Interest Rate Liberalization and Economic Growth: Conceptual Issues and Empirical Evidence

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Résumé :

Cet article décrit le rôle que la libéralisation des taux d'intérêt sont susceptibles de jouer dans les pays en développement. Il commence par la discussion des justifications traditionnelles de la libéralisation des taux d'intérêt, puis fournit une partie de la preuve empirique. Il aborde ensuite une série de conditions préalables pour la réussite de cette libéralisation. La conclusion de l'analyse est que la libéralisation des taux d'intérêt est susceptible d'être en seconde ordre d'importance après le développement des institutions financières et monétaires dans les pays en développement. Un accent sur les réformes institutionnelles plutôt que la libéralisation des taux d'intérêt peut rendre les pays en développement à être en meilleure santé et moins fragile aux crises qu'on a vécu au cours de ces dernières années.

Abstract: This paper describes the role that interest rates liberalization are likely to play in developing countries, It begins by discussing the traditional justifications for interest rate liberalization, and then provides some of the empirical evidence. It then discusses a range of prerequisites for successful interest rates liberalization. The conclusion from the analysis is that the interest rates liberalization is likely to be of second order importance after the development of good, financial, and monetary institutions in developing countries. A focus on institutional reforms rather than on the interest rate liberalization may encourage developing countries to be healthier and less prone to the crises that we have seen in recent years.

Introduction

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A high economic growth in conjunction with positive real interest rates is the central objective of macroeconomic policy. Not surprisingly, the question of the existence and nature of the link between high real deposit rate on overall savings, investment and growth has been the subject of considerable interest for economists and policymakers alike, over the last four decades.

In the earlier literature on the subject, McKinnon (1973) and Shaw (1973) posited that interest rate liberalization would lead to higher levels of saving and investment thus economic growth, through directing credit towards the more productive projects. According to Mackinnon, an increase in real interest rates after financial liberalization should encourage saving and expand the supply of credit available to domestic investors, thereby enabling the economy to grow more quickly.

Although the debate about the precise relationship between these two variables is still open, the intensive research on this issue has uncovered some important results and a relatively wide consensus about some aspects of this relationship has been reached. It is generally accepted now that negative interest rate has a negative effect on growth.

Several empirical studies (Fry 1981, Lanyi and Saracoglu 1983, Gelb 1989) have examined the effect of financial liberalization on growth, focusing specifically on whether the relationship between interest rate and growth. In other words, at some high rate of interest from a negative to a positive, the relationship could be positive, but at unusually high rates it becomes negative.

This paper is organized as follows. Section I discusses some basic relationships and gives a short review of the McKinnon-Shaw argument for interest rate liberalization, while Section II reviews the empirical literature on the relationship between interest rates and economic growth. Section III discusses the prerequisites for successful interest rate liberalization. While section IV reviews the Algerian experience.

I. Interest Rate Liberalization: Theoretical Underpinnings

The impact of changes in real interest rate on saving, investment, and economic growth, is a central issue that has interested economists for a long time in macroeconomics. Surprisingly, it was until the early 1970s that the economic literature on investment mainly considered that a low interest rate would promote investment spending and economic growth, through reducing the rate of return on financial assets, and inducing a shift to investments in «productive» assets in developed and developing countries alike, according to the Keynesian and neo-classical theories[1].

As a result, much of the economic policymakers in developing countries frequently adopted policies of low interest rates and extensive direction of credit severely as a way of promoting economic growth, and as a policy to fund government fiscal imbalances and subsidize priority sectors, by forcing financial institutions to pay low and often negative real interest rates, in the framework of the so-called financial repression policy. The traditional justifications of government for financial repression are[2]:

First, the government needs to impose anti usury laws thereby intervening in the free determination of interest rates, because lowering the interest rate could increase the expected quality of borrowers, and this effect would be even greater if it were assumed that the government had some positive selection capabilities.[3]

Second, the control strict (supervision) and prudential regulation of the banking system would give the monetary authorities a better control over the money supply and inflation.

Third, the governments knew better than markets or private banks, what the optimal allocation of savings was or what kind of investments were more or less desirable from a social perspective.

Fourth, financial repression was identified with interest rates below market rates which reduced the costs of servicing government debts. It also

[1] - Lazaros E. Molho, Interest Rates, Saving, and Investment in Developing Countries, A Re-examination of the McKinnon-Shaw Hypotheses, Staff Papers - International Monetary Fund, vol.33 N0. 1. March 1986, p 90.

[2] - Nouriel Roubini and Xavier Sala-i-Martin, Financial Development, the Trade Regime, and Economic Growth, National Bureau of Economic Research, Working Paper No. 3876 , Cambridge , October 1991 , p 11.

[3] - Joseph E. Stiglitz, The Role of the State in Financial Markets, The International Bank for Reconstruction and Development , The World Bank, 1994, p 40.

increases firm equity because it reduces the cost of capital, leading to investments with higher expected returns.

But this policy has led to several problems, as a result of the relation between financial repression and growth. As the empirical arguments presented systematic inverse relation between growth and several measures of financial repression. (Financial repression is associated with negative real interest rates, high required reserve ratios and the choice of a high inflation tax).

Low interest rates are insufficient to generate savings, and even reduce savings especially if substitution effects dominate the income effect for households, as well as increasing the desired level of investment but they also reduced the actual level of investment, owing to the reduction in savings.[4] As that below equilibrium interest rates lead to capital flight, thereby reducing the availability of savings for domestic investment. According to Shaw, "because savings are mobile, evasion of interest rate ceilings is routine in lagging economies (resulting in) capital flight away from domestic asset markets."

Administratively determined interest rates are not only low but lack flexibility and often administered at negative levels in real terms. They make it impossible for financial institutions to adjust their lending rates to the changing cost of funding. This makes it impossible for many lending institutions to absorb any loss that may be incurred in lending to higher risk projects.[5]

In their analysis of financially repressed developing economies, McKinnon (1973) and Shaw (1973), both challenged the economic growth argument. However, they proposed that distortions in the financial systems, such as loans issued at an artificially low interest rate, directed credit programs, and high reserve requirements would reduce saving, retard capital accumulation, and prevent efficient resource allocation. Thus, reducing both the real volume and productivity of investment, by affecting adversely the quality of investment by allowing low productivity projects to remain

[4] - Ishan Kapur, Interest Rate Liberalization: Some Lessons from Africa, IMF, Working Paper, /91/121, December 1991, p 3.

[5] - Ngugi R and Kabubo J, Financial Sector Reforms and Interest Rate Liberalization: The Kenya Experience, African Economic Research Consortium, research Paper 72, Nairobi, March 1998, p 10.

profitable,[6] through highly negative effect on the quality and quantity of real capital accumulation. Generally, this policy distort the economy in five ways:[7]

First, low interest rates produce a bias in favor of current consumption and against future consumption. Therefore, they may reduce saving below the socially optimum level. This leads to reducing the flow of loanable funds through the organized banking system, forcing potential borrowers to rely more on self finance.

Second, Interest rates on the truncated flow of bank lending vary arbitrarily from one class of favored or disfavored borrower to another, as well as the potential lenders may engage in relatively low-yielding direct investment instead of lending by way of depositing money in a bank.

Third, The process of self finance within enterprises is itself impaired. If the real yield on deposits is negative, firms cannot easily accumulate liquid assets in preparation for making discrete investments. While the borrowers able to obtain all the funds they want at low loan rates will choose relatively capital-intensive projects.

Fourth, the pool of potential borrowers contains entrepreneurs with low yielding projects who would not want to borrow at the higher market-clearing interest rate. Lowering interest rates does not necessarily increase the average efficiency of investment because lower interest rates can encourage entrepreneurs with lower-yielding projects to bid for funds.

Fifth, Inflows of foreign financial capital may be unproductive when the domestic capital market is in disarray and foreign exchange rates are unpredictable. [8]

Consequently, both McKinnon and Shaw maintain that financial liberalization, involving the establishment of higher interest rates that

[6] - Philip Arestis et al, Financial Policies and the Aggregate Productivity of the Capital Stock: Evidence from Developed and Developing Economies, Levy Economics Institute of Bard College, Working Paper No. 362, 2002, p 4.

[7] - Maxwell J. Fry, saving, investment, growth, and financial distortions in pacific Asia and other developing areas, international economic journal, volume 12, Number 1, Spring 1998 , p 4.

[8] - McKinnon Ronald, Financial Repression and the Productivity of Capital: Empirical Findings on Interest Rates and Exchange Rates, Asian Development Bank, Distinguished Speakers Program July, 1990, p 9 .

equate the demand for and the supply of savings, will lead to increased savings and financial intermediation as well as to improvements in the efficiency of using savings. Thus, raising the ceilings on the interest rate would improve the allocation of credit towards more productive projects, which will affect positively the average productivity of capital. [9]

Raising interest rates (to market-clearing level) increases the amount people are willing to hold as financial assets by decreasing the holdings of non-financial assets such as cash, gold, commodities, land, etc. Raising the interest rate ceiling also deters entrepreneurs from undertaking all low-yielding investments that are no longer profitable at the higher real interest rate. Hence, the average return to or efficiency of aggregate investment increases. The output growth rate rises in this process, so further increasing saving. Thus, the real rate of interest as the return to savers is the key to a higher level of investment, and as a rationing device to greater investment efficiency. The increased quantity and quality of investment interact in their positive effects on the output growth rate.

II. Interest Rate and Growth: The Empirical Literature

Having reviewed the theoretical analysis of the arguments in favor of liberalization of interest rate, in this section, we summarize some of the results of the existing empirical literature as regards the relationship between real interest rates and economic growth.

The literature on the relation between interest rate and economic growth in developing countries evolved in a way similar to the one on financial liberalization[10] and growth. In particular the work in the 1980's showed a strong positive empirical relation between the higher level of real interest rate and the rate of economic growth and a negative relation between financial repression and growth.

There are several studies, particularly that provided by (fry 1981, 1988) and (Gelb 1989) which have tested the relationship between real interest rates (R) and the rate of GDP growth (G) using the following equation:[11]

[9] - Bela Balassa, Financial Liberalization in Developing Countries, development economics the world bank, Working Papers 55, September 1989, pp 1-6.

[10] - McKinnon and Shaw define financial liberalization to mean the establishment of higher interest rates that equate the demand and the supply of savings.

[11] - The East Asian Miracle, Economic Growth and Public Policy, World Bank Policy Research Reports, Published by Oxford University Press, Sep, 1993, P 245.

$$G = canstant + \beta_1 R + u \text{ ..... (1)}$$

Where (R) is the real interest rate on deposits and (G) is the rate of Economic growth. Both Fry and Gelb apply ordinary least squares (OLS) estimation to pooled cross-economy time-series data.

Fry (1981)[12]examined the hypothesis that lowering real deposit rates below competitive levels increases inflation and, at the same time, reduces real economic growth in seven Pacific Basin developing countries[13] over period 1962- 1981, Fry calculated an average real interest rate for countries on a real deposit rate for 12-month. The ordinary least-squares (OLS) estimates are:

$$G = 0.390 + 0.043\frac{\mathrm{P}}{\mathrm{P}^*} + 0.049\ R \text{ ..... (2)}$$

The results (t-statistics are in parentheses) indicate that there is a positive relationship and statistically significant between higher real output growth and higher real deposit rates. Where increase the real deposit rate to 3 percent is associated with a rise in the rate of economic growth to about 7.1 percent.

In this framework, Fry says that "flexible interest-rate policies in financially repressed economies can be used to counter inflationary shocks and accelerate the real rate of economic growth. An increase in the real deposit rate of interest towards its competitive, free-market equilibrium level raises real money demand, so reducing inflationary pressures. At the same time, the availability of credit increases in real terms".[14]

In one of the important studies of the effect of interest rate on economic growth, Lanyi and Saracoglu (1983) provided evidence on the relationship between real deposit rates and the growth of the broad money supply (M2), measured as the real value of the sum of monetary and quasi-monetary deposits with the banking sector.

[12] - Maxwell J. Fry, Inflation and Economic Growth in Pacific Basin Developing Economies, Federal Reserve of San Francisco, Economic Review, 1981, p 12.

[13] - Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan and Thailand.

[14] - Maxwell J. Fry, Inflation and Economic Growth in Pacific Basin Developing Economies, op-cit, p 17.

The authors calculated an average real interest rate for each country on a thirty-day deposit deflated by the rate of change in its Consumer Price Index (CPI), in a cross-section relationship of 21 countries for the (1971-1980) period.[15]

Countries were then divided into three groups, and were classified according to whether they had positive real interest rates, moderately negative real interest rates, or severely negative real interest rates: Groups 1, 2 and 3 respectively.

The results show a high correlation and statistically significant between the average rate of growth of GDP and the real deposit rate for the period (1971-1980), the interest rate variable is statistically significant at the 1 percent level.

After that, Fry (1988) replicated the Lanyi and Saracoglu's cross-country regression technique but added Taiwan. Using the scaled variable (SR) for the real deposit rate over its three Categories, and defining (G) to be the real rate of growth in (GDP), the following results were gotten:[16]

$$G = 4.451 + 2.592\, SR \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

$$(9.474)\ (4.074)$$

$$R^2 = 0.426$$

The equation (3) refer to the positive correlation between higher real output growth and higher real deposit rates.

From several pooled time series and cross-country studies for Asian economies for the 1960s and 1970s, Fry (1978, 1979, 1980, and 1981) found that estimates showing positive and statistically significant relationships between the rate of economic growth and the real deposit rate of interest. The empirical results suggest that on average a 1 percentage point increase in the real deposit rate of interest towards its competitive free-market equilibrium level is associated with a rise in the rate of economic growth of about 0.5 a percentage point in Asia.[17]

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[15] - McKinnon Ronald, Financial Repression and the Productivity of Capital: Empirical Findings on Interest Rates and Exchange Rates, op-cit, p 4.

[16] - McKinnon Ronald, Financial Repression and the Productivity of Capital: Empirical Findings on Interest Rates and Exchange Rates, op-cit, p 5.

[17] - Maxwell J. Fry, In Favour of Financial Liberalization, The Economic Journal, Volume. 107, Number 442, May, 1997, p 762.

In a more comprehensive study Presented by Alan Gelb (1989) analyzed the relationship between average 3 to 6 month deposit rates (deflated by the CPI rate of inflation) and average real GDP growth.

Gelb used the same methodology as Lanyi and Saracoglu for a sample of 34 developing countries, over a longer time period (21 years), 1965-1985. He found that average growth rate was 5.5 percent for countries with positive real interest rates, 3.8 percent for those with moderately negative real interest rates, and only 1.9 percent for those with strongly negative real interest rates.

$$G = c + \ 0.256\ RR \text{..... (4)}$$

$$(5.72)$$

$$R^2 = 0.489$$

Equation (4) suggests that real interest rates and growth rates are quite strongly correlated.

After (1973), measured average growth in real GDP fell from 6 percent per year to about 4 percent per year in the 34 countries. as a result of the collapse of the Bretton Woods System, Hence, Gelb introduced a dummy variable, GROUP, taking on the value 0 for (1965-1973), and 1 from (1974-1985), and then calculated country-wide averages for RR and G for each of the two sub periods. [18]

$$\mathrm{G} = \mathrm{c} + 0.197\mathrm{RR} - \ 0.018\ \mathrm{GROUP} \text{ ..... (5)}$$

Literally interpreting equations (4) and (5), for every one percentage increase in the real deposit rate, output growth increases by 0.2 to 0.25 percentage points.

III. Requirements for Interest Rate Liberalization

Several interest rate liberalization experiences have failed to achieve the expected results. The basic problem lies in the perverse reaction to higher

[18] - Alan Gelb, Financial Policies, Growth and Efficiency, The World Bank, Working Papers N0 202, June 1989, p 20.

interest rates, which was the root cause of bank failures, as a result bank supervision weak and capital adequacy requirement for banks did not even exist. Moreover, classification of loans and provisioning rules were inadequate and not up to international standards.

Thus the proper regulation and supervision is the most important factor in the success or failure of interest rate liberalization. All banking crises after interest rate liberalization could be traced back to inadequate supervision or regulations not keeping up with the changing financial landscape. Removing interest rate constraints has led to more competition in almost all cases, but this competition became destructive rather than constructive when banks were allowed to enter too risky businesses.

Demirguc-Kunt and Detragiache (1998) examined the relationship between banking crises and financial liberalization in a panel of 53 over the period (1980-1995). They concluded that the impact of financial liberalization on the fragility of the banking sector is weaker where the institutional environment is strong. In particular, respect for the rule of law, a low level of corruption, and good contract enforcement. These results support the view that financial liberalization should be approached cautiously where the institutions necessary to ensure law and contract enforcement and effective prudential regulation and supervision are not fully developed, even if macroeconomic stabilization has been achieved, as well as that strong institutions cannot be created overnight, not even by the most reform oriented government. Thus, the financial liberalization should be gradual. While for countries that were initially in a state of financial repression the positive effect of liberalization on financial depth appears to be stronger than the negative effect of a banking crisis. [19]

In this framework Friedman (the biggest advocates of financial liberalization) said in 2001, "we have learned about the importance of private property and the rule of law as a basis for economic freedom. Just after the Berlin Wall fell and the Soviet Union collapsed, I used to be asked a lot: What do these ex-communist states have to do in order to become market economies? And I used to say: You can describe that in three

[19] - Asli Demirguc-Kunt and Enrica Detragiache, Financial Liberalization and Financial Fragility, IMF, Working Paper /98/8 , Jun 1998, p 35.

words: privatize, privatize, privatize. But, I was wrong. That wasn't enough. It turns out that the rule of law is probably more basic than privatization".[20]

Moreover, the Macroeconomic and structural imbalances present important challenges. Removing the ceilings on interest rate can expose other problems in the economy, unusually high positive real interest rates possibly triggered by macroeconomic instability, as was the case in some Latin American countries[21], especially Chile during the 1970s, where demand was growing too rapidly and policies allowed for excessive borrowing, facilitated by a rapid liberalization of interest rate and capital account. Inadequate regulatory and supervisory frameworks and poor governance in banks also have exacerbated problems in virtually all the cases.

Throughout the discussion on interest rate management policy in developing countries during the 1970s, McKinnon (1973) stressed on the importance of stable macroeconomic and financial conditions has been stressed on:[22]

"This preferred strategy of high real rates of interest--where real finance is plentiful at those rates--may be nearly impossible in an economy with high and unstable inflation. Uncertainty and the desire to avoid risk may make nominal rates of interest that incorporate the expected future price inflation look too high to borrowers and too low to depositors."

Because the increase inflationary expectations lead to the weakness credibility of the stabilization program, suppose that the government is trying to reduce inflation but that agents attach some positive probability to a self fulfilling panic, because of self-reinforcing pessimism about expected inflation. Nominal interest rates will be raised in anticipation of expected inflation. If the panic does not occur and stabilization is in fact successful, ex post real interest rates will be high because nominal interest rates at the outset of stabilization efforts included a premium for inflation that did not materialize. The implication, as Krugman (1991) puts it, is that

[20] - James Gwartney and Robert Lawson, Economic Freedom of the World: 2002 Annual Report, p 17.
[21] - Diaz – Alejandro Carlos, Good-Bye Financial Repression, Hello Financial Crash, Journal of Monetary Economics, 19/ (1985), North-Holland, p 1-24.
[22] - Ishan Kapur, Interest Rate Liberalization: Some Lessons from Africa, op-cit, p 7.

history and expectations together determine whether the good or bad equilibrium emerges over time.[23]

According to Calvo (1988) "The expectations may play a crucial role in the determination of equilibrium when being instability, that the nominal interest rate is not simply a passive reflection of people's inflationary expectation, but rather that the nominal interest rate is actually one of the main determinants of inflation. Consequently, a credible anti-inflationist policy would have to implement rules to prevent nominal interest rates to become unduly high".[24]

As the best example of incredibility, we refer to the Russian's stabilization program experience, in mid-1994, for example, nominal interest rates had fallen much less than inflation, which had dropped sharply. But real interest rates were too high throughout the period until October 1994. In the summer months inflation was about 6 percent a month, while nominal interest rates on interbank loans were 15 to 18 percent a month, suggesting of incredible stabilization program. As the Russian monetary authorities persisted with tight credit during 1994, the high real interest rates led to a rapid and crippling build-up of bad debts in many enterprises and banks. [25]

Fry (1997) considers that there are five prerequisites for successful financial liberalization:[26]

❖ Adequate prudential regulation and supervision of banks, implying some minimal levels of accounting and legal infrastructure, which aims at ensuring that banks have well diversified loan portfolios.

❖ A reasonable degree of price stability or macroeconomic stability.

❖ Fiscal discipline taking the form of a sustainable government borrowing requirement that avoids inflationary expansion of reserve money by the central bank either through direct domestic borrowing by the government or through the indirect effect of government borrowing that produces

[23] - Paul Krugman, History Versus Expectations, The Quarterly Journal of Economics, Volume. 106, Number. 2. May, 1991, pp. 651-667.

[24] - Guillermo A. Calvo, Servicing the Public Debt: The Role of Expectations, The American Economic Review, Vol. 78, No. 4, September, 1988, p 659.

[25] - Jeffrey Sachs, Russia's Struggle with Stabilization: Conceptual Issues and Evidence, the World Bank, 1995, p 73.

[26] - Maxwell J. Fry, In Favour of Financial Liberalization, op-cit, p 795.

surges of capital inflows requiring large purchases of foreign exchange by the central bank to prevent exchange rate appreciation.

❖ Profit-maximizing, competitive behavior by the commercial banks.

❖ A tax system that does not impose discriminatory explicit or implicit taxes on financial intermediation.

Indeed, the interest rates liberalization is likely to be of second order importance to the development of good fiscal financial and monetary institutions in producing macroeconomic success in developing countries. Rather than treating the interest rate structure as a primary choice, a greater focus on institutional reforms like improved bank and financial sector regulation, fiscal restraint building consensus for a sustainable and predictable monetary policy. A focus on institutional reforms rather than on the interest rate liberalization may encourage developing countries to be healthier and less prone to the crises than we have seen in recent years. Moreover, interest rate liberalization requires a deep understanding of a country's economy, institutions, and political culture.

Finally, we consider "price stability, Banking Supervision, institutional environment including formal rules, informal norms and policy credibility the four key factors to successes and failures the interest rates liberalization in developing countries".

IV. Interest Rate Liberalization in Algeria

Algeria, like many other developing countries, followed a policy of low interest rates the main aim of this policy was to keep the costs of funds low, with the belief that cheap credit promoted development through increased investment. The use of interest rates to manage monetary conditions and mobilize and allocate financial resources in an efficient manner was neglected. Interest rates remained under the administration of the government until 1990, through a regime of fixing minimum savings rates for all deposit-taking institutions and maximum lending rates for commercial banks. The allocation of resource to preferred sector was assured through central credit allocation and preferential interest rates. For example the highest nominal lending rate 6 percent was charged on loans to private business, nominal rates as low as 2.5 percent prevailed for rural-sector borrowers. Nominal interest rates on deposits also ranged

between 2.5 and 6 percent[27]. While the nominal interest rates on long term loans were between 3 and 6 percent for the public sector, from 2.5 to 10 percent for the private sector between 1986 and 1989[28]. Deposit savings rates were too low, as a result of inflationary pressure created by the oil crisis in 1980s the interest rates became negative in real terms during most of the early 1980s.

The government saw the need to review the interest rates to encourage savings through the banks and to create a disincentive to forestall speculation and uneconomic use of savings by borrowers. In the l990s, the interest rate policy was reviewed with the following objectives:

First, to keep the general level of interest rates positive in real terms in order to encourage savings and to use the interest rates as a tool to promote monetary stability and economic growth.

Second, allow greater flexibility and encourage greater competition among the banks and financial institutions to enhance efficient allocation of financial resources.

Third, to reduce the differential to maximize lending for banks, the interest rate liberalization aimed to harmonize the competitiveness among the commercial banks by removing the differential that had existed for maximum lending rates to allow greater flexibility and encourage greater competition in interest rate determination so that the needs of both borrowers and lenders could be better met through the cooperation of market forces. Also, it was aimed at making interest rates responsive to changes in international markets to provide protection against adverse movements of funds internationally.

Moves to liberalize interest rates began in 1990, when interest rates for the private and the public sector were unified and commercial paper from both sectors was made subject to the same eligibility criteria for refinancing. In May 1990 the ceilings on savings deposit rates for commercial banks were progressively raised, while commercial banks' lending rates still remained subject to a 20 percent ceiling a year.

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[27] - Alan Gelb and Patrick Conway, Oil windfalls in a controlled economy A 'Fix-price' Equilibrium Analysis of Algeria, Journal of Development Economics, North-Holland, 28 (1988), p 65.

[28] - Benissad Hocine, La Réforme Economique en Algérie ; ou L'indicible Ajustement Structurel, Office des Publications Universitaires, 1991, p 118.

An important step taken under the 1994 reform program was, therefore, the abolition of the ceiling on commercial banks' lending rates to the public, so that the effective rates on loans could exceed stipulated ceilings. It was accompanied by the temporary imposition of a cap of 5 percentage point on commercial bank interest rates spread, with a view to preventing an excessive increase of lending rates as a result of possible collusion among the five commercial banks. This cap on banks' spreads was eliminated in December 1995. The deregulation of interest rates, together with the deceleration of inflation brought about by tighter demand management policies, eventually led to the emergence of positive real interest rates since the beginning of 1996.[29] (See Table 1)

Interest rate liberalization was accompanied by other reforms including the floating of the exchange rate and trade liberalization. In the financial sector there was a move toward the use of indirect monetary policy instruments, including reserve ratios, variable liquidity ratios and liberalized market based interest rates. The government took measures to remove the policy and institutional constraints in the operations of Treasury bill and Treasury bond markets, including the attraction of auction, reforms in the lending mechanism and issue of a broader range of treasury bills, aimed at regulating the liquidity in banking institutions. (See Table 1)

Table 1 - Financial Liberalization Program in Algeria

Monetary policy and financial sector reform	Date
- Removal of ceilings on savings deposit rates. - Elimination of ceilings on bank lending rates while imposing a limit of 5 percent point on banks' spreads.	1990 1994
- Introduction of minimum reserve requirement of 3 percent	1994

[29] - Karim Nashashibi et al, Algeria: Stabilization and Transition to the Market, International Monetary Fund, Occasional paper 165, 1998, P 33.

on bank deposits remunerated at 11% a year.	
- Audit of the state-owned commercial banks in collaboration with the world bank.	1994- 96
- Financial restructuring and recapitalization of public commercial banks.	1994- 96
- Development of the money market	
- Introduction of an auction system for bank credit.	1995
- Introduction of an auction system for treasury bills.	1995
- Introduction of open-market operation. - Imposing a capital adequacy ratio of 4 percent, it was increased to the bank of international settlement standard of 8 percent by 1999. - Elimination of the 5 percent point limit on banks' interest rate spreads. - Introduction of a deposit insurance scheme.	1995 1995 1996 1997

Source; Karim Nashashibi et al, Algeria: Stabilization and Transition to the Market, op-cit, p 10.

This made it possible for the central bank use the Rediscount rate to influence the level of other short-term interest rates. However, with the high inflationary conditions, after the liberalization of most price controls and following the steep devaluation kept real interest rates negative until 1995.[30] A tight monetary policy was adopted to mop up the excess liquidity through the decline in credit to the non government sector. Rediscount rates increased, pushing up the interest rates. Commercial banks increased their deposit rates as they competed for deposits from the non-banking sector and then decreased with low inflation.

The central bank felt that it was only logical for the lending rates to come down to reflect change in inflation and the downward trend in rediscount rates. The lending interest rate was reduced by from 20 percent in 1994 to 9 percent in 1997, while the deposit rates decreased from 16 to 8.5 percent within the same period. (See Table 2)

Table 2. Structure of interest rates 1991-1999

(In percent per year)

1991-94		**1995**	**1996**	**1997**	**1998**	**1999**
CB rediscount	11.5	14	13	11	9.5	8.5

[30] - Abdelali Jbili, Klaus Enders and Volker Treichel, Financial Sector Reforms in Algeria, morocco and Tunisia; A Preliminary Assessment, IMF, Working Paper 81, July 1997, p 20.

Deposit rate	12-16	16-18	16-18	8.5-12	8.5-12	8-10
Lending rate	15-20	19-24	17-21	9-13	8-12.5	8-11
CN d'épargne						
Deposits rate						
Savings	8	16	16	16	12	7.5-9
Housing	5	12	12	12	10	7-9
Lending rate						
Individuals	7–14	12-22	12-22	10-17	8.5-10	8.5-10
Developers	14	16-20	16-20	10-17	8.5-10	8.5-10
Inflation	26	30	18.7	5.7	5	2.6

Source: Algeria: Selected Issues and Statistical Appendix, IMF, 1998, 2003.

The expected main objective of interest rates liberalization is that the financial sector will grow and become efficient as information flows improve, while the low cost of intermediation leads to a narrowing of the spread between the lending and deposit rates, as efficiency improves and competition increases.

Table 3. Financial Indicators after interest rates liberalization

(In percent per year)

RDR[1]	RLR[2]	M2[3]	GDP	CPS[4]	CPS[5]	NPLs[6]
2000 7.16	9.64	58.1	2.2	70.6	29.4	27.4
2001 2	5.2	58.6	2.6	68.6	31.3	26.1
2002 3.8	7	63.9	4.7	56.5	43.5	-
2003 2.7	5.4	63.7	6.9	57.4	42.6	37.1
2004 -1	4.4	61.0	5.2	56.0	44.0	37.4
2005 0.1	6.3	55.2	5.1	49.6	50.4	19.0
2006 0.2	6	56.7	2.0	44.5	55.5	18.0
2007 -1.7	3.5	63.7	3.0	44.8	55.1	22.0
2008 -2.8	3.3	63.0	2.4	46.0	54.0	17.5
2009 -3.9	2.3	72.9	2.4	48.1	51.9	21.1
2010 -2.1	4.1	68.8	3.3	44.7	55.3	18.3

Source: Bank of Algeria, IMF and database world bank,

1/ Real deposit rate, 2/ Real loan rate, 3/ M2/GDP, 4/ Credit to public sector, 5/ Credit to private sector, 6/ Nonperforming Loans.

So far, after two decades of interest rates liberalization, the results demonstrate a non achievement of efficiency in banking intermediation. Despite the efforts to introduce competitiveness, the banking sector seemed to gain an oligopolistic structure, with only a few institutions controlling the sector. Six state major commercial banks continued to dominate, with more than 93 percent of the total deposit liabilities and a

similar share of the loans market.[31] (At end-2004, the six public banks accounted for 84 percent of bank deposits and 86 percent of bank credits). Most of the banking sector in Algeria is in public hands, while that although the private banks in Algeria are well capitalized and profitable but they only represent 10 percent of financial system assets. With such a structure it difficult for interest rates the banking system to respond to changes in other price indicators.

Notwithstanding the declining interbank rates and surplus of funds in the banking system, the interest rates structure of commercial banks showed high lending rates. The average nominal lending rate increased slightly to 8 percent in 2010 from 6 percent in 2006. While deposit rates declined from an average 2 percent in 2006 to an average 1.8 percent in 2010. Thus, the spread between the average lending rate and the average deposit rate widened over the period 2006-2010 reflecting inefficiencies in cost management, and unrealistic profit expectations and targets in commercial banks.

After deregulation, lending surged in Algeria. The ratio of loans to GDP increased from 25 percent to close to 27 percent within ten years, with regard the credit to the private sector remains small by international standards (about 22 percent of GDP in 2011), despite its recent rapid growth, reflecting the difficult access to financing for both businesses and households. Notably, credit to households was low and accounted for only 8 percent of credit to the economy, hindered by the ban on consumer credit decided in 2009.[32] Lack of capital has constrained the banks in developing credit to the private sector. The public banks' capital is only 4 percent of non hydrocarbon GDP. This small capital allows low overall credit because of capital adequacy rules. Since a significant share of credit still goes to public enterprises, the scope for private sector credit is small, because more credit to public enterprises may distract banks from developing the practices and products to finance private sector activity. Overall, the ratio of loans to total loans remains very small by international standards.

[31] - Amor Tahari et al, Financial Sector Reforms and Prospects for Financial Integration in Maghreb Countries, IMF Working Paper 125, May 2007, p 12.

[32] - International Monetary Fund, Algeria: 2012 Article IV Consultation, IMF Country Report No. 13/47, February 2013, p 6.

The non-performing loans are still very high by international standards, for example, in 2005, the ratio of non-performing loans to total loans about 19 percent while in Morocco and Mexico about 10 and 1.2 percent respectively, the cost of the government's taking over of public banks' non-performing loans has been about 3 percent of GDP annually from 1991–2001. The ministry of finance estimated public banks' remaining non-performing loans to public enterprises at 4 percent of GDP at end-October 2006.

Although the financial sector in Algeria is relatively deep when compared with Maghreb Countries, the M2/GDP ratio maintained after the liberalization of interest rates in 1990 is slightly lower than the average M2/GDP ratio maintained before the liberalization. For example, during the period 1970 to 1989, the average M2/GDP ratio was 65 percent[33]. Between 1990 and 2000, the average M2/GDP decreased to 46 percent. In 1996, the M2/GDP ratio reached about 36 percent, the lowest since 1970. However, since then the ratio increased phenomenally. The ratio was 40 in 1997 and 56 percent in 1999. In 2001, the M2/GDP ratio increased to 58 percent and in 2009 the M2/GDP ratio reached 72.9 percent, the highest since 1990.

Although in Algeria financial depth has improved considerably since 1997, economic growth has consistently shown a mixed trend since the 2001. For example, during the period 2000 to 2010, the country recorded a record high GDP growth rate to about 6.9 percent in 2003 from about 2.6 in 2001. However, the rate later declined in 2006 and 2007 to 2 and 3 percent respectively. Despite dwindling economic growth, has maintained Algeria on a modest recovery in economic growth during the period (2000-2010), on average, 3.6 percent. (See Table 3)

According to this analysis, the major challenges are still in the Algerian banking system, low credit growth to the private sector, high lending rates to the public sector and a widening interest rate spread despite declining interbank rates and a relative surplus liquidity in the banking system.

Conclusion

[33] - Naas Abdelkrim, Le Système Bancaire Algérien ; de la décolonisation à l'économie de marché, éditions INAS, 2003, p 86.

The objective of this paper is to examine the McKinnon-Shaw hypothesis, which indicates that the higher interest rates will lead to increased savings and financial intermediation as well as to improvements in the efficiency of using savings, thus, the rate of economic growth in developing countries. There is convincing evidence from a number of empirical studies referred to in this article concerning the positive effect of the interest rates liberalization on economic growth in developing countries.

However, the excessively high interest rates after the financial liberalization will have unfavorable economic effects. Such a situation can be avoided if the liberalization of the banking system takes place under appropriate conditions, including monetary stability and the government supervision of the banks. This would further the goal of establishing equilibrium interest rates. Experiences indicates that to be successful, interest rate liberalization must be accompanied by other economic reforms including fiscal reform aimed at ensuring that the government debt will not explode in the aftermath of the liberalization, as well as sound prudential supervision and regulation of the financial system, because the financial institutions and banks play a key role in evaluating prospective entrepreneurs and improve the probability of successful innovation and thereby accelerate economic growth.

In Algeria the Banking intermediation remains relatively low. The banking sector is very liquid, but lending remains relatively low mainly because of credit risk. Overall, credit to the economy has increased slightly over the period (2000-2010). The growth in credit to the public sector has remained at a high level while growth in credit to the private sector is low according to international standards. However, the non-performing loans ratio in public banks remains too high and further actions are needed to improve the resolution of public banks' non-performing loans with public enterprises and the private sector.

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