The Analysis of the Relationship between the Public Budget and the Balance of Payment in Iraq for the period (1991 to 2008)

تحليل العلاقة بين الموازنة العامة وميزان المدفوعات في العراق

للمدة 1991−2008

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Introduction

This study analyzes the relationship between the Public Budget and the Payments Balance, in the system of macro- economy through the relationship between should be deleted them and finds out the reasons for surplus and deficit.

The attention of many Economists was initially focused on the reasons for the imbalance in the Public Budget and the Payments Balance. There was an attempt in these studies to restore the balance of the Public Budget and the Payments Balance as well and the growing interest in studying the relationship between these two indicators in both developed and developing countries, is added in this study.

The relationship between the surplus (deficit) of Public budget, and the surplus (deficit) of Current Account Balance is representing the Balance of Payments in the Iraqi economy.

Oil revenues are the essential ingredient for both exports and government revenues in Iraq. There was not a natural situation in the economy during the period of the study (1991-2008). In order to determine the nature and direction of the relationship, we must ask:

1- Is there a significant relationship between the surplus (deficit) in the Public Budget, and surplus (deficit) of the Current Account?

2- If there is a relationship between them, what are the nature and the trend of this relationship?

  a- A relationship in one direction.

  b- Reciprocal causal relationship.

المستخلص

استحوذت دراسة تحليل علاقة الموازنة العامة بميزان المدفوعات في منظومة الاقتصاد الكلي من خلال العلاقة بينهما ومعرفة الفائض والعجز بالاختلال او الموازاة على اهتمام العديد من الاقتصاديين. لذا سعت هذه الدراسة لتناول العلاقة بين فائض (عجز) الموازنة العامة وفائض (عجز) ميزان الحساب الجاري ممثلاً لميزان المدفوعات في الاقتصاد العراقي، كونه اقتصاد نفطي مفتوح تشكل العائدات النفطية المكون الاساسي لكل من الصادرات وايرادات الدولة، والمساحة الواسعة للقطاع العام في الحياة الاقتصادية، ناهيك عن الظروف غير الطبيعية التي مر بها الاقتصاد العراقي خلال مدة الدراسة (1991−2008)، ولتحديد طبيعة واتجاه هذه العلاقة فأنه ثمة تساؤلات عدة من بينها؟

1- هل هناك علاقة معنوية بين فائض (عجز) الموازنة وفائض (عجز) الحساب الجاري؟

اذا كانت هناك علاقة بين هذين المتغيرين ما هي طبيعة واتجاه هذه العلاقة؟

علاقة ذات اتجاه واحد. ب- علاقة تبادلية.

وعلى اساس ما تقدم فأن هذه الدراسة هدفت الى تحليل العلاقة باستخدام الاسلوب القياسي من اجل التأكيد علـــى وجود علاقة طردية بين هذين المتغيرين. وتعيين اتجاه العلاقة السببية بين هذين المتغيرين، بتطبيق اختبــار السببية الثنائي لـــ (Hsiao) في احتساب الخطأ النهائي للتوقع لاختيار الطول المناسب للابطــاء. وتوصــل البحث الى وجود علاقة تبادلية بين المتغيرين.

The aim:

This study aims to analyze the relationship, in order to achieve the following:
1- To emphasize a positive relationship between these two variables.
2- Determine the trend of the causal relationship between two variables, where the test was applied for causality model (Hsiao) in calculating the final prediction error (FPE), for choose of the appropriate length of the delay.

The hypotheses:

There is a strong reciprocal relationship between surplus (deficit) in parallel or inversion in Public Budget and Current Account putting the after in Iraqi economy for the period (1991-2008).

First- Public Budget (PB): Concept, Balance and Imbalance:

1- The concept of Public Budget([*]):

The Public Budget is "an estimate and detailed out line of all Public achieved potentially expenditures and revenues, during the financial year to come, and this estimate is supported by the legislative,. according to this the government issued the law"([1]), through its authority that the budget consists of two sides, first side expenditures are borne by the government and second the revenues, which help the Government to bear burdens.

2- Balance and imbalance in the Public Budget:

There are account balance and economic balance: account balance means the equal between expenditures and revenues([2]). In other words revenues are fully funding the burden of government, while the economic balance is not achieved only if the values are planned equal to the act value for each revenue and expenditure.

([*])- Vary the public budget for the balance sheet and final accounts in being the estimates of time to come ،while the budget are figures and data achieved truly reflect the financial position of an earlier period ،while reflecting the final account statement of expenditure and public revenue and numbers of certain of what has been placed in both sides of the public budget.

(1)- Taher al-Janabi ،Studies in Public Finance،Higher Education Press ،Baghdad ،1990 ،p.270 .

(2)-Arthur Osullivan, and Steren M Sheffrin, Macroeconomics Principles and Tools, prenttce, Hell, upper Saddle River, New Jersey, 1998, P306

The classical theory considered the balanced theory as a very important matter, expenditures must be equal to the revenues, especially taxes. They have the assumption that capitalist system automatically reaches a balance at the level of full employment. This means that any increase in supply will create an increase in expenditures equal to it. All this done by the principle of invisible hand[1] , and so if there was any surplus or deficit then it will be caused by exceptional cases like a war.

The economist English (Keynes) has confirmed in his theory about the role of the government through, the aggregate demand and through the disruption of Public Budget by increasing the government expenditures and decreasing the taxes, and he refused the concept of Budget equilibrium[2].

The Neu classic believed as the classic believed in the invisible hand, Friedman's most important ideas since he focused his ideas about money and monetary policy, such as inflation, unemployment because the errors of monetary policy. Friedman laid the bulk of his attention to monetary stability and not to achieve the full employment as wanted by Keynes[3]. He said that can be achieved only by adjusting the amount of money[4].

According to supply-side economics, the problem capitalism we face is how to refresh a*ggreg*ate supply and not aggregate demand[5].

The new combination collected between supporters of the monetary school, calling for the reduction of fiscal deficit (budget deficit), by reducing the rate of growth in money supply and the dimensions of government economic activity, and the economists of supply- side to reduce taxes, this combination has formulated the economy Regina in united states and Altathari in Britain[6].

Second- Balance of Payment (BP): Concept, Balance and Imbalance:
1- *The concept Balance of Payment:*
1- It record depends on the double-under, it is a statistical record of total accounting including the details of all the economic relations between residents in the state- from individuals, companies or government

[1]-Sadiq Abdul Karim Barakat ،Studies in financial economics ،Alexandria ،1983 ،p500 .

(2)- Abdel Moneim Ali ،the entrance of Economics،University Press ،Baghdad ،1984 ،pp،50-38

(3)-Bernheim, Aneoclassical Perspective on Budget Deficits, Journal of Economics, Pers pectives, Vol 3. No spring 1989, P.222.

(4)-Rudiger Denbusch, Stanly Fischer, Gorden p. Sparts, Macroeconomics, Mc Grow- Hill Ryessin Limited, New York 1993, P448.

(5)-R Denbusch, S.Fischer, op.cit, P450.

(6)-Dr .Ramzi Zaki ،exploded the deficit treatment budget deficit of the state in light of the contraction approach and curriculum development ،the Institute of National Planning ،Cairo ،1998 ،p. 109.

agencies, and between non-residents during the specified time period often year(1), It is includes:

2- Current Account: The Current account consists of the following balances:

3- Trade Balance: Includes the process of imports and exports of goods, which is known as the balance of visible trade.

4- Services Balance: includes transport services, travel, insurance etc.., add and as invisible trade.

5- Income Balance: Includes Employees compensation, divided into wages and salaries and benefits. And concerning income such as income resulting from direct investment and portfolio investment, loans deposits and commercial benefits.

6- Balance of current transfers: The transfers are part of and in a commodity or service, not cash, because recent capital transactions (without charge), can be divided into the public transfers sectors and private transfers sectors. Provides from workers to their families.

A- The Capital Account includes:

1- Capital Transfers: Resulting from aching in the fixed assets or capital transfers associated with them, or brings down the debt payments. In addition to the possession of non-produced assets and non-financial leasing contracts as.

2- Financial Account: Reflects the direct investment and investment portfolios and other investments such as a long credit and short term loans.

B- Cash Account: Includes the operations of foreign currency balance and short-term reserve assets, such as monetary gold, and reserve currency to the international monetary fund.. Et, which represents the overall balance.

C- Net Errors and Omissions includes: The resulting value from the differences and the statistical estimates and settlements of international transactions.
According to that, the Payments Balance divided into[2]:

1- Automated Processes: The processes taking place regardless of the mode in the overall balance, are these processes in the current account and long-term capital account and the movement of short- term capital for the purpose of speculation only, and account transfers from one side and calculate the gold for the purposes of trade only, and for these reasons operations are independent the balance of payments situation.

2- Settlement Processes: It is resulted by from automatic processes, as it is to settle the difference between debit and credit processes.

(1)-International Monetary Fund ،Balance of Payments Manual ،1993 ،p.150-142 .
(2)-Ghazi Saleh al-Tai ،International Economics, dar al-kutb for printing and publishing ،Mosul University .1999 ،P. 143.

2-Balance and imbalance in the Balance of Payments:

In the after beginning it can be said that the final accounts balance of payments of any country in the world, are always in equilibrium in terms of accounting for rich or poor countries debtor or creditors, as known the balance arithmetic is equal to the credit side with the debtor side in the total values of balance[1].

It exists for finding out whether the balance of payments, balanced or unbalanced (surplus or deficit), should be given consideration to the method of the settlement of the account balance.

If settlement was based on constantly balanced factors of the economic and vice versa in the case of reliance on contingent factor is as table balance economically unstable, and better put this done through the distinction between sub- scales of the balance of payments (Current Account Balance), the balance of capital and long- term balance- of- capital operations and short- term movement of gold balance[2].

If the sum of debt in current account and the capital balance and long- term capital balance in case of account balance then the balance of payments in economic balance situation, if there was a difference between them this difference should cover through the capital balance short- term, gold movements, then the balance of payments in total economically dysfunctional.

According to that, the standard general of the economic external balance of a country is the existence or lack of funding compensatory or adaptive in the balance of payments, if all the components of balance of payments automatically financed, the country is in case of economic balance, but if some component of the balance have nature compensatory or adaptive, then we can say that the balance of payments suffers from imbalance in the economic balance.

Third- Analysis of macro- economic the relationship between the Public Budget (PB) and Balance of Payment (BP):

The economic equation of national account for the planned value between aggregate demand and aggregate supply, help to provide the theoretical basses for understanding the relationship between (PB) and (BP) according to the following[3].

$$GNP = Y = GDP + TR$$

Where: GNP= gross national product , GDP= gross domestic product
TR= net revenues and external elements of production equal to:

$$TR= TR_{in} +TR_{out}$$

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[1]-Dr .Saleh Mohammed al-Quraishi, Dr .Ci Fawaz Jarallah ،Introduction to International Economics، Higher Education Press ،University of Mosul ،1990 ،pp.255-248
(2)-Ghazi Saleh al-Tai ،op.cit ،p162 .
(3)-أعلى النموذج Mamdouh Al-Khatib Kiswani, the relationship between my two deficit to budget and current account in the Kingdom of Saudi Arabia, economic studies, the string of scientific Saudi Economic Association, vol III, 6.

And where the:

$$GDP = C + I + G + x - m$$

C= final consumption, I=investment, G=government spending, x=exports, m=import

$$Y = C + I + G + X - M - - - -(1)$$

$$X = x + TR_{in} \quad , \quad M = m + TR_{out}$$

And using the relationship represented by the product and uses as follows:

$$Y = C + S + T + TR \quad - - - (2)$$

As the:

S=private savings, T=government revenue from taxes.

And equal matched and (2) with matched (1) is:

$$C + I + G + X - M = C + S + T + TR$$

$$(X - M) = (S - I) + (T - G) + TR$$

$$(X - M) = (S - I) + (T - G) + (TR_{in} - TR_{out})$$

And where the:

(X-M)= current account net, (S-I)= net private sector resources,

(T-G)= the net public budget,

This means that the net current account equals the sum of three components represent the net private sector resources, the net public budget, and the net proceeds of foreign production elements.

According to that, we can observe the budget deficit and surplus the balance will support the added, While the budget surplus and balance deficit are expanding flows drop, so a different impact trend of the surplus and deficit for both, guarantee for the balance in the general framework[1].

Fourthly: Analysis of trends in the surplus (deficit) in the Public budget (PB) and the Current Account (CA) in the economy of Iraq for the period (1991-2008) :

Iraqi economy characterized as one of the economies that depends on oil revenues in financing the public budget, so the oil revenues and public budget are exogenous variable, we can see that through the strong relationship between the government revenues (R) and exports (X), through Correlation Coefficient (0.85%)(*) in Iraq for the period of the study, then this relationship will lead to a relationship between (G) and (M), that means depending on oil revenues in financing the government budget, not

[1]-Dr .Mahmoud Mohamed Dagher, Dr. Salam Abdul-Jalil al-Shami, analysis of the relationship between the public and external in Libya for the years (1985-2004), Journal of Arab Economic Research, No. 52.2009.
(*)- Calculated by the researcher based on the data tables (1) and (2)

about other resource like the taxes, in addition to the budget deficit not resulted of taxes reducing, but because the result of increasing in government expenditure.

In order to determine the development of the trends of surplus and deficit in both the Public Budget (PB) and Balance of Payment([**]) which is represented by the Current Account (CA) in Iraq during the period (1991-2008). The following are the results in each of the two tables (1) and (2):

1- *The development the (PB) in Iraq for the period (1991-2008)*

Surplus (deficit) is equal to the difference between public revenues([***]), and public expenditures, surplus is a positive balance and deficit a negative balance.

Table (1) shows that:

- The (PB) had changed from deficit in the first period which is (1991-2001), to surplus in the second period which is (2002-2008).
- The deficit reached (1326.9) Million $. in 1991, which is the highest value in the first period. And The highest surplus was reached in 2008 with (2035001) Million $. in second period
- The budget balance according to the gross domestic product (GDP), the high rate reached (4522.55%), in 2008 and it corresponded to (the highest percentage of surplus), while the lowest for the budget balance for the gross domestic product (56%) in 1995, before memorandum understanding, and held between Iraq and the United Nations

Table (1): Trends of surplus (deficit) in both the Public Budget (PB) in Iraq during the period (1991-2008)   mullion $

Years	R	G	PB	R/G [**] [*]	rate (PB) [*]	GDP	PB/GDP [*]
1991	422.8	1749.7	-1326.9	0.242	---	713.5	-1.86
1992	240.3333	1565.857	-1325.52	0.154	-0.001	426.8571	-3.11
1993	121.5811	931.8108	-810.23	0.131	-0.389	179.973	-4.50
1994	56.02402	435.4629	-379.439	0.129	-0.532	27.73581	-13.68

(**)- The movements of capital or funding in both directions is not negligible and thus change the balance of the settlement is a reflection of ongoing operations, which is paid to deal with the current account and as a reflection of Iraq's international economic relations which this is similar with most of the oil economies.

(***)- Direct taxes and indirect, and fees and the share of the budget from oil revenues, which constitute 96.4% of the total revenues according to the annual bulletins of the Central Bank of Iraq 1991-2008.

(**)- One can express a surplus by dividing to Budget through the expenditure of allele revenues. A surplus exists if the result is greater than one. A deficit exists if the result is small than one. A balance exists if it is equal to one. The come concepts can be applied to the Current Account.

1995	63.91039	412.6547	-348.744	0.155	-0.081	6.198925	-56.26
1996	152.1479	463.7111	-311.563	0.328	-0.107	13.27179	-23.48
1997	279.087	411.83	-132.743	0.678	-0.574	12.86608	-10.32
1998	321.2531	568.2105	-246.957	0.565	0.861	11.50617	-21.46
1999	364.6374	524.1136	-159.476	0.696	-0.354	10.93408	-14.59
2000	587.0642	776.5285	-189.464	0.756	0.188	12.08705	-15.68
2001	668.3494	1078.137	-409.788	0.620	1.163	13.31726	-30.77
2002	959.9295	888.8145	71.11497	1.080	-1.174	20.5534	3.46
2003	1132.039	1045.648	86.39135	1.083	0.215	14.24051	6.07
2004	22699.75	22104.26	595.4907	1.027	5.893	28.90571	20.60
2005	27571.74	24761.86	2809.881	1.114	3.719	29.27161	95.99
2006	33444.69	25955.55	7489.138	1.286	1.665	32.71984	228.89
2007	43505.54	31100.58	12404.96	1.399	0.656	38.24701	324.34
2008	474152.9	270652.8	203500.1	1.752	15.401	45.10638	4511.56
Average growth rate					1.47		
The coefficient of variation (C.V.) [*]					3.89		

Source: Annual publications of the Central Bank of Iraq (1991-2008).
(*)- Calculated by the researcher.

- Despite, the Expenditure and Revenues increased in both periods (1991-2001) and (2002-2008), but in the first period the growth rate of the expenditure was greater than the growth rate in the revenues. Furthermore in the second period, the growth rate of the revenues was greater than the

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$(^*)$ -$C.V. = \frac{S.D.}{\bar{x}} * 100$ - As S.D=Standard deviation, $\bar{x}$=Mean.

growth of rate in the expenditure. For that the deficit increased in the first period and the surplus increased in the second period.

- The lowest percentage revenues relative to the expenditures was (0.128%) in 1994, and the highest (1.75%) in 2008.
- The total accumulated surplus of the public budget during (1991-2008) (226957.1) m.\$. more than the accumulated deficit (5640.83)m.\$.
- When we look at the average annual growth rate of the Public Budget we will see that the average of it was 1.47% for all the period.

2- *The development the (CA) in Iraq for the period (1991-2008)*

Surplus (deficit) Current Account is equal to the difference between {(exports (X) items creditor and (imports (M) items debtor)}(*), which includes the trade balance of goods and services, net income returns of production, as well as transfers from the side. Current Account surplus is achieved if exports are greater than imports, and the deficit in Currunt Account if imports are greater than exports.

Table (2): Trends of surplus (deficit) in both the Current Account (CA) and in Iraq during the period (1991-2008) million \$

Year	X	M	CAB	X/M (*)	Rate (CA) (*)	GDP	CA/GDP
1991	2125.4	5532.4	-3407	0.384	---	713.5	-4.78
1992	2257.3	9333.5	-7076.2	0.242	1.077	426.8571	-16.58
1993	1955.2	10406.4	-8451.2	0.188	0.194	179.973	-46.96
1994	1932	11060	-9128	0.175	0.080	27.73581	-329.11
1995	2129	12676.1	-10547.1	0.168	0.156	6.198925	-1701.44
1996	2920.6	12966.6	-10046	0.225	-0.048	13.27179	-756.95
1997	6385.2	16514.9	-10129.7	0.387	0.008	12.86608	-787.32
1998	7427.8	19472.9	-12045.1	0.381	0.189	11.50617	-1046.84

(*)- Represents exports (X) items creditor and imports (M) items debtor, which includes the balance of trade in goods and services, net income and revenue production, as well as transfer payments from the side, so that the difference between them represents the current account balance .So when we talk about exports and imports is meant by the content on this definition in order to avoid the shortcut and the extension of repetition.

1999	13067	27594.9	-14527.9	0.474	0.206	10.93408	-1328.68
2000	18742.6	26911.7	-8169.1	0.697	-0.438	12.08705	-675.86
2001	12872.1	28282.3	-15410.2	0.455	0.886	13.31726	-1157.16
2002	10236.2	25998.6	-15762.4	0.394	0.023	20.5534	-766.9
2003	10700.1	11634.6	-934.5	0.920	-0.941	14.24051	-65.63
2004	19720	22124.6	-2404.6	0.891	1.573	28.90571	-83.19
2005	27435	25741	1694	1.066	-1.705	29.27161	57.87
2006	31425	24329	7096	1.292	3.189	32.71984	216.87
2007	41070	21008	20062	1.955	1.827	38.24701	524.54
2008	70705	38361	32344	1.843	0.612	45.10638	717.06
Average growth rate					0.41		
The coefficient of variation (C.V.)					-353.95		

Source: Annual publications of the Central Bank of Iraq (1991-2008).
(*)- Calculated by the researcher.

Table (2) explains trend the surplus and deficit of the (CA) in Iraq during the period (1991-2008):
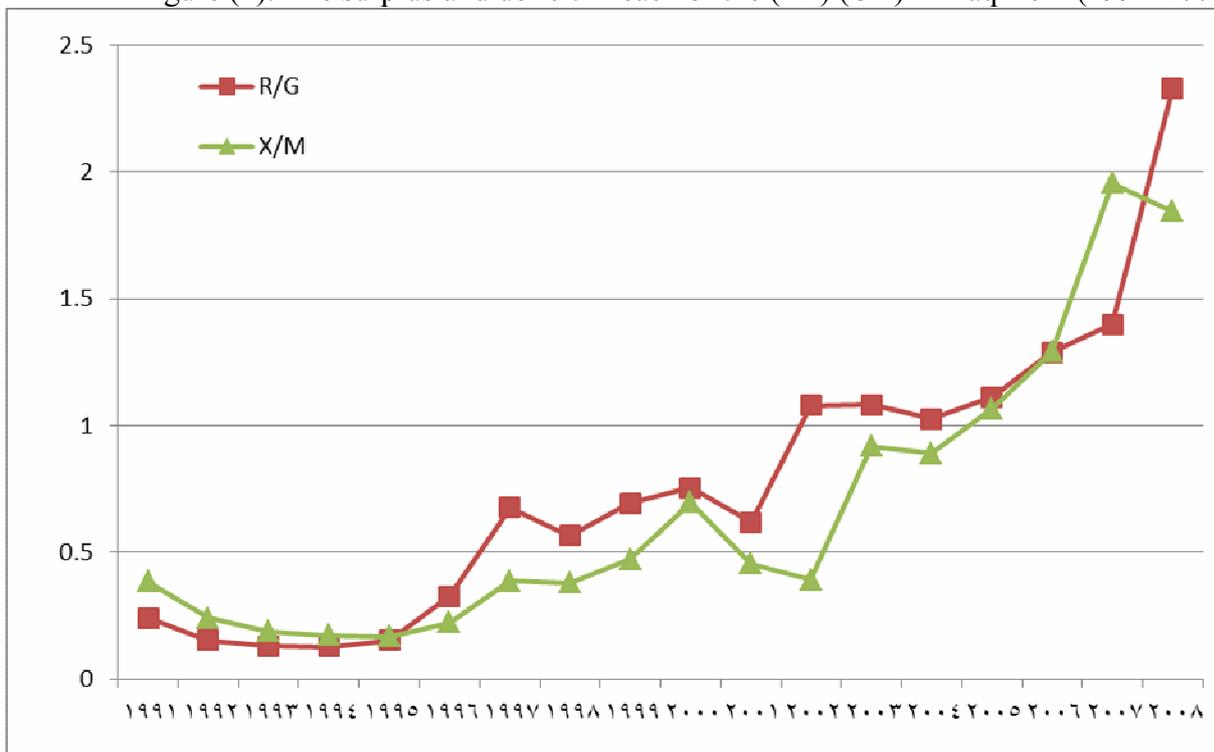
- The (CA) suffered from deficit in the first period (1991-2004), and it achieved surplus in the second period (2005-2008).
- The highest deficit was (15762) Million $. in 2002, where as the highest surplus was (32344) Million $. in 2008.
- Relative to the gross domestic product (GDP), the highest percentage of surplus of (CA) (717.06%) from GDP in 2008, and the highest percentage deficit (1701.44%) in 1995, the lowest percentage exports relative to the imports (0.17%) in 1995, and the highest percentage (1.96%) in 2007.
- From table (2) we find that, the total accumulated deficit of the (CA) (128039) m.$. in (1991-2008), more than the accumulated surplus (61196)m.$
- When we follow the trends of the average annual growth rate of (CA), we will find that it reached the average of 0.41% percent in all the period of this study.

The calculation of coefficient of variation helped to compare the fluctuation amount in surplus and deficit for time series reflected the qui change in economic policy. The coefficient of variation for budget (3.89%) more than the coefficient of variation current account (-353.95%), that reflect the highest relative dispersion for budget, which is the summary of internal economic policy compare with dispersion of current account, which is associated with external economic policy.

Figures (1) and (2) help in understanding the trends of the each surplus and deficit in the (PB) and (CA).
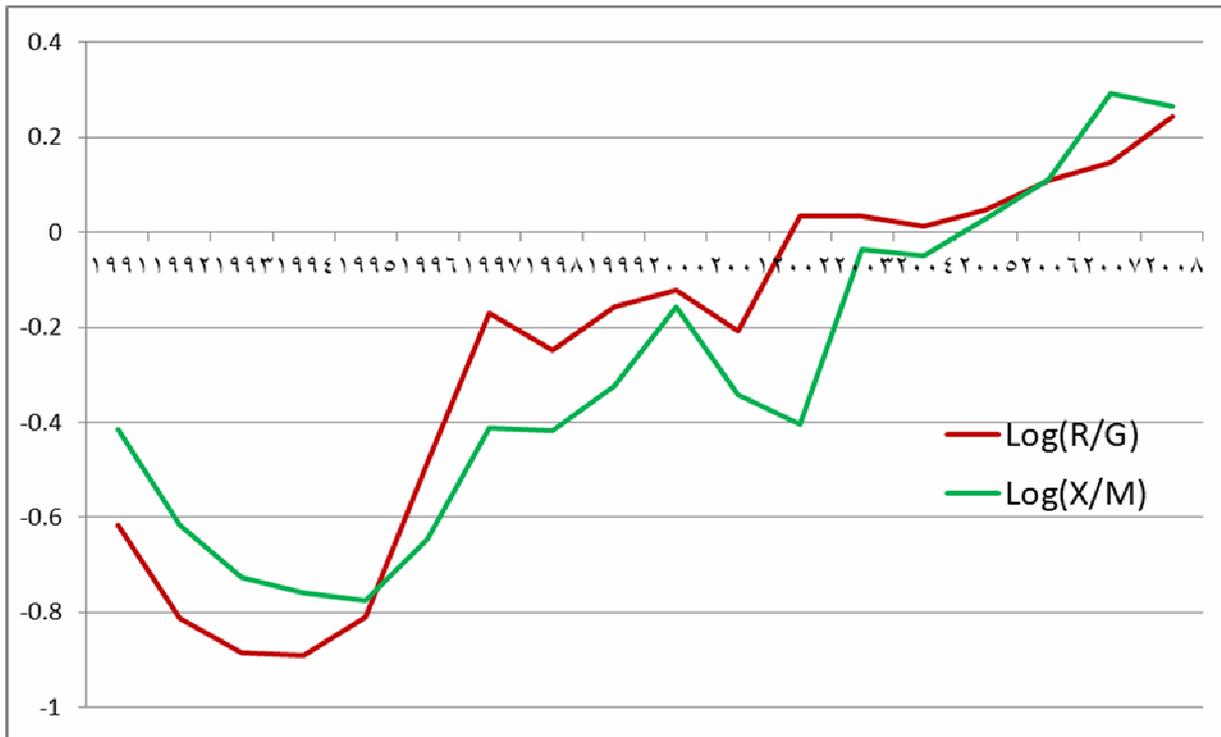
Noting that there is a relative connection between the Budget and the Account except for some years (2002-2004), as the combined budget surplus account deficit. the largest area of deficit is not within the financial capacity of the Iraqi economy, and we used in the figure (2) the logarithm method in order to explain the part with the negative sign.

Figure (1): The surplus and deficit in each of the (PB) (CA) in Iraq from (1991-2008).

Source: Prepared by the researcher .

Figure (2):The surplus and deficit in each of the (PB) and (CA) in Iraq from (1991-2008) in logarithm values

Source: Prepared by the researcher.

fifthly: measurement and analysis of the causal relationship between the surplus (deficit) in the Public budget (PB) and the Current Account (CA) in the economy of Iraq for the period (1991-2008) (Hsiao model):

1-   The nature of the variable that used in econometric analysis:

   The analysis and measured of casualty between the variable, sometime a preferred approach tests the inter-relationship in the macroeconomic approach compared with correlation and regression.

   The correlation between the economic variable reflects the best model in analyzing the economic phenomena. But the correlation itself doesn't mean that there is a casual between the variable as much as the association reflects the time or place(1), therefore it is difficult to use the effectual variable in explaining variable associated. Therefore, the identification not is correct on the causal relationship and diagnosis is the source of a representative of the error(2).

   The variable   delete are in logarithmic is been taken in order to reduce the problem of different time series variation on the one hand, and to reduce the impact of abnormal values on the other hand. The application of the casual on time series

(1)-James and Richard Jawartna Astrup - Macroeconomics (test public and private) translation of Abd al-Fattah Abdel-Rahman, Mohamed Abdel-Azim - Riyadh, Dar Al-Mars, 1988, p. 284.
(^{2})-E. Walter & B. Lee, "Current account & budget deficits: Twin distance cousins?" Review of Economics & Statistics, 1990, PP. 63-81.

without taking the logarithm of these time series may lead to not an exact result, because the instability of the time series.

And collide with the application of the principle of dealing with the logarithms of time series of the specificity of the variable of this research, which analyzes the relationship between surplus (deficit) budget and surplus (deficit), current account because the possibility of taking both variable a negative values in case of deficit for budget and current account, then when we depend on the logarithms of the values, It is not possible because the negative values have no logarithms. So that we used logarithms shape of variables (R, G, X, M).

The logarithms of surplus (deficit) of (PB):

$$lnPB = \ln R - \ln G = \ln\left(\frac{R}{G}\right)$$

The logarithms of surplus (deficit) of (CA):

$$lnCA = \ln X - \ln M = \ln\left(\frac{X}{M}\right)$$

2- *Determine the nature of the relationship between (PB_t) and (CA_t):*

We estimate the co-integration to represent the long-term relationship between (PB_t) and (CA_t) by using the method of least squares (OLS), and the result is shown in the table (3) and according to the following models[1]:

$$PB_t = \alpha_0 + \alpha_1 CA_t + U_t$$

$$CA_t = b_0 + b_1 PB_t + V_t$$

Table (3): The results of co-integration between the (PBt) and (CAt)

	PB_t	CA_t
C	0.140 (0.184)	0.016 (0.155)
PB_t	0.93 (7.956)	
CA_t		0.86 (7.956)
R^2	0.79	0.79
F	63.297	63.297
D.W	1.713	1.662

[1]- Johansen, S. "Estimation and Hypothesis Testing of co- integration vectors in Gaussian vector Autoregressive models". Econometrics.1991, 59, 1551-80.

S.E	0.266	0.256

Source: Prepared by the researcher based on the results of computer.

The co- integration in table (3) indicate, there is a positive relationship between surplus (deficit) of (PB_t) and surplus (deficit) of (CA_t) from regression coefficients, we find that the change rate of 1% of (PB_t) will change (0.86%) in (CA_t), change rate in (1%) in (CA_t) will change (0.93%) in (PB_t), and these coefficients reflect the long- term elasticity for both of surplus (deficit) each relative to gather. The long-term elasticity for surplus (deficit)) of (PB_t) according to surplus (deficit) of (CA_t) equal to (0.93%), while the elasticity, surplus (deficit) of (CA_t)) according to surplus (deficit) of (PB_t) equal to (0.86%). There is a significant between the coefficients of the variable of (PB_t), (CA_t), and the value of (F) which compare with table (F) value in (5%) and the value of (R^2), which explain the change in the dependent variable because the change in independent variable.

3- *Measuring and determining the direction of causality using (Hsiao) model*

In order to determine the trend of the causal relationship between the Surplus (deficit) (PB_t) and (CA_t), we use the Hsiao model to test the optimal reciprocal period for the dependent variable according to the independent variable, which has the minimum final prediction error (FPE). As the error was calculated predict of the final six periods, then we choose the optimal lagged period of the models which exceeds the economical, statistical and econometrical test, as show in table (4) and (5). According to the following (Hsiao) models:

Estimate the equation dependent as follow[1]:

$$Y_t = a + \sum_{j=1}^{M} b y_{t-j} + U_t \ - - - - - - (1)$$

As the:
Y_t= dependent (Internal) Variable.
X_t= Independent (External) variable.
Y_{t-j}= Logged Variable (M) of the years and identified by Hsiao (6) years

The six regressions are above, which exceed the economical, statistical and econometrical test, the final prediction error (FPE), was calculated as follow:

$$FPE_{(m)} = \frac{\frac{T + M + 1}{T - M - 1}(ESS)}{T} \ - - - - (1)$$

T=Sample size,

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[1]-Hsiao. C., "Autoregressive modeling and mony income causality detection", Journal of Monetary, Vol, 1981, pp. 85-106.

M= Rank regression
Ess=Sum of squares of errors,
FPE= final prediction error

And then we chose the minimum final prediction error (FPE) the estimating regression, which reflect the optimal lagged period for the dependent variable, the symbol (m^*).

And then we estimate another six new regression in order to determine the optimal lagged period for the independent variable, which included in the regression equation with the dependent variable, which has optimal lagged period (m^*), that we reach to give in the period lest. And then the regression equation it is as follow:

$$Yt = a + \sum_{i=1}^{m*} bi\, Y_{t-i} + \sum_{j=1}^{n} cj\, X_{t-j} + Ut \dots\dots (2)$$

T=Sample size,
m*= Rank regression best,
n= Number of regressions estimated

After the estimate of six regression equation we calculate final production error for each regression as follow:

$$FPE(m^*, n^*) = \frac{\frac{T + m^* + n^* + 1}{T - m^* - n^* - 1} ESS(m^*, n)}{T} ----(2)$$

In order to determine the optimal lagged period (n^*), we chose the estimate regression equation which has the minimum final production error (FPE).

According to Hsiao model that determines the trend of the casualty depends on the minimum final production error (FPE) though the comparison between the size of error for the dependent variable and independent variables if :

$$FPE(m^*) < FPE(m^*, n^*)$$

The trend of causal relationship from the dependent variable to independent variable

$$FPE(m^*) > FPE(m^*, n^*)$$

The trend of causal relationship from the independent variable to dependent variable.

The estimate results the surplus (deficit) for the current year (PB_t) in table (4) as a dependent variable for the independent variable, which represents the surplus (deficit) for each the (PB_{t-1}) and the (CA_{t-1}) as a lagged variable in one year.

Table (4) :The results of estimating the relationship between the surplus (deficit) of dependent variable (PB_t) to the surplus (deficit) (CA_t) according to the model (Hsiao):

Function formula (logarithm)	R^{-2}	F*	D.W	S.E	$FPE_{(m*)}$	$FPE_{(m*)(n*)}$

			1.452	0.143	0.02287	
$PB_t = 0.04 + 0.963PB_{t-1}$ (0.885) (10.063)	0.86	101.27				
			1.603	0.142		0.02386
$PB_t = 0.012 + 1.157PB_{t-1} + 0.253CA_{t-1}$ (0.234) (5.652) (1.730)	0.86	51.73				

Source: Prepared by the researcher based on the results of computer.

- The result shows that the sign of the parameter corresponding to the economic theory. There is a positive relationship between the estimated variables of the function as a significant addition to the statistical and econometrical test.

- We see that there is a trend of causal relationship from the dependent variable to independent variable by using lagged variable because the value of final prediction error ($FPE_{(m^*)}$) dependent variable less than the final prediction error ($FPE_{(m^*)(n^*)}$) for independent variable, and this reflects the effect of the surplus (deficit) of the Current Account on the surplus (deficit) of the Public Budget.

    When we consider the surplus (deficit) for the (CA_t) as dependent variable to each the surplus (deficit) for the (PB_{t-1}) and (CA_{t-1}) as a lagged variable for one year as shown in table (5).
- We see that there is a corresponding sign of the parameter for the estimated model in accordance with economic theory. There is a significant statistical and econometrical test.

Table (5) :The results of estimating the relationship between the surplus (deficit) of dependent variable (CAt) to the surplus (deficit) (PBt) according to the model (Hsiao):

Function formula (logarithm)	R^{-2}	F*	D.W	S.E	$FPE_{(m^*)}$	$FPE_{(m^*)(n^*)}$
$CA_t = 0.037 + 0.991CA_{t-1}$ (0.677) (8.278)	0.81	68.53	1.818	0.154	0.0265	
$CA_t = 0.010 + 0.401CA_{t-1} + 0.572PB_{t-1}$ (0.23) (2.023) (3.355)	0.89	63.32	1.670	0.119		0.0166

Source: Prepared by the researcher based on the results of computer.
- the direction of a causal relationship from the independent variable to dependent variable.

- The result reflects that the value of final prediction error ($FPE_{(m^*)}$) dependent variable more than the final prediction error ($FPE_{(m^*)(n^*)}$) for independent variable, and this reflect the effect of surplus (deficit) for the (PB_t), on the surplus (deficit) of the (CA_t).

    From table (4) and (5) we conclude there is a reciprocal relationship between (PB_t) and (CA_t).

Conclusions:

- The oil plays an important role in the Iraqi economy. The development of the revenues from the oil decide about the gap between (PB_t) and (CA_t), through the increasing in exports and revenues.
- According to the co-integration estimating we reached that, the foreign policy is the more important effect in the overall balance in Iraq, compared with the financial policies.
- There is a positive and reciprocal relationship between both variable. That mean there is an effect in the (PB) toward (CA) and vice versa.

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