

Analyzing the Influence of Foreign Debt on Non-Oil Economic Growth: A Case Study of Iraq Using the Autoregressive Distributed Lag (ARDL) Model from 2003 to 2022

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Abstract

Developing countries' external debt is a strategic tool used by creditor countries to exert pressure on debtor countries, creating a complex dynamic. This article explores the determinants of Iraq's external debt. The methodology used includes unit root tests, long-run and short-run analyzes using autoregressive distributed (ARDL) models, and diagnostic tests to ensure model validity. The results reveal that external debt has a significant negative impact in the long and short term on non-oil economic growth in Iraq. The study suggests wise strategies for managing debt, diversifying sources of financing, and prioritizing political stability and infrastructure development to promote economic growth.

Keywords: *external debt, performance, iraq, Cointegration, debt sustainability, economic growth, ARDL model.*

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Introduction

The external debt of developing countries is similar to a depository appointed by creditor countries within the framework of a long-term strategy that uses debt as an excuse to pressure debtor countries on the one hand. On the other hand, we should not hold the creditor countries responsible alone, as the responsibility is shared. There are objective reasons for debt that have negative effects on what is known as rescheduling. But if developing countries have export surpluses, they resort to prepayment. Therefore, we attempt, through this article, to discuss these ideas by studying the determinants of Algeria's external debt.

Algeria's external debt growth was mostly associated with the industries programmer manufactured to boost the country's economy, hence funding had to be found. Al-Kharga must turn to debt in order to finance massive investments through growth plans. Algeria made the option to go back because it believed that economic decisions are only political. Restructuring its foreign loans, and if the Algerian government had not previously considered this alternative before to 1993, then this option strongly demanded itself as a result. The severity of the debt has worsened due to the severe expense of debt servicing, which has started to consume all export revenues. Low fuel costs as a result of the nation's financial and economic conditions declining at the end of 1993 Algeria asked to reschedule its overseas.

It can be said that Algeria's debts moved from 1990 to the end of 2006 important stages. The first phase from 1990-1993 Due to the decline in oil prices, which resulted in a decline in the economic growth rate The pace of inflation increased and Algeria's hard currency reserves decreased External debt services exceeded 80% of its external revenues, all of these Developments led Algeria to resort to the International Monetary Fund for the purpose of borrowing It obtained 300 million Special Drawing Rights from him in June 1991 It reduced Algeria's ability to pay its debts.

At the beginning of 1994, Algeria took upon itself great efforts to restore the structural adjustment of the economy, so it resorted to the International Monetary Fund. The International Bank obtained a loan of \$260 million to support the balance of payments. Also, the rescheduling agreement that Algeria concluded with the Paris Club in May.

On the one hand, 1994 contributed to reducing the debt service rate, and 1997 represented a point a shift in the position of Algeria's external debt, recording the debt, in a downward trend.

2000): Oil prices recorded a noticeable improvement, and the third stage (2006).

Which led to a decrease in the debt ratio against exports, and the exchange reserve exceeded the threshold of \$10 billion, but the balance of payments deficit in 2001 was paid Algeria borrowed to cover this deficit, which led to an increase in its debts for a year 2002, and its medium- and long-term debts increased in 2003 to reach 23.35 Billion dollars. This increase is due to the decline in the exchange rate of the US dollar against the rest of the hard currencies, especially with the emergence of the euro as a competing currency, and with Algeria's conclusion of the Euro-Mediterranean Partnership Agreement increased its debt in euros against the dollar, and external debt continued to decline in 2006 due to. High oil prices.

For the period (2000-2013): The third millennium was characterized by a special situation, as it was characterized by a noticeable and continuous improvement in the external financial situation thanks to the unexpected rise in oil prices in global markets, as the price of a barrel of oil rose and reached the value of \$112.94 per barrel in 2011. This was accompanied by The positive

development in the external financial situation during this period was a decrease in the volume of external debts from 25.3 billion dollars in 2000 to 21.84 billion dollars in 2004, which is the year in which the government announced the cessation of borrowing and the beginning of prepayment of external debts and the transfer of part of them to direct foreign investment. The government began paying its foreign dues in advance, which led to an increase in the volume of transfers abroad, which amounted to \$12.87 billion in 2006. Accordingly, the volume of external debt witnessed a declining trend since this year until it reached its lowest level in 2012 at \$3,479 billion. With regard to medium- and long-term debt, it decreased. From \$25.3 billion in 2000 to \$3.1 billion in 2013, recording a total decrease estimated at 86%.

The requirements of rapid development, which depend on development plans, prompted the government to rely on external loans. Investments were directed to the productive sectors represented by the industrial and agricultural sectors, and the share of the productive sectors was significant during the period 1967-1978. Accordingly, anyone who follows the development of external debt in Algeria notes that it was formed in the decade the seventies, due to the adoption of the heavy industry method during this stage and the lack of internal resources. The decline in fuel prices in 1986, as the main source of obtaining hard currency, led to a decrease in export revenues, the inability of most economic institutions to achieve an economic surplus, and an increase in the severity of the debt crisis, in addition to an increase in the requirements for supplying the national market. To meet consumer needs in light of these difficult circumstances, Algeria resorted to short-term loans. In 1986, it obtained loans that had to be repaid in 1988, and accordingly its debts accumulated, as the stock of foreign debts increased by more than \$10 billion in the period extending between 1985 and 1989. These financial difficulties led to the necessity of adjustment and transition towards a market economy, accepting the programs of the International Monetary Fund, and accepting the rescheduling of its debts, which somewhat reduced the financial problems of the economy and transferred the burden of the bill to a future stage. By the third millennium, the miracle of oil occurred and Algeria was able to get out of the trap of indebtedness. From the implementation of prepayment of the debt, and accordingly, the size of the external debt has witnessed a declining trend since the year 2004, and the size of the debt has become no longer a significant burden compared to what Algeria has hard currency surpluses of approximately 200 billion dollars, and the challenge that Algeria faces at the present time is how to benefit from the accumulated financial surpluses and not to search for external financial resources. The national economy is still dependent on the developments taking place in oil prices in global markets, and it must exploit the financial surpluses made available by the oil boom in the best possible way and seize its opportunity for development, otherwise it may once again fall into financing problems because what you are given may be taken by the oil boom. Any scarcity or external shock.

Literature review:

This study (Georgantopoulos 2011) examines the causal links between military spending and external debt of four emerging countries in North Africa (i.e. Egypt, Tunisia, Algeria, and Morocco) during the period 1988-2009. Academics and researchers support that defense spending can significantly affect a country's economic growth, and in some ways Cases affect external debt, which has implications for various macroeconomic indicators. However, relevant empirical studies have produced contradictory evidence while the literature in this area remains relatively weak. From this standpoint, this study attempts to demonstrate the causal links between military spending and external debt for four emerging countries in North Africa (i.e.,

Egypt, Tunisia, Algeria, and Morocco) during the period 1988-2009. The empirical results are based on the long-run relationship between the variables tested in the cointegration test. The results of a Granger causality test using autoregressive estimates (VAR) and an error correction model indicate that there is no dynamic causality between military spending and external debt for Tunisia, Algeria, and Morocco. On the other hand, with regard to Egypt, the results indicate a strong unidirectional causality extending from defense spending to external debt. Collectively, the empirical calculations show that the military burden does not have a significant impact on most North African countries. The only exception is the case of Egypt. Empirical results show that military spending strongly affects a country's external debt. These are the only results provided by this study that validate the hypothesis that the military burden may be important in determining the evolution of debt in developing countries (Georgantopoulos 2011).

The study (Korneyev et al. 2023) aims to assess the impact of external public debt on Ukraine's economy from 2014 to 2022. There are several specific features and circumstances that can characterize Ukraine's foreign policy. For public debt management, the results are not always unambiguous. The study aims to assess the impact of external public debt on Ukraine's economy from 2014 to 2022, a period that includes the annexation of Crimea, the beginning of the COVID-19 pandemic, and the beginning of open Russian military aggression. To analyze the contemporary state of public debt and assess the degree of influence of the external debt burden on the country's economy, a factor analysis technique known as the principal components method was used. Through the STATISTICA.12 program, it was demonstrated that the debt situation worsens as the debt burden grows and the solvency indicators values approach the thresholds. The application of the Kaiser criterion allowed the selection of the most influential indicators (principal components) for assessing the external debt burden. The eigenvalue of the first component (inflation rate) is 4.48 and explains 50% of the variance; The second component (production of export-oriented goods) has an eigenvalue of 2.43, explaining 27% of the variance; The third component (government spending on military purposes) has an eigenvalue of 1.24, which explains why 14% of the variance (Korneyev et al. 2023).

The study (Gurung and Rijal 2023) examines the relationship between internal debt, external debt and economic growth in Nepal. Debt plays a crucial role in capital formation that contributes to economic growth. Therefore, this study aims to study the impact of internal and external debt on economic growth in Nepal in the period between mid-July 1975 and mid-July 2022, using the ordinary least square method to determine the relationship between variables, enhanced Dickey-Fuller techniques for unit root testing, and Granger causality test to determine the relationship. Causality between GDP, external debt and internal debt. The results of the unit root test indicate that the GDP variable is stationary, while the external and internal debt variables are not stationary in the model. The causality results show a bidirectional relationship between external debt and GDP, but there is no causal relationship between internal debt and GDP. Johansen cointegration test indicates that there is no long-run relationship between external debt, internal debt and GDP (constant price). This rejects the null hypothesis of no cointegration, and indicates that there is insufficient evidence to support the idea of cointegration between external debt, internal debt, and economic growth. In addition, external debt Granger does not cause internal debt, indicating a unidirectional relationship. The results of Operation Lifeline indicate that external debt is detrimental to economic growth, while internal debt has a positive impact on the growth of the Nepalese economy. The study results also indicate that external debt has a greater negative impact on economic growth than internal debt. The study suggests that the government should prioritize the use of internal debt over external debt to promote economic growth in

Nepal(Gurung and Rijal 2023).

Also study (Omar and Ibrahim 2021) Most emerging countries have large external debts and depend on foreign aid to achieve sustainable economic development. However, the main objective of this paper is to examine the determinants of Somalia's external debt. To achieve this, the study used the autoregressive distributed lag (ARDL) model and the cointegration test to determine short- and long-run relationships during the period from 1980 to 2018. The results showed that the exchange rate and domestic investment have a significant and positive impact. And its impact on external debt in the long run, while GDP per capita and government spending have a significant negative relationship with external debt; the short-term result is consistent with the long-term result. The study recommends that the Government of Somalia also focus on profitable sectors (such as livestock, fisheries and agriculture) with the aim of improving the production and revenue base in order to reduce external debt, government spending and imports. Likewise, expanding a simpler tax base system and removing the dependence of spending on financial stability would enhance fiscal balance. Many governments have hidden their borrowing through fiscal measures, which have expanded debt stocks. Relying on external debt and aid is not the best way to ensure the health of the economy, so Somali governments need to start reconsidering their external debt allocation, and policymakers can promote a strategy and policy to reduce heavy reliance on debt that has worked in the past(Omar and Ibrahim 2021).

In this study(Acet 2023), the relationship between external debt and economic growth is discussed in terms of the Turkish economy. In the analysis, the period 2000-2021 was used as a quarter. . In the model, real GDP (2010) was used as a variable for economic growth, and public sector external debt, private sector external debt, short-term external debt stock, and net external debt stock variables were used as external debt variables. According to the Granger causality test archives, no causal relationship was found between the stock of public sector external debt and GDP. A bidirectional causal relationship was found between private sector external debt and GDP. A bidirectional causality relationship is also found between short-term external debt and GDP. Finally, no causal relationship was found between the net external debt stock and GDP(Acet 2023).

This study (Amalia Yunia Rahmawati 2020) sought to determine the impact of external debt on the performance of the agricultural sector in Kenya. A correlational research design was adopted. The time series data used in the study were obtained from the World Development Indicators and Statista databases, covering the period from 2012 to 2020. The data were analyzed using EViews software. The results showed that external debt had a significant positive impact on the performance of the agricultural sector in Kenya. Therefore, according to the study, the government of Kenya needs to invest more external debt in agriculture to stimulate the growth of the agricultural sector. Agriculture forms the backbone of the economy in most developing and developed countries. Its production has increased significantly over the past three to four decades. In 2018, it contributed about 4% of global GDP, and in 2020, it accounted for 35% of GDP and 65% of Kenya's foreign exchange earnings. It is also a major source of raw materials for both national and international industries. However, the sector's performance has declined over the years, and there is a paucity of information regarding how external debt affects the sector's performance (Amalia Yunia Rahmawati 2020).

This study(Sumanaratne 2022) explores the effect of external debt sustainability on Sri Lanka's economic growth by applying a non-linear auto regressive distributed lag (NARDL) model, which allows us to decompose the effect of the debt variables into positive and negative effects,

based on the annual data covering the period 1980 – 2021. The estimated NARDL model shows that external debt stock and foreign debt service payments had a robust short term and long-term effect on economic growth in Sri Lanka. The asymmetric cointegration results provide strong evidence for a long-run integration that exists between economic growth and external debt sustainability. The study discovered a strong and negative relationship between the decline in the external debt stock and economic growth, suggesting that lowering the stock of debt may boost economic growth. The study further discovered an asymmetric relationship between economic growth and debt service payments. Accordingly, an increase in debt service payments would lead to a decrease in growth, while a downward change in that would lead to an increase in growth. Concerning control variables, trade openness has a negative relationship with growth, whilst the real exchange rate indicates a positive nexus. The study also found that short-run findings are almost likely to be those in the long-run. In light of these findings, the low level of economic wellbeing in Sri Lanka can be attributed to debt overhang and the crowding out effect which discourages investment. As per the results, the real exchange rate is positive and not a significant determinant of trade balance in the short run, indicating the J-curve effect as not being valid for the case of Sri Lanka. In this context, a proper debt management mechanism should be implemented to maintain a sustainable external debt level in Sri Lanka(Sumanaratne 2022).

Mythology

To test the relationship between external debt and non-oil economic growth in Iraq, the Gross Domestic Product (GDP) excluding oil was chosen as the dependent variable. Total fixed capital formation (*K*), total labor force (*L*), and external debt (*de*) were selected as independent variables. The analysis was conducted using data for the period (2003-2022), and due to the short time span, the data was transformed into quarterly intervals. This period represents the broadest time range accessible using the regular dataset obtained from the International Monetary Fund and the World Bank

Natural logarithms were applied to all sequences used in the analysis to address the issue of heteroscedasticity that may arise in the analysis. The purpose of taking the logarithm of the sequence is to eliminate the problem of heteroscedasticity that may arise in the analysis.

A standard economic model was constructed for use in the study, employing the Cobb-Douglas production function in Equation (1)

$$GDP = AK^\alpha L^\beta \dots\dots\dots (1)$$

After taking the logarithm for both sides of the above equation, we obtain:

$$\ln GDP = \ln A + \ln \alpha K + \ln \beta L \dots\dots\dots (2)$$

The model can be expanded by adding the element of external debt (*de*) to the model, and thus it becomes:

$$\ln GDP = \ln A + \ln \alpha K + \ln \beta L + \ln \theta de \dots\dots\dots (2)$$

The methodology applied in this study is based on the approach used by Pesaran and Shin (1997), Pesaran (1997), and Pesaran, Shin, & Smith (2001). This study will measure and analyze the impact in a similar manner.

1. Unit Root Test Results:

The results of the Phillips-Perron unit root test provide insightful observations regarding the stability characteristics of the selected variables in the study. As shown in Table (1), it is

observed that the Gross Domestic Product (GDP) is stable at the level, indicating no unit root. Similarly, the external debt variable (*de*) is also stable at the level.

On the other hand, the labor force (*L*) and fixed capital (*K*) variables become stable after taking the first difference.

Table (1) Phillips-Perron Unit root Test

1 st difference		Level		Variable
: Constant, Linear Trend	Constant	: Constant, Linear Trend	Constant,	
		-4.0567***	-3.9546***	GDP
-9.0235***	-9.0541***	-2.5099	1.70253	K
-9.9314***	-9.5886***	-1.5254	1.3815	L
		-21.7367***	-22.3022***	de

Not : *, **, *** value of t-staistic at 10%, 5%, 1% respectively

2. Long-Term Analysis Results:

From the results of the long-term analysis, it appears that the only statistically significant variable affecting non-oil economic growth is external debt, which exhibits a negative impact in the long run. The lack of statistical significance for labor force (*L*) and fixed capital (*K*) in their influence on economic growth may be attributed to the Iraqi economy's need for achieving security and political stability as prerequisites for the growth of non-oil sectors. Additionally, it emphasizes the necessity of improving infrastructure to foster economic growth beyond the oil sector.

Table (2) Long-Term Parameters

Levels Equation				
Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
K	-2.80E-10	2.25E-10	-1.245891	0.2169
L	1.08E-06	1.65E-06	0.653650	0.5154
DE	-0.097881	0.051647	-1.895181	0.0621
C	5.471175	11.07405	0.494054	0.6228

3. Table (3) Short-Term Parameters:

The table (3) presents the results of the short-term analysis.

ARDL Error Correction Regression
 Dependent Variable: D(NO_GDP)

ECM Regression
 Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(NO_GDP(-1))	0.549653	0.059729	9.202377	0.0000
D(K)	7.11E-11	7.15E-11	0.994866	0.3232

D(DE)***	-0.216149	0.026912	-8.031759	0.0000
ECT_{t-1}***	-0.216810	0.023581	-9.194382	0.0000
R-squared	0.740908	Mean dependent var	-0.763965	
Adjusted R-squared	0.730544	S.D. dependent var	4.872779	
S.E. of regression	2.529418	Akaike info criterion	4.743162	
Sum squared resid	479.8466	Schwarz criterion	4.863134	
Log likelihood	-183.3549	Hannan-Quinn criter.	4.791226	
Durbin-Watson stat	1.927712			

Note: The symbols *, **, and *** indicate the significance of coefficients at the 10%, 5%, and 1% levels, respectively.

According to the results presented in Table (3), the Error Correction Term (ECT) coefficient is negative and statistically significant. In this case, it implies that the error correction mechanism is active in the model. In other words, deviations that occurred in the short term between the two series moving together in the long term disappear, and the series converge back to the equilibrium relationship in the long term.

Examining the coefficients of the variables, it is noted that both capital and human capital did not show statistically significant impact on economic growth in the short term. On the other hand, external debt has a significant and negative impact on short-term economic growth.

4. Diagnostic Tests

A. Serial Correlation Test:

The Breusch-Godfrey Serial Correlation LM test is conducted to assess whether there is serial correlation in the residuals of the model, as indicated in Table (4). Serial correlation occurs when the residual values are correlated with their lagged values, suggesting a potential violation of the independence assumption in the regression model. The test results, particularly the F-statistic and its associated p-values, suggest weak evidence against the hypothesis of serial correlation in the residuals. Therefore, based on this test, it appears that the residuals in the model do not exhibit significant serial correlation.

Table (4)

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.179801	Prob. F(2,69)	0.8358
Obs*R-squared	0.409583	Prob. Chi-Square(2)	0.8148

B. Heteroscedasticity Test:

To assess the presence of heteroscedasticity, the Breusch-Pagan-Godfrey test is conducted, and the results are outlined in the Appendix (5). It is observed that the Prob. Chi-Square value equals (0.5021), which is greater than 0.05. This implies that the model does not suffer from heteroscedasticity issues according to the assumptions of the test.

Table(5)

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.883100	Prob. F(7,71)	0.5244
Obs*R-squared	6.327334	Prob. Chi-Square(7)	0.5021
Scaled explained SS	9.700557	Prob. Chi-Square(7)	0.2062

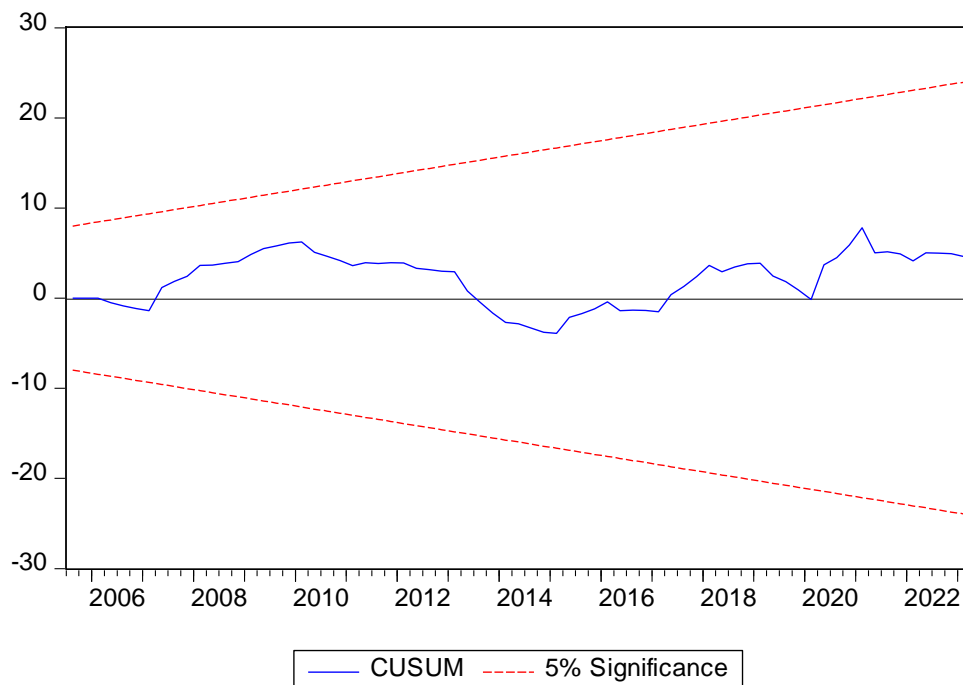
C. Model Stability Test:

To ensure the absence of any structural changes in the data used in this study, it is essential to employ an appropriate test, such as the Cumulative Sum of Squares (CUSUM) test. This test is crucial in revealing any structural changes in the data, making it important for understanding the stability of the model.

Many studies have shown that such a test is often employed in conjunction with the ARDL methodology. Structural stability is achieved for the estimated coefficients of the Error Correction Term in the Autoregressive Distributed Lag (ARDL) model if the CUSUM tests fall within the critical bounds at a 5% significance level. As depicted in Figures (1), the CUSUM tests remain within the critical bounds, indicating structural stability.

Based on the majority of these studies, we applied the CUSUM test proposed by Brown, Durbin, and Evans (Andrews and Akay, 2013, p. 24)

Figures (1)



Finding

The results of the Phillips-Perron unit root test indicate that both Gross Domestic Product (GDP) and external debt (de) are stable at the level, while Labor (L) and Capital (K) become stable after taking the first difference.

The results of the long-term analysis indicate that external debt is the only significant variable affecting non-oil economic growth, and it has a negative impact. The lack of significance for Labor (L) and Capital (K) may be attributed to the necessity of achieving security and political stability in the Iraqi economy as a fundamental condition for the growth of non-oil sectors, along with the need to improve infrastructure and strengthen governance.

The short-term analysis also reveals that external debt has a significant and negative impact on non-oil economic growth. The negative and statistically significant Error Correction Term (ECT) suggests the presence of an error correction mechanism directing the series towards a long-term equilibrium relationship after short-term deviations. However, Capital (K) and Labor (L) do not exhibit a statistically significant impact on economic growth in the short term.

The diagnostic tests, such as the Breusch-Godfrey Serial Correlation LM test, indicate the absence of serial correlation in the residuals of the model. Additionally, other diagnostic tests confirmed the validity of the analysis results by addressing standard issues.

Due to the long-term negative impact of external debt on non-oil economic growth, it is recommended that the Iraqi government adopts prudent strategies for debt management. This may include diversifying sources of funding, negotiating favorable terms, and ensuring efficient allocation of borrowed funds to projects with high economic returns.

To enhance the importance of labor and capital in driving economic growth, there is a critical need for the Iraqi government to prioritize political and security stability. Efforts should be directed towards creating a conducive environment for economic activities, attracting investments, and promoting sustainable development.

Improving infrastructure remains crucial for the growth of non-oil sectors. The government should focus on strategic investments in infrastructure projects to facilitate economic activities, enhance productivity, and attract private sector participation.

While external debt shows a short-term negative impact on economic growth, it is crucial to closely monitor this relationship. Policymakers should evaluate the nature of debt utilization and consider short-term measures to mitigate the negative effects, such as targeted investments and economic stimulus initiatives.

References

1. Acet, Hakan. 2023. "Journal of Current Researches on Business and Economics The Effect of on Business and Economics The Effect of External Debt on Economic Growth : A Review on Dış Borçlanmanın Ekonomik Büyümeye Etkisi : Türkiye Üzerine." (October). doi: 10.26579/jocrebe.13.1.5.
2. Georgantopoulos, Andreas G. 2011. "The Interrelationship between Military Expenditure and External Debt: Patterns of Causation in Northern Africa Countries." *Journal of Economics and Behavioral Studies* 3(4):264–73. doi: 10.22610/jrebs.v3i4.279.
3. Gurung, Abin, and Deepak Prasad Rijal. 2023. "External Debt and Internal Debt Impact on the Growth of the Nepalese Economy." *Open Journal for Research in Economics* 6(1):13–24. doi: 10.32591/coas.ojre.0601.02013g.
4. Korneyev, Maxim, Anna Bohorodytska, Mila Razinkova, Natalia Nebaba, Maxim Korneyev, and Tetiana Yakovenko. 2023. "Assessment of Ukraine ' s External Debt Burden under Geopolitical Instability." doi: 10.21511/pmf.12(2).2023.06.

5. Omar, Zahir Mohamed, and Mohamed Isse Ibrahim. 2021. "Determinants of External Debt: The Case of Somalia." *Asian Development Policy Review* 9(1):33–43. doi: 10.18488/journal.107.2021.91.33.43.
6. Sumanaratne, B. M. 2022. "External Debt Sustainability and Economic Growth in Sri Lanka." *Journal of Social Sciences and Humanities Review* 7(4):271–93. doi: 10.4038/jsshr.v7i4.113.
7. M. Hashem Pesaran & Yongcheol Shin (1997) - "An Autoregressive Distributed Lag Modeling Approach to Cointegration Analysis" can be found in the book "Econometrics and Economic Theory in the 20th Century: The Ragnar Frisch Centennial Symposium" edited by S. Strøm. It is published by Cambridge University Press, Cambridge, and spans pages 371-413.
8. Mohammad Pesaran (1997) explores "The Role of Economic Theory in Modeling the Long Run" in the *Economic Journal*, Volume 107, Issue 440, pages 178-191.
9. M. H. Pesaran, Y. Shin, and R. Smith (2001) contribute to the field with their work titled "Bounds Testing Approaches to the Analysis of Level Relationships" published in the *Journal of Applied Econometrics*, Volume 16, Issue 3, covering pages 289-326.
10. Nasr Abdelkader and Dahmani Mohammed Adrous (2011) investigate "The Impact of Foreign Direct Investment on Economic Growth in Algeria: A Comparative Study." This study is featured in the *Journal of Economic Sciences*, Volume 6, Issue 6.
11. International Monetary Fund: <https://www.imf.org/ar/Home>
12. Arab Monetary Fund: <https://www.albankaldawli.org/>