The Impact of Population Growth on Some Economic Indicators in Iraq for A Period of 2003-2017

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Abstract

There is certainly a relationship between population growth and economic development. Population and economic growth, since 2003 and before the Iraqi state has pursued different development paths with the aim of achieving high rates of economic growth, but those tracks proved to be unsustainable in the medium or long term, especially since they relied on the only economic resource, oil, which Led to the rise in population growth rates in an explosive manner, especially the increase in the incomes of individuals, health care and free education, which generated armies of unemployment and laziness after the dominance of the public sector in all economic activities, and the public sector was the engine of economic growth which Provides employment opportunities and provides all social services, use descriptive research and economic suppositify approach in the formation of models based on the Eviews 10 program in the analyzer, in light of the data on population growth and economic variables and the reliance on the Diki Fuller tests The analysis was based on the time-long data represented by the research sample, which included population, unemployment, national income size and GDP, and the addition of some Other variables and the measurement of the relationship between them and as a result of the analysis of standard models of research, it appeared that there is a strong effect by population growth on GDP and the existence of a relationship between them through regression analysis, where the research included a number of recommendations, the most important of which is interest in studies and research Related to population estimates and the identification of a clear relationship between population policy and economic policy and the development of plans to remove the negative effects of population growth and increase the positive effects of it as well as increase gdp spending to keep up with developments in population growth according to specialized sectors.

Keywords: population growth, total exports, total imports, GDP.

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أثر النمو السكاني على بعض المؤشرات الاقتصادية في العراق للمدة من (2003 -2017)

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المستخلص
من المؤكد وجود علاقة بين النمو السكاني والتنمية الاقتصادية، فقد اثبتت تجارب بعض الدول التي توصلت إلى تنمية ناجحة كانت لديها معدلات نمو أعلى للإنتاج من معدلات نمو السكان ولكي تصبح السياسات التنموية أداة من أجل الوصول إلى رفاه الإنسان يجب أن نفهم إشكالية العلاقة بين نمو السكان والنمو الاقتصادي، منذ عام 2003 وما قبله انتهجت الدولة العراقية مسارات تنموية مختلفة بهدف تحقيق معدلات عالية من النمو الاقتصادي، غير أن تلك المسارات اثبتت انها غير قابلة للاستمرار على المدى المتوسط أو البعيد وخاصة أنها اعتمدت على مورد اقتصادي وحيد هو النفط، مما أدى إلى الارتفاع في معدلات نمو السكان بصورة انفجارية وخاصة زيادة دخول الأفراد والرعاية الصحية والتعليم المجاني الذي ولد جيوش من البطالة الانتكالية والتكاسل بعد هيمنة القطاع العام على جميع الأنشطة الاقتصادية، وكان القطاع العام هو محرك الأساس للنمو الاقتصادي وهو الذي يوفر فرص التوظيف وهو الذي يقدم الخدمات الاجتماعية كافة، واستخدام البحث المنهج الوصفي ومنهج الاقتصاد القياسي في تكوين الأنموذج بالاعتماد على برنامج Eviews 10في التحليل، في ضوء البيانات الخاصة بالنمو السكاني والمتغيرات الاقتصادية والاعتماد على اختباري ديكي فولر وفيليبس بيرون لمعرفة مدى سكون تلك المتغيرات الداخلة في التحليل، وباستخدام طريقة المربعات الصغرى OLS، حيث اعتمد التحليل على بيانات المدة الزمنية التي تمثلت بعينة البحث وشملت عدد السكان والبطالة والناتج المحلي الإجمالي واضافة بعض المتغيرات الأخرى وقياس العلاقة بينهما ونتيجة لتحليل النماذج القياسية للبحث، ظهر أن هناك أثرا قويا من قبل النمو السكاني على الناتج المحلي الإجمالي ووجود علاقة بينهما من خلال تحليل الانحدار الخطي البسيط، حيث تضمن البحث جملة من التوصيات من أهمها الاهتمام بالدراسات والبحوث المتعلقة بالتقديرات السكانية وتحديد علاقة واضحة بين السياسة السكانية والسياسة الاقتصادية ووضع خطط تبعد الآثار السلبية لنمو السكان وتزيد من الآثار الإيجابية لها وكذلك زيادة إنفاق الناتج المحلي الإجمالي لمواكبة التطورات في النمو السكاني حسب القطاعات المتخصصة.

الكلمات المفتاحية: النمو السكاني، الصادرات الكلية، الاستيرادات الكلية، GDP

1. Introduction

Population growth is one of the most important demographic phenomena in the modern era, as it is considered a strong challenge to humankind, especially for the people of developing countries whose population is increasing at a large rate that exceeds the rate of economic growth in them and the provision of food For its inhabitants, This matter made the interest in the population issue increasing day after day, and it received a lot of research and study, especially since the issues of population and development in these countries and the factors affecting them and the results resulting from them economically, socially and politically have taken a large part of the efforts of thinkers and economists, Today, in the context of forming a new global trading system, the world is witnessing many fluctuations that are mainly due to the complexity of economic life in all countries of the world due to the expansion and doubling of commercial dealings between them, which led to the emergence of international economic blocs. Foreign trade is also the main engine for economic growth in all countries of the world, as it expanded greatly between countries due to the increase in production and ease of transporting goods, as well as due to the emergence of economic blocs and the World Trade Organization, Countries cannot be isolated from one another because each of them depends on the other in exporting surplus goods and services and importing capital and intermediate goods that contribute to their economic growth and thus their development. International trade also plays an important role in supporting the different national economies in developing countries and developed countries, and the study included a set of conclusions, including: the impact of population changes in developing countries with inflexible productive devices, including Iraq, where the negative impact and

the lack of positive exploitation of the population increase due to Poor performance, training, and inappropriateness with the development of this population growth, as well as the standard study proved the existence of a moral relationship between population growth with some economic indicators under study in different proportions and due to the abnormal conditions of the Iraqi economy and the standard study indicates a positive relationship between the gross domestic product in Iraq and the economic population growth and this Consistent with the logic of economic analysis.

The importance of studying

The importance of the study comes from knowing the extent of population growth development and some economic indicators represented by GDP, growth, inflation, unemployment and foreign trade, its importance and the extent of its impact on the development of population growth.

1.1. Purpose of the study.

The study aims to know the role of population growth in economic variables in Iraq and the extent of the relationship of influence on those economic variables.

The study Problem

Iraq suffers from a continuous increase in population growth rates and is not commensurate with the growth of economic indicators, and this creates a real gap in providing the requirements of life and economic development for the country. The economic indicators represented by the gross domestic product, growth, inflation, unemployment and foreign trade are among the basic indicators in the stability of the national economy, which is the main factor in achieving social welfare through the problem of increasing population growth in Iraq.

1.2. The hypothesis of the study

The research is based on the hypothesis that population growth generates an impact on some economic variables represented in GDP, unemployment and foreign trade.

1.3. Population and sample study

The study took the time series of economic variables for the study sample for the period from 2003-2017 as well as the population growth of the study sample.

2. Theoretical and conceptual framework of population growth and some economic indicators

2.1. The concept of population growth

It is the change that occurs in the population as a result of natural increase and migration.

2.1.1. Classical theory of population

The complexity of the relationship between demographic growth and economic development has reached a point where we have not yet found a convincing answer, and this is due to the lack of agreement among all those interested about the various methods and methods of development, in

addition to disagreement about the results. What we observe is the ambiguity surrounding the classical theory, Which is concerned with the relationship between population and economy that theory that was the first advocate of which was the English priest Thomas Robert Malthus R Thomas (1766-1834), on his part, tried to clarify the relationship between population and production rate. Humanity is threatened with poverty - from his point of view - unless the process of excessive population growth is resolved. He believes that the population is increasing with a geometric progression. , Is the double doubling - that is, multiplying by two - while the increase in production is doubled by an odd arithmetic numerical sequence, and he warned against inflation with innate speed, as it would add to the earth those on it The resources are not sufficient to meet their needs. That is why Malthus said: "The standard of living of the population will deteriorate. For balance to occur, material prosperity and economic prosperity are achieved, the numerical increase must be commensurate with the increase in the standard of living and livelihoods." This is what prompted Malthus to sue for delaying the age of marriage to achieve this goal. He said this for the first time in 1798 in an essay entitled "Population Growth and Its Impact on the Progress of Society."

2.1.2. Population stage theory

The roots of this theory go back to the economist Myint, who determined that the population growth of any country passes through several stages. This theory explains the stages of population growth according to the behavior of both birth and death rates, as well as explaining the factors responsible for that.

- The first stage, the population stage: the primitive, backward societies of the Middle Ages and before it passed through this stage.
- The second phase, the slow population growth phase: The advanced industrial countries went through this phase after the days of the Industrial Revolution in England and all European countries from the early nineteenth century to the middle of it. This period was marked by a measure of economic progress, as civil wars were eliminated.
- The third stage is the stage of moderate population growth: European countries went through this stage since the middle of the nineteenth century, that is, a hundred years after the industrial revolution, and this period was marked by an increase in government spending on public health programs.

2.2. Economic indicators

Each economy produces different types and quantities of goods and services using the available economic resources, as the production process requires mixing the available productive elements and using the available technical level to obtain the largest possible quantity of goods and services, and the production elements get a financial compensation for their contribution to the production process .

2.2.1. Gross domestic product

The gross domestic product is one of the most important axes of the real current in the economy, and it is also one of the most important economic indicators that measure the level of economic performance of the country, as it represents the amount of goods and services produced in a specific period of time that is usually determined by a year. The gross domestic product means the total market value of the final goods and services that a country produces during a year, that is, the amount that is determined as a result of our application of the monetary measure to evaluate all goods and

services of all kinds (Samson and Nordhaus, 2006, 451), [6] and the GDP is one of the most criteria A comprehensive measure of the country's total production of goods and services, as it is the sum of the values for each of the consumption components (C), total investment (I), government purchases of goods and services (G), and net exports (XM) produced by the state during a specific year, and can be represented by the following equation:

$$GDP = C + I + G + (X-M)$$

Therefore, the GDP is one of the important indicators in measuring the level of economic activity of the country, and the percentage change in it is statistically used to measure economic growth as well as using this indicator with other indicators in drawing up the economic policies of any country, and that the development of the GDP reflects the development in the standard of living of individuals (Al-Issa, 2006, 123) and the analysis of product growth and its structure are essential points for identifying and treating defective paragraphs (Buraihi, 2011, 32).

2.2.2. Foreign trade

The term foreign trade was used for the first time in the period in which the theory of free trade prevailed when industrialized countries were looking for external outlets for their products, and for sources of raw materials in colonies or in foreign countries. Foreign trade is a central issue in relations between countries, as in the past it was Today, it is considered the most important reason for rapprochement between countries. It also allows these countries to consume more than they produce with their own resources as well as expand distribution outlets to sell their production. Foreign trade means the process of trade exchange in goods, services and other various production elements. Between several countries with the aim of achieving mutual benefits for the parties to exchange [15] , as we can know it as" a set of legal rules regulating business, based on financial, material, service flows and resources exchanged between countries, as the exports side crosses It expresses the productive capacity of the economy and is transferable to other countries, while imports express the deficit recorded at the national economy level in covering part of the total demand. Both visible and invisible exports and imports (goods and services) [10]

2.3. The importance of foreign trade

Foreign trade plays an important role in supporting the different national economies in developing countries and developed countries, by providing the foreign currency needed to finance capital and intermediate imports necessary to implement economic development plans, and by alleviating the difficulties accompanying the unbalanced growth conditions arising from structural imbalances in the productive sectors, To the extent that the belief became prevalent that achieving more economic development requires more openness to the outside world and the abolition of restrictions imposed on free trade and the flow of goods, services and labor [13]

Economic studies have increased which confirm that countries, especially developing ones, can achieve economic growth that contributes to development, if their access to the export market improves and reforms in their trade policy are carried out. Evidence from several sources (growth regression analyzes and research at the sector and corporate level) is useful. And case studies) that trade is the engine of growth and that growth is necessary to reduce poverty [16]

Foreign trade is a reflection of the economic relations between countries. It is also a part of the state’s foreign relations, which include the trade exchange of part of that country's production with other countries. Foreign trade is historically the oldest and most important part of external economic relations, and it is a criterion for the development and balance of countries in securing their needs for import and export of goods and services to the world. Foreign trade is the one that judges the numbers on the direction of influence of the activities of various internal and external policies. Foreign trade has an important role in accelerating the process of economic and social development in developing

countries, as it effectively contributes to defining the main features of the economic structure, and creating balance and organic interdependence between all sectors, so the components of foreign trade (exports and imports) are among the matters that must be studied to clarify the relative importance of foreign trade. The study of the geographical distribution of foreign trade among the countries of the world is no less important than the study of its components, because it shows the extent of the relevance and dependence of the national economy on the economies of other countries. Through exports, the market is expanded, which enables the economy to increase its production and the subsequent exploitation of the benefits of large-scale production as well as its contribution to increasing national income, thus reflecting the extent of the development of the state's capabilities in domestic production and its diversification. [2]

2.4. The importance of foreign trade in the economy

There is a close relationship between foreign trade and the economy, and this relationship can be touched through its impact on economic variables and indicators, as follows:

1. Economic growth: There is a theoretical disagreement among economists about the relationship of foreign trade to economic growth , Which spanned for more than two centuries and this disagreement still affects the nature of this relationship, and although most empirical results confirmed the existence of a correlation between trade and growth, as some economists considered that trade is one of the variables that enter the process of economic growth, and the owners need This trend is that trade was the real engine of growth in Southeast Asian countries (Asian Tigers) such as (Hong Kong, Singapore, and South Korea, etc.) [17] The correlation of the growth of trade with the growth of the national product is often not explained by the fact that the growth of trade led to the growth of output. Rather, the opposite may be true. The existence of a correlation relationship, but it is not sufficient by itself to prove or deny the existence of a causal relationship, or to indicate which of the two variables is the cause and which is the result But common sense indicates that it is very possible that there is a causal relationship in both directions, and the matter here is similar to saying that demand creates supply, but it is also true that supply creates demand in turn, so opening the door to trade opens the market for products or expands it, This stimulates the state to increase its production, but increasing the state's production initially stimulates the search for new markets or the expansion of the market, as trade grows depending on the growth of output [1] . A number of comparative and longitudinal regression analyzes have been carried out in an attempt to uncover the various factors that affect growth rates and determine the direction of the causal relationship between them. These analyzes have concluded with evidence proving the close link between trade openness and increased rates of economic growth, whether the openness is measured by trade policies (Tariff and non-tariff barriers) or later consequence (ratio of exports and imports together to GDP) The strength of this correlation increases if the absolute total output is used instead of the total output measured in purchasing power parity (PPP). The effect of economic growth on improving living conditions and fighting poverty is not hidden [16]

2. National income: Foreign trade is closely related to national income, as it appears as a bridge across income fluctuations from one country to another, and the effect of these fluctuations and their repercussions depend on the amount of foreign trade for each country, and the link and effect of foreign trade on national income is evident in both import operations and export, as export is one of the sources of expenditure for what is distributed of income, and its decrease means depriving the national economy of an important source of income resources, and this can be explained by the following equation [8] National income = consumption + investment + government spending + (exports - imports). Income will rise from one period to another as exports increase or imports decrease, and vice versa when exports decline and imports rise.

3. Use of resources: The importance of foreign trade appears in the use of resources through what foreign trade gives in terms of the opportunity to dispose of production and obtain income that contributes to purchasing equipment that increases production efficiency, as foreign trade can help raise production efficiency through competition, and this This brings many benefits to the country, and it also contributes to the integration of the local economy with the global economy.

4. Income distribution: Foreign trade is of great importance in the redistribution of national income and the international division of labor, but it does not necessarily work on equality between countries of the world, due to the variation in the level of economic development between developed and developing countries. Foreign trade also works to redistribute income through export, import and production processes, and it works to change the structure and composition of these incomes and their ratio between producer, output and consumer, and it also works to amend this combination by preferring between consumer surplus and producer surplus and between the producers themselves and importers [13]

2.5. Population growth related to economic changes in Iraq

The data in Table (1) refer to the variables of the study sample, which were represented by the statistics of the population, gross domestic product, inflation, unemployment and foreign trade, with two components: exports and imports, as follows:

Table 1: shows the population, GDP, inflation, unemployment and foreign trade for the period 2003-2017

the year	Population (people)	GDP at current prices	Unemployment rate	Total exports (Billion dollar)	Total imports (Billion dollar)
2003	26340	23,793.02	28.1	9,711.00	9,933.50
2004	27139	36,638.24	26.8	17,810.00	21,302.30
2005	27963	49,954.89	17.9	23,809.00	23,532.00
2006	28810	64,805.39	17.5	29,361.00	22,009.00
2007	29682	88,840.05	11.7	41,267.90	19,556.00
2008	30890	124,373.40	14.7	61,264.4 0	35,012.00
2009	31664	129,429.78	14	41,791.70	41,512.00
2010	32490	138,516.72	15	52,482.60	43,915.00
2011	33338	185,749.66	11	79,681.00	47,803.00
2012	34208	218,000.99	11.9	94,209.00	24,400.00
2013	35096	234,637.68	11	89,768.00	33,383.70
2014	36000	228,490.90	12.7	85,369.00	37,064.50
2015	36936	171,087.13	16.4	51,328.00	41,600.00
2016	37896	172,478.71	10.8	41,298.00	48,600.00
2017	38858	190,874.31	14.8	57,559.00	48,473.00

Source: The Central Bank of Iraq / Statistics and Research Department - Arab Monetary Fund.

The data results showed through Table No. (1) the following:

1. Population: Population growth is considered one of the factors affecting economic development, as the data indicate a gradual increase in the population, meaning that there is a clear increase in spite of the wars and problems that the country went through for the period from 2003-2017. Figure (1) shows the continuous increase in the population.

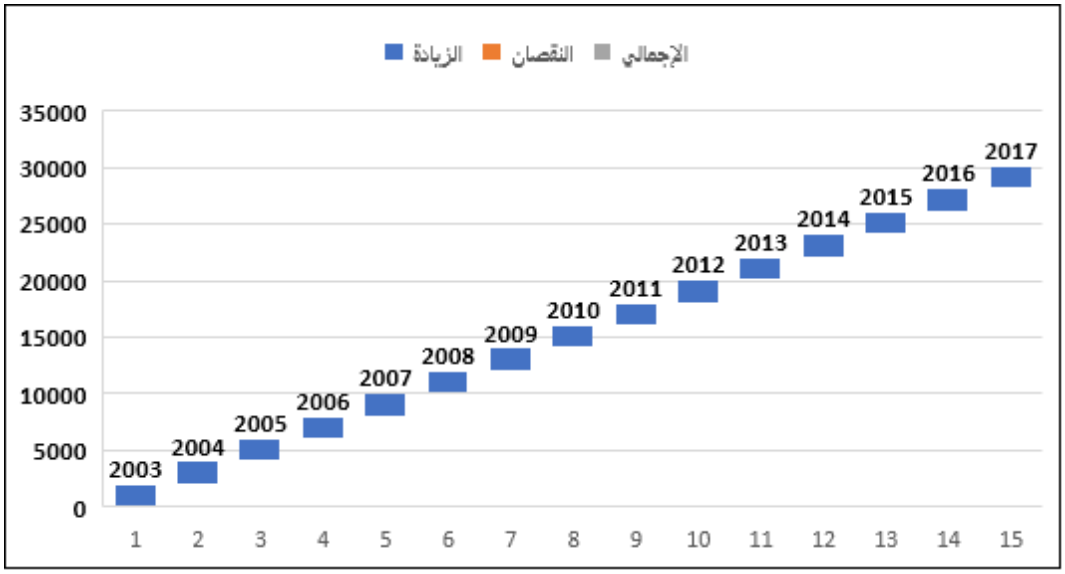

Figure 1: shows the population in Iraq for the period from 2003-2017
Source: prepared by the researcher based on the data of Table No. (1)

2. Gross Domestic Product (GDP): a gradual increase in the gross domestic product in Iraq during the studied period, as the year 2003 came with the lowest value (23,793.02) and the year 2013 came with the highest value (234,637.68) due to the large discrepancy in the gross domestic product between the beginning and the end of the period and Figure No. (2) It shows.

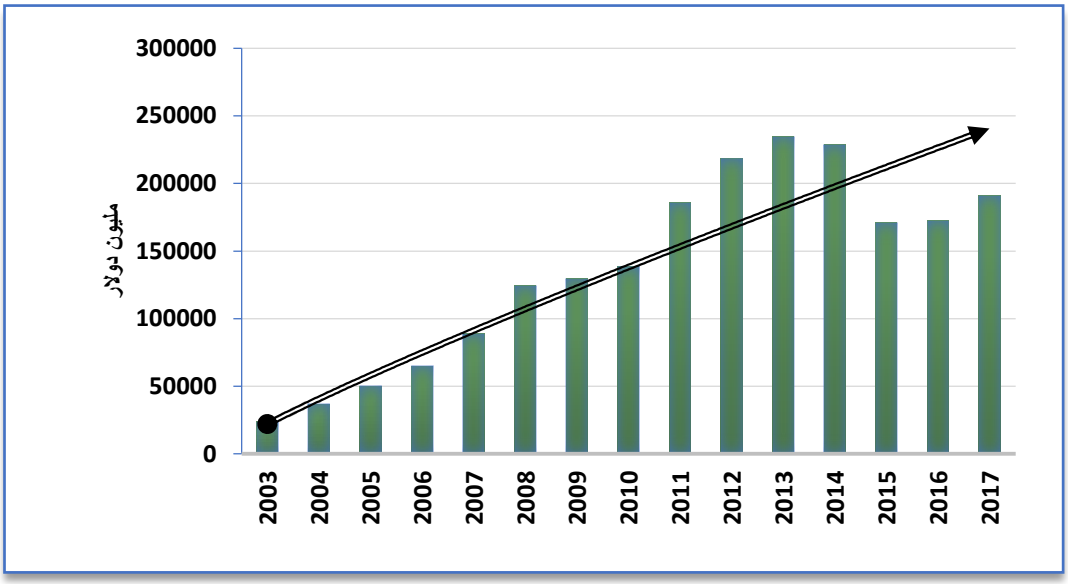

Figure 2: shows the gross domestic product in Iraq for the period 2003-2017
Source: prepared by the researcher based on the data of Table No. (1)

3. Unemployment rate: The data refer to the unemployment rate during the studied period of the study sample, as the increase in population leads to an increase in unemployment rates from a basic point of view. Nevertheless, there must be clear plans drawn up for the national economic policy, as it was shown in 2004 According to the existence of the highest unemployment rate in the country, and then it decreased in 2011. There are fluctuations in the rise and fall of unemployment rates in the country.

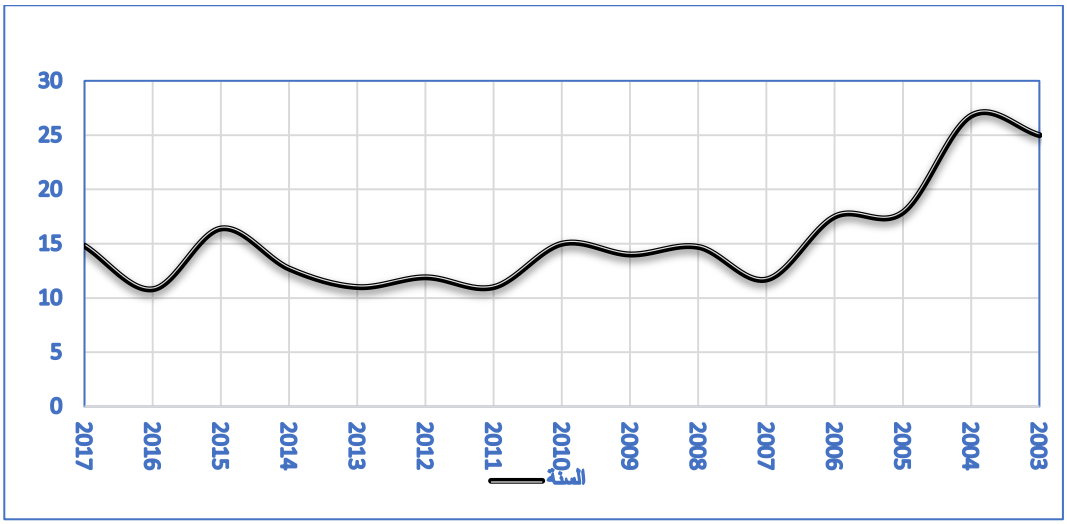

Figure 3: shows the unemployment rates in Iraq for the period 2003-2017

Source: prepared by the researcher based on the data of Table No. (1)

4. Total Exports and Imports: The data on total exports indicate that the year 2003 was of a low value, while the year 2012 came with the highest value of total exports, and the total imports also came in the volume of total exports, as evident from this there is a balance between exports and imports However, the volume of exports was greater than the total imports, and Figure No. (4) shows that.

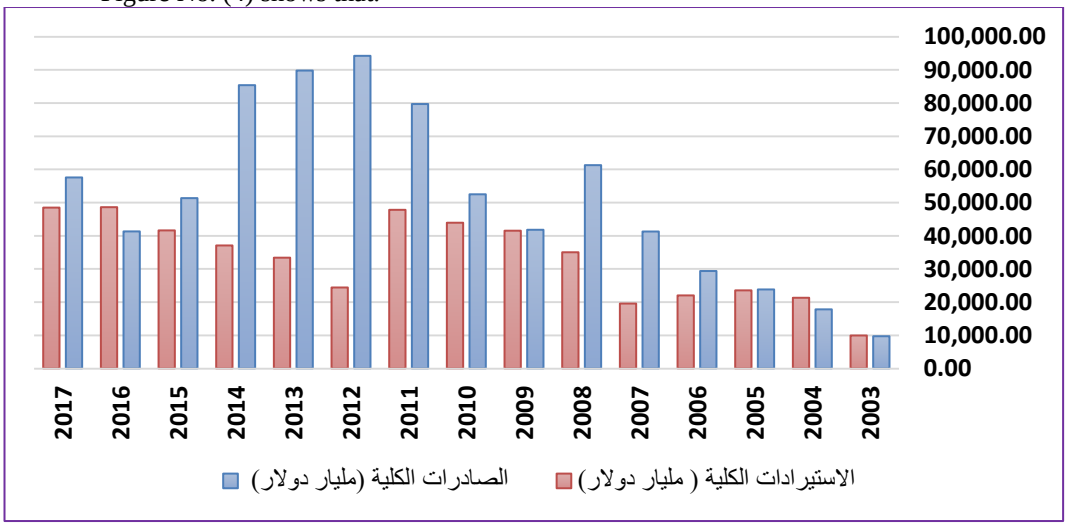

Figure 4: shows total exports and imports in Iraq for the period from 2003-2017

Source: prepared by the researcher based on the data of Table No. (1)

3. The impact of population growth on some economic indicators in Iraq for the period from 2003-2017 (the analytical aspect of the study)

3.1. Standard Model Characterization

The standard analysis method is one of the quantitative methods that is based on testing and estimating the relationship between many different variables due to the simplicity, accuracy and ability to interpret the results. The main goal of standard studies of all kinds is economic theory, yet quantitative measurement remains a tool to prove The extent to which the results of the variables under study conform to the logic of economic theory, and thus the standard method is a method that is used to confirm the assumptions of economic theory. Variables into mathematical equations.

At this stage, the model variables were determined and based on the logic of economic theory and on the data available for the study sample, as the sample consisted of 15 years for the period from (2003-2017) and the dependent and independent variables represented and constructed the structure of the standard model that consists of several equations using simple linear regression In estimating the studied relationship, as in the following table:

Table 2: The structure of the standard model of the studied relationship

Variable name	code	Variable type	Build a form structure
Population size	PS.	independent	--------
Gross domestic product	GDP.	dependent	$GDP = B_0 + B\ PS + ei$
Unemployment rates	UR.	dependent	$UR = B_0 + B\ PS + ei$
Total exports	TE.	dependent	$TE = B_0 + B\ PS + ei$
Total imports	TI.	dependent	$TI = B_0 + B\ PS + ei$

Source: Prepared by the researcher

3.2. Time series stability tests

The modern analysis of time series represented by stability tests (unit root tests), which is the necessary condition for choosing the standard model, is one of the most important tests that takes us to the next stage, which is to choose a model that fits with the stability of the data, as using the Ordinary Least Square (OLS) method without Referencing to stability tests may give false and inaccurate results that cannot be relied upon for interpretation [13] The time-series static (stability) test was performed for the study sample data, and two static tests were adopted, namely ADF and PP.

3.2.1. Unit root test Augmented Dicky - Fuller (ADF)

The results of the extended Dickie - Fuller ADF test came at the level I (0) as shown in Table (3), as the population size of PS is not stable at the level in the three cases and the GDP is not stable at the level in the three cases while the unemployment rates UR is stable with constant at 1% level of significance, and unstable in both cases of constant and nonexistent and total exports TE are stable

While the results of the ADF test after taking the first difference (I) (First Difference), the results came after taking the first difference, as shown in Table No. (3), to confirm the stability of the remaining variables at the level of 1% and 5% of significance.

Table 3: Results of testing for stability (static) variables at level I (0) and first difference I (1) using the ADF test

Level		Un	EX	IM	GDP	PO	IN
With Constant	t-Statistic	-4.900*	-4.130***	-2.680	1.970	0.993	-2.890
	Prob.	0.000	0.000	0.01	0.562	0.994	0.07
With Constant & Trend	t-Statistic	-4.048	-3.689	-2.613	-1.970	-2.429	-2.290
	Prob.	0.035	0.058	0.280	0.562	0.351	0.405
Without Constant & Trend	t-Statistic	-1.304	-3.552	-0.458	0.873	26.375	-1.674
	Prob.	0.167	0.001	0.800	0.886	0.999	0.087
At First Difference		Un	EX	IM	GDP	PO	IN
With Constant	t-Statistic	===	===	4.130*	===	3.965**	===
	Prob.	===	===	0.008	===	0.061	===
With Constant & Trend	t-Statistic	===	===	===	===	===	===
	Prob.	===	===	===	===	===	===
Without Constant & Trend	t-Statistic	===	===	===	-2.034**	===	-5.857*
	Prob.	===	===	===	0.041	===	0.000

Source: Prepared by the researcher based on Eviews 10 program outputs

***: moral at the level of 10%, **: significant at the level of 5%, *: significant at the level of 1%.**

3.3. Unit root test Phillips – Perron (PP)

For the purpose of confirming the above results, another test for stability has been relied on, which is the Phillips-Pyrone PP test at level I (0) as shown in Table (4), noting that the PP test is more accurate for data results in small samples (Kozhan, 2010, 74). The test is that the size of the population (PS) was static at the level in the case of the constant presence of 10%, its instability in the case of the constant and the trend, and it is stable without the constant and the trend at 5% and the result of the GDP appeared unstable at the level in the three cases while the unemployment rates The UR was stable at the first level with the constant and unstable in the cases with the constant and the trend and others, and the total exports TE were stable at a level of 1% in the presence of the constant and the trend, and unstable in the two cases of the constant and their absence, as well as the total imports IM is not stable at the level in the three cases

Whereas the results of PP test after taking the first difference I (1) (First Difference), the results showed the stability of the time series of other variables at the level of significance 1, 5% and for all cases (the presence of the constant, the presence of the constant and the trend and their absence).

Table 4: Results of the test of stability (static) variables at the level at level I (0) and the first difference I (1) PP test

Level		Un	EX	IM	GDP	PO	IN
With Constant	t-Statistic	6.091*	3.763	1.953	1.493	1.564	1.821
	Prob.	0.000	0.015	0.301	0.507	0.998	0.355
With Constant & Trend	t-Statistic	4.493	3.750	2.645	0.834	2.416	2.714
	Prob.	0.018	0.053	0.268	0.935	0.356	0.246
Without Constant & Trend	t-Statistic	1.834	3.553*	0.668	0.621	22.262*	1.464
	Prob.	0.065	0.001	0.848	0.838	0.000	1.32

At First Difference		Un	EX	IM	GDP	PO	IN
With Constant	t-Statistic	===	6.056*	4.130*	2.344	===	3.138**
	Prob.	===	0.000	0.008	0.173	===	0.048
With Constant & Trend	t-Statistic	===	===	===	2.411	===	===
	Prob.	===	===	===	0.357	===	===
Without Constant & Trend	t-Statistic	===	===	===	2.034**	===	===
	Prob.	===	===	===	0.041	===	===

Source: Prepared by the researcher based on Eviews 10 program outputs
*****: moral at the level of 10%, **: significant at the level of 5%, *: significant at the level of 1%.**

3.4. Determine the optimal slowdown time

The optimum deceleration period shown by the results of the three tests (SC, HQ, AIC.), Which was used to determine the optimum slowdown period in order to achieve the best estimate of the estimated model, which is the duration and for all economic variables under study, at a level of 5% that is because its value is the lowest compared to the rest of the values The other exams will depend on that period in estimating this model.

Table 5 shows the determination of the optimal slowdown for economic variables with population size

	Log	LogL	LR	FPE	AIC	SC	HQ
GDP	0	-161.057	NA	3.94E+09	24.93184	24.9753	24.92291
	1	-148.348	21.50686*	6.52e+08*	23.13052*	23.21743*	23.11265*
	2	-147.487	1.325806	6.70E+08	23.15178	23.28215	23.12498
PS	0	-113.517	NA	11394041	19.08609	19.1265	19.07113
	1	-72.7794	67.89518*	15191.64*	12.46324*	12.54406*	12.43332*
	2	-72.5962	0.274891	17541.25	12.59936	12.72059	12.55448
TE	0	-148.576	NA	5.77E+08	23.01166	23.05512	23.00273
	1	-142.967	9.491178*	2.85e+08*	22.30267*	22.38959*	22.28481*
	2	-142.33	0.981092	3.03E+08	22.35841	22.48878	22.33161
TI	0	-138.392	NA	1.21E+08	21.44499	21.48844	21.43605
	1	-134.986	5.765580*	83409626*	21.07469*	21.16160*	21.05682*
	2	-134.969	0.025433	97618705	21.22599	21.35636	21.19919
UR	0	-29.7907	NA*	6.682308	4.737036	4.780494	4.728103
	1	-28.4884	2.20399	6.392369	4.690519	4.777435	4.672654
	2	-26.1766	3.556518	5.255640*	4.488714*	4.619087*	4.461916*

Source: Prepared by the researcher based on Eviews 10 program outputs
***: Duration of optimum deceleration.**

It is evident from the results of the analysis in the above table that the optimum slowdown period for the economic variables under study is the first period, as it was in line with the Scwarz standard (SC), the AICAIC standard (AIC) and the Hanan Cowen standard (HQ), which is the lowest value.

3.5. Estimating and analyzing the results of the standard model

The models were estimated based on the OLS method using the simple linear regression method, as this method gives the best results in estimating the relationship between population size as an independent variable, GDP, unemployment rates, total exports and total imports as dependent variables and after analyzing table (1) data Using the Evewis-10 statistical program, the results were shown as follows:

3.5.1. GDP equation

Table 6: Values of regression coefficients for estimators and their statistical tests for the GDP model

Estimated parameters	T	R^2	F	sig
B0 = -370154.5	-4.861	0.77	45.03	0.00
B = 15.616	6.710			
GDP = -370154.5 + 15.616 PS				

Source: Prepared by the researcher based on Eviews 10 program outputs

We notice through the results of the above analysis that the estimated model has a high explanatory power, as it is noted that the value of the coefficient of determination R2 amounted to (0.77) and this percentage indicates that 77% of the changes that occurred in the gross domestic product are due to the influence of the independent factor which is the size of the population and remains The percentage of 23% is due to other factors that were not subject to measurement, and it is also evident that the estimated parameters are significant at the level of 1% significance through the calculated t value of 6,710 greater than the tabular t value of 2.947, which means rejecting the null hypothesis and accepting the alternative hypothesis indicating the significance of the model in general. The model is significant through the value of F, which indicates the significance of the model as a whole.

From the economic point of view, the results of the analysis showed a positive relationship between the size of the population and the gross domestic product.

3.5.2. Unemployment Form Equation UR

Table 7: Values of regression coefficients for estimators and their statistical tests for the unemployment rates model

Estimated parameters	T	R^2	F	sig
B0 = 328.65	3.73	0.49	12.64	0.00
B = -3015	-3.55			
There is no estimated equation for the non-significance of the model				

Source: Prepared by the researcher based on Eviews 10 program outputs

We note through the results of the above analysis that the estimated model has a high explanatory power, as it is noticed that the value of the coefficient of determination R2 reached (0.49) and this percentage indicates that 49% of the changes that occurred in the unemployment model are due to the influence of the independent factor which is the size of the population and the percentage remains. 51% is due to other factors not subject to measurement, and it is also evident that the estimated parameters are significant at the level of 1% significance through the calculated t value of -3.55 is smaller than the tabular t value of 2.947, which means accepting the null hypothesis and rejecting the alternative hypothesis indicating the significance of the model in general. The model is significant through the value of F, which indicates the significance of the model as a whole.

From the economic point of view, the results of the analysis showed a positive relationship between the size of the population and the gross domestic product.

3.5.3. Equation of the total import model TI

Table 8: Values of regression coefficients for estimators and their statistical tests for the total import model

المعلمات المقدرة	T	R^2	F	sig
B0 = 7.46	11.781	0.61	20.694	0.00
B = 8.81	4.549			
LOG TI = 7.46 + 8.81 PS				

Source: Prepared by the researcher based on Eviews 10 program outputs

We notice through the results of the above analysis that the estimated model has a high explanatory power, as it is noticed that the value of the coefficient of determination R2 amounted to (0.61) and this percentage indicates that 61% of the changes that occurred in total imports are due to the influence of the independent factor, which is the size of the population. 39% is due to other factors that were not subject to measurement, and it is also clear that the estimated parameters are significant at the level of 1% significance through the calculated t value of 4.549 greater than the tabular t value of 2.947, which means rejecting the null hypothesis and accepting the alternative hypothesis indicating the significance of the model. The model is significant through the value of F, which indicates the significance of the model as a whole.

From the economic point of view, the results of the analysis proved that there is a direct relationship between the size of the population and total imports.

3.5.4. Equation of the TE Total Export Model

Table 9: Values of regression coefficients for the estimators and their statistical tests for the total export model

المعلمات المقدرة	T	R^2	F	sig
B0 = 30.021	-3.097	0.57	17.650	0.00
B = 3.922	4.201			
LOG (TE) = -3.097 + 4.201 LOG (PS)				

Source: Prepared by the researcher based on Eviews 10 program outputs

We notice through the results of the above analysis that the estimated model has a high explanatory power, as it is noted that the value of the coefficient of determination R2 amounted to (0.57) and this percentage indicates that 57% of the changes that occurred in total exports are due to the influence of the independent factor, which is the size of the population, and the percentage remains. 43% is due to other factors that were not subject to measurement, and it is also evident that the estimated parameters are significant at the level of 1% significance through the calculated t value of 4.201 is greater than the tabular t value of 2.947, which means rejecting the null hypothesis and accepting the alternative hypothesis indicating the significance of the model and in general that The model is significant through the value of F, which indicates the significance of the model as a whole.

From the economic point of view, the results of the analysis proved that there is a positive relationship between the size of the population and total exports.

4. Conclusions

Among the results that were reached through the following:

1. The impact of population changes in developing countries with inflexible productive devices, including Iraq, where the negative impact and the lack of positive exploitation of the population increase due to poor performance and training and are not appropriate with the development of this population growth.
2. The standard study proved the existence of a significant relationship between population growth with some economic indicators under study and in different proportions and due to the abnormal conditions of the Iraqi economy.
3. The standard study proved the existence of a direct relationship between the gross domestic product in Iraq and the economic growth of the population, and this is consistent with the logic of economic analysis.
4. The increase in population with the availability of job opportunities leads to an increase in the gross domestic product.
5. The results of the standard analysis proved that all the local economic variables are devoid of the unit root, that is, they are static and stable at the first difference (1, 1) and at a significant level (1%, 5%, 10%) according to the results of the Extended Dickey - Fuller test and the test Phillips - Byron.
6. The results of the standard analysis showed a positive relationship between population size and (gross domestic product, total exports, total imports, unemployment rates), both through the estimated regression coefficient for each function.

5. Recommendations

In light of the findings of the study, we recommend the following:

1. Preparing an economic growth model for the Iraqi economy, in which the population and its changes are an important part of it due to the impact on other macroeconomic variables.
2. Working to exploit the energies of the population and raise their scientific, health and professional competence in line with the requirements of development and the desired economic growth, in a way that makes their productivity achieve rates of economic growth greater than the rates of population growth.
3. Increasing government spending on some sectors and tackling unemployment.
4. Increasing interest in research and development and studies that carry out population assessments, and their impact on the overall economy, in order to define a clear relationship between population policy and economic policy and to develop coordination programs and policies that remove the negative effects of population changes and work to activate their positive effects.

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