EFFECTS OF THE ECONOMIC FREEDOMS ON THE ECONOMIC GROWTH: EVIDENCE FROM THE EU AND COMCEC COUNTRIES (1996-2015)

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Abstract

In this research, the effects of the economic freedoms on the economic growth for EU and COMCEC countries at different development/income level are econometrically analyzed via panel data analysis for the period of 1996-2014 by being considered the improvement of economic growth theories for the key determinants of economic growth. From this aspect, it is aimed at this research that to evaluate the effects of the economic freedoms on the long termed economic growth performances and income level differences of EU and COMCEC countries which have different statuses in terms of economic freedoms and income level indicators. It is determined at the end of the study that the economic freedoms have a positive and statistically significant effect on the economic growth of EU countries in investigation period, on the other hand, these freedoms have not any effect on the economic growth of COMCEC countries. Moreover, the existence of a one-way causality relation operates from economic freedoms to the economic growth in EU countries is specified while there is any causality link found between these freedoms and the economic growth for the countries in COMCEC group. All these results indicate that also the economic freedoms besides the physical human capital accumulation, in other words, whether the EU and COMCEC countries have a market economy adopts outward-oriented liberal fiscal policies plays a major role in differentiating the income levels or the economic growth performances.

Keywords: *Economic Growth, Economic Freedoms, Liberal Fiscal Policies, EU and COMCEC, Cross Section Dependence.*

JEL Classification: *B22, C10, C50, F43.*

1. Introduction

The economic growth is analyzed as the long termed concept about the increments in production capacity and composed of two key factors such as increasing of physical amounts and increasing of the average performances of per capita production factors. Traditional economic growth theories (Classical, Keynesian and Neoclassical) and modern (endogenous) theories developed to explain the reasons for the economic growth and the income level differences between the countries mostly emphasized on these two factors as the key determinants of the economic growth, but the improvements occurred in corporate structure of economy are not considered.

However, remaining incapable of the Classical and Keynesian growth theories evaluate the economic growth process by just the basic economic factors to explain the income level differences between the countries and falling through the predictions of Neoclassical growth theories based on the assumption that the technology is exogenous and stable paved the way for to emerge new growth theories in the literature. Due to these growth theories also called the endogenous growth theories, the economic growth and income level differences between the countries had been tried to be explained via non-economic factors besides the basic economic factors (Berber, 2011: 143). In the theoretical and empirical studies which became increasingly popular by the endogenous growth theories, a series of factors like physical-human capital accumulation, technological advancement level, demographic-geographic determinants and corporate structure are discussed as the key

explanatories of the economic growth and wealth level differences between the countries (Kucuker, 2003: 6).

In these factors, the economic freedoms represent the corporate facts by its economic dimension shape the corporate structure regarding the financial aspects and contribute to the improvement of corporate structure qualitatively. In the most general definition, the freedoms mean that having economic activities of financial decision units freely and also explain the status of using the earnings obtained as the result of the activities of these units without any external intervention (Aktan, 1997: 30). Protecting of the proprietary rights, proving the voluntary changing, generating a free society in terms of economic, guarantee the personal property are the issues composing the economic freedoms. Thus, the economic freedoms pave the way for an economic environment reduces the interventions of the government on the market, activate the free market mechanism, allow the financial decision units to take and apply the decisions in line with their desires. From this aspect, the economic freedoms which enable for financial decision units to maximize their wealth levels also increase the level of welfare of the society as a whole (De Haan and Sturm, 2000: 215-17).

Within this context, the interest rates can be determined by the nominal exchange rates at a competitive level, the rates of inflation is at a low and predictable level, balance of payment equilibrium and a consistent macroeconomic infrastructure required for a qualified corporate structure are provided with reference to obtain the competitive advantages in an outward-oriented economy includes the economic freedoms. Since the uncertainties for the future decrease in such an environment where the macroeconomic balances are ensured and the targets are achieved, the effectiveness of consumption-production and saving-investment decisions of economic decision units increase, and their continuity is provided as well. The required economic environment has been created to provide the economic growth and make this growth sustainable in the long run thanks to a market economy adopts an outward-oriented liberal fiscal policy, in other words in a corporate structure where the economic freedoms are guaranteed (Beşkaya and Koç, 2006: 44-45).

Besides being reviewed the improvement of the effects of the economic freedoms in the European Union (EU) and Organization of Islamic Cooperation Standing Committee for Economic and Commercial Cooperation (COMCEC) on the economic growth are comparatively and empirically analyzed in this research. Moreover, it is aimed in this study to evaluate the impacts of the economic freedoms on changing the long termed economic growth performances and the income levels of EU and COMCEC countries which have different gradation and positions in the world in terms of the income level indicators and the economic freedoms

Within this framework, the literature searches the relations between economic liberties and the economic growth is summarized in general terms in the second chapter following the introduction and the position of the study is specified. The third chapter introduces the data set used in this study, and the limitedness of the research is explained. The effects of the economic freedoms on the economic growth are empirically investigated in the last part of the study by the new generation panel data methodology for the period of 1996-2015. Finally, our research is ended by the conclusion expresses the general evaluations and discusses the model findings.

2. Summary of the Literature

Much as the foundations of the economic liberalism were laid by the Classical Ecole under the leadership of Adam Smith, measuring the libertarian structure on the countries in terms of economy and empirically reviewing the effects of this situation on the economic growth have made progress since the 1990s with the institutional economics approach. The constraints for obtaining the indicators used on behalf of the economic freedoms from the reliable sources have an effect on occurring this situation besides the difficulties to be defined and measured for the economic freedoms. It is seen when the relevant literature is reviewed that the indicators compile the

economic freedom components in different qualifications as the index are used on behalf of the economic freedoms in empirical studies by international organizations such as The Heritage Foundation, The Wall Street Journal, and The Fraser Institute. The several criteria represent the different aspect of the economic freedoms are considered in this kind of economic freedom indicators derived as the index and the economic freedom indexes are computed by sub and general index dimensions by being weighted differently to these criteria.

It is mentioned in the studies conducted on several country and country groups by using the cross section and panel data analysis that the indicators in the form of index used on behalf of the economic freedoms have mostly positive and statistically significant effects on the economic growth (De Vanssay and Spindler (1994), Easton and Walker (1997), Farr et al., (1998), Dawson (1998), Nelson and Singh (1998), Berggren (1999), De Haan and Sturm (2000), Sturm and De Haan (2001), Adkings et al., (2002), Scully (2002), Madan (2002), Carlsson and Lundström (2002), Doucouliagos and Ulubaşoğlu (2006), Stroup (2007), Justesen (2008), Faria and Montesinos (2009), Gwartney (2009), Williamson and Mathers (2011), Compton et al., (2011), Cebula et al., (2013), Tunçsiper and Biçen (2014) Acikgoz et al., (2014) Bashir and Xu (2014)). In addition to this, according to the some of the studies in literature that these indicators in the form of index have a negative and statistically significant effect on the economic growth or not (Carlsson and Lundström (2002), Santhirasegaram (2007), Sarıbaş (2009), Pourshahabi et al., (2011), Cebula et al., (2013), Tunçsiper and Biçen (2014)).

The results of the empirical studies made for investigating the effects of the economic freedoms on the economic growth confirm the logical relations between the economic freedoms and the economic growth within the theoretical frame. However, a vast majority of the empirical studies were conducted so as to include the countries at the same income/development level and the positions of these countries in the economic freedom indicators were not considered. Some of these researches are; Dawson (1998), De Haan and Sturm (2000), Doucouliagos and Ulubaşoğlu (2006), Williamson and Mathers (2011), Cebula et al., (2013), Bashir and Xu (2014). In this study, the impacts of the economic freedoms on the economic growth are reviewed from a comparative perspective and by being considered the positions/gradations of EU and COMCEC countries around the world regarding economic freedoms and the income level indicators. On that sense, the findings of this research will contribute to the improvement of the literature on this subject.

3. Data of the Research

The effects of the economic freedoms in EU and COMCEC countries on the economic growth are empirically investigated in this research for the period of 1996-2015.[1] Therefore, it is aimed to evaluate the effects of the economic freedoms on differentiating the long termed economic growth performances and the income levels of 28 EU and 26 COMCEC countries which have accessible data.[2] Table 1 defines the indicators used in models which are predicted for analyzing the effects of the economic freedoms index on the economic growth (Real Gross Domestic Product-GDP).[3]

[1]The Economic Freedoms General Index which is taken from the database of The Heritage Foundation and used on behalf of the economic freedoms has been started to procured since 1996. This issue has an effect upon to be started the investigation period of the research from this date.

[2]28 countries in EU group: Germany, Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Croatia, Netherlands, The UK, Ireland, Spain, Sweden, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Hungary, Malta, Poland, Portugal, Romania, Slovakia, Slovenia and Greece. 26 countries which are in COMCEC group and have accessible data: Albania, Azerbaijan, Bahrain, Bangladesh, Burkina Faso, Algeria, Indonesia, Morocco, Ivory Coast, Iran, Cameroon, Malaysia, Mali, Egypt, Mozambique, Niger, Nigeria, Pakistan, Senegal, Saudi Arabia, Tunisia, Turkey, Uganda, Oman, Jordan and Yemen. Since the data of 31 countries in COMCEC group has totally 57 members were not procured for the relevant period, these countries could not be included in the research.

[3]The RPCGDP variable is taken in purchasing power parity and 2011 basis year from the WB database. RPCFCI variable is taken from WB database as real (USD) and used in per capita values by being proportioned to the total population in the same database.

Table 1. Defining the Variables Used in Model

Sampling Period: 1996-2015		
Abridgments of the Variables	**Definition of Variables**	**Data Source of Variables**
RPCGDP	Real Per Capita GDP 2011 (USD)	World Development Indicators World Bank (WB).
RPCFCI	Real Fixed Capital Investments 2010 (USD)	
EL	Employed Workforce	Total Economy Database The Conference Board.
EFI	Economic Freedom Index (General Index)	The Heritage Foundation.
Note:	All variables defined in table are used in the models with the logarithmic values within the relevant period.	

On the other hand, Table 2 presents the correlation coefficients to be obtained the foreknowledge about the direction and level of the relations between the variables with the descriptive statistics of the variables used in models in the groups of EU-28 and COMCEC-26.

Table 2. The Descriptive Statistics and Correlation Coefficients Belong to the Indicators

	EU-28				**COMCEC-26**			
Variables	**RPCGDP**	**RPCFCI**	**EL**	**EFI**	**RPCGDP**	**RPCFCI**	**EL**	**EFI**
Mean	10.25	8.51	8.14	4.19	8.61	5.97	8.88	4.04
Median	10.30	8.60	8.29	4.21	8.62	5.99	8.83	4.03
Std. Dev.	0.45	0.75	1.40	0.11	1.16	1.52	1.29	0.13
Minimum	9.04	5.30	4.99	3.82	6.12	-0.24	5.58	3.40
Maximum	11.48	10.02	10.67	4.41	10.83	8.91	11.65	4.35
Jarque-Bera	7.36 [0.025]	47.40 [0.000]	9.69 [0.008]	48.98 [0.000]	14.98 [0.000]	12.37 [0.002]	1.34 [0.510]	165.17 [0.000]
Observations	560	560	560	560	520	520	520	520
Correlation Coefficients								
RPCGDP	1.0000				1.0000			
RPCFCI	0.9541 [0.000]				0.8676 [0.000]			

The data is taken as the nominal (USD) for Bahrain, Ivory Coast, Malta, Niger, Saudi Arabia, Oman, Tunisia and Yemen and made real by being proportioned to the deflator price indexes of the countries. EFI: The General Economic Freedoms Index prepared by The Heritage Foundation is computed by being considered 10 different criteria and 4 main titles represent the economic freedoms, these 4 titles are; Legal Rules (Proprietary Rights, Corruption Perception), Size of the Government (Fiscal Freedom, Public Expenditures), Effectiveness of the Regulations (Freedom of Transact Business, Labour Freedom, Monetary Freedoms). For detailed information about criteria and the sub-indexes used to compute the Economic Freedoms Index, see Miller and Kim. (2015)

EL	0.0477 [0.259]	0.2071 [0.000]
EFI	0.6563 [0.000]	0.4042 [0.000]

Note: The values in parenthesis show the probabilities belong to the test statistics.

It is recognized when the results in Table 2 are reviewed that the differences between the minimum and maximum values of all variables and the standard deviations mention the distances from the average are highest in the EU-28 group and the lowest in a COMCEC-26 group within the investigation period. This circumstance shows that all variables respectively follow stable/unbiased and relatively unstable/biased courses in EU-28 and COMCEC-26 groups in the sampling period. At the same time, the results reveal that the average and median values of all variables in sampling period are higher in the EU-28 group in contrast with the COMCEC-26 group and almost all the variables do not show a normal distribution. We can see when the results in Table 2 are reviewed regarding the correlation coefficients of the variables in models that the positive and meaningful correlation relations between the variables of RPCGDP and EFI are more in the EU-28 group as expected.

4. Econometric Method and Findings

In this study, since the time series data of EU and COMCEC countries are used together, the panel data analysis analyzes the effects of the economic freedoms on the economic growth and determining the connections between the series is targeted. Since the time series data of EU and COMCEC countries are used together, the panel data analysis analyzes the effects of the economic freedoms on the economic growth and determining the connections between the series is targeted in this survey. The equation below shows the econometric model predicted by being used the control variables of physical-human capital accumulation for determining the long termed effects of the economic freedoms of EU-28 and COMCEC-26 groups on the economic growth:[4]

Model: $PCRGDP_{it} = \alpha_{it} + \beta_1 PCRFCI_{it} + \beta_2 EL_{it} + \beta_3 EFI_{it} + u_{it}$ (1)

The terms of (α), (β), (u), (i) and (t) respectively represent the constant parameter, slope parameters, residuals, countries in a panel and the time. The assumptions of a standard regression model mention that the series in the model should be stationary and the error term needs to have an intercept variance with zero. The spurious regression fact can occur, and the parameters may be insignificant even though the meaningful t statistics are obtained if the series are not stationary. That's why it is important to test the stationarity of the series to obtain reliable information in the applications conducted by panel data (Tatoğlu, 2013:199). Solving this problem in non-stationary series are a necessity to avoid the spurious regression and get economically significant results. The unit root tests used for analyzing the stationarity of the panel data are classified as the first and the second generation unit root tests in regard to the existence of the cross section dependence (CSD) in the units create the panel. It is accepted in the first generation unit root tests that the cross sections create the series are independent of each other, and all the units are affected by a shock at the same rate which emerges in just one unit create the series. According to the second generation panel unit root tests based on the assumption called 'the cross sections are interdependent' that a shock emerges just in one unit create the panel effects all the units at different rates.

Under these circumstances, the first generation panel unit root tests cannot produce consistent results in the case of the CSD exists between the units create the panel (Hadri 2000; Levin et al., 2002; Im at al., 2003; Breitung 2005 et al.). Such a condition necessitates to be used the second

[4]The model defined in the study is estimated by being used the model Gauss 10.0, Stata 14.00 and EViews 9.5 econometrics packaged software.

generation Panel Unit Root Tests allow for (Taylor and Sarno 1998; Breuer et al., 2002; Pesaran 2007; Hadri and Kurozumi, 2012 et al.) the CSD between the units create the panel. In this context, scrutinizing the CSD in series and the co-integration equation, then specifying the unit root, co-integration and other tests are important before starting the application in articles about the panel data. Otherwise, the implementations may be biased and inconsistent results can be obtained as well.

After all, the time and section dimension of the series need to considered together when being researched the CSD in the panel data. Moreover, the CD-LM_{adj} test developed by Pesaran et al., (2008) can be used in cases of being the time dimension of the series bigger than the section dimension (T>N), smaller than the section dimension (T<N) also equal to the section dimension (T=N) (Pesaran et al., 2008:105-127). In the CD-LM_{adj} test, the existence of the CSD is analyzed by the alternative hypothesis called 'there is cross section dependence in the series or model' against the primary hypothesis called 'there is not a cross section dependence in the series or model.' It is made a conclusion in CD-LM_{adj} test which is assumed to show the asymptotically standard normal distribution that there is CSD in the series and/or the model in the case of being denied the primary hypothesis. In this paper, the presence of the CSD in models defined for EU-28 and COMCEC-26 countries and co-integration equation of the models is researched by the CD-LM_{adj} test, and Table 3 displays the results.

Table 3. Results of CD-LM_{adj} (Cross Section Independence) Test

	EU-28			**COMCEC-26**		
Variables	**CD-LM_{adj} Statistics**	**P**	**T**	**CD-LM_{adj} Statistics**	**P**	T
RPCGDP	118.35* [0.000]	4	1	85.55* [0.000]	4	**1**
RPCFCI	97.95* [0.000]	4	1	69.52* [0.000]	4	**1**
EL	118.80* [0.000]	4	0	80.08* [0.000]	4	**1**
EFI	115.43* [0.000]	3	1	79.76* [0.000]	4	**1**
Model	16.41* [0.000]	3	1	16.70* [0.000]	4	**1**

Note: The '*' sign before the CD-LM_{adj} statistics indicates the existence of the cross section dependence at 1% and significance level. The number of '1' on the 'T' column on Table shows that the model with the related variable is estimated in intercept+trend form; the number of '0' indicates that these are estimated in intercept form. The 'P' column on the table indicates the optimal lag lengths determined by the Schwarz information criteria and the values in square brackets '[ ]' show the probabilities belong to the test statistics.

It is recognized by the help of the results in Table 3 that the probability values belong to the CD-LM_{adj} test computed for all series defined in models, and the co-integration equations of the models are smaller than 0,01. About this issue mentioned, the alternative hypotheses must be accepted by being denied the primary theories established with regard to the CD-LM_{adj} tests for the co-integration equations and the indicators in EU-28 and COMCEC-26 groups. These outcomes confirm the presence of the CSD between the cross section units create the panel in EU-28 and COMCEC-26 countries regarding the indicators in models and the co-integration equations. Moreover, these outcomes show the necessity to be used the test methods of new generation panel data consider the existence of the cross section dependence for the next phases of the analysis.

The stationarity status of the series in models defined for EU-28 and COMCEC-26 groups is tested by the second generation panel unit root test of CADF (Cross-Sectional Augmented Dickey-Fuller) developed by Pesaran (2007) considers the cross section dependence. In this test, firstly, the CADF test statistics are calculated for all cross sections to create the panel, then the CIPS (Cross-

Sectionally Augmented IPS) statistics are found by being used the arithmetic mean of the values mentioned. The CADF test statistics which can produce the meaningful results also in cases of N>T and N<T are computed as follows:

$$t(N,T) = \frac{\Delta y_i^{'} \overline{M}_i y_{i-1}}{\overline{\sigma}^2 \left(\Delta y_{i-1}^{'} \overline{M}_i y_{i-1}\right)^{1/2}}$$

(2)

After being computed the CADF test statistics values as in Equation 2, the CIPS statistics are obtained by averaging of this values:

$$CIPS = N^{-1} \sum_{i=1}^{n} t(N,T) \qquad (3)$$

The CADF and CIPS test statistics values estimated are compared with the Monte Carlo simulations developed by Pesaran, and the hypotheses are analyzed for the stationarity. At the end of the test, the primary hypothesis (there is the unit root in the series) is denied if the CADF and CIPS test statistics values are bigger than the critical table values, and the alternative hypothesis (there is not the unit root in the series) is accepted for the related unit-panel wide (Pesaran, 2007: 265-312). The stationarity condition of the variables in models defined for the groups of EU-28 and COMCEC-26 is researched by the CIPS Panel Unit Root test, and Table 4 displays the results.

Table 4. Results of CIPS Panel Unit Root Test

	EU-28				**COMCEC-26**			
Variables	**Level**	**First Difference**	**P**	**T**	**Level**	**First Difference**	**P**	**T**
RPCGDP	-2.51	-2.88*	4	1	-1.39	-3.83*	4	1
RPCFCI	-2.01	-3.06*	4	1	-2.41	-3.59*	4	1
EL	-1.66	-2.26**	4	0	-2.57	-3.12*	4	1
EFI	-2.26	-2.70**	3	1	-2.25	-2.98*	4	1
Critical Table Values				0	***-2.32***		***-2.15***	
				1	***-2.83***		***-2.67***	
				%	**(0.1)**		**(0.5)**	

Note: The signs of '*' and '**' before the CIPS test statistics show that the variables are respectively stationary at 1% and 5% significance levels. The critical table values of CIPS statistics are taken from the work of Pesaran (2007) by being regarded the conditions of T and N. See Table 3 for the columns of 'P' and 'T.'

It is confirmed when the results in Table 4 are examined that all the indicators in models are not stationary based on the 5% significance level. It comes to light when the first differences of the variables are taken that all variables in models become stationary at 1% and 5% significance levels. This situation is understood by being denied the primary hypotheses and the CIPS statistics values calculated in intercept or intercept+trend forms bigger than the critical table values at different importance levels. The difference-taking process in series which become stationary at the first differences, not the level, may destroy the effect of the short-term, transitory shocks in series before and the possible co-integrated relations in the long term between these series. The stationary combination of non-stationary economic series can be determined by co-integration analyses (Tarı, 2010: 415). While the first generation panel co-integration tests can produce reliable results in models has not the CSD (Johansen 1988; Pedroni 1999; etc.), the results of these tests may be

biased in case of being existed the cross section dependence in co-integration equation. This circumstance necessitates that the long termed relations between the variables should be analyzed via the second generation panel co-integration tests allow for the CSD (Westerlund 2008; Westerlund and Edgerton 2007; etc.).

In the Panel Co-Integration test of Westerlund (2008) used in the study, the co-integrating relations, in the long run, can be reviewed by the test statistics of DH panel (DH_p) and DH group (DH_g) simultaneously at the panel and the group dimension. The (DH_p) and (DH_g) tests based on the assumption called 'the autoregressive parameter is respectively same and becoming different between all cross section units create the panel. Within this scope, the existence of the co-integration relation in all cross section units create the panel, and at least some of the cross sections create the panel in case of being denied the primary hypothesis in the tests of (DH_p) and (DH_g). Moreover, the accepting and rejecting decisions for the primary hypothesis in both two tests actualized after being compared the test statistics with the normal distribution critical table values. Since the main hypotheses are denied in the case of being the DH_p and DH_g test statistic values bigger than the critical table value (2.33), the presence of the co-integration relations at 1% significance level in all sections and/or some sections create the panel (Westerlund, 2008: 196-199). This paper searches the existence of the long termed relations between the variables in model defined for EU-28 and COMCEC-26 groups via Durbin-Hausman Panel-Co-Integration test and Table 5 reports the results.

Table 5. Results of Durbin-Hausman Panel Co-Integration Test

Test Statistics	DH_g	DH_p	$\tilde{\Delta}_{adj}$
EU-28	5.25* [0.000]	2.35* [0.009]	1.105[a] [0.134]
COMCEC-26	5.32*[0.000]	2.41* [0.008]	1.248[a] [0.106]

Note: The test statistics and the probability values (10.000) are respectively obtained from the intercept+trend form and bootstrap distribution. (*) mark shows the existence of the co-integration relations between the series in models at 1 % significance level. The (*) sign before the $\tilde{\Delta}_{adj}$ test statistics indicates that the slope coefficients in co-integration equations are homogeneous at 1% significance level. The numbers in square brackets '[ ]' display the probability values of the test statistics.

According to the results in Table 5, the primary hypotheses are rejected at 1% significance level with regard to the DH_p and DH_g test statistics in models and the alternative hypotheses are accepted at the same time. All these results show that there is a long termed co-integration relation between series in all cross section units create the panel and the panel-wide in the models defined for the groups of EU-28 and COMCEC-26. With reference to being analyzed the long termed relations in models, the slope coefficients in co-integration equation need to be tested by Slope Homogeneity Tests developed by Pesaran and Yamagata (2008). In this test, whether the slope coefficients in co-integration equation are different between the cross sections in the panel is analyzed via the alternative hypothesis (the slope coefficients are not homogeneous) against the primary hypothesis (the slope coefficients are homogeneous). The primary hypothesis is accepted at 1% significance level, and the homogeneity of the co-integration coefficients is confirmed in the case of being the probability values belong to ($\tilde{\Delta}_{adj}$) test statistics bigger than 0,01 (Pesaran and Yamagata, 2008: 50-93). In this paper, the homogeneity of the slope coefficients in co-integration equations of models defined for the groups of EU-28 and COMCEC-26 is analyzed by ($\tilde{\Delta}_{adj}$) test, and Table 5 shows the results. According to the Homogeneity Test Results in Table 5, the probability values calculated for ($\tilde{\Delta}_{adj}$) test statistics in all models defined for two country groups are bigger than 0,01. It can be understood from these results that the intercept term and the slope coefficients are homogeneous between the cross section units in co-integration equation of models

defined for EU-28 and COMCEC-26 groups and the long termed co-integrated relations in the panel are valid.

After being specified the long termed relations between the series in models defined for EU-28 and COMCEC-26 via the co-integration tests, it needs to be determined how the long term coefficients belong to the series should be estimated. Since there is cross section dependence in models, the size of the long termed effects of the explanatory variables of models on the dependent variables must be estimated by the estimators consider the cross section dependence. In this study, the estimator of Panel AMG (Augmented Mean Group) of Bond and Eberhardt (2009) is used to obtain the long termed coefficients for the panel-wide. This estimator considers the cross section dependence either. In this estimator, the long termed co-integration coefficients for the panel-wide are computed by being weighted the arithmetic means of the long termed co-integration coefficients of the cross-section units. Panel AMG estimator produces effective results even if the endogeneity problem exists and also considers the common factors and the dynamic effects in variables (Eberhardt and Bond, 2009: 1-3). In EU-28 and COMCEC-26 groups, the model established to predict the long termed effects of the economic freedoms on the economic growth is estimated by Panel AMG method and Table 6 shows the results.

Table 6. Results of Model Prediction: Panel AMG

Variables	EU-28		COMCEC-26	
	Coefficients	**SE.**	**Coefficients**	**SE.**
RPCFCI	0.3359*	0.0606 [0.000]	0.2105*	0.0400 [0.000]
EL	0.4405**	0.2165 [0.043]	0.7806*	0.2659 [0.003]
EFI	0.3706*	0.1019 [0.000]	0.0184	0.1258 [0.884]
C	2.3134	1.5662 [0.140]	0.2892	2.2210 [0.896]

Note: The signs of '*' and '**' before the coefficients calculated for the variables mentioned that the t-statistics are respectively meaningful at 1% and 5% significance levels. The concept of 'SE' shows the standard errors belong to the coefficients and the values in square brackets '[ ]' indicate the probabilities.

It is seen when the model results in Table 6 are evaluated that the coefficients of the RPCFCI and EL explanatory variables are positive and statistically significant at different important levels as expected. These results reveal that the increments/developments occurred in human capital accumulation effect the economic growth positively and statistically significant when the physical capital accumulation and the education level are taken as the data. In addition to this, according to the model results in Table 6 in terms of the coefficients of the variables, the coefficients of RPCFCI and EL explanatory variables are respectively computed as (0.3359) and (0.4405) in the EU-28 group; (0.2105) and (0.7806) in the COMCEC-26 group. We can say based on these results that the size of the positive and statistically significant effects of the physical capital accumulation of EU-28 countries and human capital accumulation of COMCEC-26 countries on the economic growth are bigger than the other effects.

It is seen when the model results in Table 6 are commented regarding the EFI indicator that the coefficient of EFI explanatory variable is positive and statistically significant in EU-28 countries; this same coefficient is positive and statistically insignificant in COMCEC-26 countries at the same time. It can be mentioned based upon these conclusions that the economic freedoms in EU-28 countries have the positive and statistically significant effect on the economic growth while

these freedoms have not any impact on the economic growth of COMCEC-26 countries. According to these results, the increments (economic liberalization) happened at the index of economic freedoms level can stimulate the economic growth and a liberal environment (economic freedom) is relatively provided as well. On the other hand, the same results show that the connections are weak between the economic freedoms index and the economic growth in COMCEC-26 countries and the liberal environment has not been provided as of yet.

After being determined the size of the long termed effects of the economic freedoms of EU-28 and COMCEC-26 countries on the economic growth, the direction of the relations between the variables can be examined by the causality tests. In this paper, the direction of the long termed causality relations between the economic freedoms and the variables of economic growth is researched via the Panel Fisher Causality test considers the cross section dependence. In the Panel Fisher Causality test developed by Emirmahmutoğlu and Köse (2011), the causality relations between the variables is researched by the primary hypothesis called 'there is not a causality relation between the series.' At the end of the test, the primary hypothesis is denied at 5% significance level, and the alternative one has confirmed if the probability value belongs to the Fisher statistics is smaller than 0,05 (when the test statistics value is bigger than the critical table value). Under this circumstance, the presence of the causality connections between the variables in models (Emirmahmutoğlu and Köse, 2011: 870-876). The causality relationships between the economic freedom and variables of economic growth in the models defined for EU-28 and COMCEC-26 groups are analyzed by Panel Fisher Causality test, and Table 7 presents the conclusions.

Table 7. Results of Fisher Panel Causality Test

	RPCGDP→EFI		**EFI→RPCGDP**	
	Fisher Statistics	**P**	**Fisher Statistics**	**P**
EU-28	117.55 [2.900]	1	288.11* [0.004]	1
	133.85 [2.550]	2	90.48* [0.002]	2
COMCEC-26	122.34 [1.340]	1	68.39 [0.632]	1
	182.45 [2.220]	2	62.30 [0.155]	2

Note: The 'P' column on Table shows the lag lengths selected with the Akaike Information Criteria and the values in square brackets '[ ]' show the probability values obtained from (10.000) bootstrap distribution of Fisher Statistics. The '*' sign means that there is a causality relationship between the variables at 1% significance level.

According to the 1 and 2 numbered lagged results in Table 7, there is a causality link moves from the economic freedoms index to the economic growth in the EU-28 group, on the other hand, the COMCEC-26 group has not any causality relation between the economic freedoms index and the economic growth. This condition is understood from being the probability values belong to Fisher statistics calculated for EFI variable in the EU-28 group smaller than 0,05 importance level and also being the probability value belong to Fisher statistics calculated for EFI and/or RPCGDP variables bigger than 0,05 significance level in the COMCEC-26 group. While these results show that the increments happened at economic freedoms level in the EU-28 group have a stimulant effect on the economic growth, the connections between the increments happened at economic freedoms level, and the economic growth is broken for the COMCEC-26 group.

5. Conclusion

In this study, the effects of the economic freedoms on the economic growth are econometrically analyzed for the countries of EU and COMCEC have different development/income levels for the period of 1996-2014 by being considered the improvement of economic growth theories about the key determinants of the economic growth. Moreover, it is aimed in this research to evaluate the effects of the economic freedoms on changing the long termed economic growth performances and the income levels of EU and COMCEC countries which have different gradation and positions in the world in terms of the income level indicators and the economic freedoms. The models established with the control variables of physical-human capital accumulation to estimate the effects of the economic freedoms of EU and COMCEC countries on the economic growth are predicted with reference to the panel data methodology considers the cross section dependence. At the end of this study, the results match with the theoretical literature and the empirical studies obtained from high-income EU countries (except Bulgaria and Romania) and low-middle income COMCEC countries (excluding Bahrain, Saudi Arabia, and Omani) as follows:

It is determined in models defined for EU and COMCEC groups that the effects of physical capital investments on the economic growth are positive and statistically significant and the size of these positive effects is bigger in EU group. Moreover, it is determined that the effects of human capital accumulation on the economic growth are positive and statistically significant and the size of these positive effects is bigger in COMCEC group when the education level is taken as the data for the models defined in EU and COMCEC countries. On the one hand, these results show that the increments of physical human capital accumulation have a booster effect on the economic growth, on the other hand, the economic growth performances of EU and COMCEC countries mostly hinge upon the physical and human capital accumulation.

It is determined in the research period that the economic freedoms in EU countries have the positive and statistically significant effect on the economic growth, but these same freedoms in COMCEC countries have not any effect on the growth like this. According to these results, the increments (economic liberalization) happened at the index of economic freedoms level can stimulate the economic growth and a liberal environment (economic freedom) is relatively provided at the same time. On the other hand, the same results show that the connections are poor between the economic freedoms index and the economic growth in COMCEC-26 countries and the liberal environment has not been provided as of yet. On the other hand, the same results show that the connections are poor between the economic freedoms index and the economic growth in COMCEC-26 countries and the liberal environment has not been provided as of yet. Therefore, the size of the long termed effects of the economic freedoms in two country groups on the economic growth is also confirmed in terms of the direction of causality relations between two variables. Within this context, there is a one-way causality relation moves from the economic freedoms to the economic growth in EU countries but there is not any causality connection between economic liberties and the increase in COMCEC countries at the same time. These results reveal that the increments happened at economic freedoms level of EU countries can stimulate/increase the economic growth while the increments at economic freedoms level have not such an impact for the COMCEC group.

We can see when these results are evaluated in terms of the qualification of economic freedom indicators that the liberalization level of economies of EU countries create a perfect environment where the proprietary and contract rights are protected; the liberalization is actualized in terms of financial, monetary, employer and labor force. Also, the same results indicate that the liberalization level of economies of COMCEC countries relatively remains poor and cannot create a well economic environment for the economic growth. All these statements address that having a market economy adopts the outward-oriented liberal fiscal policies is more effective in changing the long termed economic performances and income levels of the EU and COMCEC countries in comparison with the physical human capital accumulation (when the other conditions are constant).

In conclusion, in COMCEC countries which have poor connections between the economic freedoms and the economic growth, the policy makers need to develop and apply the regulation politics to guarantee the economic freedoms and liberalize the economic structure. Within this scope, the economic decision units of COMCEC countries should support the entrepreneurship by corporate and legal regulations, eliminate the constraints on the market, reduce the interventions of the government to the markets, provide the free market mechanism in commodity and money markets. Therefore, the connections of economic freedoms with the economic growth in COMCEC countries will be strengthened and reached to the same level with EU countries. Also, it will be possible to reduce the income level differences to a certain degree. Otherwise, it is possible to say that the available changes about the effects of economic freedoms on the economic growth and the income levels will be the same for the future of EU and COMCEC countries. In addition to all these, using different country samples which have different development levels when being determined the effects of the economic freedoms on the economic growth will contribute to the improvement of the literature on this subject. The findings of the research indicate that the positive effects of the economic freedoms on the economic growth cannot be valid for all countries in all conditions and are in the tendency to change according to the income/development level differences of the countries.

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