Analysis of the relationship between some indicators of sustainable development and economic growth in Iraq for the period (2004-2020)

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ABSTRACT The research aims to analyze the relationship between some indicators of sustainable development and economic growth, as well as knowing the extent of the impact of sustainable development indicators on the economic growth indicator represented by the gross domestic product in Iraq, through the use of time series to express the nature of the relationship between the variables of the study, and through estimation and analysis Relationship in the applied side in which the ARDL model was used, it was found that there is a long-term equilibrium relationship between some indicators of sustainable development and economic growth in Iraq, in addition to that indicators of sustainable development have an impact on economic growth in Iraq. The study, which means that sustainable development has contributed in one way or another to achieving economic growth in Iraq.

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1. INTRODUCTION
Sustainable development is a modern topic that has received wide attention at the global level, especially after the world's access to modern technologies. The concept of sustainable development is a sophisticated concept of old or former development concepts. It considered that the contribution of human capital investment to economic growth was no less important than investing in physical capital, and that increasing GDP was a measure of economic growth, focusing on members of society benefiting from the fruits of economic growth in a more equitable manner. It is a state of continuous interaction between human beings and society and between human beings and nature, as human capacity development must be used in the process of economic growth to achieve economic benefits that increase the possibility of further sustainable development as one of the States seeking to achieve steps on this path, Iraq faced many problems and obstacles related to the realities of the Iraqi economy due to the surrounding circumstances, which engulfed Iraq after 2003 and resulted in military operations and United States occupation, and many subsequent incidents and crises that prevented it from continuing its sustainable development approach. These conditions had a direct impact on Iraq's sustainable development indicators. In addition to depleting its resources, the process of sustainable development requires a multiplier development effort by decision makers through the diversification of Iraq's economy and the failure to rely on a single sector to obtain its base through which to embark on a meaningful plan of action through which to achieve the desired goals for achieving sustainable development.

2. METHOD
The inductive and deductive Approach to study and analyze the impact of economic growth on certain indicators of sustainable development during the Duration of the Study, as well as the applied method based on economic measurement to determine the results of the relationship between study variables.

2.1 Research Structure
The research was divided into three topics. The first topic was devoted to the study of the theoretical and conceptual aspect of sustainable development and economic growth. The second focus was on the development of economic growth and the analysis of some indicators of Iraq's sustainable development during the period of the study and knowledge of the relationship between them. The third focus was on measuring and analysing the impact of some indicators of sustainable development on Iraq's economic growth. The research concluded with a number of conclusions and recommendations.

2.2 Research Problem
The Iraqi economy faces many problems, including the irrational use of natural resources, environmental pollution, desertification, low per capita GDP and water, as well as increased openness to the outside world, which directly affects natural resources and their depletion, all of which have a negative impact on economic growth. The problem can therefore be formulated in response to the following questions: To what extent have sustainable development
indicators contributed to Iraq's economic growth during the study period.

3. RESULTS AND DISCUSSION

3.1 Theoretical and conceptual framework for sustainable development and economic growth

Economic growth is one of the prerequisites for improving communities' living standards. Gross domestic product (GDP) is not only an increase in real per capita income, This increase must be greater than the rate of population growth and be cumulative and sustained over time, while sustainable development indicates the need to conserve and not drain natural resources through sufficiency. Through this pillar, we will address economic growth and sustainable development through the following:

3.1.1 The Concept of Sustainable Development

Sustainable development is one of the topics the world has taken on in the economic, social, and political arena. If sustainability becomes a developmental idea, it is spreading in many developing and developed countries alike, so sustainability is not a topic of the day. It is based on a series of reforms that have evolved as a result of inadequate concepts of past development. Many concepts of sustainable development have been identified by the economist Robert Solo as not harming the productive capacity of future generations and bringing them to the same position as the current generation. This speech of sustainability means not only the resources we consume at present and those we inherit for future generations, but also the environment must be taken care of. This environment includes the total productive capacity of the economy (Maher and Ahmad, 2017: 17)

It can be said that sustainable development can be considered as the means of human beings. It seeks to ensure a balance between environmental aspects through its various and diverse dimensions in order to ensure the rational development of both natural and human resources and in accordance with its planned strategy collectively and organizationally in order to reconcile the needs of the present and the future. There are some who define it as a dynamic balance in the process of interaction between the population and the absorptive capacity of their environment so that people develop to express their potential without adversely affecting the absorptive capacity of the environment (Ben, 2015: 2). This concept indicates that sustainability focuses on human activities and their ability to meet the needs of individuals without draining the productive resources at their disposal.

Sustainable development is also known as development, which encompasses the various activities of society, by adopting the best means to achieve the best investment of material and human resources in development activities, focusing on the principles of equity in production and consumption and in the distribution of returns, for the purpose of achieving the well-being of all members of society without damaging the environment or the allocations of future generations (Al-Qureshi, 2010: 35)

The FAO Council defines sustainable development as managing and protecting the natural resource base and guiding technical and institutional change in a way that ensures continuous satisfaction of human needs for present and future generations (Jawarain, 2017: 16) This concept indicates that sustainable development is the management and maintenance of the resource base and the direction of technological and institutional changes in a way that ensures that current and future human needs are met in a continuous manner. To complement the foregoing, sustainable development aims at conserving and not draining natural resources through sufficiency, improving the well-being of society by meeting their needs and achieving balance while the present generation and future generations need it.

3.1.2 The Importance of Sustainable Development

The importance of sustainable development comes from the following: (Hashim, 2011: 284)

1. The need to preserve and sustain non-renewable natural resources as an important topic, whether in the field of thought or politics. The concept of sustainability has therefore been incorporated into the concept of human development.

2. Reducing pollution and ensuring better life for generations. Productive expansion, particularly industrial activities in developed countries, has led to higher demand for natural resources and higher pollutants.

3. Improving the cultural, social, economic and health level of society.

4. Solving the problems caused by underdevelopment and creating new jobs for individuals and society and developing their abilities to work, think, innovate, innovate, and innovate.

5. Developing the use of renewable energy materials.

3.1.3 Characteristics of sustainable development

Sustainable development enjoys continuity and communication and therefore has a range of features and characteristics: (Abu Qasr and Jasmine, 2017: 20).

1. It is its long-term development and this is one of the most important features of it, taking the time dimension as the basis for it. It is a development that depends on appreciation of the possibilities of the present while taking into account the right of future generations.

2. Sustainable development is primarily geared towards meeting the needs of the poorest strata of society, that is, it seeks to reduce the worsening of global poverty.

3. The elements of sustainable development cannot be separated from each other as a result of the overlapping quantitative and qualitative dimensions of these elements.

4. It is a multidimensional and interdependent process based on planning and coordination between economic and social development plans on the one hand and environmental development on the other.

5. Taking into account equality and the rights of subsequent generations and balancing the ecological, economic and social system.

6. It is an integrated development based on policy coordination and integration.

7. Sustainable development differs from development in general because it is characterized by overlap and particular complexity with regard to the natural and social nature of development.
8. Continuing to generate high income that can be reinvested and then perform replacement, replenishment and maintenance of resources. The need to preserve and sustain non-renewable natural resources as an important topic, whether in the field of thought or politics. The concept of sustainability has therefore been incorporated into the concept of human development.

3.1.4 The concept of economic growth

The concepts of economic growth vary because of different researchers and intellectuals, as well as the different intellectual base on which such concepts are based. The definitions put forward by the competent writers are many but all of them are in the same sense. In this context, we mention some definitions that touched on economic growth.

Economic growth can be defined as an increase in per capita or labour volume because the increase in output is often accompanied by an increase in population size. Therefore, the real estimate of the meaning of prosperity is measured by the average per capita GDP (Awad Et al., 2021: 235) this concept, economic growth means a sustained increase in real per capita income over time and is limited to the per capita income divided by the population.

It is also defined as increasing the economy’s ability to expand the production of goods and services over a period of time compared to another period of time and can be measured in nominal terms, including inflation or measured in real terms that do not include inflation (Dagher, 2018: 50)

While who refers to economic growth as the impact of sustained increases in the production of material wealth, technical progress and efficiency of economic systems, as well as investment in capital and human beings, are the main sources of economic growth, because technical progress means the use of new technical methods through innovation and invention as well as the risk element of productive enterprises. Economic systems show their efficiency by transferring resources to areas that achieve economics of scale and optimal production status, while the capital of material and human capital positively affects the worker’s productivity and manpower development in terms of training and qualification to the extent that increases the proportion of economically active forces (Awad Et al., 2020: 185)

This concept means that economic growth represents the State's ability to offer a diverse mix of economic goods to its population. This growing increase in productive capacity is based on technological progress and institutional and ideological adjustments.

3.1.5 Importance of economic growth

Economic growth is the reflection of economic activity and the proportion of its development. It is of interest to economists and shows its importance as a general indicator reflecting the current economic situation. The high level of income (15%) leads to a reduction in the poverty rate by 20-30%. The importance of economic growth can be represented by the following: (Kaff, 2014: 540).

1. Economic growth raises the standard of living, creates jobs and reduces unemployment, thereby reducing poverty.
2. Endeavours to improve the health, education and social standards of members of society.
3. Supporting the balance of payments through the development of economic plans that contribute to improving and achieving economic stability and contributing to domestic income growth.
4. Providing all basic needs, especially food, at affordable prices commensurate with society's economic capacity. This helps to improve their living conditions.
5. Economic growth contributes to increased income and provides significant assistance to a number of States’ institutions in the form that ultimately leads them to self-sufficiency.
6. Supporting important sectors of the State to increase the level of services provided to citizens.

3.1.6 Elements of economic growth

There are many elements that contribute to economic growth, the most important of which can be represented by the following: (Awad Et al., 2020: 186)

1. Technological advances: technological advances in the use of modern technologies used in the production process, which contribute to the production of more quantities and are of higher quality and less time, by using the same amount of production elements or less, i.e. optimal exploitation of the production elements.
2. Work: This element is an influential factor in the production process, as it represents the physical and intellectual abilities that human beings can use in the production process. The size of the labour force is linked to the number of active people ready and able to work and to the working hours of each worker. As is known, the increase in the population contributes to the increase in the volume of employment.
3. Capital: This component consists of machinery, land, buildings, physical assets and other elements that are involved in the productive process. The financing of this element is done through savings that go to invest. Increasing savings leads to increased investment and thus increased production and income, thereby increasing the capacity for capital formation.

3.2 Development of economic growth and analysis

Development of economic growth and analysis of some indicators of Iraq's sustainable development for the period (2004-2020)

3.2.1 The reality of Iraq's economic growth after (2004)

National income and gross domestic product (GDP) are among the most important indicators of economic growth for most countries and Iraq. National income represents the total income earned by factors of production in return for their contribution to the production process of goods and services produced within the national economy over a period of time that typically represents a year. While GDP indicates the total gross added values achieved by different branches of economic activity over a given period, that is, it represents the total market values of all final goods and services produced in the national economy over a certain period of time, often a year (Abbas, 2011: 68). GDP is also considered as one of the most important indicators of economic performance because it is one of the country’s primary sources of national income, so we will focus on GDP as
an indicator of economic growth, and Iraq's GDP can be said to be different from the rest of the world, especially those that are similar in terms of growth in available resources and capacities. Due to Iraq's circumstances during the duration of the study, this has had a negative impact on the overall economic activity, combined with the widespread financial and administrative corruption in some of the joints of the State, which has worked differently in GDP compared to other countries (Awad et al., 2021: 11437).

To complement the foregoing, Iraq's gross domestic product (GDP) gives a close picture of the economic reality and the course of its development. When reference is made to table 1, the GDP has seen an upward trend during the first years in the value of GDP, which has risen from (53235358.7) million dinars in 2004 to (157026061.6) million dinars in 2008, owing to the end of economic sanctions and the economic blockade imposed on Iraq by the Coalition States prior to 2003. This has led to increased trade openness to the outside world, which has clearly contributed to an increase in oil exports, thus increasing Iraq's revenues from this commodity, because oil exports occupy the lion's share in the composition of GDP, and the GDP has fallen to reach (130643200.4) million dinars in 2009 owing to the decrease due to the global financial crisis, which reduced revenues from this sector owing to low oil prices due to low demand globally (Ali, 2023: 317).

While gross domestic product (GDP) data for the period 2010-2013 showed a marked rise as a result of increased exports of the oil sector, owing to an increase in oil prices which contributed significantly to an increase in the sector's revenues, which clearly contributed to an increase in GDP, while in 2015 it declined to reach (194680971.8) million dinars, as a result of the security conditions experienced in Iraq and the accompanying crisis in the decline of oil prices globally. This led to a decline in the revenues of this sector, which is dependent on the composition of GDP, which clearly affected the decline in GDP during that period, and then took the GDP up until 2019. (27617000.0) million dinars as a result of the relative improvement in the security situation during that period and subsequently decreased due to the crisis (COVID-19) and the interruption of most life activities, which reduced the oil sector's exports, thereby decreasing revenues and hence the decline of GDP. From this vision, it can be said that the growth rates witnessed in the Iraqi economy were associated with the abundance of oil revenues, without these rates being reflected in positive changes in the environment of the Iraqi economy. The Iraqi economy is dependent on the exports of one sector, the oil sector, and thus any circumstance in which the country is experiencing will be reflected in the revenues of that sector, which in turn will be reflected in the country's economic growth rates.

3.2.2 The reality of some of Iraq's sustainable development indicators after 2004

Average per capita GDP This indicator is an important economic indicator that expresses development. The economic significance of this index is highlighted by the fact that it reflects economic growth rates and measures overall output volume. Iraq's average per capita GDP can be explained by reference to table 2, which shows that the average per capita has seen an upward trend in the early years. From (1961,539) dinars in 2004 to (5135,269) dinars in (2008).

This increase may be due to the large financial resources attributable to the Iraqi economy as a result of higher oil prices and increased oil revenues, then the GDP fell to reach (4125861) dinars in (2009) owing to the decrease due to the global financial crisis, which reduced revenues from this sector owing to low oil prices due to low demand globally and consequently lower GDP and hence lower average per capita. While data on average GDP per capita for the period (2010-2013) showed a marked increase as a result of increased exports of the oil sector, owing to increased oil prices, which contributed significantly to the increase in the sector's revenues, which contributed clearly to the increase in GDP and thus to an increase in its average per capita. While in (2015) it fell to (5444537) dinars, as a result of security conditions in Iraq, which clearly affected the decline in the average per capita GDP during that period, and then took the rise until (2019) reached (7056782) dinars as a result of the relative improvement in the security situation during that period. The coronavirus outbreak (COVID-19), which has swept across the world and disrupted the economies of these countries because of the almost total lockdown policies among the various countries of the world, in addition to preventive measures, including the reduction of official working hours of various state joints, as well as the decline in oil prices due to the rise in coronavirus cases and the world's perception of the seriousness of the epidemic, reflected in oil demand.

Unemployment rate The phenomenon of unemployment is a major problem that threatens the stability of various developed and developing countries alike, as well as its contribution to impeding the progress and movement of economic development, particularly in developing countries, as high unemployment rates are the result of low national output and consequently the loss of resources of those countries that suffer from it. The data in table 2 shows the evolution of the unemployment phenomenon in the Iraqi economy during the period of study, which shows that unemployment rates in one year (2004) was high at (26.80) per cent of the active population owing to the deterioration of economic and social conditions after one year (2003) The demobilization of security agencies and the disbanding of several ministries in Iraq in that year, which led to an increase in unemployment rates as indicated in the Ministry of Planning surveys.

In 2005, the unemployment rate fell to almost (17.90) This rate continued to decline to (11.7) in a year (2007) This decrease was due to higher oil prices and a relative improvement in the performance of the Iraqi State, as well as higher level of employment and job creation for the unemployed. Many graduates received employment opportunities in that period as a result of that year's explosive balances, which coincided with higher oil revenues received by the Iraqi economy.

Unemployment rates rose again in 2008. (15.3) This rise in unemployment is due to the year's global financial crisis (2008) affecting the world and its effects on the Iraqi economy, albeit indirect, including the decline in Iraq's oil exports. Because that crisis began in the economy of the United States of America and then its effects spread to the rest of the world. As the largest importer of Iraqi oil exports, and with the onset of the crisis, the United States economy collapsed completely. Its oil imports decreased, resulting in a decline in Iraqi oil exports and, consequently, a decrease.
in the operating rate and thus higher unemployment rate in the Iraqi economy.

During the period (2009-2014), the unemployment rate fell steadily, reaching a decrease of approximately 10.6 in 2013, owing to the State's adoption of public sector employment policy and the trend towards higher employment rates in order to accommodate the unemployed in various State departments. In 2015, unemployment rates rose to reach (13.18) Continued to fluctuate until close to (17) (2020) owing to higher unemployment rates due to increased numbers of graduates from universities and government and private institutions, as well as increased numbers of holders of higher degrees, lower employment rate, inability of the State to provide jobs and lay off many workers from their workplaces due to their closure as a result of dependence on imported products as well as the economic and security conditions experienced by the Iraqi economy. As well as the coronavirus outbreak (COVID-19) and its accompanying curfew and business interruption, which caused some sectors to lose their partial or total work stoppages and layoffs, all of these reasons led to higher unemployment rates during that period, which adversely affects Iraq's economy.

Expenditure on education Education spending is a vital indicator for measuring the social role of the State as well as the significant impact of government spending on education in the process of achieving development, both human and economic, given the significant role of the individual learner in the development process. So the education sector can be said to be the fundamental pillar of human development and capacity upgrading. Therefore, expenditure on education represents the total amount of cash allocated by the Government as a proportion of the State's general budget or of the gross domestic product to achieve social balance by providing educational opportunities to all members of society. When reference is made to Table 2, expenditure on education was 1802,610.9 million dinars in (2004). This rise is due to a rise in total public expenditure, while it has reached, and then the expenditure on education, which adversely reflected the country's education for the sector's importance in achieving sustainable development. However, expenditure on education has gone up from (2051914.3) million dinars (2006) to (4943891.8) million dinars (2008) and (9300539.0) million dinars (2011), owing to higher total expenditure due to higher oil prices and increased revenues due to the global financial crisis. In addition to the relative improvement of economic and security conditions, resulting in higher expenditure on education for the sector's importance in achieving sustainable development, education expenditure fell in (2012) to (8530552.7) million dinars. This is due to the poor distribution of financial resources between different sectors of the economy, and based on the foregoing, it can be said that the reason for the decline in education spending during that year is not only the decline in public spending, but also because of the increased share of certain sectors in the public budget at the expense of others, which has clearly affected the reduction of spending on education.

Expenditure on education then fluctuated, depending on the country's economic situation, while expenditure on education declined after a year. (2014), as a result of the poor security conditions in Iraq during that period, which forced the Government to allocate the bulk of the expenditure on military operations, resulting in lower expenditure on education, which adversely reflected the country's educational reality. Expenditure on education after 2016 was again rising as a result of a real increase in oil revenues, reflected in increased total expenditure and thus increased expenditure on education, as well as the relative stability of security and economic conditions, which had a positive impact on increased spending on Iraq's education sector, but fell overall in (2020) to reach (118351830) due to the coronavirus outbreak (COVID-19) and increased spending on the health sector.

Expenditure on health Health spending is an important factor affecting human capital, a variable that is critical to economic growth and sustainable development, and is therefore one of the indicators reflecting the Government's interest in the development of this sector. Because health expenditure increases productivity in the future by increasing life expectancy rates, and in order to analyze the health expenditure index, we use Table 2, from which it is noted that health expenditure reached (17882574.0 million dinars in 2004). This rise is due to a rise in total public expenditure, and then health expenditure takes a rise as it rises from (1637696.9) million dinars (2006) to (27089341.4) million dinars (2008) and (4591942.2) million dinars (2011), owing to higher total expenditure due to an increase in oil exports resulting in increased oil revenues and thus increased public expenditure, as well as a relative improvement in economic and security conditions, resulting in higher health expenditure for the sector's importance for development. However, expenditure on health fell to (4047973.1) million general dinars (2012) This was due to an increase in the allocation of certain sectors to the detriment of others, which reduced the volume of health spending, and then fluctuated and decreased depending on the country's situation, while health spending declined after a year. (2014) to reach (3772844.9) million dinars in (2015), owing to the decrease in the allocation of a large part of public expenditure for military operations due to the control of certain governorates of Iraq by terrorist gangs, as well as the decline in oil prices, resulting in a decrease in the health sector's share of public expenditure, reflecting negatively on the health services provided to citizens.

Health expenditure after (2015) was again rising as a result of increased oil revenues, reflected in increased total expenditure and hence increased health spending. As well as the relative stability of the security and economic conditions, which has a positive impact on increased spending on the sector and hence the increase in health services, which reflects the rise in health expenditure as it reaches (5821352.0) million dinars (2020), so it can be said that despite the high share of health spending during most years of study, However, these ratios do not rise to the level of reliability in achieving sustainable development. The Government's health services to individuals must therefore be supported, developed and improved in order to meet the requirements of sustainable development.

Average per capita from arable land This indicator includes measuring the per capita arable land as well as the per capita land available for agricultural production. Agriculture provides the centrepiece of sustainable development. Agricultural progress offers the best safe range of poverty and hunger in many countries. Although Iraq enjoys a wide range of arable land, the sector's contribution to GDP is low during the course of the study, leaving Iraq with advanced positions in the lists of importing countries. When reference is made to Table 2, note that the average per capita arable land has experienced fluctuation between rise and decrease. Due to water scarcity, low technological
level, high dependence on oil sector and neglect of other sectors as well as deteriorating security situation and increasing population. All of these factors combined have led to a decline in the total area of agricultural land and have therefore adversely affected the average per capita of that land.

Relationship between economic growth and sustainable development

Economic growth is appropriately positioned in determining the dimensions and trajectory of the sustainable development blueprint, because man is the most important element in the process of economic growth, as well as its primary objective, as the process of economic growth seeks to provide him with decent life, so human capital is one of the fundamental pillars that stimulates the country’s economic growth. Therefore, the appropriate climate of health and social services needed by the individual, as well as education, training, rehabilitation and skills development, must be provided in order to form, develop and increase the efficiency of the human capital, thereby helping to raise the country’s national output rate, and many economists emphasize that the human capital is the key factor in the economic growth process. States have increased their efforts and intensified their potential to address education, increase savings and investment rates, reduce poverty, conserve and deplete the environment and natural resources economic growth ”, which is reflected positively in the level of economic growth of the country. Economic growth theories suggest that scientific and technical progress helps to increase it, improve its productive quality, produce new quality and raise the rate of long-term economic growth. It must therefore be emphasized that sustainable development indicators should be supported and developed to stimulate economic growth. Based on the foregoing, the relationship between economic growth and sustainable development can be said to be mutually beneficial. If there are targeted economic development policies, this will be positively reflected in stimulating and accelerating sustainable development. At the same time, sustainable development achievements will positively reflect economic growth, meaning that all variables are influential and influenced by the other.

### 3.2.3 Analysis of the relationship between Iraq’s sustainable development indicators and economic growth for the period (2004-2020)

Study variables and functional description In order to test the study’s hypotheses and achieve its objectives, the independent variable has been identified by some indicators of sustainable development (average per capita GDP, health expenditure and education expenditure) and the dependent variable of the GDP index. As in table 3:

Results of the stabilization test of study variables

After the DAL description of the model is done, we will test the stability of the study variables using the (Eviews) program to see whether the variables are stable or unstable, i.e. do they contain the root of the unit, with the rank of integration.

Detecting the stability of time chains has become very important in estimating standard models in order to get rid of the problem of false regression when estimating. In addition, stable time chains can get rid of the shocks they encounter and then return to long-term balance, so we will use unit root tests to ensure the stability of time chains. These tests are ADF and PP.

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Preliminary assessment of the ARDL model

The results of the appropriate (ARDL) model is ARDL (2,0,5,2), to indicate the relationship between the study variables in Iraq, has been done according to the standard (AIC) This model was among the best (20) model to give it the lowest value to this standard as it was automatically identified through the program (Eviews). The results of the statistical tests shown in the above table indicate that they are moral and of quality for the estimated model.

The value of the determination coefficient (R2) has also been shown to be (99%) giving interpretive power to the model, i.e. independent variables explain changes in the dependent variable by (99%) and the remaining ratio of (1%) is due to the influence of other variables not included in the model, and the value (Durbin-Watson statistic) was about (1.902835). This value indicates that the model is devoid of the problem of self-association.

Results of the boundary test for joint integration In order to test the long-term balanced relationship (common integration) between the dependent variable of (average per capita GDP) and the independent variables of (some sustainable development indicators), the boundary test (Bounds Test) must be conducted taking into account the following points:

- Compare the value of the count (F) calculated with its tabular value and within critical limits. There is a minimum (LCB: Lower Critical Bound explains whether the thoughtful variables are integrated from Grade (I0) and higher limit (UCB: Upper Critical Bound explains whether the variables are (II)-class integrated. If the value of (F) is exceeded by the upper limit (UCB), we reject the null hypothesis and accept the alternative hypothesis that there is a common complementarity.

- When there is a common integration between variables, the formula is estimated in the long term in accordance with the (Akaike) standard.

To identify short-term movements according to the specifications of the ARDL, the error correction model (ECM) is used.

The results of the boundary tests between some of Iraq’s indicators of sustainable diminishment and economic growth shown in table 7 above show that the value of (F-statistic) calculated is about 4.811772, which is greater than the minimum and highest calendar value at a level below (1%) This means rejecting the hypothesis of nowhere and accepting the alternative hypothesis indicating a common integration relationship, i.e. a long-term balance between independent variables and dependent variables. This requires an assessment of the response and the error correction factor.

Long-term and short-term response assessment results

After the boundary tests (joint integration) we found a long-term balance between the interpretative variables and the dependent variable, and here the short- and long-term capabilities of the estimated model parameters and the error correction parameter should be obtained. (ECM) The results of the long-term and short-term response assessment according to the (ARDL) model are shown through table (8). The relationship between some of...
Iraq's indicators of sustainable development and economic growth, as follows:

The error correction parameter indicates a long-term balance between some indicators of sustainable development and economic growth in Iraq for the period 2004-2020, because the error correction parameter is negative and moral at a lower level (1%), as the parameter indicates a return to balance within (0.002) of time.

Long-term response results show a weak expenditure impact between education expenditure and economic growth, because the volume of expenditure on education was not at the required level during the school period.

Long-term response results show a strong and moral exponential impact at a level below (1%) between average GDP per capita and economic growth.

Long-term response results show a strong and moral exponential impact at a level below (1%) between health spending and economic growth.

4. CONCLUSION

The results of the research indicate a long-term balance between certain indicators of sustainable development and economic growth in Iraq during the duration of the study. This demonstrates the research hypothesis, Many economic, social and environmental indicators that show low growth rates excluding per capita GDP decreased during the duration of the study. Through the implementation of sustainable development indicators to Iraq, Iraq has the capacity to achieve sustainable development by expanding welfare investments such as those from infrastructure, education and health. The results of the study showed a long-term balance between some indicators of sustainable development and economic growth in Iraq during the duration of the study, because the wrong correction parameter is negative and moral at a lower level (1%). The parameter indicates a return to balance during (0.002) of time, i.e., changes in sustainable development indicators lead to changes in economic development indicators.

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