FINANCIAL LIBERALIZATION AND FINANCIAL DEVELOPMENT IN IRAQ

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Abstract

This paper examines the impact of financial repression policies from 1970 to 2002, and the results of the financial liberalization polices between the years 2003-2007 on the financial development of Iraq. By using the Autoregressive Distributed Lag (ARDL) model, the paper argues that neither the financial repression policies nor the financial liberalization polices promoted the financial development of Iraq. This fact suggests that Iraq's policy-makers have to launch multi-pronged measures, such as promoting private sector enterprises, reducing informal activities in the economy, stabilizing macroeconomic variables (reduction of fiscal deficit and inflation rate), and, most importantly, restore political and social security, in order to ensure the economic prosperity of the country.

Keywords: Financial Liberalization, Financial Repression, Financial Development, Iraq.

1. INTRODUCTION

At the heart of every robust economy is a vital financial sector. This wise observation was initially made by Schumpeter (1912), who argued that financial services are essential to promoting economic growth. Over time, several theoretical and empirical researchers such as Patrick (1966), Goldsmith (1969), Shaw (1973), McKinnon (1973), Gupta (1984), King and Levine (1993 a, b) and others have emphasized that an efficiently functioning financial sector is necessary to spur economic growth.

Since their independence, the developing countries have launched differ-

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ent policies to make their financial sectors play a key role in the whole process of economic development and they continue to do so. Prior to the 1970s, repressive financial polices prevailed in the developing countries. These policies were highly influenced by the Keynesian ideas which supported the repression of the financial sector, especially through interest rate controls (Beim and Calomiris, 2001, p. 69). However, policies of financial repression as a means of promoting financial development and economic growth were criticized in the early works of McKinnon (1973) and Shaw (1973). They argued that the poor performance of investment and growth in developing countries was due to financial repression policies such as fixing an interest rate ceiling, the imposition of high reserve requirements, and quantitative restrictions on credit allocation. These constraints were the main causes that lead to low savings rates, credit rationing and low investment. Instead, they propounded the financial liberalization thesis which involves removing interest rate controls, lowering reserve requirements, the reduction of government interference in banks' lending decisions, and the free entry and exit of financial institutions.

After decades of wasted development efforts, developing countries started rethinking their strategies. Liberalization of the financial sector was one of the main agendas that these countries undertook to ensure the development of their financial systems as a key to higher levels of economic growth. Many countries have nurtured their economic growth through financial liberalization, while at the same time many others got frustrating results, and had to face financial crises, thus retarding their economic growth.

Several theoretical and empirical studies have argued that a sophisticated financial system is a prerequisite of economic growth, and that the liberalization of the financial system is the key to achieving financial development. McKinnon (1973) and Shaw (1973) asserted the significance of a liberalized financial system in achieving higher savings and investment growth. Roubini and Sala-i-Martin (1992) argued that the financial repression polices have negatively influenced financial development and economic growth.

Similarly, in examining the Indian experience, Demetriades and Luintel (1996, 1997) found that policies of financial repression have a direct negative effect on financial deepening.

Iraq has had a liberalized financial system since 2003. Prior to this, policies of financial repression prevailed. No studies have yet been undertaken to examine the impact of these polices (repressive and liberalized) on the financial development of the country to date. Therefore, the objective of this paper is to examine the effect of financial liberalization on the financial development of Iraq.

2. THEORETICAL LITERATURE

Financial system development is a multidimensional concept and it can be determined by different measures. The literature frequently delineates financial development as the improvement in quality, quantity and efficiency of financial intermediary services. Researchers use different proxies to capture the level of financial development, such as M2/GDP, M2-Currency in Circulation/GDP, M2 - M1 (Quasi-money)/GDP, Credit to Private Sector/GDP, Credit to Private Sector/Total Credit, and Commercial Bank Assets/Commercial Banks Plus Central Bank Assets (*see* for instance, King and Levine, 1993a, b; Demetriades and Hussein, 1996; XU, 2000; and ESCWA, 2005). This study uses the M2-currency in circulation/GDP as the appropriate proxy of financial development in Iraq.

The relationship and the positive link between financial development and economic growth are well documented in the literature. This nexus dates back to the seminal works of Schumpeter (1912), Goldsmith (1969), Shaw (1973), McKinnon (1973), and King and Levine (1993 a, b) among others.

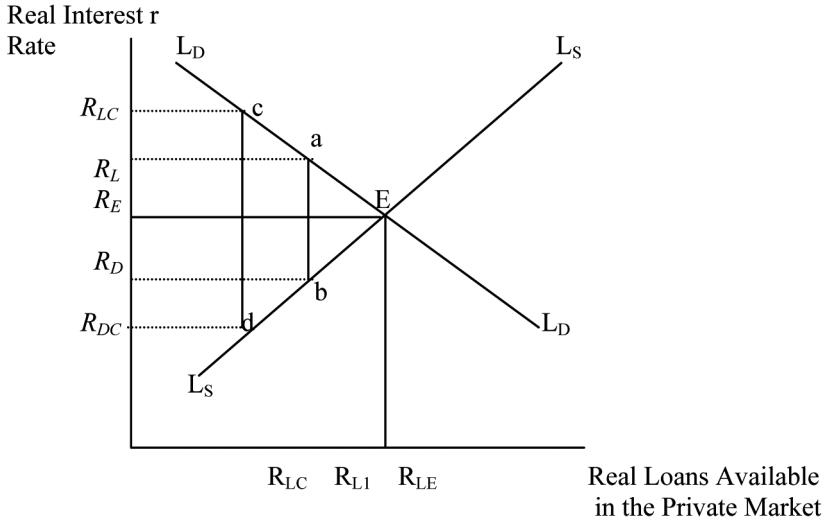
It should be noted that different policies are implemented to achieve greater development of the financial system. The governments of some developing countries have opted for restrictive policies such as controlling interest rates, interfering in banks' lending decisions, the imposition of high reserve requirements, and monopoly of bank ownership. However, several theoretical and empirical studies reveal that these polices do not achieve their goals, and have instead contributed to the dampening of financial development by lowering the levels of savings and investment. The theoretical negative effect of financial repression policies on financial development is well illustrated by Beim and Calomiris, (2001, pp. 47-59).

Figure 1 illustrates the supply and demand graph for real loans as a function of real interest rates (Beim and Calomiris, 2001, p. 48).

In Figure 1 the demand curve for real loans (LD) presents the amount of loans adjusted for changes in the price level, which credit-worthy borrowers want as a decreasing function of real interest rate on loans (RL). The loan-supply curve (LS) shows the quantity of real loans that savers are willing to provide as an increasing function of real interest rate on deposits (RD). E represents the equilibrium point at which the market would clear, where the loan rate equals the deposit rate and also where the loan supplied equals the loan demanded at the point (RE).

In reality, bank lending will not be able to reach point E. Banks must earn sufficient spread to recoup their operating and other costs. Profit is the main determinant of a bank's remaining in business. The vertical line (a-b) repre-

Figure 1: Effect of Interest Rate Control on Financial Development



Source: Beim, David O. and Calomiris, Charles W., 2001, *Emerging Financial Markets*, McGraw-Hill Irwin, Singapore, p. 48.

sents the amount of the requisite spread (RLRD). The need to channel some of the bank profit into payments for overheads thus reduces the return that depositors can receive, and shrinks the volume of real loans from (RLE) to (RL1).

The imposition of a deposit interest rate ceiling at (RDC) reduces the available supply of deposits by constraining the ability of banks to attract deposits. In order to equate the new (lower) loan amount supplied with the amount demanded by borrowers, the size of the spread between deposit and loan rates must be hiked. This implies an enlargement of the vertical line separating the two rates, which is represented by line (c-d). Thus, an interest rate ceiling not only lowers the real return (RDC) payable to savers (depositors), but also reduces the volume of loanable funds, thereby enabling higher rates to be charged to private borrowers.

Since the spread is enlarged from (a-b) to (c-d), due to interest rate ceiling, banks become more profitable, but at a lower level of business, as the RLE shifts to RLC. Furthermore, banking development is dampened at RLC point due to shrinkage in supply and demand for real loans.

In the same vein, Kitchen (1988, p. 82) pointed out that if bank credit is scarce or rationed, then a firm's capacity utilization may be restricted, because it cannot obtain credit to finance its working capital, which may re-

strict its output. Thus, Kitchen argued that liberalization of interest rates leads to greater availability of credit, which may have the effect of increasing the utilization of the existing capital stock.

In addition, high reserve requirements restrict the supply of bank lending, since banks are statutorily required to maintain a high ratio of their loanable funds at zero-rate of interest with the central bank. Directed credit programs are also found to have a negative effect on the efficiency of credit allocation of banks. This effect occurs because banks are forced to channel some of their loanable funds to state-owned firms or to government-favored borrowers at subsidized interest rates. It seems that marginal productivity and return of firms diminish when banks are forced to allocate their loanable funds because of political pressure. Such policy will limit the loan supply to the private sector.

Shaw (1973), McKinnon (1973), Roubini and Sala-i-Martin (1992), King and Levine (1993 a,b) and Demetriades and Luintel (1996, 1997) have argued that financial repression polices undermine both financial development and economic growth. In this regard, they suggested a thesis of financial liberalization in order to re-establish a sophisticated financial system and spur economic growth.

However, Stiglitz (1993) has put forth his views against the financial liberalization thesis. He argued that financial markets are significantly different from other markets and are more prone to failure. He then goes on to discuss seven key manifestations of financial market failure. He is of the view that some amount of financial repression may be beneficial until a very advanced stage of the development process has been achieved.

3. EMPIRICAL LITERATURE

The recommendation made by Shaw (1973) and McKinnon (1973), towards liberalization of the financial system as a means of improving financial depth and economic growth have been adopted by many of the world's developing countries since the 1970s. Most of the Arab countries started liberalizing their financial systems in the 1990s (Nashahibi *et al*, 2001, p. 63). The countries that adopted the financial liberalization thesis attempted to increase the role of market forces in the determination of interest rates, the allocation of credit and the overall scale of financial intermediation. These efforts sought to mobilize more of the national savings in the form of financial assets (deposits), and to make more efficient allocation of financial resources for more productive investments.

However, financial liberalization has had varied results – from disastrous to very successful transitions, i.e. to more efficient and market oriented financial systems. Differences in the financial structure, institutional base, the initial link between the financial sector and the real sectors, the speed and timing of the liberalization process and the macroeconomic environment have played significant roles in the implementation of liberalization efforts (*see* for instance, Pill and Pradhan, 1995; Fry, 1997, World Bank, 2005, and, Kabir and Hoque, 2007, pp. 435-36).

Kabir and Hoque (2007) examined the impact of financial liberalization on financial development and economic growth in Bangladesh. The results of their study revealed that despite the extensive financial development in post-liberalization period, financial and monetary variables have not fully contributed to economic growth. Laurenceson and Chai (1998) examined the influence of financial liberalization on financial depth in China during the period 1978-1996. By applying the Autoregressive Distributed Lag (ARDL) model the study found that financial liberalization led to financial deepening in China.

Habibullah and Eng (2006) investigated the causality between financial development and economic growth of 13 developing Asian countries over the period 1990-1998. The study found, among other things, that financial liberalization promoted the financial development and economic growth of the sampled countries. A study by Galindo *et al* (2007) tested the crucial question of whether financial liberalization improves the allocation of investment in 12 developing economies. The results showed that financial liberalization had positive effects on the efficiency of the allocation of resources. Shrestha and Chowdhury (2005) tested the impact of financial liberalization on savings and investment for Nepal over the period of 1970 to 2003. Based on the ARDL model, the result of this study revealed that liberalization of interest rate has had significant positive effect on both savings and investment in Nepal. Fry (1997) pointed out that financial repression reduces economic growth. This result was derived by examining a sample set of 16 developing countries over the period 1970-1988. Similar to the Shaw-McKinnon approach, he then suggested financial liberalization as a means of increasing economic growth. Pill and Pradhan (1995) reported that the outcomes of financial liberalization in some African countries (i.e. Gambia, Ghana, Kenya, Madagascar, Malawi, and Zambia) were less successful than the results that were obtained in the case of other Asian countries (i.e. Indonesia, Korea, Malaysia, the Philippines, Sri Lanka, and Thailand). The development of financial systems in the African countries sampled, as measured by (M2/GDP), did not change in the post liberalization period. This is because

the necessary and appropriate preconditions, such as a stable macroeconomic climate, institutional and financial development, were not favorable to the success of financial liberalization in those African countries, in comparison to conditions in the Asian countries. Odhiambo (2006) examined the financial liberalization influence on the savings level in South Africa. The study found, among other things, that the liberalization of interest rate may ambiguously affect domestic savings. Jankee (2006) investigated the effect of financial repression polices on the financial development of Mauritius over the period 1970 to 2000. The study showed that banking controls had inhibited financial sector development. All this, therefore, suggests the pursuit of financial liberalization to achieve a higher rate of economic growth. Odhiambo (2005) also examined the effect of financial liberalization on financial deepening in three sub-Saharan African countries, *viz*. Kenya, South Africa and Tanzania. Using the co-integration and vector error-correction model, the study found positive effect of financial liberalization on the financial development of the sample countries. Recently, Fowowe (2008) has investigated the effect of financial liberalization on economic growth in Nigeria over the period from 1972 to 2002. The study pointed out that, though financial liberalization can cause financial fragility in the short-term, in the long-term, it will improve economic performance.

4. VIEW OF FINANCIAL LIBERALIZATION TRENDS IN IRAQ

In Iraq the financial repression policies lasted up to 2003. These were in the form of controls – administered interest rates, credit allocation through credit-plan programs, imposition of high reserve requirements and state ownership of banks until 1991. The banking sector was partially liberalized from 1991 onwards, when the Central Bank of Iraq (CBI hereafter) permitted only the domestic private sector to set up banks. Thus 17 privately owned banks were established in the country, till 2003 (CBI, 2003, p. 17).

However, the two largest state-owned commercial banks, *viz*. Rafidain Bank and Rasheed Bank, controlled the banking sector by holding a considerable amount of the total assets, total deposits, and total credit of the commercial banking system through their large network of branches, as shown in Table 1.

The CBI was empowered to administratively determine the interest rates on deposits and credit. The spread[1] was high as the rate of interest paid by

[1] Spread is the interest earned, less interest expended.

Table 1: Selected Indictors of Commercial Banking System in Iraq: 1990-2007 (ID million)

Year	*Total Assets*		*Total Deposits*		*Total Credit*		*Number of Branches*	
	SOBs	POBs	SOBs	POBs	SOBs	POBs	SOBs	POBs
1990	24252	00	21551	00	3426	00	249	00
1995	452407	18479	386360	15387	142294	3299	311	23
2003	33436647	434327	3986134	332538	506423	114708	312	161
2007	250149173	120429	15167753	1760543	2079597	585301	280	201

Note: SOBs = State-Owned Banks; POBs = Privately Owned Banks.
Sources: Authors' estimates based on the Annual Reports of Iraqi banks - several years.

Iraqi banks was less than the interest rates charged for lending. Table 2 shows that the spread was over 10 per cent, particularly during the 1990s. The same table also shows that prior to that period the Iraqi banks received moderate spread, as it did not exceed 4 per cent. It appeared that Iraqi banks had achieved a high ratio of profit. But the reality was just the opposite. This is because the state-owned commercial banks were forced to hold a considerable amount of their loanable funds in the form of treasury bills and government securities. The Rafidain Bank, for instance, held 77 per cent of the total loanable funds in the form of treasury bills in 2000 (Rafidain Bank, 2000). Similarly, Rasheed Bank held 55 per cent of its loanable funds in the form of treasury bills in the same year (Rasheed Bank, 2000).

Table 2: Spread of Iraqi Commercial Banks: 1970-2007 (%)

Year	*Interest Rate on Short -Term Credit*	*Interest Rate on Savings Deposits*	*Spread*
1970	6	4.5	1.5
1975	6	4.5	1.5
1980	6	4.5	1.5
1985	9	6	3
1990	11	7	4
1995	20	10	10
2000	20	10	10
2003	14	7	7
2006	15.1	6	9.1
2007	20.6	10	10.6

Source: Authors' estimates based on the, Central Bank of Iraq, *Annual Bulletins*, Department of Statistics and Research, Baghdad, *Various Issues*.

On the other hand, Table 3 shows that the depositors had received negative interest rate due to the high rates of inflation which were aggravated during the economic sanctions imposed from 1990 to 2003. The negative rate of interest on deposits encouraged Iraqis to hold real assets and foreign currencies (especially US dollar) instead of financial assets (deposits) in order to maintain the real value of their wealth. Factors other than the unattractive interest rates, i.e. weak banking culture and low banking density, also seemed to have encouraged the Iraqis to keep their surplus funds away from the banks.

Table 3: Real Interest Rate in Iraq: 1970-2007 (%)

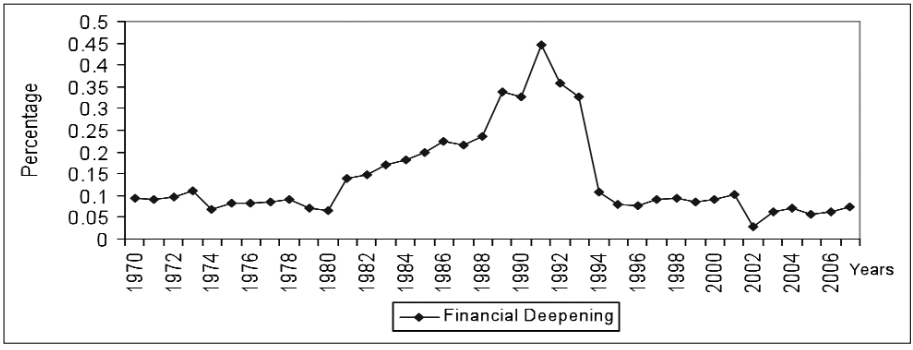
Year	*NDR*	*INF*	*RDR*
1970	4.5	12	-0.57
1975	4.5	11	-0.54
1980	4.5	22	-0.76
1985	6	4	0.4
1990	7	52	-0.85
1995	10	351	-0.96
2000	10	5	0.83
2003	7	34	-0.76
2006	6	53	-0.87
2007	10	0.8	5.11

Note : The Nominal Deposit Rate (NDR) of interest is measured by the official savings deposit rate.
The Inflation rate (INF) is measured by average growth of consumer price index (1988=100).
The Real Deposit Rate (RDR) is calculated as (1+NDR) / (1+INF)-1.
Source: Authors' estimates based on Central Bank of Iraq, Annual Bulletins, Department of Statistics and Research, Baghdad, *Various Issues*.

Hence, the main negative consequence of these factors was that only a meager amount of savings flowed into the banking sector. The currency in circulation formed over 50 per cent of M2 over the period from 1970 to 2007 (CBI Bulletins, *various issues*). Therefore, the financial depth[2] was shallow in Iraq as measured by the ratio of M2-currency in circulation divided by GDP during the same period as seen in Chart 1.

[2] Shaw (1973) defines financial depth as the phenomenon in which the financial sector grows at a rate faster than the real sector of the economy. Financial depth is reflected in the financial development, and they are used as synonyms in the literature (King and Levine, 1993a, p. 720). Two measures are used in the literature to capture the financial deepening of an economy. The first is M2/GDP. This indictor is used in the works of King and Levine (1993 a, b) and others. The second measure is M2 less currency outside the banking system divided by the GDP. This indictor is used for instance by Demetriades and Hussein, (1996) and Xu (2000) among others.

Chart (1) Financial Deepening in Iraq 1970-2007



Source: Authors' estimates based on Central Bank of Iraq, Annual Bulletins, Department of Statistics and Research, Baghdad, *Various Issues*.

The CBI also made use of the credit planning policy to control credit allocation to the economy. Table 4 reveals that this policy of allocating credit to high return investments also did not achieve its goals. Most of the loanable funds of Iraqi banks were channeled either to the state-owned enterprises or to finance the government budget deficits through holding treasury bills. The same table 4 shows also that the private sector projects had received only a smaller share of total loanable funds.

Table 4: Allocation of Loanable Funds by Iraqi Commercial Banks: 1970-2007 (ID million, Percentage)

Year	Loanable Funds Allocated to			*Total Loanable Funds* (4)	*Ratio* 1/4	*Ratio* 2/4	*Ratio* 3/4
	Private Sector (1)	*Public Sector* (2)	*Treasury Bills* (3)				
1970	87	47	30	164	53.1	28.6	18.3
1975	116	796	33	945	12.3	84.2	3.5
1980	409	1090	5	1504	27.3	72.4	0.3
1985	365	1365	6271	8001	4.6	17.1	78.3
1990	285	3140	13762	17187	1.6	18.3	80.1
1995	6101	139492	165445	311038	2	44.8	53.2
2000	170004	168184	815344	1153532	14.8	14.5	70.7
2003	396418	224713	1551861	2172992	18.2	10.3	71.5
2007	2387433	1054992	519000	3961425	60.2	26.7	13.1

Source: Authors' estimates based on Central Bank of Iraq, Annual Bulletins, Department of Statistics and Research, Baghdad, *Various Issues*.

The Iraqi commercial banks achieved a low level of profitability based on this pattern and policy of funds allocation. Loans to the state-owned enterprises were advanced between 6.5 to 8.5 per cent rate of interest (CBI, 2003, p15); whereas, the government paid only 6 to 7 per cent rate of interest for treasury bills held by the banks (Al-Shama'a, 2002, p. 32). At the same time, banks paid higher rates of interest on the deposits which varied from up to 10 per cent for savings deposits and 15 to 18 per cent for two-year time deposits annually (CBI, 2003, p. 15). Hence, the financial intermediation of the Iraqi banking system was lopsided during the financial repression period as measured by the credit to private sector divided by GDP (Sanhita and Khalaf, 2008, p. 16).

Financial intermediation in Iraq was further aggravated because the statutory reserve requirements were set at a high ratio of 42 per cent. As this ratio increases, banks' capacity for lending decreases at a certain level of deposits. This is due to the banks having to keep some amount of their deposits in the form of statutory reservations at the central bank without return. The loanable funds of banks will therefore be reduced. The profitability of banks was further reduced because the reserve requirements yielded zero-rate of interest.

5. IMPLEMENTATION OF FINANCIAL LIBERALIZATION IN IRAQ: POST-2003

In order to overcome all the above-mentioned negative effects of financial repression policies and establish a viable and vital financial system in Iraq, the monetary authorities launched a comprehensive financial reform program in 2003. This reform package includes:

– Relaxing of interest rate control.
– Relaxing of credit control.
– Lowering of reserve requirements ratio from 42 to 25 per cent, and.
– Permitting the foreign banks to enter the banking arena.

The effect of elimination of interest rate control on financial deepening has been limited because the real rate of interest has been negative even in the post-reform period (*see* Table 3). The fact is that the negative real interest rate is turning off savers from transferring their surplus funds to create financial assets. Moreover, the interest rates on various types of deposits were reduced after the liberalization of the financial sector. For instance, the interest rate on saving deposits had dropped from 10 per cent in 2002 to 6 per cent in 2006; the rate on one-year time deposits also decreased from 12 per

cent in 2002 to 7 per cent in 2006; similarly for other types of deposits too the interest rate has been reduced (CBI, 2003, p. 15; CBI, 2006, p. 58).

In spite of the fact that interest rates were reduced, however, private sector deposits have swollen during the post-liberalization period. In fact, the interest bearing deposits (savings and time deposits) have increased from (Iraqi Dinar) ID 8,38,640 million in 2002 to ID 29,17,387 million in 2007 (CBI, 2003, p. 3 and CBI, 2007, p. 18). The hikes in salaries and wages since 2003 are the main factors that have contributed to the increase in bank deposits[3]. This implies that the elimination of interest rate control has had no effect on the volume of deposits.

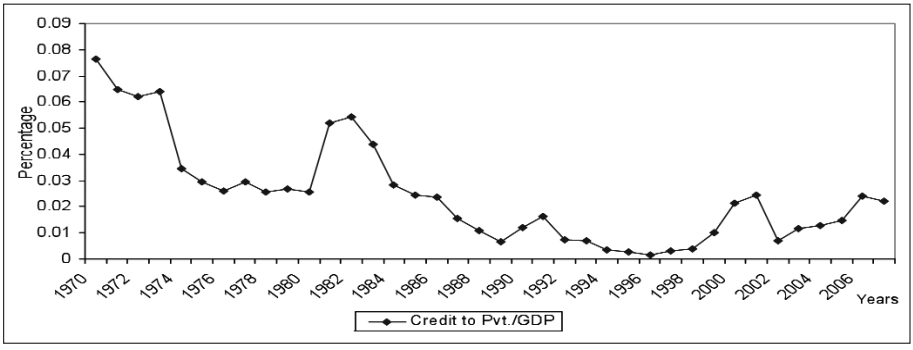
Overall, the increased volume of deposits is expected to lead to better financial deepening in Iraq, in line with the existing theoretical and empirical literature (Shaw, 1973; McKinnon, 1973; and King and Levine 1993 a, b). But, contrary to expectations, the expected financial deepening in Iraq did not happen. Rather it got further aggravated during the post-liberalization period. In this regard, it deteriorated from 0.10 per cent in 2001 to 0.06 per cent in 2006 (*see* Chart 1). This was due to the increase in GDP which was higher than the pace of deposits, as a result of the lifting of the economic sanctions in 2003.

According to theoretical literature, the freeing of credit ceiling and similar controls and the lowering of reserve requirements are expected to promote the financial intermediation of banks at a certain volume of deposits. This occurs through reallocation of loanable funds to higher return projects in the private sector, instead of subsidizing government-favored firms. In Iraq, the financial intermediation of banks, as measured by the credit to private sector as a share of GDP declined during the post-liberalization period. This ratio, in fact, was reduced from 0.076 in 1970 to 0.022 in 2007 (*see* Chart 2).

Chart 2 also reveals that financial intermediation had deteriorated during the period of economic sanctions from 1990 to 2003. Moreover, the credit deposits ratio, as an important indicator of bank performance by channeling the deposits to a variety of credit seekers, had also declined. It shows that the Iraqi banks had low performance during the post-liberalization period, since this ratio dropped from 22.9 per cent in 2002 to 15.7 per cent in 2006 (Sanhita and Khalaf, 2008, p. 22).

[3] The high inflation rate and shortage in some core consumption goods in the wake of US invasion in 2003 had exhausted a considerable amount of Iraqis' disposable income. A recent survey has revealed that Iraqis spent 30-60 per cent of their disposable income per month only on petroleum products (Al-Shibibi, 2007, p. 13). Furthermore, Looney (2006, p. 1004) reported that increases in the prices of gasoline products, consumer goods, medical supplies, transport services, and commercial and residential rents, consumed around 90.3 per cent of an Iraqi household's spending.

Chart (2) Financial intermediation of Iraqi Banks 1970-2007



Source: Authors' estimates based on Central Bank of Iraq, Annual Bulletins, Department of Statistics and Research, Baghdad, *Various Issues*.

This implies that the financial liberalization policies have not been conducive to improving the financial intermediation of the Iraqi banking system. Several reasons have constrained the financial liberalization efforts, and contributed to the lowering of the financial intermediation of Iraqi banks. Some of the most important factors are: (*a*) The informal activities of the private sector have been significantly expanded in the wake of the US invasion. These contributed to around 65 per cent of the total GDP of Iraq in 2007, as estimated by Looney (2006, p. 999). The informal activities took the form of trading, subsistence agriculture, and other forms of self-employment undertakings. Most of these activities depended on self-financing, or at best relying on loans from informal sources, such as family, relatives or friends, rather than from the formal financial institutions, i.e. banks. This form of financing has long flourished in Iraq (Malm, 2004, p. 55). (*b*) Deterioration in other sectors due to the unplanned liberalized economic policies that were implemented after the US invasion in 2003. For instance, liberalization of foreign trade undermined the opportunities of domestic producers/investors to compete with the cheap imported goods. Hence, the small and medium-scale private sector enterprises were forced to suspend their activities. This led to shrinkage of further credit demand from the banks. (*c*) The situation was further aggravated by the uncertain national security and political scenario prevailing since 2003. In addition to these uncertainties, the daily bombings prevented the private sector from expanding its economic activities, which has also adversely affected the demand of bank credit.

The entry of foreign banks was expected to improve the development and efficiency of the host country's financial sector. Consequently, restric-

tions on foreign banks' entry were lifted, as suggested by the literature (Levine, 1996, p. 225 and Demirgue-Kunt *et al*, 1998, p. 103). Since 2004 the CBI has permitted foreign banks[4] to conduct business in the country after a ban that lasted for four decades (foreign banks were nationalized in 1964).

However, no foreign bank that had been granted a license in 2004 opened its doors for business until 2007 (The Brooking Institute, 2007, p. 46). This is because of the unstable economic situation caused by the insecure and political chaos prevailing since 2003. Against this background, the policy of permitting foreign bank entry is not expected to play a major role in promoting the financial development of Iraq in the near future.

6. MODEL, DATA SOURCE AND METHODOLOGY

6.1. Model and Data Sources

Guided by the writings of Demetriades and Luintel (1996), Demetriades and Luintel (1997), Laurenceson and Chai (1998) and Jankee (2006), and taking into account the constraints relating to data availability, which were mostly destroyed during the arson and looting operations that erupted in the wake of the US invasion of Iraq in 2003, we estimate the following model.

$$DEEPTH = f\ (RGDP, RIR, BD, FRI) \qquad (1)$$

Financial depth is proxied with the variable DEEPTH, which is defined as broad money (M2), less currency in circulation, divided by the nominal GDP. Without deducting currency in circulation, we primarily have a measure of monetization rather than financial deepening. This measure is frequently used in the analysis as a proxy of financial development, particularly in the developing countries, where considerable amount of M2 is in the form of currency in circulation outside the banks. Therefore, a rising ratio of M2/GDP may reflect a more extensive use of currency rather than an increase in the volume of bank deposits. Hence, currency outside the purview of banks is excluded from the measure, because it is not intermediated through the banking system (*see* Demetriades and Hussein, 1996, p. 395 and Xu, 2000, p. 334).

The economic growth (RGDP) is measured as the real GDP per capita. This variable is widely used in the literature as a proxy for the level of real

[4] The first three foreign banks granted licenses by the CBI were: Hong Kong & Shanghai Banking Corporation, Standard Chartered Bank of the UK, and National Bank of Kuwait (Looney, 2004, p. 9).

income and economic growth of an economy (*see* Demetriades and Hussein, 1996; Demetriades and Luintel, 1996, 1997; Laurenceson and Chai, 1998; and Jankee, 2006). It is assumed to have a significant positive effect on financial deepening. Robinson argued that financial development follows economic growth, and articulated this causality argument by suggesting that "where enterprise leads finance follows" (Robinson, 1952, p. 86).

Real interest rate (RIR) measures the nominal interest rate on savings deposits deflated by the prevailing inflation rate. This proxy measures the indirect effect of financial liberalization on financial development (Laurenceson and Chai, 1998, p. 404). Banking density (BD) is calculated by dividing the population by the number of bank branches. This variable reflects the appropriate spread of banks' branches throughout the country. According to the Structuralist School, the expansion in the structure of the financial system, such as an increase in the number of financial institutions and in the array of financial instruments, will have a beneficial effect on the savings-investment climate, and, hence, on economic growth (Goldsmith, 1969). This proxy has been used as a determinant of financial development in several studies (Demetriades and Luintel, 1996, 1997; Laurenceson and Chai, 1998; and Jankee, 2006).

Financial repression index[5] (FRI) is used to gauge the effect of financial repression polices on financial development. For our index, we may organize the data concerning three aspects of financial repression, *viz.* (*i*) interest rate controls, (*ii*) credit intermediation controls, and (*iii*) credit allocation controls. Interest rate and credit intermediation controls are calculated by using a dummy variable that is assigned a value of 1, if the control is present, if it is not, it is 0. Therefore, the period from 1970 to 2003 is assigned the value of 1. Credit allocation controls capture the trend of credit allocation between public and private sectors.

In order to construct a single index of financial repression policies, we use the statistical method of 'principal component'. Principal component analysis linearly transforms a set of positively correlated variables into a new, smaller set of variables which are termed as principal components. These principal components are not correlated with one another and are ordered in terms of the amount of variance in the original variables they explain. Therefore, the first principal component frequently explains the vast majority of

[5] Financial repression index includes three factors, *viz*. interest rate controls, credit intermediation controls, and credit allocation controls. Interest rate controls denote the fixing of interest rates on deposits and loans by the Central Bank of Iraq. Credit intermediation controls refer to the ceiling imposed on credit allocation. Credit allocation controls denote the share of credit to public sector divided by total credit.

variances in the initial set of variables. Data on financial repression index is given in the Appendix One.

The data about GDP, population, inflation, general price index, total deposits, banks' branches, interest rates, and credit allocation are obtained from various issues of the Central Bank of Iraq Annual Reports, Annual Reports of Iraqi commercial banks, and Annual Statistics Abstract of the Ministry of Planning. All the variables in the data set are expressed in natural logarithms, and the annual observations and time-span of the study ranges from 1970 to 2007. The choice of annual data is prompted by the fact that most of the available data are reported annually.

6.2 Econometric Methodology

The methodology of this study is designed to evaluate the impact of the financial liberalization on the financial development in Iraq. In this study, we utilize the Autoregressive Distributed Lag (ARDL) approach to cointegration as outlined by Pesaran and Pesaran (1997) and Pesaran and Shin (1998). This approach examines the hypothesis that financial liberalization leads financial development as proposed by McKinnon (1973) and Shaw (1973). The ARDL model has been chosen here because it has numerous advantages. Firstly, it can be applied irrespective of whether the individual repressors are integrated to the order of I(0) or I(1), regardless of stationarity. Secondly, the ARDL model takes a sufficient number of lags to capture the data generating process from a general to specific modeling framework: Laurenceson and Chai (2003). Thirdly, the ARDL approach yields superior estimates of long-run coefficient, and the diagnostic tests of the estimated equation are more reliable (Gerrard and Godfrey, 1998, p. 235 and Laurenceson and Chai 1998, p. 405). Fourthly, from the ARDL model, one can derive a dynamic error correction model (ECM) through a simple linear transformation (Banarjee *et al*, 1994, pp. 50-52).

The ECM also helps us to measure the short-run relationship among the model's variables. Finally, the ARDL model is a more appropriate measure in the case of a smaller sample. Since the sample size of our study is limited to 38 observations, it provides more motivation for the study to apply the ARDL approach for analysis. Based on Equation (1), we establish our ARDL model as follows:

$$\Delta DEEPTH=\alpha_0+\sum_{i=1}^{P}\beta_1\Delta LDEEPTH_{t-i}+\sum_{i=1}^{P}\beta_2\Delta LRGDP_{t-i}+\sum_{i=1}^{P}\beta_3\Delta LRIR_{t-i}+\sum_{i=1}^{P}\beta_4\Delta LBD_{t-i}+\sum_{i=1}^{P}\beta_5\Delta LFRI_{t-i}$$

$$+ \lambda_1 LDEEPTH_{t-1} + \lambda_2 RGDP_{t-i} + \lambda_3 LRIR_{t-1} + \lambda_4 LBD_{t-1} + \lambda_5 LFRI_{t-1} + \mu_t \qquad (2)$$

Where Δ =1st difference of a variable,
α_0 is a constant,
p is a maximum lag order,
β_1,…., β_5 represent the short-run coefficients (error correction dynamic),
λ_1,…., λ_5 correspond to the long-run relationship,
i time trend, and,
μ_t is the white noise error.

The implementation of the ARDL approach involves two stages. First, the existence of the long-run relation (cointegration or co-movement) between variables under investigation is tested by computing the *F*-statistics to analyze the significance of the lagged levels of the variables. Pesaran *et al* (1999) and Narayan (2004) have provided two sets of appropriate critical values for different numbers of regressors (variables). This model contains an intercept or trend or both. One set assumes that all the variables in the ARDL model are of 1(0), and another assumes that all the variables are 1(1). If the *F* statistic lies above the upper-bound critical value for a given significance level, the conclusion is that there is a non-spurious long-run level relationship with the dependent variable. If the *F*-statistic lies below the lower bound critical value, the conclusion is that there is no long-run level relationship with the dependent variable. If it lies between the lower and the upper limits, the result is inconclusive. The general form of the null and alternative hypotheses for the *F*-statistic test is as follows:

$$H_0: \lambda_1 = \lambda_2 = \lambda_3 = \lambda_4 = \lambda_5 = 0$$
$$H_1; \lambda_1 \neq \lambda_2 \neq \lambda_3 \neq \lambda_4 \neq \lambda_5 \neq 0$$

Secondly, if the cointegration between variables is identified, then one can undertake further analysis of long-run and short-run (error correction) relationship between the variables.

7. EMPIRICAL RESULTS

7.1. Unit Root Test

The Augmented Dickey-Fuller (ADF) test was carried out to investigate the stationarity (the presence of unit roots) in all the variables included in Equation (1). This test examined the null hypothesis that the considered variable has a unit root (non-stationary) *versus* the alternative hypothesis that the variable is stationary. The ADF test results presented in Table 5 clearly reveal

that all the variables under investigation are integrated at order 1, I (1), i.e. they become stationary after first differencing.

Table 5: Unit Root Test Results

ADF			
Variables	*Levels*	*1st Differenced*	*Status of Integration*
DEEPTH	-1.557825	-5.734150*	I(1)
RGDP	-1.494076	-5.771955*	I(1)
RIR	-2.122696	-3.343065**	I(1)
BD	-2.566709	-2.769828***	I(1)
FRI	-1.180926	-5.758818*	I(1)

Notes: 1. Critical values follow the MacKinnon (1996) one-sided p-values.
2. One, two and three asterisks indicate statistical significance at 1%, 5% and 10% levels respectively.

In the first stage of the ARDL analysis, we test for the presence of long-run relationship between the variables under investigation. This is done by computing the *F*-statistic for testing the significance of the lagged levels of the variable in the error correction form of the underlying ARDL model. Given the fact that we use annual time series data and the limited number of observations (38), we then allow the ARDL model to be lagged by a maximum of two periods. This level of lag is recommended by Pesaran and Shin (1998) and Narayan (2004). Therefore, the calculated *F*-statistic is 5.3624. This value is greater than the upper critical value bounds at 5 per cent significant level, where the lower and upper critical value bounds are 3.130 and 4.128 (Narayan, 2004, p. 27). Hence, the null hypothesis of no cointegration between the variables is rejected.

After having found the long-run relationship between the variables, we move on to the second stage of the analysis. At this point we estimate the long-run and the short-run coefficients. The results of our ARDL model are presented in Tables 6 and 7.

Table 6 shows the results of the long-run relationship between the dependent variable (DEEPTH) and the other regressors. All the independent variables have the expected signs, except for the financial repression index, which is also not statistically significant. This may indicate the inadequacy of the data that was used for measuring this variable. The most significant fact of this table is that all the regressors are not statistically significant, which means that none of these variables had any substantial effect on the financial deepening of Iraq.

Table 6: Long-Run Estimates of ARDL Model

Regressor	*Coefficient*	*Standard Error*	*t-value*	*p-value*
LRGDP	0.428	0.36	1.16	[0.25]
L(1+RIR1)	0.550	0.32	1.67	[0.10]
LBD	0.091	1.48	0.06	[0.95]
LFRI	0.723	0.66	1.09	[0.28]
CONST	-7.408	5.68	-1.30	[0.20]

Note: Dependent variable is LDEEPTH and ARDL model (1,1,0,0,1) is selected based on Schwarz Bayesian Criterion.

The real GDP per capita has however registered an insignificant effect on the financial depth in Iraq as the p-value shows that (see table 6). However, the GDP per capita seems to have a great impact on financial depth in term of elasticities. The insignificant effect between the two variables traced to a fact that the real GDP per capita had collapsed due to the high inflation rate, the deleterious effects of three major wars and the imposition of economic sanctions by the UN. The recent estimates of real GDP per capita, compared with other Arab countries, have ranked Iraq to the bottom (*see* for instance, ESCWA, 1999, p. 20 and ESCWA, 2008, pp. 10-11). Similarly, the real interest rate and banking density exhibit the expected signs but were statistically insignificant. This means, these two proxies do not have any effect on financial deepening in the long-run in the case of Iraq. The negative real interest rate has not encouraged Iraqis to keep their surplus funds with banks. It is also implied that the concentration of banks and their branches in the main cities in Iraq does not motivate the people to maintain their savings with banks.

Table 7: Error-Correction Estimates

Regressor	*Coefficient*	*Standard Error*	*t-value*	*p-value*
ΔLRGDP	-0.636	0.13	-4.74	[0.00]
Δ(1+LRIR)	0.115	0.04	2.78	[0.00]
ΔLBD	0.0191	0.31	0.06	[0.95]
ΔLFRI	-0.386	0.24	-1.60	[0.11]
ΔCONST	-1.548	1.23	-1.25	[0.22]
ΔECM(-1)	-0.209	0.08	-2.41	[0.02]
$R^2 = 0.68$	R-Bar-Squared = 0.60			
	S.E. of Regression = 0 .24216		F-stat. F(5,30) 12.2372[0.000]	

Note: ECM-ARDL (1,1,0,0,1) is selected based on Schwarz Bayesian Criterion.

Table 7 presents the results of error correction of the ARDL approach and the short-run relationship of the variable as well. The results reveal that the real interest rate is the only key determining factor in explaining the short-run changes in financial depth. The coefficient of the real rate of interest indicates that, in the short-run, a 1 per cent rise in the real deposit interest rate increases the financial depth by 0.11 per cent. Unsurprisingly, the real GDP per capita has appeared with a negative sign, and is statistically significant.

This implies that the real GDP per capita is not an essential determinant of financial depth in Iraq. This also means that the increases in the real incomes do not tend to flow into the financial system in the form of financial assets (deposits); instead it is diverted to other forms of immovable assets[6]. Although not statistically significant, the negative sign of the financial repression index variable indicates that such policies have dampened the financial development of Iraq. With the expected sign, the banking density variable is statistically insignificant, which also suggests that this variable is not conducive to promoting financial deepening in the country.

According to Banarjee *et al* (1998), a highly significant error correction term is a further proof of the presence of a stable long-run relationship between the variables. Hence, Table 7 shows that the coefficient of error correction term ECM-1 is statistically significant with the expected negative sign. This confirms, once again, the existence of cointegration between the variables of our model. The coefficient of ECM-1 is -0.209 per cent, which indicates that the specified relationship returns to equilibrium relatively fast. That is, -0.209 per cent of the disequilibrium in the previous year is corrected in the current year.

Finally, in order to investigate the stability of the long-run and short-run relationships of our ARDL model for the entire period, the cumulative sum (CUSUM) and the cumulative sum of squares (CUSUMSQ) of the recursive residual test for structure stability, proposed by Brown *et al* (1975), have been used here. These two tests are presented in Charts 3 and 4. If the plotting of the CUSUM and CUSUMSQ remains within the 5 per cent critical bound, the null hypothesis, that all coefficients are stable, is accepted. In fact, these charts clearly reveal that the plotting of both CUSUM and CUSUMSQ are within the boundaries, and, therefore, these statistics confirm the stability of the long-run and short run coefficients in our ARDL model.

[6] Several empirical studies have found that economic growth does not affect financial development. For instance, Majid and Mahrizal (2007, p. 385) found that the economic growth does not lead to financial development in the case of Indonesia and Malaysia. A study for China, (Laurenceson and Chai, 1998, p. 409) also found that the real GDP per capita did not promote financial deepening and the result was negative and statistically insignificant.

Chart 3: Plotting of CUSUM Statistics for Stability Test

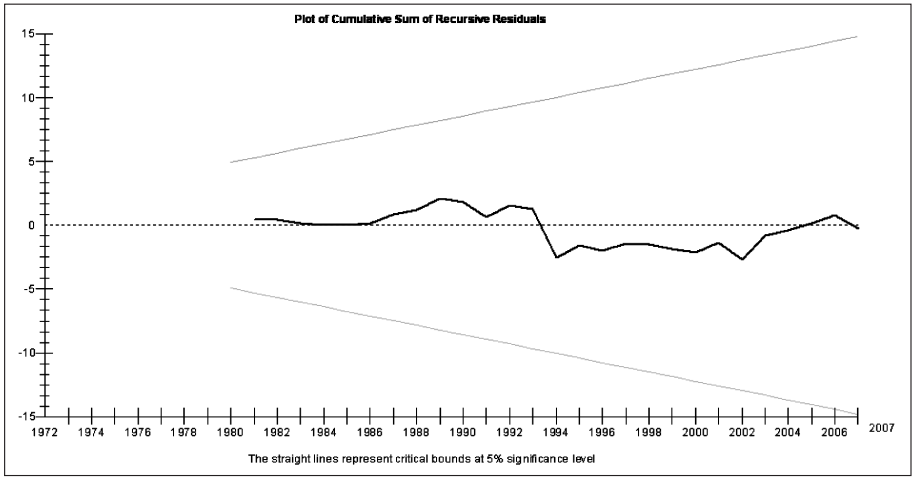
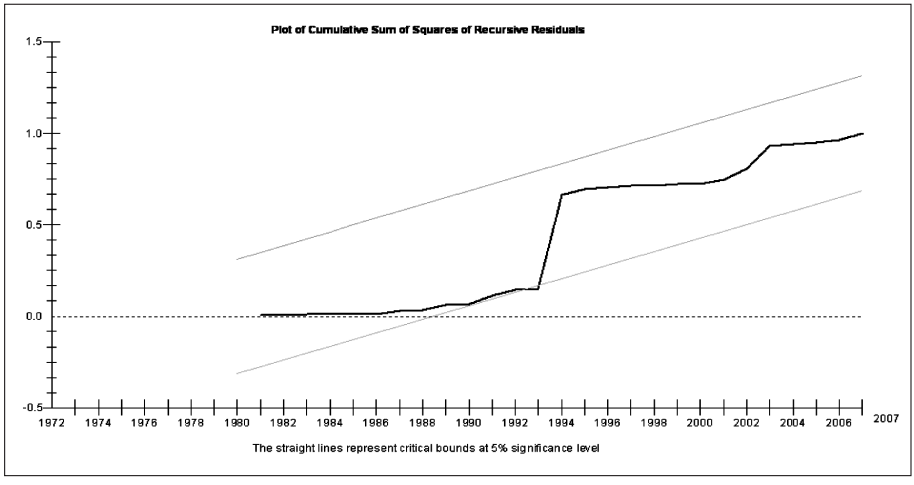


Chart 4: Plotting of CUSUMSQ Statistics for Stability Test



8. CONCLUSION AND POLICY IMPLICATIONS

An attempt has been made in this paper to assess the impact of the policies of financial repression (1970 to 2002), and the financial liberalization policies that have been launched since 2003 on the financial development of Iraq. The initial investigations of this study revealed that the financial devel-

opment in Iraq was low during the entire period from 1970 to 2007. This implies that neither of these two strategies (repressive or liberalized) has contributed to spur the financial development in Iraq.

In order to verify this fact, we applied a more robust econometric technique, *viz.* the ARDL model. The findings of the ARDL analysis suggest that the financial repression index negatively affected the financial development in Iraq through the policies of interest rate controls and directed credit allocation. Moreover, the recent attempts to remove the impact of financial repression policies *via* the liberalization approach also unfortunately, could not improve the country's financial development. The findings of this study therefore reject the McKinnon-Shaw hypothesis, which states that liberalization of the financial system will lead to the financial deepening of an economy. However, the main unforeseen reasons behind the unintended consequences of the financial liberalization strategy implemented since 2003 are the uncertain security and political scenario, absence of an appropriate investment climate, and unstable macroeconomic environment (high inflation rate), among others. These findings corroborate the earlier findings by Pill and Pradhan (1995), World Bank (1989, 2005), Fanelli and Medhora (1998) and Looney (2004). Their findings suggest that the success of financial liberalization depends on the primary conditions of an economy, i.e. macro-economic stability, quality of financial and legal institutions (efficient financial intermediaries, advanced communication and information technology support, and the quality of the legal and regulatory framework), as well as on the security scenario of a country.

The econometric analysis also shows that the banking density in Iraq has not contributed to financial deepening, due mainly to the inappropriate allocation of banks which are mostly concentrated in the main cities.

APPENDICES

Appendix One

Data for Financial Repression Index (FRI)

Years	*IRC*	*CIC*	*CAC*	*FRI*
1970	1	1	35	18.2013
1971	1	1	46	23.533
1972	1	1	45	23.0483
1973	1	1	49	24.9871
1974	1	1	72	36.1352
1975	1	1	87	43.4057

1976	1	1	81	40.4975
1977	1	1	75	37.5893
1978	1	1	69	34.6811
1979	1	1	71	35.6505
1980	1	1	73	36.6199
1981	1	1	70	35.1658
1982	1	1	66	33.227
1983	1	1	67	33.7117
1984	1	1	74	37.1046
1985	1	1	79	39.5281
1986	1	1	74	37.1046
1987	1	1	88	43.8904
1988	1	1	92	45.8292
1989	1	1	96	47.768
1990	1	1	92	45.8292
1991	1	1	96	47.768
1992	1	1	95	47.2833
1993	1	1	93	46.3139
1994	1	1	94	46.7986
1995	1	1	96	47.768
1996	1	1	93	46.3139
1997	1	1	90	44.8598
1998	1	1	86	42.921
1999	1	1	63	31.7729
2000	1	1	51	25.9565
2001	1	1	38	19.6554
2002	1	1	52	26.4412
2003	1	1	36	18.686
2004	0	0	24	11.6328
2005	0	0	45	21.8115
2006	0	0	30	14.541
2007	0	0	31	15.0257

Note: IRC, CIC, and CAC denote interest rate controls, credit intermediation controls, and credit allocation controls respectively. FRI is the financial repression index. It is equal to: $FRI_t = 0.6184(IRC_t) + 0.6184\ (CIC_t) + 0.4847(CAC_t)$. The values are given by the first principal component.

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Résumé

Cette étude analyse l'impact sur le développement économique de l'Iraq des politiques de répression financière depuis 1970 jusqu'à 2002 et les conséquences des stratégies de libéralisation caractérisant la période 2003-2007. En utilisant l'ARD modèle, un modèle autorégressif à retard échelonné, cet exposé met en évidence que ni les politiques de répression financière ni les tactiques de libéralisation, n'ont encouragé la croissance économique de l'Iraq. Ce constat suggère que les politiciens iraquiens devraient mettre en acte des mesures pluridirectionnelles, telles que la promotion des entreprises du secteur privé, la réduction des activités non officielles du système économique, la stabilisation des variables macroéconomiques (réduction du déficit fiscal et du taux d'inflation) et, de façon encore plus importante, la reconstitution d'une sécurité politique et sociale, en mesure de garantir la prospérité économique du pays.

Mots clés: libéralisation financière, répression financière, développement financier, Iraq.