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The Nexus between Economic Freedom and Economic Growth in Arab Countries

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ABSTRACT

The purpose of this study is to explore the relationship between economic freedom and economic growth in Arab countries. Specifically, we seek to verify the hypothesis that greater economic freedom increases real gross domestic product per capita and to identify, consequently, the components of economic freedom that contribute to economic growth in Arab countries. We use panel data of 14 Arab countries from 2002 to 2019. The ordinary least squares estimation results confirm the hypothesis that greater economic freedom is associated with greater economic growth. The results also suggest that only four of the 10 economic components outlined in the Index of Economic Freedom have a significant effect on real gross domestic product per capita: trade freedom, government integrity, property rights, and tax burden. Reform in these areas, which are often neglected by neoclassical growth models, is essential to enhance economic growth and improve the standard of living in Arab countries.

INTRODUCTION

Neoclassical growth models show that economic growth is achieved through investment in human and physical capital, technology, and innovation. However, economic growth is also reliant on the quality of institutions; hence, policies that enhance government integrity, reduce taxes, guarantee the security of property rights, reduce trade barriers, and promote labor market flexibility are key determinants of economic growth. These variables constitute the core elements of economic freedom. The relationship between economic freedom and economic growth has been the subject of several studies, and the Index of Economic Freedom (IEF), established in 1995, has provided an insight into the contribution of economic freedom to economic growth and social progress (Miller et al., 2020). Economic freedom, defined as the absence of government coercion or constraint, is a significant determinant of economic growth (Cole, 2003; Gwartney et al., 1999). Greater economic freedom leads to an increase in economic growth and development (Hall and Lawson, 2014; Bennett and Vedder, 2013) and a higher growth rate of gross domestic product (GDP) per capita (Asandului et al., 2016; Compton et al., 2011). Economic freedom also produces higher levels of income (Ashby et al., 2013), reduces unemployment (Cebula, 2016; Bennett, 2016) and boosts exports of manufactured goods (Gouider and Ben Haddad, 2020).

A wide range of theoretical and empirical investigations confirm the significant positive relationship between economic freedom and economic growth. In this line, Cole (2003) examined the explanatory power of the IEF in several models of economic growth. Using a panel of 106 countries and data from 1980 to 1999, Cole (2003) concluded that economic freedom is a significant determinant of economic growth. Similarly, Chheng (2005) argued that countries tend to experience faster growth when they enhance economic freedom. Based on panel data of 50 countries from 1981 to 2000, Chheng (2005) confirmed the hypothesis that greater economic freedom is associated with greater economic growth. Asandului et al. (2016) studied the intensity of the relationship between GDP per capita and the IEF score for 40 European countries in 2014. Using variance analysis, Asandului et al. (2016) state that GDP per capita is positively associated with economic freedom. This finding is supported by Hussain and Haque (2016); using panel data for 57 countries for 2004 to 2014, the authors provide empirical proof that an increasing IEF score tends to foster an increase in the annual growth rate of GDP per capita. Most empirical studies use the overall IEF score; however, economic freedom is multidimensional, and it is important to measure the extent to which the different components of economic freedom affect economic growth. Fewer studies (e.g., Cebula and Clark, 2014; Hussain and Haque, 2016; Bennet, 2016; Kacprzyk, 2016) focus on the relationship between economic growth and the different aspects of economic freedom. Cebula and Clark (2014) studied the relationship between real income per capita and economic freedom in the member nations of the Organization for Economic Co-operation and Development for 2003 to 2007. The authors found that a higher degree of economic freedom and a higher quality of regulation are associated with higher real income per capita. However, the authors concluded that a reduction in real income per capita is a function of the tax burden.

Using a panel dataset of 50 U.S. states and 10 Canadian provinces from 1980 to 2010, Bennet (2016) explored the relationship between three components of economic freedom (size of government, taxation, and labor freedom) and some measures of macroeconomic performance and concluded that the three components of economic freedom lead to an increase in income per capita. Similarly, Kacprzyk (2016) investigated the relationship between economic growth and five components of economic freedom in a panel of 28 European Union countries during five-year periods. Applying the generalized method of moments technique, Kacprzyk (2016) provided empirical evidence confirming that economic growth is an increase function of trade freedom, secure property rights, and regulatory policies. Moreover, Hussain and Haque (2016) argued that trade freedom, fiscal health, labor freedom, and financial freedom, have a strong impact on economic growth. More recently, Miller et al. (2020) stated that increasing economic freedom, through reducing taxes, boosting competition, and fighting corruption, leads to the efficient allocation of resources and generates dynamic economic growth. In Arab countries, despite governmental efforts, economic freedom levels remain low (Miller et al., 2020). This is confirmed by the statistics contained in Table 1, which report the IEF ranking of the 14 Arab countries analyzed in our study.

Table 1. Ranking of Arab countries by economic freedom index in 2020

	<i>Overall score</i>	<i>Ranking world</i>	<i>Position</i>
U. A. Emirates	76.2	18	Mostly free
Qatar	72.3	31	Mostly free
Bahrain	66.3	63	Moderately free
Jordan	66	66	Moderately free
Oman	63.6	75	Moderately free
Morocco	63.3	78	Moderately free
Kuwait	63.2	79	Moderately free
Saudi Arabia	62.4	83	Moderately free
Tunisia	55.8	128	<i>Mostly unfree</i>
Mauritania	55.3	130	<i>Mostly unfree</i>
Egypt	54	142	<i>Mostly unfree</i>
Djibouti	52.9	151	<i>Mostly unfree</i>
Lebanon	51.7	157	<i>Mostly unfree</i>
Algeria	46.9	169	Repressed

Source: The Heritage Foundation (2020)

According to the Heritage Foundation (2020), among the 180 economies ranked by the IEF, the level of economic freedom in Arab countries is low, with many Arab economies (nearly 50%) classified by the IEF as *repressed*. In 2020, none of the 22 Arab countries is classified as *free*, while only the United Arab Emirates and Qatar are classified as *mostly free*. Therefore, enhancing economic freedom represents an opportunity for Arab countries to achieve economic development.

Therefore, determining the extent to which an improvement of economic freedom can contribute to economic growth in Arab countries is of paramount importance. To our knowledge, there are no empirical studies that have investigated the relationship between economic growth and economic freedom in Arab countries. With this study, we seek to fill this gap in the empirical literature. Economic freedom is multi-dimensional; therefore, to provide more adequate policy recommendations, it is necessary to focus on the impact of the individual components of economic freedom on economic growth. This is expected to help policymakers to understand the aspects of economic freedom that need to be enhanced to improve the economic and social well-being of Arab citizens.

The remainder of this article is organized as follows. Section 2 describes data and method, the results are presented and discussed in section 3, and section 4 provides our conclusions and recommendations.

1. DATA DESCRIPTION AND ECONOMETRIC METHOD

Our empirical investigation is based on annual data from 2002 to 2019 of 14 Arab countries: Algeria, Bahrain, Djibouti, Egypt, Jordan, Kuwait, Mauritania, Morocco, Oman, Lebanon, Qatar, Saudi Arabia, Tunisia, and United Arab Emirates. These countries were selected based on the availability of data related to macroeconomic variables and economic freedom. All macroeconomic variables used in this study were obtained online from the World Bank's World Development Indicators, apart from the IEF data, which is produced by the Heritage Foundation (2020). We use real GDP per capita as the dependent variable and domestic investment rate, labor force participation rate, and economic freedom as the independent variables.

The model used in this study is derived from the standard neoclassical growth model used in other studies (Barro, 1991), which considers the real GDP per capita as a function of saving rate (measured by the ratio of investment to output) and the level of human capital (proxied by the labor force). The main goal is not to study the determinants of economic growth but to measure the extent to which economic freedom impacts economic growth. Hence, we use the IEF as an explanatory variable.

The basic model is summarized in Equation (1):

$$\text{LogRgdpp}_{it} = \alpha_{i0} + \alpha_1 \text{INV}_{it} + \alpha_2 \text{LF}_{it} + \alpha_3 \text{EF}_{it} + \varepsilon_{it} \quad (1)$$

Where:

- LogRgdpp is the natural log of real GDP per capita. Used to measure economic growth, the real per capita GDP is measured in constant 2010 U.S. dollars.

- i denotes country and t denotes time.

- INV denotes domestic investment, defined as the ratio of gross fixed capital formation to GDP (% GDP). A positive coefficient of INV is expected because a greater rate of investment increases economic growth (Cole, 2003; Chheng, 2005).

- LF is the labor force participation rate and is used as a proxy for human capital. A positive coefficient of LF is expected because greater workforce participation increases GDP per capita (Van Ark and McGuckin, 1999).

- EF represents the overall IEF score, ranging from 0 to 100. The higher the score, the freer the economy of the country. A positive coefficient of EF is expected because greater economic freedom increases economic growth (Compton et al., 2011; Bennet, 2016).

The IEF provides 12 quantitative and qualitative elements: government spending, government integrity, tax burden, trade freedom, investment freedom, labor freedom, monetary freedom, financial freedom, business freedom, property rights, fiscal health, and judicial effectiveness. All economic freedom

components are allocated a score from 0 to 100, with higher scores indicating a higher degree of freedom for that component. Because of the non-availability of data concerning fiscal health and judicial effectiveness, the IEF used in this paper is based on 10 elements.

According to the Heritage Foundation (2020), the components of economic freedom are grouped in four area: the rule of law, government size, regulatory efficiency, and open markets.

Our method is based on regression analysis. First, we proceed to regress the basic equation (model 1), which focuses only on the overall score of the IEF. Second, we integrate the components of economic freedom in the basic equation to determine the components that most strongly affect economic growth.

As the correlation matrix indicates (see Appendix 1), there is a substantial correlation between real GDP per capita and four of the 10 economic freedom components: trade freedom (TRF), property rights (Prights), government integrity (GINTG), and tax burden (TB). Accordingly, four additional models are estimated separately.

$$\text{LogRgdpp}_{it} = \alpha_{i0} + \alpha_1 \text{INV}_{it} + \alpha_2 \text{LF}_{it} + \alpha_3 \text{TRF}_{it} + \varepsilon_{it} \quad (2)$$

$$\text{LogRgdpp}_{it} = \alpha_{i0} + \alpha_1 \text{INV}_{it} + \alpha_2 \text{LF}_{it} + \alpha_3 \text{Prights}_{it} + \varepsilon_{it} \quad (3)$$

$$\text{LogRgdpp}_{it} = \alpha_{i0} + \alpha_1 \text{INV}_{it} + \alpha_2 \text{LF}_{it} + \alpha_3 \text{GINTG}_{it} + \varepsilon_{it} \quad (4)$$

$$\text{LogRgdpp}_{it} = \alpha_{i0} + \alpha_1 \text{INV}_{it} + \alpha_2 \text{LF}_{it} + \alpha_3 \text{TB}_{it} + \varepsilon_{it} \quad (5)$$

Consequently, five models are estimated consecutively. The basic model (model 1) explores the relationship between economic growth and the overall IEF score. The other four models are used to measure the effect of the selected components of economic freedom on economic growth.

Table 2 summarizes the descriptive statistics for the variables used in this study. As shown, the average value of real GDP per capita is US\$18,960.28. In addition, investment has a mean value of 26.45%, and the mean value of the labor force participation rate is 59.26%. The average economic freedom score is 61.5 points, which implies that, on average, the economies of the sample countries are considered by the Heritage Foundation as *moderately free*. Summary statistics concerning the four key components of economic freedom determined by this study are also reported in Table 2.

Table 2. Descriptive statistics

Variable	Rgdpp	INV	LF	EF	GINTG	TRF	TB	Prights
Mean	18960.28	26.45	59.26	61.50	43.95	69.80	87.62	44.68
Median	11096	24.45	54.28	60.95	43.00	74.40	91.30	50.00
Maximum	69679	61.47	88.07	77.70	90.00	86.20	99.90	81.80
Minimum	884.1	10.05	41.56	44.70	10.00	27.20	51.30	12.30
Std. Dev.	18102.13	8.91	13.13	7.07	15.24	13.71	12.08	13.99
Skewness	1.396848	1.27	0.67	0.18	0.54	-1.36	-0.54	0.10
Kurtosis	3.914331	4.8	2.31	2.51	2.74	4.42	2.06	2.29

Source: Author's calculation

The mean scores for government integrity and property rights are 43.95 and 44.68, respectively, which implies, *ceteris paribus*, that the economies of the 14 selected Arab countries are *repressed*; however, trade freedom has a mean score of 69.8, and the mean score for tax burden is 87.62, which implies that the economies of Arab countries are *moderately free* and *free* in terms of trade and taxation, respectively.

2. EMPIRICAL RESULTS AND DISCUSSION

Before the regression analysis, unit root tests of variables were undertaken using the methods of Im, Pesaran, and Shin (IPS) (2003), and Levin, Lin, and Chu (LLC) (2002). The results are summarized in Table 3.

Table 3. Panel unit root tests

Variable	At Level	
	LLC t^*	IPS W-sat
Rgdpp	-4.35*** (0.0000)	-2.18*** (0.0014)
INV	-1.76*** (0.0035)	-2.19*** (0.0014)
LF	-10.35*** (0.0000)	-3.87*** (0.0001)
EF	-3.02*** (0.0013)	-1.76*** (0.0039)
TRF	-4.89*** (0.0000)	-2.38*** (0.0087)
Prights	-1.30*** (0.0026)	-1.73*** (0.0041)
GINTG	-4.20*** (0.0000)	-3.15*** (0.0008)
TB	-3.41*** (0.0003)	-2.24* (0.0126)

Note: LLC and IPS tests have null hypothesis of the existence of a unit root in any of the series in the panel. ***, ** and * denote statistical significance at the 1%, 5% and 10 % level.

As shown in Table 3, both the LLC and IPS tests reject the null hypothesis of the unit root, which indicates that all the variables are stationary in level. In addition, to avoid any problems of multicollinearity, we calculated the correlation between the variables used in the five regressions (see Table 4). It is apparent from the correlation analysis that no potential collinearity is expected because the different dependent variables are not highly correlated with each other. Furthermore, the results in Table 4 reveal a strong positive correlation between economic freedom and real GDP per capita, indicating that greater economic freedom tends to foster economic growth.

Table 4. Correlation between variables used in the five models

	<i>Rgdpp</i>	<i>INV</i>	<i>LF</i>	<i>EF</i>	<i>TRF</i>	<i>Prights</i>	<i>GINTG</i>	<i>TB</i>
Rgdpp	1							
INV	0.48	1						
LF	0.45	-0.29	1					
EF	0.55	-0.21	-0.31	1				
TRF	0.51	-0.16	-0.07	0.63	1			
Prights	0.57	-0.22	-0.21	0.83	0.44	1		
GINTG	0.71	-0.1	-0.27	0.81	0.5	0.82	1	
TB	0.63	-0.21	-0.22	0.69	0.64	0.5	0.59	1

Source: Author's calculation

2.1 Relationship between economic growth and the overall score of economic freedom

The first step in our empirical study is to focus on the impact of the overall score of economic freedom on economic growth in Arab countries. The ordinary least squares estimation results are reported in Table 5. The choice between fixed or random effects is determined using the Hausman test. The statistic of the Hausman test confirms that the null hypothesis is accepted, indicating that random-effect estimation is a suitable method for this model. In other words, the p-value of 0.3319, which is greater than the critical value of $p = 0.05$, confirms that random-effect regression is more suitable than fixed-effect regression. This result implies that the variation of the overall score of economic freedom is largely due to differences across countries rather than from changes over time.

Table 5. Relationship between economic growth and the IEF

	<i>Model 1</i>	
	<i>Fixed effect</i>	<i>Random effect</i>
Intercept	-2.44 (-1.92)*	-2.06 (-1.71)*
INV	0.56 (3.02)**	0.52 (3.03)**
LF	0.28 (6.14)***	0.27 (6.15)***
EF	0.095 (12.29)***	0.092 (12.12)***
No. of Observations	252	252
F-Statistic	8.02 0.0000	55.35 0.0000
R ²	0.52	0.51
Hausman test Prob.	3.41 0.3319	

Notes: the dependent variable is the natural log of real GDP per capita; t statistic are reported in parentheses; ***, ** and * denote statistical significance at the 1%, 5% and 10 % level.

As shown in Table 5, all the variables are statistically significant and exert a positive effect on economic growth. When the investment rate increases by 1%, real GDP per capita improves by 0.56%. In addition, real GDP per capita increases by 0.28% when the labor force participation rate rises by 1%. The coefficient of the IEF score is positive and statistically significant at the 1% level; hence, economic freedom is likely to substantially enhance economic growth. Moreover, a one-point increase in the IEF score leads to a 0.092% improvement in economic growth. This result, which confirms the growth-enhancing effects of economic freedom in Arab countries, is consistent with most empirical studies (Compton et al., 2011; Bennet, 2016; Asandului et al., 2016).

The results presented in Table 5 concern the relationship between economic growth and the overall IEF score. However, economic freedom is an aggregate indicator covering several areas. Hence, separately studying the effect of each component on economic growth is important, so that policymakers can focus their efforts on the elements that have the strongest effects.

2.2 Relationship between economic growth and the key components of economic freedom

The ordinary least squares estimation results are reported in Table 6. Apart from model 3, where random-effect estimation is more appropriate, the statistic of the Hausman test suggests the rejection of

the null hypothesis for the consistency of random-effect estimates, indicating that fixed-effect estimation is the preferred method for models 2, 4, and 5. This finding provides evidence that the variability in the scores for trade freedom, government integrity, and tax burden is due to changes over time, whereas the variability of the score for property rights is due to differences across countries.

Table 6. Relationship between economic freedom components and economic growth

	Model 2	Model 3	Model 4	Model 5
Intercept	1.53 (1.43)	2.54 (2.49) *	3.29 (3.47)	-4.51 (-3.92) ***
INV	0.44 (2.5) *	0.56 (3.21) ***	0.23 (1.42)	0.88 (5.25) ***
LF	0.17 (4.02) ***	0.2 (4.66) ***	0.21 (5.33) ***	0.35 (8.44) ***
TRF	0.055 (13.15) ***	-	-	-
Prights	-	0.044 (11.71) ***	-	-
GINTG	-	-	0.048 (15.16) ***	-
TB	-	-	-	0.07 (16.02) ***
N	252	252	252	252
F-Statistic	9.14 0.0000	50.98 0.0000	12.05 0.0000	13.43 0.0000
R ²	0.49	0.47	0.51	0.54
Hausman test Prob.	38.14 0.0000	5.76 0.2137	9.79 0.0204	23.09 0.0000

Notes: the dependent variable is the natural log of real GDP per capita; t statistic are reported in parentheses; ***, ** and * denote statistical significance at the 1%, 5% and 10 % level.

As summarized in Table 6, we find that the four components of economic freedom are statistically significant at the 1% level and exert a positive effect on economic growth. These areas of economic freedom are a catalyst for economic growth; for example, a one-point increase in the score for trade freedom is associated with a 0.055% rise in real GDP per capita. This result confirms the affirmation by Miller et al. (2020) that the freedom to trade reflects an economy's openness and is a powerful driver of growth. Similar evidence is provided by Kacprzyk (2016) and Hussain and Haque (2016), who argue that trade freedom exerts a strong and positive impact on economic growth. In addition, a one-point increase in the score for property rights fosters economic growth by 0.044%. This is supported by Kacprzyk (2016) and Barro (1997), who find that securing property rights is associated with greater economic growth. Furthermore, improving government integrity has a positive effect on economic growth to the extent that real GDP per capita can increase by 0.048% with a one-point increase in the score of government integrity. This is supported by Haggard and Tiede (2011) who provide empirical evidence that the rule of law (e.g., property rights and government integrity) is essential for economic growth.

Finally, we find that the tax burden level exerts a positive effect on economic growth, and our study demonstrates that taxation in Arab countries is not excessive or unreasonable. When the score for tax burden rises by one-point, economic growth increases by 0.07%. This finding was expected due to the high average score for tax burden (87.62) for the 14 Arab countries in our sample, implying that these economies are *free* in terms of taxation (Heritage Foundation, 2020). Our finding is supported by Hussain and Haque (2016), who find that a low tax burden exerts a positive and strong effect on economic growth. Similarly, Laffer (2014) argues that enhanced economic growth requires the elimination of a progressive tax rate and the establishment of a reasonable tax rate.

CONCLUSION

This study analyzes the relationship between economic freedom and economic growth in Arab countries. The results suggest that economic freedom is an important determinant of economic growth. Furthermore, the investigation of the relationship between economic growth and the components of economic freedom shows that only four of the 10 economic freedom components -trade freedom, property rights, government integrity, and tax burden- appear to have positive and significant effects on real GDP per capita. These results indicate to policymakers the key areas of economic freedom that should be targeted to maximize economic improvement. Concentrated efforts in the improvement of these components of economic freedom will enhance the quality of institutions and, therefore, will lead to economic growth in Arab countries. Policymakers in Arab countries are encouraged to apply a stronger rule of law through better protection of property rights, while enhancing government integrity, reducing trade barriers, and applying an efficient fiscal policy. Our findings suggest that reforms in these key areas can enhance economic growth and social well-being in Arab countries.

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Appendix 1. Correlation matrix between real per capita GDP and components of economic freedom

	RGDPP	EF	BFR	FFR	GINTG	GS	INVFR	MFR	PRIGHTS	TB	TRF	LFR
RGDPP	1											
EF	0.55	1										
BFR	0.25	0.46	1									
FFR	0.04	0.59	0.00	1								
GINTG	0.71	0.81	0.42	0.30	1							
GS	0.13	0.25	0.21	-0.09	0.16	1						
INVFR	-0.29	0.15	-0.11	0.50	-0.12	-0.15	1					
MFR	-0.11	0.15	0.01	0.19	0.15	0.15	0.05	1				
PRIGHTS	0.57	0.83	0.48	0.40	0.82	0.10	0.06	0.20	1			
TB	0.63	0.69	0.12	0.42	0.59	-0.05	-0.08	-0.2	0.5	1		
TRF	0.51	0.63	0.31	0.37	0.44	0.06	0.07	-0.1	0.5	0.64	1	
LFR	0.27	0.60	0.12	0.17	0.52	-0.01	-0.13	-0.1	0.4	0.65	0.3	1

Source: Author's calculation