



The Impact of Macroeconomic Stability on Economic Growth in MENA Countries: A Panel Data Analysis

Tarek Chenini*

MOFID LAB, Faculty of Economics and Management of Sousse, University of Sousse,
Sousse 4000, Tunisia.

Abstract: This article examines the relationship between macroeconomic conditions and economic growth in a group of economies in the Middle East and North Africa (MENA) region. The study focuses on nine countries: Algeria, Djibouti, Egypt, Iran, Iraq, Jordan, Morocco, Tunisia, and the United Arab Emirates, using annual data covering the period 2002–2018. Economic growth, measured by real GDP growth, is the dependent variable, while foreign direct investment (FDI), inflation, unemployment, domestic investment, public debt, and population are considered independent variables.

The empirical analysis is conducted within a panel data model, using a two-factor fixed-effects model that accounts for country-specific characteristics and their evolution over time. A random-effects model is estimated as an alternative, and the Hausman test is used to determine the most appropriate model. This test yields a χ^2 value of 17.280 and a p -value of 0.008, confirming the fixed-effects model.

The results indicate a positive relationship between foreign direct investment (FDI) and economic growth. However, the estimated correlation coefficient of 0.221 is not supported by classical statistical data. Inflation shows a slightly negative correlation coefficient (-0.004), while unemployment shows a positive coefficient (0.286); neither of these correlations is statistically significant. Domestic investment registers a correlation coefficient of -0.460 and shows a statistically significant relationship with economic growth ($p < 0.015$). Public debt is positively correlated with growth, with a correlation coefficient of 1.885 and a marginal level of statistical significance ($p < 0.059$). Population also shows a positive, but statistically weak, correlation coefficient.

The selected model shows a coefficient of determination (R^2) of 0.438. Overall, the results show that the relationship between macroeconomic factors and economic growth varies across the countries studied, with domestic investment and public debt showing the strongest statistical correlations in the estimated model.

Keywords: : *Macroeconomic stability, Economic growth, Middle East and North Africa countries, Panel data, Fixed effects mode, Inflation, Public debt, Foreign direct investment, Investment.*

Received: 10 April 2025; **Accepted:** 5 May 2025; **Published:** 25 June 2025

INTRODUCTION

The Middle East and North Africa (MENA) region, comprising 21 countries, is historically known for the complexity and diversity of its economies. Geographically, it spans two continents and has a population of over 500 million ([International Monetary Fund, 2021](#)). Despite its unique cultural, linguistic, and geographical diversity, the region faces significant economic challenges, including high rates of unemployment, poverty, and income inequality. This economic

*Correspondence concerning this article should be addressed to Tarek Chenini, MOFID LAB, Faculty of Economics and Management of Sousse, University of Sousse, Sousse 4000, Tunisia. E-mail: chenini.tarekk@gmail.com

diversity has historically led to stark contrasts between the region's economies: some countries are heavily reliant on oil exports, while others benefit from more diversified economies.

The Middle East and North Africa region has historically faced numerous challenges, suffering from successive periods of political instability, weak governance, civil wars, and waves of unrest and conflict that impact macroeconomic stability and, most importantly, state collapse. All of these events have affected the region's economies. Recent studies have focused on the relationship between macroeconomic instability indicators and economic growth, concluding that macroeconomic instability in the region hinders its growth.

The relationship between macroeconomic conditions and economic growth has been the subject of numerous theoretical and empirical studies. Traditional growth models, particularly the neoclassical framework, emphasize the importance of capital accumulation and technological progress for achieving long-term economic performance. Subsequent endogenous growth models have broadened this perspective by highlighting the contribution of human capital, innovation, knowledge, and investment to sustainable growth. From this perspective, macroeconomic policies can influence growth not only through capital accumulation but also by affecting productivity and the efficiency of resource allocation.

The Middle East and North Africa (MENA) region provides a crucial context for studying the relationship between macroeconomic stability and economic growth. This region is characterized by significant economic diversity, encompassing both resource-rich and resource-poor economies, high- and middle-income countries, and varying levels of institutional development. While some countries in the region have made remarkable economic progress over the past two decades, others continue to face persistent economic challenges related to inflation, unemployment, budget deficits, rising public debt, external imbalances, and political instability.

According to the [International Monetary Fund \(2023\)](#), persistent inflationary pressures, widening fiscal deficits, and increasing debt burdens can all weaken economic performance and expose countries to external risks. The report stresses that maintaining policy credibility through appropriate fiscal and monetary measures is crucial for preserving macroeconomic stability and supporting sustainable economic development. The IMF also notes that countries with stronger macroeconomic frameworks generally demonstrate greater resilience during periods of global uncertainty.

As [Campos and Kinoshita \(2002\)](#) noted, "The positive impact of foreign direct investment on economic growth in the Middle East and North Africa appears to be a well-established fact in international economic literature." Early empirical studies in macroeconomics support this optimistic view. According to these analyses, the adoption of foreign expertise and technologies, human capital development, indirect effects on productivity, and externalizes of knowledge constitute the main channels through which the positive effects of foreign direct investment are transmitted to a wide range of domestic firms (and not just to those receiving the capital inflows).

In a subsequent regional assessment, the [International Monetary Fund \(2024\)](#) concluded that economic growth in the Middle East and North Africa (MENA) region remains dependent on geopolitical developments, financing conditions, and inflation dynamics. The IMF noted that economies that maintain fiscal sustainability and strict macroeconomic discipline tend to achieve stronger growth and recover more quickly from adverse shocks.

This research primarily aims to assess the contribution of macroeconomic stability to economic growth in the Middle East and North Africa (MENA) region and to identify the main macroeconomic factors influencing economic performance. It enriches the existing literature by providing a comprehensive regional analysis covering the period 2002–2018, a period marked by significant economic transformations and unprecedented global shocks. The findings should provide valuable information for policymakers seeking to strengthen economic resilience, improve macroeconomic management, and support sustainable economic growth in the MENA region.

The central research question is therefore: to what extent does macroeconomic stability contribute to the economic growth of countries in the MENA region between 2002 and 2018?

The research is structured in several sections: Section 2 presents a review of the theoretical and empirical literature on macroeconomic stability and economic growth; Section 3 describes the data, variables, and econometric methodology used in the analysis; Section 4 analyzes the empirical results and their economic interpretation; Finally, the research concludes with policy recommendations and avenues for future research.

LITERATURE REVIEW

The role of macroeconomic stability in promoting economic growth has become a major concern for economists and policymakers, particularly in the Middle East and North Africa (MENA) region. A stable macroeconomic environment

is generally characterized by moderate inflation, sustainable fiscal balances, manageable public debt, and relatively stable exchange rates. These conditions contribute to reducing economic uncertainty, boosting investor confidence, and facilitating productive economic activity. Recent assessments by the International Monetary Fund (IMF) and the World Bank consistently emphasize that sound macroeconomic fundamentals remain essential for ensuring sustainable growth and the resilience of MENA economies.

Similarly, the [World Bank Group \(2024\)](#) indicated that rising public debt, economic uncertainty, and structural imbalances continue to pose significant challenges for many countries in the region. The report emphasized the need to strengthen economic governance and implement sound fiscal policies to improve growth prospects and stimulate private sector investment. It also identified debt sustainability as a key factor in long-term macroeconomic stability.

The [World Bank \(2025\)](#) further noted that lower inflation and a dynamic private sector can significantly contribute to improved economic performance in the MENA region. The report explained that stable macroeconomic conditions encourage investment decisions and create a favorable environment for business expansion and economic diversification.

Over the past decade, researchers have increasingly focused on identifying the specific mechanisms linking macroeconomic stability to growth. It is demonstrated that macroeconomic instability, particularly inflation volatility and fiscal imbalances, negatively impacts economic growth by adversely affecting investment and productivity.

In the context of the Middle East and North Africa, researchers have emphasized the importance of sound macroeconomic policies for maintaining economic resilience, particularly in the wake of the global financial crisis and the economic challenges related to the Arab Spring. High public debt, inflationary pressures, and exchange rate volatility have been identified as key factors holding back economic growth in many countries.

[Siddik \(2023\)](#) examined the relationship between macroeconomic stability and economic growth the period from 1991 to 2020, using fixed-effects estimates and the generalized moment method (GMM). His study demonstrated that macroeconomic stability has a positive impact on economic performance. While inflation hinders growth, exchange rate stability, foreign direct investment, and financial development contribute positively to economic expansion.

In the context of the Middle East and North Africa (MENA) region, [Zirari, Souar, Benziane, and Lefilef \(2023\)](#) explored the impact of political stability on economic growth in fifteen countries between 1983 and 2022. Their empirical findings revealed that stable political institutions encourage investment and reduce uncertainty, thereby promoting economic growth. The researchers concluded that political stability is a key pillar of sustainable economic development in the region.

[Abou Hamia \(2024\)](#) examined the interaction between central bank independence and macroeconomic performance in the MENA region. The study concludes that controlling inflation alone is insufficient to guarantee sustainable economic growth. The researcher emphasizes the need to combine macroeconomic stability with policies aimed at increasing productivity, stimulating investment, and improving the labor market.

[Mohamed, Elmoussaoui, Ouali, El-Abbadi, and Benboubker \(2025\)](#) analyzed the impact of inflation and exchange rate volatility on economic growth in Middle Eastern and North African countries between 2000 and 2023. Their findings indicate that inflationary pressures and exchange rate volatility negatively affect economic activity. Conversely, macroeconomic stability is associated with improved investment flows and stronger growth.

Using a cross-sectional dynamic GMM model, [Soltani \(2025\)](#) studied the relationship between financial development and economic growth in Middle Eastern and North African economies. The results indicate that financial sector development promotes economic growth, while inflation negatively impacts economic performance. The study concludes that macroeconomic stability is essential to maximize the benefits of growth resulting from financial development.

Similarly, [Saliha and Benyoub \(2025\)](#) studied the impact of macroeconomic variables and the COVID-19 pandemic shock on the economic growth of several Middle Eastern and North African countries between 1990 and 2022. Their findings showed that inflation and exchange rate instability negatively affect economic performance, while stable macroeconomic conditions enhance resilience and long-term growth prospects.

In general, empirical studies indicate that macroeconomic stability significantly impacts economic growth through multiple channels, including encouraging investment and financial development, boosting productivity, and reducing economic uncertainty. While the magnitude of these effects varies across countries, the available data largely confirm that maintaining stable macroeconomic conditions is essential for achieving sustainable economic growth in the Middle East and North Africa.

METHODOLOGY

Sample and Data

For my empirical analysis, I selected nine countries from the Middle East and North Africa region—Algeria, Djibouti, Egypt, Iran, Iraq, Jordan, Morocco, Tunisia, and the United Arab Emirates—primarily because of the availability, consistency, and comparability of the macroeconomic data available for the study. I deliberately prioritized countries with sufficient and comprehensive data for all variables included in my empirical model, which allowed me to construct a balanced dataset. The selected countries also represent valuable economic diversity within the MENA region, in terms of economic structures, levels of development, and macroeconomic conditions. I considered the 2002–2018 period appropriate because it provides a sufficiently long time horizon to examine variations in macroeconomic stability and their relationship to economic growth. Furthermore, limiting the sample to countries and years for which the data were consistent helped ensure the reliability and comparability of the empirical estimates.

Model Specifications

To study the impact of macroeconomic stability on economic growth, I developed a Plove data model, using real GDP growth as the dependent variable. Macroeconomic stability is measured by inflation, unemployment, public debt, and exchange rate conditions. Foreign direct investment was also included as a control variable, given its potential impact on economic growth. The empirical model was defined as follows:

$$\text{GDPG}_{it} = \beta_0 + \beta_1 \text{FDI}_{it} + \beta_2 \text{INF}_{it} + \beta_3 \text{UNEMP}_{it} + \beta_4 \text{INV}_{it} + \beta_5 \text{DEBT}_{it} + \beta_6 \text{POP}_{it} + \mu_i + \lambda_t + \varepsilon_{it} \quad (1)$$

Table 1 *Definition of Variables*

Symbol	Variable	Rôle
GDPG	Economic Growth	Dependent variable
INF	Inflation	Explanatory variable
UNEMP	Unemployment	Explanatory variable
DEBT	Public Debt	Explanatory variable
POP	Total Population(total no of inhabitant in each country)	Control variable
FDI	Foreign Direct Investment	Control variable
INV	Investment	Control variable
α_i	Country Fixed Effects	Fixed effect
λ_t	Time Fixed Effects	Time effect
ε_{it}	Error Term	Error term

ESTIMATION AND EMPIRICAL RESULTS

Descriptive Statistics

Table 2 *Descriptive Statistics*

Variable	Mean	Std. Dev.	Minimum	Maximum
GDP Growth	1.546	6.453	-38.418	49.480
FDI	2.836	3.443	-4.337	23.537
Inflation	7.018	8.512	-10.067	53.231
Unemployment	10.774	4.072	1.640	25.900
Investment	26.817	9.776	-0.098	50.781
Public Debt	15.521	4.129	6.733	25.564
Population	31,551,934	28,446,072	746,942	98,423,595

Source: Created by author

Table 2 reveals significant variations among the sampled countries, with average economic growth of 1.546% and extreme values ranging from -38.418% to 49.480%. This indicates notable fluctuations in economic performance between countries and over the years.

Although foreign direct investment (FDI) represents an average of 2.836% of GDP, its relatively high standard deviation suggests substantial differences in FDI performance.

Average inflation is 7.018%, with peaks exceeding 53%, illustrating periods of high price volatility. The average unemployment rate is 10.774%, highlighting the persistent challenges facing the labor market in many economies of the MENA region. Average domestic investment is 26.817%, while average public debt is 15.521%. Overall, the significant variation observed between countries justifies the use of panel data analysis techniques rather than simple cross-sectional regression.

Correlation Matrix

Table 3 *Correlation Matrix*

Variable	GDPG	FDI	INF	UNEMP	INV	DEBT	POP
GDPG	1.000	0.066	-0.063	0.134	-0.082	0.289	0.074
FDI	0.066	1.000	-0.117	0.057	-0.096	0.171	-0.319
INF	-0.063	-0.117	1.000	-0.052	0.104	-0.338	0.428
UNEMP	0.134	0.057	-0.052	1.000	0.080	0.359	0.110
INV	-0.082	-0.096	0.104	0.080	1.000	-0.009	0.178
DEBT	0.289	0.171	-0.338	0.359	-0.009	1.000	-0.446
POP	0.074	-0.319	0.428	0.110	0.178	-0.446	1.000

Source: Created by author

The correlation matrix shows that the simple correlation between foreign direct investment (FDI) and economic growth is positive but very weak (0.066). Inflation is negatively correlated with economic growth (-0.063), while the unemployment rate shows a slight positive correlation (0.134). Domestic investment is negatively correlated with GDP growth (-0.082), while public debt shows the strongest positive correlation with the latter (0.289).

The correlations between the explanatory variables are generally moderate. The strongest relationships are observed between public debt and population (-0.446) and between inflation and population (0.428). These values remain below the thresholds typically associated with strong multicollinearity. However, the correlation matrix is only a preliminary diagnostic tool, as it does not account for country-specific or time-period-specific effects.

Multicollinearity Test

Table 4 *Variance Inflation Factor (VIF)*

Variable	VIF
FDI	1.128
Inflation	1.272
Unemployment	1.296
Investment	1.045
Public Debt	1.623
Population	1.722

Source: Created by author

The results of the inflation coefficient of variation (VIF) indicate that multicollinearity is not a major problem in the empirical model. All values of the Variance Inflation Coefficient (VIF) are well below the generally accepted threshold of 10, and even below the more conservative threshold of 5. The highest value was recorded for the population variable (1.722), followed by the public debt variable (1.623).

Therefore, the explanatory variables can be included together without causing significant problems related to strong linear correlations between the independent variables. Consequently, the estimated coefficients can be interpreted with reasonable confidence from a multicollinearity perspective.

Fixed Effects Estimation

I estimate a two-factor constant effects model that controls for both country-specific characteristics and common annual shocks. Standard errors are aggregated at the country level.

Table 5 *Two-Way Fixed Effects Estimation*

Variable	Coefficient	Clustered Std. Error	<i>p</i> -value	Significance
FDI	0.221	0.229	0.334	—
Inflation	-0.004	0.056	0.937	—
Unemployment	0.286	0.378	0.450	—
Investment	-0.460	0.189	0.015	**
Public Debt	1.885	0.997	0.059	*
Population	0.000000163	0.000000247	0.510	—
Country effects	Yes			
Year effects	Yes			
Observations	141			
R ²	0.438			

Notes: ** $p < 0.05$; * $p < 0.10$. Standard errors are clustered by country.

Source: Created by author

The results of the fixed-effects model allow us to draw several important conclusions.

First, foreign direct investment (FDI) has a positive coefficient of 0.221, indicating that an increase in FDI is associated with stronger economic growth. However, this coefficient is not statistically significant ($p < 0.334$). Therefore, the results do not provide sufficient evidence of a statistically significant direct effect of FDI on economic growth after adjusting for country and year effects. This result supports the argument that the benefits of foreign direct investment (FDI) are highly dependent on the host country's economic environment. More recent data also suggest that the positive impact of FDI can depend on the quality of institutions, human capital, and macroeconomic stability. For example, [Ochi, Haouas, and Saidi \(2024\)](#) found that FDI becomes a driver of growth when countries meet minimum requirements for institutional and human capital.

Second, inflation has a very small negative coefficient (-0.004), which is not statistically significant. While this negative signal is economically consistent with the idea that price instability can reduce purchasing power, investment incentives, and economic efficiency, it is not statistically significant.

Third, the unemployment rate has a positive coefficient, but it is not statistically significant (0.286). Therefore, the estimation does not reveal a statistically significant relationship between unemployment and economic growth in the Middle East and North Africa.

Fourth, domestic investment has a statistically significant negative coefficient (-0.460 ; $p < 0.015$). This means that, all else being equal, a one percentage point increase in investment is associated with a decrease in GDP growth of approximately 0.46 percentage points in the estimated model. Therefore, the negative coefficient may indicate that the "investment" variable reflects significant variability in investments across countries, including investments that do not directly translate into productivity gains. It may also reflect the short-term nature of this relationship and the strong influence of country and year.

Fifth, the public debt coefficient is 1.885, which is positive and statistically significant at the 10% level ($p = 0.059$). This result suggests that, in the sample and model studied, moderate increases in public debt are associated with stronger economic growth. One possible explanation is that borrowing can finance productive public spending and investment. However, this result should be interpreted with caution, as recent research in the Middle East and North Africa shows that the relationship between debt and growth is largely nonlinear. [Alshammmary, Karim, Khalid, and Ahmad \(2020\)](#) found that public debt has a positive effect on growth below a threshold of approximately 58% of GDP,

beyond which the relationship reverses. Similarly, [Alsamara, Mrabet, and Mimouni \(2024\)](#) found non-linear effects of debt on growth in MENA countries, with different thresholds for oil-producing and non-oil-producing economies. Therefore, the positive coefficient in the current linear constant effects model may reflect the stimulating effect of debt on growth at relatively moderate debt levels, rather than indicating that unlimited debt is beneficial.

Finally, population size has a positive coefficient, but it is not statistically significant. Thus, population size does not appear to have a direct and statistically significant effect on economic growth when other macroeconomic variables and country-specific effects are taken into account.

Overall, the constant effects model explains approximately 43.8% of the variance in economic growth within the sample. The results indicate that the most significant negative effect is that of domestic investment, while public debt has a marginally significant positive effect. Foreign direct investment, inflation, unemployment, and population size are not statistically significant.

Random Effects Estimation

For comparison, I also estimated specifications with random effects.

Table 6 *Random Effects Estimation*

Variable	Coefficient	Interpretation
FDI	0.164	Positive
Inflation	-0.033	Negative
Unemployment	-0.087	Negative
Investment	-0.080	Negative
Public Debt	0.672	Positive
Population	0.000000078	Positive

Source: Created by author

Estimates derived from the stochastic effects model generally confirm that foreign direct investment remains positive, while inflation remains negative. Investment remains negative, and public debt remains positive.

The differences between fixed-effects and random-effects models highlight the importance of unobserved and country-specific characteristics in explaining economic growth. This is particularly relevant for countries in the Middle East and North Africa, given the significant differences in their institutional structures, available resources, levels of development, and macroeconomic conditions.

Previous studies also confirm this variability. For example, ([Ben Yedder & Ellouze, 2024](#)) found that FDI has a stronger impact on growth in MENA economies characterized by macroeconomic stability and a favorable investment environment.

Hausman Test

Table 7 *Hausman Specification Test*

Test	Chi-square statistic	df	p-value	Decision
Hausman Test	17.280	6	0.008	Reject Random Effects

Source: Created by author

The Hausman test yielded a χ^2 value of 17.280 and a p -value of 0.008. Since the p -value is below the 5% significance level, I reject the null hypothesis of convergence for the random effects estimator and conclude that the fixed effects model is the most appropriate.

This result indicates a correlation between unobserved country-specific characteristics and the explanatory variables. Therefore, treating these specific effects as random could produce non-convergent estimates. Consequently, the fixed effects estimator is retained as the preferred model.

Furthermore, the fixed effects model is economically important for the MENA region sample, given the significant differences between countries regarding structural characteristics that are difficult to observe directly, such as institutional arrangements, economic structure, dependence on natural resources, and historical development patterns.

Summary of the Main Findings

Table 8 *Summary of the Preferred Fixed Effects Results*

Variable	Expected Relationship	Estimated Sign	Statistical Result
FDI	Positive	Positive	Not significant
Inflation	Negative	Negative	Not significant
Unemployment	Negative	Positive	Not significant
Investment	Positive	Negative	Significant at 5%
Public Debt	Ambiguous	Positive	Significant at 10%
Population	Ambiguous/Positive	Positive	Not significant

Source: Created by author

Empirical data indicate that the relationship between macroeconomic conditions and economic growth in selected Middle Eastern and North African countries is highly variable. The results did not reveal a statistically significant direct effect of foreign direct investment (FDI) or inflation on growth during the period studied. This finding is consistent with recent research suggesting that the impact of FDI on growth depends on macroeconomic stability, institutions, human capital, and financial development, rather than FDI alone.

The most surprising finding, however, is the statistically significant negative coefficient for investment, which warrants particular attention. It suggests that increased investment does not automatically translate into stronger short-term economic growth in the sample studied. This could reflect differences in the efficiency and composition of investments between Middle Eastern and North African economies.

LIMITATIONS AND FUTURE DIRECTIONS OF THE STUDY

Several limitations must be considered when interpreting the results of this research. The empirical study is based on a selection of Middle Eastern and North African economies and covers the period 2002–2018, which may limit the generalizability of the findings due to the limited data coverage. Furthermore, the analysis focuses on a set of macroeconomic indicators and does not consider other potentially relevant dimensions, such as institutional conditions, governance, financial development, and human capital.

Future research could broaden the analytical framework by integrating these dimensions with the macroeconomic determinants examined in this study. It would also be beneficial to apply dynamic and nonlinear panel data techniques to examine how the estimated relationships change over time and to determine whether their effects differ across countries and according to public debt levels.

CONCLUSION

This article examines the relationship between macroeconomic factors and economic growth in a group of Middle Eastern and North African economies over the period 2002–2018. The analysis focuses on foreign direct investment (FDI), inflation, unemployment, domestic investment, public debt, and population, using a panel data model. Empirical results were obtained using a two-way fixed-effects model, and the Hausman test was used to determine the most appropriate estimator. The test results showed a preference for the fixed-effects approach, highlighting the need to consider country-specific characteristics when studying growth variations among the selected economies.

The empirical data reveal considerable variability in the relationship between the explanatory variables and economic growth. Both FDI and population have positive coefficients, but the estimated relationships do not provide sufficient statistical evidence of their impact on growth. Inflation is associated with a negative coefficient, although this relationship is not statistically significant. Unemployment has a positive coefficient without statistical justification, indicating that its impact cannot be demonstrated within the estimated model.

Domestic investment appears as a key variable, showing a statistically significant relationship with economic growth. Its negative coefficient indicates that, in the sample studied and after adjusting for country and year effects, a higher level of investment is associated with lower short-term GDP growth. This result does not necessarily imply that investment is detrimental to growth, but may instead reflect differences in the efficiency, composition, or distribution of investments among the countries studied. Public debt has a positive coefficient and is statistically significant at the 10% level, suggesting that debt-financed spending can contribute to economic activity when borrowing is directed toward productive uses.

Overall, the results indicate that macroeconomic factors do not affect economic growth in the same way across the selected Middle Eastern and North African economies. These findings highlight the importance of improving the efficiency of domestic investment and maintaining prudent public debt management. At the same time, the lack of statistical correlation for several variables suggests that growth performance is influenced by a broader range of economic and structural conditions.

REFERENCES

- Abou Hamia, M. A. (2024). Why developing countries need a new central bank paradigm: Evidence from the middle east and north africa region. *Economic Systems*, 48(4), 101230. doi:[10.1016/j.ecosys.2024.101230](https://doi.org/10.1016/j.ecosys.2024.101230)
- Alsamara, M., Mrabet, Z., & Mimouni, K. (2024). The threshold effects of public debt on economic growth in mena countries: Do energy endowments matter? *International Review of Economics & Finance*, 89, 458–470. doi:[10.1016/j.iref.2023.10.015](https://doi.org/10.1016/j.iref.2023.10.015)
- Alshammary, M. D., Karim, Z. A., Khalid, N., & Ahmad, R. (2020). Debt-growth nexus in the mena region: Evidence from a panel threshold analysis. *Economies*, 8(4), 102. doi:[10.3390/economies8040102](https://doi.org/10.3390/economies8040102)
- Ben Yedder, N., & Ellouze, A. (2024). Exploring the dynamic links between fdi and economic growth in mena countries. *International Journal of Research and Innovation in Social Science*, 8(2), 642–650. doi:[10.47772/IJRISS.2024.802043](https://doi.org/10.47772/IJRISS.2024.802043)
- Campos, N. F., & Kinoshita, Y. (2002). Foreign direct investment as technology transferred: Some panel evidence from the transition economies. *The Manchester School*, 70(3), 398–419.
- International Monetary Fund. (2021). *Regional economic outlook: Middle east and central asia*. Washington, DC: International Monetary Fund.
- International Monetary Fund. (2023). *Regional economic outlook: Middle east and central asia*. Washington, DC: International Monetary Fund.
- International Monetary Fund. (2024). *Regional economic outlook: Middle east and central asia*. Washington, DC: International Monetary Fund.
- Mohamed, E.-S., Elmoussaoui, K., Ouali, I., El-Abbadi, M., & Benboubker, M. (2025). The impact of exchange rate and inflation on economic growth: Empirical evidence from the mena region using panel data analysis. *Journal of Ecohumanism*, 3(8), 12405–12416. doi:[10.62754/joe.v3i8.5848](https://doi.org/10.62754/joe.v3i8.5848)
- Ochi, A., Haouas, I., & Saidi, K. (2024). Institutional quality, human capital, and the growth effects of foreign direct investment in mena countries.
- Saliha, M., & Benyoub, A. (2025). The macroeconomic and covid-19 effects on economic growth: Empirical evidence from some mena countries. *Journal of Economics and Human Development*, 16(2), 241–255. doi:[10.35658/1445-016-002-017](https://doi.org/10.35658/1445-016-002-017)
- Siddik, M. N. A. (2023). Does macroeconomic stability promote economic growth? some econometric evidence from saarc countries. *Asian Journal of Economics and Banking*, 7(3), 358–379. doi:[10.1108/AJEB-05-2022-0052](https://doi.org/10.1108/AJEB-05-2022-0052)
- Soltani, H. (2025). Exploring the finance–growth nexus in mena: A dynamic panel approach with institutional and macroeconomic variables. *Milaf Journal for Research and Studies*, 11(1), 300–308.
- World Bank. (2025). *World development report 2025: Standards for development*. Washington, DC: World Bank. Retrieved from <https://www.worldbank.org/en/publication/wdr2025> doi:[10.1596/978-1-4648-2134-2](https://doi.org/10.1596/978-1-4648-2134-2)
- World Bank Group. (2024). *World bank group annual report 2024: A better bank for a better world*. Washington, DC: World Bank. Retrieved from <https://www.worldbank.org/en/about/annual-report-2024> doi:[10.18356/9789210031868](https://doi.org/10.18356/9789210031868)

Zirari, B., Souar, Y., Benziane, R., & Lefilef, A. (2023). Panel data on the impact of democracy and political stability on economic growth in the mena region over the years 1983–2022. *Data in Brief*, 49, 109389. doi:[10.1016/j.dib.2023.10938](https://doi.org/10.1016/j.dib.2023.10938)