

# Private and Public Financing Developments and Spur Economic Growth in Light with the 2030 Saudi Arabian Vision. An Empirical Analysis

\*Elhachemi Abedlkader Hacine Gherbi<sup>a</sup>, <sup>a</sup>College of Business Administration, Imam Abdulrahman Bin Faisal University.

\*Corresponding Author Email: [elhachemi2007@yahoo.fr](mailto:elhachemi2007@yahoo.fr)

In this paper, empirical analysis is used to examine the impact of private and public financing developments on Saudi Arabia's economic growth, in line with the 2030 vision, and to describe the causality relationship that exists from 1982 to 2016. Long-run estimations were identified through the Auto Regressive Distributed Lag ARDL model. The results generally indicate that private sector performance is better than the public sector in supporting long run economic growth process in KSA. In addition, total bank claims on the private sector showed a positive and significant effect on GDP and GFCF, while total bank claims on the public sector showed a positive significant effect on GDP and a negative significant impact on GFCF. Furthermore, the results indicate that only bank credit to the private sector has a positive and significant effect on gross fixed capital formation. This study is helpful for policy makers, bankers and investors for formulating future policy. This paper is the first attempt to compare private and public sector performance on supporting long run economic growth in light of Saudi Arabia's 2030 Vision.

**Key words:** *Private, Public, Financing, Growth, Banking, Causality, ARDL.*

## Introduction

In Saudi Arabia, the mediocre price of oil spurred the development of the Vision 2030 reform plan. Saudi authorities committed to the prior year's OPEC deal in 2017 by limiting oil production and introducing major reform initiatives. Thus, in the face of fiscal consolidation attempts, the country made enhancements in medium fiscal outlook at the expense of growth, which largely depends on public spending.

Generally speaking the Vision 2030 of Saudi Arabia was introduced as a method and guidance for the country's economic development, with the primary aim being for the Kingdom to occupy the leading position in entire fields. Vision 2030 makes attempts at determining the general directions, policies, and objectives of the nation.

In the Vision, innovative methods are mentioned for the identification of challenges, seizure of opportunities, adoption of effective planning tools, activation of the private sector, and facilitating the implementation and evaluation of performances. The plan also lays down interim targets for strategic objectives in order to guarantee that a solid platform is set up for the government to take action and for the facilitation of implementation and follow-up of plans at the national level.

Vision 2030 provides a future overview of the significant potential of the financial service sector, with opportunities specifically noted for financial projects to contribute to economic growth, and with additional available opportunities for the sector to leverage (raising capital, commercial financing and payment services). Furthermore, Vision 2030 pinpoints the commitment of the Kingdom to attract foreign direct investment (FDI), with capital markets to be utilized to attract such investment. The financial service sector is deemed to be the driver of economic growth, future growth and the size outcome of the sector will hinge on the ways other economic sectors will develop.

The question arises as to what level of financial development for both the public and private sector, would reflect optimum performance for economic growth towards achieving the 2030 Vision of Saudi Arabia.

Therefore, in the present study, the primary aim is to examine the effect of financial intermediaries' development in light of both sectors (private and public), on the indicators of Saudi Arabia's economic growth, and to determine the suitable sector to improve such growth in line with the 2030 vision.

## Literature Review

### *Financial Development Leads to Growth Theories*

Arguments that advocate the importance of finance in realizing economic growth are encapsulated in the theories proposed in different growth models, including the classical, neo-classical and the endogenous theories. In particular, the Harrod-Domar classical growth model was proposed to examine a closed-economy by assuming that the national savings ratios to national capital output lead to the growth of the gross national product (GNP). This argument is followed by the expansion of new capital stock through investment upon saving a part of the national income of the economy – such new income generated through savings will lead to the growth and development of the economy. Kennedy (1966) extended the Harrod-Domar growth model by applying it to open economies where savings had the same implications. In a related study, Schumpeter's (1911) classical work viewed financial intermediaries to conduct financial services including, savings mobilizations, projects evaluation, risks management, management monitoring and transactions facilitation, to uphold technological innovation and economic growth.

In relation to the above, the mobilization of savings and sustainability of economic growth are both ensured by financial markets and banking intermediation – both also help in the agglomeration of the economic financial resources and bring about risk diversification to individual investment projects, while providing increased investment advantage to savers. This in turn will result in financial savings, instead of retaining only some profitable assets, and it facilitates development of the financial system (Goaied & Sassi, 2010).

According to Levine (1997), the increasing number of studies dedicated to the topic has forced sceptics to keep the notion of financial market and institution development as part of the growth process, rather than limiting their view to the passive reaction of the financial system to the growth and industrialization of the economy. Levine (1997) categorized economic financial functions into five parts, facilitation of trading and hedging, diversification and pool risk, allocation of resources, monitoring management and exerting corporate control, mobilizing savings, and facilitating the goods/services exchange. He continued to explain that capital and technological innovation accumulation affect economic growth and there are ways in which the functions can affect the same. Also, financial systems create a core part of the economy, and as such, a weak financial system will create havoc in long-term economic sustainability, and eventually it will create a financial crisis (Vaithilingam, Nair & Samudram, 2006). Moreover, Levine's (1997) division of financial system functions was followed by his investigation into the two branches through which every financial function may influence economic growth namely, capital accumulation and technological innovation. He stated clearly that consistent growth is affected via financial system functions and rate of capital formation, with the latter being influenced by the

financial system, particularly the changes in the rate of savings or the savings reallocation among various capital generating technologies (Lucas Jr., 1988; Rebelo, 1992). The functions of the financial system also influence the steady state growth through changes in the rate of technology innovation (Romer, 1986).

Furthermore, the financial sector is an engine of growth by supporting two channels of growth (Capital Accumulation, Technological innovation) through:

#### **a. Reducing the Cost of Acquiring Information**

Information acquisition costs and transactions drive financial markets and institutions incentives, while the issues that stem from information and transaction frictions may be mitigated by the financial markets and institutions. In this regard, certain financial contracts, institutions, and markets, encourage different types of costs of information and transactions. Thus, the financial system plays a major function in the amelioration of transaction and information costs while facilitating the allocation of resources via space and time, in a dynamic marketplace (Merton & Bodie, 1995).

#### **b. Facilitating Risk Management**

Risk sharing plays a key role in every financial system and it is often assumed that financial markets can control such function. According to Allen and Gale (1995), temporal risk sharing is the diversified and efficient allocation of risk to wealth/income at a point in time and the associated ownership of shares risks, bonds risks and other financial assets risks consist of a type of risk that people are liable to encounter (Schmidt & Tyrell, 2003).

In the same line of argument, financial markets and institutions may also promote trading, hedging and risk pooling, where two types of risks exist; liquidity and idiosyncratic risk. Liquidity risk is described as the ease and speed associated with the transformation of assets by agents into purchasing power at specific prices. This type of risk increases in the face of uncertainties linked with the transformation of assets into the exchange medium. Contrastingly, hedging and trading idiosyncratic risk is connected to industries, firms, sectors, projects and nations that the financial system caters to (Levine, 1997).

#### **c. Information Production and Dissemination**

Financial intermediaries' incentives are developed by the information acquisition cost as individual savers may not have sufficient time, capacity or the methods to collect and process information in different enterprises, with different managers, in the face of differing economic circumstances (Boyd & Prescott, 1986; Diamond, 1984). Savers have to settle with

investing in activities that have less accurate information and thus, high information cost keeps capital flows to its top value.

Additionally, the rate of technological innovation may be boosted by financial intermediaries via the determination of entrepreneurs of the top opportunities to initiate the production of goods and processes (King & Levine, 1993). Firms' acquisition and dissemination of information may also be influenced by stock markets in that when stock markets expand in size, there are more liquid market participants that are inclined towards obtaining information regarding the firms (Grossman & Miller, 1988; Holmstrom & Tirole, 1993).

#### **d. The Control of Capital**

In order to improve the funds transfer from savers to investors, it is crucial for a financial system to ensure that the fund providers obtain the rewards they deserve (Lopez de Silanes, La Porta, Shleifer & Vishny, 1998). This assurance may not be possible through contracts and thus, potential financiers should monitor and oversee managerial decisions to ensure that the monitoring and influencing role of firm activities are in the hands of certain favourable individuals/mechanisms. Evidently, this mimics equity providers that have a tendency to be inclined towards actual processes of corporate governance (Schmidt & Tyrell, 2003).

#### **e. Mobilizing Savings**

Economic development can be influenced by financial systems working towards pooling individual savings. Optimal savings mobilization can improve resource allocation and maximize technological innovations, while facilitating the accumulation of capital. Hence, the key role of financial systems is to enable the adoption of technologies so that growth can be realized through resource mobilization (Bagehot, 1873; Mc Kinnon, 1973).

In addition to the above, capital assemblage from specific savers are conducted to mobilize investment and to boost access to investments that would save the production processes from being confined to inefficient economic levels (Sirri & Tufano, 1995).

#### **Empirical Analysis**

Empirical studies dedicated to the effects of financial development on economic growth in the context of Saudi Arabia, indicate mixed findings, with some finding positive effects, and others reporting negative effects, while some others indicating the lack of any relationship.

### ***Positive Effects of Financial Development on Economic Growth in KSA***

Several studies in the literature found a positive effect of financial development on economic growth in a Saudi context (e.g., Robert, 1992; Ibrahim, 2013; Hazem & Al-Malkawi, 2014; Farahani & Dastan, 2013; Rihab, Manouba & Gazdar, 2014). On the other hand, other studies found a negative financial development effect on Saudi Arabia's economic growth (e.g., Samy & Ghazouani, 2007; Samargandi & Ghosh, 2014).

Robert (1992), Ibrahim (2013) and Hazem & Al-Malkawi (2014) employed the Saudi case as the sole study sample, whereas Farahani & Dastan (2013) and Rihab, Manouba & Gazdar (2014) adopted panel data of GCC and MENA countries, Saudi Arabia included. In a related study, Robert (1992) revealed that Saudi Arabia's infrastructure investment seemed to have no significant role in the stimulation of private sector investment, but instead, private investors remained sensitive to shorter-run conditions that are formed by the expenditures of the government. Additionally, Ibrahim (2013) revealed that domestic bank credit to the private sector significantly and positively influenced long-run economic growth, and the stock market index positively but insignificantly influenced long-run economic growth in a Saudi context.

In addition to the above-mentioned studies, Hazem & Al-Malkawi (2014) focused on the financial deepening-economic growth relationship in Saudi Arabia, using an ARDL model, for 1970 to 2010. They found a positive and significant relationship between long run M2/GDP (financial deepening) and GDP per capita growth. Meanwhile, Islamic finance resulted in growth in the context of five GCC countries, but no significant relationship was found between conventional financial development and growth (Rihab, Manouba & Gazdar, 2014). In the same vein, Farahani & Dastan (2013) found that long run Islamic bank financing has a positive and significant connection with economic growth and capital accumulation in several Asian countries including Malaysia, Indonesia, Bahrain, UAE, Saudi Arabia, Egypt, Kuwait, Qatar and Yemen.

### ***Negative Effects of Financial Development on Economic Growth***

In Samy & Ghazouani's (2012) and Mahran's (2012) study, the authors revealed a negative effect of financial development on Saudi economic growth. In particular, the former revealed a significant relationship between bank development and economic growth in the negative direction in all 11 MENA countries, including Saudi Arabia. Similarly, the effects of financial development on the oil and non-oil sectors of the economy were distinguished by Fidrmuc and Ghosh (2014), with the help of an ARDL model, they found financial development to have a positive growth effect on the non-oil sector but a negative and insignificant one on the oil-sector. This shows that the financial development/growth

relationship may be different in different resource-dominated economies. On the other hand, Marhan (2012), highlighted a negative effect of financial intermediation in the public sector, measured by real GDP long run estimation in Saudi Arabia, with the help of an ARDL model for four decades (1968-2010). They attributed the results to two factor sets that are connected to leading economic activities in the public sector, the institutional environment characteristics that surround the private sector, and to certain functional and structural characteristics of the financial system that prevented the development.

### ***Demand following for Short-Run and Supply-Leading for Long-Run***

In Saudi Arabia, evidence of demand following causality that existed between financial development and economic growth was reported by several studies (e.g., Ghazi & Trabelsi, 2015; Omri, Daly, Rault & Chaibi, 2015). In the same way, Ghazi & Trabelsi (2015) showed that demand following hypothesis is present in the short-run between financial development and economic growth in the MENA countries for different years spanning from 1960 to 2002.

Moreover, uni-directional causality that ran from financial development to economic growth, was indicated in 12 MENA countries for the period 1990 to 2011 (Omri, Daly, Rault and Omri, Daly, Rault and Chaibi 2015). The authors made use of simultaneous-equation panel data model. Policymakers can make use of such empirical insights to develop sound economic policies for the sustenance of economic development and the enhancement of the quality of the market environment.

### ***Supply Leading***

Some studies in literature advocate supply leading causality findings and these include Mansur & Madani (2009), Ghazi & Trabelsi (2015), and Hazem & Al-Malkawi (2014). In particular, the causality issue between financial development and economic growth was examined by Ghazi & Trabelsi (2015) in the context of MENA countries for different years, ranging from 1960 to 2002. Their findings supported supply following hypothesis in the long-run. Meanwhile, the direction of causation between financial development and economic growth is supply-leading as opposed to demand-following at the early development stage in Saudi Arabia (Mansur & Madani, 2009). A supply leading hypothesis was also revealed by Hazem & Al-Malkawi (2014) between financial intermediaries' sector, as gauged through the monetization ratio (M2/GDP) and Saudi economic growth.

### ***No Causality***

The causality direction between financial development and economic growth in the context of MENA countries was examined by Muhsin, Saban & Agir (2011) for the period spanning

1980 to 2007. Their empirical findings indicated no clear agreement on the causality direction between the two for the entirety of the financial development measurements, with the findings not supporting country-specificity.

### Data and Methodology

Because of the lack of empirical findings and research on the relationship between financial banking development systems and growth in the Saudi private and public sector for the period from 1982 to 2016, and the importance of the two sectors in the realization of Saudi Vision 2030, this study was motivated to be conducted.

This study chose Saudi Arabia owing to the importance of transferring experience from an oil leading country to actual growth in the non-oil sector, and this calls for examining the banking sectors role in the public and private sectors for the purpose of promoting growth and identifying the required regulations among the banks. This also concerns the financial activities that policy makers employ for the promotion of non-oil sector growth.

This study acquired data from the World Development Indicators (WDI) of the World Bank and supplemented it with the Open Data portal of Saudi Arabia. The study employed the Autoregressive Distributive Lag (ARDL) model based on the co-integration and Granger-causality tests in order to determine the nature and direction of the relationship between Bank Claims on Public Sectors (BCPs), Bank Claims on Private Sectors (PCPVs) and Economic Growth (EG) in Saudi Arabia, employing data for the years from 1982 to 2016. Accordingly, the specifications of the econometric model are as follows;

$$EG_i = \alpha_0 + \alpha_{11}BCPVs_i + \alpha_{12}BCPs_i + u_i \dots\dots\dots 1.1$$

As suggested by Beck and Levine (2004), the Bank Credit to Public Sector Enterprises (bcpls), Government Bonds (gbpls), and Total Bank Claims on Public Sector (tcpls) were proxies of Bank Claims on Public Sector (BCPVs). Meanwhile, Bank Credit (bcpvs), Investment in Private Securities (ipvs) and Total Bank Claims on Private Sector (tbcps) were adopted as proxies of Bank Claims on Private sector as suggested by Beck and Levine (2004). Moreover, economic growth was proxied by Gross Domestic Product (gpd) and Gross Fixed Capital Formation (gfcf) (Yusof & Bahlous, 2013; Goaid & Sassi, 2010), with  $u$  representing error terms and  $\alpha_0, \alpha_{11}$  and  $\alpha_{12}$  representing the model parameters.

Considering the equation above, the long-run corruption-aid model specifications are as follows:

$$\ln(gdp)_t = \alpha_1 + \ln(tbcps)_t + \ln(tcpls)_t + \varepsilon_i \quad 3.2$$

$$\ln(gf cf)_t = \alpha_1 + \ln(tcpls)_t + \ln(tcpls)_t + \varepsilon_i \quad 3.3$$

$$\ln(gf cf)_t = \alpha_1 + \ln(bcpls)_t + \ln(gbpls)_t + \ln(bcpvs)_t + \ln(ipvs)_t + \varepsilon_i \quad 3.4$$

Notably, all the variable measurements take on the natural form procedure terms with the presence of long run relationships identified through the variables using a bounds testing procedure (Pesaran & Pesaran, 1997). This procedure constitutes the first stage of ARDL co-integration method and is based on the F-test or Wald-statistics. Hence, this study conducted a joint-significance test that indicated no co-integration ( $\alpha_0, \alpha_{11}$  and  $\alpha_{12}$ ).

In addition, the conducted f-test in the bound test found a non-standard distribution at a distinct significant level, with two critical values bands calculated as established by Pesaran and Pesaran (1997). While the lower-band views the entire variables to be I(0), the upper band views the variables to be I(1). In this regard, the presence of co-integration is validated when the calculated f-statistic is greater compared to the upper-critical value. But if the f-statistics fall between the two values critical bands, then the test is said to be inconclusive. If it is lower than the critical value, then there is no co-integration. Accordingly, the following generic equation is utilized;

$$\Delta(gdb)_{t-1} = \alpha_0 + \sum_{i=1}^p \alpha_{1i} \Delta(gdp)_{t-1} + \sum_{i=0}^p \alpha_{2i} \Delta \ln(tcpls)_{t-1} + \sum_{i=0}^p \alpha_{3i} \Delta \ln(tcpls)_{t-1} + \beta_1(gdp)_{t-1} + \beta_2 \ln(tcpls)_{t-1} + \beta_3 \ln(tcpls)_{t-1} + \mu_i$$

.....3.5

The Granger-causality test is the primary test used to determine the short and long-run relationship among the variables and it is carried out through the specification of the proceeding equation for estimation. It is also deemed to be a composite of short-run and error-correction estimates (ECT-error correction term);

$$\Delta(gdp)_{t-1} = \alpha_0 + \sum_{i=1}^p \alpha_{1i} \Delta(gdp)_{t-1} + \sum_{i=0}^p \alpha_{2i} \Delta \ln(tcpls)_{t-1} + \sum_{i=0}^p \alpha_{3i} \Delta \ln(tcpls)_{t-1} + \theta ECT_{t-1} \dots\dots\dots 3.6$$

$$\Delta(gf cf)_{t-1} = \alpha_0 + \sum_{i=1}^p \alpha_{1i} \Delta(gf cf)_{t-1} + \sum_{i=0}^p \alpha_{2i} \Delta \ln(tcpls)_{t-1} + \sum_{i=0}^p \alpha_{3i} \Delta \ln(tcpls)_{t-1} + \theta ECT_{t-1} \dots\dots\dots 3.7$$

$$\Delta(gf cf)_{t-1} = \alpha_0 + \sum_{i=1}^p \alpha_{1i} \Delta(gf cf)_{t-1} + \sum_{i=0}^p \alpha_{2i} \Delta \ln(bcpls)_{t-1} + \sum_{i=0}^p \alpha_{3i} \Delta \ln(gbpls)_{t-1} + \sum_{i=0}^p \alpha_{4i} \Delta \ln(bcpvs)_{t-1} + \sum_{i=0}^p \alpha_{5i} \Delta \ln(ipvs)_{t-1} + \theta ECT_{t-1} \dots\dots\dots 3.8$$

In the above equation,  $\theta$  denotes the adjustment speed, while ECT denotes the residuals from the estimated co-integration models. Additionally, the Granger causality test was run to identify the short and long-run causality relationship among the variables. This test confirms the dynamic relationship between time-series variables and it has been extensively used in

literature of economics in determining the relationship (direction and magnitude) between two variables. The name of the test was attributed to the pioneering researcher, Granger (1988) who included the concept of co-integration into causality, with co-integrated variables and causal relationships of variables examined in the ECM framework.

Therefore, in this study, the analysis of ARDL involved a three-phase method as laid down by Kouakou (2011), where in the initial phase, the researcher obtained the integration order of the whole variables using the unit root test. This is followed by the second phase, where the co-integration relationship among the variables was examined, using bounds test and in the third and final phase, the Ganger causality test was run to test the variables' causal relationships.

### Results and Empirical Findings

From Table 1, it is evident that some of the variables are at a stationary level, while others were stationary at first difference, ranging in their levels of significance (1, 5 or 10%). Based on the basic ARDL condition, the value is valid if the variables integrations remain in the first difference level (see Table 1). The diagnostic tests showed that in the fourth model, there were no serial correlations among the variables, confirming the presence of functional form and the absence of heteroscedasticity.

**Table 1:** Unit Root Tests

Variables	ADF		DF-GLS		Phillip.P		Kwait-P-S-S	
	Level	First-d	Level	First-d	Level	First-d	Level	First-d
GDP	-1.92	-2.39	-1.49	-4.93***	-	-	-	-
GFCF	-2.98	-2.85	-1.67	-2.03	-0.75	-2.10	2.01**	-
TBCPVS	0.67	-4***	-	-	-	-	-	-
TCPLS	-1.87	-2.95	-0.35	-1.99	-1.79	0.94	0.12*	-
TRADE	-2.14	-2.4	-1.95	-2.43	-2.05	-4.12***	-	-
BCPLS	-3.28*	-5.01***	-	-	-	-	-	-
BCPVS	0.61	4.11***	-	-	-	-	-	-
GBPLS	-4.73***		-	-	-	-	-	-
IPVS	-.14	-4.97***	-	-	-	-	-	-

Note: The null hypothesis assumes no stationarity. The significance levels of \*\*\* denote stationarity at 1% and \*\* denote stationarity at 5%, with L denoting level and FD denoting First Difference.

Models one and two indicate the impact of Total Blank Claims on Public Sector (tblpls) and Total Bank Claims on Private Sector (tbcpvs) proxies for banking activity development on GDP, and GFCF proxy for economic growth in a Saudi context. The bond test result (refer to

Table 2) shows that GDP and GFCF F-statistics exceeded the upper bound of 1%, which indicates that there is 1% significant co-integration relationship among the variables for the two models. Meanwhile, in the third model, which presents the effect of Bank Credit to Public Sector Enterprises (bcpls) and Government Bonds (gbpls), considered as proxies of Bank Claims on Public Sector (BCPVs); Bank Credit (bcpvs) and Investments in Private Securities (ipvs), considered as proxies of Bank Claims on Private Sector; and Gross Fixed Capital Formation (gfcf) as a proxy of Saudi economic growth, the outcomes indicate that there is 1% significant co-integration relationship among the variables.

**Table 2: Bound Test Result**

	Dependent Variable	F-statistics	I(0) (1%)	I(1) (1%)	I(0) (5%)	I(1) (5%)	I(0) (10%)	I(1) (10%)
Model 01	<b>GDP</b>	11.19** *	3.65	4.66	2.79	3.67	2.37	3.2
Model 02	<b>GFCF</b>	13.54** *	3.65	4.66	2.79	3.67	2.37	3.2
Model 03	<b>GFCF</b>	5.54***	3.29	4.37	2.56	3.49	2.2	3.09

In the above table, \*, \*\* and \*\*\* denotes 10%, 5% and 1% level of significance respectively. The null hypothesis assumes no co-integration and the critical values were obtained from Pesaran and Pesaran (2001).

The results indicate the presence of a long-run equilibrium relationship between bank claims on public and private sectors, and the indicators of economic growth. The following equations can represent the study models.

**Model 01:**

$$GDP=106733*** + 1.034 TBCPVS*** + 0.46 TCPLS* + 0.78TRADE***..... (09)$$

**Model 02:**

$$GFCF=25797.69*** + 0.33 TBCPVS*** - 0.14 TCPLS*** + 0.14 TRADE***... (10)$$

**Model 03:**

$$GFCF=120680.9** + 0.37 BCPVS*** + 3.42 IPVS - 1.79 BCPLS - 0.13 GBPLS ..(11)$$

From the above, equations, \*, \*\* and \*\*\* denote 10%, 5% and 1% significance levels respectively.

**Table 3:** Diagnostic test of Model 01, 02 and 03 long-run equilibrium models

Test Statistic	Model 01	Model 02	Model 03
A: Normality (Probability)	0.55>0.1	0.54>0.1	0.52>0.1
B: Serial Correlation (Probability F)	0.46>0.1 (B-G)	0.44>0.1 (B-G)	0.8>0.1 (B-G)
C: Heteroscedasticity (Probability F)	0.50>0.1 (B-P-G)	0.8>0.1 (Harvey)	0.54>0.1 (B-P-G)

From the above table, the Lagrange multiplier tests are distributed as chi-squared variates having degrees of freedom indicated within brackets. The first figures of F-test within the brackets represent the degrees of freedom. With regards to the null hypothesis of the two tests, there is no serial correlation, correct functional form and homoscedasticity.

The preceding long-run equilibrium (Equation 9) shows that for every 1 million RS increase on Bank Claims on Private Sector, GDP is assumed to increase by 1.034 million RS, at the level of significance of 1%. Also, for every 1 million RS increase on Bank Claims on Public Sector, there is an expected increase of GDP by 0.46 million RS, at the level of significance of 10%, indicating a higher direct contribution of the private sector, as compared to the public sector, when it comes to economic recovery.

In equation 10 (refer to Model 2), the long-run estimation shows that Total Bank Claims on Private Sector, positively and significantly affected Gross Fixed Capital Formation at the level of significance of 1%, and it is expected that for every 1 million RS increase in Bank Claims in Private sector, GFCF will increase by 0.33 million RS. Meanwhile, in the Total Bank Claims on Public Sector regression, the negative sign shows a contrasting result to the theory with the significance level of 1%. In particular, with every 1 million RS increase in TBCPs, it is expected that GFCF will decrease by 0.14 million RS.

In model 3, (refer to equation 11), a detailed long-run impact of Bank Claims on Public Sector (Bank Credit to Public Sector Enterprises and Government Bonds) as well as Bank Claims on Private Sector (Bank Credit and Investments in Private Securities) on Gross Fixed Capital Formation (proxy for economic growth) in Saudi Arabia are presented. The results showed Bank Credit to Private Sector and Investments in Private Securities to have a positive impact on GFCF, with only Bank Credit to Private Sector having a significant effect at the 1% significance level. Notably, for every 1 million RS increase in Bank Credit to Private Sector, there will be an expected increase of 0.37 million RS in GFCF. Moreover, Bank Claims on Public Sector in light of Bank Credit to Public Sector Enterprises and Government bonds, was found to have an insignificant impact on GFCF in a Saudi contextual long-run estimation.

Table 3 presents the diagnostics tests results, and from the table, it is clear that there are normal distributed estimates, with no heteroscedasticity or serial correlation. Models 01, 02 and 03 obtained the following lag order respective (3, 3, 3, 3), (1, 2, 0, 1) and (3, 3, 1, 3, 0) on the basis of the Akaike Information Criterion.

**Table 4:** Summary of BCPVS, IPVS, BCPLS, GBPLS, TBCPVS, TCPLS, GDP and GFCF Results on Granger-causality Tests

Variable	Causality Hypothesis Exist	
<b>BCPVS</b>	→	GFCF
GFCF	→	<b>BCPVS</b>
} → Bi-directional		
<b>IPVS</b>	→	GFCF
GFCF	→	<b>IPVS</b>
} → Bi-directional		
<b>BCPLS</b>	↗	GFCF
GFCF	↗	<b>BCPLS</b>
} → No-causality		
<b>GBPLS</b>	→	GFCF
GFCF	→	<b>GBPLS</b>
} → Bi-directional		
<b>TBCPVS</b>	→	GFCF
GFCF	→	<b>TBCPVS</b>
} → Bi-directional		
<b>TBCPLS</b>	↗	GFCF
GFCF	→	<b>TBCPLS</b>
} → Demand Following		
<b>TBCPVS</b>	→	GDP
GDP	→	<b>TBCPVS</b>
} → Bi-directional		
<b>TBCPLS</b>	→	GDP
GDP	↗	<b>TBCPLS</b>
} → Supply Leading		

The Granger Causality test results for the Bank Claim on both Private and Public Sectors and the indicators of economic growth are tabulated in Table 4. The causality relationship between Total Bank Claims on Private Sector (tbcvps) and the Saudi economic growth indicators (GDP and GFCF) showed the presence of bi-directional causality. On the other hand, the Total Bank Claims on Public Sector (tbcpls) indicates supply-leading (GDP) and demand following (GFCF). There is bi-directional causality hypothesis between GFCF and

Bank Claim indicators including, bank credit to private sector (bcpvs), investments in private securities (ipvs) and government bonds (gbpls), with no presence of causality with bank credit to public sector enterprises (bcpls).

## Discussion

The obtained results generally reveal that in the long-run private sector performance is superior to the public sector. Also, total bank claims on private sector showed better performance to that of the total bank claims on public sector on GDP and GFCF as indicated by the net investment (net amount of fixed capital accumulation) in a Saudi context. This shows that the financial development-growth relationship may be different in economies that are dominated by specific resources (Samargandi & Ghosh, 2014). In this regard, the infrastructure investment of Saudi Arabia does not appear to play a key role in the stimulation of the investments in the private sector. Rather, the private investors seem to be more sensitive in shorter run-current conditions that stem from the expenditures of government. Added to this, the findings in a Saudi context may be attributed to two sets of factors that relate to the economic activities of the public sector, the characteristics of the institutional environment that is prevailing in the private sector, and the functional and structural characteristics of the financial system that prevented its development (Mahran, 2012). This all depends on the economic ability to mobilize financial resources and to ensure that people have access to the productive assets for efficient investment.

The above process represents a summary of the financial institutions role as a financial intermediary and as a growth driver, in that they mobilize savings and allocate them to the top activities that promote productivity and growth. The primary argument being that higher financial intermediation results in greater productivity, and in turn, greater national or per capita income. According to Samy and Ghazouani (2012), more needs to be done in order to support the institutional environment and enhance the banking sector's functioning in the context of MENA countries.

Moreover, from the results, it appears that Bank Claims on Private Sector (tbcpvs) in light of Bank Credit (bcpvs) and Investments in Private Securities (ipvs) reflects a positive contribution to Gross Fixed Capital Formation (GFCF). This points to Saudi's net increase in physical assets (investments minus disposals), which is consistent with Ibrahim's (2013) findings. In the same vein, Rihab, Manouba & Gazdar (2014) and Farahani & Dastan (2013) also revealed support for the assumption that Islamic finance has brought about growth in five GCC countries, but no significant relationship was found between conventional financial development and growth. The findings highlight the requirement to precipitate the financial reformation of Islamic finance that have been introduced in the past decade and to enhance

the efficiency of the Islamic financial system of countries in order to boost their savings and investments and ultimately, the long-term growth of their economy.

On the whole, the results showed that Bank Claims on Private Sector in light of Bank Credit and Investments in Private Securities and Government Bonds Granger cause growth in the economy (GDP and GFCF). This supported a bi-directional causality between Bank Claims on Private Sector Indicators and Economic Growth Indicators in a Saudi context.

In relation to the above, prior studies (e.g., Mansur & Madani, 2009; Ghazi & Trabelshi, 2015; Hazem & Al-Malkawi, 2014) supported a supply-leading hypothesis between the two variables, clearly indicating that policy implications for proactive growth and reformation of the financial sector can improve the growth of the economy in a developing nation, like Saudi Arabia.

Nevertheless, no causality was found between Bank Credit to Public Sector Enterprises and GFCF and demand, but one was found between Total Bank Claims on Public Sector and GDP in the same context. This result is consistent with that reported by Muhsin, Saban & Agir (2010), which showed no consensus on the causality direction between financial development and economic growth for the all financial development indicators in MENA countries. This result may be attributed to the co-integration methods or Granger causality tests that support the causality hypothesis from the real to the financial sector (Ghazi & Trabelsi, 2015).

In the same way, little support was found to support the notion that the finance sector is a leading sector in determining long-run growth in the MENA region and the findings may be related to four reasons; the financial sector's strict oversight in these countries for long periods, the delayed financial reforms implementation in these countries, the issues in reform implementation that have often cropped up such as, the non-performance of loans, and the high costs of information and transactions that act as barriers to the promotion of resources and financial deepening in the midst of financial reforms.

## **Conclusion**

To conclude, the preceding analysis results showed that the private sector has a positive significant role, as compared to the public sector, in the development of the economy in light of Gross Domestic Product (GDP) and Gross Fixed Capital Formation (net investment), which represent the net amount of fixed capital accumulation. These findings may be attributed to two sets of factors that are connected to the dominating economic activities of the public sector, the institutional environment characteristics that surround the private sector,

and some functional and structural characteristics of the financial system that have prevented its development as argued by Mahran (2012).

The results are indicative of the fact that the right 2030 Vision strategy has to be based on the private sector (over 70%), with the minimization of the role of financial lending to the public sector. The findings also have policy implications in the form of the proactive policy of growth and reform in the financial sector that will improve the growth of the economy in Saudi Arabia, as a developing country (Mansur & Madani, 2009).

It is suggested that constant and consistent support should be provided to the institutional environment and for the enhancement of the Saudi public sector. Policy implications also reflect that domestic financial reforms should be considered prior to the liberalization of the financial market, so that the private sector may be supported. This is a challenging task but from a policy sequencing view, it pays to reform the trade regime and develop the fiscal policy prior to capital account liberalization. In other words, reforms should begin in the domestic economy prior to welcoming the participation of foreign entities. In Rihab, Manouba, Tunisia & Gazdar's (2014) and Farahani & Dastan's (2013) study, the authors found Islamic financial institutions to outperform conventional financial institutions in the promotion of the growth of Saudi Arabia. Therefore, there is a need to precipitate the establishment of financial reforms for Islamic finance, which the Saudi government has launched in the last decade, and a need to enhance the country's Islamic financial system in the hopes of stimulating investments and savings, and ultimately, the long-term growth of the economy. In sum, the study shows that the 2030 Vision objectives of Saudi Arabia support the dominating role of the private sector (70%) in the country's economic activities but reforms are needed for the public sector in order to contribute to the country's growth. Reforms are also needed to establish the country's Islamic financial sector to promote the country's achievement of the 2030 Vision.

## REFERENCES

- Abidi, N., Errais, E., Duplay, J., Berez, A., Jrad, A., Schäfer, G., ... & Trabelsi-Ayadi, M. (2015). Treatment of dye-containing effluent by natural clay. *Journal of cleaner production*, 86, 432-440.
- Allen, F., & Gale, D. (1995). A welfare comparison of intermediaries and financial markets in Germany and the US. *European economic review*, 39(2), 179-209.
- Bagehot, W. (1873). *Lombard Street: A description of the money market*. London: HS King.
- Beck, T., & Levine, R. (2004). Stock markets, banks, and growth: Panel evidence. *Journal of Banking & Finance*, 28(3), 423-442.
- Boyd, J. H., & Prescott, E. C. (1986). Financial intermediary-coalitions. *Journal of Economic theory*, 38(2), 211-232.
- Crane, D. B., Froot, K. A., Mason, S. P., Perold, A., Merton, R. C., Bodie, Z., ... & Tufano, P. (1995). The global financial system: A functional perspective.
- Diamond, D. W. (1984). Financial intermediation and delegated monitoring. *The review of economic studies*, 51(3), 393-414.
- Easterly, W., & Levine, R. (1997). Africa's growth tragedy: policies and ethnic divisions. *The quarterly journal of economics*, 112(4), 1203-1250.
- Goaied, M., & Sassi, S. (2010). Financial development and economic growth in the MENA region: What about Islamic banking development. Institut des Hautes Etudes Commerciales, Carthage, 1-23.
- Grassa, R., & Gazdar, K. (2014). Financial development and economic growth in GCC countries: A comparative study between Islamic and conventional finance. *International Journal of Social Economics*, 41(6), 493-514.
- Grossman, S. J., & Miller, M. H. (1988). Liquidity and market structure. *the Journal of Finance*, 43(3), 617-633.
- Gudarzi Farahani, Y., & Dastan, M. (2013). Analysis of Islamic banks' financing and economic growth: a panel cointegration approach. *International Journal of Islamic and Middle Eastern Finance and Management*, 6(2), 156-172.
- Holmström, B., & Tirole, J. (1993). Market liquidity and performance monitoring. *Journal of Political Economy*, 101(4), 678-709.

- Ibrahim, M. A. (2013). Financial development and economic growth in Saudi Arabian economy. *Applied Econometrics and International Development*, 13(1), 133-144.
- Kar, M., Nazlıoğlu, Ş., & Ağır, H. (2011). Financial development and economic growth nexus in the MENA countries: Bootstrap panel granger causality analysis. *Economic modelling*, 28(1-2), 685-693.
- Kennedy, j. W., baxley, w. A., figley, m. M., dodge, h. T., & blackmon, j. R. (1966). Quantitative angiocardiology: I. The normal left ventricle in man. *Circulation*, 34(2), 272-278.
- King, R. G., & Levine, R. (1993). Finance and growth: Schumpeter might be right. *The quarterly journal of economics*, 108(3), 717-737.
- King, R. G., & Levine, R. (1993). Financial intermediation and economic development. *Capital markets and financial intermediation*, 156-189.
- Lee, K., Pesaran, M. H., & Smith, R. (1997). Growth and convergence in a multi-country empirical stochastic Solow model. *Journal of applied Econometrics*, 12(4), 357-392.
- Looney, R. E. (1992). Real or illusory growth in an oil-based economy: Government expenditures and private sector investment in Saudi Arabia. *World Development*, 20(9), 1367-1375.
- Lucas Jr, R. E. (1988). On the mechanics of economic development. *Journal of monetary economics*, 22(1), 3-42.
- Mahran, H. A. (2012). Financial intermediation and economic growth in Saudi Arabia: An empirical analysis, 1968-2010. *Modern Economy*, 3(05), 626.
- Marashdeh, H. A., & Al-Malkawi, H. A. N. (2014). Financial deepening and economic growth in Saudi Arabia. *Journal of Emerging Market Finance*, 13(2), 139-154.
- Masih, M., Al-Elg, A., & Madani, H. (2009). Causality between financial development and economic growth: an application of vector error correction and variance decomposition methods to Saudi Arabia. *Applied Economics*, 41(13), 1691-1699.
- Merton, R. C., & Bodie, Z. (1995). A conceptual framework for analyzing the financial system. *The global financial system: A functional perspective*, 3-31.
- Mohd. Yusof, R., & Bahlous, M. (2013). Islamic banking and economic growth in GCC & East Asia countries: A panel cointegration analysis. *Journal of Islamic Accounting and Business Research*, 4(2), 151-172.



- Naceur, S. B., & Ghazouani, S. (2007). Stock markets, banks, and economic growth: Empirical evidence from the MENA region. *Research in International Business and Finance*, 21(2), 297-315.
- Omri, A., Daly, S., Rault, C., & Chaibi, A. (2015). Financial development, environmental quality, trade and economic growth: What causes what in MENA countries. *Energy Economics*, 48, 242-252.
- Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of applied econometrics*, 16(3), 289-326.
- Porta, R. L., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. (1998). Law and finance. *Journal of political economy*, 106(6), 1113-1155.
- Rebelo, S. (1992, July). Growth in open economies. In *Carnegie-Rochester Conference Series on Public Policy* (Vol. 36, pp. 5-46). North-Holland.
- Romer, P. M. (1986). Increasing returns and long-run growth. *Journal of political economy*, 94(5), 1002-1037.
- Ronald I. McKinnon. (1973). *Money and capital in economic development*. Brookings Institution Press.
- Samargandi, N., Fidrmuc, J., & Ghosh, S. (2014). Financial development and economic growth in an oil-rich economy: The case of Saudi Arabia. *Economic Modelling*, 43, 267-278.
- Schmidt, R. H., & Tyrell, M. (2003). *What constitutes a financial system in general and the German financial system in particular?* (No. 111). Working Paper Series: Finance & Accounting.
- Schmidt, R. H., & Tyrell, M. (2003). *What constitutes a financial system in general and the German financial system in particular?* (No. 111). Working Paper Series: Finance & Accounting.
- Vaithilingam, S., Nair, M., & Samudram, M. (2006). Key drivers for soundness of the banking sector: lessons for developing countries. *Journal of Global Business and Technology*, 2(1), 1.