THE IMPACTS OF INSTITUTIONS, OPENNESS AND MACROECONOMIC STABILITY ON ECONOMIC GROWTH: A PANEL DATA ANALYSIS ON MIDDLE INCOME COUNTRIES[1]

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Abstract

This study aims to analyze the impacts of indirect determinants such as institutions, trade-financial openness and macroeconomic stability on economic growth in 48 middle income countries. With this purpose, the impacts of the ten indicators in total belonging to the aforesaid variables for the term of 2002-2011 on economic growth are econometrically analyzed by using panel data analyses. According to the results of the analysis, institutions (political stability and absence of violence, regulatory quality and rule of law), trade and financial openness (M2/GDP), and macroeconomic stability (central government revenues /GDP) affect economic growth in a positive way. The results of the analysis show that institutions, openness and macroeconomic stability in middle income countries contribute to economic growth but that the level of this contribution is low.

Keywords: Economic Growth, Institutions, Openness, Macroeconomic Stability, Middle Income Countries, Panel Data Analysis
Jel Classification: C33, O40, O43, O50

Özet

Bu çalışmanın amacı, 48 orta gelirli ülkede kurumlar, ticari-finansal dışa açıklık ve makroekonomik istikrar şeklindeki dolaylı belirleyicilerin ekonomik büyüme üzerindeki etkilerini incelemektir. Bu amaçla, 2002-2011 dönemi için söz konusu değişkenlere ait toplam on göstergenin ekonomik büyüme üzerindeki etkileri panel veri analizleri kullanılarak ekonometrik açıdan analiz edilmektedir. Analiz sonuçlarına göre, kurumlar (politik istikrar ve şiddetin yokluğu, düzenlemelerin kalitesi ve hukukun üstünlüğü), ticari ve finansal dışa açıklık (M2/GDP) ve makroekonomik istikrar (merkezi hükümet gelirleri/GDP) ekonomik büyümeyi pozitif yönlü etkilemektedirler. Analiz sonuçları orta gelirli ülkelerde; kurumlar, dışa açıklık ve makroekonomik istikrarın ekonomik büyümenin sağlanmasına katkıda bulunduklarını, ancak bu katkıların düzeyinin düşük olduğunu göstermektedir.

Anahtar Kelimeler: Ekonomik Büyüme, Kurumlar, Dışa Açıklık, Makroekonomik İstikrar, Orta Gelirli Ülkeler, Panel Veri Analizi

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1. Introduction

The factors affecting economic growth and the causes of the differences of development level between countries constitute one of the important matters of debate of the literature of growth. By the time the 1990s, the economists of growth gave different answers to the question of why some countries had a higher growth rate than the others, that is, which factors affected economic growth. Within this context, the level of per capita output of the countries which had some economic factors such as real capital, labour force, natural resource, human capital, and technology was accepted to be high that much. But in the 1960s, it was tried to be replied why the aforesaid factors were inadequate in some countries and the various sides of the factors affecting economic growth were discussed. It can be said that the decrease of interest towards the traditional determinants, absence of convergence between the developed and developing countries, and theoretical-econometric developments are among the most important causes of discussing the various sides in economic growth theories.

From the mid-1990s on, both theoretical and applied studies, there has been a transition from the traditional economic factors to those indirectly affecting economic performance. This process of transition observed in economic growth literature led the determinants of economic growth to be divided into two groups. In this sense, while traditional economic factors were the direct determinants of growth, the items indirectly affecting economic growth, by affecting the direct determinants of economic growth, were described as the indirect determinants of economic growth (Temple, 1999; Rodrik ,2002; Unsal, 2007). These developments made the place and importance of institutions, openness and macroeconomic stability in the process of economic growth one of the basic areas of interests of both academicians and policymakers (Snowdon and Vane, 2005).

It is accepted that institutions, openness and macroeconomic stability are the locomotive power of economic development, which also includes economic growth, and that the improvements of the aforesaid factors can create massive increase in per capita income (Rodrik, 2002; Bloch and Tang, 2004, Snowdon and Vane, 2005). Within this framework,

active institutions and corporate structure, trade and financial openness, and macroeconomic stability affect long-term economic growth, by removing market distortions, creating positive externalities, decreasing uncertainty and being effective on transaction costs, gathering financial resources, and easing technological information transfer (Fischer, 1993; King and Levine, 1993; Acemoglu, Johnson and Robinson, 2005; Kong, 2007). For these reasons, many economists have dealt with the various indicators of the indirect determinants and examined their effects on economic performance.

One major motivation of this study, which is made with reference to the important role that the indirect determinants play on economic growth, is to evaluate the impact of institutions, openness and macroeconomic stability on economic growth in 48 middle income countries with econometric methods. The rest of the paper is structured as follows. In Section 2 we present a brief overview of the relationship between the indirect determinants and economic growth, followed in Section 3 by a short review of the literature on the relationship between the indirect determinants and economic growth. Section 4 presents the description of theoretical framework and data set, the methodology used is discussed, the empirical evidence is presented. Section 5 concluding remarks are presented.

2. The Relationship Between the Indirect Determinants and Economic Growth

From the 1990s on, in line with the developments in the growth literature, it has been come to an agreement about that economic growth has been affected by a number of traditional factors such as real capital, labour force, natural resources, human capital, and technology as well as some other factors such as population increase, institutions, openness, macroeconomic stability, income inequality, geography, and political economy. By affecting the traditional factors, those factors creating a highly impact on economic growth, have been described as the indirect (basic) determinants of growth (Temple, 1999; Snowdon and Vane, 2005; Unsal, 2007). The effects of institutions, openness and macroeconomic stability, which are among the indirect determinants of economic growth, on economic performance are higher than those of the other indirect determinants. The developments of these factors become meaningful within the process of economic growth, by contributing to both the development of other factors and increase of productivity.

While institutions, one of the basic indirect determinants, involve the issues of property rights, role of the laws, the impact of culture-norms and religion on individuals, and the process of individually decision making; the organisation and structure contains the governance of economic activities such as financial institutions or labour market institutions, and organization (Kong, 2007). It is accepted that the developments in institutions and institutional structure contribute to economic growth, by providing the use of resources effectively, increasing real and human capital accumulation, enabling the development of sociopolitical-cultural structure, and decreasing transaction costs (Acemoğlu et al., 2005; Putnam, 1993; Knack and Keefer, 1997; Easterly, 2001). Accordingly, institutions can affect economic performance to the extent that they can affect the production possibilities curve.

Openness includes trade and financial openness. Trade openness expresses the approach which aims to provide free trade together with the removal of state control on the trade of goods and services. Financial openness is a body of policies which targets first to remove the intervention and control of state on domestic banking and other financial tools, and which, then, intends the integration of domestic financial market into international markets (Yapraklı, 2007). Trade openness affects economic growth not only through absolute and/or comparative advantage but also through some channels such as learning by practicing, specialization and knowledge overflowing, information transfer, research and development activities, and effect of level. According to the model used in applied literature related to the subject and the trade policies of the country in question, the effects of these channels on economic growth can be positive, negative or indefinite (Kong, 2007; Bloch and Tang, 2004). The effect of financial openness on growth is carried out through the removal of the restrictive effect of domestic saving limit on investment by drawing foreign capital, increasing financial intermediary services, and providing technological innovation (King and Levine, 1993).

Macroeconomic stability, which states economic situation that the stability is provided in monetary-fiscal policy and balance of payments, involves a low and predictable inflation rate, suitable real interest rate, a stabil and sustainable fiscal policy, a competitive and predictable exchange rate, and a reasonable balance of payments. Macroeconomic stability contributes to provide efficiency in price mechanism by removing the elements

which causes uncertainty in macroeconomic factors, and to the increase of economic growth rate by providing possibility the increasing of investments and productivity (Fischer, 1993).

3. Literature

In the applied studies related to the relationship between the indirect determinants and economic growth in the international literature, it is observed that a standard and extensive measurement of indirect determinant has not been used. However, it is seen to have been benefited from a number of indicators of the indirect determinants in theoretical and applied studies. The literature summary related to the basic applied studies made in various years between 1995-2012 is presented in the Table 3.1.

Table 3.1. The Literature Summary Related to the Relationship between the Indirect Determinants and Economic Growth

	Writer(s)/ Study Year	Countries	Term	Method	Result
The Applied Studies Related to Institutions	Helliwell-Putnam/1995	Italy	1960-1970	OLS	Doesn't affect economic growth.
	Rodrik/1999	97 HIC and MIC	1960-1975 1975-1989	OLS	Positively affects economic growth.
	Zak and Knack/2001	41 Countries	2001	OLS	Positively affects economic growth.
	Tavares/2004	Portugal	1960-1995	OLS	Positively affects economic growth.
	Glaeser et al./2004	72 Countries	1960-2000	OLS	Positively affects economic growth.
	Easterly et al./2006	82 HIC and MIC	1960-1990	3 SLS	Positively affect economic growth.
	Vural/2007	14 EU Countries and Turkey	1990-2000	OLS	Affects economic growth in the form of (U).
	Yapraklı/2008	36 MIC	2002-2005	OLS	Institutional structure is the result of economic growth.
	Cavalcanti et al./2008	Brazil	1960-2000	2SL	Positively affects economic growth.
	Beşkaya and Manas/2009	Turkey	1970-2005	OLS	Its effect on economic growth is uncertain.
	Libman/2010	Russia	2000-2004	OLS	Negatively affects if not in optimal level.
	Özkan and Tarı /2011	Turkey	1987-2008	OLS	Positively affects economic growth.
	Alfano and Baraldi/2011	Italy	1980-2008	GMM	Positively affects economic growth.
Studies Related to Openness	Sachs and Warner/1995	37 HIC and MIC	1970-1989	OLS	Trade openness positively affects economic growth.
	Kwan et al./1998	4 Asian countries	1962-1995	OLS	Financial openness positively affects economic growth.

Rodriguez and Rodrik/2000	95 countries-71 countries	1976-1985 1970-1989	OLS	Trade openness doesn't affect economic growth.
Guillaumet and Richaud/2001	France	1850-1997	OLS	The effect of trade openness on economic growth is uncertain.
Din et al./2003	Pakistan	1960-2001	VECM	Trade openness doesn't affect economic growth.
Ogujiuba et al./2004	Nigeria	1980-2003	Co-integration	Trade openness doesn't affect economic growth.
Utkulu and Kahyaoğlu/2005	Turkey	1990-2004	TAR, STAR and Markow	Economic growth is affected positively by trade openness.
Yapraklı/2007	Turkey	1990-2006	Co-integration	Economic growth is affected positively by trade openness and negatively by financial openness.
Bashar and Khan/2007	Bangladesh	1974-2002	Co-integration	Economic growth is partially related with financial openness and is unrelated with trade openness.
Korkmaz et al./2010	Turkey	1990-2008	OLS	Trade and financial openness positively affect economic growth.

Table 3.1. (cont.)

	Writer(s)/ Study year	Countries	Term	Method	Result
	Huang and Wang/2010	China	1997-2008	OLS	Financial openness positively affects economic growth.
	Faria/2011	Brazil	1990-2007	VAR	Financial openness partially affects economic growth.
	Mougani/2012	64 Countries	1976-2009	OLS, GMM	Financial openness positively affects economic growth.
The Applied Studies Related to Macroeconomic Stability	Barro/1996	100 Countries	1960-1990	OLS	Inflation uncertainty negatively affects economic growth.
	Ma/1998	Colombia	1955-1997 1977-1997	VAR	Inflation uncertainty negatively affects economic growth.
	Domaç and Shabsigh/1999	4 Middle East Countries	1970-1995	OLS	Exchange rate uncertainty negatively affects economic growth.
	Crosby/2000	Hong Kong	1974-1999	OLS	Economic growth is affected positively by interest and inflation uncertainty.
	Nas and Perry/2001	Turkey	1963-1999	GARCH	Inflation uncertainty negatively affects economic growth.
	Keşkek and Özhan/2004	Turkey	1950-2002	GARCH	Inflation uncertainty negatively affects economic growth.
	Ismihan et al./2005	Turkey	1963-1999	Co-integration VAR	Negatively affects economic growth.
	Lensink/2005	138 Countries	1970-1995	OLS	Instability negatively affects economic growth in developing countries and positively in developed countries.
	Fountas et al./2006	7 Developed Countries	1957-2000	OLS	Inflation and output uncertainty negatively affects economic growth.

Schnabl/2007	41 Countries	1994-2005	GLS	The effect of instability on growth is depend on development level.
Adak/2010	Turkey	1972-2006	OLS	Budget uncertainty negatively affects economic growth.
Mahmood et al./2011	Pakistan	1975-2005	GARCH OLS	Exchange rate uncertainty positively affects economic growth.

In conclusion, the different aspects of the relationship between the indirect determinants and economic growth can be said to be generally examined through panel and cross-sectional data analysis in applied studies. The basic common point of the aforesaid studies, which complete each other, is that they have achieved the result that the positive effect of the indirect determinants on economic growth shows increase together with development level.

Comparing with other studies made on middle income countries, it is possible to state that this study is different in the sense of the term of the data, the consolidation of theoretical and applied literature, and econometric method. Besides, with reference to the results of the study, the policy offers suggested are expected to provide benefit for the actors who both follow an economy policy and are affected by economy policy.

4. Theoretical Framework and Data Set

The data belonging to the term of 2002-2011 are used in the estimation of the effect of institutions, openness and macroeconomic stability on economic growth in this study. That the term discussed in the study is limited derives from the difficulty of finding data about the indicators of the indirect determinants. In considering GDP for economic growth[2], it has been effective that GDP shows the level of life standard in an economy (King and Levine, 1993; Knack and Keefer, 1997). The data of GDP, which has been compiled in the local currency of middle income[3] countries[4], has been calculated in dollar by dividing into average nominal USA exchange rate of dollar.

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[2] The data of the application are constituted by, on behalf of economic growth, the variables related to gross domestic product (GDP) per capita, the indicators of corporate structure, trade and financial openness, and macroeconomic stability.

[3] The level of per capita income of which is between 1026-12475 $ in the ranking made by the World Bank according to the gross domestic product (GDP) in 2011

[4] Angola, Argentina, Albania, Azerbaijan, Belarus, Bolivia, Brazil, Bulgaria, China, Dominican Republic, Ecuador, El Salvador, Indonesia, Armenia, Morocco, Philippines, Ghana, Guatemala, South Africa, Georgia, Honduras, Kazakhstan, Colombia, Costa Rica, Lesotho, Latvia, Lithuania, Macedonia, Malaysia, Mexico, Egypt, Mongolia, Moldova, Namibia, Nicaragua, Pakistan, Panama, Paraguay, Peru, Romania, Russia, Sri Lanka, Tunisia, Turkey, Ukraine, Uruguay, Jordan, and Vietnam.

In respect of institutions, the indicators such political stability and absence of violence, government effectiveness, regulatory quality and the rule of law. These indicators are calculated by international organizations, which have a high credibility, and are used very often in the applied literature. Institutional structure indicators including subjectivity at a certain level are composed of indexes and the maximum value of indexes is "100" and the minimum is "0". That the value of indexes is high means the effectiveness of corporate structure is also high.

Some variables such as (import+export/GDP) for trade openness, monetary quantity described as M2/GDP, and private capital flows to GDP ratio have been used. The variables of inflation rate, current account to GDP ratio, and central government revenues to GDP ratio have been used as the indicator of macroeconomic stability. The inflation rate has been calculated according to the consumer price index of the year 2005.

While compiling the data, the statistics of the World Bank, the World Bank (Worldwide Governance Indicators-WGI), International Monetary Fund (IMF), and IMF World Economic Outlook (WEO) have been benefited from.

4.2. Method

In the study, the production function, which is commonly used in the applied literature and which has been developed by Rodrik, Subramanian and Trebbi (2002) model is as the following:

$$\ln\text{GDP} = c + \beta X \qquad (4.1)$$

In the model numbered (4.1), ln represents logarithm, GDP represents real gross domestic product per capita, c represents constant term, and X represents other factors. In the study, the indirect determinants for the (X) variable have been added as independent variables and a model has been generated for each indirect determinant. Thus, the variables related to the indirect determinants such as institutions, trade and financial openness and macroeconomic stability have been subjected to regression analysis. The growth models predicted in the study are as below:

$$\ln GDP_{it} = c_0 + \alpha_1 PSAAV_{it} + \alpha_2 GF_{it} + \alpha_3 RQ_{it} + \alpha_4 ROL_{it} + \varepsilon_{it} \qquad (4.2)$$

In the model numbered (4.2), for the (X) variable, the explanatory variables belonging to institutions such as PSAAV (political stability and absence of violence), GF (government effectiveness), RQ (the regulatory quality), and ROL (the rule of law) are used.

$$\ln GDP_{it} = c_0 + \beta_1 \ln M2GDP_{it} + \beta_2 FFLOW_{it} + \beta_3 \ln OTRADE_{it} + \varepsilon_{it} \qquad (4.3)$$

In the model numbered (4.3), for the (X) variable, the explanatory variables belonging to trade and financial openness such as M2/GDP (financial openness), OTRADE (trade openness), and FFLOW (private capital flows) are used.

$$\ln GDP_{it} = c_0 + \delta_1 ENF_{it} + \delta_2 BOPGDP_{it} + \delta_3 \ln REV_{it} + \varepsilon_{it} \qquad (4.4)$$

In the model numbered (4.4), for the (X) variable, the explanatory variables belonging to macroeconomic stability such as ENF (inflation rate), BOP/GDP (current account balance/GDP), and REV (central government revenue) are used. In the three models mentioned above, i represents the cross-sectional data, that is, countries (i = 1,…,48), t shows the term (t = 2002-2011), and ε represents the error term.

4.3. Preliminary Analysis: Cross-section Dependency and Unit Root

Before panel data analysis, one important issue to be considered to testing for cross-sectional dependency across countries. In this case, the presence/absence of the correlation between the units is sought through Pesaran (CD_{LMadj}), Friedman (FR), Frees (FRS) tests, which search cross-sectional dependence. If H_0 hypothesis is rejected after CD_{LM}, FR and FRS tests, it is accepted that there is a cross-sectional dependence between the units.

For this purpose, Pesaran, Ullah and Yamagata (PUY, 2008). proposed the following Lagrange multiplier test statistic: $LM_{adj} = \sqrt{\frac{2}{N(N-1)}} T \sum_{i=1}^{N-1} \sum_{j=i+1}^{N} \frac{(T-k)\hat{\rho}_{ij}^2 - \mu_{Tij}}{\sigma_{Tij}}$. Friedman (1937) proposed a nonparametric test based on Spearman's rank correlation coefficient. Spearman's rank correlation coefficient equals, $FR = [(T-1)((N-1)R_{AVE} + 1)]$. Frees

(1995, 2004) proposed different statistic and the squared rank correlation coefficients and equals, $FRE = N(R^2_{AVE} - (T-1)^{-1})$.

Whether the panel data are stationary or not is searched through the 2nd generation unit root tests, which consider cross-sectional dependence, since the asymptotic features of the 1st generation unit root tests are negatively affected by cross-sectional dependence. Among the 2nd generation unit root tests, Pesaran's CADF panel unit root test is suitable to the case of N>T. CADF test is the extended version of ADF unit root test with the first differences of the individual series and the cross-sectional average of the level of lagged (Pesaran, 2007).

4.4. Robust Standard Errors Estimation with Cross-Sectional Dependence

Classical, fixed and random effect regression models used in the panel data are based upon the assumption that there are not existence of the cross-sectional dependence, autocorrelation[5] and heteroscedasticity[6]. When the existence of these problems, the panel data model, which is estimated in accordance with the acceptance that there is no variance from the assumptions, must be purged of these problems and/or the adjusted model, which considers these problems, must be predicted. With this purpose, it is seen that Driscoll and Kraay estimator is often used in literature. Driscoll and Kraay estimator produces standard errors, which are consistent in the existence of heteroscedasticity that cross-sectional dimension, especially encountered in micro-econometric panels, is bigger than the time dimension, and which are resistant in the existence of cross-sectional dependence and autocorrelation (Driscoll and Kraay, 1998; Hoechle, 2007).

Finally, Stata 12 software and econometric analysis package program of Eviews 7.2 are used while making panel data analyses in this study[7].

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[5] See Baltagi (2005).

[6] See Brown and Forsythe (1974), Greene (2003).

[7] We thank Mrs. Assoc. Prof. Dr. Ferda Y. Tatoğlu for sharing Stata 12 codes with us. See Tatoğlu (2012)

4.5. Empirical Results

In the study, therefore, it has been searched if there is a correlation between the units through CD_{LMadj}, FR, and FRS tests, which analyze cross-sectional dependence, and the results obtained have been given in Table 4.1.

Table 4.1. Cross-Sectional Dependence Test Results

	CD_{LM} Test	FR Test	FRS Test
(4.2) No. Model	84,416[a]	336,495[a]	27,901[a]
(4.3) No. Model	62,14 [a]	239,709[a]	15,182 [a]
(4.4) No. Model	65,561[a]	261,155[a]	17,901 [a]

Note: a, b and c show the importance level of 1%, 5% and 10% respectively. Schwarz Information Criterion (SIC) has been used for optimal lag length.

As seen in Table 4.2, in consequence of CD_{LM}, FR and FRS tests, the hypothesis of H_0, which suggest that there is no cross-sectional dependence between the units, has been rejected at the level of importance of 1%. Hence, Pesaran's CADF unit root test, which internalizes cross-sectional dependence, and which is among the estimators called as 2nd generation unit root tests has been applied to the variables used. This test provides to avoid from the unnecessary effects of possible en results that could occur in T samples (Pesaran 2007). The results belonging to CADF unit root test are as in the Table 4.2.

Table 4.2. Unit Root Test Results

Variables	CADF	
	Constant	**Constant and Trend**
lnGDP	-2,993[a]	-3,362 [a]
PSAAV	-2,125 [a]	-2,745 [a]
GF	-4,723 [a]	-5,133 [a]
RQ	-3,134 [a]	-3,124 [a]
ROL	-4,127 [a]	-4,687 [a]
lnM2/GDP	-2,351 [a]	-2,578 [a]
FFLOW	-4,321 [a]	-5,331 [a]
lnOTRADE	-3,212 [a]	-3,512 [a]
ENF	-3,236 [a]	-4,216 [a]
BOP/GDP	-2,956 [a]	-2,296 [a]
lnREV	-3,258 [a]	-2,978 [a]

Note: a, b and c show the importance level of 1%, 5% and 10% respectively. Schwarz Information Criterion (SIC) has been used for optimal lag length. The critical values have been provided from Table C in Pesaran's (2007) article.

As seen in Table 4.3, according to the CADF test, it has been established that all of the variables held in the study have become stationary with their levels [1(0)], that is, they have not had unit roots.

Since deviating from the assumptions of cross-sectional dependence, heteroscedasticities and autocorrelation would cause variance-covariance matrix of error terms to lose its feature of being unit matrix, the models have been adjusted by using Driscoll and Kraay Estimator and re-estimated by resistant estimators. The results of fixed effect model estimation are presented in Table 4.3[8].

Table 4.3. Fixed Effect Model Estimation[9]

No.	Variables	Parameter	Standard Error	t-statistic	Prob.
Model (4.2)	PSAAV	0,0072 [a]	0,0016	4,57	0,000
	GF	-0,0061 [b]	0,0027	-2,26	0,029
	RQ	0,0241 [a]	0,0033	7,38	0,000
	ROL	0,0092 [b]	0,0039	2,34	0,024
	Cons	6,3634 [a]	0,2035	31,26	0,000
	R^2 0,1458		F sta. (p-value): 11,56 (0,000)		
Model (4.3)	lnM2/GDP	1,7226 [a]	0,1527	11,27	0,000
	FFLOW	-0,0060 [a]	0,0024	-2,48	0,011
	lnOTRADE	-0,5870 [a]	0,2038	-2,88	0,006
	Cons	3,9185 [a]	1,2329	3,18	0,003
	R^2 0,49		F sta. (p-value): 12,64 (0,000)		
Model (4.4)	ENF	-0,0128 [a]	0,0023	-5,5003	0,0000
	BOP/GDP	-0,0078 [a]	0,0028	-2,7383	0,0064
	lnREV	1,9547 [a]	0,1743	11,2145	0,0000
	Cons	1,5871 [a]	0,5709	2,7801	0,0057
	R^2 0,2823		F sta. (p-value): 20,14 (0,0000)		

According to the results of fixed effect panel data regression analysis, the parameters of the all variables are statistically meaningful. The statistical value of F shows that all models, as a whole, is meaningful at the importance level of 1%. According to the results, for the model numbered (4.2), it is possible to say that the effect of institutions on economic growth in middle income countries is very low. For the model numbered (4.3), It is possible to say that the effect of trade and financing on economic growth in middle income countries,

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[8] The results of F and LR tests, unit effects exist in significance levels of 1% in all models. The results of Hausman Test and Mundlak Test, one-way (unit effect) fixed effect models must be predicted. All models have been estimated in one-way (unit effect) fixed effect model. But, cross-sectional dependence (correlation between the units), autocorrelation, and heteroscedasticity have been observed. So, Driscoll and Kraay Estimator has been used.

except for the variable of FFLOW, is higher than the institutional indicators. For the model numbered (4.4), It is possible to say that the effect of macroeconomic stability/instability on economic growth in middle income countries, except for the variable of lnREV, is very low and negative.

5. Conclusion

In this study, the effects of the indirect determinants such as institutions, openness, and macroeconomic stability in 48 middle income countries on economic growth has been econometrically analyzed, by using panel data belonging to the term of 2002-2011. With this purpose, the fixed-effects regression with Driscoll and Kraay standard errors are benefited from.

According to the results of fixed effect model estimation, in middle income countries, which include also Turkey, of the indicators related to institutions, political stability and absence of violence, the regulatory quality and the rule of law positively affect the growth and the government effectiveness affects it negatively. As to openness, while the effects of trade openness and the variable of M2/GDP on growth are negative, those of private capital flows/GDP are positive. Of macroeconomic stability indicators, the effects of inflation and current account balance/GDP on economic growth are negative, central government revenue/GDP is positive. The results of the analysis show that institutions, openness, and macroeconomic stability contribute to economic growth in middle income countries, but the level of this contribution is low.

Though the positive effects of the indirect determinants on economic growth are small, that the indirect determinants in middle income countries catch the trend of a continuous and steady growth together with the direct determinants are among the important cases which can approach middle income countries to high income countries. To do this, it is required to give importance political measures to improve the indirect determinants as well as the direct determinants, in terms of economic growth in middle income countries trying to keep up with the improvements in the world economy. Within this framework, for institutions and trade

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[9] The Correlation analysis has been made for the relationship between the term error and independent variables, it has been established that there has been no problem of internality in models.

and financial openness, some measurements such as making formal institutional arrangements functional and carrying out formal and informal institutional arrangements in line with each other, providing emission of money in accordance with GDP increases, improving some policies such as increasing exports or improving policies that incent international private capital flows are needed. Some measurements must be appealed such as steady inflation rates, balanced current account balance, and concentrating on policy measurements which can provide high public revenue for macroeconomic stability. In addition to this, it is possible to say that comprising aggregative index which involves the indicators that represent the indirect determinants would contribute to get more meaningful results for the applied studies to be made in the future.

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