Measuring the impact of financial policy indicators on poverty rates in Iraq using the ARDL methodology

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Abstract :

The aim of the research is to demonstrate the impact of financial policies on reducing poverty rates in Iraq and after conducting statistical tests.The results of the assessment showed that the increase in public spending and what was allocated to the regional development program and the ration card support program were not sufficient to generate significant effects towards reducing poverty rates, due to the weakness of the macroeconomic implications in overcoming the imbalances that could push the economy towards achieving a high or accelerating rate. In economic growth, especially in light of the spread of the phenomenon of financial and administrative corruption, the imbalance of the budget structure and the reluctance of the implemented projects, which generated more counterproductive factors towards an increase in poverty rates. The standard model showed the absence of a long-term equilibrium relationship between the indicators of fiscal policy and poverty rates in Iraq. This infers from him that economic policies did not generate those accelerating effects on the real GDP growth rate in a manner that generates moral effects towards alleviating poverty rates.

Introduction

Iraq, in particular, has recently witnessed a wide spread of poverty rates due to wars, conflicts and internal crises such as famine and terrorism and the accompanying displacement, killing and displacement, so that poverty has become a problem that threatens the future of humanity, which necessitates successive governments to follow financial and economic policies to fight poverty and eliminate it. Stimulating government spending on health, education and service institutions to mitigate the impact of this phenomenon on Iraqi society because of its negative effects that cast a shadow on all aspects of life, and to reduce the effects of this phenomenon (the phenomenon of poverty) it is necessary to adopt a clear and specific development plan that takes into account the available capabilities and resources. And proceed according to the correct scientific

methodology in building sound economic policies that represent the mainstay of the desired development process.

Hence, this research came to shed light on the impact of direct financial policies on poverty within the framework of the process of economic growth, and indirect through its various tools represented by the policy of government spending and taxes on poverty rates in Iraq. The research aims to measure the impact of direct and indirect financial policy on poverty rates. In Iraq during the period 2004-2019.

This research stems from the hypothesis that "there is no clear moral impact" of the indicators of fiscal policy on poverty rates in Iraq." For the purpose of achieving the goal of the research and reaching to prove its hypothesis, it was divided into the following axes:

The first axis: research methodology

The second axis: characterization and construction of the standard model

The third axis: estimating and testing standard models and discussing the results.

The forth axis: conclusions and recommendations.

The first axis: research methodology

First: the stationary test

Time series analysis is an important step before estimating and testing the relationship between economic variables. To ensure the stationers of these variables and to know their statistical properties, it is said that the series data are stationary when their averages and variances are constant over time ([1]).

In the event that the time series are not static, a problem called spurious regression will appear. To address this, the Unit Root Test will be adopted to ensure that the variables are static and determine the degree of their integration. Despite the multiple choices of the unit root, we will use two tests: Dickey and

Fuller 1979) and Phillips-Perron Selection (Phillips-Perron 1988). In 1981, Dickey and Fuller developed three different equations to test the existence of a unit root. The second equation contains the constant term only when the third contains the constant term and the general direction. The first equation is without a fixed term and a general trend. And (et) in the three equations is the error terms, which It is characterized by white noise and has desirable properties ([2]).

The Dickey-Fuller test can be explained by the following equation ([3])

$$\Delta Y = \delta\, y_{t-1} + e_{1t} \quad \ldots\ldots\ldots (1)$$
$$\Delta Y = \alpha + \delta\, y_{t-1} + e_{2t} \quad \ldots\ldots\ldots (2)$$
$$\Delta Y = \alpha + BT + \delta y_{t-1} + e_{3t} \quad \ldots\ldots\ldots (3)$$

If the error term (et) suffers from autocorrelation, it can be corrected by adding an appropriate number of slowed difference terms (time-lag), and the regression equation for this test becomes as follows ([4]):

$$\Delta y_t = B_1 + B_2 T + \delta y_{t-1} + \sum_{i=1}^{m} \alpha i\, \Delta y_{t-1} + e_t$$

This test is called the Augmented Dickey-Fuller test, where (e_t) is not self-correlated and has the desired properties (White Noise). Or (Schwartz Info criterion (SC)) (Final Prediction Error (FPE)) ([5]).

The null hypothesis (H_0: δ=0), that is, the presence of a unit root, is chosen by comparing the estimated statistic (τ) for the parameter (δ) with the tabular values also developed by (Makinnon 1991). The null hypothesis that includes the instability of the series is rejected when the parameter (δ) is negative and statistically significant. That is, the time series is stable if the value of (τ) is absolutely greater than the tabular value. Conversely, if it is less than the tabular value, the alternative hypothesis cannot be accepted and indicates the instability of the series ([6]).

As for the Phillips-Perron test, it depends on the same equation above, but it differs from the simple and expanded Dickey-Fuller test in the way it treats the presence of autocorrelation, as it performs a non-parametric correction for the statistic (τ) for parameter (δ) and has a better and more accurate testing ability, especially when the sample size is small.

Many of the time series of economic variables are not static at their levels, but become static in the first difference.

Second: Co-integration Test:

The co-integration methodology is used to find out the nature of the equilibrium relationship between variables in the long run, which requires that the variables subject to this test be unstable at the level, but have the same degree The sukoon means that it becomes stable after taking the first or second difference ([7]). It is required to apply the co-integration test that the variables under study are integrated in the same degree. That is, the long-term relationship between the variables yt, xt will be meaningful only when the estimated error term is stable at degree zero (0) u_t~I and does not suffer from a unit root.

Co-integration is defined as the synchronization between two time series (Xt, Yt) such that fluctuations in any of the two series cause the cancellation of fluctuations in the other in such a way that the ratio between their values is fixed, that is, the data of the series are not static if taken separately They are static as a group, as these long-term relationships are useful for predicting the values of the dependent variable in terms of a group of independent variables ([8]), meaning that there is a relationship between the various variables in the long run, even if these variables move away from their values in the short term.

The occurrence of co-integration requires that the two series are complementary of the same rank (that is, that the residuals resulting from estimating the relationship between them are of rank zero), so the goal of the unit root test is to determine the integration rank of the study variables in order to ensure the existence of a long-term relationship between the variables that do not It can be clarified unless there is a co-integration relationship linking them, and even if the two series are of the same rank, there is no guarantee that they will be co-integrated.

Third: Estimating Error Correcting Term (ECM)

The model is used in the event that the two variables (x, y) are jointly integrated to show the relationship between the short-term. This model is based on the assumption that there is a long-term equilibrium relationship, and despite its existence, it is rare to achieve and then may take (y) values different from its value Equilibrium, and the difference between the two values at each time period is represented by an equilibrium error, and this error or at least part of it is modified or corrected in the long run, so this model was called the error correction model, as this model (ECM) enables us to examine and analyze the behavior of variables in the short term from In order to reach equilibrium in the long run ([9]), to estimate

this model is done The introduction of the estimated residuals in the long-run relationship as an independent variable slowed for one period (e_(t-1)), in addition to the differences of the other non-static variables according to the following two equations ([10]):

$$\Delta y = \propto_0 + \sum_{j=1}^{n} \propto_{1i} \; y_{t-j} + \sum_{i=1}^{m} B_{1j} \, \Delta \, x_{t-j} + \rho_1 e_{t-1} + \upsilon_{1t}$$

$$\Delta \, x = B_0 + \sum_{s=1}^{n} B_j \, \Delta X t_j + \sum_{i=1}^{m} ai \, \Delta y_{t-1} + p_2 e_{t-1} + \upsilon_{2t}$$

whereas :

Δ: refers to the first-degree difference formula.

et-1: error correction term and represents the long-term relationship

If the value of the parameters of the error correction limit $(p_1, p_2)$is significant and negative in the (t) test, then this indicates the existence of an equilibrium relationship in the long run. or modified in the time period (t) ([11]).

Fifth: Autoregressive Distributed Deceleration (ARDL) model

Auto regressive Distributed Lag

This model was developed by Pesaran (1997) and Shinand and Sun (1998). The model is characterized by that it does not require the variables to be of the same degree and that it can be applied regardless of whether the time series are stable at their I (0) levels or integrated. First order I(1) or a mixture of the two. The only condition for applying this test is that the time series are not integrated of the second degree (2) I, the ARDL model takes a sufficient number of time lags from the data set of the general frame model In addition to the other features that will be mentioned ([12]).

The co-integration is tested by ARDL model using the BoundTest method developed by Pesaran (2001) by integrating Autoregressive Models and Distributed Lag Model In this methodology, here the time series is a function of slowing down its values and the values of the current explanatory variables and slowing them down by one or more periods.) :-

1) The ARDL model can be used regardless of the degree of integration between the variables (whether they are at the first level or the difference).

2) The ARDL model takes a sufficient number of time lags in order to obtain the best set of data within the framework of the general trend model.

3) Through the (ARDL) model, we can get the error correction model using the simple linear transformation, as the error correction model helps in measuring the short-term relationship between the variables included in the model, and thus the (ARDL) model has the ability to measure parameters in the short and long term at same time .

4) The ARDL model is one of the most important models in the application when it determines co-integration, especially in small samples.

The second axis: characterization and construction of the standard model

Standard models are one of the most important measurement tools that are used in economic studies to address economic problems on the one hand, and to know the extent to which the hypotheses of economic theory can be achieved on the other hand. Reflecting the different relationships between the variables included in the model, and this stage is called the stage of characterization and formulation of the model ([13]), and includes the following steps:

First, build the structure of the model.

Second: Determine the model variables.

Third: the mathematical formula of the model.

Fourth: Determine the relationship between the model variables.

Fifth: the matrix of correlation coefficients.

First, build the model:

First model:

It is a linear model that measures the impact of financial policy indicators on poverty rates in Iraq during the period 2004-2019. A quarterly series of up to (64) observations has been adopted. Modern quantitative methods have been used as the stability of variables and the joint integration methodology using the program (Eviews 10).

Second: Determine the model variables.

I used a number of important economic variables that directly or indirectly affect their time course on poverty rates in Iraq, depending on what was brought by economic theory as well as The propositions of some economic schools and what recent theoretical studies have used. The following describes the most important variables included in the model:

Dependent Variables

They are variables whose value is determined from within the model, and they are also called endogenous variables. The first estimated model in this study includes a dependent variable, the poverty rates in Iraq (time series), symbolized by the symbol (POV), which represents a percentage of the total population who are below the poverty line. As for the second estimated model, the poverty rate at the governorate level in Iraq (cross-sectional data) is also symbolized by (POV).

Independent variables.

They are variables that are determined by forces from outside the model, and they are also called exogenous variables. They are macro variables that have direct and indirect effects on poverty rates, variables resulting from changes in macroeconomic policies within the framework of fiscal policy. Accordingly, these variables were defined as follows:

A- The ratio of public expenditures to gross domestic product, which is denoted by the symbol (GE).

B_ The ratio of investment expenditures to the total public expenditures and is symbolized by the symbol (INV).

C- The allocations of the regional development program, symbolized by the symbol (RED).

D- Allocations of the ration card, symbolized by the symbol (RAC).

E- The average total expenditure per person, symbolized by (ATE)

Third: the mathematical formula of the model.

Format of the first form:

$$POV = \alpha_1 + \alpha_2 GE + \alpha_3 INV + \alpha_4 RED + \alpha_5 RAC + U \dots\dots\dots\dots\dots\dots (1)$$

Fourth: Determine the relationship between the model variables

The direction of the relationship between these variables can be determined based on the foundations and ideas of economic theory, as follows:

Relationship Indicators of poverty and public expenditures The economic theory, based on the ideas of most economic schools, assumes that there is an inverse relationship, that is, an increase in public spending will lead to a reduction in poverty rates, whether from an increase in growth rates in the gross domestic product or through grants and aid to the poor and relying on From these assumptions, the value of the parameter (α_2) is expected to be negative.

The relationship between poverty indicators and the percentage of investment expenditures is an inverse relationship between them. This is based on the assumption that increasing investment spending will generate new job opportunities and an incentive to achieve sustainable growth rates, which will negatively affect poverty rates and work to reduce them. The value of the parameter (α_3) is expected to be negative.

The relationship between the regional development program and poverty rates sees the theoretical propositions and the studies conducted to assess this relationship see that there is an inverse relationship between the two variables, as the increase in the allocations of the oil regions development program will have positive effects on poverty indicators. Therefore, the relationship is expected to be inverse, and the sign of the parameter (α_4) is negative.

The relationship between ration card support and poverty rates, and this is based on the assumption that the sums allocated to support the ration card will have a positive impact on poverty rates through what the family obtains from foodstuffs that contribute to raising the calories achieved and thus moving away from the poverty line. The value of the parameter (α_5) is negative.

As for the relationship between the average total expenditure per person and poverty rates according to the governorates, the relationship will be inverse because increasing the average total expenditure per person will inevitably lead to an improvement in the standard of living for the individual and the family and reduce poverty rates at the level of spatial unity and here at the governorate level.

Fourth: the matrix of correlation coefficients

For the purpose of determining the degree of regression of the relationship between the variables under study, the following correlation coefficients were adopted:

Table (1)

Matrix of correlation coefficients

	GE	INV	POV	RAC	RED
GE	1.000000	-0.191861	0.223984	0.054469	0.109661
INV	-0.191861	1.000000	-0.280093	-0.206849	0.715089
POV	0.223984	-0.280093	1.000000	0.470033	0.062780
RAC	0.054469	-0.206849	0.470033	1.000000	0.219548
RED	0.109661	0.715089	0.062780	0.219548	1.000000

The table of correlation coefficients indicates the relationship between these variables, as it shows the strength and direction of the relationship between these variables, and it is clear from it that there is a weak degree of correlation between them and the direction of the relationship is positive (direct) except for investment expenditures that is, the increase in public spending and what is allocated to the regional development program and the ration card support program

It was not enough to generate moral effects towards reducing poverty, and this is due to the weakness of the macroeconomic implications in overcoming the imbalances that could push the economy towards achieving a high or accelerating rate of economic growth, especially in light of the spread of the phenomenon of financial and administrative corruption, the imbalance of the budget structure and the delay in the implemented projects, which generated More adverse factors towards increasing poverty rates.

We infer from this the ineffectiveness of macroeconomic policies, especially in the financial aspect, and that they are still below the level of the normal relationship in the nature of the impact of their performance, whether within the framework of economic growth or within the framework of direct and influencing variables in poverty rates in Iraq.

The degree of correlation between poverty rates and other influential variables (the percentage of public spending to GDP, the percentage of investment expenditures for public spending, the ration card program and the regional development program [0.223, -0.28, 0.47, 0.062], respectively).

However, this correlation, in addition to being unable to determine the direction of influence between the variables, does not provide sufficient evidence for the existence of a causal relationship. These variables may be functionally related to each other (functionally) that tend to simply synchronize their movements or be affected by common factors among them. Resorting to the

adoption of standard regression models and the use of tests to determine the validity of these correlations.

The second axis: Estimation and analysis of standard models

To determine the nature and direction of the relationship in the short and long term between fiscal policy indicators and poverty rates in Iraq, the quarterly (quarterly) data for these variables were used for the period (2004-2019). The expanded (ADF) and the Phelps-Peron test (pp) and the results will be estimated and analyzed successively

1. Stationary Test: Time series analysis is an important step before estimating and testing the relationship between economic variables. To ensure the stability of these variables and to know their statistical properties, it is said that the data of the series are stable when their averages and variances are constant over time ([14]).

In the event that the time series are unstable, a problem called spurious regression will appear. To address this, unit root tests will be adopted to ensure the stability of the variables and determine the degree of their integration. Despite the multiple choices of the unit root, we will use two tests: Dickey and Fuller 1979) and Phillips-Perron Selection (Phillips-Perron 1988). In 1981, Dickey and Fuller developed three different equations to test the existence of a unit root. The second equation contains the constant term only when the third contains the constant term and the general direction. The first equation is without a fixed term and a general trend. And (et) in the three equations is the error terms, which It is characterized by white noise and has desirable properties ([15]).

Extended Dickey Fuller Test (ADF).

To verify the static time series of the economic variables used in the analysis, the Dickey-Fuller Expanded Test method or ADF was used to test the unit root of time series. This method is based on the null hypothesis ($H0:\beta=0$) which states that the time series of a variable is not static (It has a root unit) against the alternative hypothesis ($H1:\beta<1$) which states that the time series are static.

Table (1) shows that the variables (POV, GE, INV) are all stable at the level because the calculated value (τ) is greater than its tabular value (critical) in its absolute form, which means that the alternative hypothesis that states the stability of the variables is accepted. Of the two variables (RAC, RED) are stable without a

fixed limit and direction and at a significant level (5%,10%), respectively, and this series becomes stable and devoid of unit root.

Table (2)
Extended Dickey-Fuller Test (ADF)

UNIT ROOT TEST RESULTS TABLE (ADF)
Null Hypothesis: the variable has a unit root

		At Level				
		POV	GE	INV	RAC	RED
With Constant	t-Statistic	-3.3600	-4.2403	-3.0764	-1.7579	-2.0130
	Prob.	***0.0165*** **	***0.0013*** ***	***0.0338*** **	***0.3967*** n0	***0.2804*** n0
With Constant & Trend	t-Statistic	-3.4170	-3.1525	-3.1290	-2.3293	-2.1634
	Prob.	***0.0588*** *	***0.1049*** n0	***0.1093*** n0	***0.4111*** n0	***0.4971*** n0
Without Constant & Trend	t-Statistic	-0.2913	0.1337	-0.0711	-1.0611	-0.9279
	Prob.	***0.5767*** n0	***0.7207*** n0	***0.6546*** n0	***0.2570*** n0	***0.3090*** n0
		At First Difference				
		d(POV)	d(GE)	d(INV)	d(RAC)	d(RED)
With Constant	t-Statistic	-3.6572	-2.2117	-2.4810	-1.9662	-1.7579
	Prob.	***0.0073*** ***	***0.2046*** n0	***0.1255*** n0	***0.3004*** n0	***0.3958*** n0
With Constant & Trend	t-Statistic	-3.5393	-2.5324	-2.5914	-1.9638	-1.7446
	Prob.	***0.0443*** **	***0.3120*** n0	***0.2857*** n0	***0.6066*** n0	***0.7137*** n0
Without Constant & Trend	t-Statistic	-3.7354	-2.3257	-2.4623	-1.9506	-1.7589
	Prob.	***0.0003*** ***	***0.0206*** **	***0.0146*** **	***0.0497*** **	***0.0747*** *

Notes:
a: (*)Significant at the 10%; (**)Significant at the 5%; (***) Significant at the 1% and (no) Not Significant
b: Lag Length based on SIC

Source : From the researcher's numbers based on the statistical program (Eviews-10)

2. The Philips-Peron PP test:

As for the results of the stability test using the Phillips-Peron method (p-p), it has a better and more accurate test ability than the (ADF) test, especially when the sample size is small and in the case of inconsistency and inconsistency of the two tests, it is better to rely on the results of the p-p test, and it is clear from the table below: Table (3) Philips-Peron (P-P) test

UNIT ROOT TEST RESULTS TABLE (PP)
Null Hypothesis: the variable has a unit root

		At Level				
		POV	GE	INV	RAC	RED
With Constant	t-Statistic	-2.5936	-5.4351	-2.5593	-2.2237	-2.2314
	Prob.	***0.0999*** *	***0.0000*** ***	***0.1071*** n0	***0.2002*** n0	***0.1980*** n0
With Constant & Trend	t-Statistic	-2.5602	-4.5809	-2.2121	-2.5787	-2.3887
	Prob.	***0.2995*** n0	***0.0026*** ***	***0.4742*** n0	***0.2912*** n0	***0.3809*** n0
Without Constant & Trend	t-Statistic	-0.9370	-1.3530	0.1256	-1.3370	-1.2375
	Prob.	***0.3068*** n0	***0.1615*** n0	***0.7186*** n0	***0.1660*** n0	***0.1956*** n0
		At First Difference				
		d(POV)	d(GE)	d(INV)	d(RAC)	d(RED)
With Constant	t-Statistic	-3.6486	-3.5398	-3.4489	-3.9748	-3.6853
	Prob.	***0.0075*** ***	***0.0102*** **	***0.0130*** **	***0.0029*** ***	***0.0072*** ***
With Constant & Trend	t-Statistic	-3.4411	-3.6501	-3.5045	-3.9618	-3.5068
	Prob.	***0.0557*** *	***0.0340*** **	***0.0481*** **	***0.0154*** **	***0.0493*** **
Without Constant & Trend	t-Statistic	-3.7321	-3.6842	-3.4405	-4.0047	-3.7181
	Prob.	***0.0003*** ***	***0.0004*** ***	***0.0009*** ***	***0.0001*** ***	***0.0004*** ***

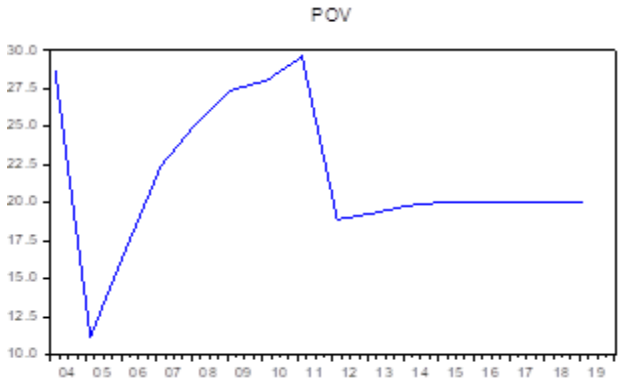
Notes:
a: (*)Significant at the 10%; (**)Significant at the 5%; (***) Significant at the 1% and (no) Not Significant
b: Lag Length based on SIC

The results showed that the two variables (POV) and (GE) were stable at the level at a significant level (10%, 1%), respectively, and the calculated value (τ) for both variables was greater than their critical value (tabular), while these other variables became (INV). , (RAC), (RED) is stable at the first differences and at all significant levels, whether with a fixed limit only or with a fixed limit and a general trend, and the calculated (τ) values are greater than their (critical) tabular value, which means rejecting the null hypothesis and accepting the alternative hypothesis that indicates stability Variables at the first difference with a level of significance of 1%.

This can be shown in the graphs below:

shape (1)

stability at level



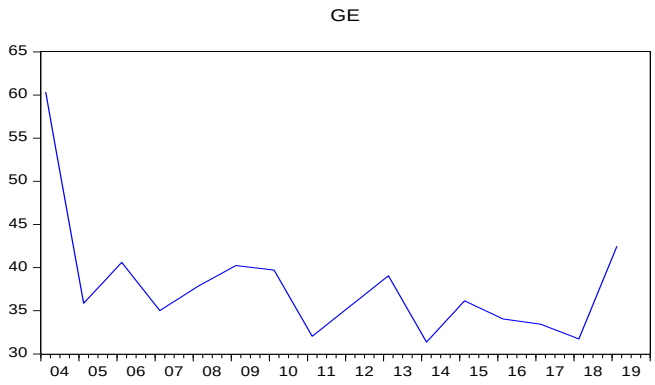
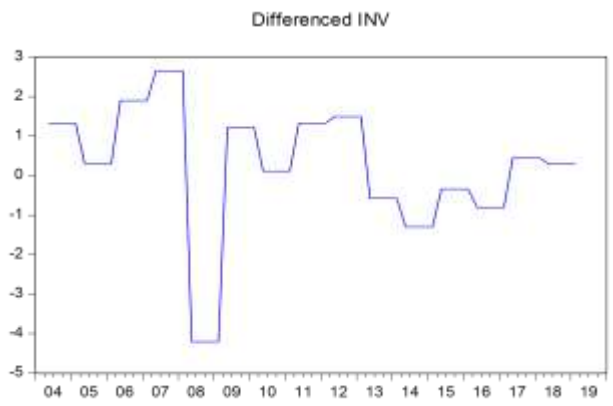
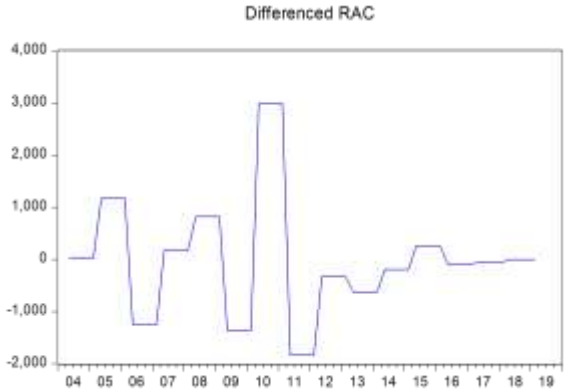
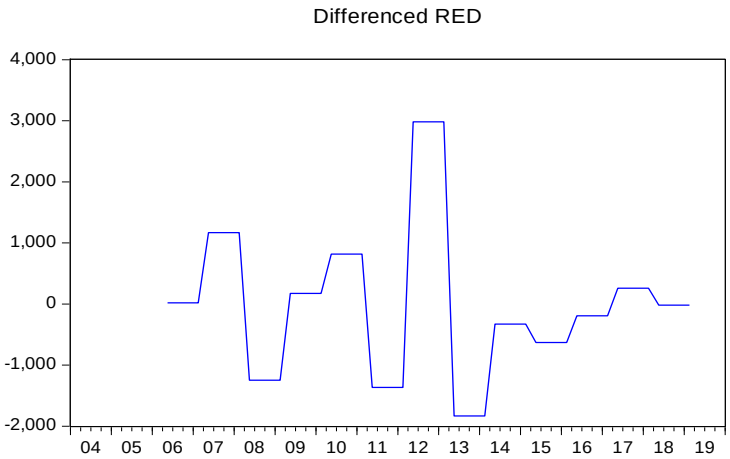


Chart (2)

Stability at the first difference







2. ARDL Model Estimation

It became clear to us from the analysis of the results of stability (unit root test) for the model variables, that the time series of some variables are static at the level (0~I), while the rest of the variables are not static at the level and become static in the first difference (1~I), and since the model (ARDL) works in data level and first difference or a combination of the two and is more efficient and more efficient in estimating the long and short-term parameters than other models, so it became necessary to use the Bound Test approach to estimate the parameters of the model.

The Auto Regressive Distributed Lag (ARDL) model is one of the standard models used for co-integration testing, and it is conducted through the use of the Bound Test developed by Pesarah: 1997, Shinand and Sun: 1998, Pesaranet: 2001), as both the autoregressive model and the distributed lag model were combined together, according to which the time series is a function of slowing down the values and with a single time period that may be a year or more, and here (Pesaranet) sees it possible to apply the limits test within the framework of the ARDL model when the series is It is stable and at its levels I(0) or of degree or integral and of the first degree (1), or when it is a mixture of the two cases, and this is done on the condition that the time series which is of the second degree is not integrated.

Table (4) shows us the results of estimating the model with time lags of (2,2,2,0,2) based on the values of the Akaike criterion (AIC) among the best (20) descriptions of the model as it gives the lowest value for this criterion It is determined automatically by the program used, as the value (1) means a time lag for one

period and (0) means that there is no time lag, and so on, according to the lag periods determined by the program for each of the variables in the model. Table (3) shows the results of the estimation, while Figure (3) shows the Akaike time lag criterion (AIC).

Table (4)

The results of estimating the ARDL model for the impact of fiscal policy

Dependent Variable: POV
Method: ARDL
Date: 05/18/21 Time: 14:29
Sample (adjusted): 2006Q3 2019Q1
Included observations: 51 after adjustments
Maximum dependent lags: 4 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (4 lags, automatic): GE INV RAC RED
Fixed regressors: C
Number of models evalulated: 2500
Selected Model: ARDL(2, 2, 2, 0, 2)
Note: final equation sample is larger than selection sample

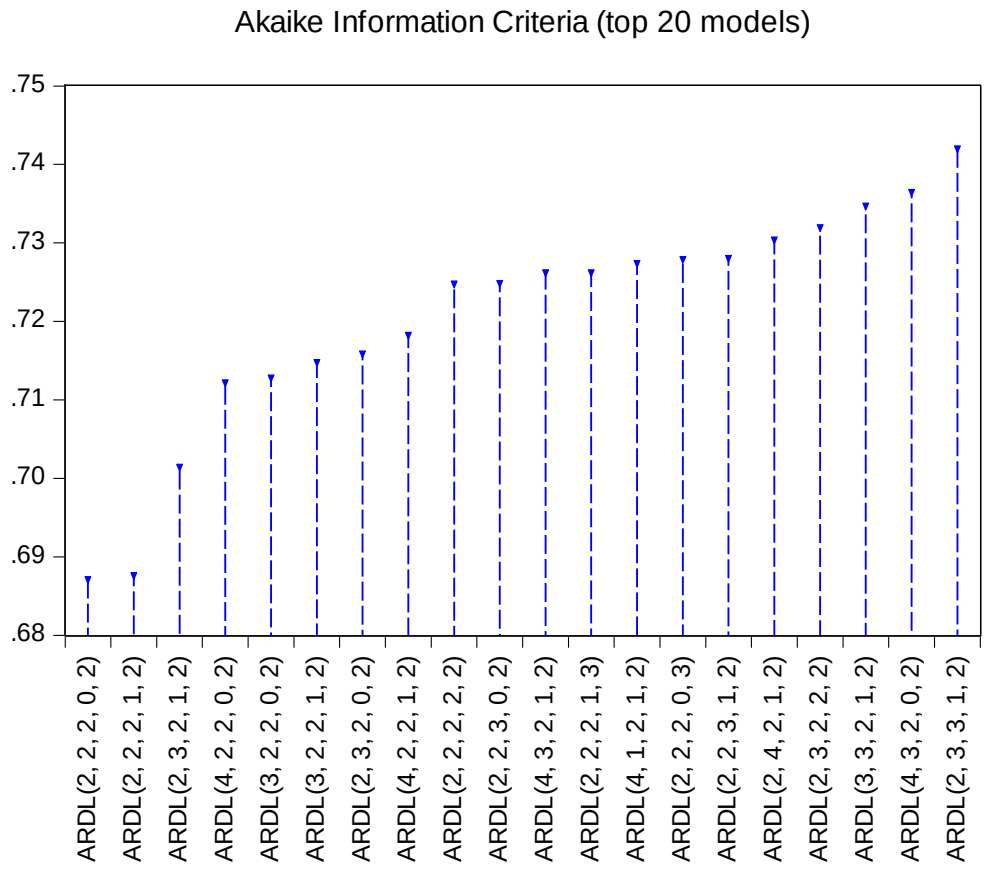
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
POV(-1)	1.754096	0.081278	21.58145	0.0000
POV(-2)	-0.797336	0.079602	-10.01648	0.0000
GE	-0.250544	0.057635	-4.347105	0.0001
GE(-1)	0.498064	0.112082	4.443748	0.0001
GE(-2)	-0.220433	0.079890	-2.759190	0.0089
INV	-0.235269	0.052773	-4.458134	0.0001
INV(-1)	0.395289	0.079384	4.979477	0.0000
INV(-2)	-0.186714	0.049485	-3.773128	0.0006
RAC	-2.23E-05	2.77E-05	-0.807381	0.4245
RED	0.000489	7.29E-05	6.713452	0.0000
RED(-1)	-0.000842	0.000110	-7.647326	0.0000
RED(-2)	0.000396	7.77E-05	5.096071	0.0000
C	0.583192	1.457708	0.400074	0.6913

R-squared	0.994479	Mean dependent var	22.36431
Adjusted R-squared	0.992736	S.D. dependent var	3.490155
S.E. of regression	0.297468	Akaike info criterion	0.628545
Sum squared resid	3.362516	Schwarz criterion	1.120971
Log likelihood	-3.027894	Hannan-Quinn criter.	0.816715
F-statistic	570.4178	Durbin-Watson stat	2.301627
Prob(F-statistic)	0.000000		

From the researcher's numbers based on the statistical program (Eviews-10

shape (3)

ACAIK Standard Test Results



3. Statistical tests according to the (ARDL) model

Statistical tests of the estimated model indicate the quality of the estimated model through the value of the parameter (R2), which is (99%), as well as the value of (F-Statistic), which is (570), with a level of statistical significance less than 1% (0.000000). Since the value of (Durbin- Watson Test) was (2.30), it indicates that the model is free of the autocorrelation problem.

4. The Bound Test for Co-integration.

After estimating the ARDL model, the boundary test proposed by Pesaran, Shin and Sun: 2001 is directed to verify the presence or absence of co-integration (a long-term equilibrium relationship) between the variables, and the null hypothesis is tested against the alternative hypothesis, as the hypothesis states The null on the absence of co-integration, while the alternative hypothesis states on the

existence of co-integration (the long-term equilibrium relationship), and this is done by using the test (.F-Statistic), then comparing the calculated F for long-term parameters with the corresponding tabular F values installed in tables calculated by each of Before Bisran and others, if the calculated F is greater than the tabular, this indicates the existence of a joint integration and vice versa if the calculated F is less than the tabular, but if the calculated F value is between the two values, no decisive decision can be taken, and Table (4) shows the results of the limits test of the model.

Table (5)

Bounds Test Results for Cointegration

ARDL Long Run Form and Bounds Test
Dependent Variable: D(POV)
Selected Model: ARDL(2, 2, 2, 0, 2)
Case 2: Restricted Constant and No Trend
Date: 05/18/21 Time: 14:35
Sample: 2004Q1 2019Q4
Included observations: 51

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	1.906920	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37
Actual Sample Size	51		Finite Sample: n=55	
		10%	2.345	3.28
		5%	2.763	3.813
		1%	3.738	4.947
			Finite Sample: n=50	
		10%	2.372	3.32
		5%	2.823	3.872
		1%	3.845	5.15

Table (5) shows the results of the co-integration test using the boundary test method, as it turns out that the calculated values of the F-statistic test, amounting to (1.90) are less than the tabular upper and lower bounds of the F-statistical values according to the sample size and degrees of freedom at a different level of significance, and this indicates that The lack of co-integration between the studied variables, that is, we reject the alternative hypothesis and accept the null hypothesis that there is no long-term equilibrium relationship between the indicators of financial policy and poverty rates in Iraq. This is inferred from him that economic policies did not generate those accelerating effects on the real GDP growth rate in a way that generates significant effects towards reducing poverty rates by overcoming the disparity in income distribution and the improvements that it can generate in the average per capita income. In other words, the country still suffers from distortions in the performance of its macroeconomic policies, whether within the framework of monetary policies or fiscal policy, in addition to the structural imbalances it suffers from.

5. Estimation of the long-term relationship according to the Bound Test

Table (6) shows the effect of the independent variables on poverty rates in the long term, which is the co-integration equation, and we note that all the independent variables (GE, INV, RAC, RED) are not statistically significant, and this indicates that there is no clear effect of these variables on the rates of poverty. Poverty in Iraq, and that both the variable ratio of public expenditure to gross domestic product (GE) and the Regional Development Program (RED) had a positive indication of their parameters and this is contrary to the economic theory, which reflects the size of the structural imbalances in the structure of the Iraqi economy and indicates the apparent weakness in the spending policies of the government in the long This is what made the economy suffer from limited sources of national income (a state of lack of economic diversification) and the inability of the commodity sectors to meet the increasing needs of members of society.

It reflects the weak role of public spending, whether investment or current, in increasing the volume of GDP, due to the spending policy in Iraq that dominates consumer spending based on increasing demand towards imports of goods and services without positively affecting the increase in aggregate demand for local goods due to the weak flexibility local production. The inefficient use of resources as well as the spread of the phenomenon of administrative and financial corruption and the increase in dependence on the rentier economy.

Table (6)

The results of the long-term relationship of the model

ARDL Long Run Fo
Dependent Variable
Selected Model: AR
Case 2: Restricted
Date: 05/18/21 Tir
Sample: 2004Q1 20
Included observatio

Levels Equation
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GE	0.626458	0.659005	0.950613	0.3478
INV	-0.617346	0.715124	-0.863272	0.3934
RAC	-0.000517	0.000779	-0.663421	0.5111
RED	0.000998	0.001258	0.793211	0.4326
C	13.48734	33.12641	0.407148	0.6862

EC = POV - (0.6265*GE -0.6173*INV -0.0005*RAC + 0.0010*RED + 13.4873)

Source: prepared by the researcher based on the statistical program (Eviews-10)

6. Diagnostic tests

1. The results of the test of the autocorrelation problem through (LM Test.)

The Breusch-Codfrey correlation test, or the so-called LM Test, indicates that the model is free from the autocorrelation problem because the value of the Chi-Square probability was (0.117) which is greater than the level of significance (0.05), which indicates acceptance of the null hypothesis that Indicates that there is no autocorrelation of the residuals.

Table (7)

The results of testing the autocorrelation problem using (LM Test)

Heteroskedasticity Test: ARCH

F-statistic	0.002896	Prob. F(1,48)	0.9573
Obs*R-squared	0.003017	Prob. Chi-Square(1)	0.9562

Source: From the researcher's numbers based on the statistical program (Eviews-10)

2. Results of the Heteroscedasticity Test: ARCH

To identify whether the residuals suffer from the problem of heterogeneity of variance or vice versa, it is clear from the following table (8) that it is clear that the value of the probability of Chi Square (1) amounted to about (0.956), which is greater than (0.05) and is not significant, which is concluded from Acceptance of the null hypothesis that emphasizes the homogeneity of the residuals and the absence of the model from the problem of heterogeneity in variance.

Table (8)

Results of the Variation Heterogeneity Problem Test Using ARCH))

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.772483	Prob. F(2,36)	0.1844
Obs*R-squared	4.571841	Prob. Chi-Square(2)	0.1017

Source: prepared by the researcher based on the statistical program (Eviews-10)

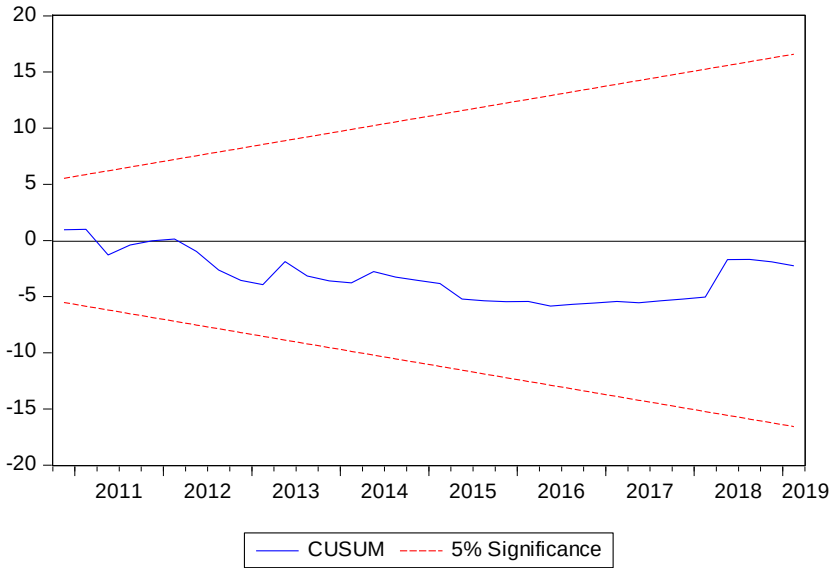
3. Stability Test for ARDL Model Parameters

In order to ensure that the data used in this study are free from the presence of any structural changes in them, especially the parameters of the long-term and short-term relationship during the period used in estimating the ARDL model, it is necessary to use appropriate tests for this, such as: Cumulative Residual Total (CUSUM) (The Cumulative Sum of the residuals squared and the SUSUMSQ test,

developed by Brown and others (1975 Broun et al.), as the structural stability of the coefficients estimated in the error-correction formula of the autoregressive distributed time-gaps model is achieved. If the graph of the two tests falls within the critical limits at a significant level of 5% and varies around the zero value (zero), and thus proves the stability of the long and short-term parameters of the ARDL model, as shown in the graphs below (4) and (5).

shape (4)

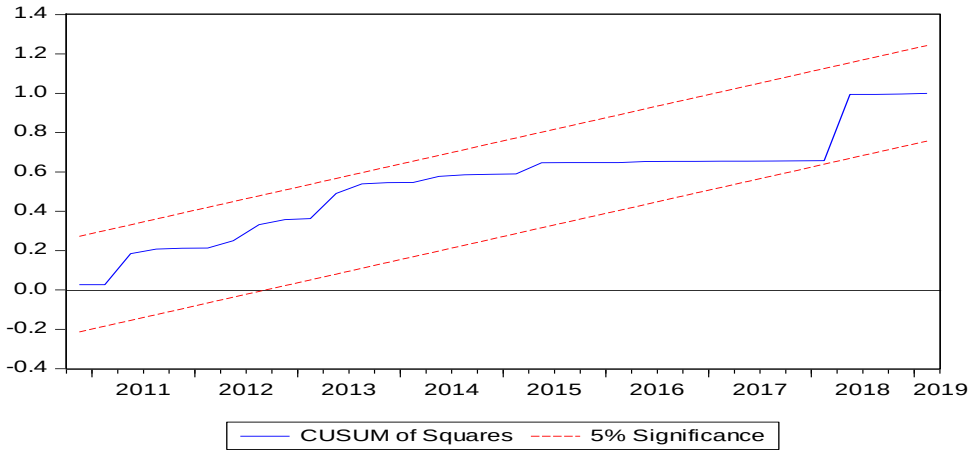
for the cumulative sum of the residuals (CUSUM))



Source: prepared by the researcher based on the statistical program (Eviews-10)

Figure (5)

Cumulative sum of squares of residuals test (SUSUMSQ))



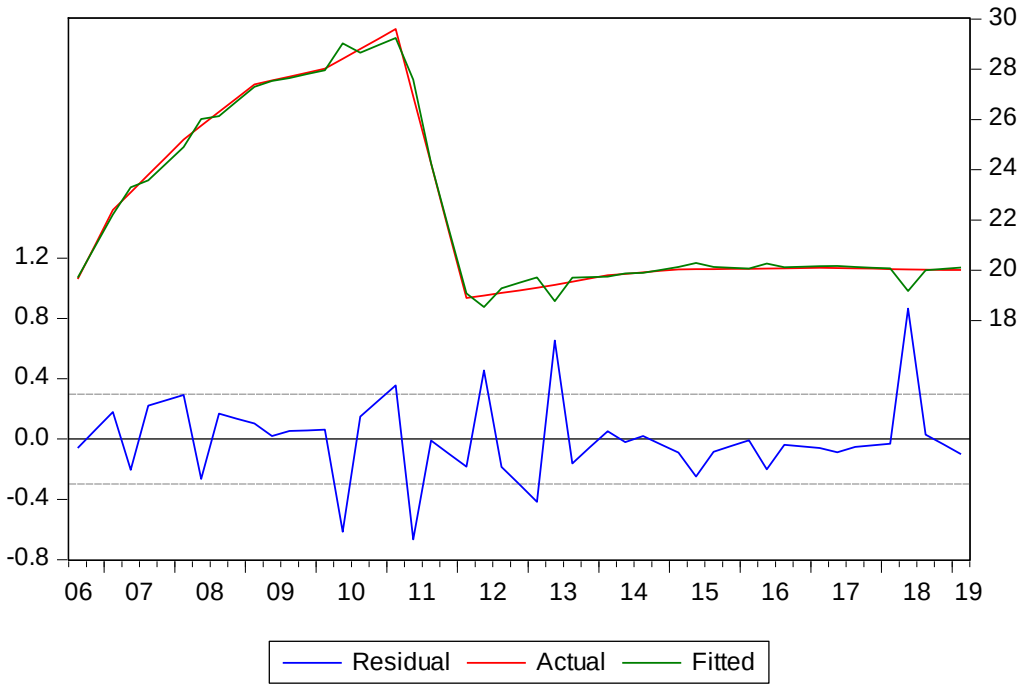
Source: prepared by the researcher based on the statistical program (Eviews-10)

From the graphs, it is clear that the estimators are stable over time within the confidence limits or within the critical limits at the 5% level, i.e. we have no more than one equation, which confirms that the variables are stable over time and that the ARDL model is the best model in estimating the relationship.

Figure (6) indicates the conformity of the estimated and actual residuals of the model and reflects the accuracy and quality of the model estimated according to the ARDL methodology.

Figure (6)

Estimated and actual model residuals



Source: prepared by the researcher based on the statistical program (Eviews-10)

Fourth axis: conclusions and recommendations

First: the conclusions

1. The results of the assessment showed that the increase in public spending and what was allocated to the regional development program and the ration card support program were not sufficient to generate significant effects towards reducing poverty rates, due to the weakness of the macroeconomic implications in overcoming the imbalances that could push the economy towards achieving a high or accelerating rate. In economic growth, especially in light of the spread of the phenomenon of financial and administrative corruption, the imbalance of the budget structure and the reluctance of the implemented projects, which generated more counterproductive factors towards an increase in poverty rates.
2. The standard model showed the absence of a long-term equilibrium relationship between the indicators of fiscal policy and poverty rates in Iraq. This infers from him that economic policies did not generate those accelerating effects on the real GDP growth rate in a manner that generates moral effects towards alleviating poverty rates.
3. The ineffectiveness of macroeconomic policies, especially in the financial aspect, and that they are still below the level of the normal relationship in the nature of the impact of their performance, whether in the context of economic growth or in the context of direct and influencing variables in poverty rates in Iraq.
4. Absence of planning and a clear strategy to address the phenomenon of poverty, which led to its spread and a significant increase in the number of poor people.

Second: Recommendations:

a. Diversifying the economic sectors and not being completely dependent on one resource (oil) as a main financial resource and moving towards developing the rest of the economic sectors that can achieve financial resources, such as the agriculture and industry sectors and creating the investment structure to attract foreign investment and support the private sector.
b. Activating the pioneering role of the financial policy tools in reducing the level of inequality in the distribution of income by adopting progressive direct taxes that deduct part of the income of the higher

groups to provide aid and assistance to the poor groups within the framework of transfer expenditures and in a manner that contributes to the redistribution of income in favor of the poor and low-income classes.

c. The competent authorities should adopt a clear financial policy that is compatible with the nature of Iraq and its economic and social conditions in order to raise the rates of economic growth, and to address the problem of poverty, unemployment and deterioration in the educational and health sector.
d. Reviewing financial policies from time to time and benefiting from the experiences of countries in addressing the phenomenon of poverty, especially in countries with a situation similar to the Iraqi situation.

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