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# ECONOMIC FREEDOM AND ECONOMIC GROWTH IN MENA COUNTRIES

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## ABSTRACT

*Most studies of the relationship between economic freedom and growth of GDP have found a positive correlation. One problem in this area is the choice of measure of economic freedom. A single measurement does not reflect the complex economic environment and a highly aggregated index makes it difficult to draw policy conclusions. This paper attempts to answer the question: How does economic freedom impact economic growth? Using data from 13 selected MENA countries over the period of 2000 to 2009, this paper investigates the relationship between economic freedom and economic growth. The results of panel data analysis show that economic institutions, specifically economic freedom, play a significant role in economic development independently and the overall index of economic freedom is positively correlated with growth. It is found that economic freedom does matter for growth. This does not mean that increasing economic freedom, defined in general terms, is good for economic growth since some of the categories in the index are insignificant and some of the significant variables have negative effects.*

**Keywords:** Economic freedom, Economic growth, Panel data.

**JEL Code**: I10,O43, P50

## 1. INTRODUCTION

Economic freedom, in its most compact definition, refers to the protection of private property rights and the freedom of voluntary transactions (Gwartney Lawson and Block., 1996). A government that does not enforce contracts usurps property from its citizens without due compensation, and puts limits on voluntary transactions, violates the tenets of economic freedom. In so doing, such a government provides a disincentive for entrepreneurship and productivity, given that individuals are skeptical about realizing the gains of their productive efforts. It is the lure of the individual's potential gain from productive activities and new ideas that makes

entrepreneurship, and thus growth, possible[1]. Within the growth literature, there have been many efforts to assess the impact of economic freedom on growth and development. Noting that protection of private property and freedom of choice and exchange are the key elements of economic freedom; (De Haan, Lundström and Sturm, 2006) examine the existing empirical research and conclude that a vast majority of studies support the positive link between economic freedom and growth[2]. For example, (Gwartney Lawson and Block., 1996), the creators of the Fraser Institute's measure of economic freedom, note that the countries with the highest economic freedom scores have an average annual growth rate of per capita real GDP of 2.4%, while those with the lowest economic freedom scores have an average of negative 1.3% for 1980-94. The authors also iterate that countries significantly improving their economic freedom scores recorded positive rates of growth. Given the existing literature illustrating the importance of economic freedom, independently, on growth, the next logical question is how economic growth is impacted by both variables. When economic freedom is included in empirical estimates, the relative impact of each on growth can be deduced. In the next section, we begin this endeavor by describing the variables used in the analysis and the potential outcomes of regressions.

## 2. WHAT IS ECONOMIC FREEDOM?

Economic freedom, as defined by the Fraser Institute, a think tank that publishes Economic Freedom of the World since 1996, is composed of personal choice, voluntary exchange, freedom to compete and protection of people and property. Individuals have economic freedom when: (a) their property acquired without the use of force, fraud, or threat is protected from physical invasions by others; and (b) they are free to use, exchange, or give their property to another as long as their actions do not violate the identical rights of others. In an economically free society, the fundamental function of the government is the protection of property and the enforcement of contracts (Gwartney Holcombe and Lawson, 2004).

The Heritage Foundation, another think tank which publishes (together with the Wall Street Journal) Index of Economic Freedom since 1995 defines economic freedom as "the absence of government coercion or constraint on the production, distribution or consumption of goods and services beyond the extent necessary for citizens to protect and maintain liberty itself". In

[1] -In addition to the general definition offered above, recall that economic freedom can be thought of as a collection of various subheadings, including size of government, economic structure and use of markets, monetary policy and price stability, freedom to use alternative currencies, legal structure and security of private ownership, international exchange and freedom to trade with foreigners, and freedom of exchange in capital markets (Carlsson and Lundström, 2002). Each of these categories represents a smaller facet of the overarching definition of economic freedom.

[2] -For example, (De Vanssay and Spindler, 1994). ((Gwartney Lawson and Block., 1996). (Islam, 1996). (Hanke and Walters, 1997). (De Haan and Siermann, 1998). (Johnson and Lenartowicz, 1998). (Nelson and Singh, 1998). (Gwartney Lawson and Holcombe,1999). (De Haan and Sturm, 2000). (Carlsson and Lundström, 2002). (Green et al., 2002). (Knowles and Garces-Ozanne, 2003). (World Bank, 2004). (Heckelman and Knack, 2004). (Berggren and Jordahl, 2005). (Weede, 2006).

other words, people are free to work, produce, consume and invest in the ways they feel are most productive (Beach and Miles, 2004).

In this definition, there is a substantial difference between the degrees to which people are free individually and collectively to undertake economic activities. Individual freedom means the right to do economic activities free from arbitrary control and interference by the state and other individuals. Collective freedom refers to the extent to which the economic system that controls choice reflects the expressed preferences of majority of the citizenry rather than those of a ruling few (De Haan and Sturm, 2000).

## 2.1. Economic Freedom

To measure economic freedom, we utilize the well-cited and established Economic Freedom of the World Index compiled by the Fraser Institute (Gwartney Lawson and Norton., 2008).

The index measures the level of economic freedom, utilizing 23 different components, on a scale from zero to ten, with ten representing a greater degree of freedom. These components can be grouped in seven broad categories: size of government, economic structure and use of markets, monetary policy and price stability, freedom to use alternative currencies, legal structure and security of private ownership, freedom to trade with foreigners, and freedom to exchange in capital markets. According to this index, economic freedom measures "the extent to which rightly acquired property is protected and individuals are free to engage in voluntary transactions" (De Haan and Sturm 1999). Thus, any government interference in transactions decreases the economic freedom score for that country[3].The factors and the components of the economic freedom index are listed in Table 1:

**Table-1**. Economic Freedom Index for MENA Country (13 Opponents)

| Factor | Index mean(2009) | variable |
|---|---|---|
| 1:Size of Government: Expenditures, Taxes, and Enterprises | 5.61 | 1-1 general government consumption spending<br>1-2 transfers and subsidies as a percentage of GDP<br>1-3 government enterprises and investment<br>1-4 top marginal tax rate |
| 2:Legal Structure and Security of Property Rights | 6.20 | 2-1 judicial independence<br>2-2 impartial courts<br>2-3 protection of property rights<br>2-4military interference in rule of low and the political process<br>2-5 integrity of the legal system<br>2-6 legal enforcement of contracts<br>2-7regulatory restrictions on the sale of real property |

[3] -We recognize the availability of alternative institutional indices (such as Heritage Foundation's Index of Economic Freedom and ICRG's average protection against risk of expropriation); however, due to the long time period and sample size of countries covered by the Fraser index, we find it to be the most suitable for our analysis. For an in-depth explanation of and comparison between the Fraser freedom index and Heritage's freedom index, see De Haan and Sturm 1999.

| | | |
|---|---|---|
| 3:Access to Sound Money | 8.31 | 3-1 money growth<br>3-2 standard deviation of inflation<br>3-3 inflation: most recent year<br>3-4 freedom to own foreign currency bank accounts |
| 4:Freedom to Trade Internationally | 6.54 | 4-1 taxes on international trade<br>4-2 regulatory trade barriers<br>4-3 size of the trade sector relative to expected<br>4-4 black – market exchange rate<br>4-5 international capital market controls |
| 5:Regulation of Credit, Labor, and Business | 6.65 | 5-1 credit market regulations<br>5-2 labor market regulations<br>5-3 business regulation |

## 2.2. Economic Freedom and Growth

Even though the existing literature overwhelmingly supports the theory that economic freedom displays a significantly positive effect on economic growth (as discussed above), there are a small number of studies yielding insignificant (or even negative) effects of select categories of economic freedom on growth (Ayal and Karras, 1998).

For example, Sala-i-Martin (1997) concludes that both the freedom to use alternative currencies and freedom to trade with foreigners have an insignificant effect on growth.

However, it is important to note that even the studies with atypical results generally only report insignificant or negatively significant results for a particular category, noting positively significant results overall[4], given the large body of existing evidence regarding the effect of economic freedom on economic growth.

## 3. MODEL SPECIFICATION AND DATA DESCRIPTION

In this study two models are used. First a variety of control variables that may affect a country's growth rate are employed, and an estimation of the model with the overall index of economic freedom is made.

In the next step the economic freedom index is broken down into the categories constructing the index. Summary statistics overall index of economic freedom and 13opponents MENA are provided in Table 2.

**Table-2.** Summary Index and Countries Rank for Year 2009

[4] - (Carlsson and Lundström, 2002). provide a tabular summary of research in the various categories of economic freedom, observing positive results for the effect of economic freedom on economic growth for categories including, but not limited to, freedom to use alternative currencies (Ayal and Karras, 1998). legal structure and security of private ownership (Knack and Keefer, 1995). freedom to trade with foreigners (Torstensson, 1994). and freedom of exchange in capital markets (Ayal, and Karras, 1998).

| Summary Index | Rank | Country | Summary Index | Rank | Country |
|---|---|---|---|---|---|
| 6.45 | 65 | Malta | 7.28 | 28 | Bahrain |
| 6.12 | 78 | Morocco | 6.60 | 53 | Egypt |
| 7.03 | 39 | Oman | 5.76 | 95 | Iran |
| 4.91 | 116 | Syria | 6.55 | 56 | Israel |
| 6.03 | 85 | Tunisia | 7.24 | 30 | Jordan |
| 7.02 | 40 | UAE | 6.72 | 44 | Kuwait |
| 4.98 | 115 | Algeria | | | |

### 3.1. General Economic Freedom Index

Following the existing literature on economic freedom and growth in selecting the variables,[5] the used model is defined as:

$$LRGDP_{PC}=\beta_0+\beta_1 LECFR+\beta_i \sum LZ_i+\varepsilon_i$$

Where $RGDP_{PC}$ is real gross domestic production per capita in 2000 constant dollars, and ECFR is economic freedom indicators, $\sum z$ is control variables.

Firstly, an estimation model without control variables is made to show the basic relationship between economic growth and the main variables for 13opponents MENA in years 2000-2010. The standard control vector includes government share of GDP, investment share of GDP, population growth, primary school enrollment, inflation rate and data source and data description explained in appendix 1. The data on economic freedom is reported in Economic Freedom of the World: 2010 Annual Report (Gwartney et al., 2000). The data have been reported every five years since 1970. There are three main indices with different weightings of the 23 components of the index. The index where the weights are determined by a principal-component analysis is used. The index of economic freedom is divided into the seven categories and this study uses five of them. Each category index is measured on a scale between 0 and 10, where 10 is the highest level of freedom. Summary statistics for these unbalanced panel data are provided in Table 3.

**Table-3.** Summary Statistics

| Variable | Obs. | Mean | Std.Dev. | Min | Max |
|---|---|---|---|---|---|
| LRGDPPC | 130 | 9.278 | 0.948 | 7.848 | 10.938 |
| LECFR | 130 | 1.882 | 0.111 | 1.589 | 2.042 |
| LKG | 130 | 1.983 | 0.380 | 1.108 | 2.757 |
| LKI | 130 | 3.292 | 0.350 | 2.488 | 3.892 |
| LLANDAR | 130 | 11.336 | 2.631 | 5.768 | 14.683 |
| LPRSEN | 108 | 4.518 | 0.067 | 4.327 | 4.599 |

Thereafter, the panel characteristics of the dataset are taken into account and an estimation of random and fixed effects models are made. The baseline model contains a control variable of the

[5] For example,(Levine, and Renelt, 1992). (Dawson, 1998). (Gwartney et al., 2004).

size of the government, investment share of GDP, primary school enrollment and country size. The log of the total area of a country is used as control for its size. The size of government is measured as the government's share of real GDP and is included to control for the potential negative effect of a large government on economic growth. We include the investment share as one of the standard control variables because of the well-documented positive relationship between the rate of investment in physical capital and the rate of growth (Levine and Renelt, 1992). However, we acknowledge a potential endogeneity problem, as highlighted by (De Haan *et al.*, 2006), of including both economic freedom and the investment rate in the same regression. Several studies show that economic freedom influences growth directly through a productivity enhancing channel and indirectly through an investment effect (Dawson, 1998; Bengoa and Sanchez-Robles, 2003; Gwartney *et al.*, 2004).

In order to choose between different methods (Pooled Least Squares (PLS), fixed effects (Knack and Keefer, 1995), and random effects (RE)), tests of Chao (F. Limer), and Hausman are used. First, in order to choose the type of model estimates, it is necessary to test the F Limer and Hausman. In the second step, an estimation of both random effect model and fixed effect model is made.

### 3.2. Results and Discussion

First, the model with the overall index of economic freedom is estimated. Table 4 presents the static panel regression results. Both the versions Random Effect and Fixed Effect show a very good overall model fit as indicated by the Wald Chi-Square and F-statistic respectively. In all equations, the (Knack and Keefer, 1995) model is better than the (RE) model. It is possible to see that the economic freedom is highly positively correlated with economic growth. Coefficient is 1.22, and standard error is 0.19, meaning that the coefficient is statistically significant at all conventional levels. This is as the expected positive sign from the theory. A single unit increase in the economic freedom index leads to a 1.22 percentage point increase in growth. In order to provide a more complete model specification, regressions are re-estimated but this time by including some additional control variables. In model 2 the government share of GDP is included. The result shows that economic freedom coefficient is positive and significant.KG coefficient is negative and significant at the 10% level. Where1% increases in KG leads to a 0.11% decrease in economic growth. In model 3, the addition of investment share of GDP, results represent that KI coefficient is positive and significant. Model 4 includes a Logarithm of the total area of a country. Changes in the area of a country negatively and significantly impact the growth rate by 0.18. Finally in the last model we added primary school enrollment variable to the model. The outcome shows that the coefficient is positive and significant at 1% level. In additional coefficients of economic freedom is positive and significant.

**Table-4.** Static Panel Regression Results

| Variables | Model1 | | Model 2 | | Model3 | | Model4 | | Model5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | FE | RE | FE | RE | FE | RE | FE | RE | FE | RE |
| LECFR | 1.22*** (0.19) | 1.27*** (0.19) | 1.20*** (0.19) | 1.25*** (0.19) | 0.78** (0.18) | 0.83** (0.18) | 0.79** (0.18) | 0.80*** (0.18) | 0.83*** (0.18) | 0.86*** (0.18) |
| LKG | | | -0.11* (0.09) | -0.11* (0.09) | -0.07* (0.08) | -0.07* (0.08) | -0.11** (0.08) | -0.06 (0.08) | -0.00 (0.09) | 0.01 (0.08) |
| LKI | | | | | 0.22*** (0.03) | 0.21*** (0.03) | 0.23*** (0.04) | 0.22*** (0.03) | 0.16** (0.04) | 0.16** (0.04) |
| LLANDAR | | | | | | | -1.30** (1.02) | -0.18** (0.08) | -0.45* (0.98) | -0.18** (0.08) |
| LPRSEN | | | | | | | | | 1.18*** (0.24) | 1.18*** (0.24) |
| CONSTANT | 6.96*** (0.37) | 6.87*** (0.42) | 7.23*** (0.423) | 7.13*** (0.47) | 7.21*** (0.37) | 7.13*** (0.43) | 21.98*** (11.66) | 9.28*** (1.03) | 6.96** (11.42) | 3.81** (1.55) |
| Wald Chi-sq | | 5.62 0.0177 | | 7.36 0.0251 | | 8.17 0.0425 | | 5.33 0.2542 | | 4.58 0.4689 |
| F Statistic | 783.85 0.0000 | | 719.34 0.0000 | | 906.95 0.0000 | | 792.48 0.0000 | | 826.59 0.0000 | |
| Adjusted R-squared | 0.99 | 0.23 | 0.99 | 0.23 | 0.99 | 0.38 | 0.99 | 0.40 | 0.99 | 0.51 |

***,**,* indicates coefficient is significant at 1%, 5% and 10% level of significance respectively

Wald Chi-Square is used to assess the overall model fit for Random Effects (RE) Model and F-statistic is used to test the overall model fit for Fixed Effects (Knack and Keefer, 1995).

Numbers in parentheses are standard error.

Dependent Variable is RGDPPC (Real Gross Domestic production per capita).

### 3.3. Different Measures of Economic Freedom

We now turn to the case with the five categories of the economic freedom index. Employing (Carlsson & Lundstrom, 2000) analysis, the estimated model is defined as:

$$LRGDP_{it}=\alpha_0 +\alpha_1 LINV_{it} +\beta_1 LSIZ_{it} +\beta_2 LPRO_{it} +\beta_3 LSM_{it} +\beta_4 LFTR_{it} +\beta_5 LLOW_{it} +\varepsilon_{it}$$

Where $INV_{it}$: is investment of country i in year t,$SIZ_{it}$: index of size of government of country i in year t, $PRO_{it}$: index of legal structure and security of property rights, $SM_{it}$: index of access to sound money, $FTR_{it}$ : index of freedom to trade internationally, and finally $LOW_{it}$ refers to index of regulation of credit, labor, and business.

In order to choose the type of model estimates, it is necessary to test the F Limer and Hausman. The results suggest that the random effects model is better than the fixed effects. The Hausman test statistics is equal to 4.76 and significant. Results can be found in Table 5.

Investment coefficient is positive and significant. The size of government (EF1) is not significant and the coefficient is positive, implying that a larger government size cause an increase in growth. The estimated size suggests that one unit increase of the index increases the average growth rate by approximately 0.02 percent. Most previous studies have found a negative relationship between this variable and growth.

**Table-5.** Results of Estimations Using Five Measures of Economic Freedom: RGDP

| **Dependent variable: real GDP** | | | |
|---|---|---|---|
| **Independent Variable** | **Cross-section Random effects test equation** | | |
| | **Coefficient** | **Std. Error** | **t-Statistic** |
| $LINV_{it}$ | 0.0921 | 0.0384 | 2.3968 |
| $LSIZ_{it}$ | 0.0293 | 0.0803 | 0.0368 |
| $LPRO_{it}$ | -0.0798 | 0.0741 | -1.0772 |
| $LSM_{it}$ | 0.0230 | 0.1081 | 0.2130 |
| $LFTR_{it}$ | 0.3080 | 0.0947 | 3.2503 |
| $LLOW_{it}$ | 0.6370 | 0.0941 | 6.7692 |
| C | 7.3546 | 0.4382 | 16.7831 |
| The Chaw test (F-limer) | 1516.37 (0.0000) | | |
| The Hausman test | 4.7637 (0.5745) | | |
| $R^2$ | 0.65 | | |
| DW | 0.74 | | |

Legal structure and security of property rights (EF2) is significant and negative, and the estimated size suggests that one unit increase of the index decreases growth by 0.07 percent. This result is somewhat surprising since most previous studies have found a positive or insignificant relation.

Index of access to sound money (EF3) is positive and significant. Freedom to trade with foreigners (EF4) is significant and positive. In other words, trade openness increases growth. The result suggests that one unit increase of the index increases growth by 0.3 percent.

And finally, regulation of credit, labor, and business (EF5) is positive and significant, and one unit increase of the index increases growth by 0.63 percent. Consequently, four of the significant economic freedom variables are positively related to economic growth but one is negatively correlated.

**Table-6.** Result of the effect of Economic Freedom Variables on the Economic Growth

| **Economic Freedom Variable** | **Sign of the effect** |
|---|---|
| Size of government | Positive |
| Legal Structure and Security of Property Rights | Negative |
| Access to Sound Money | Positive |
| Freedom to Trade Internationally | Positive |
| Regulation of Credit, Labor, and Business | Positive |

## 4. CONCLUSION

Economic freedom has been recognized as potentially important for economic growth. A comprehensive empirical study examining the relative effects of both was absent from the literature. This paper is one attempt to fill the gap in the literature. Using panel data technique, it investigated the impact of economic freedom on economic growth in the MENA countries over the period 2000 to 2009.

It was found that economic freedom is to have a positive and significant effect on economic growth. The economic freedom index is broken down into the five categories. It was observed that only legal structure and security of property rights protection as two ingredient of economic freedom index have negatively correlated with growth.

The property rights must be protected through strong and unbiased judicial system. Establishment of impartial and strong judicial system may decrease the process of growth through sufficient provision of protection to property rights.

We also found that government size is positively correlated with economic growth as increase in government size positively affects the better allocation of resources. Two other indexes of economic freedom are also positively correlated with economic growth.

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**APPENDIX 1**

| Variable | Data Description | Data Source |
|---|---|---|
| GDP Growth | Growth of GDP per capita, PPP basis, constant 2000international dollars. | World Development Indicators 2010 |
| Economic Freedom | Economic freedom of the World is compiled by the Fraser Institute and measures the level of economic freedom on a scale from zero to ten, with ten representing a greater degree of freedom | Fraser Institute, Economic Freedom on the World |
| Government share of GDP | Ratio of size of government to GDP in 2000 constant dollars. | Penn World Tables version 7 |
| Investment share of GDP | Ratio of total investment to GDP in 2000 constant dollars | Penn World Tables version 7 |
| Population Growth | Growth rate of population | World Development Indicators 2010 |
| Primary School Enrollment | Total number of pupils enrolled in primary school | World Development Indicators 2010 |
| GDP pc (log) | Real GDP per capita in 2000 constant dollars, log form. | Penn World Tables version 7 |
| Size of government | -General government consumption spending<br>-Transfers and subsidies as a percentage of GDP<br>-Government enterprises and investment ,<br>-Top marginal tax rate | Economic Freedom Dataset, published in Economic Freedom of the World: 2010 Annual Report |
| Legal Structure and Security of Property Rights | -Judicial independence (GCR),<br>-Impartial courts (GCR)<br>-Protection of property rights (GCR)<br>-Military interference in rule of law and the political process (CRG)<br>-Integrity of the legal system (CRG)<br>-Legal enforcement of contracts (DB)<br>-Regulatory restrictions on the sale of real property (DB) | Economic Freedom Dataset, published in Economic Freedom of the World: 2010 Annual Report |
| Access to Sound Money | -Money Growth<br>-Standard deviation of inflation<br>-Inflation: Most recent year<br>-Freedom to own foreign currency bank accounts | Economic Freedom Dataset, published in Economic Freedom of the World: 2010 Annual Report |

| | | |
|---|---|---|
| Freedom to Trade Internationally | -Taxes on international trade<br>-Regulatory Trade Barriers<br>-Size of the trade sector relative to expected<br>-Black-market exchange rates<br>-International capital market controls | Economic Freedom Dataset, published in Economic Freedom of the World: 2010 Annual Report |
| Regulation of Credit, Labor, and Business | -Credit market regulations<br>-Labor market regulations<br>-Business Regulations | Economic Freedom Dataset, published in Economic Freedom of the World: 2010 Annual Report |