Financial Development and Economic Growth in Saudi Arabia

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Abstract
The crucial role of financial instruments and institutions in the context of economic development is that of facilitating and encouraging both savings and investment. Increasing financial intermediation in the economy creates better opportunities for economic development and growth. In Saudi Arabia the increase in oil revenues during 1970's and early 1980's made it possible for the government to fund its huge development projects and to subsidize the private sector financial needs. This also made it possible to reorganize and develop the private sector financial system. During the past four decades the financial system in Saudi Arabia went through tremendous changes and the purpose of the paper is to examine the impact of this change and development on the growth and development of the economy.

Introduction:

Financial development did not receive very much attention as a factor and important instrument in promoting economic growth and development. This is basically due to the belief that finance is only a supporting mechanism and would presumably follow when the demand for it arises in the real sectors of the economy. Even though the impact of financial development on economic growth had been recognized in early studies of economic development (Tobin, 1965; Patrick, 1966; Gurley and Shaw, 1967; McKinnon, 1973; and Shaw, 1973), lately this relationship became an important issue and a subject of debate (King and Levine, 1993; Pagano, 1993; Ireland, 1994; Demetriades and Hussein, 1996; Levine and Zerove, 1998; and Ranjan and Zingalis, 1998).

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Financial factors influence economic development by the way in which savings become available and the intermediation of these savings to investment opportunities that bring the highest return. Thus, creation and development of financial institutions lead to a positive relationship between financial intermediation and economic growth. That is financial intermediaries play a central role in allocating capital to its best possible use. If this is the case, then underdeveloped or poorly functioning financial system would become a constraint on economic growth and development. Moreover, several studies have attempted to establish whether financial deepening leads to improved growth and performance of the economy. Other studies have focused on identifying the channels of transmission from financial intermediation to growth of the economy and emphasized the roles played by financial liberalization in increasing savings and hence, investment (Fry, 1988).

The Saudi Arabian economy depends on oil as the main source of income for the government, which uses it for domestic expenditure and the change in this source of income directly and indirectly would affect the output of the other sectors. Because of the drop and fluctuations in oil prices in recent years there is uncertainty about the government's ability to maintain its past level of expenditure and economic policies. This uncertainty could have an adverse impact on the private sector decisions on future investment spending and in turn on the growth and stability of the economy. In fact most of the economic growth witnessed in Saudi Arabia was a result of the government's spending from oil revenues. With reduced oil revenues, however, there is an increased concern that the government will not be able to assure adequate liquidity to finance steady expansions in the activities of the private sector.

Oil revenues increased as a result of the increase in oil prices in 1973 which peaked in 1982 and started to decline since then and it seems unlikely that these revenues will increase sharply in the future. As a result the government experienced budget deficit and a large portion of this deficit was financed by drawing on its foreign

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investment and reserves and then by borrowing from domestic financial resources. With increased oil revenues during the 1970's and early1980's there was little need to wary about adequate liquidity for funding various private sector activities since much of the this financing has been assumed by the specialized credit agencies with low or no cost to the borrowers because these loans are subsidized by the government.

Before 1952 (the establishment of the Saudi Arabian Monetary Agency (SAMA) the monetary and financial system was primitive and simple. In fact the country did not even have a currency of its own (Young, 1983). Since then the monetary system represented by the financial and capital markets have undergone dramatic changes, which expanded the size of the financial sector significantly and increased domestic financial intermediation. As a result the private sector has the opportunities to expand its investment frontiers by borrowing from these institutions. Nevertheless, Saudi Arabia has experienced financial development during the past three decades, but it has by no means achieved an advanced stage of financial development since its financial system has not realized its full potential. Moreover, the financial system remains inadequate with respect to the kind and number of financial institutions and instruments, to the extent of the development of the economy, and the integration of the financial and capital markets due to the underdevelopment of the stock market.

Because of the drop in oil revenues the government can no longer finance the specialized credit agencies and the private financial system would be called upon to play a more active role in increasing domestic savings and in engaging in medium and long term lending activities, "thus contributing more heavily to the growth and development of the economy." (Fifth development Plan, 1990). Thus, the aim of the paper is to investigate the impact and the relationship between indicators of financial deepening, measured by the growth of the monetary and financial system, and economic growth and development of the Saudi Arabian non oil private sector proxied by

Real non-oil private sector gross domestic product (GDP). This is because the private sector is the most beneficiary from the development of the financial system.

Nature of the Saudi Arabian Economy:

Saudi Arabian economy depended heavily and still depends on the production and export of oil as the main source of income. Oil is a national wealth extracted and utilized by the government in the public interest. Thus, revenues accruing from sale of oil goes to the national treasury to finance government expenditures. It is mainly through these expenditures, among other channels, that oil affects economic development in Saudi Arabia and gives the government a dominant influence on the performance of the economy. Given the primitive state of the Saudi Arabian economy in general and the situation of the private sector in particular in the early stages of the development, the emphasis was put on developing basic infrastructure and expanding social services. Accordingly, the government spent massive amount on infrastructure during 1973-1982 period. The objectives of the government were to increase the participation of the private sector through a structural change in the economy. The government adopted a policy of giving the private sector opportunities to undertake many tasks in the economy. Thus, to facilitate a strong and more diversified private sector, the government helped to create a positive environment and established new institutions to further this sector's interest. At the same time it made available long term loans at low or free interest rates. The primary vehicle for carrying out the government support for the private sector financial system development in Saudi Arabia are the specialized credit agencies. In short the government policy was to encourage the private sector to take an active role in the economy's investment and economic growth and development.

Development of the Financial System in Saudi Arabia:

Before 1952 the monetary and financial system in Saudi Arabia was primitive and simple. According to Young (1983) there was no

central bank or any other institution, private or public, discharging the function of a central bank. The country did not have a currency and it was dependent on hybrid of foreign metallic currencies. Thus, the need for advanced financial system was recognized. The increase in oil prices during the 1970's and the huge projects and economic development in the country which took place during the period of the 1970's and early 1980's also made it important to speed up the development of the financial system and to establish a capital market.

The Saudi Arabian financial system has undergone tremendous changes beginning with the establishment of the Saudi Arabian Monetary Agency (SAMA) in 1952. The increased monetization of the economy, the gradual adaptation of banking habits by the citizens of the country, and the actual institutionalization of commercial banking 'banking law' in 1965, the establishment of the specialized credit agencies and institutions, the nationalization 'Saudizaion' of commercial banks in the 1970's, and formally establishing and regulating stock market in the 1980's were the major developments in the monetary and financial system and capital markets. The following table shows the rapid and dramatic increase in domestic liquidity between 1965-1996 in Saudi Riyals (SR).

Domestic liquidity (Billion SR)

1965	1970	1975	1980	1985	1990	1996
1.8	3.15	17.97	83.39	148.82	188.44	258.50

Source: SAMA Reports.

Saudi Arabian Monetary Agency (SAMA):

SAMA was established in 1952 and its activities fall within four broad categories: the issue of coins and notes, serving as a banker to the government, controlling financial institutions, and conducting monetary policy. In addition to the major function of a central bank, SAMA provides other services to the banking sector and the economy. For instance it provides a clearing service for banks, it provides a banking training center, and it publishes series of annual reports.

Young (1983,133) reported that "The desire of the Saudi Arabian government to create a new institution to handle monetary affairs, to act as its fiscal agent and for financial and economic research shows an appreciation of the important part that such an institution can play in the country's program". Over the past four decades, the responsibilities and power of SAMA have rapidly increased. Today, it serves most if not all of the roles traditionally associated with central banks.

Commercial Banks:

The history of commercial banking in Saudi Arabia started in 1926 with the establishment of the first branch of a foreign bank. By 1975 commercial banks consisted of two national banks and ten foreign owned banks. The two national banks at that time dominated the banking sector since the government did not allow foreign banks to open additional branches in the country. With the increase in the country's wealth, which caused an increase in government spending, and the rapid economic growth and the move toward industrialization, it became clear that banking practices were inadequate. This not only entailed the growth of existing institutions and agencies, but a massive reorganization of the financial system including commercial banks. By 1977 the decision was made to nationalize (Saudize) foreign banks which involved transferring the majority of foreign banks to Saudi Arabian nationals. Such move enabled foreign banks to overcome the restraint placed on them. Now there are twelve banks with more than 1200 branches in the country and as the following table shows by the end of 1996 these banks had deposits of more than 215 billion SR and total assets of more than 357 billion SR.

	1965	1970	1975	1980	1985	1990	1996
Total Assets	1.66	2.93	15.71	73.92	150.25	232.06	357.95
Total Deposits	0.96	1.80	12.69	64.73	137.77	143.66	215.46
Claim on p. Sec	1.02	1.54	6.55	32.65	62.84	65.3	123.55

Sources: SAMA Reports.

Until recently commercial banks in Saudi Arabia have served the business community almost exclusively. They have played a limited role in the domestic economy and they have not engaged in medium or long term lending activities. They provide mainly short term credit to the private sector where over one third of this credit finds its way into trade financing. Services to the household were not advanced, commercial banks have ignored this area of service for a long time. Mostly they served as financial "gap filling". Unable to compete with the cheap finance offered by the specialized credit agencies they have exploited those areas not favored by the government finance or filled the gap for the government loans. Though, the expansion which occurred recently has included some efforts to attract household's funds. The attractiveness of overseas investment has also been strong since the short run alternative for commercial banks in Saudi Arabia is to extend operations in international markets. Thus, openness and absence of sufficient domestic outlets for funds allow them a strong placement of funds abroad. But Euromoney (May 1992, 58) suggested that one difference between now and the past is that the government is very keen for some state or quasi state owned companies to get their finance from the private sector. In the past, to a large extent, they would have been publicly funded. "This development is good for the banks". According to Abdeen and Shook (1984) one of the failures of the Saudi Arabian financial system has been the failure of the commercial banks to become increasingly involved in the country's economic diversification.

Specialized Credit Agencies:

The inability of the existing financial institutions during the rapid growth of the economy to provide long term credit to finance private sector development led the government to start a massive reorganization of the financial sector. This principally came through the creation of new government sponsored financing agencies, reflecting greater public sector participation in financial provision and

a narrow private sector involvement. These specialized credit agencies became the primary vehicles for carrying out government support of private sector financial system development. These agencies have been active in extending credit to the private sector during the last two decades. They received their capital and lending resources primarily from the government and they indirectly and effectively expanded the absorptive capacity of the economy since they were oriented toward injecting credit into the private sector. These credit agencies include: Saudi Industrial Development Fund, Real Estate Development Fund, Saudi Agriculture Bank, and Saudi Credit Bank. As the following table shows these credit agencies have advanced the growth of the private sector and the financial system, but they by no means substitute for the long term growth provided by an effective capital market.

Specialized credit agencies total assets, credit to the private sector and outstanding loans (BSR)

	1976	1980	1985	1990	1996
Total Assets	17.47	92.38	185.40	203.00	227.61
Credit to p. Sec	5.77	22.37	13.79	6.88	2.44
Outstanding Loans	11.88	76.03	163.79	160.4	150.88

Sources: SAMA Reports.

Abdeen an Shook (1984,139) pointed out that "Accomplishing a diversified industrial base in a nation with single resource requires considerable participation of public as well as private investment, and this is the primary objective of these specialized credit agencies. These agencies performed an important economic diversification role during the development plans, following the Islamic principal of granting loans without interest". They concluded that "The result is that the specialized credit agencies effectively became the conduit for government fiscal policy while also complementing the short term credit activities of the commercial banks through their long term financing activities".

Despite the important support the specialized credit agencies contributed to the capital growth the government repeatedly indicated that there is no intention to substitute these agencies for the commercial banking system or capital market.

Stock Market:

Prior to 1985, stock trading was not regulated by the authorities and more often than not, the buyer must reach the seller by his own means (Fifth Development Plan, 1990). However, about 80 stock brokers were informally putting buyers and sellers of stocks in touch. These brokers had no licenses, capital or credential requirements. After al-Manakh crisis in Kuwait in 1982, the lack of regulation to organize and monitor trading activities drove the authorities in Saudi Arabia to take regulatory actions. Thus, stock market in Saudi Arabia was formally regulated in 1985 and compared to industrialized and some developing countries it is a recent development. Only Saudi Arabian nationals are allowed to trade in shares of the Saudi Arabian public companies. Most companies that went public in Saudi Arabia were newly established corporations with large capital requirements and operating history. The earliest publicly traded companies were in the cement and regional electricity industries reflecting the phase of the development in the infrastructure in Saudi Arabia. The biggest jump in the number of publicly traded companies was in the period of 1976-1980 corresponding to a period of economic prosperity and growth in the country. During that period, nineteen new companies were offered to the public. An important feature of these stocks was the fact that the government insisted that these shares be offered at par value as a form of distributing to the public the new acquired economic gains of the country. These floatations resulted in a tremendous shareholders interest in the stock market and a large segment of the population becoming involved in buying and selling shares. Several more stocks were released in the market in 1981 when fifteen new companies in a variety of business were offered to the public. Currently there are about seventy companies with shares traded in the market. These

companies are classified into six categories: Financial, Industrial, Cement, Services, Electricities, and Agriculture sectors.

An important step toward developing the market was taken with the issuance in 1988 of the government development bonds, thereby promoting the potential for both savors and individual investors to increase their participation in the process of the capital market development. By issuing bonds, the government was aiming at achieving two major objectives as stated by SAMA in its 1989 report,

1) to maintain an adequate and normal level of public spending following the sharp decline in oil prices and revenues, by resorting to domestic borrowing to insure additional resources to complete development projects, and 2) to deepen the financial market in the country by creating secure investment instruments of reasonable yield to absorb national savings.

By November 1991, SAMA started issuing Treasury Bills (TB) with maturities of 4, 13, 26, and 52 weeks. The government continues to issue SR 1.5 billion weekly through SAMA. As of now, there is no secondary market for government bonds or TB's. They are sold to commercial banks and semi government agencies. Even though corporate laws allow companies to issue bonds, no corporate bonds are issued by now.

Finance in Economic Growth and Development:

Financial development is characterized by the increasing role of indirect finance and channeling savings to productive investment, hence financial development and liberalization of the financial sector facilitate economic development and growth. The theory of finance in the economy argues that increasing financial intermediation in the economy creates better opportunities for economic development and growth. Increasing financial resources, by providing wide ranges of financial assets and liabilities to the public, brings into contacts a greater number of ultimate borrowers with ultimate lenders, facilitates the flow of inter- and -intra-sectoral savings, distributes risk more evenly on investments, and takes advantages of administrative and

other economies of scale in investing as well as mobilizing savings. The critical role of financial instruments in the context of economic development is that of facilitating and encouraging both saving and investment by providing efficient means for transferring claims over resources from savers (lenders) to investors (borrowers). Goldsmith (1969) argued that the more developed the financial structure, the faster will be the rate of economic development of a country. That is, financial development is perceived here as having a positive impact on economic growth and development. He stressed the connection between "a country's financial superstructure and its real infrastructure" and indicated that financial superstructure of an economy "accelerates economic growth and improves economic performance to the extent that it facilitates the migration of funds to the best user, i.e., to the place in the economic system where the funds will yield the highest social return". (Goldsmith, 1969,400). He further presented data showing a well defined upward secular drift in the ratio of financial institutions' assets to gross national product for both developed and less developed countries for 1860-1963 period. As he notes, though, it is difficult to establish "with confidence the direction of the causal mechanism, i.e., of deciding whether financial factors were responsible for the acceleration of economic development or whether financial development reflected economic growth whose mainsprings must be sought elsewhere". (Goldsmith, 1969, 48). He attempted to measure the degree of institutional maturity in the financial market by using ratio of total financial assets to national wealth. He showed that the higher the financial intermediation ratio (FIR) value, the greater a nation's level of financial development. This and several other instruments have been used to denote the relative dimension of financial structure in different countries over long periods of time in order to identify the association between financial development and real economic growth. (Adelman and Morris, 1968; Cameron, 1972; Patrick,1966; Gurley and Shaw, 1967; Drake,1980;· Ayres,1983).

Studies of the determinants of growth in less developed economies show the growth of the capital stock as being a critical factor in explaining the rate of economic growth and that financial deepening contributes to the accumulation of capital. World Bank Report (1989,29) notes, "As more saving moves through the financial system, financial depth increases. The financial system of higher income countries are usually deeper than those in poor ones. They are also deeper in the most rapidly growing countries than in the slowest growing countries. Faster growth, more investment, and greater financial depth all come partly from higher saving. In its own right, however, greater financial depth also contributes to growth by improving the productivity of investment. Investment productivity is significantly higher in the faster growing countries, which also have deeper financial systems. This suggests a link between financial development and growth". Drake (1980), Porter (1966), and Cameron (1972), indicated that financial development: (1) augments the quantities of real saving and capital formation from any given national income, (2) increases net capital inflow from abroad, (3) raises the productivity of aggregate investment by improving its allocation, (4) improves macroeconomic stabilization, "greater stabilization of the economy through monetary controls is attainable when the banking system is more widespread" (Porter, 1966, 356), (5) banks provide a basic intermediary function between savers and investors, or surplus and deficit spending units, since they are unique in being able to supply liquidity to the economy by creating money. "They are in a position not merely as the custodian of the stock of money but also to increase or decrease the stock. The consequences of this power for society at large can be considerable-and either favorable or unfavorable". (Cameron, 1972, 7), (6) Cameron further suggests that the banking system may function as the provider of entrepreneurial talent and guidance for the economy as a whole. "As potential entrepreneurs, they may set their country on the road to continuing growth, or they may waste its resources in uneconomical or fraudulent activities". (Cameron, 1972, 8). King and Levine (1993, 515) further

suggest that financial systems influence decisions to invest in productivity enhancing activities through two mechanisms: they evaluate productive entrepreneurs and they fund the most promising ones. Financial institutions can provide research, evaluative, and monitoring services more effectively and less expensively than individual investors; they also are better at mobilizing and providing appropriate financing to entrepreneurs than individuals. Overall, the evaluation and sorting of entrepreneurs lower the cost of investing in productivity enhancement and stimulate economic growth. Thus, financial sector distortions can therefore reduce the rate of economic growth. Shaw (1973, 9) suggests that, "Real growth in financial institutions provides more investors with access to borrowing and gives them incentives to save and to accumulate the equity that makes borrowing cheaper". Goldsmith (1969, 47) also documented that "the cost of financing .... is distinctly lower in financially developed than less developed economies". McKinnon (1973) and Shaw (1973) have argued that the credit markets of the developing countries are "fragmented" causing investment funds to be allocated inefficiently. They also argued that the limited development of financial markets, and the high cost of transacting in these markets account for the poor real performance of a variety of less developed economies. In particular, it appears that credit markets imperfections have serious consequences for economic growth. Thus, poor financial institutions drastically reduces the quality of capital formation. Accordingly, firms need credit to finance their operations and investment. Development of the financial sector enables them to seek funds from many sources, if they are credit rationed, it may be the availability of financing rather than cost (interest rate) that has more impact on the investment decisions of these firms. Here, monetary policy and financial development affect investment by changing the availability of credit even without changing the interest rate. This, in contrast to developed countries, one of the principal constraints on investment, hence· economic growth, in developing countries is the quantity, rather than the cost, of financial resources. (McKinnon, 1973; Leff and Sato,

1975; Fry, 1988). In this respect, both public and private financial institutions play an important role by providing the public with a wide range of financial assets in which to save, and a similar range of liabilities through which to make real and financial investments. Furthermore, financial development, particularly from the view point of less developed countries (LDC's) is the creation of the whole range of financial institutions and instruments and by growing sophistication of the monetary and financial system, both in terms of types of financial assets and institutions, including money and capital markets.

Governments in less developed countries for a variety of reasons, intervene to keep the nominal interest rate on loanable funds low. Both McKinnon (1973) and Shaw (1973) argue that the higher the real interest rates the higher will be the amount of savings available in the economy. This, as they suggest, will lead to higher investment spending and consequently, higher rate of economic growth. However, they differ in the mechanism through which the effect of higher real interest rates is transmitted through the economy to bring about higher growth. McKinnon (1973) analyzed an economy with very limited possibility of external finance for the fast majority of investors. He argued that because of the lumpiness of investment projects, self-financed investors may find it convenient to accumulate funds in monetary assets first until they have enough resources to invest in higher yielding investment projects. That is, deposits may serve as a "conduit" for capital formation, making deposits and capital complementary assets. Thus, the availability of deposits with positive real rates of return may encourage both savings and capital accumulation. Shaw (1973) on the other hand, emphasized external rather than internal financing possibilities as the effective constraint on capital formation. Focusing on the role of deposits (intermediated funds) as a source of financing for investment projects, he argued that high deposit rates may stimulate investment by allowing the supply of credit to expand in line with financing needs of the productive sectors of the economy.

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Money Balances in the Production Function:

The rational for the inclusion of money balances in the production function relates, in part, to the increased "economic efficiency" of a monetary economy compared to a barter economy. In a barter economy, labor and capital may be diverted from production to distribution in order to achieve the "double coincidence" of wants required in such a system. With money entering as a medium of exchange this search can be avoided. Therefore, in a monetary economy, productive efficiency may increase as labor and capital services, released from the special tasks required in a barter system, are used in production. (Friedman, 1959; Johnson, 1969; Levhary and Patinkin, 1968; and Baily, 1971). These models have simply included real money balances as an input in the aggregate production function. Or as Johnson (1969) has shown by modifying one assumption of the monetary neoclassical growth model that the very presence of money causes a higher capital intensity than that of a barter economy. However, Moroney (1972) suggests that money can be treated as an economic innovation. He notes that money should not be considered as an ordinary input of the firm's production. It is, as he assumes, a sources of technological change that may be regarded as an external economy for each firm. He indicates that, it is external in the sense that the creation of a generally accepted means of exchange is a matter over which the firm exerts no control. Yet, as he notes, money is clearly an innovation for which the firm is willing to pay. In the regard, if financial deepening and real money balances act as a technological improvement in the production function, as most of the studies indicate, then poorly functioning financial system would become a constraint on the implementation of technological improvement in the production function.

Methodology:

Since many economic time series variables are non-stationary (Nelson and Ploser, 1982), it is necessary to transform the variables into stationary process so that any estimated effects are not attributed

to serial correlation. This is accomplished by following Engle and Granger (1987) and applying a test for unit roots on each variable by using Augmented Dickey-Fuller (ADF) test (Dickey and Fuller, 1979, 1981) which involves regressing a particular variable on a constant, a time trend, the dependent lagged variable, and lags of the differenced series. Since transforming the data into first difference leads to the loss of important long run information, cointegration test is employed to determine whether the set of variables possesses any long run relationships. This test first runs ordinary least squares (OLS) regression of a variable in level form on the levels of the remaining variables, a constant, and a trend variable. Using the estimated residuals from this cointegrated regression, the next stage involves running OLS of the differenced residual term and lags of the differenced residual. (Granger, 1986; Mills, 1990; Hamilton, 1994; and Harris, 1995). ADF test for unit roots is based on the following regression,

$$\Delta y_t = \alpha + \beta y_{t-1} + \sum_{t=1}^{n} \delta \Delta y_{t-1} + \varepsilon_t$$

The null hypothesis of the test is th at y_t is a non-stationary series. Engle and Granger (1987) test for cointegration can be estimated as follows,

$$y_t = \theta x_t + \mu_t$$

Then retrieving the residuals of regression to estimate

$$\Delta \mu_t = a + b \mu_{t-1} + \sum_{t=1}^{n} b_t \Delta \mu_{t-1} + \varepsilon_t$$

Where $\alpha, \beta, \delta,$ and θ are constants, Y and X are time series, ε is serialy uncorrelated residual. The t statistics values are used to test the null hypothesis of no cointegration between Y and X. Since stationarity clarifies the "spurious regression" or "nonsense correlation", problem associated with trending time series data, (Eircsson, 1992), an OLS regression tests based on the differenced variables is conducted to investigate the impact of the independent

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variables on the growth of the real non oil private sector economy, (proxied by GDP), in Saudi Arabia. Sinai and Stockes (1972) using Cobb-Douglas production function, conducted an empirical study on the role of real money balances in the production of goods and services in the United States for the period 1929-1967 and found that real balances, regardless of definition, contributed significantly to output. Khan and Koury (1975), Boys and Kavanough (1975), Khan and Reinhart (1990), A. Khan and Ahmad (1985), Sephton (1988), Nguyen (1986), King and Levine (1993), and Berthelemy and Varoudakis (1995) expanded the work of Sinai and Stokes (1972) by expressing the variables in the forms of growth terms, or by using simultaneous equations, the production function can be written as:

$$Y = Af(K, L, M)$$

$$dY.Y = [A.dY/dK/dK/Y] + [A.dY/dL.L/Y]dL/L + [A.dY/dM.M/Y]dM/M + dA/A$$

For estimation purposes most studies transform the above function (Khan and Reinhart, 1990) to be written as:

$$\Delta Y/Y\text{-}1 = a_0 + a_1 I/Y\text{-}1 + a_2 \Delta L/L\text{-}1 + a_3 \Delta M/M\text{-}1$$

This study uses the following estimation form,

$$\Delta y = \beta_0 + \beta_1 \Delta \ln I + \beta_2 \Delta \ln L + \beta_3 \Delta \ln M$$

Where:

d= partial derivative of the variable,

Δ = change,

ln= natural logarithm,

$\Delta Y/Y\text{-}1$ = growth rate of real private sector non-oil GDP,

$I/Y\text{-}1$ = the ratio of real private sector investment to lagged real private sector non-oil GDP,

$\Delta L/L\text{-}1$ = growth rate of labor force

$\Delta M/M\text{-}1$ = growth rate of real balances,

. Y= the real level of non oil private output, proxied by Gross Domestic Product (GDP),

L= labor, proxied by the growth rate of population,

K= stock of physical capital, and total investment: $I = dK$

I= total real gross investment,

M= real balances, and include:
CC= currency in circulation,
DD= demand deposits,
M1= CC+DD
M2=M1+Time deposits,
M3=M2+Quasi-money,
MB= monetary base,

a_0 = A.dA/A which capture the growth of productivity,

a_1 = A.dY/dK= marginal productivity of capital,

a_2 = A.dY/dL .L/Y = the elasticity of output with respect to labor,

a_3 = A. dY/dM . M/Y = the elasticity of output with respect to money.

It is assumed here that a_1, a_2, a_3, and in turn β_1, β_2, β_3 > 0.

Empirical Result:

The data used in this study are annually data which covers the period 1964-1997. Monetary and financial data are obtained from SAMA reports different issues. Gross Domestic Product (GDP), gross domestic private sector investment and government investment are obtained from Ministry of Planning "Facts and Figures" different issues. Population and labor data are obtained from IMF Financial statistics.

Given the time series natures of the data, a first step was to test for unit roots and the common trend of the variables. Table 1 presents the results of the augmented Dickey-Fuller (ADF) and cointegration tests where the ADF test results reveal that the variables are non-stationary in their level term. With first difference these variables become stationary at I (1).

The results of Engle and Granger (1987) cointegration tests appear in Table 1 reveal also that the variables are not cointegrated which indicate that we can not reject the null hypothesis of no cointegration of the variables at their level terms.

Table (1)
Augmented Dickey-Fuller (ADF)
Unit Roots and Cointegration Tests

ADF Unit Roots Test			Cointegration Test	
Variables	Level	Differenced	Variables	Level
Y	-1.86	-3.89**	Y,PI	-2.86
PI	-2.05	-5.13*	Y,L	-2.77
L	-1.65	-9.07*	Y,CC	-2.72
CC	-1.53	-3.45**	Y,DD	-1.95
DD	-1.82	-4.62*	Y,MI	-2.89
M1	-2.13	-7.06*	Y,M2	-2.15
M2	-2.83	-7.19*	Y,M3	-3.37
M3	-2.38	-5.18*	Y,MB	-2.20
MB	-2.14	-3.90**	Y,PI,L	-1.64
			Y,PI,L,CC	-2.71
			Y,PI,L,DD	-2.43
			Y,PI,L,MI	-2.34
			Y,PI,L,M2	-2.53
			Y,PI,L,M3	-3.40
			Y,PI,L,MB	-2.27

In all tables:
* Significant at 1% level
** Significant at 5% level
*** Significant at 10% level

MacKinnon Critical Values:

ADF		1%	-4.295
		5%	-3.567
		10%	-3.217
Cointegration		1%	-5.066
		5%	-4.219
		10%	-3.816

Since the variables become stationary when first differenced which clarifies the "spurious regression" or "nonsense correlation" problem associated with trending time series data (Ohanian, 1988; Ericsson, 1992; Cuthbertson, 1992), an OLS regression based on the differenced variables was conducted and the results are presented in Table 2. All variables are in log terms. Thus, Table 2 shows the results of the regression of the variables with respect to the growth rate of real non oil private sector GDP (y). These results of the estimations can be analyzed as follows:

Table (2)
Results of Single Equation Regression:
Dependent Variable (Δlny)

Ind. Var.	1	2	3	4	5	6
Constant	0.0303 (1.867)	0.039 (1.766)	0.0022 (1.356)	0.021 (1.209)	0.007 (0.415)	0.039** (2.130)
ΔlnpI	0.190* (2.798)	0.122*** (1.630)	0.060 (1.318)	0.058 (1.240)	0.055 (1.213)	0.072 (1.475)
ΔlnL	0.195 (0.612)	0.181 (0.609)	0.164 (0.467)	0.029 (0.078)	0.108 (0.303)	0.202 (0.515)
ΔlnCC	0.162* (2.97)					
ΔlnDD		0.079*** (1.610)				
ΔlnM1			0.283* (4.405)			
ΔlnM2				0.328* (4.485)		
ΔlnM3					0.472* (6.413)	
ΔlnMB						0.092** (2.37)
Dd. R.seq	0.727	0.708	0.653	0.618	0.637	0.556
F	13.259*	12.130*	15.103*	13.129	18.54*	10.401*
D.W.	2.10	2.02	1.92	1.98	1.89	1.80

*   Significant at 1% level,
**   Significant at 5% level,
*** Significant at 10% level.
Figures in Parentheses are t-statistics values.
Δ is first differenced variables, ln is natural log.
lny=log of real growth of non oil private sector GDP,
lnL=log of labor (domestic labor only),
lnPI=log of real non oil gross private investment,
lnCC=log of real Currency in circulation,
lnDD=log of real demand deposits,
lnm1=log of real M1(M1=CC+DD),
lnm2=log of real M2 (M2=M1+Time deposits),
lnm3=log of real M3 (M3=M2+Quasi Money),
lnMB=log of real monetary base.

1- Since there are no data available on capital stock and depreciation, changes of real private investment are used and the results in Table 2 show that they have the expected signs. They are positively correlated with the growth of real non oil private sector GDP and statistically significant at the 1 percent level. These results indicate that investment contributes to the growth of private sector real output (GDP).

2- The change in log of labor was found to have positive sign, but not significant in some cases, Table 2. This can be explained by the fact that Saudi Arabia has a small population and imported large number of skilled and unskilled labor. These foreign workers were not included in the labor force used in this estimation because these workers come with contracts for a certain time (2 -5 years) with fixed wages. However, this might suggest that the influx of workers and expatriate labor following the oil boom has contributed with domestic labor force to the growth of real non oil private sector GDP during the period of study.

3- It can be seen from Table 2 that the coefficients of real money balances are statistically significant with the expected signs. These results indicate that the change in log of real money balances, as measured by currency in circulation, demand deposits, m1(M1=currency in circulation +demand deposits), m2(M2= M1+time and saving deposits), m3 (M3= M2+ quasi money), and change in the log of monetary base(MB) in Table 2 are highly significant at 1 percent level and that m1, m2 and m3 have the expected signs and significant. This implies that real money balances have significant impact on economic growth as proxied here by the growth of real non oil private sector GDP (y). This implies also a positive impact of financial deepening on economic growth and development. These findings assert that real money balances are an important factor of production · which has been omitted from the production function. Thus, real money balances should be included as arguments in the

production function along with labor and capital. As in most studies the results show that real money balances have positive impact on income, and that income growth is inhanced by this positive effect (Fry, 1988). This indicates for LDC's that real money balances are in fact a factor of production of goods and services. This suggests that, in the context of Goldsmith-Shaw's Hypothesis, financial deepening as measured by the growth in real money balances is positively related to economic growth (as proxied by the growth of real non oil private sector GDP).

Conclusion and Policy Implications:

It was hypothesized in this study that financial development has a positive impact on economic growth and development in Saudi Arabia during the period 1964-1997, and that the role of the financial sector was not a passive one. It is assumed that the financial sector has played an active role in stimulating and accelerating the growth and development of the Saudi Arabian non-oil private sector economy. Empirical tests were conducted to investigate the impact of financial deepening on income, (proxied by real non oil private sector GDP), and the relevant proxies for financial deepening are included as additional arguments in the production function. Real balances were used as proxies for financial deepening. Empirical results appear to favor the contention that financial deepening does have a favorable impact on the growth of real non oil private sector income. The results show real money balances to be highly significant. The overall results seem to support the hypothesis that when there is financial deepening economic growth is enhanced and accelerated. It seems from the results that foreign labor satisfied domestic demand for labor and contributed to the growth of output.

It is possible that repression measures exist which is the case in Saudi Arabia since there is no formal interest rate, however, if a process of financial deepening occurs for the economy, then the likelihood is that the development of the financial system may have a

favorable impact on saving, investment and the growth of real non oil private sector income.

For Saudi Arabia to maintain its economic growth, it is important to have effective monetary tools that will allow the necessary monetary policy to be carried out. In addition, the development of financial and capital markets is crucial for economic development of the country. Furthermore, developed financial and capital markets can mobilize savings and channel them to productive use. However, financial market innovations should be directed to the determinants of growth; in the mean time financial markets and intermediaries have to be intended to improve the productivity of investment. In this respect, financial and capital markets should be designed and directed to meet several specific needs by:

1) Making yields on financial instruments sufficiently attractive to raise new savings and divert savings from the alternatives of real estate investment and capital flight, 2) creating and developing medium and long term debt markets to finance domestic investment, 3) providing access to new equity funds by corporations and to ownership of equity by the public, 4) insuring that investment in socially desirable sectors and infrastructure would receive enough financing 5) assuring that firms are not constrained by the shortage of liquidity. In short efforts should be made to remove constraints which make it difficult for firms in the most productive sectors to obtain financing for desired new investment.

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تطور المنشآت المالية وأثره على النمو الاقتصادي
في المملكة العربية السعودية

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ملخص

إن الشيء الأساسي و المهم فـي دور المنشـآت و الأدوات المـاليـة فـي النمـو الاقتصادي هو أنها تسهل و تساعد على الادخار و الاستثمار . إن زيادة عدد المنشـآت و الأدوات المـالية الوسيطة في الاقتصاد تخلق فرصـاً أحسـن وأكـبر للنمـو و التطـور الاقتصادي. في حالة المملكة العربية السعودية فإن زيادة أسعار البترول و من ثم زيـادة الدخل جعل من السهولة على الحكومة أن تمول التنمية الاقتصادية الضخمة التي تبنتها و في نفس الوقت سد حاجات القطاع الخاص المالية،و في نفس الوقت أيضاً أصبـح مـن الأهمية بمكان إعادة تنظيم القطاع المالي و المصرفي. و لهذا فإنه خلال الأربعة عقـود الماضية تطور النظام النقدي و المصرفي و أسواق الأوراق المالية بشكل كبير ، لهذا فـإن هدف هذه الورقة هو محاولة دراسة تأثير التطور الكبير في أسواق النقد و أسـواق رأس المال على النمو الاقتصادي في المملكة.

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