positive, the theory suggests that prosperity increases since "positive savings enable wealth growth over time, ensuring future generations to enjoy as many opportunities as the current ones" (World Bank, 2012). By contrast, negligible or negative amounts of the rate reduce the wealth and overall prosperity of the country in the long run.

In any case, economic sustainability, which is prolonged by economic growth and sustainable development, is exclusively oriented to consumption and contribution of natural resources in the eponymous economies to production, and is achieved by increasing the well-being of all generations or "the non-declining usefulness of a representative member of society throughout the millennia into the future" (Pezzey, 1992). Bojo et al. (1992) best show that "economic development in a given area is sustainable only if the total stock of resources – human capital, physical population, environmental resources, and exhaustible resources – is not reduced over time."

2. Methodology and the research model

The research problem is examined using the econometric methods of multiple linear regression analysis and the multicollinearity test as part of the correlation analysis. The analysis covers the period from 2010 to 2020. Within the same concept, sustainable development that creates conditions for economic well-being and reduction in resource consumption for the needs of better long-term production and balanced capacity of the ecosystem is particularly highlighted. This paper aims to examine the determinants of long-term economic growth and sustainable development of the Kingdom of Saudi Arabia as a selected single resource economy. Some of the statistical methods used within the analyses are Pearson correlation coefficients, the coefficient of determination R^2, the corrected coefficient of determination, the F-test, and the corresponding T-test. To create a model of economic growth and determinants of sustainable development, all data were collected from annual reports published on the website of the Saudi Central Bank. Linear in all parameters and deviations, the regression model was obtained on a sample of thirteen (13) independent variables in the appropriate form:

$$\text{Real GDP growth rate (Y)} = \beta_0 + \beta_{1\text{inflation}} + \beta_{2\text{budget surplus/deficit}} + \beta_{3\text{oil exports}} + \beta_{4\text{imports}} + \beta_{5\text{unemployment}} + \beta_{6\text{foreign direct investment (FDI)}} + \beta_{7\text{labour productivity}} + \beta_{8\text{public debt}} + \beta_{9\text{labour force}} + \beta_{10\text{BDP per capita}} + \beta_{11\text{HDI index}} + \beta_{12\text{total natural resources rent}} + \beta_{13\text{ adjusted net savings}}$$

The dependent variable is the annual rate of the real gross domestic product as a measure of the total economic activity of Saudi Arabia, while the factors used as independent variables in the analysis are inflation, budgetary surplus (deficit), total oil exports, import, unemployment rate, foreign direct investments, labour productivity, public debt, labour force, GDP per capita, the HDI index, total natural resources rents, and adjusted net savings (ANS). The indicators are correlated with the dependent variable based on which the function of the ten-year model and the contribution of determinants to economic growth and sustainable development are assessed. Depending on the chosen set and the results of the conducted tests, two hypotheses were set. While the null hypothesis, H_0, concludes based on the high coefficients that there is no statistically significant correlation between the analysed set, the alternative hypothesis, H_1, shows a statistically significant correlation between the same variables

since its coefficients are lower than the maximum value.

In addition to these factors, the model attempted to analyse additional variables determined by the theory as crucial factors for economic growth. Unfortunately, the limitations refer to a statistical set excluded from testing due to regression that does not take into account short-term economic growth indicators or factors of insignificant value for the observed years.

2.1 Research results

Table 1 Correlation matrix of GDP and determinants of economic growth

	GDP (%)	Inflation	Budget deficit	Oil exports	Import	Unemployment rate	ISU	Labour productivity	Public debt	Labour force
GDP (%)	1									
Inflation	0.43	1								
Budget deficit	0.74	0.41	1							
Oil exports	0.77	0.34	0.91	1						
Import	0.10	-0.03	-0.08	0.24	1					
Unemployment rate	-0.71	0.12	-0.41	-0.46	-0.14	1				
ISU	-0.50	-0.55	-0.51	-0.28	0.27	0.22	1			
Labour productivity	0.73	0.31	0.89	0.98	0.24	-0.37	-0.23	1		
Public debt	-0.74	-0.62	-0.50	-0.57	-0.34	0.49	0.62	-0.47	1	
Labour force	-0.81	-0.59	-0.79	-0.64	0.23	0.48	0.87	-0.58	0.74	1

Source: Authors' calculation

Table 1 shows the correlation between the dependent variable and the set of independent variables that represent determinants of long-term economic growth. The test has shown that there is a very strong and positive correlation between GDP and the variables of the budget deficit/surplus (74%), oil exports (77%), and labour productivity (73%). Inflation and import have a low and positive correlation with the dependent variable (43% and 10% of the correlation with GDP, respectively). In contrast to expectations, there is a very high but negative correlation between GDP and the unemployment rate (-71%), foreign direct investment (-50%), and public debt (-74%).

Despite the high correlation with labour productivity, it is evident from the data that the most significant negative correlation is the one between GDP and the labour force factor (-81%), which suggests that labour productivity does not necessarily stem from the number of skilled labour force in Saudi Arabia. Namely, the Saudi economy relies on oil, whose exports generate a GDP rate and have the greatest impact on aggregate money supply and foreign currency inflows, records an increase in surplus on the budget (visible in the correlation of 91% with oil exports) and realises high labour productivity (a correlation of 98%). Although the local population is massively employed in the agricultural and service sectors, the oil sector has been driven by productivity-generating migrants.

Table 2 Summary of regression statistics and ANOVA table

Regression Statistics					
Multiple R				0.9999	
R Square				0.9997	
Adjusted R Square				0.9974	
Standard Error				0.1731	
Observations				11.0000	
	DF	SS	MS	F	Significance F
Regression	9	116.126391	12.902932	**430.4959362**	**0.037**
Residual	1	0.02997225	0.0299723		
Total	10	116.156364			

Source: Authors' calculation

The F-statistic in Table 2 is as high as 430.49, the p-value is 0.037, which is lower than the alpha value (α = 0.05), and it indicates that the regression model is entirely statistically significant, i.e., the hypothesis that there is no linear correlation has been rejected. Since there is a high correlation between GDP and these variables (99%), the multiple correlation confirms that the results in the annual GDP rate trends can be accurately predicted using a set of tested variables. The determination coefficient suggests that about 99% of real GDP variations are explained by means of explanatory variables of the model.

Table 3 Multiple regression model of economic growth in Saudi Arabia (2010-2021)

	Coefficients	**Standard Error**	**t Stat**	**P-value**
Intercept	9.68	5.56	1.74	0.33
Inflation	-0.56	0.09	-6.54	**0.10**
Budget deficit	0.02	0.00	10.35	0.06
Oil exports	-0.06	0.00	-18.27	0.03
Import	0.01	0.00	3.35	**0.18**
Unemployment rate	-0.61	0.36	-1.69	**0.34**
ISU	0.14	0.01	13.45	0.05
Labour productivity	0.54	0.03	17.71	0.04
Public debt	-0.01	0.00	-12.01	0.05
Labour force	**-4.74**	0.48	-9.92	**0.06**

Source: Authors' calculation

The regression analysis (Table 3) established the following results: the inflation, unemployment, labour productivity, and public debt variables, and the associated coefficients coincide with theoretically expected values. In the observed period, Saudi Arabia recorded mild inflation ranging between 2 and 4%, with the exception of the pandemic years when it reached the level of negative -2% and posi-

tive 3%, respectively. Considering the imbalance in the energy products market, their prices, and the "closure" of all global economies due to the emergence of the COVID-19 virus, additional central bank's money emission increased the inflation rate and the poverty rate. Such "cost inflation", caused by a VAT increase, has only registered the highest price increase of the consumer price index components in the past three years and a reduction in GDP rates, i.e., a negative impact of 56% on Saudi GDP.

The agricultural sector contributed on average less than 20% to the employment rate of the total employment level for many years until the end of 2014. A vast number of the younger and the domestic population constitute structural unemployment depending on the lack of knowledge, skills, and competencies required in the markets as well as the percentage of employment in the service sector. In accordance with the situation, the regression has established a negative impact of 61% on GDP.

Furthermore, labour productivity recorded a positive impact of 54% on economic growth considering that foreign nationals as residents of the country fill the workforce in active sectors such as the oil sector. Although successfully reduced in previous years due to a high surplus in the budget and on the current account balance sheet, public debt increased by 118 billion SAR in the pandemic years, thus reducing economic growth to -4.1%. Such debt, the cause of which was not found in private capital accumulation but in state debt and the "support" measures, forced the government to sell state bonds and consequently reduced the level of salaries and production. The monetisation of debt by "printing" money and increasing lending to educational and health projects increased the debt by 25.9%, thus predicting a negative impact of 1% on the real GDP rate.

Government decisions on economy diversification under the "Vision 2030" programme launched in 2016 and the emergence of the COVID-19 virus caused a double decrease in real GDP and a 10.8% drop in the volume of oil exports. The drastic drop in oil prices by around 25% in global markets has further complicated the situation, as co-world prices and production volumes have sharply dropped due to the health and economic crisis.

Although there is permanent resource scarcity and the underdevelopment of many economic sectors in the country, the import rate is constantly linked to the rate of oil revenues since the country retains part of the imported goods for consumption in its own industries. The recession caused by the pandemic caused a reduction in both total exports and imports, primarily in the private sector, mainly through the decline in financing from commercial banks. Furthermore, resources are represented in the import structure, which in the short term generate growth of private consumption in the structure of real GDP, and therefore, the analysis showed a weak and positive impact of 1% on the GDP rate.

Since the country reflects a negative list of sectors banning foreign investment without state control, with the subsequent halt of state investment in reform projects during the COVID-19 crisis, it is evident that regression has found a positive but very low impact of 14% on GDP, with a high p-value bordering the recommended end level. Unfortunately, the labour force variable has the largest and negative coefficient. The global health crisis has raised the overall level of unemployment, which is evident in the growth of the Saudi rate to more than 7%. For the reasons already explained (low employment of the resident population, underdevelopment of the education system, poor structure of the overall labour force, etc.), it is evident that the labour force has a negative impact of as much as 4.74% on gross domestic product.

The long-term significance test, measured by the t-statistic, shows that all explanatory variables are statistically significant depending on p-values that are lower than alpha values (0.05). In the short term, taking into account the expansion of the energy market and the impact of the COVID-19 crisis, the exceptions are the variables of inflation, import, unemployment, and labour force, which are statistically insignificant because their p-values exceed by far the alpha value. The coefficients of independent variables are in line with previous expectations: the budget deficit is significant at 6%, oil exports at 3%, labour productivity at 4%, and ISU and public debt at the maximum level of 5%.

Table 4 Correlation matrix between GDP and determinants of sustainable development

	GDP (%)	GDP per capita	HDI index	Total natural resources rents	Adjusted net savings
GDP (%)	1				
GDP per capita	0.46	1			
HDI index	**-0.59**	**0.05**	1		
Total natural resources rents	0.68	0.65	-0.65	1	
Adjusted net savings	0.45	0.40	**-0.75**	0.82	1

Source: Authors' calculation

The correlation matrix in Table 4 analyses the ratio between the GDP rate and the set of variables of economic dimensions that are considered determinants of sustainable development. The test showed a high and positive correlation between GDP and GDP parameters per capita (46%), the total natural resources rents (68%), and adjusted net savings (45%). Unfortunately, there is a high negative correlation with the HDI index (-59%). Unexpected results were found in the correlations between the HDI index and individual variables, a particularly low and positive link to GDP per capita (5%), but a very strong and negative correlation with adjusted net savings (-75%).

Table 5 Regression table and ANOVA table

Regression statistics					
Multiple R	**0.8717**				
R Square	**0.7599**				
Adjusted R Square	0.5999				
Standard Error	2.1558				
Observations	11				
	Df	SS	MS	F	Significance F
Regression	4	88.27222107	22.0680553	**4.748517238**	**0.0454**
Residual	6	27.88414256	4.64735709		
Total	10	116.1563636			

Source: Authors' calculation

F-statistics in Table 5 amount to 4.74, the p-value is 0.045, which is still less than the alpha value and indicates that the model of sustainable development is statistically significant, i.e., the hypothesis that there is no connection is rejected. Based on the correlation between GDP and these variables, a multiple correlation of 87% confirms that results in trends in the annual GDP rate can be predicted using a set of selected variables. The coefficient of determination suggests that about 76% of variations are explained using explanatory variables of the regression model.

Table 6 Multiple regression model of sustainable development of Saudi Arabia (2010-2021)

	Coefficients	Standard Error	t Stat	P-value
Intercept	210.99	84.96	2.48	0.05
GDP per capita	**0.00**	0.00	1.93	0.10
HDI index	**-275.09**	108.89	-2.53	**0.04**
Total natural resources rents	**-0.03**	0.18	-0.16	0.88
Adjusted net savings	**-0.39**	0.19	-2.00	0.09

Source: Authors' calculation

Just like the case of economic growth determinants (Table 6), the existing theory determines in advance the relationship and coefficients of all sustainable development factors. In this case, it is assumed that GDP per capita, the HDI index, the total natural resources rents, and adjusted net savings (ANS) positively influence the level of sustainable development of a resource-based economy, so that positive signs in coefficients are expected. The regression analysis established the results contradictory to expectations, i.e., all indicators had a negative impact on the GDP rate, with the exception of the GDP per capita variable, which shows no impact on the dependent variable (0%).

The HDI index ranging from 0.809 to 0.859, with a three-year stagnation at the level of 0.854, indicated a decrease in the level of human development in accordance with the growth in longevity and the number of the younger population, but with chronic lack of skills. Despite the oil revenues, the country has not achieved prosperity for the entire population, but it has facilitated economic changes on the basis of real national income, prices, a drop in exports, and an increase in oil scarcity. Only within the last recession, unequal distribution of education, health, and the standard of living has stopped progress in the country, losing up to 24% of the HDI index and thus suffering the worst impact on GDP of -275.09%.

2.2 Discussion

The economic consequences have forced the country to take more restrictive austerity measures that have hindered the reforms from the "Vision 2030" programme. Although adjusted net savings recorded positive figures in the observed period, their gradual decline and a decline in gross national income show that Saudi Arabia does not make enough wealth for future generations. In general, household income declines during recessions; however, the support measures implemented in 2019/20 by the national government mitigated a decline in the income, increasing at the same time household savings to 23 billion SAR, with constraints affecting private consumption. For this reason, it is evident that ANS has a negative impact on GDP of 39%.

In addition to the OPEC's refusal to reduce production and lower oil prices, the country increased its oil supplies to prevent long-term consequences. Unfortunately, the oil use rent was so high in the year before the outbreak of the virus and at the peak of the oil market in 2014 that the substitution of raw materials affected the decisions of the population to temporarily use other sources of energy. Since the rent was above the balance point on the market, some of the oil remained unused in recent years given a drop in demand and, ultimately, the regression established a negative impact of the natural resources rent of 3% on GDP. Since the long-term significance test has established statistical insignificance of all variables depending on p-values exceeding the maximum level with the exception of the HDI index with a coefficient of 0.04, the coefficients of variables are in line with previous expectations, i.e., GDP per capita, the total resource rent, and net savings are insignificant at the levels of 10%, 88%, and 9%, respectively.

3. Conclusion

The aim of the research was to analyse the determinants of long-term economic growth and sustainable development of Saudi Arabia using the econometric methods of multiple regression analysis and the multicollinearity test for the period from 2010 to 2020. The research was conducted based on a model of 13 variables, with the dependent variable

constituting the annual GDP rate, while independent variables included inflation, budget deficit, oil exports, import, the unemployment rate, foreign direct investment, labour productivity, public debt, labour force, GDP per capita, the HDI index, total natural resources rents, and adjusted net savings.

The results point to a very strong positive correlation between GDP and determinants of the budget deficit, oil exports, and labour productivity. Inflation and import have a low and positive correlation with GDP, and a negative correlation with the rate of unemployment, foreign investment, and public debt. Despite the correlation with labour productivity, it was found that the greatest negative correlation is the one between GDP and labour force because labour productivity does not stem from the number of the skilled people but from productivity in the oil sector. The p-value of 0.037 determined the statistical significance of regression analysis and a high correlation between GDP and economic growth determinants of 99%. The theory assumes that a budget surplus, foreign investments, exports, labour productivity, and labour force positively stimulate economic growth, while unemployment, inflation, budget deficit, import, and public debt have a negative impact on the economy. The research has shown that inflation, unemployment, labour productivity, and public debt exclusively coincide with theoretical expectations. The t-test has shown that all explained variables are statistically significant due to lower p-values, so that the coefficients are also in line with the expectations: budget deficit of 6%, oil exports at 3%, labour productivity at 4%, and ISU and public debt at the maximum level of 5%. In the short term, considering the expansion of the energy market and the impact of the COVID-19 crisis, the exceptions are inflation, import, unemployment, and labour force due to statistical insignificance.

On the other hand, the research established a high and positive correlation between GDP and a set of determinants of sustainable development: GDP per capita (46%), the natural resources rent (68%), and adjusted net savings (45%). A negative correlation is achieved with the HDI index (-59%). The p-value in the F-test is 0.045, and it shows the statistical significance of the sustainable development model. The theory assumes that GDP per capita, the HDI index, resource rent, and adjusted net savings positively affect Saudi Arabia's sustainable development rate; however, the research found the opposite results, i.e., indicators have a negative impact on GDP, with the exception of GDP per capita that shows no impact on the dependent variable (0%). The t-test determined the statistical insignificance of all variables depending on p-values exceeding the maximum level, with the exception of the HDI index, so that coefficients are also in line with expectations: GDP per capita is insignificant for GDP, total natural resources rents, and net savings at the levels of 10%, 88%, and 9% or more, respectively. The limitations of the research presented in this paper are related to the statistical set that was excluded from testing, given that the regression analysis does not take into account indicators of short-term growth of the economy, as well as factors with insignificant values for the observed years. Based on these results, the results suggest that investing in human capital is an urgent step to achieve long-term sustainability and reduce reliance on operating with natural resources in the future.

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