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Reviewing the Trade Openness, Domestic Investment, and Economic Growth Nexus: Contemporary Policy Implications for the MENA Region

Abstract

This study researches the impact of trade openness on the economic performances of selected Middle East and North Africa (MENA) countries, while incorporating elements of domestic investments into the empirical analysis in the wake of the recent trends of trade liberalization among nations. The study is based on an empirical analysis of panel data observations from the selected countries within the framework of the Fully Modified Ordinary Least Square (FMOLS) and the Dynamic Ordinary Least Square (DOLS) regression techniques. The empirical results affirm the existence of a long-run relationship among the variables. However, while domestic investment and the size of the labor force significantly impact economic growth in a positive direction among these countries, trade openness was found to be negatively impacting economic growth for the period of the study. It is therefore recommended that cogent effort should be directed towards investments that are crucial for the improvement of labor productivity and the production value chains in the domestic economies to dissuade or minimize the rate of export of raw primary commodities. Also, adequate steps should be taken to improve the overall business environment, remove trade impediments, and strengthen institutions among the countries in the region to harness the benefits of trade in our increasingly globalized world.

Keywords: trade openness, domestic investment, labor, FMOLS & DOLS; MENA countries.

JEL Classification: C23, F10, F43, O53, O55

Revisión del nexo entre apertura comercial, inversión interna y crecimiento económico: implicaciones políticas contemporáneas para la región MENA

Resumen

Este estudio investiga el impacto de la apertura comercial en el desempeño económico de países seleccionados de Oriente Medio y África del Norte (MENA, por sus siglas en inglés), al tiempo que incorpora elementos de la inversión nacional en el análisis empírico a raíz de las recientes tendencias hacia la liberalización del comercio entre las naciones. El estudio se basa en un análisis empírico de datos de panel de los países seleccionados mediante las técnicas de regresión del Mínimo Cuadrado Completamente Modificado (FMOLS, por sus siglas en inglés) y el Mínimo Cuadrado Dinámico Ordinario (DOLS, por sus siglas en inglés). Los resultados empíricos afirman la existencia de una relación de largo plazo entre las variables. Sin embargo, si bien la inversión nacional y el tamaño de la fuerza laboral tienen un impacto positivo significativo en el crecimiento económico de estos países, se encontró que la apertura comercial tuvo un impacto negativo en el crecimiento durante el período de estudio. Por lo tanto, se recomienda que se dirijan esfuerzos contundentes hacia inversiones cruciales para mejorar la productividad laboral y las cadenas de valor de producción en las economías nacionales para disuadir o minimizar la tasa de exportación de materias primas primarias. Además, se deben tomar las medidas adecuadas para mejorar el entorno empresarial en general, eliminar los obstáculos comerciales y fortalecer las instituciones de los países de la región para aprovechar los beneficios del comercio en nuestro mundo cada vez más globalizado.

Palabras clave: apertura comercial, inversión nacional, fuerza laboral, FMOLS y DOLS, países MENA.

INTRODUCTION

It has become common knowledge that economic growth is propelled by both internal and external factors, including investment (domestic and foreign), exchange rates policies, human capital endowments vis-à-vis labor force and population demographics, and openness to trade, among others, as demonstrated by various growth models (Romer, 1986; Lucas, 1988; Solow, 1994). Over the decades, international trade, among other factors, has been an important driving force of economic growth, receiving the attention of researchers in several trade-related growth studies (Arvin et al., 2021; Pradhan et al., 2017a; Yussif et al., 2022; Pradhan et al., 2016).

There is a long historical background on the theories supporting the connections between trade and economic growth. The absolute advantage theory argues that countries with access to foreign markets can benefit from increased productivity, especially when there is division of labor in place (Smith, 1776). Furthermore, in a situation where there is no absolute advantage, nations can still gain from international trade via the comparative advantage, which is the production and trade of goods with relatively small opportunity costs (Ricardo, 1891). The Ricardian view was further complemented by the Heckscher-Ohlin theory, which holds that nations can increase their general welfare by exporting goods that are produced from available vast resource deposits, to import those commodities that ought to have been produced from scarce resources (Heckscher & Ohlin, 1991).

Hence, studies to substantiate the benefits of international trade among countries, and consumers and investors alike, have received considerable attention in the trade literature on country-specific cases and even across different economic integration and trading blocs like the Association of South East Asian Nations (ASEAN), the BRICS countries (Brazil, Russia, India, China and South Africa), the European Union (EU), and the Economic Community of West African States (ECOWAS), among others (Pradhan et al., 2015; Burange et al., 2019; Balsalobre-Lorente & Leitão, 2020; Pradhan et al., 2019). Some of the major benefits linked to trade range from a wider freedom of choices from vast alternatives of international commodities and services to the provision of essential support for economic growth and productivity through technological transfer, among others (Krugman, 1985; Grossman & Helman, 1994). Furthermore, the arguments in favor of trade have been broadened with the advent of the trade-led growth hypothesis (TLGH) which has been examined and validated

in many economies of the past and revalidated in contemporary economies (Narayan et al., 2007; Ozturk & Acaravci, 2010; Hye et al., 2013; Joshua et al., 2020).

However, despite the overwhelming arguments in support of free trade in the literature, the empirical evidence in support of the trade-led growth hypothesis is still divided with respect to the nature and magnitude of the impacts of trade liberalization on growth in various economies across the globe (Kassim, 2015; Rani & Kumar, 2019). Besides, some studies have revealed that trading activities and liberalization policies have yielded just minimum results or even failed to yield the expected results in several cases, despite the inherent conventional benefits of trade (Menyah et al., 2014).

In this regard, the case of the MENA countries is of particular importance. Conventionally, the benefits from trade in MENA countries are expected to be enormous given that most of the countries in this region are big traders, especially in the oil and gas industry, which is one of the most prominent industries in the global trade. However, the expected impact of trade on the economic performance may not be accurately assessed if other crucial factors, such as the prevailing level of investments in the domestic economy of the trading countries, are not accounted for. Firstly, domestic investment rates are expected to influence the productivity of local firms, which in turn is expected to have crucial impacts on the overall economic performance or the GDP size (Ndikumana & Verick, 2008; Lautier & Moreau, 2012). Secondly, domestic investment also tends to influence other growth stimulants like the inflow of foreign direct investment, as has been established in the literature (Lautier & Moreau, 2012; Hicham et al., 2017; Onifade et al., 2020a; Bakari & Sofien, 2019). Currently, to the best of our knowledge, no study has incorporated the salient issue of domestic investment in the trade-led growth hypothesis in the case of the MENA region. Hence, in the wake of the recent dynamics of trade liberalization among nations, this study explores empirically the trade-led growth hypothesis (TLGH) taking into account the domestic investment in the case of fourteen selected MENA countries: Algeria, Bahrain, Egypt, Iran, Iraq, Jordan, Qatar, Oman, Saudi Arabia, Morocco, Tunisia, the United Arab Emirates (UAE), Sudan, and Lebanon.

The study has been organized into four sections. Section one (1) contains the introduction, and Section two (2) discusses the literature on the subject. Subsequently, Section three (3) provides detailed information on the empirical methodology and data sources and discusses the results. Section four (4) concludes the study with policy recommendations.

LITERATURE REVIEW

The relationship between economic growth and trade liberalization has received global attention over the years. Recently, studies have shown that the impacts of trade on the economic growth of countries exist in the short-run and long-run, and both in developed and developing countries. Some studies have shown a positive and significant link between trade performances/policies and economic growth (Arvin et al., 2021; Çoban et al., 2020; Pradhan et al., 2017b; Kong et al., 2021), others have shown a negative relationship (Musila & Yiheyis, 2015; Hossain and Maitra, 2020), while still others have revealed that trade could contribute less than expected or insignificantly to economic growth (Musila & Yiheyis, 2015; Huchet et al., 2018). As a result, several studies have concluded that the impacts of the implementation of the trade openness policies often vary from one nation to another (Kassim, 2015; Onifade et al., 2020b; Rani & Kumar, 2019).

Among the positive nexus narratives, Thirlwall (2000) noted, for example, that trade liberalization enhances the domestic firms' access to the external markets, thus supporting an increase in the gross national product. It has also been observed that countries that face negative impacts from trade in the short term often benefit from trade liberalization in the long run (Foster, 2008). Makki and Somwaru (2004) obtained a positive impact of foreign direct investment (FDI) and trade openness on the economic growth of sixty-six developing countries through an empirical analysis that was based on Two-Stage Least Squares (TSLS) regressions. Bhatti et al. (2011) also obtained a positive impact of trade on the growth of the Pakistani economy. Söderbom (2003) found out that trade openness has a positive impact on productivity as its increase also stimulates technological progress up to about 0.8% in a panel data analysis of 93 cross-sections of selected economies between 1970 and 2000. The study of Manni and Afzal (2012) also revealed a positive nexus between trade openness and economic growth in the case of the Bangladeshi economy in a study that adopted the ordinary least squares (OLS) approach to a data set between 1980 and 2010. Kong et al. (2021) have also concluded, based on their empirical analysis of the Chinese economy, that there is a significant positive impact of openness to trade on the quality of economic growth.

Evidence to substantiate the negative nexus between trade openness and economic growth is also available in the empirical literature. According to Musila and Yiheyis (2015), trade openness had a negative impact on economic growth in the Kenyan economy. Similarly, a study carried out on a group of developing and least

developed countries by Abbas (2014) revealed a negative impact of trade openness on economic growth, even though other variables like capital and labor had positive impacts on growth. Ali and Abdullah (2015) noted that the long-run impact of trade openness on economic growth in Pakistan is negative, even though there is evidence of a positive impact only in the short run, due to weak institutions and poor management. The study of Hossain and Maitra (2020) has also revealed that the impacts of trade openness are unstable in the case of India, as trade openness proxies affect economic growth positively in the short-run but negatively in the long-run.

The study by Huchet et al. (2018) shows that the impacts of trade openness are low or even negative for countries that are less diversified and mainly depend on the export of low-quality commodities, when compared to highly diversified economies that often export high-quality products. As such, it is often argued that aspects like the degree of protectionism, the economic structures, and the level of inflation are among the factors that should be examined while explaining the trade openness growth nexus. Thus, according to Parikh and Stirbu (2004), trade openness should be designed based on liberalization policies that create a balance between imports and exports to avoid a balance of payment deficit. For instance, Santos-Paulino and Thirlwall (2004) found out that trade liberalization increased imports by six percent while exports reduced by two percent in countries that had high import protection before the liberalization of trade. Also, according to Kim et al. (2011), the impact of trade liberalization is positive on countries with low inflation rates, high income, and less agricultural economies, but negative on low-income countries with high inflation rates.

For the case of the MENA region, the findings of Ozturk & Radouai (2020), from a Granger causality analysis for the specific case of Morocco among other MENA countries, reveal that trade openness granger causes GDP growth and demonstrate a positive but negligible impact on growth. However, the study only utilizes a bivariate model, thus leaving out other important factors. Hicham and Belmokaddem (2017) applied the Vector Auto-regressive (VAR) model to explore the impacts of trade liberalization in the region and concluded that trade liberalization has no significant impact on the economic growth of the MENA region. On the other hand, a study by Sabra (2016) concluded that trade openness is an important driver of government expenditure in the MENA region.

Although the trade-led growth hypothesis has drawn a lot of attention globally and although there is abundant literature on the subject for economic blocs

like the Organization for Economic Co-operation and Development (OECD) and the BRICS economies, the literature remains scanty for the MENA region. In the light of the foregoing, this study empirically explores the impact of trade openness on the economic growth performances of selected Middle East and North Africa (MENA) countries, while considering domestic investment factors to assess whether these countries have benefitted from more trade openness, considering the dynamics of trade and globalization in recent years.

DATA AND METHODOLOGY

Relevant data for the empirical analysis were sourced from the World Development Indicators (WDI) of the World Bank (WDI, 2020). The data set consists of a panel of observations on all variables of interest spanning over 15 years, from 2003 to 2017 for all the countries in the study. The adopted study plan and range of data for the selected countries were strictly based on the level of data available for countries in the region. Relevant data concerning the domestic investment proxy were generally available for the periods after the year 2000. Thus, to avoid excluding many countries and to ensure wider coverage of the region, we established the mentioned sample limit for the empirical analysis. As such, a total of 14 MENA countries were included in the study: Algeria, Bahrain, Egypt, Iran, Iraq, Jordan, Qatar, Oman, Saudi Arabia, Morocco, Tunisia, the United Arab Emirates (UAE), Sudan, and Lebanon. Equation [1] was set up to explore the nexus between trade openness and economic growth performances while incorporating measures for domestic investments for the selected countries:

$$LnRGDP_{it} = \alpha + \beta_1 LnOPN_{it} + \beta_2 LnGFCF_{it} + \beta_3 LnLAB_{it} + \mu_{it} \qquad [1]$$

From Equation (1), *LnRGDP* represents the real gross domestic product for country *i* in time *t*, while *LnOPN* captures the degree of openness to trade as measured by the ratio of the sum of imports and exports in the country *i* at time *t* to the country's GDP in the corresponding time. *LnGFCF* is the proxy for domestic investment as measured by the amount of total gross fixed capital formation for country *i* at time *t* as is usual in similar empirical studies (Bal et al., 2016; Onifade et al., 2020a). Lautier & Moreau (2012) have noted that the use of the gross capital formation variable would not only help to account for the level of domestic investment alone, but it would also partly contribute to account for the influence of the inflow of foreign direct investment.

Besides capital formation, the size of the population vis-à-vis the amount of labor force is another factor that ought to be considered in the specification, due to the relative difference in the size of the countries in the study. Thus, the size of the labor force (*LnLAB*) for each country was also factored into the model specification to control for the impacts of population size (Luo, 2020). Lastly, μ_{it} is the error term for the model given estimations from the observations from a country *i* in time *t*. The variables were provided in the natural log form, which assisted us in interpreting outcomes from a simple elasticity perspective. From here, we proceeded to provide some preliminary analysis of the statistical nature and characteristics of the panel sample in all the MENA countries in the study.

Correlation analysis

An initial correlation analysis was performed on the raw data to take a glimpse into the nature of the relationship between the four variables. The obtained correlation coefficients are provided in Table 1. According to the correlation results, in Table 1, there is a weak negative correlation between trade openness, gross domestic product, and gross fixed capital formation, while there is a relatively strong negative correlation between the size of the labor force and trade openness. On the other hand, the labor force has a relatively strong correlation with the GDP and the amount of capital formation.

Table 1.

Correlation Analysis

Correlation Probability	GDP	GFCF	LAB	OPN
GDP	1			
P-Value	-----			
GFCF	0.952434	1		
P Value	0.000	-----		
LABOR_FORCE	0.561532	0.501213	1	
P Value	0.000	0.000	-----	
OPENNESS	-0.18483	-0.15803	-0.578498	1
P Value	0.0072	0.022	0.000	-----

Source: Author's computation.

It is important to note that, although the correlation analysis can provide a glimpse into the nature of the relationship amongst the variables, this analysis would be insufficient in the context of the true magnitude of the impacts of the regressors on the dependent variable in Equation [1] if the time-series properties of the variables are fully taken into consideration. As such, we explore the time-series properties of the variables by firstly conducting a unit root test.

Panel Unit-root Test

The need to conduct a unit root test when analyzing time series data has been highlighted in different empirical studies (Shrestha & Bhatta, 2018). As such, the Fisher Augmented Dickey-Fuller (ADF, 1979), Philips & Perron (PP, 1988), and Im et al. (2003) unit root tests were applied to all the variables, both at the level and at first difference. The three tests were conducted to maximize the strengths of each technique, thus giving more credence to the conclusion reached on the integrating properties of the variables. The tests were carried out on all the variables both at the level and at the first difference, using the model that allowed for individual intercepts and trends. The results are provided in Table 2.

Table 2.

Panel Unit Root Test

	LEVEL			
Statistic	**LnRGDP**	**LnOPN**	**LnGFCF**	**LnLAB**
IPS	1.05176	0.46494	0.75394	-1.23395
Fisher-ADF	24.2933	20.7784	20.6327	5.90799
Fisher-PP	33.9077	43.3582	29.6790	6.87863
	FIRST DIFFERENCE			
Statistic	ΔLnRGDP	ΔLnOPN	ΔLnGFCF	ΔLnLAB
IPS	-2.50922 ***	-3.46362 ***	-3.03660 ***	-1.32631 *
Fisher-ADF	50.1492 ***	60.6166***	57.4111***	42.1511 **
Fisher-PP	80.9520 ***	125.271***	77.8563***	53.8426 **

Source: Author's computation. *All the series are at their natural logarithms and all tests are reported alongside the subscripts *, **, and *** to show the statistical significance of the estimates at 10%, 5%, and 1% levels of significance, respectively.*

The unit root test results in Table 2 show that all variables are non-stationary at the level. However, all variables were stationary at the first difference and therefore integrated of order one I(1). This result justifies the adoption of the cointegration techniques for the study in line with similar empirical studies on the subject (Hjalmarsson & Österholm, 2010; Gyamfi et al., 2022; Taiwo et al., 2020; Hakan et al., 2022).

Panel Cointegration Test

Having understood the unit root properties of the variables, it is also important to conduct a co-integration test to ascertain whether the variables in the study can coexist in the long run (Shrestha & Bhatta, 2018; Çoban et al., 2020). Thus, we applied the Pedroni (2004) panel cointegration test to check for the co-integration relationship among the variables.

In time series, stationarity can be obtained from a linear combination of non-stationary processes (Shrestha & Bhatta, 2018). In the current study, the Pedroni (2004) cointegration method essentially accommodates heterogeneity across sample observations when examining the validity of level relationship among our understudied variables vis-à-vis the available data for the MENA region with regards to the relationship in the baseline model, following the expression in Equation [2].

$$Z_{it} = \mu_i + \pi_i t + \sum_{p=i}^{p} \delta_{qi} Y_{qit} + \gamma_{it} \qquad [2]$$

The Pedroni (2004) panel cointegration techniques reports a combination of various test statistics in two categories, namely the group statistics and the panel test statistics. Following the outcomes of the group and panel statistics, conclusions about cointegration status are drawn based on seven (7) individual test statistics: the rho statistics, the panel v-statistics, the PP-statistics, the ADF-statistics, the group PP-statistics, the group ADF-statistics, and the group rho statistics. In Equation [2], *i* stands for the individual country of the panel observations covering the period of time *t*, while Y_{it} denotes the error coefficient given that the test is performed under a null hypothesis of no cointegration in contrast to an alternative assumption that a valid long-run relationship exists between the panel variables. The outcomes of the test are reported in Table 3.

Table 3.

Pedroni residual test for Cointegration

Pedroni Residual Cointegration	Statistic	Prob.	Statistic	Prob.
Panel v-Statistic	1.048951	0.1471	-1.605225	0.9458
Panel rho-Statistic	2.783228	0.9973	2.462317	0.9931
Panel PP-Statistic	-3.505016	0.0002	-6.011489	0.0000
Panel ADF-Statistic	-5.207373	0.0000	-5.130386	0.0000
Alternative hypothesis: individual AR Coefficients. (between-dimension)				
	Statistic	Prob.		
Group rho-Statistic	3.626444	0.9999		
Group PP-Statistic	-5.088053	0.0000		
Group ADF-Statistic	-4.342544	0.0000		

Source: Author's computation.

According to the results in Table 3, the panel PP statistics, the panel ADF statistics, the Group PP statistics, and the group ADF statistics have P-values that are significantly less than 5%, thus providing evidence to reject the null hypothesis that there is no co-integration relationship between the understudied variables. Hence, we conclude that there is a long-run relationship between the variables and proceed to obtain the underlying long-run coefficients.

DOLS and FMOLS Regression

The Fully Modified Ordinary Least Square (FMOLS) and the Dynamic Ordinary Least Square (DOLS) of Pedroni (2000, 2001) were applied in the study to obtain the homogenous panel coefficients. These techniques suit our empirical analysis considering the nature of the study vis-à-vis the application of these techniques in contemporary empirical studies (Erdogan et al., 2020; Bekun et al., 2021; Onifade et al., 2021a). To correct for serial correlation and endogeneity in the dynamic nexus between variables in a panel regression, say variables X and Y, Pedroni (2000) introduced the group means Fully Modified Ordinary Least (FMOLS) by incorporating a semiparametric correction into a panel OLS estimator to generate a FMOLS estimator as expressed in Equation [3].

$$\varphi_i = N^{-1} \sum_{i=1}^{N} \left[\sum_{t=1}^{T} (X_{it} - X_i^O)^2 \right]^{-1} \left[\sum_{t=1}^{T} (X_{it} - X_i^O) Y_{it}^* - T Y_i^{**} \right] \qquad [3]$$

From Equation (3), X_{it} is the exogenous variable with X_i^o as its average values, while Y_{it} is the endogenous variable, with Y_i^o as its average values. t and T are the time series data and its number, respectively, while i and N are the cross-section data and its number, respectively. Furthermore, from Equation (3), Y_{it}^* is equal to $[(Y_{it} - Y_i^o) - \{(\Phi)\Delta X_{it}\}]$ where Φ is the covariance of the panel regression model. In the model, Y_i^{**} helps to correct serial correlation in the heterogenous short-run dynamics impacts on X and Y, and φ_i denotes the FMOLS estimator.

As stated earlier in the preliminary results, the initial correlation results are not reliable to obtain a conclusion since they do not necessarily reveal the long-run impacts that we desire to know. Hence, the FMOLS approach was applied. However, we decided to compare the outcomes of the FMOLS results using the DOLS estimator for robustness purposes. The DOLS method follows a parametric approach in correcting for issues of serial correlation. In this approach, Pedroni (2001) introduced the leads and lag dynamics into a panel regression model, as demonstrated in Equation [4], to generate the DOLS operator in Equation [5].

$$Y_{it} = \beta_i + \alpha_i X_{it} + \sum_{j=-k}^{K} \phi_{ik} \Delta X_{i,t-k} + \mu_{it} \qquad [4]$$

$$\varphi_i = \left(N^{-1} \sum_{i=1}^{N} \left[\sum_{t=1}^{T} Z_{it} Z_{it}^* \right]^{-1} \left[\sum_{t=1}^{T} (Z_{it} Z_{it}^{**}) \right] \right) \qquad [5]$$

From Equation [4], t and T are the time series data and their number, respectively, while i and N are the cross-section data and its number, respectively. Z_{it} is equal to $2(K+1)1$ and Z_{it}^{**} is equal to $(X_{it} - X_i^o)$. X_i^o denotes the mean of X_i and $\Delta X_{i,t-k}$ represents the differential value of X, while φ_i denotes the DOLS estimator.

In a nutshell, the combination of both approaches has tremendous benefits as they contribute to deal with issues of cross-sectional heterogeneity, serial correlation, and endogeneity, while also utilizing heteroskedastic standard errors. On the other hand, spurious regression results often occur when applying the traditional Ordinary Least Square (OLS) approach to a series of non-stationary data, since outputs can suffer from problems of heteroskedasticity and serial correlation (Shrestha & Bhatta, 2018; Çoban et al., 2020). Hence, the choice of the selected methods is in line with empirical literature (Phillips, & Moon, 2000; Onifade et al., 2021b; Gyamfi et al., 2021). The non-parametric

estimation under the FMOLS was carried out with the inclusion of deterministic trends. The results of the FMOLS and the DOLS are given in Tables 4 and 5, respectively.

Table 4.

FMOLS Pooled trend and Grouped trend estimation

Variable	FMOLS Pooled trend	FMOLS Grouped trend
Dependent var (LnRGDP)	Coefficient	Coefficient
LnOPN	-0.13622***	-0.20845***
LnGFCF	0.31008***	0.45862***
LnLAB	0.41373***	0.92381***

Source: Author's computation. *** and ** indicate the statistical significance of coefficients at 1% and 5%

Table 5.

DOLS Pooled and Grouped Estimation

Variables	DOLS Pooled estimation	DOLS Grouped estimation
Dependent var (LnRGDP)	Coefficient	Coefficient
LnOPN	-0.07670**	-0.22241**
LnGFCF	0.25171***	0.46887***
LnLAB	0.51255***	0.90583***

Source: Author's computation. *** and ** indicate the statistical significance of coefficients at 1% and 5%

From Table 4 and Table 5 we observe that both FMOLS and DOLS produced relatively similar estimates. The results show that all variables impact significantly the economic growth for the panel of countries in the study. The output of the FMOLS shows that openness to trade impacts negatively on economic growth in the selected countries as growth is expected to decrease by approximately 0.136% when openness rises by 1%. Increasing openness to trade is often expected to stimulate economic growth among nations. However, empirical results from extant studies on various countries have supported the notion that there is no consensus on the direction of this relationship. The study of Ulaşan (2015) also revealed that trade openness by itself does not directly translate into economic growth. Our findings support similar conclusions in the sense that trade liberalization has not created a significant impact on economic growth in the MENA region (Ahmed, 2010; Hicham, & Belmokaddem; 2017). Hye et al. (2015) observed a similar result in the case of India, where trade inhibits growth in the long run.

Numerous factors could have contributed to the relationship obtained between trade openness and growth in the case of the MENA countries, but two are of particular

In addition to the DOLS outcomes, we performed an additional robustness check with the fixed effect model for the samples, as reported in Table 6. Although both the fixed effects and random effects models were reported in Table 6, the conducted Hausman test shows that the outcomes of the fixed effect model are more reliable and efficient for the robustness checks. From the extended robustness checks based on the fixed effect model, the observed impact of openness is also negative and statistically significant, while the impacts of domestic investment level via fixed capital formation, and the impacts of labor are both positive and statistically significant for growth in the MENA countries. These outcomes further corroborate the FMOLS and the DOLS results.

Long-Run and Short-Run Causality test

Co-integration outputs alone do not supply the full details of the direction of causality between the variables. For this reason, the need to perform a causality test often arises in empirical studies (Alola, & Onifade, 2022; Appiah et al., 2022; Alola et al., 2021; Onifade, 2022; Erdoğan et al., 2022; Onifade et al., 2021c). Hence, we performed the short-run causality test from the Pairwise Granger Causality tests and the long-run causal nexus was captured from the statistical significance of the error correction term (ECT) from an estimated Vector Error Correction model. The results from the tests are provided in Table 7.

Table 7.

Long Run and Short Run Causality Results

	F-Statistics				ECT	
Variables	LnRGDP	LnOPN	LnGFCF	LnLAB	(Long-run)	DIRECTION OF CAUSALITY
LnRGDP	_	2.73710 *	24.6073 ***	61.0005 ***	-0.13949 **	*LnRGDP → LnOPN, LnGFCF, LnLAB*
LnOPN	1.03306	_	1.12407	0.00927	0.00111	
LnGFCF	3.90547 **	3.68799 **	_	52.2310 ***	-1.32E-06	*LnGFCF → LnRGDP, LnOPN, LnLAB*
LnLAB	4.88084 **	6.35735 ***	0.00103	_	1.86E-12*	*LnLAB → LnRGDP, LnOPN*

Source: Author's computation. *** and ** indicate the statistical significance of coefficients at 1% and 5%

From Table 7, following the P-values of the F-statistics from the Pairwise Granger Causality Tests, it is confirmed that both domestic investment and labor force are granger causing economic growth, while there is no evidence of direct

causality between trade openness and economic growth among the countries. This finding buttresses the outputs of the long-run estimates from the FMOLS and DOLS techniques concerning the significant impact of domestic investment and the size of the workforce on the economic growth of the countries. There is a bi-directional causality between domestic investment and growth, and between labor force and economic growth. However, the evidence of directional causality was only obtained from economic growth level to the trade openness among the countries and not vice versa, thus further buttressing the obtained unconventional openness-trade long-run impact despite the statistical significance of the negative value of the ECT that confirms an overall long-run causal linkage among the variables when economic growth is the explained variable.

CONCLUSION AND POLICY RECOMMENDATIONS

The impact of trade openness on economic growth has been investigated while taking into cognizance the roles of domestic investment and the size of the labor force in 14 selected MENA countries: Algeria, Bahrain, Egypt, Iran, Iraq, Jordan, Qatar, Oman, Saudi Arabia, Morocco, Tunisia, the United Arab Emirates (UAE), Sudan and Lebanon. A cointegration relationship was established among the variables for the countries in the study. Following the confirmation of the long-run relationship between the variables, the Dynamic Ordinary Least Square (DOLS) and the Fully Modified Ordinary Least Square (FMOLS) approaches were applied to obtain the estimated long-run panel coefficients.

The empirical results reveal that the impacts of domestic investment and the size of the labor force on economic growth are positive and highly significant for the MENA countries. On the other hand, trade openness negatively impacts growth for the panel of countries in the study. Numerous factors could have contributed to the result obtained between trade openness and growth in the case of the MENA countries. The economic structures and the institutional arrangements have been identified as notable factors. Most of the countries in the study are still grossly import-dependent, with the bulk of their exports composed mainly of raw primary commodities. This could be attributed to the poor performance of the countries in the region in terms of the overall production value chains. Besides, weak institutions and poor business environments are also huge barriers to achieving desirable economic growth through trade. Hence, the expected benefits from trade openness

vis-à-vis the much-desired impacts on growth may have been inhibited among the countries in the region.

Thus, we recommend that urgent attention should be paid to the strengthening of institutions among countries in the region to monitor and supervise the proper implementation of trade policies. This will be instrumental to remove ambiguous trade barriers and to foster interregional trade among the MENA countries, and to also facilitate fair international trade between the MENA region and the rest of the world. The removal of trade barriers is also crucial for the region to harness the benefits of trade in an increasingly globalized world.

While we acknowledge the significance of trade in the global economy, it is also worthy to note that trading activities should not be promoted to the detriment of domestic productivity by grossly relying on the export of raw primary commodities. As such, we further recommend that cogent efforts should be directed towards investments that are crucial for the improvement of production value chains in the domestic economy of the MENA region to minimize the huge dependence on the export of raw primary commodities to foreign economies. Governments in the region are admonished to direct more expenditures to the provision of critical infrastructures while also providing aid and necessary support for domestic investors.

Finally, based on the findings, domestic investment and the size of the labor force play significant roles in promoting economic growth in the region and as such, it is also recommended that adequate investment should be directed towards human capital development through investment in education and various research and development (R&D) projects to enhance labor productivity and competitiveness in order to achieve sustainable growth in the MENA region.

Direction for Future Study

This study provides an important basis or insight into a possible future area of research for the MENA countries. Findings from the research suggest various challenges that may be inhibiting trade benefits in the region. Future research can specifically focus on such challenges. For example, following the evidence provided in this research, factors like weak institutions can further be integrated into the study's framework to establish their roles in the trade-growth nexus in the MENA region.

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