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Does Financial Development Induce Economic Growth in UAE? The Role of Foreign Direct Investment and Capitalization

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Abstract:

This paper investigates the relationship between financial development and economic growth in case of UAE over the period of 1975Q1-2012Q4. The issue of unit root properties of the variables is solved by employing structural break unit root test. We have employed *Bayer-Hanck* combined cointegration to test the long run relationship between the variables. Our analysis revealed the existence of cointegration between financial development and economic growth. Financial development induces economic growth. Foreign direct investment stimulates economic growth. Capitalization also increases economic growth. This paper suggests using foreign direct investment appropriately redesigning financial policy for sustainable economic growth in long span of time.

Keywords: Financial Development, FDI, Capital, Growth, UAE.

JEL Classification: E22, C32, F43, G18, G28.

I. Introduction

During the past two decades, global economy has witnessed rapid growth and development. The role of developing countries has been crucial towards the accomplishments of common global economic goals. The strong urge for economic prosperity and level of reforms at both domestic and international level within global economy translates equitable dissemination of socio-economic well-being. The liberalized flow of capital and investments is more frequent amongst the world economies. However, the magnitude of effectiveness of foreign direct investment (hence after FDI) and market capitalization is different amongst various countries. There is sufficient literature available discussing the role of financial development in optimizing growth returns from foreign direct investment in hosting countries. The efficient financial system ensures the efficacy of financial inflows. Therefore, the sole emphasis on increasing net financial inflow may not help unless financial system is also developed simultaneously. Moreover, financial institutions of any country are responsible for mobilizing existing capital, new capital formation, and stimulate knowledge and technological economy through spillover. Owing to increasing interdependence of global economies, financial shocks and other economic and non-economic crisis in any part of the world or region may affect directly or indirectly rest of the linked economies, and in that situation, financial institutions have vital role to play.

There are several empirical and theoretical evidences that support the key role of financial development in the economic growth. However, the ground breaking study of McKinnon (1973) and Shaw (1973) started the debate on the relationship between growth and financial institutions. That study was actually an outcome of 1970's recession due to the oil price shock. Since then, the topic has fetch attention of scholarly research and has been under extensive discussion. Until 1990's, the sufficient debate had been taken place and scholars were not in full consensus, because growth and financial development nexus depends on the financial liberalization policies. Therefore, in some cases it may detrimental for economic growth process. Nevertheless, the studies on the role of financial development

and FDI-growth nexus have been very positive. FDI and capital formation are two key constituents of country's enhanced infrastructure, technology and industrial development. Similarly, these effects are empirically investigated by Grossman and Helpman (1991) and Barro et al. (1995). However, in order to attain specific growth results from FDI, it necessitates an advance stage of financial development (Hermes and Lensink, 2003). The findings of De Gregorio and Guidotti (1995) established that the relationship between financial development and economic growth is of efficiency. Hence, country's growth related to FDI does not just depend on the volume of investment.

The financial crisis of 2008 posed severe threat to economic growth and its tremor is still wandering in many of developed economies, especially in Europe. There is a strong need of revisiting the role of financial system that could minimize the risk and exploit the capital efficiently. Although there are several studies on the spillover effect of FDI and financial role to growth, nevertheless the literature on growth-financial development nexus including the role of FDI is hard to find. In this regard, the aim of this work is to explore the role of FDI and capitalization towards growth and financial development nexus, in case of UAE. Dubai, one of seven states that make UAE, has been center of world's mega events, property investment, tourism, oil and gas and other financial investments. The global financial crisis of 2008 hit UAE hard that it is still recovering that financial upheaval. This notion necessitates this investigation and possesses valuable policy implications for UAE. The results of this study also open the new horizons on growth-financial development-FDI nexus, and unveil future research directions for future investigations. We find that financial development stimulates economic growth. Foreign direct investment enhances in economic growth. Capital use improves domestic production and hence economic growth.

The rest of paper is organized as following: section-II provides relevant literature review; section-III deals with methodological framework, model development and data sources. The section-IV introduce the econometric approach. The section-V discusses the empirical results and interpretation. Final section is composed of conclusion with policy implication.

II. Literature Review

After the work of McKinnon (1973) and Shaw (1973) on the relationship of financial development and growth, there is sufficient literature that studies the role of FDI and market capitalization on economic growth of recipient country. The later work of Stoneman (1975) enumerates that the growth effects of FDI is determined by the structure of an economy and financial system holds sufficient contribution. During the survey study on determinants of FDI, Agarwal (1980) analyzed the capital market imperfections as one of four different hypotheses and found indirect relationship. Frieden (1981) studied the four industrializing countries and declared that internationalization of finance has caused indebted industrialization resulting expansion in industrial output of LDC's. The productivity of foreign capital is subject of the development level of the financial system in the recipient countries. Consequently, the influence of FDI varies in terms of its beneficence to growth. The credit availability to entrepreneurs, integration of financial market, and justified financial repression enhances the overall yield of FDI. The literature focusing on the productivity of FDI is contributed reported by De Mello, (1997); Borensztein and Gregorio, (1998); Djankov and Hoekman, (2000); Griffith and Redding, (2004); Guillaumont et al. (2006). The most current study of Alfaro et al. (2009) investigated the impact of foreign direct investment on output growth through financial market in term of total factor productivity (TFP) and factor accumulation. The author recommended that FDI would have a better impact effect in a developed financial market through TFP. Omran and Bolbol, (2003) argued that the efficient financial system ensures efficient utilization of savings and investment and subsequently contribute to growth. Later, the study of Alfaro et al. (2006) further added that the poor financial system limits the ability of an economy to gain from FDI. Moreover, technological spillover is considered as the highest contributing factor from FDI to economic growth [Borensztein et al. (1998), Zhang (2001), Omran and Bolbol (2003), Hermes and Lensink (2003), Ahmad et al. (2003) and Alfro and Rodriguez-Clare (2006)]. The study of Ljunwal and Li (2007)and Ang (2008) for China and Malaysia respectively, found that the role of financial sector towards technological spillover from FDI to growth is crucial. Shahbaz and Rahman

(2010), Shahbaz et al. (2011), and Rahman and Shahbaz, (2011) using different data sets, endorse the same notion. The argument that advantages of FDI are subject of efficiency but not on the capital accumulation is validated by the empirical analysis of Azman-Saini et al. (2010) and it suggests that FDI can only benefits to growth if threshold financial market development is achieved.

Nevertheless, the literature on the FDI and growth through financial development has been source of skepticism since the debate is started. The base argument redundant in FDI and growth literature is its spillover effect. Contrary, there are many studies, which found no trace of spillover effect. For example, Kraska and Taira (1974) found that the FDI neither supports nor hinders growth by any mean but it is just a tool of profit making of foreign firms. Later, the findings are supported by Borschier and Chase-Dunn. (1985) concluding that FDI increases inequality and support growth in short run and in case of any shock economy suffers heavy recession. Similarly, Sharma (1986) found that foreign capital inflow depends on whether it is stimulating debt capital or equity capital, however, the equity capital serves better for growth than debt capital. The studies on the positive spillover effect of FDI in technology, knowledge and skill diffusion are also encountered with opposite arguments. Hansen (2001) found that there is very weak association between FDI and its spillover. The argument is supported by Gorg and Greenaway (2004) and Alfaro *et al.* (2004). Lipsey (2004) suggested that relationship between FDI and growth is unreliable. Likewise, Shahbaz et al. (2011) inspected the role of local financial development over FDI-growth nexus for Portugal and concluded that the role of financial development is dissatisfactory.

The impact of FDI-growth nexus varies from an economy to another and several other factors might alter the nature of relationship. The methodological framework and data sets previously used also have significant impact on the variance of results. It is commonly agreed that the time series data is appropriate tool to analyze the role financial development on FDI-growth nexus but the techniques used to asses time series data affect the relationship. For instance, Blomstrom and Wolf. (1994) conducted the cross country analysis on 78 less developing countries using time series from the period of 1960-1985

concluded that the proportion of productivity increased due to FDI is meager. However, the study of Blomstrom and Wolf, (1994); Lawrence and Weinstein, (1999); and Damooei and Tavakoli (2006) concluded opposite results and found positive correlation between productivity and FDI. Similarly, the study of Thangavelu and Rajaguru (2004) reported weak linkage between financial system development and FDI in various south East Asian economies.But, in pool data analysis of Awokuse (2007) and Awokuse (2008) suggested the positive relationship. On other hand, Hermes and Lensink, (2003); Alfaro et al. (2004); Awokuse (2007) and Ang (2008) reported the positive relationship between FDI and economic growth in the presence of financial development. This critical analysis of literature suggests that the there is a strong extravagance of nature of methodological framework use to study this relationship due to difference in various characteristics from country to country.

Therefore, the cross-country analysis may not give appropriate results. Thus, it possess limited policy implications for a particular economy. As a result, the single country analysis has emerged as the recent trend and of higher importance. The results can be trusted and utilize for further investigations. For instance, however, even the data on micro and macro level also differ in terms of spillover effect (Hermen and Lensik, 2003; Alfaro et al. 2009). The single country studies include: China (Qiang, 2001; Jun and Yu, 2005), Malaysia (Ang, 2008), Mexico (Blomstrom and Persson, 1983; Blomstrom and Wolff, 1994) Taiwan (Bende-Nabende and Ford, 1998), Uruguay (Kokko et al. 1996) and more have studies the spillover effect of FDI but have significantly ignored the role of financial development.

III. Methodological Framework and Data

The brief review of relevant literature on the role of financial development in connection with growth-FDI nexus suggests that financial development plays significant positive externality effect on FDI (Bailliu, 2000; Hermes and Lensink, 2003; Alfaro et al. 2004; Lee and Chang, 2009; Shahbaz et al. 2013). While comparing the empirical findings of various studies conducted on both developing and developed countries, it is noticed that the intermediating effect of growing local financial markets have large and positive

substantial consequence on the FDI-growth nexus in the developing countries. Hence, this study attempts to investigate the relationship between financial development, economic growth and FDI for UAE. Following Alfaro et al. (2004), Durham (2004), and Azman-Saini et al. (2010), we use real domestic credit to private sector per capita as a measure for financial development (FD_t), real GDP per capita calculates economic growth (Y_t), and real FDI per capita is for FDI_t . Maskus et al. (2012) suggest that the overall market capitalization truly demonstrates the role of financial development channel in FDI-growth nexus. Therefore, we also incorporate real gross fixed capital formation as a proxy of capital use (K_t). The general form of the model can be developed in following equation form;

$$Y_t = \alpha_1 FD_t^{\beta_1} FDI_t^{\beta_2} K_t^{\beta_3} e^{t+u_{1t}}$$ (1)

The equation-1 shows the non-linear form of general model, however, Shahbaz (2012) argues that the log-linear specification of empirical model is more suitable as it derives both consistent and reliable empirical results. Therefore, the general model is further transformed in to log-linear form and the model equation is as follows:

$$\ln Y_t = \alpha_1 + \beta_1 \ln FD_t + \beta_2 \ln FDI_t + \beta_3 \ln K_t + U_t$$ (2)

In equation-2, $\ln Y_t$ is natural log of real GDP per capita, $\ln FD_t$ is natural-log of financial development (in terms of real domestic credit to private sector per capita), $\ln FDI_t$ is natural-log of foreign direct investment (in real terms), $\ln K_t$ is natural-log of gross capital formation and U_t is error term with time invariant variance.

The study covers the period of 1975Q1-2012Q4. The world development indicators (CD-ROM, 2014) is used to attain data on real GDP (local currency), real domestic credit to private sector (local currency), real FDI (local currency) and gross fixed capital formation (local currency). To transform series into per capita unit, we used series of total population.

We made use of quadratic match-sum method to convert annual series into quarter frequency following Sbia et al. (2014).

IV. Econometric Methodology

It is now general rule that before utilizing time series data it must be tested for unit root. Otherwise the regression turns out to be spurious (Nelson and Ploser, 1982).The unit root test analyses whether the series possesses stationary property or not. For this purpose, there are number of unit root tests suggested in applied econometrics literature i.e. Augmented Dickey-Fuller (ADF) test developed by Dickey-Fuller (1979), Phillips-Perron (PP) test developed by Phillips-Perron (1988) and Perron (1990), Zivot-Andrews (ZA) test developed by Zivot and Andrews (1992), and Ng-Perron test developed by Ng and Perron (2001). Nevertheless, we utilize ZA unit root test and Ng-Perron unit root test based on their two distinct properties. First, the ZA-unit root test has a property to accommodate a single structure break in the series (Zivot and Andrews, 1992) and secondly, Ng-Perron unit root test uses modified information criteria (MIC) and GLS detrended data that acquire higher power and desirable size properties in the test (Ng and Perron, 2001).

In recent years, the applied time series literature mainly has been focusing on the cointegration analysis to test the association among the vectors in the long-run. The time series is considered integrated, if two or more of underlying time series are individually cointegrated. Over the period, the various tests have been developed to test the cointegration e.g. Engle-Granger (1987), Johansen (1991), Johansen and Juselious (1990) etc. These cointegration tests provide inefficient and inconsistent empirical results due their low explanatory power and all need that the variables must be integrated at 1(I). This problem is later solved by the ARDL bounds test approach to cointegration developed by Pesaran and Pesaran (1997). However, based on the applied economics literature, Bayer and Hanck (2013) identified that there is too much contradiction in the empirical findings of these cointegration tests. The *p*-values across these tests are highly uncorrelated and one cannot rely on the smallest *p*-values for hypothesis testing (Gregory et al. 2004). Bayer and Hanck (2013) further argue that in many instances it is also noticed that for the same data one test rejects the hypothesis while other does not. Thus, Bayer and Hanck (2013)

develops new test for cointegration by combining non-cointegration tests. Bayer-Hanck cointegration test maintains high power during the path of the nuisance parameter. The Meta test rejects arbitrary decision and gives ambiguous result if individual tests are conflicting. Therefore, this new test provides certain approach that gives more robust results, with less contradiction. We use Bayer-Hanck cointegration test to investigate the long-run relationship between economic growth ($\ln Y_t$), financial development ($\ln FD_t$), foreign direct investment ($\ln FDI_t$) and capital use ($\ln K_t$) in case of the UAE. Based on Bayer and Hanck (2013), the model equations that test the relationship are as follow:

$$EG - JOH = -2\big[\ln(p_{EG}) + (p_{JOH})\big] \qquad (3)$$

$$EG - JOH - BO - BDM = -2\big[\ln(p_{EG}) + (p_{JOH}) + (p_{BO}) + (p_{BDM})\big] \quad (4)$$

where p_{EG}, p_{JOH}, p_{BO} and p_{BDM} are the p-values of different individual cointegration tests respectively. Implicitly, if the estimated Fisher statistics surpass the critical values provided by Bayer and Hank (2013), then the null hypothesis of no cointegration is rejected.

Impulse response function (IRF) and Forecast Error Variance Decomposition Method (FEVDM) are termed as Innovative Accounting Approach (IAA) for testing causal links between the variables. The IAA provides prominent method of explaining the estimated linear and non-linear multivariate time series models (Alves and Moutinho, 2013; Lanne and Nyberg, 2014; Shahbaz et al. 2015). We preferred this approach over traditionally used Granger causality tests because IAA does not only provide the direction of causality. Further, it discloses the magnitude of causal relationship among the variables at different time periods (Menyah and Wolde-Rufael, 2010; Hassan et al. 2011; Shahbaz, 2012). Furthermore, under FEVDM process, the variance in each vector is decomposed in exogenous (change occurs due to other variables in the model) and endogenous (change occurs due its own innovative shocks) during vector autoregression (VAR) and IRF characterize the reaction of endogenous variable; whereas, the Granger causality has limitation of calculating only exogenous change. However, the concept of exogeneity in

IAA is different from Granger causality in a way that in IAA it refers to the contemporaneous value of an endogenous variable and the contemporaneous error term of another variable (Cloyne, 2013).

V. Empirical Results and Discussions

The time series econometric models necessitate that all underlying time series must be stationary and should not contain unit root. In this regard, unit root test results validate whether each time series is stationary. We use Ng-Perron unit root test and Zivot and Andrews (ZA) unit root test to check the stationarity of the variables. The test results are reported in Table-1 and the results of both the tests confirm that all the variables are found to be non-stationary and own unit root at level. The ZA unit root test results confirm the findings of Ng-Perron unit root test accommodating single unknown structural break which may have arise due to abnormal economic event at a certain point of time. The break year column in Table-1 is demonstrated such point of time against each time series. These breaks are 2008QI, 1991QII, 2003QI and 1993QII in economic growth, financial development, foreign direct investment and capital use respectively. There breaks are outcome of economic and financial reforms implemented by the UAE government to improve performance of financial sector as well as economic growth. We note that all the variables have unique order of integration i.e. $1(I)$[1].

Table-1: Unit Root Analysis

Ng-Perron Test				
Variable	MZa	MZt	MSB	MPT
$\ln Y_t$	-74.8365	-6.0201	0.0804	1.63216
$\ln FD_t$	-1.7168	-0.9264	0.5396	53.0771
$\ln FDI_t$	-5.2189	-1.5764	0.3020	17.3149
$\ln K_t$	-3.6023	-1.2392	0.3440	23.6901
Variable	**ZA Test at Level**		**ZA Test at 1st Difference**	

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[1]The results are available upon request from authors.

	T-statistic	Break Year	T-statistic	Break Year
$\ln Y_t$	-2.542 (2)	2008Q1	-7.632 (3)*	1988Q2
$\ln FD_t$	-5.035 (1)	1991Q2	-6.672 (2)*	1979Q4
$\ln FDI_t$	-1.543 (3)	2003Q1	14.778 (1)*	2002Q3
$\ln K_t$	-3.702 (2)	1993Q2	-6.686 (3)*	1988Q2
Note: T-statistics at 1%, 5% and 10% levels are -23.8000, -17.3000 and -14.2000 respectively for Ng-Perron unit root test. * indicates significant at 1% level.				

As we confirmed that time series are stationary at $I(1)$, we move to the next step which is applying Bayer-Hanck, (2013) combined cointegration approach to inspect the long-run association between the variables. Table-2 presents the combined cointegration test results including EG-JOH, and EG-JOH-BO-BDM tests. At 1% level of significance, the computed critical values for EG-JOH and EG-JOH-BO-BDM test models are 16.529 and 31.169, respectively. The results show that our calculated Fisher-statistics in case of $\ln Y_t$, $\ln FD_t$ and $\ln FDI_t$ are greater than critical values which means the null hypothesis of no cointegration is rejected and variable are found to be cointegrated. However, in case of $\ln K_t$, the test statistics are lesser than critical values and failed to reject the null hypothesis of no cointegration. In nutshell, all the variables (economic growth, financial development, foreign direct investment and capital use) are found to be cointegrated except capital formation. This notion further implies the existence long-run relationship between the variables over the period of 1975Q1-2012Q4 for United Arab Emirates.

Table-2: The Results of Bayer and Hanck Combined Cointegration Analysis

Estimated Models	EG-JOH	EG-JOH-BO-BDM	Lag Order	Cointegration
$Y_t = f(FD_t, FDI_t, K_t)$	18.293*	40.727*	6	Yes
$FD_t = f(Y_t, FDI_t, K_t)$	23.064*	36.510*	6	Yes
$FDI_t = f(Y_t, FD_t, K_t)$	22.945*	33.980*	6	Yes

$K_t = f(Y_t, FDI_t, K_t)$	8.170*	10.201*	6	No

Note: * represents significant at 1 per cent level. Critical values at 1% level are 16.529 (EG-JOH) and 31.169 (EG-JOH-BO-BDM) respectively. Lag length is based on minimum value of AIC.

The long-run association via cointegration intends us to examine the marginal impact of independent variables (i.e. FD_t, FDI_t and K_t) over dependant variable (Y_t) using long-run and short-run analysis. The results of the analysis are reported in Table-3. In long-run, financial development has significant and positive impact on economic growth where 1%increase in financial development reduces economic growth by 0.9818%. Therefore, our results confirm evidence of finance-led growth in UAE. This result point out financial development is an important factor of economic growth. Facilitating credit conditions by, for example, facilitating the access to finance, would improve the well-being of UAE's citizens. When the cost of credits becomes reasonable, firms and entrepreneurs would borrow at a lower cost, and consequently their output would rise and they will expand the activity. As a result, they would hire further. This would obviously reduce the unemployment rate in UAE (Hamdi et al. 2014). Nevertheless, the effect of foreign direct investment and capital use is positive and statistically significant where 1% increase in FDI and capital use will increase economic growth by 0.0335% and 0.0951%, respectively. Since many years, UAE has been attracting huge foreign capitals by providing a very good business climate, insuring political stability, free taxes environment. UAE market offers a wide range of business opportunities including energy sector, manufacturing, real estate and financial and banking sector. Moreover, UAE's government understood that the way to development requires some basics ingredients. For more than 20 years, government is massively investing in capital infrastructure such airports, ports, metro, roads, telecommunication. Finally, we have included dummy variable to capture the impact of National Investment Reform Agenda (NIRA) implemented by UAE government in 2007[2]. This shows that implementation of NIRA is having positive impact on economic growth significantly.

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[2]It is indicated by ZA unit root test.

Now, as far as short-run analysis results are concerned, financial development has significant but negative impact on economic growth where 1% increase in financial development rises economic growth by 0.171%. The foreign direct investment has positive and statistically insignificant impact on economic growth where 1% increase in FDI increases economic growth by 0.0041%. However, the impact of capital use on economic growth is positive and statistically significant where 1% increase in capital use leads economic growth by 0.051%. The dummy variable of National Investment Reforms Agenda has positive and significant effect on economic growth.

Table-3: Long and Short Run Analysis

Dependent Variable = $\ln Y_t$			
Panel- A: Long Run Results			
Variables	Coefficient	T. statistic	Prob. Values
Constant	5.7849*	33.0186	0.0000
$\ln FD_t$	0.9818*	-12.5600	0.0000
$\ln FDI_t$	0.0335**	2.5768	0.0110
$\ln K_t$	0.0951*	8.9957	0.0000
D_{2008Q_1}	0.1329*	12.8334	0.0000
R^2	0.6975		
$Ajd - R^2$	0.6912		
Panel-B: Short Run Results			
Constant	-0.0018*	-3.6997	0.0003
$\Delta \ln FD_t$	0.1711*	-3.8000	0.0002
$\Delta \ln FDI_t$	0.0041	1.0797	0.2821
$\Delta \ln K_t$	0.0514*	3.6487	0.0004
D_{2008Q_1}	0.0034*	2.7432	0.0069
ECM_{t-1}	0.0138**	2.1023	0.0435

R^2	0.1739		
$Ajd - R^2$	0.1506		
D-W Test	1.6696		
F-statistic	7.4742*		
Diagnostic Test			
Test	F-statistic	Probability	
$\chi^2 SERIAL$	0.1014	0.9120	
$\chi^2 ARCH$	0.1933	0.6500	
$\chi^2 WHITE$	0.4044	0.8652	
$\chi^2 REMSAY$	0.2053	0.6551	
Note: *, ** and *** represent significance at 1%, 5% and 10%level respectively. $\chi^2 SERIAL$ is for serial correlation, $\chi^2 ARCH$ for autoregressive conditional heteroskedasticity, $\chi^2 WHITE$ for white heteroskedasticity and $\chi^2 REMSAY$ for Remsay Reset test.			

The recent literature argues that the most commonly used Granger causality approached (e.g. VECM Granger causality approach) has some constraints. For example: Shahbaz (2012) have chosen that generalized forecast error variance decomposition method using vector autoregressive (VAR) system to test the causal links instead of VECM Granger causality test. He indicated that Granger causality test cannot capture the relative strength of causal relation between the variables beyond the selected time period. Hence, forecast error variance decomposition method (FEVDM) along with the impulse response function (IRF) test provides Innovative Accounting Approach (IAA) to define the causal relationship among the variables. Similarly, we utilized IAA to test the causal links between economic growth, financial development, FDI, and capital use in case of UAE. The simulation results of FEVDM are reported in Table-4. The results suggest that over the 20 different time horizons between 1975Q1-2012Q4, the economic growth is88.8%is endogenously contributed and 0.09%, 4.32%, 6.69% is exogenously contributed by financial development, FDI and capital use, respectively. This implies that market

capitalization in comparison to financial development and FDI, is the highest contributor in UAE's economic growth. Concerning financial development, the endogenous change is due to its own innovative shock is 74.91% and 7.79%, 5.88%, 11.40 are exogenously contributed by economic growth, FDI and capitalization, respectively. Here again market capitalization is the highest contribution factor in UAE's financial development. Similarly, in case of FDI, the endogenous change is recorded

69.34% and 7.17%, 18.88%, 4.60 are exogenously contributed by economic growth, financial development and capitalization, respectively. Interestingly, among exogenous factors, UAE's FDI is highly relying on financial development. In case of capitalization, the endogenous contribution is 79.44% and 6.58%, 11.97%, 1.98% is exogenously contributed by economic growth, financial development and FDI, respectively. The financial development contributes highest in the market capitalization in UAE, which is 11.97%. The overall results indicate that there is feedback effect between financial development and market capitalization with almost same ratio. Market capitalization contributes economic growth and financial development has potential to increases FDI by almost 19%. Our results suggest that market capitalization plays the role of catalyst between FD-FDI-Growth nexus.

Table-4: Variance Decomposition Analysis

Horizon	Variance Decomposition of $\ln Y_t$				Variance Decomposition of $\ln FD_t$				Variance Decomposition of $\ln FDI_t$				Variance Decomposition of $\ln K_t$			
	$\ln Y_t$	$\ln FD_t$	$\ln FDI_t$	$\ln K_t$	$\ln Y_t$	$\ln FD_t$	$\ln FDI_t$	$\ln K_t$	$\ln Y_t$	$\ln FD_t$	$\ln FDI_t$	$\ln K_t$	$\ln Y_t$	$\ln FD_t$	$\ln FDI_t$	$\ln K_t$
1	100.000	0.00	0.00	0.00	17.317	82.682	0.000	0.000	1.953	4.493	93.553	0.000	2.844	0.287	0.087	96.780
2	99.921	0.00	0.02	0.05	18.092	81.540	0.334	0.032	1.253	2.951	95.739	0.056	3.487	0.095	0.102	96.315
3	99.781	0.01	0.06	0.13	18.136	80.840	0.913	0.110	0.804	2.024	97.015	0.155	4.010	0.043	0.105	95.839
4	99.602	0.04	0.14	0.21	18.032	80.123	1.601	0.242	0.516	1.377	97.807	0.299	4.487	0.072	0.110	95.328
5	99.373	0.03	0.38	0.20	15.866	80.878	2.666	0.587	0.478	1.306	97.734	0.480	5.585	0.158	0.086	94.168
7	98.684	0.02	1.13	0.15	12.402	80.836	4.863	1.897	0.450	3.126	95.499	0.923	7.940	0.660	0.059	91.338
9	97.856	0.02	1.98	0.14	10.031	79.657	6.421	3.889	0.795	7.052	90.710	1.442	9.626	1.690	0.116	88.566
11	97.171	0.03	2.53	0.25	8.941	78.319	6.860	5.879	2.492	10.134	85.282	2.091	9.815	3.110	0.387	86.686
13	96.352	0.04	2.92	0.67	8.604	77.183	6.677	7.534	4.512	12.177	80.550	2.760	9.240	4.747	0.770	85.241
15	94.993	0.04	3.36	1.60	8.427	76.278	6.400	8.893	5.125	14.618	76.829	3.426	8.559	6.589	1.094	83.756
17	92.994	0.04	3.80	3.16	8.176	75.605	6.182	10.036	5.415	16.873	73.739	3.971	7.828	8.636	1.410	82.124
18	91.761	0.04	3.99	4.18	8.038	75.341	6.082	10.537	5.743	17.771	72.267	4.218	7.424	9.721	1.593	81.260
19	90.391	0.06	4.17	5.36	7.907	75.112	5.985	10.994	6.279	18.465	70.825	4.429	7.007	10.831	1.785	80.367
20	88.882	0.093	4.32	6.69	7.798	74.910	5.885	11.405	7.171	18.881	69.346	4.600	6.586	11.978	1.988	79.446

Overall, we note that the neutral effect exists between economic growth and financial development. Capital use causes financial development and in resulting, financial development cases capital use. Foreign direct investment is cause of financial development.

Figure-1 shows the results of the results of the impulse response, which is termed as an alternative FEVDM. We note that economic growth responds positivity due to forecast error occurs in financial development. A forecast error stems in foreign direct investment leads positive impact on economic growth. Economic growth shows positive response due forecast error occurs in capital.

Figure-1: Impulse Response Function

Response to Cholesky One S.D. Innovations ± 2 S.E.
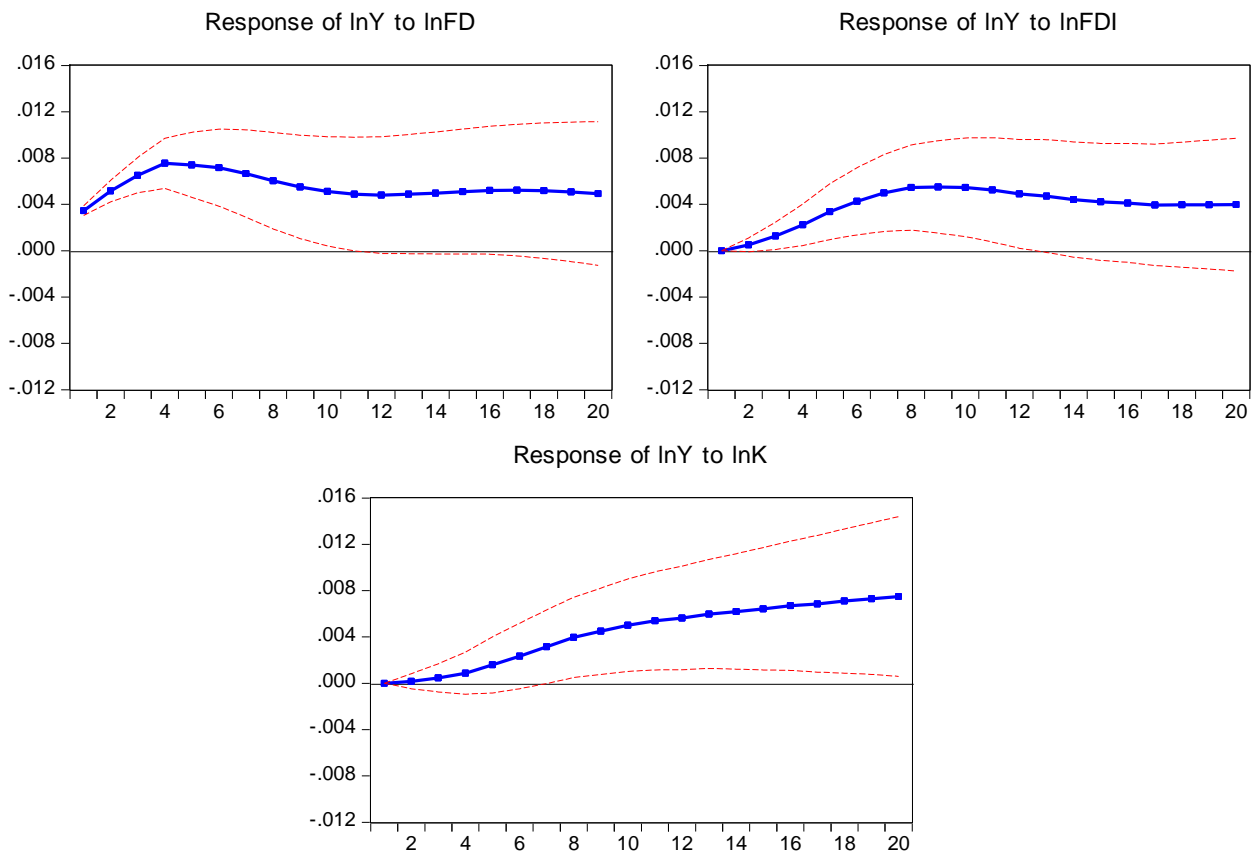
VI. Conclusion and Policy Implications

This paper scrutinized the relationship between financial development and economic growth in UAE by including foreign direct investment and capital in production function during 1975QI-2012QIV. To this aim, we have applied unit root test and cointegration approach in order to investigate the stationarity properties of the variables and long run relationship between financial development, foreign direct investment, capital and economic growth in the presence of structural breaks. The degree of causal relationship is investigated by applying innovative accounting approach. The results approve that all the variables cointegrated for long run relationship. Moreover, financial development adds in economic growth. Foreign direct investment augments domestic production and hence economic growth. Economic growth is boosted up by an increase in capitalization. The neutral effect exists between financial development and economic growth. The bidirectional causality is found between financial development and capital use. Financial development causes foreign direct investment that leads economic growth in UAE.

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