Journal of Statistical and Econometric Methods, vol.1, no.2, 2012, 53-64
ISSN: 2241-0384 (print), 2241-0376 (online)
Scienpress Ltd, 2012

Are External Financial Liberalization and Corruption Control Substitutes in Promoting Growth? Empirical Evidence from MENA Countries

Dorsaf Elbir[1] and Mohamed Goaied[2]

Abstract

We study empirically how the positive effects of capital account liberalization on economic growth can be magnified or reduced by Corruption control. We develop a model in which Corruption control and capital account liberalization promote growth, but acts as substitutes. We test this substitutability by predicting growth in Mena Countries region using measures of capital account liberalization, Corruption control and a key interaction term. Empirical evidence from an analysis of dynamic panel data supports our theoretical predictions. Results confirm the positive effects of financial liberalization and Corruption control, respectively on growth. The interaction term coefficient is itself significant across a variety of specifications and suggests that financial liberalization and low Corruption are substitutes in promoting growth. Another finding is the presence of a threshold effect on Corruption control when measuring the impact of financial liberalization on economic growth. That is the growth impact of improving financial liberalization is higher when Corruption level is high. These results can contribute to the recent policy debate on the strengths and weaknesses of capital account liberalization on developing countries, with a special focus on Mena region.

---

[1] LEFA. IHEC Carthage, e-mail: elbyr.dorsaf@gmail.com
[2] LEFA, IHEC Carthage, e-mail: mohamed_goaied@yahoo.fr

Article Info: *Received* : April 3, 2012. *Revised* : May 19, 2012
Published online : July 30, 2012

Mathematics Subject Classification: 91B55, 91B62, 91B82.
Keywords: Corruption, External financial liberalization, Economic growth, Substitutes, Threshold effect

1 Introduction

Recent literature shows the existence of a positive link between capital account liberalization and economic growth in developed economies. However, these stylized facts are controversial in developing economies where the absence of evidence in favor of a strong openness-growth relationship is confusing and could be explained by the relatively low institutional quality. In this context, Corruption is often associated with poor functioning of institutions and public sector [1]. Corruption is reinforced by the large number of controls and licenses required in economic transactions.

The Majority of MENA countries have undertaken economic reforms and structural adjustment programs. Moreover, Addressing high unemployment is a longstanding but increasingly urgent challenge in the region. Because of demographic pressures, the level of economic growth is not sufficient to absorb the unemployed and new entrants to the labor force. Within the broader debate of the increasing importance of international capital flows in the economy, some countries have been encouraged to liberalize their capital accounts in order to foster economic growth. However, they expressed concern about the limited impact on the present growth spurt on job creation. This failure is often attributed to structural problems of governance that prevent incentives for private investment. Despite the interest of the subject, very little empirical work has been studied the impact of capital account openness and Corruption control on growth in Mena countries. The purpose of this paper is to fill this gap and to focus on the issue of interaction between Corruption control and external financial liberalization and its impact on economic growth. Based on recent literature, we test a model in which low Corruption and financial liberalization facilitate economic growth, but act as substitutes. We test this substitutability by validating a model of economic growth in MENA countries, using different measures of financial liberalization in the presence of variable measuring Corruption control and testing their impact on economic growth according to a non-linear relationship, in order to identify the existence of a threshold effect. The issue of interaction has important implications in this context. For example, low Corruption and financial liberalization are complementary when improving financial liberalization will have an effect on economic growth if Corruption is controlled. But if Corruption control and financial liberalization are substitutes then the improvement of financial liberalization in the most corrupt countries would give a higher growth. Hence, understanding the interactions between the various ingredients of

economic growth is crucial for improving macroeconomic management and setting incentives for private investment.

In the empirical part, we test the hypothesis of interaction between Corruption control and capital account liberalization as well as the separate effects of each factor on economic growth on a panel of country of the region MENA, observed during period 1984-2008. The explanatory variables include both indicators of capital account liberalization and Corruption control. The main measures of capital account liberalization are the dummy indicator of the International Monetary Fund (IMF) and the indicator KAOPEN. Corruption is measured by the ICRG[3]. The focus is on the interaction term between capital account liberalization and Corruption. The results confirm respectively the positive effects of capital account liberalization and low Corruption on economic growth. The coefficient on the interaction term is significant and suggests that capital account liberalization and low Corruption act as substitutes in promoting growth.

Section 1 presents a review of the recent literature on the effect of financial liberalization and Corruption control on economic growth. Section 2 develops the econometric model used. Section 3 presents the data. Section 4 describes the main empirical results. Section 5 concludes.

2 Literature Review

Recent years have witnessed a revival of interest in financial liberalization as a key driver of economic growth. Furthermore, extensive literature has highlighted the theoretical and empirical links between the capital account liberalization and economic growth. For the theoretical links, Prasad and al. [2] find that liberalization of capital flows can have a positive effect on economic growth in developing countries, through various channels, such as the increase in domestic savings, the reduction in the cost of capital, the transfer of technology from advanced countries to developing countries etc. For the empirical works, using the variation of the indicator of capital account restrictions, Quinn [3] finds that the variation in capital account liberalization has a significant effect on GDP growth in a sample of 58 countries over the period 1960 to 1989. Honig [4] and Klein and Oliver [5] argue that capital account liberalization can increase economic growth by developing the financial system[4]. Otherwise, a parallel literature has established theoretical and empirical evidence on the negative effects of Corruption on economic growth. Since the pioneering work of Mauro [8] to Watson [9], many economists have highlighted the failure of economic activity related to the phenomenon of Corruption. Mauro focused on the relationship

[3] ICRG : International Country Risk Guide

[4] See [6] and [7] for more details concerning the literature on financial globalization.

between the ratio of investment to GDP and the level of Corruption. The paper finds that countries with high Corruption level have also the lowest ratio of private investment to GDP. Therefore, Corruption reduces investment opportunities in a country. The conclusions of the paper highlight the role of Corruption control for the development of private investments. On the other hand, the recent literature supports the view that Corruption is detrimental to growth ([10], [11], [12], [13]). Empirical evidence shows that countries with high levels of Corruption grow more slowly. This is particularly relevant for developing countries in general and for African countries in particular, because, governance criteria are generally less stringent in developing countries than in industrialized countries, and the situation is even worse in African countries than in other regions of the developing world [14].

There are so two areas of the literature which examine the capital account liberalization and Corruption. The first area shows that the financial liberalization is the main engine of the economic growth and institutional quality are considered as an ingredient of capital account liberalization. Castro, Clementi and MacDonald [15] develop a model in which the positive effects of investor protection on growth are the strongest for countries with more open capital accounts, because access to international capital holds interest rates steady even as better institutions increase the demand for investment. Meanwhile, Alfaro, Kalemli-Ozcanand Volosovych [16] show that capital inflows are significantly and positively affected by institutional quality. Wei studied the effects of Corruption on foreign direct investment (FDI) and found that Corruption is a barrier to FDI ([17] and [18]). The second area of the literature is smaller and closely related to our paper in that it examines the liberalization and Corruption side by side, allowing each factor to act on growth independently. Klein [19] found that capital account liberalization in countries with better institutional quality stimulates growth[5]. Kunieda and al. [21] studied theoretically and empirically how the negative effects of Corruption on economic growth are amplified or reduced by the capital account liberalization process. They have shown through a panel data model that highly Corrupt countries impose higher tax rates than do less Corrupt countries; thereby, magnifying the negative impacts of government Corruption on economic growth in the highly Corrupt countries and reducing the impacts in the less Corrupt countries if capital account liberalization is enacted.

3 The Model

At first, we test the direct effect of Corruption control and capital account

[5] Several studies have found no effect or a mixed effect of liberalization in developing countries with low institutional quality. (See [20])

liberalization on economic growth. Subsequently, we refine the analysis by introducing the key interaction term between financial liberalization and Corruption control to detect, possibly, the presence of a substitution effect. For that purpose, we consider two specifications:

$$y_{it}= \alpha\, y_{it-1}+ \beta_1 C_{it} + \beta_2\, F_{it} + \beta_3 X_{it} + \varepsilon_{it} \quad (1)$$

$$y_{it}= \alpha\, y_{it-1}+ \beta_1 C_{it} + \beta_2\, F_{it} + \beta_3\, C_{it}F_{it} + \beta_4\, X_{it} + \varepsilon_{it} \quad (2)$$

where $\varepsilon_{it}= \mu_i+ U_{it}$

$i = 1,\ldots,n$; $t = 1,\ldots\ldots,T_i$.

The index i indicates the country and t the year considered.

y_{it} refers to the growth of real GDP per capita. y_{it-1} indicates the lagged endogenous variable.

F includes indicators of capital account liberalization.

C is the indicator of Corruption.

X is the vector of control variables for economic growth. ε_{it} is a general disturbance, including the specific effect of individual countries μ_i and a particular disturbance U_{it}.

4 The Data

This analysis focuses on a panel of 13 countries in the MENA region covering the period 1984-2008. Following Alesina, Grilli and Milesi-Ferreti [22] , we use as an indicator of capital account liberalization, a dummy variable extracted from the annual report of the International Monetary Fund (IMF), "Exchange Arrangements and Exchange Restrictions" [23]. This indicator takes a value of one when, according to the IMF, capital controls are in place and zero otherwise. On the other hand, to reflect the degree of restrictions, we use the indicator KAOPEN developed by Chinn and Ito [24]. This indicator is based on four binary variables from the same report of IMF, cited above. Build essentially according to the method of principal component analysis, this indicator ranges between -1.7 and 2.6. The more this value is higher, the more the capital account of the country concerned is liberalized. Corruption control is measured by the ICRG (International Country Risk Guide) [25]. This index provides an assessment of Corruption within the political system. The index ranges from 0 to 6, the highest values indicating less Corruption. Data are provided on a monthly basis, so a simple average is used, making the continuous index between 0 and 6.The advantage of the ICRG index compared with other indexes is that it is available for a long period and for a large sample of countries. It is also highly Correlated with other indices used in the literature, such as Transparency International and International Business (see [26], for more details).

Summary statistics for key variables are provided in Table 1.

Table 1: Summary Statistics for key Variables

Variable		Mean	Std. Dev.	Min	Max	Observation
	overall		5.57	42.88	34.61	N =317
Y	between	1.56	1.21	-0.79	2.84	n = 13
	within		5.45	-43.93	33.55	T-bar= 24.38
	overall		0.77	1	4	N =325
Corr	between	2.62	0.40	1.80	3.28	n = 13
	within		0.67	1.42	4.81	T= 25
	overall		1.76	-1.83	2.5	N = 325
KAOPEN	between	0.37	1.62	-1.83	2.5	n = 13
	within		0.80	-1.67	2.65	T = 25
	overall		0.50	0	1	N= 325
IMF	between	0.49	0.44	0	1	n = 13
	within		0.26	-0.26	0.93	T = 25

Furthermore, Pearson Correlation Coefficients are reported in Table 2. This Correlation coefficient analysis is important for analyzing which capital account liberalization variable is better being used for measuring the marginal impact on growth. Furthermore, Results show that capital account liberalization indicators are highly correlated with each other. So they are used one at time, in our regression analysis. Regressors are weakly Correlated, except for Correlation between KAOPEN and Trade which is 0.55.

Table 2: Correlation analysis

Variable	Y	Corr	KAOPEN	IMF	INF	Trade	GC
Y	1						
Corr	-0.06	1					
KAOPEN	0.04	-0.20	1				
IMF	0.05	-0.08	0.81	1			
INF	-0.06	0.07	-0.34	-0.12	1		
Trade	0.09	-0.01	0.55	0.40	-0.47	1	
GC	-0.15	0.11	0.38	0.23	-0.46	0.43	1

5 Empirical Results

Table 3 presents the estimation results with the GMM method in first differences of the two specifications used in Section 2 (Models (1) and (2)). As noted by Arellano and Bond [27] and Blundell and Bond [28], the asymptotic

standard errors for the two-step estimator are biased downward. However, one-step estimator is asymptotically inefficient relative to the two-step estimator, even in the case of an homoscedastic error term. Thus, the coefficient estimates of the two-step estimator are asymptotically more efficient.

In each of the specifications in Table 3 we involve a variable of capital account liberalization, the variable of control Corruption and the interaction variable between them. The control variables are included in all specifications. The first four columns are for the equation (1) where we involve estimates of specifications (1) and (1)' the KAOPEN variable and the Corr variable and estimates specification (2) and (2)' the IMF variable and the Corr variable. The last four columns are for the equation (2) where we involve the estimates of specification (3) and (3)' the KAOPEN variable, the Corr variable and the CorrKAOPEN variable and estimates specification (4) and (4)' the IMF variable, the Corr variable and the CorrIMF variable. The eight specifications are globally significant. Indeed, the test of over-identification of Sargan confirms the validity of all the instruments used in the regressions. Moreover, the test of residual autocorrelation of order 2 is checked and ensures the absence of autocorrelation.

The regression results are consistent with economic intuition. The coefficients associated with the measurement of capital account liberalization (KAOPEN and IMF) and Corruption control (Corr) are individually significant and positive.

Furthermore, the coefficients associated with variables measuring interaction capital account liberalization - Corruption control are individually significant and negative. This confirms the substitutability between these two factors in promoting growth [29]. Substitutability is that more Corruption raises the need for liquidity and thus provides financial improvements more productive. Instead, a financially-developed country is less affected by an increase in Corruption, as funds can be borrowed more easily.

For control variables, the positive effect of trade openness (Trade) on growth is observed in specifications (1), (2), (1)' and (4)'but is not significant. Regarding the variables of macroeconomic stability the coefficient of government consumption (GC) is statistically significant and negative in all specifications at 1% level of significance. Inflation (INF) rate has a negative impact on growth in all the specification but is statistically significant only in specifications (1)' and (2)' with a 5% level and in the specification (3)' with a 10% level of significance.

Table 4 presents the estimation results with the system GMM one-step and two-steps of the two specifications of equation (1) to test the direct effect and equation (2) to test the interaction between the two main ingredients of growth and validate the presence of threshold effect [6]. Columns are similar as the specifications retained above, in Table 3.

---

[6] Economic analysis is based on GMM system results which provide more efficient estimates.

Table 3: Capital account liberalization, Corruption control and growth. First differences GMM estimates.

	Direct effect		Cross effect					
	One-step	Two-step	One-Step	Two-step				
Variables	(1)	(2)	(1)'	(2)'	(3)	(4)	(3)'	(4)'
Corr	4.35**	7.80**	7.26***	5.48**	4.49**	6.67*	5.31***	6.55*
	(2.11)	(2.17)	(3.43)	(2.00)	(1.96)	(1.77)	(3.14)	(1.68)
KAOPEN	3.43**		3.09**		12.65***		7.40**	
	(2.00)		(1.98)		(3.21)		(2.17)	
IMF		14.23*		14.42***		48.68***		49.74***
		(1.95)		(2.72)		(2.76)		(2.73)
CorrKAOPEN					-3.68***		-1.84**	
					(-3.07)		(-2.20)	
CorrIMF						-12.67**		-13.45**
						(-2.48)		(-2.52)
PIB-1	-0.07	-0.33**	-0.17*	-0.37***	-0.29*	-0.00	-0.30**	0.03
	(-0.46)	(-2.16)	(-1.72)	(-3.72)	(-1.89)	(-0.02)	(-2.42)	(0.26)
INF[a]	-0.50	-0.71	-0.82**	-0.63**	-0.68	-0.96	-0.71*	-0.99
	(-0.89)	(-1.20)	(-2.56)	(-2.12)	(-1.19)	(-1.45)	(-1.74)	(-1.45)
Trade	0.84	0.59	6.19	-1.22	-2.10	-1.61	7.99	-1.73
	(0.28)	(0.18)	(1.54)	(-0.58)	(-0.66)	(-0.47)	(1.53)	(-0.48)
GC	-12.45***	-14.84***	-22.97***	-30.93***	-18.22***	-18.60***	-19.30***	-18.83***
	(-3.01)	(-3.26)	(-4.03)	(-3.67)	(-3.97)	(-3.71)	(-2.69)	(-3.66)
F-statistical (p-value)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Test of Sargan (p-value)[b]	0.46	0.18	0.40	0.05	0.26	0.28	0.05	0.23
Test of second-order Correlation(p-value)[c]	0.67	0.64	0.63	0.35	0.09	0.64	0.16	0.59

T-Student are reported in parentheses. (***), (**) and (*) indicate significance levels at 1%, 5% and 10%, respectively. [a] In regression, this variable X is included as log (X + 1). [b] The null hypothesis is that the instruments used are unCorrelated with the residuals. [c] The null hypothesis is that the errors in the first-difference regression exhibit no second-order serial Correlation.

The Sargan test present strong evidence that the over identifying restrictions are valid which confirm the validity of the instruments, at 5% level of significance. Moreover, we accept the null hypothesis that the residuals in the first difference regression exhibit no second order serial Correlation. The results show that the coefficients associated with the measurement of capital account liberalization (KOPEN and IMF), are all significant and positive except, for specification (2). Corruption control (Corr) has significant and positive relationship with growth. However, these results do not necessarily suggest the need for a coordinated effort for capital account liberalization and the reduction of Corruption simultaneously.

Table 4: Capital account liberalization, Corruption control and Growth
System GMM estimates.

	Direct effect				Cross effect			
	One-step		Two-step		One-step		Two-step	
Variables	(1)	(2)	(1)'	(2)'	(3)	(4)	(3)'	(4)'
Corr	2.34**	2.37	3.08***	2.91***	2.09**	3.41	2.94**	7.94
	(2.13)	(1.34)	(2.65)	(4.92)	(2.00)	(1.52)	(2.07)	(1.57)
KAOPEN	1.76*		1.62***		3.16**		11.07***	
	(1.78)		(3.19)		(2.47)		(2.94)	
IMF		1.26		1.55**		39.82***		32.74***
		(1.34)		(2.15)		(3.74)		(3.31)
CorrKAOPEN					-0.73*		-2.85**	
					(-1.80)		(-2.35)	
CorrIMF						-10.43***		-17.51**
						(-3.24)		(-2.24)
PIB-1	-0.11	-0.00	-0.23*	-0.03	-0.04	0.00	-0.28**	-0.24
	(-1.02)	(-0.01)	(-1.94)	(-0.44)	(-0.39)	(0.08)	(-2.34)	(-1.41)
INF[a]	0.43	-0.27	0.42	-0.23	0.20	-0.22	0.65	-2.01
	(1.02)	(-0.77)	(1.18)	(-0.91)	(0.50)	(-0.57)	(1.08)	(-1.59)
Trade	2.07**	2.60***	4.29***	2.12***	2.22***	0.11	1.87	5.58***
	(2.43)	(3.34)	(3.82)	(3.92)	(2.58)	(0.12)	(0.86)	(2.58)
GC	-5.05***	-5.51***	-9.28***	-5.26***	-4.94***	-4.74***	-5.95**	-11.72**
	(-4.38)	(-3.25)	(-3.95)	(-6.04)	(-3.93)	(-2.76)	(-2.17)	(-2.33)
F-statistical (p-value)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Test of Sargan (p-value)[b]	0.48	0.42	0.49	0.34	0.42	0.12	0.29	0.07
Test of second-order Correlation (p-value)[c]	0.63	0.25	0.69	0.31	0.51	0.78	0.41	0.48

T-Student are reported in parentheses. (***), (**) and (*) indicate significance levels at 1%, 5% and 10%, respectively. [a] In regression, this variable X is included as log (X + 1). [b] The null hypothesis is that the instruments used are unCorrelated with the residuals. [c] The null hypothesis is that the errors in the first-difference regression exhibit no second-order serial Correlation.

Besides, the empirical results that emerge from Table 4 relating to the direct effects on the Corruption control and financial liberalization on growth indicate that for countries in the MENA region, the establishment of procedures for Corruption control has a greater effect on economic growth than that of financial liberalization. The empirical results highlight the need to sit better governance by ensuring administrative reforms that could stimulate economic growth, rather than focusing on the agenda of financial liberalization. Moreover, the coefficients associated with variables measuring interaction capital account liberalization - Corruption control are individually significant and negative. This

confirms the substitutability between these two factors to stimulate economic growth. In Table 4, column 3', the marginal impact of the external financial liberalization on economic growth is expressed as follows:

$$\frac{\partial y_{it}}{\partial KAOPEN_{it}} = 11.07 - 2.856 * Corr_{it} \quad (3)$$

This result indicates that the effect of financial liberalization on economic growth depends on the level of Corruption in the country. It is worth mentioning that the threshold level of Corruption control is equal to 4. Paradoxically, the empirical results show that financial liberalization policies in Mena countries are favorable to promote economic growth, as the political Corruption control index is less than 4. For control variables, Government spending has a negative and significant impact on economic growth, so high government consumption dampen growth. Inflation has a negative coefficient in specifications (2), (2)', (4) and (4)', but it's not significant, while trade openness has a positive and statistically significant effect on growth in all the specifications, pointing that reducing trade barriers foster growth.

6 Conclusion

This study addressed very important question that do the positive effects of capital account liberalization on economic growth can be magnified or reduced by Corruption control? For this purpose, our novelty is in modeling the openness-Growth nexus, using a model in which Corruption control and capital account liberalization promote growth, but acts as substitutes. We test this substitutability by predicting growth in Mena Countries region using measures of capital account liberalization, Corruption control and a key interaction term. There are three important findings. First, there is a positive direct impact on capital account liberalization and Corruption control on growth, respectively. Besides, in the MENA region, the establishment of procedures for Corruption control has a greater effect on economic growth than that of financial liberalization. Second, financial liberalization and low Corruption are substitutes in promoting growth.

That is the growth impact of improving financial liberalization is higher when Corruption level is high. Last, the presence of a threshold effect on Corruption control should be taken into account in future research on the openness-Growth nexus, notably in developing countries. These results can contribute to the recent policy debate on the strengths and weaknesses of capital account liberalization on developing countries, with a special focus on Mena region.

ACKNOWLEDGEMENTS. We would like to thank Bassam Kamar, University of Monaco and Samy Ben Naceur, IMF, for useful comments and suggestions.

References

[1] M. Salinas-Jiménez, and J. Salinas-Jiménez, Corruption, efficiency and productivity in OECD countries, *Journal of Policy Modeling*, **29**, (2007), 903-915.

[2] E. Prasad, K. Rogoff, S. Wei, M. Kose, Financial Globalization, Growth and Volatility in Developing Countries, *NBER Working Paper*, **10942**, (2004).

[3] D. Quinn, The Correlates of change in International Financial Regulation, *American Political Science Review*, **91**(3), (September, 1997), 531-551.

[4] A. Honig, Addressing causality in the effect of capital account liberalization on growth, *Journal of Macroeconomics*, **30**(4), (March, 2008), 1-15.

[5] M.W. Klein and G. P. Olivei, Capital account liberalization, financial depth, and economic growth, *Journal of International Money and Finance*, **27**(6), (2008), 861-875.

[6] M.A. Kose, E. Prasad, K. Rogoff and S.J. Wei, Financial globalization: a reappraisal, *IMF Staff Paper*, **56** (1), (2009), 8-62.

[7] M.A. Kose, E. Prasad, K. Rogoff and S.J. Wei, Financial globalization and economic policies, In: D. Rodrik, M. Rosenzweig, (Eds.), *Handbook of Development Economics, Elsevier, Amsterdam*, **5**, (2010), 4283-4359.

[8] P. Mauro, Corruption and growth, *Quarterly Journal of Economics*, **110**(3), (1995), 681-712.

[9] C. Robertson and A. Watson, Corruption and change: The impact of Foreign Direct Investment, *Strategic Management Journal*, **25**(5), (April 2004), 385-396.

[10] V. Tanzi, Corruption around the world: causes, consequences, scope and cures, In G.T. Abed and S. Gupta (eds.), Governance, Corruption, and economic performance, *Washington, DC: IMF*, (2002), 19-58.

[11] J. Svensson, Eight questions about Corruption, *Journal of Economic Perspectives*, **19**(3), (2005), 19-42.

[12] K. Gyimah-Brempong, Corruption, economic growth, and income inequality in Africa, *Economic of Governance*, **3**, (2002), 183-209.

[13] A. De Vaal and W. Ebben, Institutions and the relation between Corruption and economic growth, *Review of Development Economics*, **15**(1), (2011), 108-123.

[14] L. Ndikumana, Corruption and Pro-Poor growth outcomes: evidence and lessons for African countries, in Governance and Pro-Poor Growth, *African Economic Research Consortium, Nairobi, Kenya*, (2007), 184-216.

[15] R. Castro, G.L. Clementi and G. MacDonald, Investor protection, optimal incentives, and economic growth, *The Quarterly Journal of Economics*, **119**(3), (August, 2004), 1131-1175.
[16] L. Alfaro, S. Kalemli-Ozcan and V. Volosovych, Capital flows in a globalized World: The role of policies and institutions, *NBER Working Paper*, **11696**, (October, 2005).
[17] S.J. Wei, How taxing is Corruption on international investors, *Review of Economics and Statistics*, **82** (1), (2000), 1-11.
[18] S.J. Wei, Local Corruption and global capital flows, *Brookings Papers on Economic Activity*, **2**, (2000), 303-346.
[19] M.W. Klein, Capital account liberalization, institutional quality and economic growth: theory and evidence, *NBER Working Paper*, **11112**, (2005).
[20] M.W. Klein and G. Olivei, Capital account liberalization, financial depth and economic growth, *NBER Working Paper*, **7384**, (October,1999).
[21] T. Kunieda, K. Okada and A. Shibata, Corruption, globalization, and economic growth: theory and evidence, *MPRA Paper*, **35355**(12), (December, 2011).
[22] A. Alesina, V. Grilly and M. Milesi-Ferretti, *The political economy of capital controls*, in L. Leiderman and A. Raizn, eds., Capital mobility: The impact on consumptions, investment and growth, *Cambridge University Press*, 1994.
[23] IMF. Exchange Arrangements and Exchange Restrictions. *Annual Report*.
[24] M.D. Chinn and H. Ito, Capital account liberalization, institutions and financial development: cross country evidence, *NBER Working Papers*, **8967**, (2002).
[25] PRS Group, *International Country Risk Guide*, New York, (2011).
[26] D. Treisman, The causes of Corruption: a cross-national study, *Journal of Public Economics,* **76**, (2000), 399-457.
[27] M. Arellano and S. Bond, Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations, *Review of Economic Studies*, **58**(2), (1991), 277-297.
[28] R. Blundell and S. Bond, Initial conditions and moment restrictions in dynamic Panel Data models, *Journal of Econometrics*, **87**(1), (1998), 115-143.
[29] C. Ahlin and J. Pang, Are financial development and corruption control substitutes in promoting growth, *Journal of Development Economics*, **86**, (2008), 414-433.
[30] World Bank, Education Statistics, World Bank, Washington, (2010).
[31] World Bank, World Development Indicators, World Bank, Washington, (2010).