

The Impact of Financial Development Elements on Economic Growth on Gulf Cooperation Council (GCC)

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Abstract: This study evaluates the effects of financial development factors and other important factors based on Solow's model over the economic growth in the Gulf Cooperation Council (GCC) countries. The panel data from 1986-2009 is used in this research. For analyzing the data, pooled OLS model, random effect model and fixed effect model are used by using E-views software. To distinguish between pooled OLS model and random effect model, LM test is run and to differentiate between random effect model and fixed effect model, the Hausman test is run. The results reveal that financial development which is measured by PRIVY is not significant in all the models that have been suggested. Nevertheless, the financial development, which is measured by the LLY, has a positive and significant sign in some of the models that have been offered.

Keywords: Economic growth, financial development, gulf cooperation council

INTRODUCTION

The connection between financial improvement and the level of economic growth was one of the considerable subjects of dispute among economists since early 1930's (McKinnon, 1973; Shaw, 1973; Goldsmith, 1969; Schumpeter, 1932). New studies, either conceptual or pragmatic, have endeavored to broaden our concepts of dissimilar traits of the link by digging out the presence of the link aforementioned; the movement of causality between the two variables and the links of conveyance between them and a few records of current documents has scrutinized this literature (Al-Yousif, 2002).

The dispute of the causative connection among financial improvement and economic evolvement of a nation is functional to the broad argument, but the special landscape of the causativeness can be quite uncertain. Nonetheless, there can be one broad compromise that financial improvement acts as a crucial character in economic evolvement. Pragmatic scrutinizers of the influences of financial improvement on long-term economic evolvement consist of King and Levine (1993) and Roubini and Sala-i-Martin (1992). These studies utilized cross-section exploration to connect routes of financial improvement with economic evolvement.

There are numerous significant literatures on the connection of financial improvement and economic evolvement. The studies and researches have been performed and conducted for dissimilar regions and states all over the world. Most of the researches have covered the causativeness connections amongst

financial improvement and economic evolvement; nonetheless it seems that there is gap on GCC regions and no comprehensive research has been implemented on these regions and the scarcity of an appropriate study is very clear. By applying financial improvement elements plus other elements based on Solow's Model and analyzing the influence on evolvement of economy, there is an effort in this research to fill the aforementioned gap (Rousseau and Wachtel, 1998).

The Gulf Cooperation Council (GCC): The Gulf Cooperation Council has been recognized since a contract was signed in 1981 in Saudi Arabia amongst these six countries: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and United Arab Emirates (Louis *et al.*, 2012). These nations professed that the GCC would be recognized in outlook related to the superior associations amongst them, their identical administrative structures according to Islam rules and principles, combined purpose and shared ideas and goals (Black, 2012). The GCC would be a provincial shared bazaar with a shield design board as well. The topographical vicinity of these nations and their overall acceptance of unrestricted marketing transactions and economical strategies are elements that invigorated them to institute the GCC (Al-Rantawi, 2011).

This study examines the effect of development in the financial sector of GCC on their economy and examines the causal relationship of financial improvement variables on economic evolvement and also analyzes the long run impact of financial improvement on the economy of GCC.

Table 1: Descriptive statistic- first dataset

	LGDP	LPOP	LPRIVY	LLY	LDI
Mean	9.60	4.19	3.47	3.91	3.20
Median	9.56	4.22	3.58	3.91	3.23
Maximum	11.28	4.44	4.54	4.64	4.21
Minimum	8.42	3.93	-13.81	3.21	2.29
S.D.	0.68	0.11	1.50	0.35	0.36
Skewness	0.35	-0.41	-10.67	-0.04	-0.19
Kurtosis	2.23	2.61	123.44	2.08	3.02
Jarque-Bera	6.62	4.94	89771.30	5.06	0.93
Probability	0.03	0.08	0.00	0.07	0.62
Sum	1382.95	604.39	500.65	563.21	464.74
Sum Sq. Dev.	67.13	1.92	322.98	17.99	19.03
Observations	144	144	144	144	144

Table 2: Correlation among the variables

	LGDP	LPOP	LPRIVY	LLY	LDI
LGDP	1	0.87	0.17	0.01	0.24
LPOP		1	0.19	0.32	0.18
LPRIVY			1	0.11	0.056
LLY				1	-0.01
LDI					1

Table 3: Hausman test

Test cross-section random effects				

Test				
summary	χ^2 Statistic	χ^2 d.f.	Prob.	
Cross-section	2.134343	3	0.5450	
random				
Cross-section random effects test comparisons				

Variable	Fixed	Random	Var. (Diff.)	Prob.
LPRIVY	0.019178	0.018038	0.000001	0.2555
LDI	0.357090	0.339562	0.000307	0.3169
LPOP	4.378075	4.472518	0.016226	0.4584

Correlated random effects: Hausman Test; Equation: Untitled

NUMERICAL RESULTS

This part expresses the experimental outcomes applying the panel data scrutiny, including pooled OLS, random and fixed effects methods, as well as the result of panel unit root test, LM test and Hausman test. This study used data of six GCC countries includes: Kuwait, Oman, Qatar, Saudi Arabia, Bahrain and United Arab Emirates. In this study the main explanatory variable, which is the financial development, is regressed using two different measurements. These measurements are the indicator of “domestic credit to private sector as percentage of GDP” (PRIVY) and the indicator of “money and quasi money” (LLY) as percentage of GDP.

The model including LPOP, LDI and LFD: Table 1 and 2 present the descriptive statistics and correlations among the variables. As shown in Table 2, all variables have positive correlation with LGDP. According to the literature, these correlations are expected and many scholars confirm these expected correlations. The financial development which is measured by PRIVY and LLY has positive correlation with economic growth. It confirms many empirical evidences which examine the correlation between economic growth and financial development (King and Levine, 1993). In addition, the population has positive correlation with GDP; however the empirics see this relationship as a puzzle (Faria *et al.*, 2006).

The results of LM test: In order to compute the LM, it only requires the pooled OLS residuals. It is given as:

$$LM = \frac{NT}{2(T-1)} \left[\frac{\sum_{i=1}^N (\sum_{t=1}^T \varepsilon_{it})^2}{\sum_{i=1}^N \sum_{t=1}^T \varepsilon_{it}^2} - 1 \right]^2 \quad (1)$$

Using the formula, following LM is obtained for the first data-set: LM = 220.62.

The computed amount upsurge the chi-squared amounts, resulting in accomplishing that the REM would be more right than OLS (pooled model).

The results of the Hausman test: A test was implemented by Hausman (1978) as the official test which would assist to select amongst FEM and REM. Table 3 shows results of Hausman test.

The null hypothesis beneath the Hausman test would be which FEM and REM assessors do not vary noticeably. The test measurement implemented by Hausman possesses an asymptotic X2 dissemination. If the null hypothesis is refused, the outcome would be which REM is not applicable and which would be proper to apply FEM. Based on the table, p-value for the test is >5%, representing that the FEM would not be right and the REM is to be desired.

According to the above Table 3, the results of Hausman and LM tests indicate that random effects method is more appropriate than other two methods. It means that there exist country effects in the residuals; however these country effects are not correlated with explanatory variables.

Result for panel data methods: Table 4 and 5 compare the result of three methods including pooled

Table 4: Result for using the measurement PRIVAY

	Pooled OLS	Random effect	Fixed effect
Constant	-11.95 (-11.43)***	-10.32 (-7.08)***	-9.99 (-6.52)***
Ln POP	5.01 (19.68)***	4.47 (11.90)***	4.37 (11.03)***
Ln PRIVY	0.00 (0.16)	0.01 (1.17)	0.01 (1.25)
Ln DI	0.15 (1.95)**	0.33 (4.32)***	0.35 (4.44)***
Observations	144	144	144
Breusch and pagan LM test (pooled vs RE)	220.62 (0.00)***		
Hausman test (RE vs FE)		2.13 (0.54)	

Numbers in parenthesis indicate t-statistic and numbers in brackets indicate p-value; ***: significance levels at 1%; **: significance levels at 5%; *: significance levels at 10%

Table 5: Result for first dataset using the measurement LLY

	Pooled OLS	Random effect	Fixed effect
Constant	-12.01 (-13.83)***	-8.24 (-7.33)***	-7.69 (-6.61)***
Ln POP	5.57 (25.16)***	5.00 (17.52)***	4.91 (16.68)***
Ln PRIVY	-0.55 (-7.73)***	-1.03 (-10.05)***	-1.10 (-10.21)***
Ln DI	0.11 (1.75)*	0.28 (4.75)***	0.29 (4.90)***
Observations	144	144	144
Breusch and pagan LM test (pooled vs RE)	215.36 (0.00)***		
Hausman test (RE vs FE)		5.72 (0.12)	

Numbers in parenthesis indicate t-statistic and numbers in brackets indicate p-value; ***: significance levels at 1%; **: significance levels at 5%; *: significance levels at 10%

Table 6: Robustness checking for first dataset

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Constant	-10.32 (-7.08)***	-8.24 (-7.33)***	-9.82 (-6.57)***	-10.00 (-6.70)***	-9.62 (-6.46)***	-7.79 (-6.79)***
Ln POP	4.47 (11.90)***	5.00 (17.52)***	4.33 (11.25)***	4.40 (11.55)***	4.32 (11.40)***	4.89 (16.86)***
Ln PRIVY	0.01 (1.17)	-	0.01 (1.22)	0.01 (1.16)	0.01 (1.16)	-
Ln LLY	-	-1.03 (-10.05)***	-	-	-	-1.02 (-9.93)***
Ln DI	0.33 (4.32)***	0.28 (4.75)***	0.35 (4.51)***	0.32 (4.07)***	0.30 (3.87)***	0.26 (4.36)***
D1991	-	-	-0.16 (-1.42)	-	-	-
D2007	-	-	-	0.11 (1.01)	-	-
D2008	-	-	-	-	0.23 (1.96)**	0.15 (1.71)*
Observations	144	144	144	144	144	144

Numbers in parenthesis indicate t-statistic and numbers in brackets indicate p-value; ***: significance levels at 1%; **: significance levels at 5%; *: significance levels at 10%

OLS, random effects and fixed effects. The result that is presented in Table 4 uses PRIVY as measurement for the financial development. On the other hand, the result which is presented in Table 5 employs LLY as measurement for the financial development.

As shown in the Table 4, 5, the lagged POP and lagged DI are positive and highly significant in both Table 4, 5, suggesting that labor (peroxide by population) and domestic investment are two important determinants of economic growth. The financial development, which is measured by PRIVY, is not significant in these models. However, the financial development, which is measured by the LLY, has a negative sign. It shows that the financial development does not play an important role as a determinant for economic growth of GCC countries.

Robustness checking: A diversity of robustness checks might be executed to inspect the delicateness of the outcomes to substitute approximation plans. The first collection of robustness checks are concerned with utilizing some dummy variables in the estimations. The dummies include year 1991, year 2007 and 2008. The

rationality in selecting these years is the importance of relative events in the years.

The event of year 1991 is related to the Gulf-War, which arose from the Gulf War and has been a war conducted by a U.N.-authorized coalition and led by the Americans, in contradiction to Iraq in reaction to Iraq's attack and capturing of Kuwait. In addition, the event of years 2007-2008 is related to the latest global financial crisis. This crisis started from the US, however it influenced most of the countries. The estimation shows that just the dummy of year 2008 is significant in our model (Table 6).

The financial development, which is measured by PRIVY, is not significant in all models. However, the financial development, which is measured by the LLY, has a negative sign in models 2 and 6. The estimated models suggest that the financial development does not play an important role as a determinant for economic growth of GCC countries.

CONCLUSION

This study tries to provide several empirical and conceptual evidences to confirm the connection among

financial development and economic growth, however based on Solow's theory, financial development is one of the areas which has been subcategorized in technological developments and improvements and the model of this study has considered Solow's general model to prove the causality relationship between financial development and economic growth.

The most significant findings of this research is that, the result observed in GCC countries does not confirm the positive influence of financial development on economic growth. Based on the two elements of financial development, there was no significant linkage between financial development and economic growth or it was weakly negative. Other researches and literatures also proved that in East Asia, there was no positive influence between financial development and economic growth; consequently, the results can be generalized to most parts of Asia.

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