AN INVESTIGATION INTO THE IMPACT OF TOTAL REVENUE AND INTERNAL PUBLIC DEBT ON IRAQI ECONOMIC GROWTH FROM 2004 TO 2021

Bzhar Nasradeen MAJEED,

Department of Accounting, College of Business, Charmo University, Sulaimani, Iraq

bzhar.majeed@charmouniversity.org

&

Hana Luqman AZIZ,

Accounting Department, Charmo University, Sulaimani, Iraq

Abstract

This paper examines the effect of internal public debt and total revenue on economic growth in Iraq between 2004 and 2021. It aims to demonstrate the level of effectiveness of the independent variables on the gross domestic product as Iraq's economic situation has been going through many difficulties during the mentioned period. After investigating the stability level of the data via unit root test and checking the long-run relationship between the variables, the autoregressive distributed lag ARDL model has been implemented. The results illustrate that total revenue, including oil and non-oil sources, contributed significantly and positively to boosting economic growth. However, internal public debt negatively influenced it; this is because the majority of the borrowed money by the government is used in the field of consumption rather than investment.

***Keywords:** Total Revenue, Internal Public Debt, Economic Growth, Iraq.*

1. Introduction

The present-day government needs vast revenue to accomplish its obligations viably. Without appropriate income, a legislature would be indolent, and the manner of life of the public would be predominated. Governments must establish numerous income streams to enhance their income base, enabling them to fund their commitments (Fineboy Ikechi & Omodero, 2020). When governments' revenues fall short of their expenditures, they borrow. This process has

left the majority of governments with substantial debts over time. In a sense, everyone is responsible for the national debt, as they are considered bondholders, and the interest must be paid on these debts, and when the bonds mature, they must be repaid or refinanced with new borrowing. Government revenue structure indicates how expenditures of public services and goods are financed in a country. The Quantum of these expenditures is divided through numerous means to spread the burden among citizens and different areas of the economy (Kousar et al., 2020).

Shvets and Shvets (2017), and Akhanolu, Babajide, and Victoria (2018) discussed the fact that public debt has a significant impact on the distribution of goods and services, capital accumulation, economic growth, income, unemployment, and stability, scholars have proposed a variety of theories regarding the desirability of public debt. In both academic and policy circles, the use of public debt as an effective instrument of economic policy, particularly in stabilization, has been demonstrated and acknowledged (Saungweme & Odhiambo, 2019).

Development in many industrialized countries in recent decades has been coupled with substantial public deficits, which has led to further growth in public debt and worsened fiscal conditions (Mencinger et al., 2014). The heavy debt burden of developing countries has been identified as an essential development policy issue. Public debt has two components: public-guaranteed external debt and domestic debt. According to traditional neoclassical models, in the early stages of economic development, developing countries have limited capital stocks and investment opportunities; therefore, capital mobility (in the form of external debt) boosts economic growth (Chowdhury, 2001). Insofar as these borrowed funds are put to constructive use, macroeconomic instability is not a concern (Burnside & Dollar, 2000). These previous debt accumulations were typically accompanied by increased general government expenditures (Tanzi & Schuknecht, 1997). In addition, the recent global financial and economic crisis has led to a significant increase in government debt in several developed nations (Sdiq & Abdullah, 2022). In response to the financial crisis, governments have utilized fiscal measures to boost aggregate demand by recapitalizing banks and implementing substantial fiscal stimulus packages based primarily on increased government spending.

Since public debt has both positive and negative economic effects, economists and academics are increasingly interested in how it affects economic growth. If a government borrows too much, according to the debt Laffer curve and the debt overhang hypothesis, the debt servicing costs will constrain investments and so damage economic growth if the debt is more

outstanding than the country's ability to repay it (Awrahman, Omer, and Abdullah, 2021). According to the theory, more public debt is associated with slower economic development. Most empirical investigations have found evidence of this nonlinear influence of GDP-debt ratios on the debt-growth nexus (Chiu & Lee, 2017).

1.1. Research Objectives

This article seeks to comprehend the influence of Iraq's state internal public debt on one side and its total revenues on the other side on economic growth from 2004 to 2021. This will highlight the relationship and contribution of Iraq's internal public debt and total revenue to its economic growth. Hence, the causes of borrowing money from the Iraqi central bank will be understood if it has been employed in consumption or investment. Meanwhile, the role of total revenue in economic prosperity will be revealed.

1.2. Research Problems

Because Iraq has been going through many difficulties in terms of covering its expenses through various sources of public revenue, which has led to an imbalance in the public budget. Understanding the impact of internal public debt on one side and total revenues on the other side on Iraqi economic growth would be the question to be answered.

1.3. Research Hypothesis

H0: null hypothesis, there is no relationship between public debt and total revenues as independent variables and GDP as dependent variables.

H1: alternative hypothesis, there is a negative and significant relationship between internal public debt and GDP.

H2: alternative hypothesis: a positive and significant relationship exists between total revenue and GDP.

1.4. Research Importance

With the recurrence of global economic crises and the expansion of the use of financial instruments to compensate for the shortage of aggregate demand and cover the economic depression in the majority of countries. The importance of the economic effects of internal public debt on economic growth comes true, especially with the exacerbation of global debt

rates to dangerous rates that threaten the stability and economic growth in the medium and long term. Also, the significance of total revenue on economic growth becomes more interesting.

2. Literature Review

Numerous studies have been conducted on public debt as one of the most significant macroeconomic indicators because it is central to many connected issues, including resource redistribution through transitive channels and economic development as the most comprehensive and useful measure. Indicator of economic progress. It's unclear whether high amounts of public debt correlate with economic growth. Moreover, these debts should be utilized for the purpose of investment because the latter could contribute to accelerating economic growth (Abdullah, 2020; Abdulqadir et al., 2022). Yusuf and Said (2018) examined the relationship between public debt and economic growth in Tanzania from 1970 to 2015 and examined how Tanzania's government debt affects economic expansion. The VECM estimate showed a poor correlation between Tanzanian public debt and economic growth throughout the study. Furthermore, the study makes the following recommendations for governments and policymakers: external debts should only be used for high-priority productive investments that will help yield returns for economic reasons (productive purposes), not for social or political reasons.

The scientific literature contains conclusions that are sharply at odds with one another in some areas, but these results do not negate the existence of a "debt overhang" limit, the boundary between the two. Positive, negative, or irrelevant can all be applied to the linear connection. A positive linear relationship implies that the economy can expand even as the degree of debt increases. It is favorable since the government can increase public debt to achieve goals like investing in human capital and building infrastructure(Abdullah & Tursoy, 2021). On the other hand, a linear negative relationship implies that as a nation's debt load increases, so does its rate of economic expansion. If this occurs, many projects could need to be delayed because taking out more loans will only impede economic growth. As investors lose interest in investing there, the country might not be able to sustain its competitiveness (Bal & Rath, 2014; Checherita-Westphal & Rother, 2012).

Blake (2015) investigated the effect of public debt on Jamaica's economic expansion in 2015. High levels of state debt and subpar economic growth have long been features of the Jamaican economy. The results of the models demonstrate that the effect of government debt on

economic development is not linear. Economic development is negatively impacted by the composition of debt or the total public and foreign loans. Meanwhile, (Lee & Ng, 2015) researched Malaysia's public debt and economic expansion. Fiscal expansions have led to an increase in the governmental debt in Malaysia. It aims to determine whether Malaysia's public debt contributes to the nation's economic growth between 1991 and 2013. The results of this study are consistent with past studies that have shown a poor correlation between debt and economic growth.

Ahmed, Saeed, and Saed (2013) investigated the impact of external debt on economic growth in Iraq. The study discovered that external debt had a detrimental effect on GDP, but this effect was more pronounced in the short term than in the long term. Moreover, (Shalal, 2020) examined Iraqi public debt on its economic growth from 2006-2017. The result revealed that there is a negative relationship between public debt and economic growth, as increasing public debt leads to a decline in economic growth and vise versa.

Public revenues denote the flow of funds from other economic sectors or units into the government sector(Tajeddini et al., 2023). In other words, capital and revenue receipts make up public revenues. Both normal and earned revenue are received. While capital receipts cover those goods that are mostly of an irregular and nonrepetitive nature and alter the financial assets and liabilities of the government. Korkmaz, Bayir and Guvenoglu (2022) randomly chose France, Germany, Greece, Hungary, Italy, Poland, Spain, Turkey, and the United Kingdom as the 9 OECD nations. The studies used panel causality test methodology and annual data from 2010 through 2019. The Granger causality test analysis revealed a unidirectional causal relationship between tax collections and economic growth. According to empirical findings, from 2010 to 2019, tax collections in the aforementioned countries boosted economic growth.

All non-repayable receipts and grants are included in public revenues, which are further broken down into current and capital receipts. Capital receipts are payments made from non-financial assets utilized in production for longer than a year, as opposed to current receipts, which are tax and non-tax fees made within a specific time frame. Conversely, grants are unrequited, non-obligatory payments made by other governmental and international organizations (Jegede, 2014). Coordinating government revenues and spending is one of the most crucial functions of fiscal policy. This function is crucial for preserving a nation's price stability and sustainable production growth, which promotes economic growth. Through its measures and tools, fiscal policy can be used to short-term prevent or ameliorate production, employment, and income

changes. Understanding the connection between government revenue and economic growth in the economy is essential for developing a sound fiscal policy, especially when dealing with budget deficits (Nikoloski, 2020).

Also, (Magu, 2013) examined the connection between government income and Kenya's economic expansion to ascertain the connection between Kenyan government revenue and economic growth. The study's results showed that all the factors were significant, impacting economic growth of 89.3%. According to individual variables, income tax, VAT, and non-tax revenue had favorable relationships with economic development but import duty and excise duty had negative relationships. Al-Salim, Jabar and Jawad (2019), in their research on the examination of the role of fiscal policy on Iraqi economic growth, found that oil revenue, as one of the main indicators of public revenue, has a positive contribution to boosting economic growth. This is also supported by (Torlak et al., 2021), when it is mentioned that Iraq has faced an economic crisis, which makes lowering monthly salary payments, especially for nurses working in public hospitals.

3. Methodology

3.1 Research Data and Variables

To achieve research objectives, secondary data was gathered from the Central Bank of Iraq (CBI) for the period of 2004-2021. The data were classified between dependent variables and independent variables.

The gross domestic product of Iraq was taken as the dependent variable to measure economic growth, which represents the contribution of total outputs by national and foreign companies. Meanwhile, internal public debt and total revenue were taken as two independent variables (Abdullah H & Tursoy T, 2023; Ibrahim P et al., 2022; Mohammed et al., 2019).

On one side, internal public debt consists of a T-Bill with commercial banks, a T-Bill with the central bank, the bonds, and the Ministry of Finance debt. On the other side, total revenue includes oil and non-oil revenues.

3.2 Measurement

To make sure that gathered data are reliable and have no issues, a unit root test was implemented. Afterward, a cointegration test was applied to demonstrate if the variables were

connected with each other or not. Finally, the ARDL method was used to determine the influence level of each independent variable on Iraqi economic growth (Akalpler & Abdullah, 2020).

3.3 Research Model

The proposed model for the research is illustrated below:

$$GDP_t = \beta_0 + \beta_1 IPD_t + \beta_2 TR_t + e_t$$

Where: GDP = gross domestic product, IPD = internal public debt, TR = total revenue, β_0 = constant, β_1 & β_2 = coefficient regression, e_t = error.

3.4 Data Description

To draw a big picture and understood the data between 2004 and 2021, dependent and independent variables are explained in chart 1.

Chart1: GDP, REV and IPD in trillion IQD
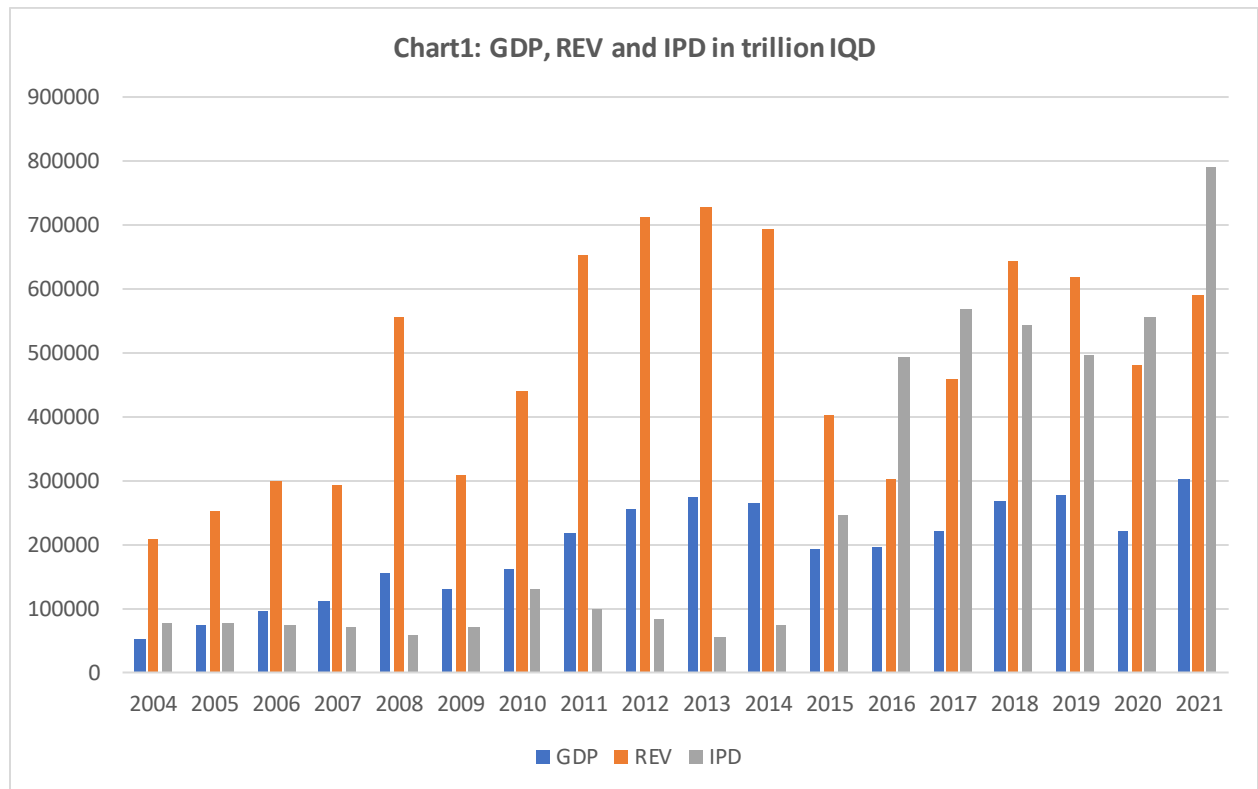
It can be seen that the Iraqi gross domestic product gradually increased from just above 200,000 trillion to almost 300,000 trillion Iraqi dinars with some slight fluctuation. It is noticeable that Iraq's internal public debt from 2004 to 2014 was always below 100,000 trillion IQD.

However, in 2015 and later dramatically jumped due to the drop in oil prices as Iraq heavily relied on it. This happened to cover the shortage in the public budget because total revenue declined sharply from nearly 700,000 trillion IQD to around 400,000 trillion IQD from 2014 to 2015.

4. Results and Discussion

In this section, the data will be going through several assessments from unit root test to check the stability of the data, then the cointegration test to reveal a relationship among research variables, and finally, regression analysis.

4.1 Unit Root Test

One of the crucial tests for determining whether or not the data are stable in the model is the unit root test (Gujarati & Porter, 2009). To do this, the stationary of the data is determined using the Augmented Dickey-Fuller test. Table 2 displays the outcomes of the unit root test.

Table 1: Stationary (Unit Root) Test

Variables	Augmented Dickey-Fuller test statistic	1% level critical value	5% level critical value	10% level critical value	Order of integration	Prob.
GDP	-3.643870	-3.920350	-3.065585	-2.673460	1st difference	0.0170
IPD	-3.281292	-3.959148	-3.081002	-2.681330	1st difference	0.0349
TR	-3.970447	-3.920350	-3.065585	-2.673460	1st difference	0.0091

Source: Author's using E-views12

As it is demonstrated in Table 1, the data are stationary at first difference due to the fact that critical probability values are less than 5%, at various levels of 1%, 5%, and 10%. Hence, it is confirmed that dependent and independent variables are reliable and trusted to be used for the purpose of the study.

4.2 Cointegration Test

One crucial test to assess the degree of interdependence between the research variables is co-integration. For the model to be estimated, there must be at least one association between one of the independent variables and the dependent variable (Majeed, 2022). The degree of

integration between the variables can be demonstrated using a variety of indicators. Hence, Johansen Test was implemented to determine the cointegration between the variables.

Table 2: Co-integration Test

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	**Eigenvalue**	**Trace Statistic**	**0.05 Critical Value**	**Prob.****
None *	0.894672	52.81219	35.01090	0.0003
At most 1 *	0.534038	19.05209	18.39771	0.0405
At most 2 *	0.397391	7.597307	3.841465	0.0058
Trace test indicates 5 cointegrating eqn(s) at the 0.05 level				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized No. of CE(s)	**Eigenvalue**	**Max-Eigen Statistic**	**0.05 Critical Value**	**Prob.****
None *	0.894672	33.76010	24.25202	0.0021
At most 1 *	0.534038	11.45478	17.14769	0.2774
At most 2 *	0.397391	7.597307	3.841465	0.0058
Max-eigenvalue test indicates 5 cointegrating eqn(s) at the 0.05 level				

Source: Author's using E-views9

The findings for the trace statistic are shown in the first section of table 2. The trace statistic of 52.81219 is evidently higher than the crucial value of 35.01090 and has a probability of 0.003, which is less than 5%. The null hypothesis that there are no co-integrating vectors is thereby disproved. The findings demonstrate the co-integration of the variables and the existence of a long-term relationship between the dependent and independent variables.

Similarly, the maximum eigenvalue test in the second section of Table 2, which shows that the max-eigen statistic of 33.76010 is higher than the critical value of 24.25202 with a probability of 0.0001, which is less than 0.05, confirms the long-term relationship between the dependent and independent variables.

4.3 Regression Analysis

Unit root and co-integration test outcomes are solid and logical, enabling model estimation. An autoregressive distributed lag (ARDL) model tests whether there is a relationship between Iraq's internal public debt, total revenue, and economic growth.

Table 3: Results and Estimations of Parameters

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
Dependent Variable: LGDP				
Dynamic regressors (2 lag, automatic): LIPD LREV				
LIPD (-2)	-0.155784	0.060970	-2.555088	0.0309
LREV	0.547293	0.096274	5.684756	0.0003
C	4.415725	3.228749	1.367627	0.2046
R-squared	0.976714	Mean dependent var		12.20016
Adjusted R-squared	0.961190	S.D. dependent var		0.345988
S.E. of regression	0.068160	Akaike info criterion		-2.234274
Sum squared resid	0.041812	Schwarz criterion		-1.896266
Log likelihood	24.87419	Hannan-Quinn criter.		-2.216965
F-statistic	62.91691	Durbin-Watson stat		2.912999
Prob(F-statistic)	0.000001			

R-square and adjusted R-square have high rates of almost (0.976) and (0.961), respectively, showing how well independent variables explain dependent variables and demonstrating that the model is appropriate for the study's goals. When its probability is identical, the significance of the model and the relationship between independent and dependent variables is supported by the significance of the F-statistic (0.000001).

Regarding the influences of independent variables on the dependent variable, table 3 is demonstrated that internal public debt has a negative impact, while revenue has a positive impact because their probability is less than 5%.

Due to the fact that Iraq is considered a developing country and the majority of its expenses rely on extracting oil and selling it abroad to cover the budget deficit, Iraq depends on borrowing money as well, and it would be consumed rather than invested, which is illustrated in table 3 when it says every borrowed Iraqi dinar by the government has negatively affected on economic growth by nearly 15.5%. However, total revenue (oil revenue, tax revenue, and non-oil revenue) comes with positive influences on the Iraqi gross domestic product by 54.7%, which clearly proves the hypothesis that mentioned a positive relationship between total revenue and economic growth.

4.4 Result Discussion

The study investigated in the impact of internal public debt and total revenue on Iraqi economic growth. Due to the results of the cointegration test based on trace and maximum eigenvalue

revealed that there is a long-run relationship between the independent variables (IPD and TR) and economic growth, which is proxied by gross domestic product.

Even though borrowed money has to be invested to generate more money, in Iraq, based on the results, internal public debt played a negative role in the country's gross domestic product because it has been used for consumption rather than investment. Besides this, total revenue has positively contributed to accelerating Iraqi economic growth.

Hence, the authority should seriously work hard toward investing at least a big proportion of borrowed money for the sake of investment and generating extra money, which could easily repay the borrowed amount to the lenders without costing the government.

5. Conclusion

The study primarily looks at the effects of total revenue and internal public debt on economic growth in Iraq from 2004 to 2021. The key conclusion of the current study is that domestic public debt has negative and substantial correlations with GDP, which shows that the debt overhang theory may be true. However, the link between total revenue and GDP is considerable and favourable.

Following the study's conclusions, the following potential policy implications are made: The study's most important finding is that a high reliance on internal public debt needs to be discouraged. Iraq must therefore embrace measures that are likely to result in a reduction in its debt load or invest borrowed money to produce income rather than spend it to drive economic growth. Second, the government of Iraq must create an atmosphere that is conducive to investment and encourage both foreign and domestic investors to increase their investments there, which might ultimately result in more tax revenue for the government. Thus, the authority may have stopped considering borrowing further money.

REFERENCES

Abdullah, H. (2020). *Capital structure , corporate governance and firm performance under IFRS implementation in Germany* (PhD Thesis). Near East University.

Abdullah, H., & Tursoy, T. (2021). Capital structure and firm performance: a panel causality test. In *MPRA Paper* (Issue 105871).

Abdullah H, & Tursoy T. (2023). The Effect of Corporate Governance on Financial Performance: Evidence From a Shareholder-Oriented System. *Iranian Journal of Management Studies*, *16*(1), 79–95.

Abdulqadir, H., Hajar, S., Salih, A., Nasradeen, B., Bzhar, M., Majeed, N., Assi, L., Lanja, H., & Hayderhazhar, A. H. (2022). The Role of Investment on Economic Growth; An Empirical Case of Iraq For the Period of 2004 to 2020. *Journal of Kurdistani for Strategic Studies*, *6*. https://doi.org/10.54809/JKSS.VI6.178

Akalpler, E., & Abdullah, H. (2020). The Impact of IFRS Adoption as Control Variable on the Stock Market-Growth Nexus: Model Countries Germany and Poland. *International CEO Communication, Economics, Organization & Social Sciences Congress / Gorazde University in Bosnia and Herzegovina*, 143–167.

Akhanolu, I. A., Babajide, A. A., & Victoria, A. (2018). The Effect of Public Debt on Economic Growth in Nigeria: An Empirical Investigation. *International Business Management*, *12*(6), 436–441.

Ali Ahmed, Y., Taher Saeed, S., & Jamal Hama Saed, S. (2013). The Impact of External Debt on Economic Growth: Empirical Evidence from Iraq. *International Journal of Science and Research*, *4*, 2319–7064. www.cbi.iq.

Al-Salim, A. J. S., Jabar, T. H., & Jawad, T. H. (2019). Role of Fiscal policy in Achieving the Economic Growth in Iraq: 2003 – 2017. *JOURNAL OF ADMINISTRATION AND ECONOMICS*, *8*(31). https://www.iasj.net/iasj/article/175202

Awrahman, H., Omer, H. and Abdullah, H. (2021). Effect of Working Capital Management on The Financial Performance of Banks. *Qalaai Zanist Scientific Journal*, *6*(1), 429–456. https://doi.org/10.25212/lfu.qzj.6.1.17

Bal, D. P., & Rath, B. N. (2014). Public debt and economic growth in India: A reassessment. *Economic Analysis and Policy*, *44*(3), 292–300. https://doi.org/10.1016/J.EAP.2014.05.007

Blake, T. (2015). *Investigating the Impact of Public Debt on Economic Growth in Jamaica*.

Burnside, C., & Dollar, D. (2000). Aid, Policies, and Growth. *American Economic Review*, *90*(4), 847–868. https://doi.org/10.1257/AER.90.4.847

Checherita-Westphal, C., & Rother, P. (2012). The impact of high government debt on economic growth and its channels: An empirical investigation for the euro area. *European Economic Review*, *56*(7), 1392–1405. https://doi.org/10.1016/J.EUROECOREV.2012.06.007

Chiu, Y. bin, & Lee, C. C. (2017). ON THE IMPACT OF PUBLIC DEBT ON ECONOMIC GROWTH: DOES COUNTRY RISK MATTER? *Contemporary Economic Policy*, *35*(4), 751–766. https://doi.org/10.1111/COEP.12228

Chowdhury, A. (2001). External Debt and Growth in Developing Countries: A Sensitivity and Causal Analysis. *WIDER-Discussion Papers*. https://epublications.marquette.edu/econ_fac/489

Fineboy Ikechi, J., & Omodero, C. O. (2020). The Nexus Between Government Revenue and Economic Growth in Nigeria. *Economic and Business*, *34*, 35–45. https://doi.org/10.2478/eb-2020-0003

Gujarati, D. N., & Porter, D. C. (2009). *Basic Economics: Vol. Fifth Edition*.

Ibrahim P, Husseini B, Ghousia K, Abubakar K, & Abdullah H. (2022). IFRS ADOPTION AND VALUE RELEVANCE OF ACCOUNTING INFORMATION OF LISTED INDUSTRIAL GOODS FIRMS IN NIGERIA. *Humanities Journal of University of Zakho*, *10*(2). https://doi.org/10.26436/hjuoz.2022.10.2.776

Jegede, C. A. (2014). Econometric Analysis of the Effectiveness of Public Revenue in Economic Growth in Developing Countries: An Examination of Nigerian Economy. *International Journal of Economics and Finance*, *6*(8). https://doi.org/10.5539/ijef.v6n8p187

KORKMAZ, S., BAYIR, M., & GÜVENOĞLU, H. (2022). The Causal Relationship Between Tax Revenues and Economic Growth in OECD Countries. *GAZİANTEP UNIVERSITY JOURNAL OF SOCIAL SCIENCES 2022*, *21*(2), 599–610. http://dergipark.org.tr/tr/pub/jss

Kousar, S., Rehman, W., Ali Khan, R., & Khan, R. A. (2020). Government revenue and economic growth of Pakistan Entrepreneurship View project Rescue 1122 Motorcycle Emergency Services in PunjabPakistan View project Government revenue and economic growth of Pakistan. *Estudios de Economia Aplicada*, 1–30. https://doi.org/10.25115/eea.v38i3.3034

Lee, S.-P., & Ng, † ---Yan-Ling. (2015). Public Debt and Economic Growth in Malaysia. *Asian Economic and Financial Review* , *5*(1), 119–126. https://doi.org/10.18488/JOURNAL.AEFR/2015.5.1/102.1.119.126

Majeed, B. N. (2022). The Effect of Macroeconomic Variables on Stock Exchange Market Performance: Iraq Stock Exchange Market as an Example. *Journal of Kurdistani for Strategic Studies*, *3*. https://doi.org/10.54809/JKSS.VI3.96

Mencinger, J. ;, Aristovnik, Aleksander, ;, & Verbic, M. (2014). The Impact of Growing Public Debt on Economic Growth in the European Union. In *Amfiteatru Economic Journal* (Vol. 16, Issue 35). http://hdl.handle.net/10419/168832http://creativecommons.org/licenses/by/4.0/www.econstor.eu

Mohammed, A., Khzer, K., & Abdullah, H. (2019). Challenges Facing Accounting Education in the Kurdistan Region Universities: A survey study. *Koya University Journal of Humanities and Social Sciences*, *2*(1), 109–117. https://doi.org/10.14500/kujhss.v2n1y2019.pp109-117

Muriithi, & Cyrus M. (2013). *The Relationship Between Government Revenue and Economic Growth in Kenya*. http://erepository.uonbi.ac.ke/handle/11295/58499

Nikoloski, A. (2020). Influence of Public Revenues on Economic Growth The Case of the Republic of North Macedonia. *Konfrontasi: Jurnal Kultural, Ekonomi Dan*

Perubahan Sosial, *7*(3), 191–204.
https://doi.org/10.33258/KONFRONTASI2.V7I3.115

Saungweme, T., & Odhiambo, N. M. (2019). The Impact of Public Debt on Economic
Growth: A Review of Contemporary Literature:
Https://Doi.Org/10.1177/0034644619833655, *45*(4), 339–357.
https://doi.org/10.1177/0034644619833655

Sdiq, S. R., & Abdullah, H. A. (2022). Examining the effect of agency cost on capital
structure-financial performance nexus: empirical evidence for emerging market.
Cogent Economics & Finance, *10*(1).
https://doi.org/10.1080/23322039.2022.2148364

Shalal, A. A. (2020). Impact of Public Debt on Economic Development -Iraq Case Study –
For a period of (2006-2017). مجلة جامعة الانبار للعلوم الاقتصادية والادارية, *12*(28), 1–28.

Shvets, S., & Shvets, S. M. (2017). Internal public debt and economic growth: a case study of
Ukraine. *Munich Personal RePEc Archive*, 1–14.

Tajeddini, K., Taylan, B., Gamage, T., Demir, A., Zaim, H., & Topal, R. (2023). Impact of
diversity management on innovative work behavior: mediating role of human
resource management and affective commitment. *Journal of Management
Development*, *42*(1), 29–53. https://doi.org/10.1108/JMD-06-2022-0154

Tanzi, V., & Schuknecht, L. (1997). Reconsidering the Fiscal Role of Government: The
International Perspective on JSTOR. *The American Economic Review*, 164–168.
https://www.jstor.org/stable/2950906

Torlak, N. G., Kuzey, C., Sait Dinç, M., & Budur, T. (2021). Links connecting nurses'
planned behavior, burnout, job satisfaction, and organizational citizenship behavior.
Journal of Workplace Behavioral Health, *36*(1), 77–103.
https://doi.org/10.1080/15555240.2020.1862675

Yusuf, S., & Said, A. O. (2018).) Andrei Shelomentsev, Russian Academy of Sciences,
Russia. Original Research Article Yusuf and Said. *Management and Trade*, *21*(7), 1–
12. https://doi.org/10.9734/JEMT/2018/41504

Appendices

Appendix 1: Ramsey Test

Ramsey RESET Test
Equation: UNTITLED
Omitted Variables: Squares of fitted values
Specification: GDP GDP(-1) IPD IPD(-1) TR C

	Value	df	Probability
t-statistic	1.159593	11	0.2708
F-statistic	1.344657	(1, 11)	0.2708
Likelihood ratio	1.960576	1	0.1615

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	1.95E+14	1	1.95E+14
Restricted SSR	1.79E+15	12	1.49E+14
Unrestricted SSR	1.59E+15	11	1.45E+14

Appendix 2: CUSUM Test
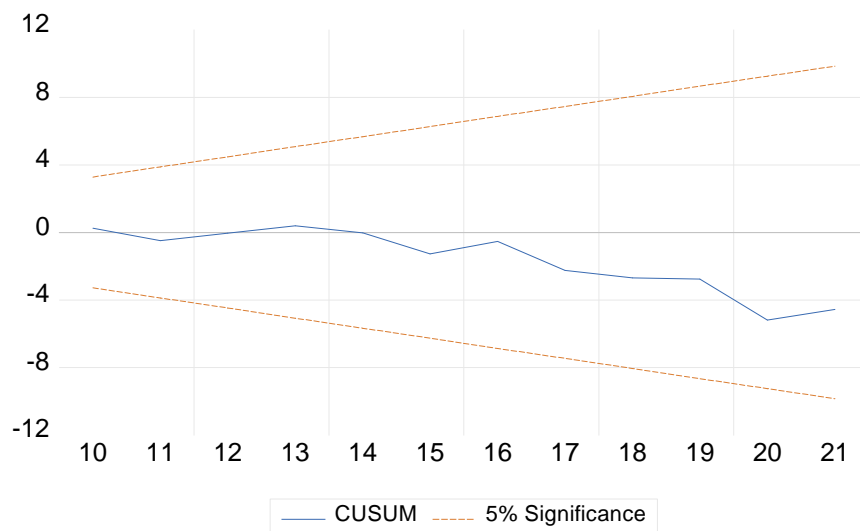
Appendix 3: CUSUM Square Test
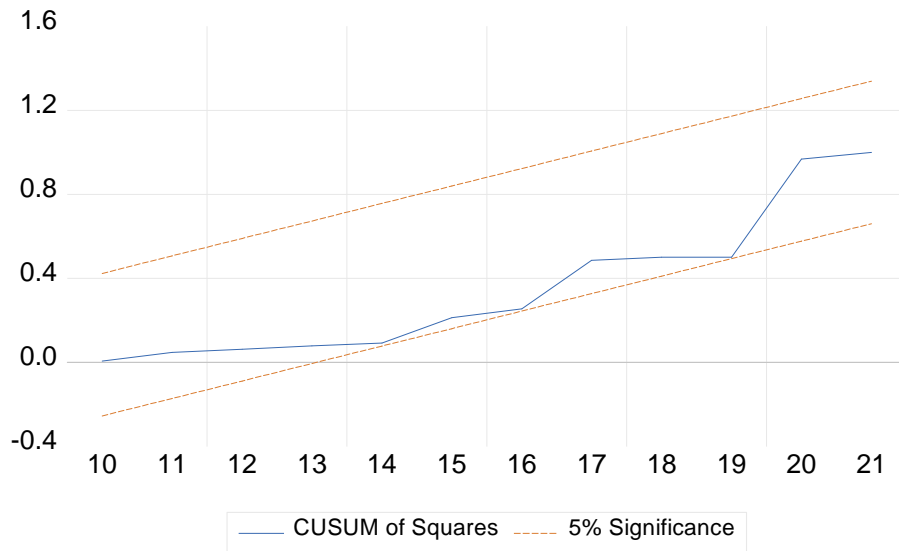
Appendix 4: Autocorrelation

Date: 11/14/22   Time: 22:16
Sample (adjusted): 2005 2021
Q-statistic probabilities adjusted for 1 dynamic regressor

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob*
		1	-0.490	-0.490	4.8520	0.028
		2	-0.024	-0.348	4.8644	0.088
		3	0.160	-0.039	5.4574	0.141
		4	-0.179	-0.148	6.2507	0.181
		5	0.105	-0.036	6.5486	0.256
		6	-0.022	-0.038	6.5631	0.363
		7	0.083	0.147	6.7849	0.452
		8	-0.248	-0.226	8.9918	0.343
		9	0.090	-0.212	9.3176	0.408
		10	0.077	-0.102	9.5883	0.477
		11	-0.263	-0.333	13.299	0.274
		12	0.370	0.039	22.124	0.036

*Probabilities may not be valid for this equation specification.

Appendix 5: Serial Correlation

Breusch-Godfrey Serial Correlation LM Test:
Null hypothesis: No serial correlation at up to 5 lags

F-statistic	2.325683	Prob. F(5,7)	0.1508
Obs*R-squared	10.61191	Prob. Chi-Square(5)	0.0596

Test Equation:
Dependent Variable: RESID
Method: ARDL
Date: 11/14/22   Time: 22:17
Sample: 2005 2021
Included observations: 17
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP(-1)	0.110722	0.092555	1.196279	0.2705
IPD	-0.092146	0.068685	-1.341572	0.2216
IPD(-1)	0.075149	0.058052	1.294509	0.2366
TR	-0.012589	0.036332	-0.346487	0.7392
C	-6881336.	8897979.	-0.773359	0.4646
RESID(-1)	-1.236861	0.404366	-3.058766	0.0184
RESID(-2)	-0.889613	1.035316	-0.859267	0.4186
RESID(-3)	0.332327	1.656220	0.200654	0.8467
RESID(-4)	0.724480	1.427049	0.507677	0.6273
RESID(-5)	0.690677	0.769563	0.897492	0.3993

R-squared	0.624230	Mean dependent var	-3.48E-08
Adjusted R-squared	0.141097	S.D. dependent var	10576623
S.E. of regression	9802099.	Akaike info criterion	35.32326
Sum squared resid	6.73E+14	Schwarz criterion	35.81338
Log likelihood	-290.2477	Hannan-Quinn criter.	35.37198
F-statistic	1.292046	Durbin-Watson stat	1.887816
Prob(F-statistic)	0.376006		

Appendix 6: Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

F-statistic	0.248581	Prob. F(4,12)	0.9050
Obs*R-squared	1.300837	Prob. Chi-Square(4)	0.8612
Scaled explained SS	0.746202	Prob. Chi-Square(4)	0.9455

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 11/14/22   Time: 22:18
Sample: 2005 2021
Included observations: 17

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.19E+14	1.58E+14	0.755171	0.4647
GDP(-1)	872655.2	986233.9	0.884836	0.3936
IPD	-300717.3	625609.9	-0.480679	0.6394
IPD(-1)	335054.9	701652.7	0.477522	0.6416
TR	-346485.6	425930.0	-0.813480	0.4318

R-squared	0.076520	Mean dependent var	1.05E+14
Adjusted R-squared	-0.231307	S.D. dependent var	1.65E+14
S.E. of regression	1.83E+14	Akaike info criterion	68.75588
Sum squared resid	4.01E+29	Schwarz criterion	69.00094
Log likelihood	-579.4250	Hannan-Quinn criter.	68.78024
F-statistic	0.248581	Durbin-Watson stat	2.092476
Prob(F-statistic)	0.905016		