

## BANKING DEVELOPMENT AND NON-OIL GROWTH NEXUS: A CAUSAL ANALYSIS IN THE CASE OF KUWAIT: 1992-2012

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### ABSTRACT

**T**his paper aims to investigate the type of relationship between financial development indicators and non-Oil economic growth in the case of Kuwait by using annual data 1992-2012 retrieved from international financial statistics (IFS) of the International Monetary Fund (IMF) and the world Bank development indicators (WB). This study employs the Johansen and Juselius Cointegration test and Vector Error Correction Model (VECM) to reveal the long-run and short-run causality between the financial development and non-Oil GDP growth. The results show that there is a long-run causality from all the financial development selected indicators to the non-Oil GDP, the short-run deviations are corrected to the long-run equilibrium within three quarters. In the other side, it seems that in the case of Kuwaiti economy, the impact of the non-Oil GDP on financial development is limited to run only in the short term. The impulse response function shows that through one standards deviation positive shock in Credit provided to private sector, the non-Oil GDP will increase by average one standards deviation during the 10 coming years. We recommend reviewing banks' credit portfolio to be more oriented for private companies by decreasing the credit for the households. This study provides the policy makers in Kuwait with the appropriate evidences to design their policies in fostering the non-resources sector.

**Key words:** Finance-Growth nexus, Granger causality, Cointegration, VECM, Kuwait.

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## I- Introduction:

There are several hypothesis tried to provide a realistic analysis in explaining the relationship between the financial intermediation development and economic growth in the long run. In this section we will try to discuss the existing literatures. We can summaries the different opinion in four main categories; the first group of economist believes that the financial and banking deepening is considered to lead the development in the real sector realized in the economic growth in the long-run, this hypothesis is called *Leading-supply hypothesis*. The second group argued that the developments in the real sector is the main motivator to push the financial and banking institutions to improve their banking and financial services and provide the appropriate package of financial and banking product to fulfill the real sector requirements, this was known as *Following-demand hypothesis*. In the other side, there is a range of economist who suggested that the relationship between the financial sector and economic growth is bi-directional, which means the existence of double side causality. The extremist opinion was represented in the fourth category, academicians who believe that the financial development has no impact on the economic growth; in contrast it could harm the development in the real sector in some circumstances. (Herve Hannoun, 2008).

The financial sector in Kuwait is dominated by the banking sector, which is relatively concentrated with a few domestic players dominating the market. This reflects entry barriers and licensing restrictions for foreign banks. The foreign banks represent 49% of the banking sector in the case of Kuwait. The market share of foreign banks in Kuwait by total assets in the rest of banking sector is 10%.

The banking sector is highly concentrated with the two largest banks (National Bank of Kuwait and Kuwait Finance House) accounting for half of the banks' total assets. The largest five banks are domestic and account for 120% of the GDP in 2002 and 84% of the GDP in 2008. In addition to the banking sector, there are 95 investment companies (ICs) with total assets of around 102% of the GDP.

The reminder of this paper is organized as follow; Section II makes a review of the existing literatures that explains the causal relation between economic growth and financial development indicators. Section III discusses data and methodology used to investigate the causal relation in the case of Kuwait. Section IV covers the main results and finding. Section V concludes with policy implications.

## II- Literature Review:

There are several hypothesis tried to provide a realistic analysis in explaining the relationship between the financial intermediation development and economic growth in the long run. In this section we will try to discuss the existing literatures. We can summaries the different opinion in four main categories; the first group of economist believes that the financial and banking deepening is considered to lead the development in the real sector realized in the economic growth in the long-run, this hypothesis is called *Leading-supply hypothesis*. The second group argued that the developments in the real sector is the main motivator to push the financial and banking institutions to improve their banking and financial services and provide the appropriate package of financial and banking product to fulfill the real sector requirements, this was known as *Following-demand hypothesis*. In the other side, there is a range of economist who suggested that the relationship between the financial sector and economic growth is bi-directional, which means the existence of double side causality. The extremist opinion was represented in the fourth category, academicians who believe that the financial development has no impact on the economic growth; in contrast it could harm the development in the real sector in some circumstances. (Herve Hannoun, 2008)

### Supply-Leading Hypothesis:

Is called also the external financial development (Franklin, Santomero, 2001,2008), it explained the phenomena where the existence of financial institutions and supply of financial assets and financial products related to it were setup before requested by the real sector, which means that financial development leads the economic growth, this hypothesis is widely accepted by economist, the main idea is that the well developed financial sector will provides a crucial functions through reducing information and transaction costs (Allen .F .Gale D, 1997), there are a lot of literatures that explained how could the well developed financial intermediation to reduce these costs and increasing saving, investment decisions and the technological innovation and as consequence the economic growth. (Levine, 1997) suggested that in order to well understand the finance-growth nexus, a functional approach should be considered, this approach focuses on the linkage between the key functions provided by the financial system and the economic growth. The other approaches in explaining the finance-growth nexus focused more on the monetary aspects of the financial and banking system, in their contributions, (John Gurley, 1955) (James Tobin, 1965), (Renald McKinnon, 1973) they focused in their mathematical as well as the theoretical explanation on money, this narrow focusing on money could limit the understanding the finance-growth nexus.

- ***Innovative Power of Credit:***

There is no doubt that the first contribution in this area belong to *Schumpeter*, he considered that financial services is in origin of the economic growth (Hendrik Hakenes, 2004), according to *Schumpeter*, the production process needs credits, so the main idea is that you cannot be an entrepreneur without being debtor for a while. From the *Schumpeter's* point of view, the entrepreneur couldn't realize his project without securing the required funding to materialize his technology in the new project (Schumpeter, Joseph, 1934). He considered that the main role of banks is to create money for the innovative entrepreneurs; because the innovation came by individuals they don't have means of productions, he mentioned that if the existing companies will materialize the new innovation, there will be no role for banks, but when the innovation came basically from individuals they don't have means of production, the money bank will be the tool through which the banks could control the means of production by take it away from the existing companies and provide it to the new entrepreneurs to achieve their innovative projects(Giancarlo Bertocco,2008) . With the absence of the money created by banks there will be no space for the new entrepreneurs to achieve their project because the new innovation will be financed by the effective saving but by using the expected saving<sup>2</sup>. (Laurence, 1999) Because the existing companies they would continue using resources in the traditional production process, and there is not reason for them to allocate the resources for the new entrepreneurs who would to change the existing production equilibrium. Many economists in Europe were convinced by this point of view which leads to arise many theories that give the leading role to the banking and financial system.

(Tobin, 1965) for example support the non-neutrality of money from the economic activity, he argued that the increase in money supply will decrease the cost of funding which will affect positively the accelerator effect. (Fisher, 1997) see that the relationship between financial and economic development exists only in the long term, he argued that the spread of banking practices has a positive impact on money and current deposits velocity that has a positive impact on economic activity. (Ibrahim Omar, 2007). However, the more modern approaches that explained the impact of monetary variables on real sector is running through bank credit channel or so called banks' balance sheets (Bernanke, 1995,2008)

<sup>2</sup> For more in this role see (David R, 2008)

### **Financial intermediation Functions for the economic Growth:**

In his attempting to organize the literature related to Finance-Growth nexus, (Levine, 2004) distinguished five main functions of financial intermediation which each one has an impact on economic growth in the long-run:

- Facilitating trade, Hedge and risk diversification.
- Allocation of resources
- Monitoring managers and establishing corporate governance.
- Collect saving
- Facilitating exchanging goods and services

He demonstrated the existence of two main channels where each function of the previous could affect the economic growth; capital accumulation and technological innovation. Regarding the first channel, banks and financial institutions could maximize capital accumulation by increasing saving and allocating saving to the productive projects. Regarding the second channel, technological innovation that was a focus subject by the second generation of economic growth models, the financial and banking intermediation could contribute by providing funds to these projects. The incentive growth models focus on high-tech, they didn't consider the innovation as public good could be provided free of charge, scientific knowledge is not subject of diminishing returns law because the returns from high-tech will not decrease by increasing its accumulation.

- a) *Liquidity and economic Growth:*
- b) *Risk management and Economic Growth*
- c) *Information production and Economic Growth*
- d) *Delegate Monitoring and Economic Growth*
- e) *Collect saving and Economic Growth*
- f) *Transaction cost and Economic Growth*

#### **1. Demand-Following Hypothesis:**

Is called also the internal financial development, is referring to the phenomena where the existence of financial institutions and supply of financial and banking services as response of demand by investors and savers, then the financial development is part of the economic development in other word the developments in financial and banking institutions id following the economic development. The pro economist for this theory believes that financial development is a positive function in the real wealth. (Khalid Al-Qadir, 2004). (Robinson, 1952) has stated this hypothesis is one sentence: '*when the projects lead, finance follow*'. He considered that finance and banks appear only as a response of economic agents internal demand.

- **Growth affect risk management and information production functions:**

An increase in economic growth rates, will push economic agents to ask for more intermediaries financial services, especially those services related to information production function in order to bridge the asymmetric information. Knowing that during economic upturns, the *Adverse Selection* risk rises, the entrepreneurs will be more risky during economic upturns, during these periods, banks and financial institutions increase their efforts to collect information in order to be able to distinguish among the good and bad debtors. In the other side, during the economic slowdown, *Moral Hazard* risk increases and adverse selection decreases. That will change the structure of information production for the banking and financial intermediaries, they will double their efforts in the delegated monitoring<sup>3</sup> in order to follow the agreed

<sup>3</sup> For more about the role of Banks in delegated monitoring see (Diamon Dybvig, 1996) and (Handrik Hakenes, 2004).

funded projects<sup>4</sup>. The main idea here is that the function of producing and collecting information of the banking and financial intermediaries is following the status of the economic activity in the real sector. The other argument is that the initial wealth of the debtors and the guarantees that they could provide it will contribute in decreasing asymmetric information effects in the banking credit market, which will save a lot of banking and financial costs related to information production. (Marc Hay, 2004)

- **What growth is providing for banking and financial intermediation:**

There is no doubt that the banking and financial system is affected by the changes occurring the real sector, changes in communication, computers, non-financial sector policies and the economic growth affect the financial and banking services as well as the financial structure. For example the changes in high-tech work to decrease the transaction cost and facilitate financial arrangements. (Merton, 1992). In the other side, the economic growth affects the investors and savers willingness to pay the participation cost in the financial and banking system. (Greenwood, Jovanovic, 1990)

In general, the GDP per capita could affect the financial and banking intermediation through different channels:

- In the High- Income countries, it appears to have big companies; the net assets for the big companies will decrease monitoring costs, which leads to decrease intermediation costs (External Finance Premium) which will result in supporting financial and banking intermediation.
- It is observed that the increase of GDP per capita is accompanied by high amount of public goods, which facilitate and help the financial and banking intermediation to perform efficiently such as the accounting standards, legal framework.
- Huge number of companies with high level of net assets will allow stock markets to get more space in financing the real sector in the aim to provide liquidity to the small and mid savers, which will support the development of these markets.

## 2. Bi-Directional Causality hypothesis:

A third hypothesis in explaining the causality between the financial, banking development and economic growth focused on the Bi-directional causality, and the type of causality depends on the stage of economic development (Ali Ahmad, 2004), during the low income periods, financial and banking development will lead the economic growth and support it until it reaches its regular levels, and during the late stages of economic development, this latter will lead the financial and banking development. (Robinson, 1979) has mentioned this bidirectional causality between financial and economic development. Regarding the first direction from Finance to economic growth; he argued that the company needs to a funding based on the bank credit, later when the project earn profits, it will be provided for the company to issue shares or bonds to pay its financial commitments. The second concept of causality from economic growth to finance as follow; when the investment increases, it will lead to more bank credit required from the banking system, which will result in an increase in bank deposits that could help the banks to create more money required for the new projects.

This bidirectional causality of Finance-Growth nexus will lead us to conclude that Schumpeter was right in his theory. (Robert G, R. Levine, 1993)

<sup>4</sup> For more about asymmetric information and the role of banks to bridge the gap see (Franklin A, A Santomero, 2001) and (Bert Scholltens, Dick Wensveen, 2000,2003)

- **Direction of causality during development' stages:**

(Greenwood, Jovanovic, 1990) confirmed that during the early stages of development, the economic growth is weak and the trading process is unorganized, but when the national income increases, the financial structures start taking in a good positions, economic growth speed-up, but the inequality among individuals increases in the same time. In the other side, during the late stage of economic development, there will be well-organized financial arrangements with a stable mechanism of wealth distribution with high level of economic growth in comparison with the early stages of developments. Verse versa, whenever the financial development could support growth, this latter will be able to reinforce the financial system whole performance.

- **Threshold effect in bidirectional causality:**

Another approach to understand the Finance-Growth nexus is to take in consideration the *Threshold effect*, starting from a certain level of financial and banking development, the economic growth will be more slowly and the possibilities to catch-up will be very difficult and the poverty trap start to appear (Berthemelemy, 1995). The weak economic growth leads to more weaknesses in the financial and banking sector which its return to weaken the economic growth. This could be described by pernicious feedback loop between the real sector and financial sector. This happens usually during the financial crisis, when the public policies fail to face the uncertainties in the business environment. Financial assets drop down, household wealth decreases, which leads to drop in the consumption. Businessmen postpone their projects; a wide credit crunch will result in creating pressures on household consumption, investment and economic growth.

### III- Stylized Facts about the Kuwaiti Banking System:

- **Economic Background:**

Economic development in Kuwait focused on welfare state concept, by using the oil rents, the government worked through the different types of subsidies and financial support to redistribute the wealth among individuals, without using taxes and the other sovereign revenues which represent the main source of governments' budget in the modern fiscal theory. This behavior results in an increase the social welfare levels in comparison with the other economies. We can summarize the four characteristics of the Kuwaiti economic performance:

- **Unilateral resources:**

Oil exports is considered the main source of government's budget, which results in instability of the Gross Domestic Product due to the fluctuation of oil price in the international markets. This result in sharp fluctuation in GDP and the government's spends as well as employment in the non-Oil sectors.

- **Public sector domination:**

By focusing on the welfare state concept, the role of government in the economic activity has increased which freeze the market mechanisms. In addition to the role of the government in providing social services, the government leaded establishing and maintaining the infrastructures tasks and contributed in the direct production of goods and services. Due to the huge domination of the public sector, the private sector move from been a leading sector to be a pure follower to the public sector counting on the public spending. The most focus of the private sector is the speculation in equities and real estate.

- **Labor Market Imbalances:**

Despite the big focus on the national human development, and due to the increase of expats to fulfill increased needs in development programs, the labor market has been a subject of structural imbalances.

- **Increased Expats demand:**

Kuwaiti increasing demand for the expats was due to the following reasons:

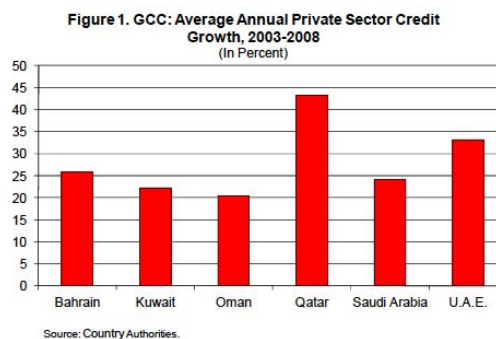
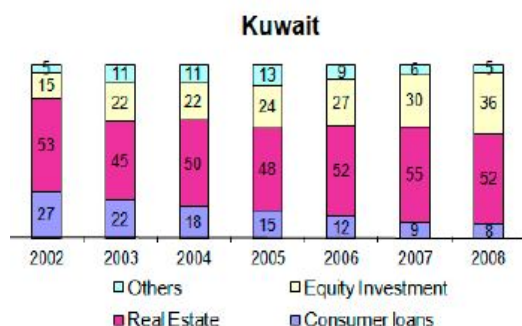
- Decreases in salaries levels for the expats.
- Decrease labor cost of expats due to the government financial support.
- Lack of serious policies to increase the expats employment in the private sector.
- The preference of local labor force to work in the public administration.
- The big gap between the salaries and the other payment such as the insurances, the early retirement among the public and private sectors.

### • Financial System in Kuwait:

The financial sector in Kuwait is dominated by the banking sector, which is relatively concentrated with a few domestic players dominating the market. This reflects entry barriers and licensing restrictions for foreign banks. The foreign banks represent 49% of the banking sector in the case of Kuwait. The market share of foreign banks in Kuwait by total assets in the rest of banking sector is 10%.

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The credit to private sector has been spurred by the increase in international oil prices. Higher oil prices have boosted government spending and non-oil GDP growth and, as a result, spurred business confidence and local and regional private sector activities and investments. The concentration of credit portfolios on constructions and real estate sectors (50% of total loans) increases the potential exposure. In the other hand, lending to the public sector has declined sharply as the government benefited from rising oil prices in recent years and therefore a decline in the need to finance domestic projects through bank borrowing. Direct credit to the government constitutes a marginal share of loans.



The household loans are mainly composed of loans facilitating equity margin purchases which represent 36% of total household lending or 12% of total banks' loans portfolio in 2008, this highly exposes Kuwaiti banks to market induced credit risk.

### IV- Data and Methodology:

- **Data:** In line with the main purpose of this paper which is to investigate the long term and short term causality between the financial development and non-resources economic growth for Kuwait, the selection of proxies to both financial development and non-Oil economic growth are very crucial. By reviewing the previous literatures, the majority of them use GDP to measure the economic growth either via GDP per capita or using the real GDP growth.

However for the case of the resources based economies, using the total GDP as proxy of the economic growth could alter the causality between financial development and economic growth. (Bekaert and Harvey, 1998) suggested that studies of finance-growth relationship in resource-based economies should focus on non-resource growth rather than total GDP, because windfall resource revenues affect the latter.

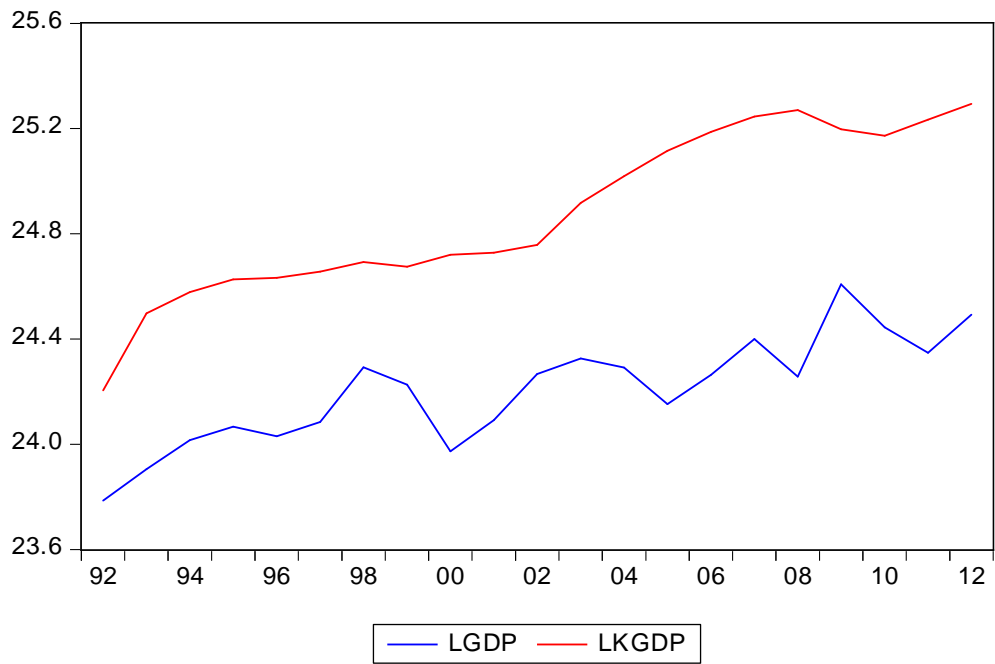
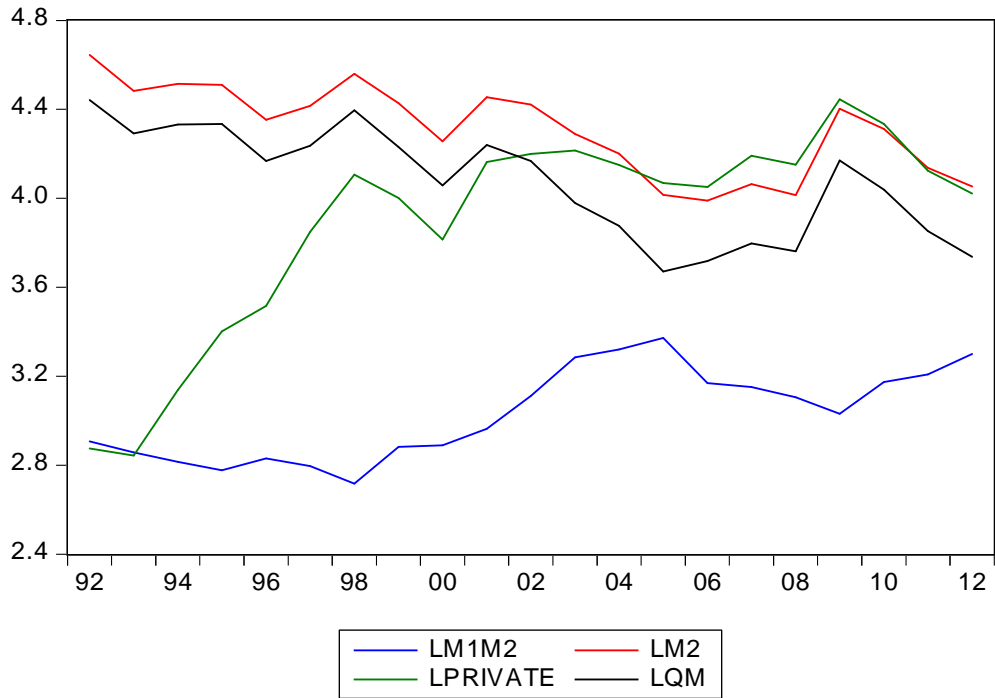
In our study we will use the Non-Oil GDP as defined by the IMF; Non resource GDP is approximated by subtracting the real values of natural resources rents from total GDP in 2005 adjusted USD (see Hamilton and Ruta (2008). Natural resources give rise to rents because they are not produced; in contrast, for produced goods and services competitive forces will expand supply until economic profits are driven to zero. An economic rent represents an excess return to a given factor of production. (Rabah Arezki et al, 2011). Meanwhile, the selection of proxies for financial development was a subject for big divergence among the empirical studies. in this study we will use the following proxies for financial development variable<sup>5</sup>:

1. **M2** monetary aggregate as a ratio to nominal GDP; is a traditional proxy used to measure the weight of financial intermediaries. It measures the size of financial intermediaries and equals liquid liabilities of the financial system. Never the less, this measure has some shortcoming (Levine, 1997); it may not measure the efficiency of the financial and banking institutions in allocating the financial resources to the more productive projects.
2. **PRIVATE**: to mention the credit provided to the private sector as part of GDP. This indicator shows the banking system's orientation to the private sector and the extent to which domestic regulations constrain credit and thus the level of activities in the private sector. It also reflects the importance of the private sector in the economy and the degree of success in obtaining its credit needs.
3. **QM**: for the Quasi Money, it represent the ratio of financial saving to GDP, where financial saving is measured by the difference between M2 and M1, the exclusion of M1 focuses on the quasi liquid assets considered as the main source of investment. M1 is generally more oriented to finance current transactions. An increase of this ratio may reflect an increase in banks' deposit, which is required for accumulation and then the economic growth.
4. **M1/M2**: this ratio provides an indicator of the importance of long-term banking and the degree of sophistication in the financial market.

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<sup>5</sup> For more about financial intermediation measurements, see (Gunther Capelle-Blancard and al,2008)





- **Methodology:** in order to determine the relationship between financial development and non-resources GDP, the econometric technique that we will use consists of three phases: first we have to check whether the time series are stationary or not, in a model for a correct evaluation, time series should be separated from all effects, and the series should be stationary. Thus logarithms of time series were taken. Augmented Dickey Fuller (1981) test was used. After that, Johansen Cointegration test was used to investigate the long-run relationship between financial development and non-resources GDP. If the Johansen Cointegration test was positive, then we have to apply the Vector Error Correction Model (VECM). But if the Johansen test was negative means there is no Cointegration between the variables, we have to apply unrestricted Vector Autoregressive (VAR) Model. We use Eviews 8 software to test and analyze the results.

1. **Unit Root Test:** we used the Augmented Dickey Fuller test. In ADF test, we test the null hypothesis that the series are not stationary (there is unit root), against the alternative one that the series are stationary by calculating the ADF *t*-statistics value with the critical *t*-statistics value obtained from McKinnon's table. If the series appears to be non-stationary, then we have to run the test again using the first or the second difference until stationary is achieved.

## 2. **Johansen test for Cointegration:**

The Johansen approach developed by Johansen and Juselius (1990) and Johansen (1991) used to investigate the possible long-run relation existence between the study variables. Johansen approach uses two test statistics, as suggested by Johansen (1988) and Osterwald-Lenum (1992) to determine the number of co-integrating vectors. These are the trace test and the maximum Eigenvalue test, represented by equation (3) and (4).

$$\lambda_{trace}(r) = -T + \sum_{i=r+1}^n \ln(1 - \lambda_i) \quad (3)$$

$$\lambda_{max}(r, r+1) = -T \ln(1 - \lambda_{r+1}) \quad (4)$$

Where  $\lambda$  is the it shows the estimated values of the characteristic roots, in assuming that the series are I(1). This number of observations and  $r$ , is the rank of the vector matrix.

We test the null hypothesis of Trace test that there is at most ( $r$ ) co-integrated relation against the alternative one that there are more than ( $r$ ) co-integrated relations. In other words, a rejection of the null hypothesis means that there are more than ( $r$ ) co-integrated relations. The Trace test rejects the null hypothesis if the trace statistics exceeds the critical value. On the other hand, we test the null that there is ( $r$ ) co-integrated relation versus ( $r+1$ ) co-integrated relations. The test rejects the null hypothesis if the Eigenvalue test statistics exceeds the respective critical value. If the null hypothesis for both statistics is rejected, this indicates that there is one co-integrated relation among the variables under testing.

**V- Results and Discussion:**

• **Unit root test:**

Results from ADF test implemented to the selected time series show that all the series belong to non-Oil growth and financial development proxies are not stationary at level. So we run the ADF test again but this time by using the first difference. ADF results are shown in Table 1; from this table, we conclude that all series are stationary at the first difference at 1%, 5%, 10% level of significant. For PRIVATE for example, the P (value) before the first difference is 87.76%, which more than 5%, so we cannot reject the null hypothesis of ADF test. But after the first difference the P(value) become 00.70% which is less than 5%, so we can reject the null hypothesis of ADF test. The rejection of the null hypothesis indicates that all the variables are stationary after the first difference.

Table 1: Unit Root Test

Unit root test	ADF test		Phillips-Person Test	
	Level 1	1 <sup>st</sup> difference	Level 1	1 <sup>st</sup> difference
<b>Variables</b>	<i>t-statistics</i>	<i>t-statistics</i>	<i>t-statistics</i>	<i>t-statistics</i>
	<i>P (value)</i>	<i>P (value)</i>	<i>P (value)</i>	<i>P (value)</i>
<b>LGDP</b>	1.632823	-3.882864**		
	0.9696	0.0388		
<b>LM2</b>	-2.825272	-4.540863**		
	0.2050	0.0098		
<b>LPRIVATE</b>	-1.221932	-4.722195**		
	0.8776	0.0070		
<b>LQM</b>	-2.545735	-4.399299**		
	0.3057	0.0129		
<b>LM1M2</b>	-3.379069	-3.593275**		
	0.0876	0.0163		

*\*, \*\*,\*\*\* significant at 1%,5%,10% level respectively*

• **Johansen Co-integration Test:**

The number of optimum lags used for the Cointegration model is selected by VAR lag Order selection criteria, which is based on SC. For this study we selected lag 1 to be used in Johansen and in VECM later.

VAR Lag Order Selection Criteria						
Endogenous variables: LGDP LM2 LM1M2 LPRIVATE LQM						
Exogenous variables: C						
Date: 08/01/14 Time: 11:07						
Sample: 1992 2012						
Included observations: 19						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	103.519760959	NA	2.16e-11	-10.37050	-10.12196	-10.32844
1	177.044366033	<b>100.6126*</b>	<b>1.46e-13*</b>	-15.47835	<b>-13.98713*</b>	-15.22598
2	205.466191897	23.93417	2.06e-13	<b>-15.83855*</b>	-13.10464	<b>-15.37586*</b>

\* Indicates lag order selected by the criterion

Table 2 shows the results of Johansen test for the long relationship between financial development indicators and non-resources economic growth.

Table 2: Johansen test results

Cointegration Hypothesis		Trace statistics	Critical values (5%)	Max-Eigenvalue	Critical values (5%)
<b>Null Hypothesis</b>	None	95.65	69.82	36.05	33.87
<b>Alternative hypothesis</b>	At most 1	59.59	47.85	22.15	27.58
	At most 2	37.44	29.79	17.59	21.13
	At most 3	19.84	15.49	12.27	14.26
	At most 4	7.56	3.84	7.56	3.84

We took Max-Eigen test as benchmark for our study, the above table shows that Trace Test is telling us that there are five cointegrating, but Max-Eigen test is only one Cointegration. We considered that there is only one Cointegration among the variables. Regarding the eigenvalue test, it rejects the null hypothesis if the test statistics exceed the respective critical value. From table 2, the results from the first row show that the eigenvalue of test statistics (36.05) exceeds the critical value at 95% confidence level (27.58). This confirmed that the null hypothesis is rejected. The failure of rejection of the null hypothesis indicates that there is one Cointegration relationship between financial development indicators and non-resources economic growth in Kuwait.

• **Causality Test Results Based on VECM:**

Table 3: Causality Test Results Based on VECM

Dependent \ Lagged	$\Delta$ LGDP	$\Delta$ LM2	$\Delta$ LQM	$\Delta$ LPRIVATE	$\Delta$ LM1M2
	Coefficient. P-Value ( )	Coefficient. P-Value ( )	Coefficient. P-Value ( )	Coefficient. P-Value ( )	Coefficient. P-Value ( )
ECT	-0.710617 (0.0069) *	-12.48162 (0.0524)	9.878101 (0.1700)	0.353600 (0.0061)	2.492236 (0.0450)
DLGDP (-1) Chi-square (P-Value)	-	3.334604 (0.0678)	3.707866 (0.0542)	0.604480 (0.4369)	2.380694 (0.1228)
DLM2 (-1) Chi-square (P-Value)	2.989225 (0.0838)	-	0.170535 (0.6796)	0.807836 (0.3688)	1.754025 (0.1854)
DLQM (-1) Chi-square (P-Value)	3.602305 (0.0577)	0.640401 (0.4236)	-	1.492177 (0.2219)	1.623785 (0.2026)
DLPRIVATE(-1) Chi-square (P-Value)	2.805234 (0.0940)	1.219697 (0.2694)	1.400270 (0.2367)	-	1.711333 (0.1908)
DLM1M2 Chi-square (P-Value)	6.618007 (0.0101) *	2.280631 (0.1310)	1.278583 (0.2582)	4.974831 (0.0257) *	-
R <sup>2</sup>	0.626931	0.586824	0.555304	0.768592	0.581283
F-Statistics	3.360933	2.840554	2.497455	6.642730	2.776491
P-value	0.03591	0.058471	0.083580	0.002767	0.062425
F-ARCH test	0.813500 (0.3805)	0.293450 (0.5955)	0.387727 (0.5423)	0.089749 (0.7684)	0.333191 (0.5718)
JB Normal	0.351625 (0.838775)	0.483727 (0.785163)	0.146950 (0.929160)	1.042802 (0.593688)	0.621319 (0.732963)
Breusch-Godfrey	1.092615 (0.3183)	0.038819 (0.8474)	0.047260 (0.8319)	0.230237 (0.6407)	0.270519 (0.6133)

- **Long-run Causality Results:**

According to the first row in table 3 results we can conclude the following interpretations:

1. The coefficient on the ECT (Error Correction Term) for LGDP is negative and significant at 5% level. Which means there is long-run causality from financial development indicators (LM2, LPRIVATE, LQM, LM1M2) to the non-Oil GDP. The magnitude of ECT is (-0.7106) implying that adjustment coefficient is fairly high and deviation from the long-run equilibrium is eliminated rapidly with higher rate of correction.
2. The coefficient on the ECT (Error Correction Term) for LM2 is negative and not significant at 5%, the magnitude of ECT is (-0.1178). So we can conclude that there is no long-run causality running from non-Oil GDP to M2.
3. The coefficient on the ECT (Error Correction Term) for LPRIVATE is positive and significant at 5%. So we can conclude that there is no long-run causality running from non-Oil GDP to PRIVATE.
4. The coefficient on the ECT (Error Correction Term) for LQM is positive and not significant at 5%. So we can conclude that there is no a long-run causality running from non-Oil GDP to LQM.
5. The coefficient on the ECT (Error Correction Term) for LM1M2 is positive and significant at 5%. So we can conclude that there is no a long-run causality running from non-Oil GDP to LM1M2.
6. *As summary we can confirm that there long-run causality from financial development indicators toward non-Oil GDP, in other words we can conclude that in the long run; the Non-resources GDP is leaded by the development of the banking sector in Kuwait which is more consistent with supply Leading hypothesis in the long-run.*

- **Short-run Causality Results:**

From the results of table 3, after applying Granger Causality/Block Erogeneity Wald test, we can conclude the following interpretations:

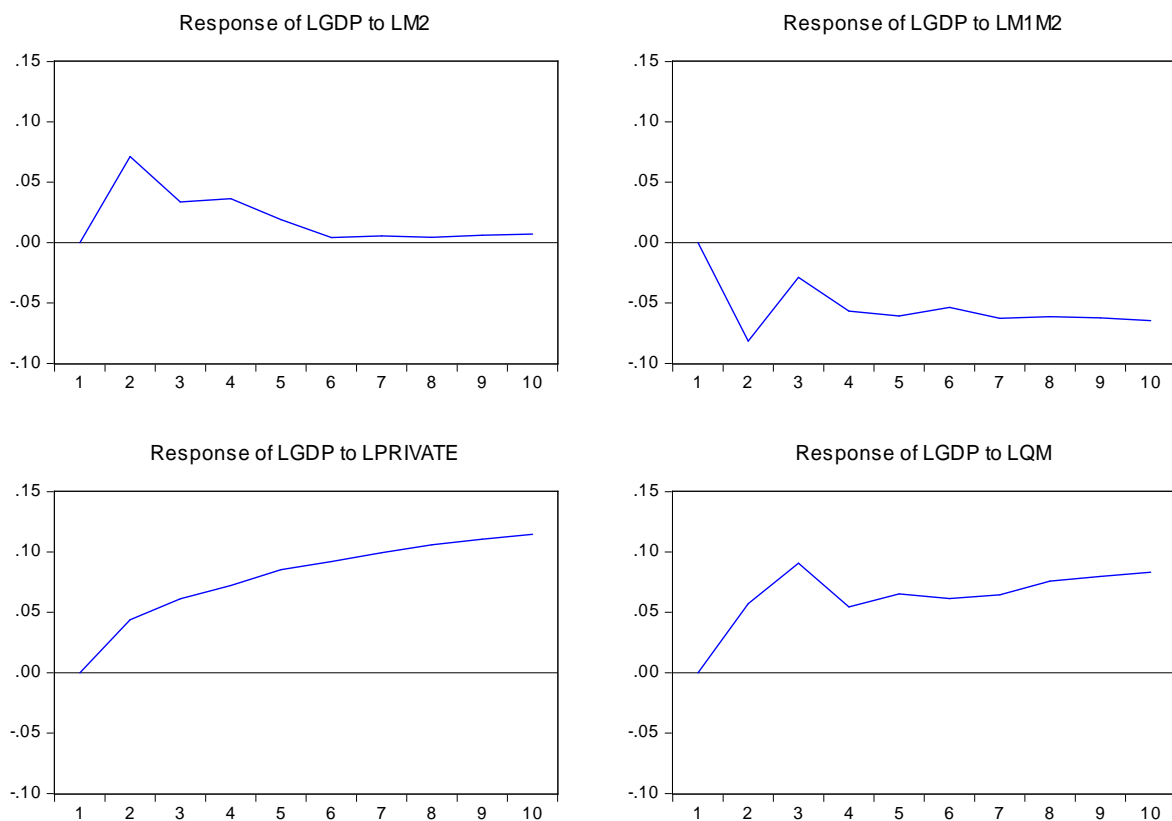
1. There is a short –run causality running from LM1M2 to LGDP. Which means that the long-term banking causes the economic growth in the non-Oil/Gas sectors in Kuwait.
2. There is no short –run causality running from LGDP to Financial development indicators, which means that in the other side, the economic growth in the non-Oil/Gas sectors does not cause the financial deepening in the case of Kuwait.

- **Impulse Response Function:**

In signal processing, the impulse response, or impulse response function (IRF), of a dynamic system is its output when presented with a brief input signal, called an impulse. More generally, an impulse response refers to the reaction of any dynamic system in response to some external change. In both cases, the impulse response describes the reaction of the system as a function of time (or possibly as a function of some other independent variable that parameterizes the dynamic behavior of the system). In all these cases, the dynamic system and its impulse response may be actual physical objects, or may be mathematical systems of equations describing such objects.

We considered the first VECM function, where the non-Oil GDP is dependent variable and financial development indicators are independent variables. From the VECM we found out that there is a long run causality running from financial development to the Non-Oil GDP. By adding one standards deviation (positive shock) to the independent variables. The figure in below shows the different scenarios for the next coming 10 years.

Response to Cholesky One S.D. Innovations



**VI- Conclusion:**

In this paper, an investigation has been conducted to explore the relation between Banking developments indicators and non-resources GDP in Kuwait over the period 1992-2012, focusing on Granger causality effects within VECM environment. The results show that there is unidirectional long-run Granger causality from all the proxies of banking development to Non-Oil GDP. The short-run deviations are corrected to the long-run equilibrium within three quarters. In the other side, it seems that in the case of Kuwaiti economy, the impact of the non-Oil GDP on financial development is limited to run only in the short term. The impulse response function shows that through one standards deviation positive shock in Credit provided to private sector, the non-Oil GDP will increase by average one standards deviation during the 10 coming years. We recommend reviewing banks' credit portfolio to be more oriented for private companies by decreasing the credit for the households. This study provides the policy makers in Kuwait with the appropriate evidences to design their policies in fostering the non-resources sector.

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**References:**

1. **Beck, T.** (2011). Finance and oil: Is there a resource curse in financial development? Unpublished working paper, International Monetary Fund, Washington, D.C.
2. **Bekaert, G., & Harvey, C.** Capital markets: An engine for economic growth. *The Brown Journal of World Affairs*, 5, 33–53. (1998).
3. **Ben S Bernanke** " Risk Management in Financial institutions " Risk" speech presented at the federal reserve Bank of Chicago on Bank structure and competition, Chicago, Illinois May 15,2008
4. **Ben S Bernanke** "Reducing Systemic Risk" speech presented at the federal reserve Bank of Kansas City's Annual Economic Symposium.Jackson Hole ,Wyoming August 22,2008
5. **Bert Scholltens.Dick Wensveen** " The theory of financial intermediation, an essay on what it does (not) explain " the European money and finance forum Vienna 2003.
6. **Bert Scholltens.Dick WensveenM:** " A critique on the theory of financial intermediation" journal of banking and finance vol 24 2000.
7. **David R. Skeie** "Banking with nominal deposits and inside money "journal of financial intermediation vol 17 (2008).
8. **Dickey, D. & Fuller, W.** (1981). Likelihood Ratio Statistics for Auto-regressive Time Series with a Unit Root, *Econometric journal*, 49(4), 1017-1072.
9. **Douglas W Diamond** " Financial Intermediation as Delegated Monitoring A Simple Example" .FEDERAL RESERVE Bank of Richmond , *Economic quarterly* Volume 82/3 Summer 1996.
10. **Franklin A .F .Gale D** " Financial Markets , intermediaries and intertemporal smoothing. *Journal of political Economy* vol 105 1997.
11. **Franklin Allen ,Anthony M.Santomero** " The theory of financial intermediation " The Wharton School ,University of Pennsylvania 1996 page 21.
12. **Franklin Allen ,Anthony M.Santomero** " What do financial intermediaries do ? " *Journal of Banking and finance* vol 25 (2001)
13. **Franklin Allen. Elina Carletti** " The Roles of Banks in Financial Systems" workpaper prepared for Oxford handbook of Banking .march 21, 2008.
14. **Giancarlo Bertocco** "Finance and development: Is Schumpeter's analysis still relevant?" *journal of Banking and finance* xxx(2008)xxx-xxx.
15. **Goldsmith, R. (1969)**, "Financial Structure and Economic Growth in Advanced Countries", National Bureau Committee for Economic.
16. **Gunther Capelle-Blancard and all** " The measurement of financial intermediation in japan" *Japan and the WORLD ECONOMY* vol 20 (2008)pages from 56 to 60.
17. **Gurley, John G. and Shaw, Edward S.** (1955), " Financial Aspects of Economic Development", *American Economic Review*, 45(Sept): 515-538.
18. **Hamilton K. and G. Ruta**, "Wealth Accounting, Exhaustible Resources and Social Welfare" *Environmental and Resource Economics*, Volume 42, Number 1, 53-64. (2008).
19. **Hendrik Hakenes** " Banks as delegated risk managers " *Journal of Banking and Finance* vol 28 (2004)
20. **Hendrik Hakenes** " Banks as delegated risk managers " *Journal of Banking and Finance* vol 28 (2004).
21. **Herve Hannoun** "Financial deepening without financial excesses" speech presented in the 43rd SEACEN Governor's Conference, Jakarta .21 March 2008.
22. **Johanson, S.** (1988) " Statistical Analysis of Co-integrating Vectors " *Journal of Economic Dynamic and Control*, 12: 231-254.
23. **Johanson, S. and K. Joselius** (1990) " Maximum Likelihood Estimation and Inference on Cointegration with Application to the Demand for Money " *Oxford Bulletin of Economics and Statistics*, 52: 169-210.
24. **KHALID H.A. AL-QUDIR**, « The effect of financial Development on the Growth in Saudi Arabia » College of Administrative science, King saud University, Riyadh. Saudi Arabia 2004



25. **Laurence Scialom** " Economie Bancaire" édition la Découverte. PARIS.1991
26. **Levine** " financial development and economic growth". Journal of economic literature vol xxxv (June 1997).
27. **Marc Hay** " Banques et croissance: examen critique et analyse en donnés de panel" papier présenté aux 17<sup>èmes</sup> Journées Internationales d'économie Monétaire et bancaire. LISBONNE, 7,8,et 9 JUIN 2000
28. **McKinnon R.I.**, (1973), "Money and Capital in Economic Development", the Brookings Institution, Washington, DC.
29. **Rabah Arezki, Kirk Hamilton, and Kazim Kazimov**,(2011) Resource Windfalls, Macroeconomic Stability and Growth: The Role of Political Institutions. IMF Working paper WP/11/142.
30. **Robert G. King; Ross Levine** " Finance and Growth: Schumpeter Might be Right" The Quarterly Journal of Economics, Vol. 108, No. 3. (Aug., 1993), pp. 717-737.
31. **Robert merton ,Zvi badie** "Finance" 2 édition Edition française dirigée par christophe thibierge pearson education France 2007.
32. **Robinson, J. (1952)**, "The Generalization of the General Theory in the Rate of Interest and Other Essays", London: Macmillan.
33. **Ross Levine** "*FINANCE AND GROWTH: THEORY AND EVIDENCE*" NATIONAL BUREAU OF ECONOMIC RESEARCH Working Paper 107661050 Massachusetts September 2004
34. **Schumpeter, Joseph A.** (1934) : "The Theory of Economic Development". Translated by Redvers Opie, Cambridge, MA: Harvard University Press.