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2023

Online at <https://mpra.ub.uni-muenchen.de/118349/>
MPRA Paper No. 118349, posted 25 Aug 2023 07:36 UTC

The nexus between domestic investment and economic growth in MENA countries; Does unemployment matter?

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Abstract

In this paper, we try to search the effect of unemployment on the relationship between domestic investment and economic growth. Data for MENA countries over the period 1998 – 2022 are applied for panel data analysis. Empirical analysis validates that domestic investment impact positively on economic growth. However, unemployment has a negative incidence on economic growth. Also, the outcome of domestic investment on economic growth attests to be influenced negatively by unemployment.

Keywords: Domestic Investment, Economic Growth, unemployment, MENA Countries, Panel Data Analysis

JEL Classification: O31; O32; O38; O47; O50

1. Introduction

The link between domestic investment and economic growth in the countries of the MENA region (Middle East and North Africa) is a subject of great economic and political importance. Domestic investment, whether public or private, plays a crucial role in stimulating economic growth. When businesses and governments invest in new infrastructure, technology and productive capacity, it leads to increased production and productivity, which can boost the economy as a whole. However, the impact of investment on economic growth can be moderated, or even offset, by the level of unemployment in MENA countries. Unemployment is a major obstacle to realizing the full potential of domestic investment. When unemployment is high, a significant portion of the available labor remains unused, leading to underutilization

of human resources and overall output below what could be achieved. This limits the positive effect of investment on economic growth, as an inactive labor force cannot fully contribute to economic output. In some MENA countries, domestic investment has been boosted by major infrastructure and economic development projects. Economies rich in natural resources, such as Saudi Arabia and the United Arab Emirates, have invested heavily in projects for industrial expansion, infrastructure construction and economic diversification. These initiatives aim to reduce long-term dependence on oil revenues and create opportunities for employment and growth in other sectors. However, the situation is more complex in other MENA countries. Some countries have faced political turmoil and conflict that have discouraged investment. Political uncertainty and violence have often deterred domestic investors from taking risks in local markets. As a result, these economies have often seen an outflow of capital and a decrease in investment, which has negatively affected economic growth and job creation {See: [Abdouli and Hammami \(2017\)](#), [Mehrra and Musai \(2013\)](#), [Rachdi and Saidi \(2015\)](#), [Bakari \(2020\)](#), [Bakari and Tiba \(2021\)](#), [Bakari and El Weriemmi \(2022\)](#), [Bakari \(2017a\)](#), [Bakari et al \(2018\)](#), [Bakari \(2017b\)](#), [Di Liddo et al \(2019\)](#), [Saidi et al \(2018\)](#), [Loayza and Odawara \(2010\)](#), [Dobronogov and Iqbal \(2007\)](#), [Ghalwash \(2014\)](#), [Arieff \(2013\)](#)}.

Furthermore, complex regulatory and bureaucratic environments in some MENA countries can also hamper domestic investment. Reforms aimed at simplifying administrative procedures, enhancing the legal certainty of investments and improving transparency are necessary to attract domestic and foreign investors. Disparities between economic sectors can also influence the dynamics of domestic investments. In some countries, investments focus more on natural resource-related sectors, such as oil and gas, at the expense of other more diversified and labor-intensive sectors. A more balanced investment strategy and active promotion of non-resource industries could help create a more resilient and diversified economic base {See: [Achy \(2005\)](#), [Aysan et al \(2005\)](#), [Bergougui and Murshed \(2022\)](#), [Awdeh and El-Moussawi, C. \(2022\)](#), [Belkhir \(2016\)](#), [Bakari and Benzid \(2021\)](#), [Guetat \(2006\)](#), [Helmy \(2013\)](#), [Sbaouelgi, J. \(2019\)](#), [Bardi and Hfaiedh \(2021\)](#)}.

Unemployment can also lead to lower domestic demand, as unemployed individuals generally have reduced purchasing power. This can reduce companies' motivation to invest more, as they fear that their products will not find enough buyers in the domestic market. Additionally, unemployment can lead to social and political pressures, which can create uncertainty for businesses and investors, hampering their willingness to commit to long-term investments. The MENA region (Middle East and North Africa) presents a varied situation with regard to

unemployment. Unemployment rates vary considerably from country to country, reflecting economic, social and political differences. Some countries, such as the United Arab Emirates and Qatar, have experienced sustained economic growth thanks to their vast reserves of oil and gas, which has led to the creation of jobs in sectors such as construction, financial services and tourism. However, these hydrocarbon-dependent economies are vulnerable to fluctuations in oil prices, which can impact their ability to maintain high employment rates over the long term. Other countries in the MENA region, particularly those affected by conflict and political unrest, face major employment challenges. Syria, Iraq, Libya and Yemen have been affected by wars and internal tensions, resulting in the destruction of economic infrastructure, the disruption of labor markets and massive population movements. In these contexts, unemployment rates are often high due to reduced economic activity and uncertainty about investment and job opportunities. The level of education and skills available in the MENA region also play a key role in the unemployment situation. Although some countries have made progress in education, there are still significant disparities in the quality and relevance of education. Young graduates may find it difficult to find jobs that match their qualifications, which contributes to the phenomenon of youth unemployment. Moreover, the region's rapid population growth means that the labor market must absorb an increasing number of young people each year, which increases the pressure on job creation. Government policies and structural reforms play a crucial role in solving the unemployment problem. Some governments have put in place initiatives to stimulate the private sector, encourage entrepreneurship and improve the match between workers' skills and labor market needs. However, reforms can be hampered by political challenges, complex bureaucracies and resistance to change. In summary, the unemployment situation in MENA countries is complex and varied due to economic disparities, conflicts, education levels and public policies. To meet these challenges, it is essential to put in place targeted policies aimed at promoting sustainable economic growth, improving education and skills, as well as fostering political stability and regional cooperation {See: [Kreishan \(2011\)](#), [Moosa \(2008\)](#), [Ramzi et al \(2015\)](#), [Haririan et al \(2010\)](#), [Bilgin and Kilicarslan \(2008\)](#), [O'Sullivan et al \(2011\)](#), [Farzanegan and Gholipour \(2021\)](#), [Fakih et al \(2020\)](#)}.

By examining the role of unemployment in the context of the relationship between domestic investment and economic growth in MENA countries, it becomes clear that unemployment exerts a significant influence on economic dynamics. Policies aimed at reducing unemployment and fostering job creation are key to unlocking the growth potential offered by domestic investment. Effective management of unemployment can reinforce the positive effects of

investment, thereby promoting sustained and sustainable economic growth in the MENA region. Our work thus raises the question of whether unemployment can influence the relationship between domestic investment and economic growth in the MENA region. In other words, to what extent can the specific dynamics of unemployment in these countries modulate the impact of domestic investment on economic growth, and vice versa? The answer to this question could provide valuable information to policy makers and economists seeking to promote balanced and sustainable development in the MENA region. In this study, we investigate the potential relationship between domestic investment and unemployment in relation to their contribution to economic growth. The focus of this research is to examine whether the effect of domestic investment on economic growth is affected by the level of unemployment. Likewise, we also explore whether the influence of unemployment on economic growth is affected by the amount of domestic investment. Our approach involves conducting a cross-country panel data analysis using the World Development Indicator (WDI) dataset. The second section of the paper outlines the growth equation and empirical methods employed, while the third section presents the empirical findings. Our work is summarized and concluded in Section 5.

2. Empirical methodology

As we mentioned that the objective of this work is to examine the role of unemployment in the impact of domestic investments on economic growth in the case of MENA countries. In another way, we will examine the impact of the interaction between domestic investments and unemployment on economic growth in the case of MENA countries. In fact, our database covers 18 countries and a period from 1998 to 2022. Table 1 presents the variables and their abbreviations that will be used in our estimation. We set up a GDP-growth equation as in [Romer \(1990\)](#), [Barro \(2003\)](#), [Bakari \(2021\)](#), [Bakari \(2022\)](#), [Ben Yedder et al \(2023\)](#), [Wang et al \(2023\)](#), [Wen et al \(2022\)](#), [Siddique et a. \(2022\)](#), [Emikönel \(2022\)](#), [Fang et al \(2022\)](#), [Bataka and Ossadzifo \(2023\)](#), [Rashed et al \(2022\)](#), [Dauti and Voka \(2022\)](#), [Soylu et al \(2023\)](#), [Tripathy et al \(2022\)](#), [Abate \(2022\)](#), [Shahzad et al \(2022\)](#), [Ashraf et al \(2022\)](#), [Mehmood \(2022\)](#) :

$$DY_{it} = \beta_0 + \beta_1 FD_{it} + \beta_2 X_{it} + \beta_3 FDI_{it} + \beta_4 GGF_{it} + \beta_5 M_{it} + \beta_6 DIN_{it} + \beta_7 DP_{it} + \beta_8 DRP_{it} + \beta_9 DDI_{t-1} + \beta_{10} DU_{t-1} + \beta_{11} DDI_{t-1} * DU_{t-1} + w_i + u_t + v_{it} \quad (1)$$

Where:

- w_i is a country effect,
- u_t is a year effect,
- v_{it} is independent and identifiably distributed error.
- $DDI_{t-1} * DU_{t-1}$ is the interaction between domestic investment and unemployment.

Table 1: The description of variables

No	Abbreviation	Variables	Descriptions	Sources
1	FD	Financial development	Broad money (% of GDP)	World Bank Indicators
2	X	Exports	Exports of goods and services (% of GDP)	World Bank Indicators
3	FDI	Foreign direct investment	Foreign direct investment, net inflows (% of GDP)	World Bank Indicators
4	DY	Economic growth	GDP growth (annual %)	World Bank Indicators
5	GGF	General government final consumption expenditure	General government final consumption expenditure (% of GDP)	World Bank Indicators
6	DDI	Domestic investment	Gross fixed capital formation (annual % growth)	World Bank Indicators
7	M	Imports	Imports of goods and services (% of GDP)	World Bank Indicators
8	DIN	Inflation	Inflation, consumer prices (annual %)	World Bank Indicators
9	DP	Population	Population growth (annual %)	World Bank Indicators
10	DRP	Rural population	Rural population growth (annual %)	World Bank Indicators
11	DU	Unemployment	Unemployment, total (annual % growth)	World Bank Indicators

Source: Built by authors

We aim to assess the growth equation (Equation (1)) using pooled ordinary least squares (OLS), as well as employing individual fixed effects and individual random effects. The primary objective of conducting the Hausman test is to determine the most suitable model for our analysis, be it the fixed effects or the random effects model. If the Hausman test yields a probability of at least 5%, then the significance lies with the fixed effects model, which will be chosen. Conversely, if the Hausman test probability exceeds 5%, then the significance leans towards the random effects model, which will be selected. In our specific scenario, the probability yielded by the Hausman test is less than 5%, precisely 0.00%. This outcome signifies that the fixed effects model is indeed significant and should be retained. Prior to introducing the empirical analyses and performance assessments, it is generally deemed crucial to conduct certain preliminary data tests. Therefore, the descriptive statistics table serves as one of these initial examinations of the data's implementation, offering preliminary insights into the suitability of the compressed variables.

Table 2 presents the descriptive statistics for all variables included in our empirical evaluation. As per Table 2, all variables exhibit a refusal probability of slightly under 5%, indicating their suitability for estimation in the panel data context. Furthermore, the standard deviation of the variables captures the fluctuations and volatility in the statistics over the investigation period. All provided variables demonstrate positive skewness. The aggregate skewness and Kurtosis coefficients suggest that the variables adhere to a normal distribution. The maximum and minimum values for all variables reveal the existence of multiple developments and variations among them.

Descriptive statistics play an economically crucial role by providing quantitative and concise understanding of data. They allow economic decision makers, researchers and businesses to grasp trends, patterns and key characteristics of data, which facilitates informed decision-making. By analyzing metrics such as mean, median, standard deviation, and distributions, descriptive statistics offer essential information for evaluating economic performance, identifying growth opportunities, detecting potential problems, and monitoring market fluctuations. In addition, they help quantify the variations and risks associated with investments, assess the effectiveness of economic policies and inform short- and long-term forecasts. Descriptive statistics provide a solid foundation for rigorous economic analysis, thus promoting more informed decision-making that is strategically adapted to the dynamics of the business world.

Table 2: Descriptives statistics

	DY	FD	X	FDI	GGF	M	DIN	DP	DRP	DDI	DU
Mean	3.525529	71.86370	37.36808	2.205203	15.59765	35.35996	5.699067	1.827692	0.729499	129.7950	0.013464
Median	3.550165	69.71546	32.56393	1.573137	15.63229	31.56872	3.664903	1.631217	0.235813	5.844534	-0.003817
Maximum	11.24206	115.2066	102.1455	9.424734	29.32164	83.73913	36.60304	6.493686	6.127950	15135.41	2.539823
Minimum	-4.957052	41.53088	10.34546	-2.687994	7.285561	16.28610	-2.079403	-0.129281	-1.223097	-29.44377	-0.717500
Std. Dev.	2.591758	17.37904	18.96891	2.106569	4.306610	13.88825	6.447335	0.994613	1.347419	1375.556	0.285539
Skewness	-0.446531	0.462936	1.597565	1.467077	0.654997	1.191541	2.305546	2.464700	1.361743	10.86215	5.760188
Kurtosis	4.127845	2.535348	5.948806	5.425540	3.379668	4.054447	9.247889	11.34595	5.740806	118.9938	52.95967
Jarque-Bera	10.43420	5.410421	95.30924	73.06637	9.378673	34.23764	304.0039	473.6838	75.26903	70212.78	13252.97
Probability	0.005423	0.066856	0.000000	0.000000	0.009193	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	426.5890	8695.507	4521.537	266.8296	1887.315	4278.555	689.5871	221.1508	88.26936	15705.19	1.629124
Sum Sq. Dev.	806.0652	36243.72	43178.36	532.5160	2225.627	23146.00	4988.176	118.7105	217.8647	2.27E+08	9.783907
Observations	121	121	121	121	121	121	121	121	121	121	121

Sources: Authors' calculations using EViews 12 software

3. Empirical results

Table 3 shows the results of the estimation of the static gravity model which presents the fixed effect method and the random effect method. The estimation of the random-effect static gravity model shows us that domestic investments have positive effects on economic growth (a 1% increase in domestic investments leads to a 0.035375% increase in economic growth). On the other hand, we note that the unemployment rate has a negative effect on economic growth (a 1% increase in the unemployment rate leads to a decrease of 1.507476% in economic growth). Finally, the estimation of the fixed-effect static gravity model shows us that the interaction between domestic investment and the unemployment rate has a negative effect on economic growth (an increase in the interaction between domestic investment and the unemployment rate). unemployment of 1% leads to a decrease of 0.175368% in economic growth.

Table 3: Static Gravity Model Estimation

Dependent Variable: DY				
	Fixed effect		Random effect	
Variable	Coefficient	Prob.	Coefficient	Prob.
C	7.777957	0.0011	7.698106	0.0001
FD	-0.008380	0.6091	-0.013160	0.3755
X	-0.042965	0.1155	-0.043202	0.0838
FDI	0.184086	0.1877	0.207373	0.0828
GGF	-0.110576	0.1266	-0.097721	0.1110
M	-0.010597	0.7624	-0.015680	0.6139
DIN	-0.119991	0.0220	-0.114677	0.0070
DP	0.001183	0.9985	0.151685	0.7797
DRP	0.101620	0.8073	0.012555	0.9738
DDI	0.035375	0.0199	0.047782	0.0004
DU	-1.507476	0.0912	-2.084004	0.0104
DDI*DU	-0.175368	0.0189	-0.236524	0.0003

Sources: Authors' calculations using EViews 12 software

In addition, Table 3 shows the results of the estimation of the random-effect static gravity model. First, we notice that domestic investments have positive effects on economic growth (a 1% increase in domestic investments leads to a 0.047782% increase in economic growth). Second, we note that the unemployment rate has a negative effect on economic growth (a 1% increase in the unemployment rate leads to a 2.084004% decrease in economic growth). Finally, the estimation of the random-effect static gravity model shows us that the interaction between domestic investment and the unemployment rate has a negative effect on economic growth (an increase in the interaction between domestic investment and the unemployment rate). unemployment of 1% leads to a decrease of 0.236524% in economic growth.

Table 4: Results of Hausman Test

Correlated Random Effects - Hausman Test			
<i>Test Summary</i>	<i>Chi-Sq. Statistic</i>	<i>Chi-Sq. d.f.</i>	<i>Prob.</i>
<i>Period random</i>	8.455291	11	0.6720

Sources: Authors' calculations using EViews 12 software

Table 4 shows the results of the Hausman test. It is clear to us that the probability of the Hausman test is greater than 5% (equal to 67.2%). In this case, the random-effect gravity model will be retained. For this, we confirm that domestic investments have a positive impact on economic growth and that unemployment has a negative effect on economic growth. Moreover, it is confirmed that unemployment negatively affects the impact of domestic investments on economic growth.

In MENA countries, unemployment exerts a negative economic impact on economic growth through several mechanisms. First, unemployment reduces the overall production of goods and services. When individuals are unemployed, they do not contribute to the creation of wealth through their participation in economic production. Consequently, the productive capacity of the economy is underutilized, thus limiting the potential for economic growth. In addition, unemployment can generate social and fiscal costs. Unemployed people are often dependent on social safety nets and public assistance programs, putting a strain on public finances. Governments must allocate resources to support these programs, which can reduce investment in other key areas such as infrastructure and education. This increased government spending

can also lead to higher taxes or budget deficits, which can disrupt economic stability and damage investor confidence.

On the other hand, domestic investments have a positive effect on economic growth in the MENA region by stimulating production and wealth creation. When companies make investments in new facilities, equipment and technologies, they increase their production capacity. This can lead to an increase in the production of goods and services, which, in turn, stimulates economic growth. Investments also create job opportunities as new businesses are established or existing businesses expand their operations. Moreover, domestic investments can encourage innovation and competitiveness. The adoption of new technologies and more efficient production methods can improve business productivity, which can promote sustained economic growth. Investments can also strengthen local supply chains and encourage economic diversification, thereby reducing reliance on certain sectors that are vulnerable to fluctuations in global markets.

In short, unemployment hinders economic growth in MENA countries by limiting production and generating significant social and fiscal costs. On the other hand, domestic investments have a positive effect on economic growth by stimulating production, fostering innovation and creating employment opportunities. To foster sustainable economic growth in the region, it is crucial to reduce unemployment through active policies aimed at stimulating investment, improving the skills of the labor force and creating a business-friendly environment.

4. Conclusions

In this study, our focus is on examining how unemployment affects the connection between domestic investment and economic growth. We utilize data from MENA countries spanning the years 1998 to 2022 and employ panel data analysis methods. The empirical investigation confirms that domestic investment contributes positively to economic growth. Nevertheless, unemployment exerts a detrimental influence on economic growth. Furthermore, the impact of domestic investment on economic growth is found to be adversely affected by the presence of unemployment. Unemployment has a significant economic impact on the link between domestic investment and economic growth in MENA countries. Unemployment creates a series of economic imbalances that hamper the growth potential derived from domestic investment. First, unemployment reduces domestic demand. When many individuals are unemployed, their purchasing power decreases, which results in a drop in demand for goods and services. This

can discourage companies from investing in production and expansion, as they fear their products will not find buyers in the market. Less investment is then made in production capacity, which slows down economic growth. Moreover, unemployment can lead to an underutilization of human resources. Unemployed workers represent untapped human capital, which means that the productive potential of the economy is not fully realized. This inefficiency can inhibit investment by making it less attractive to increase production capacity when existing resources are not being used optimally. In addition, unemployment can lead to social and political tensions. High unemployment rates can create feelings of frustration and disenchantment among people, which can translate into protests, political instability and social unrest. This instability harms the business environment, deterring investors from committing to long-term projects, which slows down economic growth. In addition, unemployment can hamper efforts to reduce poverty and inequality. Unemployed people are more likely to live in precarious conditions and depend on social safety nets, which can undermine policies aimed at improving income distribution and eradicating poverty. Such a situation weakens aggregate demand and can deter businesses from investing more, thereby undermining sustainable economic growth. In the context of MENA countries, where unemployment problems are often exacerbated by factors such as growing demographics and structural imbalances in the labor market, the negative impact of unemployment on the link between domestic investment and economic growth is particularly pronounced. To overcome this obstacle, it is crucial to implement targeted policies and strategies aimed at stimulating job creation, improving the skills of the labor force and creating an environment conducive to investment and sustainable economic growth.

In the context of countries in the MENA region (Middle East and North Africa), where unemployment can have a negative impact on the link between domestic investment and economic growth, we will propose ten recommendations and strategies to mitigate this effect.

- ✓ **Promote Education and Training:** Investing in education and vocational training will help develop a competent and qualified workforce, which can improve the productivity of investments and create high value-added employment opportunities.
- ✓ **Supporting Entrepreneurship and Innovation:** Encouraging the creation of innovative businesses can stimulate economic growth by generating new sources of income and creating jobs. Governments can provide tax incentives, subsidies and a favorable regulatory environment to promote entrepreneurship.

- ✓ **Investing in Infrastructure:** Improving physical infrastructure (such as transport, energy and telecommunications) can stimulate private investment by creating an enabling business environment and reducing operational costs.
- ✓ **Fostering the Small and Medium Enterprises (SME) Sector:** SMEs have the potential to create many jobs. Policies aimed at facilitating access to finance, simplifying administrative procedures and providing technical support can encourage their development.
- ✓ **Economic Diversification:** Encouraging diversification of the economy beyond traditional sectors can reduce dependence on certain sectors sensitive to global economic fluctuations, which can help mitigate the impact of unemployment.
- ✓ **Promoting Foreign Direct Investment (FDI):** Attracting foreign investment can stimulate economic growth and create jobs. Governments can put in place incentive policies, ensure a favorable business climate and offer guarantees of investment protection.
- ✓ **Improving the Business Environment:** Reducing bureaucracy, strengthening the rule of law, and fighting corruption can create a more transparent and attractive business environment for investors, which can promote economic growth and job creation. .
- ✓ **Temporary Work and Training Programs:** Establishing temporary work and training programs can help reduce unemployment by providing job opportunities and improving worker skills.
- ✓ **Strengthening the Labor Market:** Adapting labor market policies to encourage flexibility, job mobility and transition to new jobs can help minimize the negative effects of unemployment.
- ✓ **Promotion of the Tourism Sector:** In many MENA countries, the tourism sector has significant potential to create jobs. Investing in tourism infrastructure and promoting cultural and natural attractions can stimulate economic growth.

By implementing these recommendations and strategies in a consistent and country-specific manner, it is possible to mitigate the negative impact of unemployment on the link between domestic investment and economic growth in the MENA region.

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