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Measuring the Impact of Currency Window on Iraqi's General Budget for 2019-2004

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Abstract

The aim of the research is to know the impact of the currency sale window on the state's general budget, using the ARDL model, based on the premise that the foreign currency sale window affects the general budget.The study concluded that the bank's currency sales indicated a positive impact on public expenditures in the short term, as the value of short-term flexibility amounted to (385.0793), as well as confirming that the bank's long-term currency sales referred to the positive relationship, as its flexibility reached (933.0155), and that the bank's purchases of currency have a positive impact on public revenues in the short term, as the value of flexibility in the short term has reached (574.0115), but if the increase in purchases by the Central Bank continues, the impact rate will increase and a greater percentage in the long term, and its flexibility will be (1275.001) Thus, the research hypothesis proved that the foreign currency sale window affects the general budget The study recommends the need to work to limit the expansion of government spending, which is the main reason for the increase in the supply (sales) of the dollar, and the high demand of the Central Bank of the dollar, which constitutes a rise in the total demand for the currency, so that the state's general budget is not affected by the policy of the window

Keywords: currency window, general budget in Iraq

Introduction

Influences between financial variables (general budget) and cash (currency window), requires measurement so that decision makers can take financial action, and financial policies are developed to address the negative impact, activate the positive impact, so it is necessary to examine the factors influencing the variable, and rely on the method of economic measurement after confirming reliable data, thus inferring weaknesses to address them, and strengths to strengthen them.

The Iraqi economy after 2003 has undergone a shift in frameworks and policies, resulting in a weak efficiency of variables, especially financial and monetary ones, and because most of Iraq's financial variables are strongly linked to oil. Any change is reflected in its adverse effects on other variables. It must therefore be quantified through standard or mathematical programs or methods. Programs with modern tools have emerged to measure the impact of the independent variable on the dependent variable.

Through this research, we will try to apply a model that suits the problems of financial variables, as a standard method in the light of the financial and monetary fluctuations

experienced in Iraq during 2019-2004.

- The importance of research: the research derives its scientific significance by identifying the most important tools developed such as the procurement tool and sales from the dollar and the pros and cons it has achieved, as well as comparing the impact of currency sales on budget expenditures with the impact of bank purchases on public revenues, using the ARDL model.
- Research Problem:

The Iraqi financial system and, in particular, the general budget suffers from a deficit in its budget and its implications by overshooting public expenditure on public revenues, imbalances in financial and monetary policies and the lack of diversity of sources of revenue. All financial and monetary instruments are linked to the oil sector, including the general budget, which has been shocked and disrupted for most of the past years.

- Hypothesis: The foreign exchange selling window affects the general budget, according to the state's purchase of local currency from the central bank in dollar currency, which depends on the annual general budget resources.
- Research Objective:

Knowing the impact of the currency sale window on the country's general budget, using the ARDL model.

Theoretical framework for used standard tools
Analysis and stillness of time series

Time series analysis is the specific way to analyze a series of data points collected over a period of time. In the analysis of time series, analysts record their feedback at continuous intervals and within a specified period of time rather than simply recording their observations intermittently or randomly.

What distinguishes time series data from other data is that analysis can show how variables change over time, in other words, time is an important variable because it shows how data is adjusted over the course of the series, as well as the final results, and time provides an additional source of information. Time series analysis is used for non-static data that fluctuates continuously over time or is affected by time. Financial industries such as finance, banks, financial variables, retail and economics often use time series analysis because financial variables always change.

These data are characterized by the unit radical in standard economic models and may lead to false regressions, so the test of stillness is very important, because the full results of the regression may be misleading. Testing data for stillness is very important in research, where fundamental variables depend on time, determining the most appropriate form of direction in the data. Because many economic and financial time series show vectable or inadequate behavior on average. Mushtaq, 2019:2), the series is called static if it meets three conditions, otherwise it will be non-static series Ceren, 2018:43),

1- The computational medium has been established over time and is the following equation:
…….(1) $E(yt)=\mu$
2- The value of the variance over time has been proven by the following formula:
$var(Yt)= E (Yt-\mu)2 = \sigma2$……(2)
3- The common variance between two values for the same variable is based on the time gap (k) between the values (Yt) and (Yt-1) rather than on the actual value of the time calculated at the variance, which is the following equation:
$(Yt\ \ Yt-k) = E [(Yt-\mu) (Yt+k – u)]$…..(3) Yk

There are different methods, used to verify the data on stillness or stability proposed by various researchers, including Dickey and Fuller's (Dickey-Fuller ADF) (1979, 1981), and the important thing in their test is that non-stillness is equivalent to testing the presence of the unit radical, as well as Phelps Perron's general proposal (1989), stillness and stability can also be tested by graphics and charts, but it is less accurate than other standard tests.

2-1-4- Radical unit tests

Radical unit is a feature of random processes that can cause problems with statistical inference that includes templates of time series.

Since the linear random process contains a unit radical, this process is not fixed but does not always have a direction. In time series modeling, time series data often encounter problems with the series' stillness, Understanding the characteristics of this data is critical for the development of time series models radical test is an essential step when dealing with time series data, and the unit radical is the one containing the random variable. Important implications of the Unit's radical include:

1- The root of the unit has effects on variables.
2- Separation of unit root time chains does not lead to stillness. (Ajisafe&Akinlo,2013:505).
The detection of the unit's radical in time series takes place in a number of ways, most important of which are - (Farahani,2016:18 & Mehrara)

A. Standard method
A- Phillips-Perron (PP):
Byron (1989) proposes three test equations that vary depending on the type of interval that is thought to exist: -
1- Intersection Model
2- Trend Model
3- A model allows both types of interruption to occur at the same time.

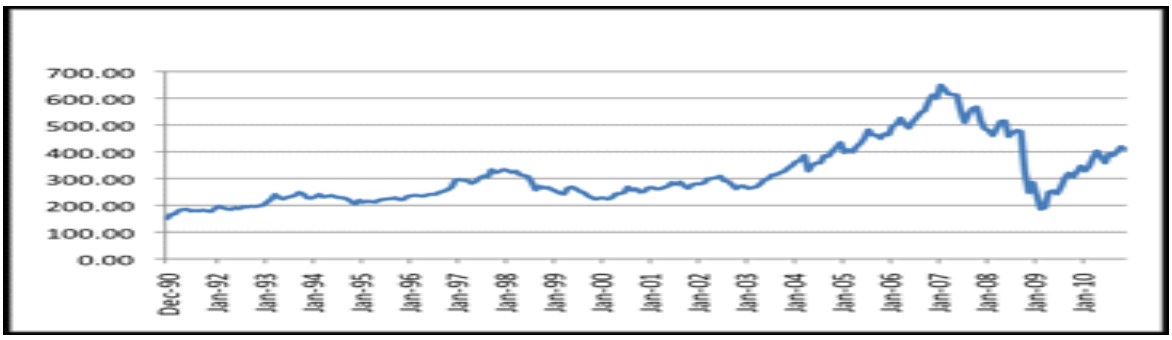
B- Dickey-Fuller
Dickey and Fuller (1976) proposed testing the stillness of the economic variables and hypotheses they include, considering H0: q = 0 vs. H0: q < 0.
If the zero hypothesis is accepted, the standard process is I (1), means $y_t \sim I(1)$

Chart method.

The shape or chart of the time series, also called the time series chart or graphic chart, is a data visualization tool that shows data points at consecutive intervals of time. Each point on the chart corresponds to the time and quantity measured. The chart is an initial step in the analysis of time series by way of a graphic format, the stability and the inadequacy of time series can be judged. It then takes steps through the tests used for this purpose for its stillness. However, the graph does not give an accurate picture of the accuracy of the oscillation that accompanies the time series, We therefore use several precise tests to test for stillness and use tests for each standard model.

Charts or drawings for time series are useful in determining constant and time trends, which is why the first step to modeling any time series should be to visualize data. The chart in the form of (4-1) represents a case of one direction of variables (Shabib, 2019 29)

Form (1) the graph of time series



Outputs of the statistical program (Eviews12)

-2- First theme/ Autoregressive distributed lag and structural tests of stability (CUSUM) and (CUSUM SQ)

2-1 Autoregressive distributed lag

Standard economists (the shift from instability to stability) have proposed many standard economics methods for the purpose of achieving a long-term approach, and one standard method is a common integration that is consistent with many variable time series. For the purpose of our study, we chose the Autoregressive distributed lag (ARDL), modelled by Pesaran, Pesaran (1997), Pesar, Smith (1998), Pesaran and others. (2001). ARDL has become wide applications due to many advantages: Mushtaq,2019:2))

1- It can be applied regardless of whether the study variables are integrated from rank (1 (0) or integrated from rank (1) 1 or integrated from the same rank.
2- It can be applied if the sample size is small.
3- Its use helps to estimate long and short-term ingredients

After confirming a long-term balance between the dependent variable and the interpretive variables, the parameters of the model are estimated (ARDL) for the short and long term, using the ordinary least squares (OLS) based on the number of slowing periods specified, in order to determine the appropriate model is relied on the elimination of the first variable differences of any variable that is the absolute values of the count (t) is less than the correct one, and before adopting and applying this estimated model should be sure of the quality of the performance of this model, which is done by conducting diagnostic tests including: (Aboih: 2017:30)

Lagrange Multiplier Test (LM) for Serial Correlation between Residual.

This test is done by testing the Lagrange Multiplier (BGLM): since the dependent variable as a time-bouncing variable is one of the interpreted variables, the test for the existence of the autocorrelation between the series data is done through the LM test, and the associated probability value of both the (F) and Kai square is greater than (5%).

Autoregressive Conditional Heteroscedasticity (ARCH)

ARCH is a statistical model used to analyze fluctuations in time series in order to predict future economic and financial fluctuations, and ARCH modeling is used to estimate risk by providing a fluctuation model that closely resembles real economic reality. ARCH effect relates to a relationship within heterogeneity, often called the serial correlation of heterogeneity.

Structural tests of stability (CUSUM) and (CUSUM SQ)

In statistical quality control, cumulative Sum of Recursive Residual (CUSUM) is a sequenced analysis technique developed by E. S. Page) from the University of Cambridge. It

is commonly used to monitor the detection of internal structural change of variables, a type of control chart used to monitor small shifts in the average process. The CUSUM scheme charts the cumulative total of deviations from the target for individual measurements or subset means. CUSUM requires two reference value (k) parameters specified in Sigma modules.

A second test is Cumulative Sum of Squares Recursive Residual (CUSUM SQ), if structural change involves a factor of propensity or variability of the term error, the CUSUMSQ test has higher strength, so CUSUM-of-squares test is preferred, as it is very strong to detect changes in model parameters Whether or not the contrast of the regression error is included in the converted parameter set.

According to these tests, the estimated parameters are structurally stable in model error correction format (ARDL) if the graph falls within critical boundaries at a morale level (5%), while the parameters are not structurally stable if the graph of tests falls outside critical boundaries at a morale level (5%) Alimi, 2014:111).

Description of variables for Iraq's currency window and general budget

Description of models used in the study

In this research, we will look at appropriate standard tests to extract the best results, and start with a stable test. If the data is stable, Granger causality and the Cointegration of Johansson are used, and if the data are unstable at the original level, we apply the ARDL autoregression test (Autoregressive Distributed lag), which is suitable for short-term and long-term flexibility.

According to the principles of economics, it requires:

1. Describe the variables of the models used and their mathematical indications, identify the variables of the model, the general budget will be a dependent variable, and the currency window (currency sales and purchases are separate variables. As in table (4.1)

Table (1). *Description of codes of variables used*

code	dependent variable	code	Independent variables
LnE	overhead	LnS	Central Bank Foreign Currency Sales (USD)
LnR	public revenue	Ln P	Central Bank foreign currency purchases (USD)

In order to measure the impact of the currency window on Iraq's general budget for 2004-1920, the function takes the multiple double logarithmic form as follows:

$LnE = \propto 0 + Ln \propto 1\ S + Et$

$LnR = \propto 0 + Ln \propto 1\ P + Et$

LnE = Variable Affiliate Overheads
LnS = independent variable foreign currency sales
LnX2 = Affiliate Variable General Income
LnX3 = Independent variable foreign currency purchases
Et= Random variable

Each variable has a predictable signal that corresponds to economic logic, but sometimes the references in the model are contrary to economic logic, due to reasons related to the variable used, but the economic variables used in the study are as indicated in table (2).

Table (2) *Description of expected signals for study variables*

Affiliate variable	Expected signals of the independent variable with the affiliate variable	Independent Variables
overhead	The relationship is unequivocal and positive, since the increase in currency sales leads to a rise in the central bank's demand for currency from the Ministry of Finance, which in turn affects public expenditures, due to the conversion of the dollar into a local currency, which increases the government's public spending..	currency sales
public revenue	The relationship is reverse and the reference is negative, as the increase in currency purchases leads to a decline in public revenues (in foreign currency). Because whenever the currency purchases are raised by the bank from the Ministry of Finance, it will lead to a deduction of oil revenues that represent revenue for the budget.	Currency purchases

Table 3 represents the study variables' data

Table (3) *Variable data*

public revenue LnR	expenditure LnE	Central Bank Foreign Currency Purchases (USD) LnP	Central Bank Sales of Foreign Currency (USD) LnS	Years
39874646	25342263	9432	9764	2004
40502890	26375175	10463	10600	2005
49055545	38806679	11175	18000	2006
54599451	33545144	15980	26700	2007
80252182	59403375	25869	45500	2008
53925042	52567025	33992	23000	2009
66715456	70134201	36171	41000	2010
103986088	78757666	39798	51000	2011
119817224	10513957	48649	8000	2012
113840076	11912755	55678	62000	2013
104114756	11347351	54463	47515	2014
66470252	70397515	44304	32450	2015
54409270	67097437	33524	25653	2016
77335955	75490115	42201	40355	2017
106569834	80873189	47133	52229	2018
107566995	11172352	51127	58851	2019
77439728.88	45231637.44	39747.4	39690.0	average

Source: 12Eveiws 's outputs

Second theme/stability test

Table 5 shows the results of the unit radical stillness test by Dickey-Fuller (ADF) test, to test the ⟦ non-hypothesis (H ⟧ _ 0: β=0) which stipulates that the time series of a variable is non-static or unstable (i.e. has a unit radical) versus the alternative hypothesis (H1: $\beta \neq 0$) which represents that the time series is static, and the results showed that the variables are predominantly non-static at the original level with the constant limit and constant limit and

time direction and without them at all levels, for example the LnE overhead variable (p) the probability (0.0134) is less than 0.5 and so the overhead series is static at the original level of data, but the general revenue series LnR is not static

because p)) the probability (0.1670) is greater than 0.5) and so the general revenue series is not static at the original level of data, which requires testing it according to taking its first difference, and we note that all variables are static after taking the first difference, because p)) probability (0.1670) is greater than 0.5).

Table (5) *Unit radical test results by test (ADF) at original level and first difference*

	Variables	**LnE**	**LnP**	**LnR**	**LnS**
With Constant	t-Statistic	-3.941730	-3.08921	-2.3674	1.803751
	Prob.	0.0134	0.0493	0.1670	0.3634
	Result	Yes	Yes	No	No
With Constant & Trend	t-Statistic	-3.528081	-3.33532	-2.73254	-2.321078
	Prob.	0.0823	0.1011	0.2403	0.3981
	Result	No	No	No	No
Without Constant & Trend	t-Statistic	-1.68668	0.73208	0.277384	0.643895
	Prob.	0.2100	0.8601	.0.7528	0.8420
	Result	No	No	No	No
		At First difference			
	Variables	LnE	LnP	LnR	LnS
With Constant	t-Statistic	-3.280826	-4.76842	-2.8616	-2.918817
	Prob.	0.0364	0.030	0.0551	0.0400
	Result	**	**	*	**
With Constant & Trend	t-Statistic	-3.174260	-4.54230	-2.752587	-1.541469
	Prob.	.00.01289	0.0169	.00.2341	0.0450
	Result	**	***	*	**
Without Constant & Trend	t-Statistic	-3.461985	-4.49167	-2.8526	-2.021556
	Prob.	0.0021	0.0003	0.0079	0.0450
	Result	Yes	Yes	Yes	Yes

Source:
- Outputs of the statistical program (Eviews12).
- Yes, indicates that it is significant and (No) indicates that it is in-significant

Second Theme/Estimation

For the purpose of estimating the research model, two formats were estimated in order to compare them, and to choose the best ones. These formats are both written and dual logarithmic, and the dual logarithmic formula for estimating the relationship between the dependent variable and the independent is the best, as they give better statistical indicators than other formulas, as they possess the lowest delay period criteria (AIC, H.Q, SC)

Table 6 shows the length of the slowdown based on three criteria (AIC) Akaike info criterion, Schwarz criterion (SC) and Hannan-Quinn H-Q), model and logarithmic. The best value is the lowest result, the value (AIC), the length of the slowing period (1) which will be approved in the tests.

Table (6) Estimate results for optimal slowing period selection

slowing lag	**H-Q**	**SC**	**AIC**
0	98.83239	99.1073	99.78796
1	92.88798*	94.87918*	94.87685*

Source: Eveiws Outputs

Preliminary estimate of ARDL for sales variable and overhead

Table 7 shows the results of the preliminary estimate of the ARDL model, which shows the relationship between the dependent variable of the overhead. (E), independent variable S

currency sales, note from the table that the determination coefficient (R ° 2) is 0.80, giving interpretive force, that is, the independent variable explains the proportion (80%) of changes occurring in the dependent variable, while the remaining ratio (20%), representing the effect of other variables not included in the model, as the test value indicates (F) and (7.7) to the significance of the model used to estimate short-term and long-term parameters, and the corrected determination factor R¯^2)) was 0.78, and the rank of the model selected according to the methodology ARDL is (0, 1) according to optimal delay period criteria (HQ, BIC, A I C), where the delay period was selected according to the criterion (A I C) which represents the lowest value of this criterion.

Table 7 Results of the preliminary estimate of the overhead model (ARDL)

Dependent Variable: E
Method: ARDL
Date: 08/12/22 Time: 14:44
Sample (adjusted): 2005 2019
Included observations: 15 after adjustments
Maximum dependent lags: 1 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (1 lag, automatic): S
Fixed regressors: C
Number of models evaluated: 2
Selected Model: ARDL(1, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
E(-1)	0.329605	0.289123	1.140015	0.2765
S	-322.3467	506.0156	-0.63703	0.5361
C	42731317	22059309	1.93711	0.0766
R-squared	0.809807	Mean dependent var		46557596
Adjusted R-squared	0.788559	S.D. dependent var		27288787
S.E. of regression	27809924	Akaike info criterion		37.29654
Sum squared resid	9.28E+15	Schwarz criterion		37.43815
Log likelihood	-276.7241	Hannan-Quinn criter.		37.29503
F-statistic	7.740108	Durbin-Watson stat		1.726068
Prob(F-statistic)	0.49763			

Source: Statistical Program Outputs (Eviews12).

The results of the boundary test for joint integration (Bounds Test) to test the long-term balanced relationship (Co-integration) between the subsidiary variable of overhead and the interpretative variables used in the preliminary estimate modules were calculated through the boundary test and table (4-8) shows the results of the co-integration test according to the boundary test.

Table (4-8) *Co-integration test results for overhead model (ARDL) according to boundary test*

Test Statistic	Value	K
F-statistic	6.205247	1
	Critical Value Bounds	
Significance	Lower Bound	Upper Bound
10%	3.02	3.51
5%	3.62	4.16
2.5%	4.18	4.79
1%	4.94	5.58

Source: Statistical Program Outputs (Eviews12).

Table 8 indicates that the statistical value (F) calculated (F-statistic) was (6.205247), which is greater than the critical tabular value of the upper limit and minimum at a significant level (1%) (H0) which states that there is no long-term balance between variables, and accepts the alternative hypothesis (H1) which provides for a common complementarity between variables in the model used, which means a long-term equilibrium relationship moving from

one of the interpretive variables towards the dependent variable (overhead), which requires a short-term, long-term response estimate and a correction parameter. As in table (9)

Table (9) *Short- and Long-Term Parameters Estimation Results and Error Correction Parameter (ECM) for ARDL Overhead Model*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	42731317	22059309	0.000000	0.0000
Ln E(-1)	-0.412725	0.282579	-1.460567	0.0179
Ln S	385.0793	385.5622	0.998747	0.0561
CointEq(-1)	-0.670395	0.241306	-2.778195	0.0167
	Long Run Coefficients			
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	63740507	31719119	2.009530	0.0675
Ln S	933.0155	510.9500	1.826041	0.0509

Source: Researcher's preparation based on the outputs of the statistical program (Eviews12)

Table 9 above shows the existence of an effect. This is confirmed by CointEq (-1) error correction vector coefficient for this model (-0.67) and the associated prob probability value (0.0167), which means that the two prerequisites in this coefficient are met: Its negative value and statistical morale, which means that (0.67) short-term errors are automatically corrected during the unit of time (Year) to achieve long-term balance, this means currency sales, requires less than a year (1.4 = 0.67 ÷ 1) that is, approximately one month to reach its long-term equilibrium value, meaning that prior periods deviate from the long-term balance and are corrected in the current period (As a speed adjustment) of 67%, this indicates that the adjustment in the model was fast slow.

The Bank's currency sales, as its coefficient (s) indicates a positive impact on short-term expenditures, have reached a short-term flexibility value (385.0793), meaning that an increase in currency sales (100%) leads to higher expenditures (385.0793%). Which means the height continues. This confirms Iraq's monetary and financial realities. Increasing sales from the Ministry of Finance to the Central Bank and replacing foreign currency with local currency encourages expenditures to increase their expenditure. This percentage represents a significant proportion whenever foreign currency is available.

The Bank's long-term currency sales referred to the package relationship. Its flexibility reached (933.0155). This means that sales increased by 100%. Overheads increased by 933.015%. This percentage increased more and more as the currency became available. This rise meant that sales had an impact on spending.

Preliminary estimate of ARDL for currency and general income purchases variable

Table (4-10) shows the results of the preliminary estimate of the ARDL model, which shows the relationship between the variable dependent on general income (R), and the independent variable of P currency purchases) noting from table (4-10) that the determination factor (R ° 2) is 0.61 giving interpretive force, that is, the independent variable explains the proportion (61%) of changes in the dependent variable, while the remaining ratio (39%) represents the effect of other variables not included in the model, as the test value indicates (F) and (9.6) to the significance of the model used to estimate short-term and long-term parameters, and the corrected determination factor R¯^2)) reached (0.55), and the rank of the model selected according to the methodology ARDL is (0, 1) according to optimal delay period criteria (HQ, BIC, A I C), where the delay period was selected according to the criterion (A I C) which represents the lowest value of this criterion.

Table 10. *Results of the preliminary estimate of the currency procurement and general income model (ARDL)*

Dependent Variable: R
Method: ARDL
Date: 08/12/22 Time: 17:11
Sample (adjusted): 2005 2019
Included observations: 15 after adjustments
Maximum dependent lags: 1 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (1 lag, automatic): P
Fixed regressors: C
Number of models evalulated: 2
Selected Model: ARDL(1, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
R(-1)	0.549795	0.190778	2.881859	0.0138
P	574.0115	309.6952	1.853472	0.0886
C	17698743	14903915	1.187523	0.258
R-squared	0.617602	Mean dependent var		79944068
Adjusted R-squared	0.553869	S.D. dependent var		27015229
S.E. of regression	18044301	Akaike info criterion		36.43141
Sum squared resid	3.91E+15	Schwarz criterion		36.57302
Log likelihood	-270.2356	Hannan-Quinn criter.		36.42991
F-statistic	9.690443	Durbin-Watson stat		1.515797
Prob(F-statistic)	0.003127			

Source: Statistical Program Outputs (Eviews12).

The results of the Bounds Test Co-Integration Boundary Test to test the long-term balanced relationship (Co-integration) between the dependent variable of general revenues and the interpretative variables used in the preliminary estimate modules are calculated through the boundary test and table (11) shows the results of the Co- integration test according to the boundary test.

Table (11) *Co- Integration Test Results of the Procurement and General Income (ARDL) Model According to Boundary Test*

Test Statistic	Value	K
F-statistic	3.783386	1
	Critical Value Bounds	
Significance	Lower Bound	Upper Bound
10%	3.02	3.51
5%	3.62	4.16
2.5%	4.18	4.79
1%	4.94	5.58

Source: Statistical Program Outputs (Eviews12).

Table 11 indicates that the inventory value (F) calculated (F-statistic) amounted to (3.783386) which is greater than the critical tabular value of the upper limit and minimum at a moral level (5%), which means rejecting the H0 hypothesis that there is no long-term balance between variables, and accepts the alternative hypothesis (H1) which provides for a common complementarity between variables in the model used, which means a long-term equilibrium relationship moving from one of the interpretive variables towards the dependent variable

(General revenues), which requires the assessment of the short and long term response and the error correction parameter. As in table (12).

Table (12) *Short- and Long-Term Parameters Rating Results and Error Correction Parameter (ECM) for ARDL Sales Model*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	17698743	14903915	0.000000	0.0000
Ln R(-1)	-0.450205	0.190778	-2.359836	0.0361
Ln P	574.0115	309.6952	1.853472	0.0686
CointEq(-1)	-0.450205	0.152705	-2.948194	0.0122
	Long Run Coefficients			
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	39312647	25467719	1.543627	0.1486
LnP	1275.001	678.4420	1.879307	0.0847

Source: Statistical Program Outputs (Eviews12).

Table 12 above shows an effect, which is confirmed by the CointEq (-1) error correction factor of this model (-0.45) and the associated prob (0.0122) probability value, which means that the two prerequisites in this factor are achieved: negative value and statistical significance. Which means that (0.45) short-term errors are automatically corrected during the unit of time (Year) to achieve long-term balance, which means currency purchases, require about less than a year (2.22 = 0.45 ÷ 1) is approximately two months to reach its long-term equilibrium value, meaning that prior periods deviate from long-term equilibrium and are corrected in the current period (as adjustment speed) by a ratio (45%). This indicates that the model's adaptation was rapid.

The Bank's currency purchases, with its P factor indicating a positive impact on public revenues in the short term, have reached the value of short-term flexibility (574.0115), meaning that an increase in currency purchases (001%) leads to a rise in public revenues (574.0115%). Which means that the height is constant. This milestone shows that the increase in purchases of currency by the Central increases public revenues, because the currency window must be equal to the demand of the dollar and its offer, which incentivizes the government to collect revenue in foreign currency, for the purpose of maintaining balance.

If purchases by the Central Bank continue to increase, the rate of impact will increase more in the long term, and its flexibility (1275.001), which means that the increase in purchases by 100%, public revenues will increase by 1275.001%.

-3. Standard test results

The results of the structural stability test of ARDL transactions.

To ensure that the data used to estimate the model do not have any structural changes and that estimates of long-term parameters are stable and consistent with estimates of short-term parameters. The two tests were used:

Cumulative sum of Squares Recursive Residual test (Cusum- SQ)

1- Structural stability of overhead (ARDL) model transactions has been tested as an approved variable with autonomous variables (central bank sales), and the test graph (CUSUMSQ) within the critical boundary framework has been shown at the level (5%), achieving structural stability of the estimated ARDL transactions and accepting the non-existent hypothesis

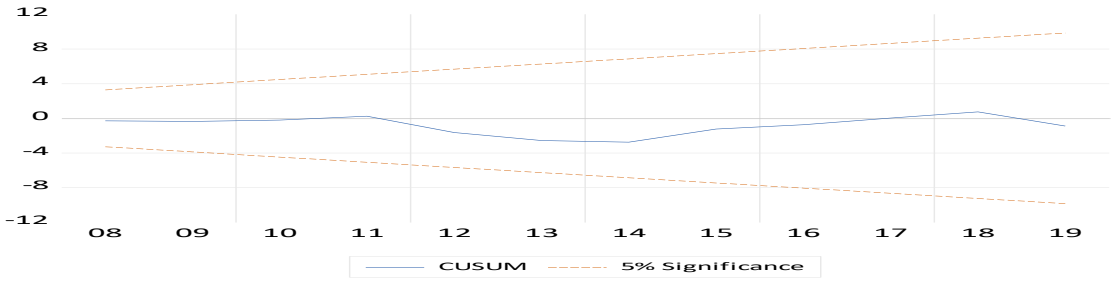


Figure (2): *Structural Stability Test for ARDL Overhead Transactions*
Source: Statistical Program Outputs (Eviews12).

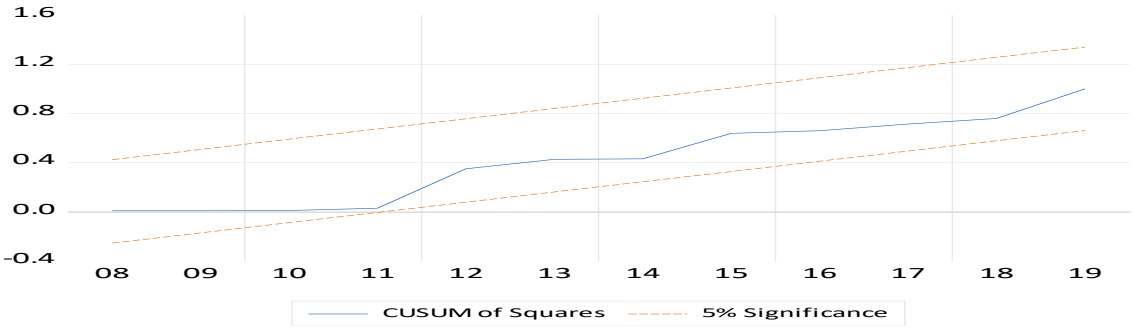


Figure 3: *Structural Stability Test for ARDL Overhead Transactions*
Source: Statistical Program Outputs (Eviews12).

Structural stability of the ARDL model of public revenues was tested as an approved variable with independent variables (central bank sales), and the CUSUMSQ graph within the critical boundary framework was found to be at a level (5%), achieving structural stability of the estimated ARDL transactions and acceptance of the non-existent hypothesis which states that all estimated parameters are structurally stable.

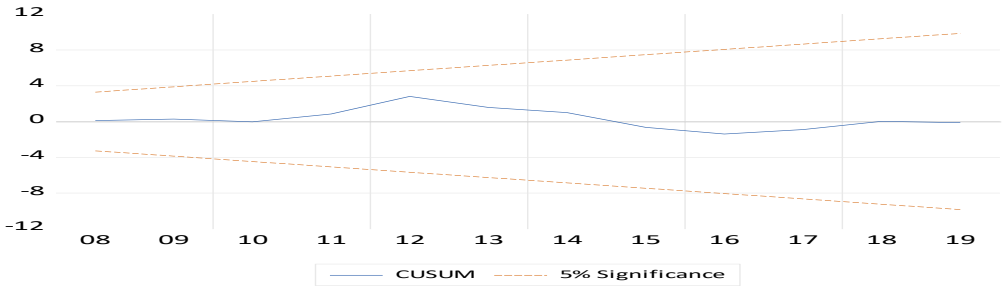


Figure (4): *Structural Stability Test for ARDL General Income Transactions*
Source: Statistical Program Outputs (Eviews12).

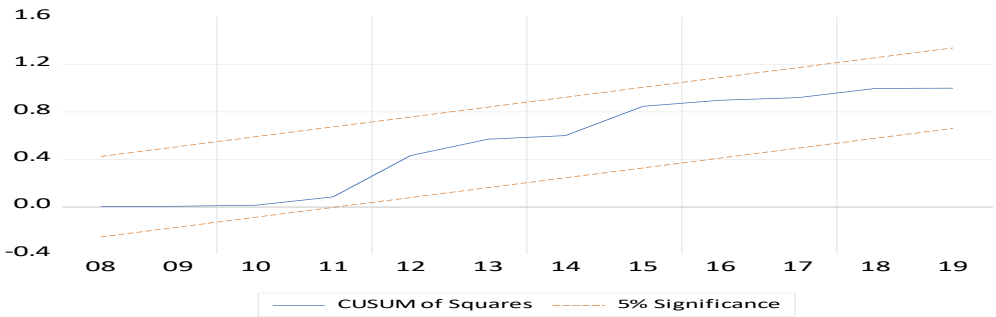


Figure 5: *Structural Stability Test of ARDL's General Income Transactions*
Source: Statistical Program Outputs (Eviews12).

3- Test (BGLM) for expenditure in table (13) below, because the associated probability value for both test (F) and Kai square was greater than (5%), with the probability value of count (F) (Prob: 0.9603), while the probability value of the count of Kai square(0.9413),

It therefore accepts the hypothesis of nowhere without the estimated model of the problem of serial interconnectedness (H0: ρ = 0).

2- Test (BGLM) for expenditure in table (13) below, because the associated probability value for both test (F) and Kai square was greater than (5%), with the probability value of count (F) (Prob: 0.9603), while the probability value of the count of Kai square(0.9413), It therefore accepts the hypothesis of nowhere without the estimated model of the problem of serial interconnection of residuals (H0: ρ = 0).

Table 13 *BGLM test for overhead model*

Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.040630	Prob. F(1,7)	0.9603
Obs*R-squared	0.120906	Prob. Chi-Square(1)	0.9413

Source: Statistical Program Outputs (Eviews12).

The (BGLM) revenue test was greater than (5%), with the (Prob: 0.3969) probability value being greater than (5%), while the potential value of the Kay square count (0.2821),

It therefore accepts the null hypothesis that the estimated model of the problem of serial interconnection of residuals is absent.

Table (4-14) *BGLM Test for General Income Model*

Breusch-Godfrey Serial Correlation LM Test			
F-statistic	1.014830	Prob. F(1,7)	0.3969
Obs*R-squared	2.530820	Prob. Chi-Square(1)	0.2821

Source: Statistical Program Outputs (Eviews12).

Heteroskedasticity (ARCH): It is noted through table (15) that the overhead model in question does not suffer from the problem of asymmetry of the variance because its count value (F) calculated at the probability level (Prob: 0.9492), which means accepting the null hypothesis of consistently varying the random error limit in the estimated model, as well as the general revenue model in table 16, that the model does not have a problem of variability instability.

Table 15. Fixed test results for variance of error limits (Heteroskedasticity) for overhead

Heteroskedasticity Test: ARCH			
F-statistic	1.835961	Prob. F(1,19)	0.9492
Obs*R-squared	0.004939	Prob. Chi-Square(1)	0.9440

Source: Researcher's preparation based on the outputs of the statistical program (Eviews9)

Table 16 Stabilization test results varying error limits (Heteroskedasticity) of general income

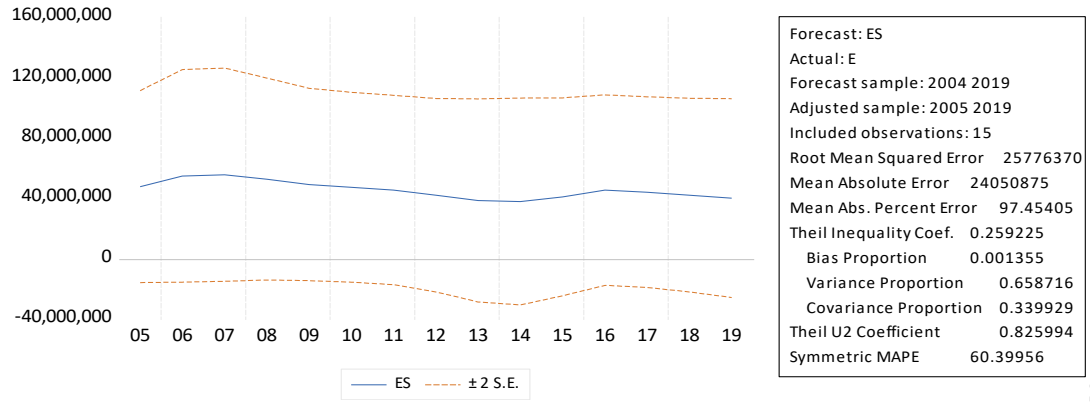
Heteroskedasticity Test: ARCH			
F-statistic	0.034915	Prob. F(1,19)	0.8549
Obs*R-squared	0.040616	Prob. Chi-Square(1)	0.8403

Source: Statistical Program Outputs (Eviews12).

Predictive Performance Test

After the standard test used structurally stable for model transactions, we use the Theil

inequality coefficient test as well as the fault source test to ensure that the model used has good predictability during the search period, as shown in the table and chart: -



Source:

Form (6) *Predictive Performance Test Results of the Estimated Model's Unrestricted Error Correction Model (ARDL)*

Statistical Program Outputs (Eviews12).

It is clear from the table and figure (4-6) above that the value of the bias ratio (BP) (0.001355) is less than the correct one, and the variation ratio is also valued (VP) (0.658) is less than the correct one, while the heterogeneity ratio is (CP) (0.3399) which is close to the correct one, these indicators show that the estimated model has high and good predictability, and the results in this model can be relied upon in the analysis.

Conclusions

1- According to the ARDL model, the Bank's currency sales indicated a positive impact on short-term overheads. The value of short-term flexibility was (385.0793), meaning that an increase in currency sales by (100%) leads to higher expenditures by (385.0793%). Which means a continuous height . This confirms Iraq's monetary and financial reality, as the Central Bank increases sales to banks and individuals and replaces foreign currency in local currency, And handing it over to the Ministry of Finance, that encourages the expenditures to increase their expenditure, This ratio represents a significant proportion whenever foreign currency is available, as well as confirming that the Bank's long-term currency sales have referred to the positive relationship, it has reached its flexibility. (933.0155), which means that sales increase by (001%) the overhead increases by a limit) 933.015%), this percentage has risen in the future and more as the currency becomes available, and this rise means that sales have had an impact on spending.

2- The Bank's purchases of currency, as its transactions indicate a positive impact on public revenues in the short term, have reached the value of short-term flexibility (574.0115). This means that the increase of pickup from currency by (001%) leads to a rise in public revenues by (574.0115%). Which means that the height is constant. This milestone shows that the increase in purchases of currency by the Central increases public revenues, because the currency window must be equal to the demand of the dollar and its offer, which incentivizes the government to collect revenue in foreign currency, for the purpose of maintaining balance.

However, if purchases by the Central Bank continue to increase, the rate of impact will increase more in the long term, and its flexibility (1275.001), which means that the increase in purchases by 100%, the public revenue increases by 1275.001%.

This rise means that purchases have had an impact on public revenues.

Recommendations

1- In order for the State's general budget not to be influenced by window policy, action should be taken to limit the expansion of government spending, which is the main reason for the increase in the supply (of sales) of the dollar,

The central bank's high demand for the dollar, which constitutes a rise in total currency demand, requires, first, the Ministry of Finance to reduce spending, and second, the bank to intervene more in the currency selling window. The Ministry of Finance relies on domestic revenues to reduce the Bank's purchases from the Ministry of Finance.

2- The need for government banks to take the lead in trading the dollar resulting from auction currency trading and at the official price exclusively in order to cut off the way for those wishing to speculate the dollar's selling prices to achieve their personal benefits without the public interest.

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