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MEASURING THE IMPACT OF SOME ECONOMIC VARIABLES ON THE UNEMPLOYMENT RATE IN IRAQ FOR THE PERIOD (2003-2020) PREPARATION OF THE TWO RESEARCHERS

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Abstract:

The research dealt with the problem of unemployment in Iraq through a standard analytical study for the period (2003-2020), as unemployment is one of the economic problems that the Iraqi society suffers from, and whose effects are reflected on the economic, social and security situation, and this problem was represented in the increasing rates after the change in 2003 The research measured the effect of some economic variables represented by the following independent variables (inflation rate, economic growth expressed in GDP, population growth rate, total expenditures (current and investment), inflation, population growth rate, number of workers in different sectors (public and mixed). , and private)) on the unemployment rate.

The unemployment rate was considered as a dependent variable using multiple regression analysis. According to the results of the standard analysis, the research concluded that there is an inverse relationship between the unemployment rate and the gross domestic product, and this relationship coincides with the logic of economic theory. And the existence of a direct relationship between the rate of unemployment and the rate of inflation, and this also coincides with the logic of economic theory. And the existence of an inverse relationship between the unemployment rate and total expenditures, which also corresponds with economic logic. And the existence of a direct relationship with the unemployment rate and the population, and this corresponds with the economic operative. And the existence of an inverse relationship between the unemployment rate and the number of workers, and this coincides with economic logic as well.

The research presented a set of theoretical and practical recommendations, including the necessity of providing information and data on employment and unemployment in the Iraqi labor market so that it is always updated for the year in which the study is conducted, in addition to that the operation of the various economic sectors can play a major role in reducing unemployment, and that activating the role of the private sector will It contributes to absorbing unemployment to the greatest possible extent.

Keywords:

THE INTRODUCTION:

Unemployment is one of the most prominent economic and social problems facing countries, and it has negative repercussions on the economic, social, political and security levels. The roots of unemployment in Iraq go back to before 2003, due to the presence of structural problems in the Iraqi economy, as well as due to some wrong measures and policies. This led to the presence of large numbers of unemployed people in the Iraqi labor market. What exacerbates this problem is its continuity and existence for a long time, and the structure of unemployment in Iraq indicates that an important part of it is due to high expectations for the quality of work, especially among job seekers with education, as well as the search for most of the unemployed in Iraq for job

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opportunities in The government sector and increasing employment without giving enough attention to the level of scientific skills and competencies.

Although government employment has been curtailed in recent years, there is still a large number of unemployed who cling to their opportunity to get an appointment, to obtain the benefits that employees enjoy from salaries, to ensure a continuous source of income, and to obtain social security. Hence the occurrence of social crises accompanied by demonstrations and protests in recent years.

Research Importance :

The importance of the research lies in the fact that it shows the impact of some economic variables on unemployment in Iraq, as well as the extent to which unemployment rates in Iraq can be affected by other economic variables, and what are the most important economic variables and the most influential in the unemployment rate.

Research problem :

Unemployment is one of the main problems that stood in the way of economic development in most societies, and this phenomenon has many negative effects, both in terms of economic, social and political aspects. Curbing its increasing course and finding out which of the variables has the most impact on it and avoiding it.

Research Aims :

The research aims to try to analyze the reality of the phenomenon of unemployment in Iraq and to find out its causes. As well as a statement of the impact of economic variables that affect the unemployment rate, and knowledge of the most influential variables on unemployment.

Research hypothesis:

The research stems from a basic hypothesis: that there is an impact of economic variables on the unemployment rate, these variables are (Gross domestic product, inflation, government spending, population growth, the number of workers in the sectors (public, private and mixed).

Search limits :

The research limits include the temporal period (2003-2020), while the spatial limits have been taken the Iraqi economy as a sample for research.

Research Methodology :

The descriptive and analytical approach was followed as they are in line with the subject of the research. Statistical and econometric methods were used to study the relationship between economic variables for the purpose of reaching specific results according to scientific standards. The statistical program (Eviews 12) was used to measure the impact of economic variables on unemployment rates through applying the steps of standard models: recognition, estimation, and testing.

Research Structure:

The research was divided into three chapters as follows:

The first topic: the theoretical framework for the problem of unemployment.

The second topic: economic indicators in the Iraqi economy

The third topic: descriptive and statistical analysis of the study variables

THE FIRST TOPIC

The theoretical framework for the problem of unemployment

Developing countries suffer from the problem of unemployment in general, with the continued failure of development efforts, the exacerbation of external debt, in addition to the spread of illiteracy, the low level of education, poor economic performance, and the failure of educational and training policy to keep up with work requirements, in addition to the lack of a clear vision in economic policies that can To avoid the problem of unemployment and find ways to solve it and get out of it, in addition to failing to adapt to the conditions of competition and globalization.

First: definition of unemployment:

The concept of unemployment refers to (the difference between the quantity supplied and the amount of labor used in various economic activities at the levels of wages and working conditions prevailing in the market) (Al-Bashir, 2002, 24). It is also known as (workers who have lost their jobs and are looking for work and waiting to return to work) (Al-Mashhadani, 2006, 78). As for the definition of unemployment according to the standards set by the International Labor Organization, it includes (everyone who is able and willing to work, and accepts it at the prevailing wage level, but to no avail) (Parkin, 1992, 54).

It is understood from the above definitions that unemployment expresses the situation in which individuals are unable to engage in economic activity during a certain period of time as a result of factors beyond their control despite being of working age, able, willing, and looking for it, and this is called complete unemployment. Likewise, unemployment in the economic concept is the cessation of work or the unavailability of work for a person who is able and willing to do it, and within the prevailing wages, but he does not find that work, which is called the term unemployed, and there are two basic conditions that meet together to define the unemployed, namely:

A- Be able and willing to work.

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B- To search for a job opportunity and accept it at the prevailing wage level, but to no avail.

These two conditions also apply to the unemployed who enter the labor market for the first time, and to the unemployed who have previously worked and were forced to leave it for any reason.

Second: Types of Unemployment:

There are many types of unemployment that can be explained as follows (ESCWA, 2000, 37) (Dr. Zaki, 1998, 29):

Blatant unemployment: It is the state of apparent unemployment, which means part of the available labor force.

- Cyclical unemployment: It is the one that accompanies the economic cycle, and its time period ranges between three and ten years.

Frictional unemployment: This type of unemployment occurs due to the lack of job opportunities that are compatible with the specializations required for workers or the lack of competencies and skills necessary for work, which pushes workers to carry out continuous transfers between regions and different professions.

Structural unemployment: This type of unemployment is associated with the structural changes that occur in the economy, and it is a type of disruption that affects a part of the labor force. They usually extend over periods of time and result from an economic recession.

Disguised unemployment: It is represented by the presence of numbers of the labor force that exceed the actual need for work, which results in the marginal productivity of this surplus labor force becoming equal to zero, which means the presence of redundant or surplus labor that produces almost nothing, so that if it is withdrawn from its work, then Production volume will not decrease. This type prevails in most of the public sector institutions in developing countries, and naming this type of unemployment disguised as an honest expression of it. Because disguised unemployment can be known, but the causes of it cannot be known. If we withdraw part of the labor force in a specific economic unit, production is not affected.

Third: Measuring the Unemployment Rate:

Unemployment rates are measured to obtain a comprehensive indication of the economic situation of a particular country, as well as knowledge of market conditions. The high level of unemployment indicates a decrease in the supply of labor, meaning that the entire economy does not operate at the level of comprehensive or full employment. The unemployment rate is the ratio of unemployed persons to the total labor force. Unemployment rates and their trends over time indicate the rate of economic activity and the ability of the economy to provide work for all the labor force. It is the ratio of the number of unemployed individuals to the total labor force.

The percentage of the unemployed varies according to (rural / urban), as well as divided into (center / outskirts). It is divided according to (gender, age, governorate, type of education, and academic level). The unemployment rate can be calculated in the following way (Johnev, 1996, 95-110):

- Unemployment rate = number of unemployed ÷ number of labor force x 100.
- Labor force participation rate = labor force ÷ effective rate x 100.
- Labor force size = number of workers + number of unemployed.

The methods of measuring unemployment rates depend on household surveys, which are more appropriate according to the measurement of unemployment rates according to international standards related to unemployment statistics. Sound statistical information on unemployment constitutes the logical and rational basis for the decision-making process and drawing up the general and sectoral economic policy. It is not possible to dispense with information for the workforce because it is included in the decision-making process, whether at the level of the state, private, public and mixed companies, or research centers for all activities related to public and private issues.

THE SECOND TOPIC

Economic indicators in the Iraqi economy

Iraq is considered one of the countries rich in its economic resources, diversified in its forms and in large quantities, which is supposed to be at the forefront of the industrialized countries in addition to agriculture, and that the levels of employment in it be at their highest levels. What raises the question is that the unemployment crisis is in a state of crisis and over long decades of time. There was no real tendency to find radical solutions to this problem.

First: the unemployment crisis in Iraq:

There are several reasons that exacerbated the problem of unemployment in Iraq, including the absence or non-activation of laws applicable to workers' rights. And causing a rise in disguised unemployment rates among them, as well as an increase in the number of foreign workers.

According to the statistics on the results of employment and unemployment surveys in Iraq, it is clear that there are high rates of unemployment from which the labor market suffers in Iraq, as the

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percentage of active persons in the labor market at the age of (15) years and over reveals that the highest rate of unemployment was at the beginning of the period, as it reached The rates for the years 2003 and 2004 were (28.10, 26.80%), respectively, then the unemployment rates decreased in subsequent years until they reached (11.70%) in 2007. The unemployment rate increased in the years from 2008 to 2010 and reached nearly (15%). The rate decreased further during the years from 2011 to 2016 and was approximately (11 to 10%). Then it rose again and reached (13.8%) during the years from 2017 to 2020.

In general, we note the fluctuation of unemployment levels according to the years of study, but the percentages gradually decreased during the years from 2003 to 2016. The reason for this is due to the circumstances that permeated those years from the presence of some projects in certain years that reduced unemployment, as well as the years in which it increased Unemployment during the last years of the study is due to the repercussions of the presence of terrorism problems and its reflection on the increase in unemployment and the emigration and displacement of some families.

The unemployment rate among the population aged (15 years) and over for the period (2003-2020) can be shown as in Table (1) below:

Table (1) Unemployment rate among the population aged (15 years) and over for the years (2003-2020)

Unemployment rate	the years
28.10	2003
26.80	2004
17.97	2005
17.50	2006
11.70	2007
15.34	2008
15.2	2009
15.2	2010
11.1	2011
11.92	2012
16.0	2013
10.59	2014
13.7	2015
10.82	2016
13.8	2017
13.8	2018
13.8	2019
13.8	2020

Source:
- Ministry of Planning, Central Statistical Organization, Annual Statistical Abstract (2003-2020), Results of Employment and Unemployment Surveys, Separate Years.

Second: The trajectory of the gross domestic product in Iraq during the period (2003-2020):

At the beginning of 2003, Iraq entered a new turning point on the political, economic and social levels, as the change of the political system in Iraq was followed by a major change in all economic policies. During this period, there was a noticeable improvement in the growth of the gross domestic product, especially after the lifting of economic sanctions, and we can attribute the relative improvement that occurred in the Iraqi economy, especially in 2006 and what followed, to some encouraging policies, such as partial liberalization of prices, as well as an increase in financial allocations for all sectors of the national economy. And the attempt to liberate the agricultural sector from the restrictions that limit its development, as well as the issuance of the Central Bank of Iraq law in 2005, but this did not work to encourage the private sector and take its role in economic activity. His role remained limited to mediating and commercial activities. And this sector remained dependent on borrowing to finance its projects, without there being an actual investment and extensive exploitation of its resources. This has led to the weakness of its competitiveness and its limited role in the formation of the gross domestic product (Al-Zubaidi, 2009, 27).

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Table (2) shows the development of the gross domestic product at current prices, as the growth rate at current prices reached (62.1%) in 2004, and it declined significantly until it reached (16.6%) in 2007, and the average growth rate of the gross domestic product reached (-16.8% in 2009 and a deficit in the public budget. The reason for this is due to the drop in oil prices in the fourth quarter of 2009, in addition to the terrorist operations that targeted oil pipelines and fields, which led to a reduction in the quantity exported.

The annual growth rate in the gross domestic product increased in 2011 and reached (30.1%) due to the improvement in oil prices and the quantities exported from it. The annual growth rate of the gross domestic product decreased in 2014 and reached (-2.7%), and the annual growth rate in the gross domestic product continued to decrease in 2015 and reached (-26.9%), due to the terrorist operations that took place in the second half of 2014. Which affected the oil fields, pipelines and most of the infrastructure in the areas controlled by terrorism. The growth rate of the gross domestic product increased in 2018 to (21.3%), and then decreased in 2020 to (-28.5%).

It must be emphasized that the weakness of the structure of the Iraqi economy is due to the low percentage of the contribution of various sectors to the gross domestic product, and because the Iraqi economy depends mainly on oil production and exports. The annual GDP growth rate fluctuated during the period (2003-2020), and sometimes it was negative for some years, as shown in Table (2) below

Table (2) Gross Domestic Product and average per capita share at current prices (2006-2020)

growth rate (Annual % (3	per capita average (JD) (2)	gross domestic product (million dinars) (1)	the years
-	1123000.2	29586000	2003
62.1	1767000.1	47959000	2004
53.3	2288000.7	73533000	2005
30.0	3274233.0	95587954.8	2006
16.6	3754986.0	111455813.4	2007
40.9	5135262.7	157026061.6	2008
-16.8	4125829.5	130642187.0	2009
27.9	5142916.2	167093204.4	2010
30.1	6518752.6	217327107.4	2011
17.0	7431918.8	254225490.7	2012
7.6	7795455.5	273587529.2	2013
-2.7	7648994.9	266332655.1	2014
-26.9	5528730.4	194680971.8	2015
1.2	5444537.4	196924141.7	2016
12.6	5968459.4	221665709.5	2017
21.3	7053761.2	268918874.0	2018
3.3	7101964.3	277884869.4	2019
-28.5	4950771.2	198774325.4	2020

Source :
Columns (1 and 2):

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Years (2003-2010): Ministry of Planning, Central Statistical Organization, Annual Statistical Abstract (2012-2013), National Accounts, p.2.
- Years (2011-2020), and the annual statistical group (2020-2021), National Accounts, pg. 459.
Column (3): From the researcher's work.

Third: Inflation in Iraq during the period (2003-2020):

The Iraqi economy suffers from the problem of inflation, and it is sometimes associated with stagnant inflation, as inflation is associated with economic recession and high unemployment rates, and there are those who call this phenomenon stagflation or monetary inflation in light of stagnation.

The burden of inflation falls on the purchasing power of money, and then contributes to the opposite redistribution of incomes, and it is more severe for low-income earners. Inflation confiscates real savings and incomes from certain groups whose incomes either remained constant or increased by a rate less than the rate of increase in the cost of living, in favor of those whose incomes increased by a rate greater than the rate of increase in the cost of living (Younis, 2001, 37).

Inflation rates in the Iraqi economy have recorded high levels in some years, despite all attempts by the Central Bank of Iraq to reduce them through the tools of the exchange rate and interest rate, but the effect was not at the required level in reducing inflation rates. The reason is that the Iraqi economy as a whole suffers from structural imbalances that made it need a package of financial and monetary policies to fix it and adjust its course in the coming decades in a way that makes it go the right way. It can be said that the central bank's performance was acceptable in controlling and curbing inflation for some years.

We note from table (3) below that the inflation rates were fluctuating during the period of the study, as the inflation rate reached (0.27%) in 2004, and continued to increase until it reached (0.53%) in 2006, and decreased in 2008 to reach (0.3%). In 2010, it reached its highest level, reaching (2.61%). In 2016 and 2017, it reached (0.00%). In 2018 it reached (0.62%), and in 2020 it reached (-0.37%).

Although inflation has remained stable during the recent period, there are still significant risks represented in accelerating the pace of inflation in the short term, in light of a more permissive stance in controlling public finances, and the emergence of the indirect secondary price effects of the rise in global commodity prices. Should these risks materialize on the ground, it will be important for the CBI to be prepared to tighten domestic fiscal conditions as needed, to avoid activating domestic inflationary drivers.

Table (3) The evolution of inflation rates in Iraq for the period (2003-2020)

% Inflation rate (2)	Consumer price index (1)	the years
* 16.5	6943.4	2003
0.27	8815.6	2004
0.37	12073.8	2005
0.53	18500.8	2006
0.31	24205.5	2007
0. 3	24851.3	2008
-0. 1	24649.5	2009
2.61	89000.3	2010
0. 6	94000.3	2011
0. 6	100000	2012
0. 2	102000.4	2013
-0. 1	101000.6	2014
0. 3	104000	2015
0.00	104000.1	2016
0.00	104000.3	2017
0.62	169000.4	2018
0. 1	170000.9	2019
-0.37	107000.1	2020

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Source:
- Column (1), Ministry of Planning, Central Agency for Statistics and Information Technology, prices and consumer price indices for the year 2006, April 2007, p. 17.
- Central Bank of Iraq, General Directorate of Statistics and Research, Annual Economic Report, 2009, p. 133.
Column (2) was calculated by the researcher according to the following law:
Annual inflation rate = x 100
whereas :
p1 = the price index of the comparison year, P0 = the price index of the base year.
* Dr. Asma Khader Yas, Analysis of Inflation Rates in Iraq for the Period (2000-2010), Administrative Technical College, Baghdad, 2013, p. 53.

Fourth: Public expenditures in Iraq for the period (2003-2020):

Public expenditure is one of the means by which the objectives of fiscal policy can be achieved, and public expenditure should be as rational or rational as possible, and in order for expenditure to be rational, it should be targeted to achieve the maximum possible economic and social benefits, even if reliance on public expenditure has expanded as One of the tools of fiscal policy went through a series of theoretical and practical developments that ended up showing the importance of this tool. Developing countries are characterized by poor development of their economic activity, low productivity, and consequently low incomes and returns, which means that these countries are unable to expand their public expenditures (Khalaf, 2008, 96).

Public expenditures (current and investment) increased during the study years, as public expenditures in 2003 reached (4.796) trillion dinars, and in 2006 they reached (37.494) trillion dinars, and continued to increase until they reached (78.757) trillion dinars in 2011. Public expenditures continued Its rise until it reached in 2014 to (125.321) trillion dinars, and after 2014 public expenditures decreased as a result of the decline in public revenues and the entry of Iraq into a new phase of the control of terrorism over some provinces and economic resources, and in 2018 it reached (80.873) trillion dinars. In 2020, it reached (76.082) trillion dinars.

It must be noted that the public budget witnessed an actual deficit in several years, according to the comparison of revenues with actual expenditures. The years that witnessed a deficit are (2003, 2009, 2013, 2014, 2015, 2016, 2019, 2020), and table (4) below shows a comparison of revenues with actual expenditures in Iraq for the period (2003-2020).

Table (4)
Comparison of revenues with actual expenditures for the period (2003-2020) (Iraqi Dinars)

Total surplus/deficit (current (and investment (3)	Total expenses (current (and investment (2)	Total revenue (current (and investment) (1	السنة
-3194971361673	4796536793662	1601565431989	2003 *
1467422634837	31521427979410	32988850614247	2004
9604598525969	30831141738435	40435740264404	2005
11,561,085,793,886	37,494,459,064,514	49,055,544,858,400	2006
15,656,501,153,555	39,308,348,582,631	54,964,849,736,186	2007
13,329,703,889,588	67,277,196,640,574	80,606,900,530,162	2008
-346,194,714,127	55,589,721,154,474	55,243,526,440,347	2009
44,021,439,075	70,134,201,818,286	70,178,223,257,361	2010
25,231,422,507,915	78,757,666,336,481	103,989,088,844,396	2011
14,677,647,871,937	105,139,575,706,934	119,817,223,578,871	2012
-5,287,480,485,551	119,127,556,292,695	113,840,075,807,144	2013
-27,702,518,447,885	125,321,074,861,413	97,618,556,413,528	2014
-11,778,435,519,237	81,525,365,440,453	69,746,929,921,216	2015

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-20,709,926,509,148	**75,119,196,428,054**	**54,409,269,918,906**	**2016**
1,932,057,490,382	**75,490,115,438,781**	**77,422,172,929,163**	**2017**
25,696,645,437,236	**80,873,188,748,070**	**106,569,834,185,306**	**2018**
-4,156,527,682,012	**111,723,523,054,366**	**107,566,995,372,354**	**2019**
-12,882,753,541,921	**76,082,442,913,942**	**63,199,689,372,022**	**2020**

Source :
- (Columns 1 and 2): Ministry of Finance, Accounting Department, Unification System for State Accounts on the Budget, separate years.
- (Column 3): From the researcher's work.
- * The years (2003, 2004, 2005) the final account of the Republic of Iraq, separate years.

Fifth: Population growth rate in Iraq for the period (2003-2020):

Population increase is one of the problems that developing countries suffer from, because it has economic repercussions on the stress and distribution of natural resources and sources, especially if it is not accompanied by productivity growth at the same rate or higher than it. The population growth in Iraq witnessed a continuous development over the period of the study, and the population increase was characterized by progress without any connection to the level of economic development. The population of Iraq, according to population projections, is (26.3) million people in 2003, and the population growth continued until it reached (31.8) million people in 2008, and the population of Iraq reached (35.1) million people in 2013, and reached (36.2) million people in 2016, and reached (40.150) million people for the year 2020. The reason for the population increase is due to two factors, the first is related to the natural growth of increasing births and decreasing deaths, and the second factor is related to net immigration abroad. The birth rate and fertility are still high in Iraq, due to the relatively low age of marriage for men and women. This has been reflected in the various aspects of life, including the labor market, economic development, education, health and social services. And as in Table (5) below:

Table (5) Total population of Iraq and growth rate for the period (2002-2020) (in thousands)

Annual population growth rate	**total population**	**the years**
-	**26340000**	**2003**
3.03	**27139000**	**2004**
3.04	**27963000**	**2005**
3.03	**28810000**	**2006**
3.03	**29682000**	**2007**
7.46	**31895000**	**2008**
-0.72	**31664000**	**2009**
2.61	**32490000**	**2010**
2.61	**33338000**	**2011**
2.61	**34208000**	**2012**
2.60	**35096000**	**2013**
2.59	**36005000**	**2014**
-2.20	**35213000**	**2015**
2.71	**36169000**	**2016**
2.68	**37140000**	**2017**
2.65	**38124000**	**2018**
2.63	**39128000**	**2019**
2.61	**40150000**	**2020**

Source :
- Ministry of Planning, Central Statistical Organization, Annual Statistical Abstract, Population Statistics for Separate Years.

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Sixth: The number of workers in different sectors in Iraq for the period (2003-2020):
The total number of workers in large establishments in the public, mixed and private sectors reached (108,684) workers in 2003, and their number increased in subsequent years until it reached (172,400) workers in 2007, and their number reached (201,000) workers in 2012, and the number of workers in the sectors continued to increase Until it reached (88,924) in 2016, and reached (85,318) in 2020. Table (6) shows this as my agency:

Table (6) Results of the annual industrial census of large establishments and the number of employees for the period (2003-2020)

sectors				the years
the total	private	mixed	general	
108684	15331	4411	88942	2003
142400	26200	4900	111300	2004
142850	18719	4689	119442	2005
166245	17364	3479	145402	2006
172400	17100	3900	151400	2007
190300	19400	3200	167700	2008
193900	20600	3600	169700	2009
189100	20000	3800	165300	2010
185900	23700	3700	158500	2011
201000	38000	4000	159000	2012
176000	32000	4000	140000	2013
37243	29595	3100	4548	2014
53517	28947	3027	21543	2015
88924	23869	2299	62756	2016
82428	22632	2320	57476	2017
80532	22842	1897	55793	2018
105786	26034	1674	78078	2019
85318	25642	1905	57771	2020

Source :
- Ministry of Planning, Central Statistical Organization, Annual Statistical Series for the years (2017), (2008-2009), (2020-2021).
- Ministry of Planning, Central Statistical Organization, large industrial establishments (cumulative) for the year 2019.

THE THIRD TOPIC
Descriptive and statistical analysis of the study variables
First: The stages of building the standard model:
This stage begins with the description of the model, that is, the description of the variables of the statistical model, and the identification of the economic variables that were chosen in the study, as follows:
A- The dependent variable (y): The dependent variable is defined as the variable that is subject to the influence of the independent variable or variables. The dependent variable may have more than one case based on its influence on the independent variable, and the relationship between the dependent variable and the independent change is a scientific relationship, in order to know the denial and proof of hypotheses. In our research, the dependent variable (y) is unemployment.
b- Independent variables: It is a variable that interacts with other variables. The independent variable also determines the state of the dependent variable based on the characteristic that this independent variable holds. Many researchers resort to using the

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independent variable in order to reveal research hypotheses, and the independent variable greatly affects the dependent variable. As it makes the condition of the dependent variable increase or decrease. Or change the state of the dependent variable based on the attributes imposed on it by the independent variable. We can review the independent variables as follows:

- Gross Domestic Product (x1): It is the monetary measure of the market value of all goods and services produced in the country during a specific period of time, usually one year. The annual growth rate of the gross domestic product is a percentage (%).
- Inflation rate (x2): It is the continuous and tangible rise in the general level of prices, and it represents a percentage (%).
- Public expenditures (x3): It is the financial appropriation decided by the legislative authority within the framework of the state's general budget, and is implemented by the federal government or local governments, regions and the rest of the state's public institutions and bodies, with the aim of satisfying public needs.
- Population growth (x4): The change in population size, whether by increase or decrease, is called growth. Positive or negative population growth comes from three factors: births, deaths, and migration. As population growth cannot be calculated by one factor, but by all of these factors. Growth may change due to any of these factors.
- Number of workers in different sectors (x5): The Labor Market Statistics Bulletin is one of the important statistical products issued by the Central Statistical Organization. .

Second: standard form tests (unit root test):

Before entering the model tests, we will present a table that shows the time series quiescence test for the research variables according to the results of the Phelps-Perron (P.P) test. Only the Phelps-Perron test was taken for all models, being more accurate.

Table (8) Phillips-Perron test statistic results

	Stability test					
	Level			1st Difference		
	PP	Sig.	Result	PP	Sig.	Result
Y	-2.87654	0.0035	stationary	-2.67761	0.0038	stationary
X1	-4.98754	0.0350	stationary	-2.09898	0.0387	stationary
X2	-4.66543	0.0153	stationary	-3.05442	0.0028	stationary
X3	-0.234543	0.0000	stationary	-2.81219	0.0034	stationary
X4	-6.887657	0.0153	stationary	-3.06162	0.0028	stationary
X5	-4.543243	0.0000	stationary	-2.00989	0.0054	stationary

Source:
- The table prepared by the researcher based on the outputs of the Eviews program.12.

Third: Estimating the impact of economic variables on the unemployment rate:

First: the initial estimate of the ARDL model:

After the stability tests that were conducted on the economic variables as independent variables and the unemployment index as a dependent variable were shown, and it was found that they were stable at the level and at the first difference (1)1.

Table (9) the results of the initial assessment of the ARDL model

Dependent Variable: Y				
Method: ARDL				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
R-squared	0.999657	Mean dependent var		14.35616
Adjusted R-squared	0.999451	S.D. dependent var		3.057337
S.E. of regression	0.071632	Akaike info criterion		-2.150837
Sum squared resid	0.205244	Schwarz criterion		-1.314534
Log likelihood	94.90219	Hannan-Quinn criter.		-1.820862
F-statistic	4856.200	Durbin-Watson stat		2.836511
Prob(F-statistic)	0.000000			

Source:
- The table prepared by the researcher based on the outputs of the Eviews program.12.

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Table (9) shows the results of the (Adjusted-squared) test that all the independent economic variables (X1, X2, X3, X4, X5) explained (99%) of the changes in the dependent variable unemployment (Y), and that the remaining percentage (1 %) due to other factors not included in the model. As for the (F-statistic) test, it indicates the overall significance of the model from a statistical point of view, at a probability level of about (0.000000Prob=), less than 5%.

Second: Bound Test results for Cointegration:
To test the extent to which there is a long-term equilibrium relationship (existence of co-integration) between economic variables (X1, X2, X3, X4, X5) as independent variables and unemployment (Y) as a dependent variable, the Bound Test must be conducted, as in the following table:

Table (10) Results of the Bound Test

Test Statistic	Value	K
F-statistic	27.91284	5
القيمة الجدولية(Critical Value Bound)		
مستوى المعنوية	I0 Bound	I1 Bound
5%	2.39	3.38

Source:
- The table prepared by the researcher based on the outputs of the Eviews program.12.

It is noted from table (10) above that the calculated (F-statistic) value amounted to (27.91284), which is greater than the tabular value at a significant level (5%), which means that we reject the null hypothesis and accept the alternative hypothesis, and this means that there is a cointegration relationship for the variables Economic (X1, X2, X3, X4, X5) as independent variables and unemployment (Y) as a dependent variable, i.e. there is a long-term equilibrium relationship.

Third: Estimated Parameters Test (Short Term):

This test shows the estimation of the short-term parameters in order to reveal the degree of influence of the independent variables on the dependent variable, and this test also shows the error correction coefficient that measures the speed of the model's return to equilibrium in the long-run, and the table below shows this.

Table (11) the results of estimating the error correction model and the short-term relationship

				Method: ARDL
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
D(X1	-1.45E-07	5.21E-08	-2.781266	0.0082
D(X2	0.393875	0.152886	2.576258	0.0138
D(X3	-9.03E-14	5.06E-14	-1.783878	0.0020
D(X4)	6.91E-06	9.71E-07	7.117520	0.0000
D(X5	-0.021141	2.12E-05	-6.681725	0.0000
C	0.636663	1.112437	0.572313	0.5703
CointEq(-1)*	-0.012983	0.011982	1.083566	0.0050

Source:
- The table prepared by the researcher based on the outputs of the Eviews program.12.

The results of the above table showed a set of results as follows:

1- There is an inverse relationship between GDP X1 and the unemployment rate Y, that is, when the GDP increases by one unit, the unemployment rate Y decreases by (1.4) units, and at a probability level of (0.0082).

2- The existence of a direct relationship between the inflation rate X2 and the unemployment rate Y, that is, when an increase in the inflation rate by one unit leads to an increase in the unemployment rate Y by (0.39) units, at a probability level of (0.0138).

3- There is an inverse relationship between total expenditures X3 and unemployment rate Y, that is, when total expenditures increase by one unit, unemployment rate Y decreases by (9.03) units, at a probability level of (0.0020).

4- The existence of a direct relationship between the population X4 and the unemployment rate Y, that is, when the population increases by one unit, it leads to an increase in the unemployment rate Y by (9.6) units, at a probability level of (0.0000).

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5- There is an inverse relationship between the number of workers X5 and the unemployment rate Y, that is, when the number of workers increases by one unit, it leads to a decrease in the unemployment rate Y by (2.0) units, at a probability level of (0.0000).
6- The estimated relationship also showed that the error correction coefficient was (-0.012983) negative and significant with a probability of (0.0050 = Prob).

Fourth: Estimated Parameters Test (Long Term):
This test demonstrates the estimation of parameters in the long run in order to reveal the degree of influence of the independent variable on the dependent variable, as well as to determine the type of long-term relationship, as in the following table:

Table (12): The results of estimating long-term parameters

Levels Equation				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
X1	**-6.75E-07**	**5.85E-07**	**-1.154365**	**0.2552**
X2	**-7.450407**	**10.43390**	**-0.714058**	**0.4793**
X3	**-3.23E-13**	**7.26E-13**	**-0.444406**	**0.6591**
X4	**7.69E-06**	**7.23E-06**	**1.063856**	**0.2938**
X5	**8.03E-05**	**0.000121**	**0.663779**	**0.5106**
C	**-49.03801**	**97.85779**	**-0.501115**	**0.6190**
EC = Y - (-0.0000*X1 -7.4504*X2 -0.0000*X3 + 0.0000*X4 + 0.0001*X5 -49.0380)				

Source:
- The table prepared by the researcher based on the outputs of the Eviews program.12.
The results of the above table showed the failure of the relationship between the economic variables (X1, X2, X3, X4, X5) as independent variables and the unemployment index as a dependent variable because the probability exceeded the (5%) barrier.

Fifth: Post-tests (confirmative):
In order to ensure the validity and accuracy of the results obtained in the previous tests, we will perform some important diagnostic tests to prove this, as follows:

1- The problem of autocorrelation: the results according to the (LM) test and the statistic (F-Test) showed that they are not significant, and therefore we reject the hypothesis that there is an autocorrelation problem, see Table (13) below.
2- Heterogeneity of variance test: The results according to the (ARCH) test and according to the statistic (F-Test) showed that they are not significant, and therefore we reject the hypothesis of the existence of the problem of homogeneity of the error variance.

Table (13) Post (confirmative) results

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	**42.15499**	**Prob. F(2,38)**	**0.0000**
Heteroskedasticity Test: ARCH			
F-statistic	**0.056915**	**((Prob. F(1,62**	**0.8122**

Source:
- The table prepared by the researcher based on the outputs of the Eviews program.12.
3- The problem of normal distribution: the results showed that the estimated model is free from the problem of the normal distribution of the residuals, as follows:
Figure (1) The normal distribution

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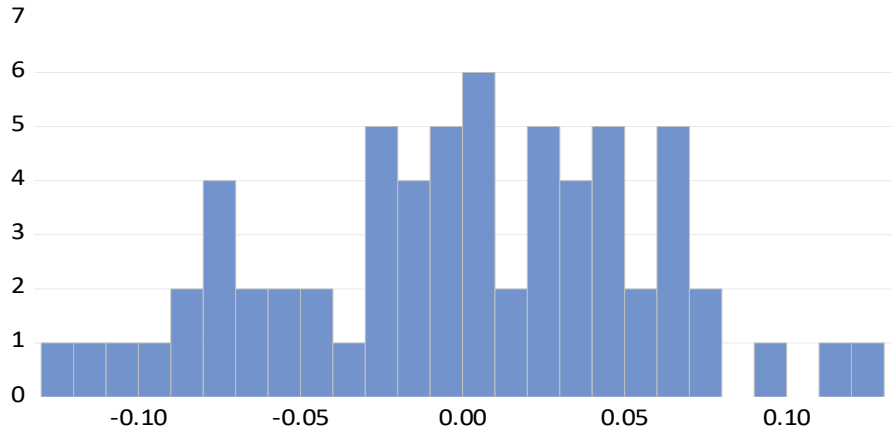

Series: Residuals	
Sample 2004Q1 2020Q1	
Observations 65	
Mean	5.22e-14
Median	0.001630
Maximum	0.125645
Minimum	-0.129149
Std. Dev.	0.056630
Skewness	-0.175219
Kurtosis	2.533154
Jarque-Bera	0.922871
Probability	0.630378

the shape:

- Prepared by the researcher based on the statistical program (12. Eviews).

CONCLUSIONS AND RECOMMENDATIONS

First: conclusions

1- Unit root tests (stillness) showed that all variables were stable at the level and at the first difference.
2- The results of the (adjusted-squared) test showed that all the independent economic variables (X1, X2, X3, X4, X5) explained (99%) of the changes that occurred in the dependent variable unemployment (Y), and that the remaining percentage (1%) It is due to other factors not included in the model.
3- The results of the limits test showed that there is a co-integration between the economic variables and the unemployment rate.
4- The results of the impact in the short term showed the existence of an inverse relationship between (Gross Domestic Product X1 Total Expenditures X3 Number of Employed Persons X5) as independent variables and the unemployment rate Y, that is, when these variables lead to a decrease in the unemployment rate Y, this is conducive to economic theory.
5- The results of the impact in the short term showed the existence of a direct relationship between (inflation rate X2 number of population X4) as independent variables and the unemployment rate Y, that is, when these variables increase, it leads to an increase in the unemployment rate Y, and this is in agreement with the economic theory.
6- The results of the effect in the long term showed that there was no effect between the economic variables (X1, X2, X3, X4, X5) as independent variables and the unemployment index as a dependent variable due to the probability exceeding (5%) barrier.

Second: Recommendations

1- Employing idle capacities in the various sectors of the national economy.
2- Providing social protection for the unemployed and expanding social security projects.
3- Supporting and encouraging the local private sector to take its role in the process of transitioning towards a market economy.
4- Expansion of training and retraining programs in various industries and professions.
5- Creating productive job opportunities by increasing the volume of investments in a balanced manner in various sectors.
6- Improving the level of education, health, housing and social welfare.
7- Issuing laws for attracting foreign investment.
8- Creating a tourism industry, as the country abounds with various tourist sites.

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