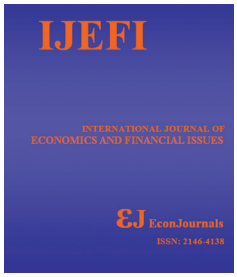

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Effects of Financial Development and Institutional Quality on the Economic Growth in The Arabian Gulf states: A Panel Cointegration Analysis

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ABSTRACT

Many studies on the link between finance and growth, in Arab gulf countries, have suggested however, without demonstrating it, that the relationship between the two spheres goes through the country's specific institutional structure. Nevertheless, this relation is neither well analyzed nor stated in the case of the Gulf States, which justifies the problem of this article. Different estimates were made by the method of panel data for the period from 1995 to 2012 for six Arab Gulf Countries. It appears from these estimates that the quality of the institutions is the transmission vector of the financial sphere towards the real sphere for the case of these countries. So, the financial system cannot stimulate economic growth if it is accompanied by a "solid institutional framework" presented by a better bureaucracy, a fight against corruption, a strong legal framework and better socio-economic conditions.

Keywords: Financial Development, Quality of Institutions, Economic Growth, Panel Data
JEL Classification: O16, O43, O47, C23

1. INTRODUCTION

The high level of economic growth is the desired objective of each developed or developing country. So, the explanation of the factors that favor this growth remains a very rich field of analysis both theoretical and empirical. and so, the economic growth of each country is strongly linked to the development of its financial system which ensures the financing of its economy. At this level, important are the works that explain the contribution of a developed financial system in stimulating growth. The majority of these studies are in line with the works of Bagehot (1873) and Schumpeter (1912), and show that financial development has an active role in the success of investment projects and start the pace of industrialization. However, other works, such as those of Robinson (1952) and Lucas (1988), do not believe in the existence of such a relationship. Despite the disagreements and controversies among economists relating to a few empirical results, it is clear that there is a positive relationship between the two fields of analysis (World Bank, 1989).

A well-developed financial systems allow better mobilization of savings towards the most productive projects, which benefits not only investments and their beneficiaries but also the economy as a whole. therefore, the majority of studies, which are in line with Levine (1997), conclude that financial development accelerates economic growth and improves the performance of an economy by facilitating the movement of capital to the most productive sectors. The theoretical argument linking financial development to growth lies in the fact that a well-developed financial system performs several functions to increase the efficiency of intermediation by reducing information and transaction costs. For example, a strong financial system encourages investment, mobilizes savings, controls managers, enables risk diversification, and facilitates the exchange of goods and services. These functions, if properly

performed, allow the financial system to more efficiently allocate resources, and build up faster human and physical capital. The consequence is faster technological progress, which in turn stimulate the economic growth.

However, recent financial crises have led economists and the international community to demand the need for concrete measures to mitigate the fragility of domestic financial systems and to preserve the development of institutional and regulatory frameworks. The efforts of these countries are largely based on the development and application of standards that support healthy policies as well a stronger corporate and market structures (Chossoudovsky, 2004 and Bates et al., 2007). The first explanation is that these countries are adopting the implementation of financial reforms with a newely emerging financial system that still poorly developed. In this context, and very recently, several studies deal with this particular point show that the success of any financial reform requires the establishment of a solid and well-developed institutional framework (Demetriades and Andrianova, 2004, Chinn and Ito, 2006 and Baltagi et al., 2007). Rodríguez and Rodrik (2000) argue that it is difficult to rigorously identify the effect of liberalization on economic growth as a set of policy reforms that include the best macro-management. It is often suggested that macroeconomic stabilization should precede structural reform. So, according to these two authors, the degree of success attained by a particular policy depends on other policies, necessarily institutional reforms. Institutional quality plays an important role in the success or failure of any economic and/or financial reform. This is why reforms have been successful in some countries and failures in others.

2. LITERATURE REVIEW

The studies of La Porta et al. (1997) and Levine (1997) have inspired researchers and policymakers to study the impact of political factors and legal traditions in the finance-growth relationship. Previous empirical studies, notably by Demetriades and Law (2006), Yao and Yueh (2009); Hasan et al. (2009); Huang et al. (2009); Casson et al. (2010); Angelopoulos et al. (2011); Cavalcanti et al. (2011); reveal that the quality of institutions is important for financial development in order to stimulate economic growth. This idea highlights the notion of institutional governance by explaining the relationship between financial development and economic growth. Indeed, these two terms are conceptually less clear and there is no clear unanimous consensus on their definitions. So, the quality of institutions and good governance can not be linked to a simple type of macroeconomic behavior. Although it is a fashionable vocabulary in the work of multilateral institutions, it is difficult to translate differences into the implementation of a sound institutional framework between countries. According to the work of La Porta et al. (1997; 1998) and Beck and Levine (2003), we find that financial systems are better developed in countries with strong legal and institutional structures. The latter develop the financial systems and help companies meet their investment financing needs (Rajan and Zingales, 1998; Demirgüç-Kunt and Maksimovic, 1998) which subsequently stimulates growth.

On the theoretical level, a very large agreement has already been concluded to recognize the advantages of a good quality of institutions on the financial development of each country. It is also recognized that good governance is guaranteed by the establishment of good public institutions. The question of governance then meets that of institutions and the analysis of it necessarily involves studying the capacity of institutions to promote financial development.

Levine (2003) shows that the financial development effect on economic growth varies across countries. This explains why this effect is not direct but it necessarily depends on the quality of the institutions in each country. Although the problems of institutional and financial market reforms have been widely analyzed, institutional economics experts have focused on improving institutions in general, while financial market theory has focused solely on financial markets. However, previous attempts have been made to analyze the meaning of financial institutions and systems and the relationship between them (Levine (1997), Pistor et al. (2000), Law and Azman-Saini (2008)). According to Levine (1997), it has become clear that a relationship exists between financial development and the quality of institutions. The econometric study of Pistor et al. (2000), on developing countries, shows that the institutional structure is important in the functioning of financial markets to encourage economic growth. Law and Azman-Saini (2008) study the effect of institutional quality on financial development in developed and developing countries. They show that the effectiveness of institutional quality on financial development is non-monotonic and varies across countries, depending on the level of economic development.

Recently, economists have drawn attention to this relationship by highlighting the importance of institutional factors for the development of financial systems and the stimulation of growth (Hasan et al., 2009, Balach and Law (2015), and Effiong (2015)). Hasan et al. (2009) examined a panel of 31 Chinese provinces over the period 1986-2002 to study this relationship. Their empirical findings suggest that financial market development, the legal environment, property rights awareness and political pluralism are associated with stronger growth. Balach and Law (2015) analyzed the relationship between financial development, quality of institutions, human capital, and economic performance in four South Asian Association countries for the period 1984-2008. These authors conclude that institutional quality positively affects economic performance when the financial sector is linked to a stable institutional framework and has adequate human capital. Effiong (2015) has studied this relationship across 21 sub-Saharan African countries over the period 1986-2010 and shows that financial development accompanied by good institutional quality has a positive impact on economic growth.

3. RESEARCH METHODOLOGY

3.1. Model Specification

In this section, we present our equations to test the relationship between financial development, institutional quality and economic growth. To do this, we will use the following regressions:

$$LnGDP_{it} = \alpha_i + \beta_1 Lnk_{it} + \beta_2 Lnh_{it} + \beta_3 Lnlf_{it} + \beta_4 FD_{it} + \xi_{it} \quad (1)$$

$$LnGDP_{it} = \rho_i + \gamma_1 Lnk_{it} + \gamma_2 Lnh_{it} + \gamma_3 Lnlf_{it} + \gamma_5 (INS_{it} \times FD_{it}) + \mu_{it} \quad (2)$$

With GDP is the logharith of real Gross Domestic Product per capita; α_i or ρ_i is the indi; *Lnk* is the stock of physical capital; *Lnh* is the stock of human capital; *Lnlf* aggregates the growth rate of the labor force and the growth rates of technological progress and capital depreciation. Knowing that growth rates of technological progress and depreciation are assumed constant across countries and over time and their sum (g + δ) is equal to 0.05; INS is the measure of quality of institutions; *FD* is the financial development indicator (% of *GDP*); INS_{it}*FD is the interaction between financial development and institutional quality, or the indirect effect of financial development through a sound institutional framework on GDP per capita; $\beta' = (\beta_1,\beta_2,\beta_3,\beta_4,\beta_5)$ or $\gamma' = (\gamma_1, \gamma_2,\gamma_3,\gamma_4,\gamma_5)$ is a vector of the coefficients to estimate of dimension (5;1) and; ξ_{it} or μ_{it} is the error term, in which the mean is equal to zero and the variance is equal to σ^2.

We consider a sample of T observations of N individual processes y_{it} and x_{it} with t = 1,…, T, and i = 1,…, N. It is assumed that the process y_{it} is a linear function of the process x_{it} defined generally by the following relation:

$$y_{it} = \alpha_i + \beta_i x_{it} + \xi_{it} \ldots V_i = 1, \ldots, N \text{ and } Vt = 1, \ldots T \quad (3)$$

3.2. Data and Variable Sources

This study examines a sample of six Gulf Arab states[1]. We tested the relationship between financial development, institutional quality and economic growth, during the 1994-2012 period[2]. The choice of these six Arab countries was made according to the classification of the World Bank based on the level of economic development. The variables in our study are: Real gross domestic product per capita as an endogenous variable, the growth rate of the labor force, three indicators related to financial development and four indicators of institutional quality.[3]

Since most financial services in Arab countries is provided by the banking sector, the most frequently used measures are: Liquid liabilities as a percent of GDP (LL), Domestic credit provided by financial sector as a percent of GDP (DCFS) and Domestic credit to private sector by banks as a percent of GDP (DCPS). Private credit measures the amount of credit that banks other than monetary authorities allocate to the private sector. This is a standard variable in the finance literature and it has been used by Beck et al. (2000). Liquid liabilities (M3) is a measure of broad stock money and it has been used by King and Levine (1993).

We calculate the physical capital stock using the perpetual inventory method described by Van-Pottelsberghe (1997). So, the stock of physical capital "*K*" of year "*t*" is equal to its stock in "*t−1*" adjusted by a depreciation rate beside investment "*I"* at time *t*: $k_t = I_t + (1-\delta)K_{t-1}$ where I_t is the gross formation of fixed capital *(GFCF)*[4] and δ is the rate of depreciation ($\delta = 6\%$).[5]

The stock of physical capital initial K_0 is equal to the initial investment I_0 divided by the sum of the growth rate annual ρ of I_t investment and of depreciation rate δ of the physical capital $k_0 = I_0/(\rho+\delta)$. The stock of physical capital per capita is the ratio between the calculated physical capital stock and the overall population.

The studie of Coe et al. (1997), state that the developing countries must have a skilled workforce, that is to say human capital capable of assimilating foreign technology. Based on the studie of Mankiw et al. (1992), we use the growth rate of the secondary schooling gross rate[6] as Proxy of the human capital.

The concept of national governance and the expression "good governance" appeared in the mid 1990s in the vocabulary of the major international organizations and the World Bank in particular. So, Kaufmann et al. (2008) define governance as: "The traditions and institutions by which authority is exercised in a country for the common good. This includes the process by which Governments are selected, controlled and replaced, the government ability to develop and put implement solid policies, and the respect of citizens and the state of the institutions governing their economic and social interactions" (p. 6). This definition covers several aspects of governance: The democratic

1 Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and United Arab Emirates.
2 The choice of the study period is limited by the unavailability of the ICRG database.
3 Real GDP per capita, the labor force and financial development variables are extracted from the basic indicators of data from World Bank (CD-ROOM, 2010).
4 The GFCF data are extracted from the flags of the World Bank (CD-ROOM, 2017) or the international financial statistics 93rd line.
5 See Robert and Jones (1999).
6 The data are taken from World Bank Indicators (CD-ROOM, 2017).

Table 1: Descriptive statistics

Variable	Notation	Source	Mean±SD	Minimum	Maximum
GDP per capita	GDP	WDI	11.03±0.39	10.53	11.77
Capital physique	Lnk	WDI	20.32±5.27	13.03	26.41
Human capital	Lnh	WDI	4.45±0.16	3.99	4.70
Labor force	LnLF	WDI	4.19±0.16	3.88	4.54
Liquid liability	LL	WDI	55.00±16.38	27.81	95.600
Domestic credit provided by financial sector (% of GDP)	DCFS	WDI	47.75±23.11	−10.151	106.94
Domestic credit to private sector by banks (% of GDP)	DCPS	WDI	42.20±13.69	20.79	84.46
Socioeconomic conditions	SOC	ICRG	7.96±1.39	5.458	11.00
Corruption	COR	ICRG	2.42±0.48	2.00	4.00
Law and order	LO	ICRG	4.92±0.50	4.00	6.00
Bureaucracy quality	BQ	ICRG	2.18±0.38	2.00	3.00

The table illustrates summary statistics of the main variables used for empirical analysis. GDP per capita is the dependent variable

character of the political institutions, the political instability and violence, the effectiveness of the public authorities, the weight of the regulations, the rule of law, and finally the struggle against corruption (COR). We have preferred this definition to those of other multilateral institutions since it takes into account the nature of the regimes.

In our study, based on this definition, we will retain four indicators of institutional quality namely, COR, which reflects the nature of the political regime; the socio-economic conditions (SEC) which reflect the effectiveness of the Government; order and law (LO) and the bureaucratic quality (BQ) to represent the respect of the institutions. These four indicators of institutional development are extracted from the database of the private agency of risk reporting (PRS)[7] which are annual variables of the International Country Risk Guide (ICRG), one of the products of the PRS Group. The variables, the SEC, COR, order and LO range from 0 to 6, and the BQ ranges from 0 to 4. In all cases, higher values reflect better marks, i.e., a better SEC, less COR, a more effective legal system and a better bureaucracy. As far as these four variables are concerned, we can say that they do not have the same ratings and that's why we carry out a change of scale. Hence, our new notation of variables varies from 0 to 10, and in this scale, the highest values reflect a good institutional quality.

Tables 1 and 2 respectively report the descriptive statistics and the correlation coefficients of the variables used in our model. For each variable, the mean, standard deviation (SD), Minimum and Maximum were calculated. The correlation matrix shows a relatively low correlation between the variables.

3.3. Econometric Methodology

The method used in this work is the nonstationary panel data method. The estimators found by the first method, presented above, do not take into account the presence of unit roots in the series. To overcome this problem, the non-stationary panel data method is used. Two techniques are used in our work, fully modified least squares (FM-OLS) regression and dynamic ordinary least squares estimator (DOLS) regression. But, before presenting these two techniques one begins to present the tests of unit root.

3.3.1. Unit root tests

Taking into account the non-stationary properties of the series reveals an important step in our study. Indeed, to overcome this problem, a series of tests have become a common approach for analyzing the stationarity of the series of the panel. The best known tests are those of Levin et al. (2002), Breitung (2000), Im et al. (2003), Fisher ADF, Fisher PP and Hadri (2000).

The most frequently used test, when the time dimension is limited, is that of Im et al. (2003) who propose tests to detect the presence of unit root in ADF type models. In this part, we try to study the order of series integration and cointegration relations between variables. To study non-stationarity, we use the IPS test presented by the following equation:

Table 2: Correlation coefficients matrix

	GDP	Lnk	Lnh	LnLF	LL	DCFS	DCPS	SOC	COR	LO	BQ
GDP	1.000										
Lnk	0.251 (0.010)	1.000									
Lnh	0.041 (0.001)	0.152 (0.000)	1.000								
LnLF	−0.188 (0.003)	−0.398 (0.017)	−0.285 (0.040)	1.000							
LL	0.501 (0.000)	0.112 (0.017)	0.031 (0.000)	0.105 (0.000)	1.000						
DCFS	0.211 (0.001)	0.350 (0.018)	0.001 (0.000)	−0.105 (0.000)	0.501 (0.002)	1.000					
DCPS	0.722 (0.003)	0.268 (0.006)	0.146 (0.000)	−0.105 (0.004)	0.501 (0.016)	0.153 (0.011)	1.000				
SOC	0.380 (0.000)	0.110 (0.000)	0.022 (0.001)	0.122 (0.000)	0.001 (0.002)	0.100 (0.000)	0.208 (0.003)	1.000			
COR	0.058 (0.001)	0.044 (0.000)	0.124 (0.000)	0.111 (0.000)	0.501 (0.006)	0.002 (0.007)	0.052 (0.000)	0.116 (0.122)	1.000		
LO	0.011 (0.000)	0.037 (0.000)	0.440 (0.000)	−0.001 (0.000)	0.588 (0.011)	0.008 (0.002)	0.057 (0.000)	0.255 (0.386)	0.013 (0.022)	1.000	
BQ	0.001 (0.000)	0.021 (0.000)	0.004 (0.000)	−0.033 (0.000)	0.017 (0.003)	0.055 (0.001)	0.004 (0.001)	0.333 (0.458)	0.020 (0.522)	0.002 (0.009)	1.000

The table shows simple correlations between the main variables used for empirical analysis. P values are in parentheses

7 The private agency risk rating, The Political Risk Services Group (PRS), provides annual estimates on the quality of governance for the period 1984-2006.

$$\Delta y_{it} = \rho_i y_{it-1} + \sum_{j=1}^{ki} \varphi_{ij} \Delta y_{it-j} + \mu_i + \delta_i t + \varepsilon_{it}$$

with k the number of delays chosen so as to eliminate the autocorrelation of the residues.

The IPS test is calculated as the average t-statistic of the Dickey-Fuller regressions with and without trend. The alternative t-bar statistic for testing the unit root null hypothesis for all individuals ($\beta i = 0$) is:

$$\bar{t}_{NT}(\rho_i) = \frac{1}{N} \sum_{i=1}^{N} t_{it}(\rho_i)$$

with, $t_{iT}(\rho_i)$: Estimated ADF tests, N: Number of individuals and T: Number of observations.

Im et al. (2003) propose using the following standardized statistics:

$$Zi = (N)^{1/2} (\bar{t}_{NT} - E(\bar{t}_{NT})) / (\text{var}(\bar{t}_{NT}))^{1/2}$$

With, $E(\bar{t}_{NT})$: Is the arithmetic means and $(var(\bar{t}_{NT})$: Is the variances of individual ADF statistics.

The IPS study shows that this standardized statistic converges weakly towards the the standard normal distribution, which makes it possible to compare it with the critical values of the N (0.1) distribution. The application of the IPS test is presented in the Table 3.

Table 3: The Pane Unit Root Test Results (IPS test (2003))

Variables	Without trend	No trend
Lny	I (1)	I (1)
Lnk	I (1)	I (1)
Lnh	I (1)	I (1)
LnLF	I (1)	I (1)
LL	I (1)	I (1)
LL*SEC	I (1)	I (1)
LL*COR	I (1)	I (1)
LL*LO	I (1)	I (1)
LL*BQ	I (1)	I (1)
DCBS*SEC	I (1)	I (1)
DCBS*COR	I (1)	I (1)
DCBS*LO	I (1)	I (1)
DCBS*BQ	I (1)	I (1)
DCPS*SEC	I (1)	I (1)
DCPS*COR	I (1)	I (1)
DCPS*LO	I (1)	I (1)
DCPS*BQ	I (1)	I (1)

I (1): Indicates that the series is stationary at first difference.

The verification of non-stationarity properties for all panel variables leads us to study the existence of a long-term relationship for regressions R1, R2, R3, R4, R5 and R6.

3.3.2. Cointegration tests

To study the existence of a cointegrating relationship, reference was made to the studies of Pedroni (1999; 2000; 2004), whose null hypothesis is to test the absence of cointegration based on unit root tests on residuals estimated. Pedroni has developed seven cointegration tests on panel data.[8] These tests take into account the heterogeneity at the level of the cointegrating relationship, i.e., for each individual there exists one or more cointegration relationships which are not necessarily identical for each of the individuals of the panel. Each of the seven statistics follows a reduced normal centered distribution for N and T sufficiently large:

$$\frac{Z_{NT} - \mu\sqrt{N}}{\sqrt{\upsilon}} \rightarrow N(0;1$$

Where Z_{NT} one of the 7 statistics; μ and υ: The values of the moments tabulated by Pedroni (Table 4).

From the results of the Pedroni cointegration tests, we notice that the set of statistics (panel: *rho*, *pp* and *adf*, group: *rho*, *pp* and *adf*) are below the critical value of the normal distribution for a threshold of 5%. Therefore, all of these tests confirm the existence of a cointegration relationship.

3.3.3. Cointegration relationship

In the literature, we have identified several approaches to estimating cointegration vectors for panel data. Like temporal analysis, there is a debate between an estimate of residues in Granger's logic or, on the contrary, the search for cointegration vector in line with Johansen's studies.

To estimate cointegrated variable systems on panel data and to release tests on cointegration vectors, it is essential to apply an efficient estimation method. At this level, there are several techniques: Pedroni's FMOLS method, the DOLS method, and the Generated Method of Moments method.

8 In the 7 Pedroni tests, four are based on the Within dimension and three are based on the Between dimension.

Table 4: Panel Cointegration tests Results (Pedroni, 1999)

Regressions	Panel v-stat(b)	panel rho-stat(b)	panel pp-stat(b)	panel adf-stat(b)	group rho-stat(a)	group pp-stat(a)	group adf-stat(a)
R1	7.01	–8.06	−7.45	−7.34	−9.02	−9.79	−9.75
R2	7.88	−8.11	−6.66	−9.42	−10.50	−9.64	−7.54
R3	4.11	−9.55	−7.87	−10.88	−10.41	−8.68	−8.66
R4	7.66	−8.01	−7.71	−7.51	−10.11	−9.19	−8.71
R5	3.30	−8.99	−6.44	−9.01	−10.60	−9.60	−7.20
R6	4.54	−9.17	−7.10	−10.28	−10.88	−7. 33	−8.44

(a): These are tests based on the BETWEEN dimension, (b): These are the tests based on the WITHIN dimension

Table 5: Estimation results with non-stationary panel data

Dependent variable is GDP per capita												
Variables	**Liquid liability LL**				**Domestic credit provided by financial sector (% of GDP) DCFS**				**Domestic credit to private sector by banks (% of GDP) DCPS**			
	R1		**R2**		**R3**		**R4**		**R5**		**R6**	
	FMOLS	**DOLS**	**FMOLS**	**DOLS**	**FMOLS**	**DOLS**	**FMOLS**	**DOLS**	**FMOLS**	**DOLS**	**FMOLS**	**DOLS**
Lnk	0.05 (13.12)***	0.05 (17.22)***	0.03 (22.2)***	0.09 (8.02)***	0.77 (4.15)***	0.44 (20.00)***	0.75 (20.12)***	0.66 (22.03)***	0.11 (2.55)***	0.22 (2.09)***	0.14 (5.01)***	0.10 (6.99)***
Lnh	0.03 (4.28)***	0.14 (4.55)***	0.06 (4.22)***	0.22 (5.02)***	0.02 (2.26) ***	0.09 (1.68)	0.02 (2.60)***	0.09 (1.60)	0.06 (1.93)*	0.12 (1.97)*	0.08 (1.94)*	0.16 (2.11)***
LnLF	−0.01 (1.34)	−0.01 (1.55)	−0.06 (1.77)	−0.11 (1.96)*	−0.04 (−1.99)**	−0.11 (−2.13)**	−0.07 (−2.14)***	−0.22 (−2.54)**	−0.01 (−2.11)**	−0.04 (−3.9)***	−0.04 (−2.23)**	−0.03 (−4.19)***
LL	0.001 (1.98)**	0.001 (2.01)**	-	-	-	-	-	-	-	-	-	-
LL*SEC	-	-	0.05 (2.3)***	0.06 (2.47)***	-	-	-	-	-	-	-	-
LL*COR	-	-	−0.03 (−4.71)***	−0.03 (−6.01)***	-	-	-	-	-	-	-	-
LL*LO	-	-	0.08 (5.2)***	0.08 (8.02)***	-	-	-	-	-	-	-	-
LL*BQ	-	-	0.02 (2.92)**	0.01 (3.00)**	-	-	-	-	-	-	-	-
DCFS	-	-	-	-	0.01 (2.11) ***	0.02 (2.16) ***	-	-	-	-	-	-
DCFS*SEC	-	-	-	-	-	-	0.07 (2.66***	0.05 (5.88)***	-	-	-	-
DCFS*COR	-	-	-	-	-	-	−0.02 (−5.2)***	−0.02 (−3.11)***	-	-	-	-
DCFS*LO	-	-	-	-	-	-	0.06 (4.95)***	0.044 (3.08)***	-	-	-	-
DCFS*BQ	-	-	-	-	-	-	0.02 (2.25)***	0.02 (2.31)***	-	-	-	-
DCPS	-	-	-	-	-	-	-	-	0.05 (1.92)*	0.02 (2.01)***	-	-
DCPS*SEC	-	-	-	-	-	-	-	-	-	-	0.06 (2.75)***	0.06 (2.33)***
DCPS*COR	-	-	-	-	-	-	-	-	-	-	−0.04 (−5.06)***	−0.06 (−5.18)***
DCPS*LO	-	-	-	-	-	-	-	-	-	-	0.08 (4.44)***	0.09 (4.98)***
DCPS*BQ	-	-	-	-	-	-	-	-	-	-	0.05 (3.56)***	0.03 (3.22)***

T-statistics are presented in parentheses. ***, **, *Significance at 1, 5, and 10%, respectively. DOLS estimators were obtained for r1=1 and r2=2. FM-OLS: Fully modified least squares, DOLS: Dynamic ordinary least squares estimator

Pedroni (1999), Phillips and Moon (1999) and Kao and Chiang (2000) have shown that, in the case of panel data, the first two techniques lead to asymptotically distributed estimators according to a reduced normal centered distribution. However, Kao and Chiang (2000) argue that the estimation by the OLS method, in the finite sample, presents a problem of bias with respect to the FMOLS method[9]. However, they also show the superiority of the DOLS method over the FMOLS method in that it is considered to be the most efficient technique in estimating cointegration relationships on panel data. The DOLS estimator can be obtained by adding delays in the initial model (relation 3):

$$Y_{it} = a_i + \beta X_{it} + \sum_{j=-r_1}^{r_2} c_{ij} \Delta X_{it-j} + \zeta_{it} \quad (4)$$

However, the use of the DOLS estimator implies an arbitrary choice of lags which represents an interesting question but which exceeds our objective in this work. We chose to keep the same number of lags for all countries.[10]

4. RESULTS AND DISCUSSION

The different estimates were made by the Panel Data Method for the 1994-2012 period for six Gulf countries, and the results are shown in Table 5. This table summarizes all the regressions according to the four institutional variables, the three financial development indicators and the control variables taken in the different models. In this table, it is proposed to give a comparison of the results found by the two estimation methods used in our work: FMOLS and DOLS of the nonstationary panel data method.

In Table 5, the majority of interaction variables between financial development and the quality of institutions[11] show statistically significant and expected signs.

For the R2 regression, the most significant variables are the rule of LO, COR, BQ and SEC, respectively, when they are multiplied by the variable reflecting the liquidity of financial system "M3/GDP". For regression R4, the most significant variables are rule of LO, COR, SEC and finally BQ when multiplied by variable reflecting the credits granted by the Financial System (DCFS). Finally, for the R6 regression, the most significant are respectively COR, rule of LO, BQ and finally SEC when they are multiplied by the financial variable representing by private sector credits (DCPS).

Our results, for all regressions (R2, R4 and R6), are important. So, research into the determinants of financial development is an important issue because it helps policymakers to put in place institutional reforms[12] to promote a financial system that generates economic growth (Law and Azman-Saini, 2008). La Porta et al. (1997; 1998; 1999) show that the quality of the application of legal rules ensures the proper functioning of financial systems and subsequently stimulates economic growth. Similarly, these results confirm the idea of Mauro (1995) who showed that COR is considered the main cause of bankruptcy of the majority of investment projects. The financing of these projects is guaranteed by the banking sector which dominates most financial systems in developed and developing countries. So, the presence of a high level of COR is considered as the main cause of the delays of the development of the financial systems of these countries. The COR helps to encourage less liquid investments, which negatively affects the development of the financial system. So, any decrease in the levels of COR in the Gulf countries can lead to a development of their financial systems and a more sustained economic growth. Our results confirm with the anti- COR programs of multilateral institutions that are established to help countries create a favorable climate for investment and boost their economic development.

5. CONCLUSION

Several studies on the relationship between the two spheres (real and financial) have suggested without however showing that the effects between the two spheres go through the institutional structure of each country. In this context, our work focused on this specific point that the quality of the institutions and the idea of good governance, that it underlies, is the transmission vector from the financial sphere to the real one for the case of six gulf countries (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and United Arab Emirates). So, we have shown, through the existing literature, that a financial system presupposes a healthy institutional framework characterized by a low level of COR, a more efficient judiciary system. This theoretical analysis is empirically supported by the use of the nonstationary panel technique, which has helped us to find a significant effect of financial development in a sound institutional framework on economic development in these countries during the period 1994-2012. Our main empirical findings suggest that the quality of institutions appears to be a key factor in financial development and stimulating economic growth.

It concludes that a good institutional environment determines financial development through the better mobilization of savings towards the most productive investment projects and the efficient allocation of financial resources. Both of these factors increase productivity because a good institutional environment reduces the costs of transactions and transformations. So, this reduction in costs in turn increases production and trade, in other words, economic development. This joins and corroborates the conclusions of the founders of the New Institutional Economy on this subject (Coase, 1937; Williamson, 1985; North, 1990; 1991).

As, institutional quality is an important precondition for financial development of the Gulf countries, but it is not sufficient. The institutions themselves must be protected by a strong state to carry out its development policies. As a result, appropriate political institutions are needed to preserve the economic achievements of abuses and mistakes by financial sector leaders. So, political factors contribute to the establishment of a solid institutional framework.

9 Pedroni (1999) shows that this problem is related to the presence of group heterogeneity.

10 We take in our analysis: $r_1 = -1$ et $r_2 = 2$.

11 Presented by indicators of socio-economic conditions (SEC), corruption (COR), rule of law (LO), and finally bureaucratic quality (BQ).

12 These institutional reforms were mainly introduced by the International Monetary Fund (IMF) and the World Bank to ensure better implementation of the Structural Adjustment Plan.

Indeed, institutional quality remains an important factor that can not be ignored by development strategies. In other words, the public authorities should focus on the quality of the institutions (economic, political and legal), since the latter favors the proper functioning of the markets. Similarly, by ensuring a good climate for financial development, the public authorities of gulf countries guarantee high economic growth. At this level, it is a matter of setting up and/or strengthening a sound institutional environment (strong legal rules, low levels of COR, favorable SEC and good BQ) to promote financial development and subsequently to improve economic development[13].

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13 The establishment of a sound institutional framework is in line with the economic program, Vision 2030, launched by Saudi Arabia in April 2016. Mainly, the Financial Sector Development Program (FSDP) whose role is to create a diversified, efficient and stable financial services sector to support the development of the national economy.

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