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# The Impact of Restructuring the Financial System in Saudi Arabia on the Relationship between Commercial Banks' Deposits and Credit to the Private Sector

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**Abstract.** Financial markets and institutions are an important integral part of any modern economy. In fact they constitute an essential vehicle through which different participants in the nonfinancial sector continually interact with one another. Further, commercial banks, as the only major financial institutions in less developed countries (LDCs), serve as intermediaries between savers and investors by supplying them with alternatives to holding wealth. As the economy grows income increases, so do savings and the number of transactions increases, and the need for banks rises. Eventhough there is no disagreement about the importance of the financial system, however, opinions do differ about weather development of the financial system precede that of the economy or whether the latter should come first. Thus, financial resources were assigned a minor, subordinate, role at best, if at all. While the concentration on real variables may be warranted, it has led to the neglect of financial activities in the development process. This neglect of financial aspects of development is especially surprising in view of the key emphasis given to capital formation. It is generally accepted that the first stage of the development process of an economy is the mobilization of savings. The inadequacy of financial capital is usually considered as one of the main impediments to economic growth. The mobilization of financial resources is vital to capital formation. Capital formation involves three interdependent steps. The first step is increasing the volume of real savings so that resources are available for investment purposes. The next step is channeling of savings through a finance and credit mechanism. This step involves allocating these savings to investors. The third step involves the act of investment itself by which resources are used for increasing the capital stock. That is, in the early stages of development well developed financial system should be established to provide needed financing for development. In addition, as the economy grows, the demand for financial services will rise, which will require parallel financial development for economic development.

## Introduction

While commercial banks, like any other firm, are profit maximizers by attaining the maximum profits, they have to meet other objectives. These objectives are soundness, which refers to the ability of the bank to maintain its continued existence even in the event of large and unexpected drains which could be a result of severe economic conditions.

Second, liquidity, which refers to the relative ease with which an asset can be converted into cash. Liquidity offers the bank protection against routine cash drains associated with changes in economic conditions. Thus, the behavior of individual banks and the banking sector as a whole during periods of normal economic conditions is to meet the above objectives by holding different kinds of securities and extending different kinds of loans and credits to their clients [1-3].

For Saudi Arabia, the need for advanced financial system was recognized. The increase in the country's wealth, which caused an in increase in government spending in the 1970's and early 1980's and the rapid growth, and the move towards industrialization, made it clear that existing banking practices were inadequate. This not only entailed the growth of the existing financial institutions and agencies, but a massive reorganization of the financial system including commercial banks.

By 1977 the decision was made to *Saudize* foreign banks which involved transferring the majority of these banks to Saudi Arabian nationals as a joint venture. Such a move enabled foreign banks to overcome some restraint placed on them by 'banking law'. Thus, the Saudi Arabian financial system went through tremendous changes during the past four decades or so.

Given the importance of the financial system, especially commercial banking which went through periods of boom, bust, and restructuring [4;5], to the economy of Saudi Arabia as a developing economy, the aim of the study, by using quarterly data covering the period 1970.1 to 1999.4, is to investigate the behavior of the commercial banking system during the past three decades. This is done, first by examining the time series properties of the individual variables in testing for stationarity of the data. Second, given the significant implication that cointegration has for econometrics analysis, the model pays particular attention to the problem of obtaining adequate representations to the non-stationary data. Then, the paper examines the information content of the cointegrating relationship by examining the short run dynamics implied by the associated vector error correction model (VECM) and to establish the causal relationship between banks deposits and banks credit to the private sector and its implications for both commercial banking management and monetary policy in Saudi Arabia. This is an important issue since commercial banks always complain that constraints put on them by SAMA prevent them from expanding credit to the private sector and participate in the development of the country. Further, it is of utmost significance to explore the extent to which the financial sector can contribute to the economic development. Any evidence of positive contribution by the financial sector, especially commercial banks, will have economic policy implications.

## Literature Overview

Even though the impact of financial development on economic activity and growth had been recognized in early studies of economic development, this relationship lately became

an important issue and a subject of debate. Several studies have attempted to establish whether financial deepening leads to improved growth and performance of the economy. (See for example, Tobin [6]; Patrick [7]; Gurley and Shaw [8]; McKinnon [9]; Shaw [10]; Fry [11]; Park [12] and Rajan [13]). However, 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. (see King and Levine [14]; Fry [11]; Levine [15]; Levine and Zervos [16]; Ranjan and Zingalis [17] and Odedokun [18] among others).

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.

Financial development is characterized by the increasing role of indirect finance and channeling savings to productive investment. Thus it has been argued that increasing financial intermediation in the economy creates better opportunities for economic development and growth. That is, 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 investment, and takes advantages of administrative and other economies of scale in investing as well as mobilizing savings. Thus, 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 of transferring claims over resources from savers (lenders) to investors (borrowers). Therefore, in accordance with Goldsmith [19] argument, the more developed the financial structure, the faster will be the rate of economic development of a country. That is, financial development is perceived as having positive impact on economic growth and development. He stresses the connection between "a country's financial superstructure and its real infrastructure" and suggests 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 [19]. Further, he documents that the cost of financing is lower in financially developed than less developed economies. Shaw [9; 10] also 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."

Moreover, studies of the determinants of growth in developing economies show that growth of capital stock as being critical factor in explaining the rate of economic growth and that financial deepening contributes to the accumulation of capital. Thus, World Bank Report [20] notes: "As more saving moves through the financial system, financial depth increases. The financial systems 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." It also suggests that " 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."

Historically, Gerschenkron [21] considers the banking system to play a key role at certain stages of the industrialization process. He suggests that the contribution of the banking system to capital formation depends on the degree of the economy's backwardness. In a moderately backward economy, banks have an impact on capital formation, while their impact is negligible in the case of extremely backward economy. He argued that changes in banking structure played instrumental roles in stimulating industrial economic growth in France and Germany in the late nineteenth century. Further, Chick and Dow [22] and St. Hill [23] believe that economic development is an historical process of change, also monetary systems too are constantly evolving and the stages of their growth shapes economic possibilities and relationships. Chick and Dow [22] suggest that "... as the banking system of a country, viewed as a unit, progresses through different stages of development, changes in the theory of how that country's economy works become necessary." In their view, economic development takes place in and interact with a changing monetary environment.

Moreover, Pierce [24] suggests that " Banks ... perform essential financial services that no other institution could provide.' Thus, changes in monetary institutions in turn influence both the course of development and the appropriateness of a given theory of development. Theoretically, Patrick [7] suggests that financial institutions and the supply of their services should be created in advance of the demand for them. This provides support to an earlier claim by Lewis [25] when he wrote, "Experience shows that the amount of savings depends partly on how widespread these facilities are; if they are pushed right under the individual's nose ... people save more than if the nearest savings institution is some distance away." Further, researchers like Porter [26]; Cameron [27]; Burkner, [28]; and Drake, [29]; Ketkar and Ketkar, [30]; Beger *et al.*, [31]; and Lucchetti *et al.*, [32] among others) indicate that banking and financial system 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 is attainable when the banking system is more widespread" [26], (5) Banks provide a basic intermediary function between savers and investors, or surplus and deficit spending units, since banks are

unique in being able to supply liquidity to the economy by creating money [27; 33]. "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" [27]. (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" [24; 27]. Banks are a source of both good and bad. They could cause reconing financial instability and often abused their tremendous economic power. Moreover, Jayaratne and Strahan [34] found that removing restrictions on branch banking improved bank lending quality, leading to higher growth rate. Abdi [35] suggests that banks transfer resources from the traditional non-growth-producing sectors to the modern sectors of the economy with higher growth potential. " This growth-induced tendency is often compared to the Schumpeterian concept of 'innovative finance,' where innovative producers gain control of the factor resources through bank intermediation only." Abdi attempted to establish as to whether there is a visible and commanding association between the rate of growth of assets of the commercial banks and real development by comparing the ratios of commercial bank assets to GDP of 30 countries and found that there is a difference in the value of the ratios between developed and developing countries. Further he examined the association between the commercial bank assets and real growth by using rank correlation analysis and found that for the sample as a group, the correlation between the two rankings was 0.8 indicating a high positive association. He points out, however, " .... As economies advance there is no evidence of direct association between banking and real growth. This is expected, however, since the competition for financial intermediation becomes more pronounced as economies developed. He attributes this to the fact that "in developed economies, specialized financial institutions and capital market become more sophisticated, and the prominence of the banks as financial intermediaries declines."

King and Levine [14] also 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. Further, financial institutions can provide research, evaluate and monitor services more effectively and less expensively than individual investors; they also are better 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, King and Levine [14] conclude that financial sector distortion or underdevelopment can therefore reduce the rate of economic growth. Moreover, Levine and Zervos [16] have argued that more developed financial systems promotes or lead economic growth. Well developed financial systems may assist in the mobilization of savings and financial investment by identifying credit worthy borrowers, pooling risk, and reducing transaction cost. They found that "stock market liquidity and banking development are both positively and robustly correlated with contemporaneous and future rates of economic growth." Diamond [36] and Diamond and Ranjan [37] indicate that financial markets and banks are

competing mechanisms that provide investors with liquidity by providing access to their capital, at good terms, on short notice. 'Unlike commercial banks, money market mutual funds do not create liquidity.' Further, there are two dominant paradigms for explaining why banks and other intermediaries are needed. One focuses on the assets side of the intermediary's balance sheet and the other on the liability side, and each produces different implications for economy and for regulation purposes. Banks perform valuable activities on either side of their balance sheets. On the asset side, they make loans to difficult, illiquid borrowers, thus enhancing the flow of credit in the economy. On the liability side, they provide liquidity on demand to depositors.

On the other hand, there are some question raised about the importance of the financial system in promoting economic growth. Robinson [38], Stiglitz [39] and Singh and Weisse [40] propose that economic development creates additional demands for financial services, which in turn brings about a more developed financial sector. Bodman [41] notes that even where saving has risen following financial deregulation, there is little empirical evidence concerning a linkage between saving and domestic investment. Shan *et al.* [42] note that regulation of financial markets in Japan has accommodated the loan requirements of other sectors and reduced the risk of financial crisis in the rapid economic growth of the 1970's McKinnon [43] suggests that the 'dualistic' banking and pricing policies in China that saw government intervention in credit allocation and interest rate controls facilitated the transition from a planned economy to a market system.

## 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 [44] 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 of its own, 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 made it important to speed up the development of the financial system and to establish a modern stock market.

Since then, the Saudi Arabian financial system has undergone tremendous changes beginning with the establishment of the Saudi Arabian Monetary Agency (SAMA) in 1952 [45]. 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 law' in 1966, the establishment of the specialized credit agencies and institutions, the *Saudization* 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.

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, early 1970's, to start a massive reorganization of the financial sector. This principally came through the creation of new government sponsored financing and lending agencies and institutions, reflecting greater public sector participation in financial provision and a narrow private sector involvement. These specialized financial agencies and institutions have been active in extending credit to the private sector during the last four decades or so and are considered to be the primary vehicles for carrying out government support to private sector financial system development. These credit agencies and institutions received their capital and lending resources from the government and they indirectly and effectively expanded the absorptive capacity of the economy since they were in principal oriented towards injecting credit into the private sector. As Abdeen and Shook [46] note: "The result is that the specialized credit agencies effectively became the conduit for government fiscal policy while also complementing the short term credit activities for the commercial banks through their long term financing activities."

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

The history of commercial banking in Saudi Arabia started approximately in 1926 with the establishment of the first branch of a foreign bank (the Netherlands Trading Society, now known as Saudi Dutch 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. Thus, with the increase in the country's wealth, which caused an increase in government spending, and the rapid economic growth and the move towards industrialization, it became clear that banking practices were inadequate. That is the provision of long term credit which became more important in the activity of Saudi Arabian banks, but this was far behind the provision of short term credit which reflected bankers preferences. " Where businesses want long term credit, banks frequently provide revolving loans rather than long term loans [47]. Furthermore, according to El Mallakh [48], banks regarded long term loans as too risky from the point of view of rational banking, and ' would instead give out loans on a short term basis to trading firms which would be able to pay back quickly'. Looney [49] in his analysis related to the situation in Saudi Arabia with the decline in oil revenue and in turn a decline in government revenue and expenditure cautioned that "the current danger in Saudi Arabia is that banks and private sector alike will react in the opposite direction by failing to provide an adequate level of financing, as a consequence of short term signals currently affecting decision making in the Kingdom."

Thus, commercial banks have not fully participated in Saudi Arabia's economic development. This low level of participation resulted in low credit being provided by these banks to domestic market. The minimal success of commercial banks to perform the conventional role played by financial institutions in other economies can be attributed to many reasons that are related to commercial banks themselves, to the household sector, and to SAMA.

Commercial banks in Saudi Arabia have a comparative advantage over other banks abroad since they benefit from the contradiction between their policies of accepting and charging interest and the society's belief in the prohibition in dealing with interest. Further, since commercial banks act as profit maximizers they seem to be very comfortable with this contradiction because they can obtain desired funds at low cost and look for higher return which can be found in foreign investment rather than domestic investment. According to Askari *et al.*, [50], reduced commercial banks participation in domestic business financing while can be attributed to direct government financing, other factors have curtailed domestic lending. Thus, they attribute that to: (1) the uncertainty surrounding the prohibition of interest in Islam; (2) the absence of the rule of law and other factors that create a sound business climate; (3) the absence of reliable audited financial statements; (4) excessive financial regulations; (5) the dearth of profitable business opportunities; and (6) the provision of long term financing by the government.

Moreover, while commercial banks offer primitive services with minimum participation in the economy compared to the benefits they receive, their policies might contradict society's beliefs. People do not accept anything that explicitly contradicts their beliefs, and since dealing with interest is explicitly prohibited in Islam they try to avoid receiving or paying interest. This belief might justify the large share of demand deposits in total banks deposits. Further, many people refrain from becoming involved in commercial banks' investments, which are based on interest, so they utilize their savings in less optimal uses such as real estate, gold, and foreign exchange speculations. This besides the fact that, neither the banking control law of 1966 nor any other law gives SAMA the power to force commercial banks to direct their credit to certain sectors of the economy. Thus, some commercial banks avoided granting loans to certain sectors of the economy, such as agriculture and small investors and businesses with no collateral.

Even though, as Leitghner and Lovell [51]; Brownbridge and Kirkpatrik [52]; Laurence [53]; and Bandiera *et al* [54] have suggested that the various limitations and regulation of commercial banks were in general designed to ensure the safety and soundness of depository institutions, to prevent conflict of interest that could distort credit allocation, and to create incentives for banks to limit risk taking, however, bankers in Saudi Arabia have argued that the controls SAMA put on them have the greatest impact on credit availability and effectively limit economic growth and development in the country. Among these controls come the following articles in the 'baking law'. Article 6 requires that if the deposit liabilities of a bank exceeds 15 times its reserves and its paid up capital, the bank either must

increase its capital and reserves to the prescribed limit, as approved by SAMA, or deposit 50 percent of the excess deposit with SAMA at no interest. Thus, this article was viewed as penalizing a bank's success in drawing deposits. In practice, however, this rule has led the banks to refuse to accept deposits from the public or to transfer excess deposits to offshore units in Bahrain, which reduced banks' ability to loan domestically and caused liquidity constraint in Saudi Arabia in 1980 [4; 47; 55; 56].

While Article 7 calls for the banks to place a statutory deposit of 15 percent of deposit liabilities, interest free, with SAMA, limiting bank credit expansion, banks must, according to Article 13, put aside 25 percent of their profits to build up their reserves. This special reserve accumulates until the amount of the reserve equals a minimum of the bank's paid up capital, providing the banks with the means of increasing their equity base. Within the general requirements of Article 7, the banks find considerable SAMA control over their reserves, since SAMA may vary the deposit requirements between 10 and 17.5 percent, if it considers a change to be in the public interest. Thus, banks' liquidity was kept at a very high level, which meant that a large portion of banks' funds were left unutilized and away from more productive uses. However, the rate for demand deposits was reduced from 15 percent to 7 percent in 1979 and savings and time deposits rates were lowed from 7 percent to 2 percent in 1981. Further, Article 8 prohibits loans to any one individual or organization that exceed 25 percent of bank's reserve and paid up capital, SAMA may in the public interest, and subject to such conditions as it may impose, increase this percentage to up to 50 percent. This percentage put limits on the maximum size of the loans available to a single customer. These provisions are also applicable to letters of credit and guarantees. Bankers in fact have argued forcefully that this Article limits their ability to grant needed loans and credit to the private sector, especially in contract areas where an individual guarantee can easily be in excess of 25 percent of a bank's capital and reserves, which effectively limits economic growth and development. Therefore, they asked that contracting liabilities (such as guarantees) be exempt from this law.

According to SAMA annual report (1965), foreign banks played an important role in the early 1960s since during that period the growth of deposits did not keep up with the demand for credit. Therefore, foreign banks filled the gap by drafts on their offices. In addition foreign banks also provided the expertise and training for the sector, which became available to the Saudi Arabian citizens. However, El Mallakh [48] has suggested that since most of the banks operating in the country in the 1960s were foreign banks, SAMA was concerned that the interest of these banks would not coincide with the interest of the country. This concern led SAMA to seek achieving Saudi Arabian control over commercial banks. Thus according to SAMA annual report (1967), as early as 1968, SAMA was approaching foreign banks with branches in the country in an attempt to convert these banks 'into a Saudi joint stock company with a Saudi participation of 60 percent'. SAMA has suggested that the policy of transforming 60 percent of foreign banks into Saudi Arabian ownership 'would contribute towards the evolution of a larger and better indigenous banking system thereby enabling it to play a vital role in serving the national economy'. This procedure later became

known as the *'Saudization'* of the commercial banks and SAMA indicated that the specific objectives of this process were to increase the number of bank branches and to increase competition among national banks.

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 *Saudize* foreign banks which is different from nationalization, it involved transferring the majority of foreign banks to Saudi Arabian nationals. Such move entailed foreign banks to overcome the restraints placed on them by SAMA by prohibiting them from increasing their capital and branches. Thus, *Saudization* put an equality between all commercial banks in the country and encouraged fair competition. Now there are ten banks with more than 1200 branches and total assets of more than Saudi Riyal (SR) 400 billion.

Until recently, services to the household were not advanced, commercial banks ignored this area of service for a long time. However, after the establishment of the specialized credit agencies and institutions by the government, mostly commercial banks served as financial 'gap filling.' Unable to compete with these agencies and institutions they either exploited those areas not favored by the government finance or worked to complement these loans granted by these agencies and institutions by filling the gap for these loans. Moreover, the expansion of commercial banks-with the encouragement of SAMA-which occurred and took place recently has included some efforts to attract household's funds by offering services to the public as credit and debt cards, cash point facilities and an increasing proportion of wages and salaries to be paid by checks or credit transfers directly into bank accounts increased competition among banks. Thus, total deposits increased from Saudi Riyal (SR) 5.586 billion in 1973 to jump to SR 106.776 billion in 1981, to SR 216.239 in 1988 to reach SR 237.043 billion in 1998. However, according to Abdeen and Shook [46] 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. Further, the attractiveness of overseas investment has also been strong since short run alternatives for commercial banks in Saudi Arabia are to extend operations in international markets. Thus, openness and absence of sufficient domestic outlets for funds allow them a strong placement of funds abroad.

## Methodology

The banking sector is a key to theories of financial development. In most LDC's bank deposits account for most of the savings, since other savings instruments are limited in availability. Thus, banks comprise the most important sources of investment funds. Therefore, in a country with underdeveloped financial institutions and markets, bank deposits are vital to the saving-intermediation process. Three functions are often identified with the financial sector in the process of economic development. The first and most fundamental function relates to the capacity of the financial sector to provide payment and medium of exchange functions to the economy. The absence of a financial sector would limit

an economy to barter. The other main functions of the financial sector pertain to the mobilization of financial savings and allocation of credit.

In his study, Goldsmith [19] observed over a long period of time the 'financial structure' of several countries which includes the various financial assets and patterns of financial institutions in existence and identified three types. The first type of financial structure is characterized by a low financial interrelations ratio and by a relatively small share of financial assts accounted for by financial institutions, predominated by commercial banks. The second type of financial structure is similar to the first type in the sense that it has a low financial interrelations ratio as well as predominance of fixed claims among financial assets and commercial banks among financial institutions. However in addition, in this type of financial structure, the government plays a significant role in the economy and there is a considerable presence of government financial institutions. Many LDC's, including Saudi Arabia, appear to have this type of financial structure.

The third type of financial structure is characterized by a ratio of financial assets to national wealth of one or greater. This type of financial structure has a significantly higher ratio of equity securities to claims. They also have higher share of financial institutions in total financial assets and have a wider range of financial institutions. The relative importance of the banking system is diminished with a corresponding increase in the importance of investment institutions and non-financial institutions.

Based on his findings, Goldsmith [19] makes a case for the hypothesis that the separation of the functions of savings and investment, which is made possible by the introduction of financial instruments as well as the enlargement of the range of financial institutions, increase the efficiency of investment and raise the ratio of capital formation to national product, and that financial activities through these two channels increase the rate of growth.

The association between financial development and economic growth is best explained in terms of division of labor in different aspects, of which three principals are analyzed. The first is division of labor in production involving exchange of factor services and output implying lending and borrowing. The second theoretical justification for the positive relationship between financial development and economic growth is based on the notion of the division of labor between saving and investment. The third aspect of division of labor pertains to the division of labor in the process of financial intermediation (indirect finance) by institutions.

The relationship between the availability of loans and credit to the private sector from commercial banks is assumed to be related to the change in deposits at these banks.

$$CPS=f(TDP) \quad (1)$$

or

$$CPS=f(TDS) \quad (2)$$

Where:CPS=credit available to the private sector,TDP=total deposits (equals demand deposits +savings and time deposits +other deposits) and TDS is demand plus time and saving deposits at commercial banks. CPS can be classified as short-term loans (LON), or in the form of investment (INV).

$$LON=f(TDP) \quad (3)$$

$$\text{or} \quad LON=f(TDS) \quad (4)$$

Also, since it is assumed that commercial banks act as gap filling with specialized credit agencies and institutions, then changes in these agencies and institutions credit to the private sector have impact on the commercial banks activities and credit available to the private sector from commercial banks. Thus,

$$CPS=f(TDP, SCP) \quad (5)$$

$$\text{or} \quad CPS=f(TDS, SCP) \quad (6)$$

where, SCP is credit available to the private sector from specialized credit agencies and institutions and

$$LON=f(TDP, SCP) \quad (7)$$

$$\text{or} \quad LON=f(TDS, SCP) \quad (8)$$

$$INV=f(TDP, SCP) \quad (9)$$

$$\text{or} \quad INV=f(TDS, SCP) \quad (10)$$

Foreign interest rates can have effects on the credit granted by commercial banks to the private sector. This is besides the fact that business cycle represented by gross domestic product (GDP) can have an impact on these relationships. Thus, these two variables can be included among the variables in the equations. Also a dummy variable which takes value of zero for the period 1970.1 to 1981.4 and 1 for the period 1982.1 the time of the completion of commercial banks *Saudization* to 1999.4, to test for this restructuring on the total deposit and in turn on credit granted by commercial banks to the private sector. Thus the equation becomes:

$$CPS=F(TDP, SCP, Y, INT, DUM) \quad (11)$$

where: Y=non-oil GDP, INT=foreign interest represented by Euro-Dollar rate, and DUM=dummy variable ( 1970.1-1981.4=0 and 1982.1-1999.4=1).

Several studies have examined time series variables properties and concluded that most macroeconomic time series data follow random walks [57; 58]. Further, recent econometrics studies, Granger and Newbold [59], Granger [60], Phillips [61] and Ohanian [62], have demonstrated that if time series variables are non- stationary, all regression results with these time series will differ from the conventional theory of regression with stationary series. That is, regression coefficients with non-stationary variables will be spurious and misleading. Therefore, analysis of the time series properties of variables used in macroeconomic research is particularly important when examining the relationship between variables that exhibit a common trend [60; 63; 64]. Thus, to avoid spurious relationships and misleading results and to provide valid evidence to the order of integration, before proceeding to the cointegration analysis and the estimation of the long run relationship between the variables, the time series properties of the individual variables were examined by conducting stationarity tests. A variable that is stationary in level terms is I(0). However, time series containing a unit root follows a random walk and requires first differencing to obtain stationarity, and is said to be first order integrated, I(1). Researchers have developed several procedures to test for the order of integration. The most popular ones are augmented Dickey-Fuller (ADF) test due to Dickey and Fuller [65; 66], and Phillips-Perron (PP) test, due to Perron [67] and Phillips and Perron [68].

Augmented Dickey-Fuller (ADF) test relies on rejecting a null hypothesis of unit roots ( the series are non-stationary) in favor of the alternative hypothesis of stationarity:

$$\Delta Xt = \mu + (\alpha - 1)Xt + \sum_{t=1}^{n} \gamma t \Delta Xt - 1 + ut \qquad (12)$$

where, Xt is a random variable, $\Delta$ is first difference operator, ut is a stationary random error, it is time period, n is number of lags for the dependent variable which is chosen to ensure that the residuals are white noise. The t statistics of ($\alpha$ - 1) is used to test the null hypothesis that this coefficient is equal to zero (i.e., that is $\alpha$ = 1). However, the critical values of the t-statistics does not have the familiar distribution. Several authors have constructed appropriate critical values for the distribution of the t-statistics (i.e., Fuller, [69]; MacKinnon [70]).

Arbitrariness of lag lengths may affect the reliability of the statistical tests and seriously bias implications of the results. Thus, to determine the proper lags for each variable, the Akaike's final prediction error criterion (FPE) is used as suggested by Hsiao [71; 72].

A problem with the ADF is that it involves the inclusion of extra differences terms in the testing equation which results in a loss of degrees of freedom and a resultant reduction in the power of the testing procedure. Alternatively, the Phillips-Perron (PP) approach allows for the presence of unknown forms of autocorrelation and conditional heteroscedasticity in the error term. Perron [67] demonstrates that if a series is stationary about a linear trend but no

allowance for this is made in the construction of the unit root test, then the probability of a type II error will be high. Thus PP test corrects for serial correlation in equation (12) using a non parametric procedure. This procedure modifies the statistic after estimation in order to take into account the effect that autocorrelated errors will have on the results. Asymptotically, the statistic is corrected by appropriate amount, and so the same limiting distribution applies. Perron [67] suggests estimating the following regression by ordinary least squares:

$$\chi_t = \mu + \lambda(t - T/2) + \delta\chi_t + ut \tag{13}$$

There are more than one method of conducting cointegration tests. The empirical testing in this paper uses the multivariate cointegration method developed by Johansen [73] and Johansen and Jueslius [74]. This approach is preferred to the Engle-Granger [63] method for several reasons. Engle-Granger procedure depends upon the normalization of the variables and may be sensitive to the choice of dependent and independent variables in the cointegrating equation. It is possible that arbitrary choice of one variable as the dependent variable and the other as independent variable may lead to the conclusion that the variables are cointegrated, whereas reversing the choice of dependent and independent variables may indicate no cointegration. Further, because the Engle-Granger procedure relies on a two step estimator in which the first step is to generate the residuals from the cointegration regression and the second step is to use the residuals generated from step one to test for unit roots, any errors introduced in first step also affects the second step. On the other hand Johansen-Jueslius approach provides a very flexible format for investigating the properties of the estimators under various assumptions about the underlying data generating process. Another advantage is that, unlike Engle-Granger cointegration methodology, the Johansen-Jueslius procedure is capable of determining the number of cointegrating vectors in the relationship. In the case of more than two variables, Banerjee *et al.* [75], and Cuthbertson [76] have shown that Johansen-Jueslius procedure is preferred. Phillips [77] has also shown that this procedure has optimal properties in terms of symmetry unbiasedness and efficiency. Further, Gonzalo [78] compared the performance of the cointegration tests using a Monte Carlo study and found that Johansen-Jueslius procedure is the most powerful even for the bivariate system. He showed that Johansen-Jueslius approach has consistent estimates even if the errors are non Gaussian and the dynamics are not known.

The Johansen-Jueslius method applies the maximum likelihood procedure to determine the presence of cointegrating vectors in non stationary time series. Johansen and Jueslius provided two different tests, the trace test and the maximum eigenvalue test, to determine the number of cointegrating vectors. The presence of a significant cointegration vector or vectors indicates a stable relationship between the relevant variables. Johansen [73] showed that both tests will have non-standard distribution under the null hypothesis, even in large samples.

The Johansen-Jueslius approach to testing for cointegration considers a p-dimensional vector autoregression (VAR) model:

$$Xt = \Pi 1Xt-1+.....+\Pi kXt-k+\varepsilon t \quad (14)$$

this autoregressive model may be written as conventional error correction model as follows:

$$\Delta Xt = \mu + \sum \Gamma t\Delta Xt-1+\Pi kXt-k+\varepsilon t \quad (15)$$

where

$$\Gamma = -1+\Pi 1+.....+\Pi t$$

$$\Pi = 1-\Pi 1-.....-\Pi k$$

The $\Pi$ matrix contains information about the long run relationships between the variables. Let the rank of the $\Pi$ matrix be denoted by r. When $0<r<p$, the $\Pi$ matrix may be factored into $\alpha\beta'$, where $\alpha$ may be interpreted as p x r matrix of error correction parameters and $\beta$ as p x r matrix of cointegrating vectors. The vector of constants, $\mu$, allows for the possibility of deterministic drift in the data series. Maximum likelihood estimates of $\alpha$ , $\beta$ and $\Gamma$ are derived in Johansen [73]. To test the hypothesis that there are at most r cointegrating vectors, one calculates the trace statistic ($\lambda$trace). The maximum eigenvalue test ($\lambda$max) is based on the null hypothesis that the number of cointegrating vectors is r against the alternative of r+1 cointegrating vectors. Johansen and Jueslius [74] provide critical values for ($\lambda$trace) and ($\lambda$max) statistics, and Osterwald-Lenum [79] developed and extended version of these critical values.

## Data and Empirical Results

Data are quarterly data covering the period from 1970.1 to 1999.4 and in log terms.

Data on commercial banks deposits and credit to the private sector (CPS), specialized credit agencies and institutions credit to the private sector (SCP) and total deposits (TDP) are obtained from Saudi Arabian Monetary Agency (SAMA) reports different issues. Commercial banks credit to the private sector is disaggregated into short term loans (LON) and investment (INV). Total deposits include demand deposits, savings and time deposits and other deposits. Demand deposits plus savings and time deposits (TDS) is used as another variable. GDP (Y) is obtained from Ministry of Planning Facts and figures different issues and interest rate (INT) is obtained from IMF statistical Tables.

Figure 1 shows the trended relationship between the type of deposits and credit to the private sector between 1970.1- 1998.4 which indicate that even with some fluctuation both deposits (demand deposits (DD), time deposits (TD), demand deposits + time deposits (TDS), and total deposits=TDS +other deposits (TDP) and credit to the private sector granted by private sector increased, however, when credit is classified into short term loans

(LON) and investment (INV) it seems that commercial banks prefer to grant credit in short term loans rather than intermediate or long term loans (INV).

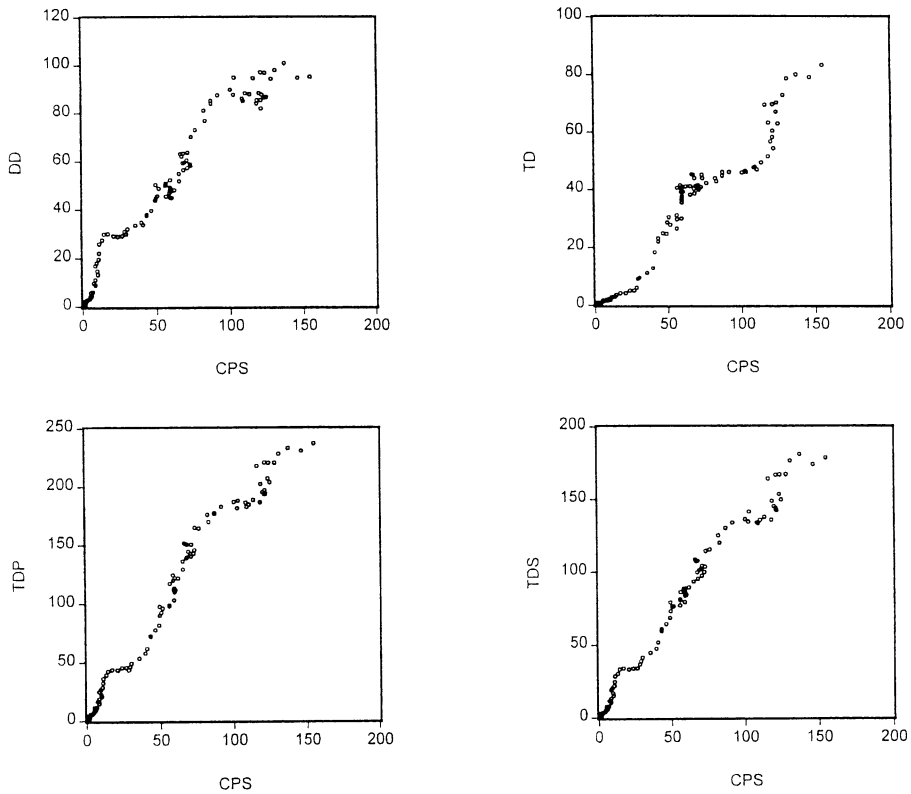


**Fig. 1. The relationship between deposits and credit to the private sector.**

While the trended relationship shows the types of deposits and credit to the private sector to be positive and increasing, Figure 2 shows the utilization of the deposits by commercial banks, where, DU1=CPS/DD, DU2=CPS/TD, DU3=CPS/TDS, and DU4=CPS/TDP which indicate the low utilization of commercial bank deposits in granting credit to the private sector and that commercial banks seem to rely to some extent on demand deposits (DD) to meet loans granted to private sector. Table 1 shows the results of unit roots tests by using ADF and PP approaches, Table 2 presents the cointegration results, Table 3 contains the error correction test, Table 4 shows the Granger causality test results and Table 5 presents the results of an OLS regression . Number of lags used are between 1 and 3 lags. In Table 1 the results indicate that the variables are non stationary, other than CPS and LON which are non stationary even after first differences when using ADF approach but they become stationary when PP approach is used with first difference, other variables (TDP, TDS, INV and SCP) are stationary when using either ADF or PP methods and they

are I(1) at the 1 percent level of significance. Thus, we can proceed to test for cointegration. Cointgration test results in Table 2 show that the variables are cointegrated and the results are significant at the 5 percent level. These cointegration results suggest that there exists a long run stable relationship between the variables.

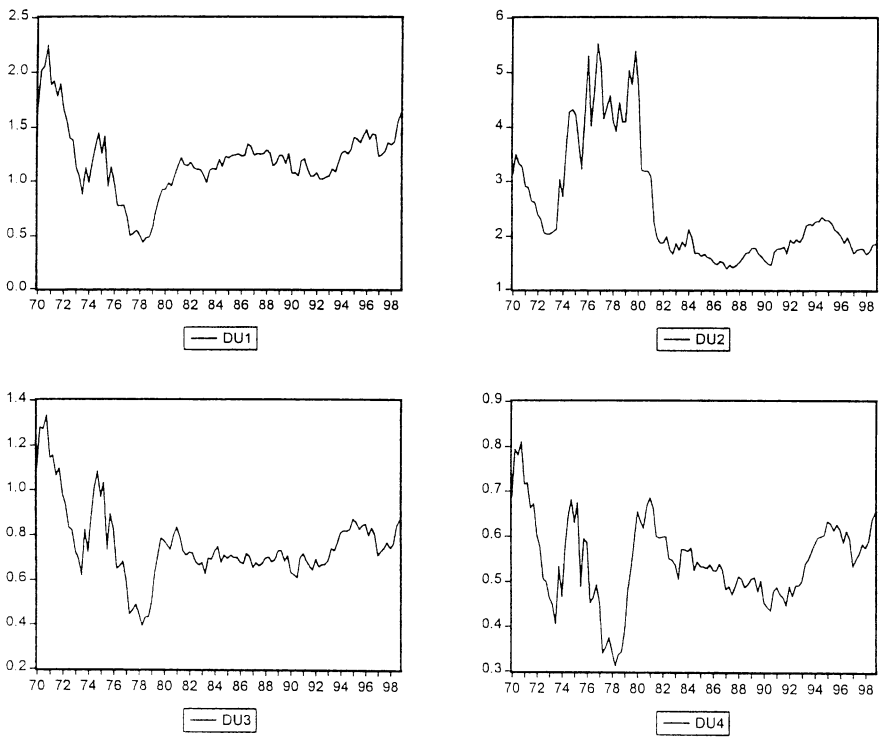


**Fig. 2. Deposits utilization by commercial banks.**

**Table 1. Stationarity tests**

| Variables | ADF | | PP | |
|---|---|---|---|---|
| | Levels | Differenced | Levels | Differenced |
| TDP | -0.769 | -7.584* | -2.881 | -25.305* |
| TDS | -1.143 | -7.653* | -4.29* | -25.480* |
| CPS | 1.556 | -1.915 | 2.383 | -9.894* |
| LON | 1.601 | -1.665 | 2.486 | -9.438* |
| INV | -1.529 | -3.413** | -1.354 | -11.184* |
| SCP | -1.619 | -3.758* | -2.925 | -19.226* |
| Y | -1.777 | -5.671* | -2.794 | -16.182* |
| INT | -2.676 | -4.609* | -2.116 | -9.837* |

* Significant at 1%, ** Significant at 5% and ***significant at 10%.

**Table 2. The Johansen cointegration test**

| Eigenvalues | $\lambda$ max | $\lambda$ trace | 5% for $\lambda$ max | 5% for $\lambda$ trace | Hypothesis |
|---|---|---|---|---|---|
| | | | lnCPS=f(lnTDP) | | |
| 0.094 | 10.96 | 17.32 | 10.50 | 12.53 | r=0* |
| 0.056 | 6.36 | 6.36 | 3.84 | 3.84 | r≤1* |
| | | | lnCPS=f(lnTDS) | | |
| 0.130 | 15.48 | 21.67 | 10.50 | 12.53 | r=0* |
| 0.054 | 6.20 | 6.195 | 3.84 | 3.84 | r≤1* |
| | | | lnLON=f(lnTDP) | | |
| 0.089 | 15.40 | 16.63 | 10.50 | 12.53 | r 0* |
| 0.055 | 6.27 | 6.27 | 3.84 | 3.84 | r≤1* |
| | | | lnLON=f(lnTDS) | | |
| 0.127 | 15.12 | 21.20 | 10.53 | 12.53 | r≤0* |
| 0.053 | 6.08 | 6.08 | 3. 84 | 3.84 | r≤1** |
| | | | lnINV=f(lnTDP) | | r 0* |
| 0.175 | 21.38 | 29.03 | 14.07 | 18.17 | |
| 0.067 | 7.65 | 7.65 | 3.74 | 3.74 | r≤1* |
| | | | lnINV=f(lnTDS) | | |
| 0.192 | 23.70 | 31.38 | 14.07 | 18.17 | r 0* |
| 0.067 | 7.68 | 7.68 | 3.74 | 3.74 | r≤1* |
| | | | lnCPS=f(lnTDP, lnSCP) | | |
| 0.140 | 16.77 | 34.95 | 20.97 | 34.55 | r 0** |
| 0.109 | 12.80 | 18.18 | 14.07 | 18.17 | r≤1** |
| 0.047 | 5.38 | 5.38 | 3.74 | 3.74 | r≤2** |
| | | | lnCPS=f(lnTDS, lnSCP) | | |
| 0.169 | 20.57 | 40.34 | 20.97 | 34. 55 | r 0* |
| 0.111 | 13.07 | 19.77 | 14.07 | 18.17 | r≤1** |
| 0.059 | 6.70 | 6.70 | 3.74 | 3.74 | r≤2* |
| | | | lnLON=f( lnTDP, lnSCP) | | |
| 0.132 | 15.72 | 40.05 | 20.97 | 29.68 | r 0** |
| 0.107 | 12.59 | 24.33 | 14.07 | 15.41 | r≤1** |
| 0.105 | 11.74 | 11.74 | 3.76 | 3.76 | r≤2** |
| | | | lnLON=f(lnTDS, lnSCP) | | |
| 0.162 | 19.94 | 39.04 | 20.97 | 34.55 | r 0** |
| 0.107 | 12.57 | 19.46 | 14. 07 | 18.17 | r≤1** |
| 0.060 | 6.90 | 6.90 | 3.74 | 3.74 | r≤2* |
| | | | lnINV=f(lnTDP, lnSCP) | | |
| 0.136 | 16.19 | 33.45 | 20.97 | 29.68 | r 0** |
| 0.078 | 9.06 | 17.26 | 14.07 | 15.41 | r≤1** |
| 0.071 | 8.20 | 8.20 | 3.76 | 3.76 | r≤2* |
| | | | lnINV=f(lnTDS, ln SCP) | | |
| 0.141 | 16.80 | 33.507 | 20.97 | 29.68 | r 0** |
| 0.075 | 8.67 | 16.704 | 14. 07 | 15.41 | r≤1** |

**Table 2. (Contd.)**

| Eigenvalues | $\lambda$ max | $\lambda$ trace | 5% for $\lambda$ max | 5% for $\lambda$ trace | Hypothesis |
|---|---|---|---|---|---|
| 0.070 | 8.03 | 8.034 | 3.76 | 3.76 | r≤2* |
| | | | lnCPS=f(lnTDP, INT) | | |
| 0.1969 | 24.34 | 45.475 | 20.97 | 34.55 | r=0* |
| 0.1398 | 16.715 | 21.17 | 14.07 | 18.17 | r 1** |
| 0.0390 | 4.417 | 4.417 | 3.74 | 3.74 | r 2** |
| | | | lnCPS=f(lnTDP, lnY) | | |
| 0.2845 | 37.168 | 47.077 | 20.97 | 34.55 | r=0* |
| 0.0702 | 8.08 | 9.914 | 14.07 | 18.17 | r 1 |
| 0.0164 | 1.838 | 1.838 | 3.74 | 3.74 | r 2 |
| | | | lnCPS=f(lnTDP, lnY, INT) | | |
| 0.31314 | 41.69 | 69.818 | 27.97 | 54.64 | r=0* |
| 0.1598 | 19.327 | 28.124 | 20.97 | 34.55 | r 1 |
| 0.0696 | 6.441 | 8.797 | 14.07 | 18.17 | r 2 |
| 0.0166 | 1.855 | 1.855 | 3.74 | 3.74 | r |
| | | | lnCPS=f(lnTDP,lnSCP, lnY, INT) | | |
| 0.3653 | 50.464 | 110.08 | 33.46 | 77.74 | r=0* |
| 0.2203 | 27.62 | 59.616 | 27. 97 | 54.64 | r 1** |
| 0. 1661 | 20.168 | 31.996 | 20.97 | 34.55 | r 2*** |
| 0.0915 | 10.649 | 11.828 | 14.07 | 18.17 | r 3 |
| 0.0106 | 1.180 | 1.18 | 3.74 | 3.74 | r 4 |

* Significant at 1%, ** Significant at 5% and *** Significant at 10%.

**Table 3. Error correction results**

ΔlnCPS=0.08-0.018ΔlnTDPt-1-0.0009ΔlnTDPt-2-0.004ΔlnSCPt-1-0.005ΔlnSCPt-2-0.03ΔlnCPSt-1
(4.73)* (-0.394) (-0.0198) (-0.196) (-0.294) (-0.300)
-0.002ΔlnCPSt-2 -0.0006 Trend -0.0523VECt-1
(-0.021) (-2.725)* (-3.329)*
R=0.178, F=2.82*** , Logliklihood=141.78, AIC=-2.35, SC=-2.133
ΔlnLON=0.04+0.007ΔlnTDPt-1+0.002ΔlnDTPt-2+0.133ΔlnLONt-1+0.244ΔlnLONt-2-0.024VECt-1
(4.44)* (0.956) (0.356) (-1.305) (2.292) (-2.90)*
R=0.085, F=2.5***, Loglikelihood=-385.83, AIC=4.79, SC=4.91
ΔlnLON=0.0756+0.008ΔlnTDSt-1+0.002ΔlnTDSt-2+0.17ΔlnLONt-1+0.278ΔlnLONt-2-0.024VECt-1
(4.059)* (0.873) 0.342) (1.73)*** (2.461)* (-2.438)**
R=0.066, F=1.92, Loglikelihood=-266.974, AIC=4.81, SC=4.934
ΔlnCPS=1.55+0.055ΔlnCPSt-1+0.283ΔlnCPSt-2+0.069ΔlnTDPt-1+0.085ΔlnTDPt-2+0.73ΔlnYt-1
(0.29) (0.542) (2.829)* (0.374) (1.752)*** (0.798)
+0.69ΔlnYt-2+0.038ΔlnSCPt-1+0.028ΔlnSCPt-2 –0.45INTt-1 –0.604INTt-2 –0.019DUMt-1
(1.814)** (2.15)** (1.689)*** (-1.714)*** (-0924) (-0.256)
-0.055DUMt-2 -0.037VECt-1
(-0753) (-1.82)**
R=0.29, F=3.94** , Log lik=147.89, AIC=-2.284, SC=-1.798

* Significant at 1%, ** significant at 5%, and *** significant at 10%.

**Table 4. Granger causality test**

| Variables | | Variables | |
|---|---|---|---|
| lnDD==>lnLON | 834* | lnDD==>lnINV | 3.855** |
| lnLON==>lnDD | 4.41* | lnINV==>lnDD | 2.276 |
| lnTDS==>lnLON | 5.406* | lnTDS==>lnINV | 3.263** |
| lnLON==>lnTDS | 4.732* | lnINV==>lnTDS | 1.945 |
| lnTDP==>lnLON | 4.634* | lnTDP ==>lnINV | 3.329** |
| lnLON==>lnTDP | 4.550* | lnINV==>lnTDP | 2.721 |

* significant at 1%. ** significant at 5%, *** significant at 10% levels.

**Table 5. OLS regression results with ( lnCPS)**

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| C | 0.038* | 0.018*** | 0.0353 | 0.0244 | 0.0786*** | 0.0779*** |
| | (5.232) | (1.795) | (1.001) | (0.7097) | (1.726) | (1.7095) |
| lnTDP | 0.067*** | 0.053 | 0.0669*** | 0.0534 | 0.1131* | 0.117* |
| | (1.672) | (1.352) | (1.658) | (1.352) | (3.291) | (3.366) |
| lnSCP | 0.002 | 0.0069 | 0.0015 | 0.0069 | ---------- | 0.0109 |
| | (0.103) | (0.469) | (0.1014) | (0.471) | | (0.798) |
| lnY | ------- | 0.9591* | ---------- | 0.891* | 0.7896 | 0.777**** |
| | | (2.813) | | (2.805) | (1.196) | (1.714) |
| INT | -------- | ---------- | -0.435 | 0.0909 | --0.223 | -0.2217 |
| | | | (-0.089) | (-0.191) | (0.465) | (0.4614) |
| DUM | -------- | ---------- | ---------- | ---------- | -0.0451** | -0.045** |
| | | | | | (-2.171) | (-2.167) |
| Adj-R-sq | 0.025 | 0.089 | 0.025 | 0.09 | 0.21 | 0.220 |
| F | 1.429 | 3.647* | 0.965 | 2.74** | 7.302* | 5.949* |
| Log Lik | 133.78 | 137.74 | 133.78 | 137.76 | 145.872 | 146.207 |
| AIC | -2.27 | -2.325 | -2.257 | -2.316 | -2.44 | -2.44 |
| SC | -2.20 | -2.23 | -2.162 | -2.19 | -2.33 | -2.30 |
| D.W. | 1.837 | 2.02 | 1.84 | 2.02 | 2.26 | 2.24 |

•Significant at 1% level, ** Significant at 5% level. *** Significant at 10 % level.
Adj-R-sq.=Adjusted R squared, F= F-statistics, Log Lik=Log likelihood, AIC=Akaike information criterion, SC=Schwartz criterion, S.W.=durbin-Watson ststistics.

Further these results suggest that availability of credit to the private sector is related to the deposits at the commercial banks. However, it seems from the results of the cointegration tests that specialized credit agencies and institutions lending and credit to the private sector encourage commercial banks to make loans and credit available to the private sector. Thus, there seems to be complementarity relationship between these two types of credit. In fact, private firms always need to finance their working capital by resorting to commercial banks, since specialized credit agencies and institutions make credit available for only 50 percent of the total cost of project and it is assumed to cover the cost of long tem capital. These results also prove the claim that commercial banks act as 'filling gap' for specialized credit agencies and institutions. That is, they either look for areas which are not favored by specialized credit agencies and institutions or they play a complementarity role with credit made available by these agencies and institutions.

Error correction results in Table 3 show that this variable is significant and shows the direction of causality and the speed of adjustment to the long run equilibrium and allows us to distinguish between short and long run effects of the model by bringing together short and long run information in modeling the data. Further, Table 4 presents the results of the causality test which show that even when there is some indication of feedback between deposits and credit to the private sector, it seems that deposits, especially demand deposits (DD), cause credit to the private sector, thus there are some indications that policy of restructuring financial system has implication for economic growth and development by providing credit to the private sector. Results in Table 5 show that including interest rates (INT), GDP (Y), and dummy variable (DUM) improve the results by increasing R-sq and F statistics and the values of Durbin-Watson (D.W.) absence of serial correlations. The coefficients of INT and Y have the expected signs, however, inerest rate is not significant. The dummy variable DUM is significant but has negative sign. This might be due to the fact that even with the increase in deposits, commmercial banks did not utilize these deposits in granting credit to the private sector as expected and as Fig. 2 shows.

## Conclusion and Policy Implications

This paper attempts to model the effect of development and restructuring the financial system in Saudi Arabia since 1952 and the impact of this restructuring on total deposits at commercial banks and on the availability of credit to the private sector and attempts to utilize recent developments in econometrics modeling. Before investigating the existence of long run relationship between the variables it uses ADF and PP approaches to test the variables for unit roots and stationarity in the variables to avoid spurious and nonsense results. Then we proceed to test for cointegration and error correction.

It has been suggested that if entrepreneurs and firms cannot borrow to attain their profit maximizing levels of capital they may not survive [80-82]. Holtz-Eakin *et al.* in that case conclude "those entrepreneurs who have substantial personal financial resources are more successful than those who do not. Their enterprises are more likely to survive, and if they do survive, they perform better."

For a long time, commercial banks in Saudi Arabia have failed to become involved in domestic economic diversification. They ignored some areas such as small business finance, credit market, and small savers. There used to be and to a certain extent is still mistrust between the public and the banking sector. This mistrust can be eased by being more flexible and by increasing their services to the public. Commercial banks should be more innovative and use their accumulated experience to improve their relationship with the public and increase their involvement in domestic economy and help to create the right environment for increasing financial savings and investment by stimulating new resources and attracting other funds from their less productive use. They must develop some methods that allow them to play the role of intermediary between the savers and investors to contribute to economic growth. Hence, drawing savings and allocating them to more productive uses facilitate economic growth.

Peek *et al.* [83],Webb [84], Beck *et al.* [85], Bodenhorn [86] and Edwards [87] all emphasize that banks and other financial intermediaries could and did matter in the process of economic growth and development. They conclude that loan supply shocks have a significant impact on real macroeconomic variables. Thus, they suggest that bank health is important and problems in banks that stem from growing non-performing loans and/or policy actions including either prudential regulation, short fall of reserves due to monetary tightening, or an increase in reserve requirements, can affect the real economy. Peek *et al.* [83] suggest that "the importance of the bank health variable is strong, suggesting that the contribution of this variable does, in fact, derive from its role as an indicator of shocks to loan supply, rather than as an indicator of demand shocks to the economy as a whole, or to loan demand in particular."

Further, Saltari [88] concludes that when financial markets are not in equilibrium, then external and internal resources are not perfect substitutes. This makes it difficult for external lenders to evaluate the profitability of the firm's investment plans, and the interest rate for external funds may be substantially higher than the opportunity cost of the corresponding internal resources.

Bhattacharya *et al.* [89], Hellmann *et al.* [90] and Diamond [91] all emphasize the importance of opening new avenues for banks and increasing competition in financial market and to be allowed to inter long term market. Further, Diamond [91] points out that adding banks, or reducing their costs of operation, makes liquidity cheaper to obtain, and this makes markets more liquid. 'Because investors then choose to hold more long term assets, the development of a banking system will lead to increased turnover and volume in financial markets.'

Foreign ownership of banks often thought to improve the overall banks soundness, especially when the foreign parents banks belong to well regulated financial systems and are themselves healthy. Foreign banks presence is expected to fortify domestic financial system by encouraging higher standards in auditing, accounting and disclosure, credit risk underwriting, and supervision. Crystal *et al.* [92] find that foreign banks in Latin America "tend to maintain greater liquidity and relied less on deposit financing. In addition, foreign banks, particularly those with established in-country operations, typically showed stronger loan growth than private domestic banks, even during periods of local economic difficulty." Further they found that " Foreign banks provisioned more aggressively against bad loans and higher loan recovery rates. ..... They seemed more willing to tolerate, or could better afford, lower returns in the near term for the sake of building longer term institutional strength."

Safety and soundness of the banking system is important not only because it prevents economic down turns related to financial panics but also because it avoids adverse budgetary consequences for governments, which often bear a significant part of the costs of the banking system from these problems by inducing banks to invest prudently (Calomiris and

Powell [93]). Thus, safety of the banking system necessitates strong compliance with prudential regulations. To improve the stability of the banking industry, it is crucial to have effective enforcement mechanisms in place.

Edwards [87, p.177] concludes that banks " have had to change what they do and how they do it in response to a steady stream of new financial products and instruments have crumpled the competitive barriers that have historically separated financial intermediaries."

The challenge is to change regulation in a way that increases the freedom of financial institutions to compete while at the same time making the financial system less vulnerable to excessive risk-taking by individual institutions.

Financial institutions currently in existence in Saudi Arabia must continually be innovative and adjust their policies to the economic and social realities of the economy. It is necessary to encourage collaborative efforts between the commercial banking system and the specialized lending institutions in co-financing and other arrangements. The commercial banking system as well as the economy could benefit from the accumulated experience of the specialized institutions in medium and long term lending. Further the banking sector has not been successful in financing capital formation as it has been mobilizing savings and providing a payment mechanism. Thus, there is a need to redirect funds from short term working capital to purposes into medium and long term investment financing activities in productive sectors. The reallocation of funds is essential for generating accelerated economic growth.

Despite progress made by the banking sector to diffuse its services through the country, there still exists a significant concentration of banking facilities. It is thus necessary for the financial sector authorities to improve climate for more competition by granting more banks to be opened specially investment and regional banks.

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# تأثير إعادة هيكلة النظام المالي في المملكة على العلاقة بين الودائع لدى البنوك التجارية و الائتمان الممنوح للقطاع الخاص

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**مستخلص البحث**. تعتبر الأسواق والمنشأت المالية جزأ مكملا ومهما للأقتصادديات الحديثه. كما أنها تعتبر أساسا مهما يفتح مجالات كبيرة للمتعاملين في هذه الأسواق من خارج النظام المالي للتواصل مع بعضهم البعض. البنوك التجارية، خصوصا، تعتبر مهمة بالنسبة للدول النامية، حيث تلعب دورا كبيرا ومهما للتواصل بين المدخرين والمستثمرين عن طريق تزويدهم بالبدائل التي يمكن لهم عن طريقها تنمية ثرواتهم.

باستخدام الأساليب القياسية الحديثة وباستخدام بيانات ربع سنوية تغطي الفترة ١ ، ١٩٧٠م إلى ٤ ، ١٩٩٩م يقوم هذا البحث بدراسة التطورات التي طرأت على القطاع البنكي في المملكة وسلوك هذا القطاع خلال فترة الدراسه لمحاولة معرفة مدى إسهام هذا القطاع في النشاط الاقتصادي عن طريق تزويد القطاع الخاص بالاعتمادات والقروض التي يحتاجها هذا القطاع لتمويل نشاطاته الاقتصادية .

تبين النتائج الأحصائية التي تم التوصل اليها أنه مع تزايد النشاط الاقتصادي في المملكه خلال فترة الدراسه تزايد كذلك نشاط القطاع البنكي ولكن هذا لم يكن الى الحد الذي يغطي حاجات الاقتصاد المحلي. حيث يتضح أن هذا القطاع يبحث عن فرص ووسائل أخرى لنشاطاته خصوصا الأسواق الخارجية لاستثمار ما لديه من ودائع في أدوات استثمار قصيرة الأجل ذات عائدات مضمونه. لهذا فإنه يتوجب على هذه البنك أن تكون أكثر ابتكارا وتطورا في تعاملها مع القطاع الخاص مما يعود بالفائدة على الاقتصاد الوطني في المملكة.