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The Role of Economic Freedom in Economic Growth: Evidence from the MENA Region

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This study investigates the economic freedom and economic growth nexus in a board of 13 MENA countries from 2010 to 2018. Based on the Heritage Foundation, five factors have been adopted to capture all of the economic freedom dimensions, namely: security of property rights, freedom from corruption, government spending, business freedom, and monetary policy. To capture the endogeneity issue, an empirical analysis has been conducted by adopting the GMM framework. The focal point of this article is to evaluate which dimension of economic freedom adds to economic growth in the MENA countries, and to what degree. The empirical results reveal that economic freedom plays an enhancing role in the economic growth of the sampled economies. In other words, the economic growth is affected positively through the dimensions of economic freedom. Moreover, the empirical outcomes signal that the current economic growth rate will be affected significantly by the growth rate of the past year. Thus, the findings of the present investigations might have precious implications for the authorities and policy-makers in the sampled countries.

Key words: *Economic freedom, Economic growth, MENA economies, GMM framework.*

Introduction

Economic freedom (EF) is an essential and inextricable part of the economic growth (EG) process, and plays an important role in stimulating the EG of a particular country. This is evident through enhancing the financial practices which eventually accelerate the development of the financial systems (Al-Gasaymeh 2016). Nevertheless, a serious debate

exists regarding the EF–EG nexus, which limits the understanding of the nature of this relationship (Kacprzyk, 2016). One perspective is that government intervention in monetary transactions will encourage financial development. A number of studies have documented various strategic and institutional factors that promote financial development (Barro, 1996; Henrekson et al., 1997). Among these are laws, regulations, transparency, assurance of individual and business opportunities, work development and property rights, which are considered the main channels to advance financial systems (Almahadin, 2019; Almahadin and Tuna, 2019; Al-Gasaymeh et al. 2015; Alshurideh et al., 2020; Terpilih 2010).

Over the last decade, the Middle East and North Africa (MENA) region has achieved relatively high EG rates. In fact, the absence of a dynamic private sector able to create more work opportunities in the labour market has implied that economic performance did not lead to improve living standards without any impact on the wellbeing of the large proportion of residents. Many structural and economic factors may cause an insufficient labour market due to ability mismatches, the swarming out of private projects, high corruption levels, cronyism, low levels of competitiveness in manufacturing sectors, the absence of fair advertising, low intraregional incorporation and EF. Moreover, despite the fact that the recent revolutions such as the Arab Spring provide a substantial chance to perform economic reform programs, the expected impact of those programs is negative because of the ways in which social and political insecurity influence the nations concerned (Becherair, 2014).

This study aims to investigate the EF–EG nexus in the MENA region. For this purpose, it utilises an economic freedom index to examine the relationship between EF and EG in 13 MENA countries. It contributes to the existing literature by first employing a modern sophisticated methodology, the Generalized Method of Moments (GMM). To the best of the authors' knowledge, few examinations have endeavoured to explore this relationship for MENA countries utilising the GMM approach. Previous studies have used traditional methodologies such as co-integration and Granger causality approaches (e.g. Abdelaziz and Helmi, 2015; Al-Jarrah et al., 2012; Andrzej, 2016; Khaled Aldiabat et al. 2019; Mauro, 1995; Mo, 2001; Pelligrini and Gerlagh, 2004). It also utilises five sub-components of the EF separately to capture all dimensions of the economic freedom concept. Thus, the empirical outcomes of the present investigation could reveal critical implications for the sampled countries to policy-makers and the authorities.

The rest of this article is organised as follows. The literature review is presented in the next section; followed by the methodology and data; the fourth section reports the empirical findings; and the conclusions and implications are presented in the final section.

Literature Review

Many studies have explored the role of EF in EG. They provide contradictory evidence about the relationship between EF and EG. For instance, Berggren (2003) asserts that various dimensions of EF have no positive affect on EG. However, changes in EF have an impact on EG. This perspective is consistent with that of the previous empirical studies (e.g. Adkins et al., 2002; Dawson, 1998; Gwartney, Lawson and, Holcombe 1998; Gwartney et al., 2002; Gouher et al. 2017; Pitlik, 2002; Weede and Kampf, 2002). Mauro (1995) examined the relationship between corruption as a related dimension to EF and EG. His study found that corruption has an undesirable impact on economic growth. The negative impact of corruption is channeled by limiting foreign investment flows.

In the same dimension, Mo (2001) asserts that the existence of corruption negatively affects the level of financial development, demonstrating that corruption influences financial development due overthrow the human capital collection in addition to undermining the political stability of a certain country. Moreover, Kaufmann et al. (1999) investigated the relationship between EG and the country's governance quality index as another related dimension of economic freedom. This study indicates that violations of governance rules and procedures, which occurs with low-quality administration systems, adversely affects economic growth.

In contrast, another strand of the literature has emphasised that the relationship between EF and EG appears positive, which means they move together over time. For example, Andrzej (2016) examined this relationship utilising five dimensions of EF for the region of European Union, including 28 countries. The author employs the GMM approach to investigate which dimensions of EG elevate EG in the sampled region, and to what degree, to achieve the main objective of the article. The empirical findings report that four of EF dimensions (i.e. security of property rights; nature of fiscal approach; opportunity to exchange; and administrative strategies) have a positive impact on the EG through the financial development channel. security of property rights, nature of the fiscal approach, opportunity to exchange and administrative strategies.

Finally, De and Sturm (2000) investigated the impact of the EF–EG nexus by employing an index based on multi-gauges for economic freedom. The results of their study mainly indicate that EF contributes to EG by encouraging the growth process. In the same direction, Carlsson and Lundstrom (2002) assert that EF plays a stimulating role in the EG process. By applying the meta-analysis approach, Doucouliagos and Mahmet (2006) maintain that EF historically affects EG positively and that EF affects EG through the physical capital channel.

The above literature reveals the following research gaps. First, the majority of these studies have concentrated on Western and developed countries. Second, empirical evidence in developing countries is relatively scarce. Finally, virtually nothing has been published to examine the impact of EF variables on EG using the methodology of dynamic GMM for MENA countries. In light of these knowledge gaps, this article provides new empirical evidence on the impact of EF on the performance EG rate in the MENA countries.

Research Framework

Sampling and Data

As mentioned above, the main purpose of this study is to examine the role of EF in EG for the MENA region. The sample consists of 13 countries from the MENA region: Algeria, Bahrain, Egypt, Jordan, Kuwait, Lebanon, Libya, Oman, Qatar, Saudi Arabia, Tunisia, Turkey, and United Arab Emirates. For this purpose, the following functional model is formulated.

$$Economic\ Growth_{ti} = f(Economic\ Freedom_{ti}) \quad (1)$$

The above model indicates that the EG of each of the sampled countries (i) is a function of EF during a specific period of (t). To simplify, the above functional model can be translated into an econometric model to be estimated as expressed below:

$$GDP_{ti} = \alpha_0 + \beta_1 PR_{ti} + \beta_2 CF_{ti} + \beta_3 GOV_{ti} + \beta_4 BF_{ti} + \beta_5 MP_{ti} + \varepsilon_{ti} \quad (2)$$

where *GDP* is the EG indicator as measured by the annum growth rate of per capita gross domestic product. EF is measured by utilising five sub-dimension consist: property rights (*PR*), corruption freedom (*CF*), government spending (*GOV*), business freedom (*BF*) and monetary policy (*MP*). The five sub-dimensions of EF are selected based on the 2015 Index of Economic Freedom constructed by the Heritage Foundation as published in partnership with the *Wall Street Journal*. α is the constant term, β*'s* are coefficients to be estimated, and ε is the error term. The data set of the considered variables for each of the sampled countries was gathered for the period spanning from 2010 to 2018. The GDP indicator was gathered from the Databank World Bank Database and World Development Indicators (2019), whereas the EF gauges were gathered from the Heritage Foundation (2019).

Econometric Methodology

To analyse the EF–EG nexus, this study adopts the dynamic panel data analysis of generalise method of moments (GMM) approach, which was first proposed by Arellano and Bond

(1991) and then developed by Arellano and Bover (1995) and Blundell and Bond (1998). Four issues may explain the reasons behind adopting this approach of analysis: (1) this approach works dynamically to recognize the variation of both time and cross-sectional of the estimated model; (2) the mechanism of this method allows to avoid the possible bias of the cross-country regressions; (3) this type of analysis means that using instrumental variables is possible, thus producing more robust estimators; and (4) adopting this approach is significantly valuable, especially in the case of panels that are characterised by a relatively low number of years and a substantial number of cross-segments. Therefore, the econometric model of Equation (2) will be rearranged as follows:

$$GDP_{kt} = \mu_0 + \pi_1 GDP_{kt-1} + \pi_2 PR_{kt} + \pi_3 CF_{kt} + \pi_4 GOV_{kt} + \pi_5 BF_{kt} + \pi_6 MP_{kt} + \sum_{t=2010}^{2018} \tau_t Time_t + \eta_i + v_{it} \quad (3)$$

where all the variables (*GDP*, *PR*, *CF*, *GOV*, *BF* and *MP*) are as defined above, GDP_{t-1} is the first lag of the explained variable, μ is the intercept term, π*'s* are the estimated coefficients, *t* refers to the period 2010–18, *k* denotes the number of cross countries.

The estimated error term of the econometric model (ε_{it}) is expressed by an error component of ($\eta_i + v_{it}$); η_i is assumed to be $IID(0, \sigma_\eta^2)$ as refers an unobserved effect of the country-specific time-invariant that allows for heterogeneity in the mean values of the explained variable series across individual countries, whereas v_{it} is the stochastic disturbance term which is assumed independent across individuals.[1]

In equation (3), the first lag of the explained variable ($GDP_{k,t-1}$) indicates that there is a connection between the regressors and the error term $\varepsilon_{k,t-1}$. The presence of lagged value of the explained variable emphasises that, using the traditional ordinary least square method (OLS), fixed effects and random effects are produced, resulting in biased and inconsistent estimations for a fixed period (T) as the number of cross-segments (N) becomes large (Blundell and Bond, 1998). In the case of the existing relationship between the variables and the error term, it is better to deal with instrumental variables as is allowed by the GMM approach.

In this regard, Arellano and Bond (1991) suggest a dynamic GMM technique that allows using instrument variables, where the validity depends on the symmetry between the estimations of the lagged variable and the error term. The mechanism of the estimation system is working to arrange imperceptibly heterogeneity by using the first differences

[1] From the statistics aspect, a sequence of random variables is characterised to be independent and identically distributed (*IID*) if each one has identical probability distribution as all of the others are mutually independent.

operator in addition to controls the possible endogeneity issue by using the model's factors lagged by at least one period as instruments.

In this study, to manage endogenous and predetermined variables ($GDP_{k,t-j}$), PR_{kt} and CF_{kt} are assumed weakly exogenous (endogenous), whereas GOV_{kt} and BF_{kt} are assumed strictly exogenous. The GMM approach adopts instrumental variables (IV),[2] which are highly correlated with the variables but uncorrelated with residuals. Therefore, the GMM system produces two models, one based on the first difference and the second at the level. As suggested by Bond (2002) and Baltagi (2009), a set of moment conditions have been conducted on the first difference model to ensure the validity of the IV.

Bond (2002) asserts that the estimated parameters of the one-step system are more robust than the estimated parameters of two-step system. The simulations used by Bond (2002) demonstrates that the estimations of the two-step system may less effective, especially when the asymptotic standard error is too small or the asymptotic t -ratio is too large. In contrast, Windmeijer (2005) emphasises that the estimated parameters of the two-step system is more robust than the one-step system with relatively lower bias and standard errors. Indeed, the reported two-step standard errors with the correction work well and appear to be modestly superior to the cluster robust one-step estimation. The present study therefore uses both the one-step and two-step systems of the GMM.

Empirical Findings

At this stage, the role of EF in EG is investigated for the panel of the 13 sampled countries using a two-step system of the GMM approach. The empirical results are reported in Table 1. which shows that all of the estimated coefficients of the EF dimensions are positive and significant.

[2] To save space, instruments choice is removed from the text; it is available upon request.

Table 1: Results of Panel GMM Regression

	One-step system		Two-step system	
Variables	**Coefficient**	**Robust Std. Err.**	**Coefficient**	**Corrected Std. Err.**
GDP_{t-1}	0.595***	0.072	0 .712***	0.064
Property rights	0.042***	0.003	0.0248***	0.001
Corruption freedom	0.031*	0.002	0.0567*	0.003
Government spending	0.210**	0.004	0.112***	0.003
Business freedom	0.468***	0.015	0.328**	0.023
Monetary policy	0.057**	0.003	0.0431**	0.003
AR(1)	-4.5101***		-3.65***	
AR(2)	0.43		0.54	
Hansen test excluding group	14.56		3.42	
Difference (null H = exogenous)	7.65		11.25	
Wald chi^2	321.02***		235.95***	
No. of observations	410		410	
No. of instruments	31		35	
No. of group	13		13	

Notes: ***, **, * refer to the significance at the significance level of 1%, 5%, and 10% respectively. Sargan is the *p*-value for the Sargan test for the validity of the over-identifying restrictions for the GMM estimates. AR (2) is the *p*-value for the test for 2nd order autocorrelation for the GMM first-difference estimate residuals.

These results provide strong evidence about the stimulating role of EF in the EG process. The results are consistent with previous studies and support the hypothesis that EF increments EG, which is also strongly compatible with the theoretical arguments of the endogenous growth theory (see Dollar and Kray, 2001; Kolstad and Tondel, 2002; Rama, 2000). Among the estimated coefficients, the first-lag of EG (GDP_{t-1}) was recorded with the highest value indicating that the previous EG rate is reflected on the current EG rate; the present rate is responsive to the past rate. Economically, the findings demonstrate that the countries with a high level of EF tend to accelerate the EG rates, which in turn favourably affect living standards and eventually increase the wellbeing of the residents.

These results have critical implications for authorities and policy designers of the sampled economies to work seriously to develop regulations and practices that enhance the levels of EF. By doing so, their economies will at least be free from corruption with good property rights, enabling them to become an attractive business environment. The findings also propose that any useful impacts of EF on growth rate will mostly be in countries with increasingly liberal and less political hazard frameworks, where government policy can formulate and actualise sound approaches and provide a foundation for quality governance measures.

In this regard, it could be explained that an open economic increases competition, which may lead to increased efficiency and will foster most financial exercises among investors and business shareholders (Gasaymeh et al., 2014). It also helps an economy's openness to import and export goods and services from all over the world and promotes the ability of citizens to communicate as purchasers and merchants in the universal commercial marketplace. The monetary policy demonstrates that currency plays an essential role in impacting the stability of the EG in the selecting countries through the exchange rate, which prompts a conductive and efficient working environment. In this manner, it is crucial for policy-makers and economists to enhance EG and transparency to gather better EG rate and performance. Additionally, EF prompts expansions in ventures, and attracts investors and stakeholders, which encourages higher growth rates and increased stability (Al-Gasaymeh and Kasem, 2015; Aseel and Al-Gasaymeh, 2018; Douglass, 1990; Kacprzyk, 2016; Mauro, 1995; Mo 2001; Murphy et al., 1991).

The Source as Authors' Own Findings/Authors' Calculations

This final stage considers sensitivity analyses that have been undertaken due to the collapse of the instruments system for robustness checking purposes. The stage is conducted in line with the recommendations of Calderon et al. (2002), Holmes et al. (2008) and Roodman (2009), who suggest that the robustness checks for the empirical result should be cautiously verified. The essential step in this phase is to collapse the instruments and then conduct a re-estimation of Equation (1). To verify the robustness of the empirical results, the regression results of the panel GMM system are presented in Table 2. From this table, it can be shown clearly that the sign and the order of magnitude for all of the estimated coefficients remain similar and significant as in the baseline regression models. These results provide extra evidence of, and reassert, the enhancing role of EF in the EG process of the sampled economies.

Table 2: Results of Panel System Generalized Methods of Moments Regression

	One-step system		Two-step system	
Variables	**Coefficient**	**Robust Std. Err.**	**Coefficient**	**Corrected Std. Err.**
GDP_{t-1}	0.430***	0.212	0.433***	0.054
Property rights	0.034***	0.007	0 .048***	0.004
Corruption freedom	0.058**	0.003	0.047**	0.003
Government spending	0.054***	0.007	0.056***	0.009
Business freedom	0.053***	0.004	0.078***	0.003
Monetary policy	0.047**	0.003	0 .023**	0.004
AR(1)	-5.08***		-5.89***	
AR(2)	0.54		0.43	
Hansen test excluding group	0.45		0.65	
Difference (null H = exogenous)	0.75		0.75	
Wald chi2	155.26***		215.23***	
No. of observations	410		410	
No. of instruments	20		20	
No. of group	13		13	

Notes: as reported below Table 1.

Table 3 reveals one more test to highlight the robustness of the model of difference GMM for the same explanatory variables. The outcomes indicate that all variables have the same coefficient sign but some have become statistically insignificant. In general, the results remain the same based on the testing with Sargan's test of over-identifying restrictions, asymptotically distributed in the number of restrictions. Overall, the results of the diagnostic tests in Tables 1 suggest that the test of first-order and second-order autocorrelation of residual reported the asymptotically standard normal distribution values of AR (1) and AR (2). The test for first-order autocorrelation AR (1) reject the null hypothesis; the *p-values* of the Arrelano and Bond statistics are at the 10 per cent significance level. The AR (2) for second-order autocorrelation fails to reject the null hypothesis of no autocorrelation.

The statistics and the p-value reported the probability of rejecting the null hypothesis of no autocorrelation – hence, the validity of the system GMM is supported by both AR (1) and AR (2) tests. The Hansen test for *p-value* reports insignificant which indicates that the model does not suffer from over-identification. The Wald test for the joint significance of regressors is statistically significant at the 5 per cent level in estimated models. Hence, this model is deemed reliable, since it passed all diagnostic tests. Furthermore, the coefficient of the lagged dependent variable is highly significant which confirms and justifying the use of dynamic panel data model estimation for the dynamic character of the model specification. Finally, the problem of heteroscedasticity and autocorrelation is managed by the two-step system GMM which is robust and it employs more instrumental variables than a two-step difference GMM. This means that the two-step GMM estimator is a more efficient and robust estimator. Moreover, the lagged dependent variable with a highly significant coefficient affirms the

application of the dynamic model, which indicates that the past inefficiencies significantly influence the current one.

Table 3: Results of Panel Deference Generalized Methods of Moments Regression

	One-step difference		Two-step difference	
Variables	**Coefficient**	**Robust Std. Err.**	**Coefficient**	**Corrected Std. Err.**
GDP_{t-1}	0.452 ***	0.1231	0.3501***	0.052
Property rights	0.027***	0.003	0 .035***	0.004
Corruption freedom	0.039	0.003	0.054**	0.003
Government spending	0 .054***	0.007	0.025***	0.005
Business freedom	0.077	0.001	0.014	0.012
Monetary policy	0.038	0.002	0.018	0.013
AR(1)	-3.34***		-3.45***	
AR(2)	-0.34		-0.32	
Hansen test of overid	-11.45		11.33	
Sargan test of overid	6.81		5.73	
Wald chi2	112.07***		165.79***	
No. of Observations	420		420	
No. of Instruments	32		33	
No. of Group	13		13	

Notes: as reported below Table 1.

Conclusions and Implications

This study examined the impact of five dimensions of EF on EG in 13 MENA countries for the period 2010–18. The utilised EF dimensions are property rights, corruption freedom, government spending, business freedom and monetary policy. To investigate this empirically, two techniques were utilised under the GMM framework: system GMM and difference GMM. The empirical results demonstrate that all EF dimensions positively influence the EG proxy. From these results, it can be concluded that hat the countries with a high level of EF tend to accelerate the EG rates, which in turn favourably affect the living standards that eventually increase the wellbeing of residents. Moreover, the empirical outcomes reveal that the present EG rates are sensitive to past growth rates.

All analysis arrangements assert the enhancing role of EF in the EG process of the sampled countries: EF spurs EG in the MENA region. The policy implications from this study indicate that the government should play a dynamic role in adopting new strategies that enhance EF. It is recommended that EF from government obstruction in financial institutions prompts and improves the EG rate. This fosters the growth rate and pulls in financial specialists and entrepreneurs. It supports an economy's receptiveness to import merchandise and ventures from throughout the world and advances the capacity of natives to associate generously as purchasers and merchants in the worldwide commercial marketplace.

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