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Algeria's financial system in the face of international financial crises: Between vulnerability and resilience

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Abstract:

From 2010 onwards, the analysis of the stability of the financial system shows that it is vulnerable to external shocks. First, there is the risk of oil prices thus limiting the resilience of the system due to the heavy dependence on oil revenues.

The purpose of this article is to present the impact of recurrent international financial crises on the Algerian financial system. To do this, we will try to explain in a first section, the phenomenon of financial crises, how they occur, what are their transmission channels and to what extent they constitute a shock for the national financial systems.

Keywords: Financial crisis, contagion, vulnerability, resilience, external shock.

JEL Classification: G32, G29, G39

1. Introduction:

The international financial crisis, which began in the United States and then spread to the entire world, affected the Algerian economy during 2009 through the decline in demand and prices for hydrocarbons. On the other hand, it did not directly affect the banking and financial system. While the fall in overall demand following the crisis has led to a contraction in oil and gas exports, and consequently to a reduction in budgetary revenues, the maintenance of public expenditure at its previous level, combined with the fact that Algerian banks do not operate on international financial markets - and therefore have not had to record losses on risky assets - has contributed to the continued growth of credit activity in the economy in 2009. This trend was maintained in 2010 and 2011.

Although the Algerian banking and financial sector has not been significantly affected by the crisis, the authorities have not remained inactive and have carried out a series of actions aimed at strengthening the stability of the financial system. These include the creation of specialized units to measure as closely as possible the effects of the crisis as it unfolds, the raising of the minimum capital of banks from 2.5 to 10 billion dinars, the strengthening of the financial structure of public banks (early redemption by the Treasury of bonds corresponding to the redemption of non-performing claims, increase in the capital of 2 banks), the compliance with new accounting standards with international standards and the strengthening of prudential control tools.

2. Transmission of the international financial crisis to emerging and developing economies:

The rapid spread of the effects of the international financial crisis has hit emerging and developing countries hard. The first shock was caused by the sharp decline in capital inflows following the collapse of commodity prices. Secondly, the erosion of demand for consumer durables in industrialized countries has led to a fall in exports from emerging countries and thus to a fall in the volume of international trade. The extreme tensions on the financial, monetary and foreign exchange markets, which characterized the fourth quarter of 2008, had a contagion effect towards emerging countries, and particularly those whose banking sector is heavily exposed to international financial markets.

This rapid spread of the international financial crisis has exacerbated the external financing problems of several emerging and developing countries that were already running large current account deficits. Economic agents in countries heavily exposed to currency risk have suffered more from the “sudden stop” situation (sudden shock due to the sharp deterioration in the situation of international banks and financial markets), materialized by the tightening of external financing conditions and difficulties in obtaining resources in situations of massive outflows of capital. In this context of the drying-up of issues on international markets, the reduction in investor demand for emerging market bonds has been the rule, even when they were well-rated companies and countries with transparent and balanced public finances, As a result, some emerging countries quickly experienced a balance-of-payments crisis and had to resort to exceptional financing from the International Monetary Fund (IMF).

2.1 Effects of the crisis on emerging economies:

The effects of the crisis have been transmitted to the banking systems of emerging countries through at least four processes:

- First, the slowdown in the flow of funds from the parent companies of international banks to their subsidiaries in emerging countries, which is a precursor to an external shock;
- The difficulties experienced by several emerging countries in mobilising external financing;
- The difficulties encountered by emerging countries with large short-term external debt (short-term commitments of banks) in dealing with payments related to external debt servicing;
- The strong expansion of bank loans in some emerging countries financed by loans on the international banking market. Indeed, the importance of banks' short-term liabilities and the increased level of non-resident portfolio investment have been vulnerabilities for some of these countries, in the context of outflows of capital by non-residents linked to their market operations.

Despite the increased importance of the need for external financing from emerging countries, particularly for servicing short-term external debt, net funding flows from the major international banks remained weak. Overall, after a record level of gross private sector capital inflows, including those from banks, to emerging countries, which were valued at 10.7% of their combined gross domestic product in 2007, 2008 saw a significant contraction in capital inflows and this ratio was estimated at only 3.5%.

Portfolio investment and cross-border bank lending were the most significant reversals. In terms of bank lending, the reversal of flows accelerated in the fourth quarter of 2008 as international banks sharply reduced their lending to emerging economies ($205 billion according to the Bank for International Settlements). Similarly, net bond repayments are estimated at $27 billion in the fourth quarter of 2008, after net borrowing of $28 billion in the previous three quarters. The development of foreign direct investment, which is by definition more stable than other capital flows, has become progressively more worrying with the increase in capital outflows due to profit repatriations due to the liquidity needs of many multinational companies.

2.2 The spread of recession in industrialized countries:

The spread of the effects of the recession from developed economies to emerging countries became even more pronounced in the first half of 2009, especially as a result of the decline in external demand following the recession, which led to certain emerging countries, In particular, in Asia, to implement recovery plans geared to domestic demand. Central banks, on the other hand, have taken measures to preserve foreign exchange supply and stabilize foreign exchange markets in order to mitigate rate volatility. Despite more stable conditions at the beginning of 2009, EM foreign exchange markets remained disrupted and the recovery has not yet been complete, while interventions on the foreign exchange market have undermined the official foreign reserves of certain emerging countries (the case of Russia or Poland, etc.).

The simultaneous recession in the industrialized countries, which led to a contraction in demand, led to a sharp fall in the prices of commodities, including hydrocarbons and other raw materials, This has had a serious impact on the current account of emerging market exporters of these products. Between July 2008 and March 2009, according to data from the Bank for International Settlements, commodity prices excluding hydrocarbons fell by 34%, while these products account for more than 40% of the exports of Latin American countries for example. At the same time, some emerging and developing countries were experiencing difficulties in borrowing on international financial markets, or were experiencing a slowdown in growth, particularly in 2009.

This development was completely surprising to the poor countries of sub-Saharan Africa, whose balance of payments deficit widened further as a result of lower commodity prices, which they produce, in conjunction with lower external demand.

3. Effects of the financial crisis on the Algerian financial system:

3.1 State of play of the Algerian financial system after the subprime crisis:

The serious international financial crisis has not directly affected the Algerian banking and financial system. Indeed, the Algerian banking system is exclusively geared to financing the needs of the national economy. Moreover, in the context of a poorly developed national financial market, this financing is largely ensured by the direct distribution of credit by local banks, and not by recourse to international capital markets. As a result, at the end of 2011, 97.9 per cent of domestic financing for non-financial economic agents was provided by the banking sector, compared with 95.5 per cent in 2010 and 94.5 per cent in 2009, and only 2.1 per cent by the financial market (4.5 per cent in 2010 and 5.5 per cent in 2009). It should be noted that the financial market is limited to the bond market, while the capital market remains virtually non-existent. In addition, the Algerian banking sector depends on international capital markets only to a very limited extent, through the possible short-term financing needs of foreign banks operating in Algeria. For these reasons, the Algerian banking sector is less sensitive than others to shocks that have hit the international financial system, including some emerging and developing countries.

Regarding the financial market, the bond market, although growing in recent years (2004-2008), still provides only a modest volume of financing. At the end of 2011, this market accounted for only 0.8% of GDP excluding hydrocarbons, compared to 1.9% in 2010, 2.6% in 2009 and 3.1% in 2008, given the few bond issues in 2009, even without issues in 2010 and 2011 in the context of larger repayments to be made on previously issued borrowings. In addition, market financing is de facto only accessible to large public enterprises and rare private enterprises (four private issuers only at the end of 2011), while SMEs that are family-owned enterprises find it difficult to raise funds there, due to insufficient transparency of their accounts, their management, and their shareholding. Moreover, the Algerian financial sector is not integrated into international capital markets.

- Foreign banks, apart from some support from the parent companies to their subsidiaries in Algeria, have not invested funds in Algerian banks;
- As a result of the regulations in force, Algerian banks have not intervened on the international financial markets; as a result, they have not acquired any “toxic” securities that could affect their solvency through impairment losses. These banks have almost no portfolios of foreign securities and are therefore not subject to fluctuations in international financial markets;
- On the Algerian financial market, there have been no investments of foreign capital (the relevant regulations have been prepared but not promulgated).

Nevertheless, it should be noted that foreign banks operating in Algeria run the risk of being affected by any difficulties encountered by their parent companies (difficulties in finding resources, decision to refocus on the market of the country of origin, etc.).

3.2 Impacts of the financial crisis on oil and gas exports:

In 2009, the Algerian economy was significantly affected not only by the development of hydrocarbon prices on the international market but also by the decline in demand for hydrocarbons. In 2008, current account export revenues for hydrocarbons were $77.19 billion, down from $44.41 billion in 2009, a decrease of 42.0 billion.5%. The average price per barrel of crude oil for Algeria was $99.97 in 2008, down from $62.26 in 2009, a decrease of 37.73%, to which should be added a contraction in the volume of oil exports of 9.58%. Despite the increase in gas exports in the second half of 2009, and the growth in the volume of sales on the domestic market, the performance of the oil and gas sector in 2009 was estimated to have declined by 8%. This directly affected the current account balance, which recorded a very small balance in 2009 ($0.40 billion), compared to a balance of 34.$45 billion in 2008, or 20.1% of GDP.

The decline in non-hydrocarbon exports in 2009 is also significant, although these exports are minimal in relation to total exports (less than 2%) and their contribution to the balance of payments balance on current account is small. The amount of non-hydrocarbon exports in 2009 ($0.77 billion) was down sharply (-45%) compared to revenues in 2008 ($1.40 billion).

On the other hand, the recovery in 2010 and 2011 is very significant: export revenues from hydrocarbons were 71.66 in 2011, up from $56.12 billion in 2010, up 27.7% from 26.3% in 2010, driven by higher hydrocarbon prices on the international market (average price: $112.94/barrel of crude oil, down from 80.15 in 2010); exports in volume were down 4.98% in 2011 from 1.78% in 2010. Exports of non-hydrocarbon goods reached $1.23 billion, up from $0.97 billion in 2010. Such a context of structural weakness in non-hydrocarbon exports de facto determines the profile of the external current account of the balance of payments.

The tightening of liquid hydrocarbon quotas and the decline in demand led to a contraction in the volume of production in the hydrocarbon sector in 2009 - 2011, despite the growth in production destined for the local market. Thanks to the very strong growth of the agriculture sector, driven by good weather conditions, and the significant evolution of the services sector, overall growth in 2009 is estimated at 1.6%, 3.6% in 2010 and 2.8% in 2011. Excluding hydrocarbons, growth was 6.1% in 2011, up from 6.3% in 2010 and 9.6% in 2009.

4. Stability of the financial and banking sector in Algeria:

4.1. Indicators of banking stability :

In Algeria, the deposit and credit markets remain marked by the importance of the relative shares of public banks in the banking sector. The share of deposits, including guarantee deposits, held by private banks is slowly increasing (10.9% in 2011 compared to 10.2% in 2010 and 10% in 2009) as well as their share in distributed loans (14.3% in 2011 compared to 13.2% in 2010 and 12.1% in 2009). Private banks collect resources mainly from private enterprises and households, and only distribute credit to these economic agents.

On the other hand, the depositor clientele of public banks consists of both enterprises (public and private) and households. Public banks are the only ones to distribute credit to public enterprises, but at the same time they distribute a large proportion of credit to private enterprises and households.

The outstanding amount of deposits collected by banks, excluding foreign currency deposits (foreign currency deposits are returned to the Bank of Algeria), is higher than domestic loans (credits to the economy, net claims on the State). From the beginning of 2002, the banking sector experienced a growing liquidity situation. During 2009, following the sharp decline in hydrocarbon deposits, the banks' excess liquidity had started a downward trend. On the other hand, liquidity rose again in relative terms in 2010 and 2011. The ratio of domestic loans to deposits collected (excluding foreign currency deposits) was 73.8% in 2011, compared with 73.5% in 2010, 70.2% in 2009 and 58.9% in 2008. The increase in this ratio from 2009 is due to the fact that between 2009 and 2011 the increase in credits was higher than that of deposits in dinars. It should be noted that the increase in CCP and Treasury deposits in 2010 - 2011 is very high (28.4% and 40.6% respectively) competing with banks in the resource market.

The loans distributed to the economy regularly follow a bullish trend. In 2011, the growth rate of loans distributed by banks, including Treasury purchases of non-performing loans, was 20% compared to 15.6% in 2010 and 20.1% in 2009; outstanding credits distributed to the private sector remain higher than outstanding credits distributed to the public sector. The share of loans distributed to the private sector rose from 51.8% in 2009 to 55.3% in 2010 and 53.2% in 2011. Indeed, the significant increase in appropriations to the public energy and water sectors in 2011 led to a decrease in the relative share of appropriations to the private sector although this share continues to be larger compared to the share of appropriations distributed to the sector public.

While the expansion of distributed credits remains relatively reasonable in view of the fact that a significant part of the flow of credits to enterprises is used to pay for imports of raw materials, semi-products or capital goods, and thus does not contribute to a strong stimulus to the money supply, it should be noted that the level of non-performing claims of public banks continues to be a concern. This is a weakness of public banks in terms of credit risk management on private borrowers, particularly for the period 2004-2007. It was found in the years before 2007 that borrowers who were economically linked to each other and operating under different names formed de facto groups, whose total indebtedness was insufficiently appreciated by the public lending banks. Such highly concentrated credits granted to these informal groups have gradually proved to be ineffective. The lower quality of public bank portfolios is therefore partly the consequence of the loans distributed to these groups between 2004 and 2007. Subsequently, public banks strengthened their credit risk management structures with respect to the private sector.

Private banks are better equipped to manage their credit risks; the non-performing loan rate on private and household enterprises was around 04% at the end of 2009-2011, compared with 11.3% and 3.9% at the end of 2007-2008 (private banks do not finance public enterprises).

The rate of non-performing loans by public banks on private enterprises and households remains still high, although in 2010 and 2011 it was down compared to 2009. This rate stood at 12.0% at the end of 2011 (13.4% at the end of 2010 and 16.4% at the end of 2009), while their non-performing loan rate on public enterprises was relatively low and declining, at 4.0% at the end of 2011 compared with 7.1% at the end of 2010 and 7.2% at the end of 2009. Indeed, the Treasury has periodically repurchased from public banks the non-performing claims held on public enterprises.

It should be noted that the reserved interest deducted for the 2005-2008 fiscal years was estimated based on data available at the end of 2009. On the other hand, the level of provisioning of claims classified by public and private banks is appreciable (at the end of 2011: 71.9% for public banks and 75.0% for private banks).

4.2. Financial Strength Indicators

Banks, both public and private, comply with prudential regulations on the solvency ratio. At the end of 2011, this ratio was 22% for public banks and 31.2% for private banks, giving an overall ratio of 23.7%, compared to 23.6% in 2010 and 26.2% in 2009. In the second half of 2009, the minimum capital of banks was substantially increased (new minimum capital regulations). In addition, the state owner has upgraded the capital of two public banks (to the tune of 42 billion dinars). The rate of risks incurred compared to the banks' basic capital (capital and reserves) is also high; such a ratio amounted to 17.0% in 2011 (14.2% for public banks and 28.8% for private banks).

The solvency ratio (relative to regulatory capital) of Algerian banks is at a relatively high level compared to rates in comparable emerging countries. In 2011, this rate was 16.6% in Turkey, 16.1% in Indonesia, 17.7% in Malaysia, 17.3% in Brazil, 13.9% in Chile and 12.7% in China, and 15.0% in South Africa.

Compared to capital and reserves (Common Equity), the rate recorded by Algerian banks is relatively high compared to the rates recorded by banks in comparable emerging countries. For example, in 2011, this rate was 14.9% in Turkey, 14.7% in Indonesia, 13.2% in Malaysia, 13.0% in Brazil, 10.1% in Chile, 10.2% in China and 12.2% in South Africa.

The overall liquidity of banks as measured by the two indicators recommended by the International Monetary Fund (liquid assets / total assets; liquid assets / short-term liabilities) remains higher in public banks than in private banks. In 2011, the share of liquid assets in total bank assets was 50.2%, of which 51.1% in public banks and 43.2% in private banks, compared to 54.0% in2% and 43.7% in 2010, due to the relative importance of the very short-term investments that public banks make with the Bank of Algeria, due to their large surpluses of liquidity. For example, this liquidity ratio in Turkey (49.7%) is close to that of Algeria but lower in other comparable emerging countries, namely 26.2 in Indonesia and 31.7 in Brazil.

In Algeria, liquid assets accounted for 106.6% of short-term liabilities in public banks and 84.6% in private banks in 2011, compared with 118.1% and 88.5% respectively in 2010.

The profitability of banks' own funds is high despite the regulatory increase in minimum capital in late 2009. In 2011, the return on equity of public banks was 26.1% and that of private banks 21.4%. In 2010, this ratio was 29.8% for public banks and 20.3% for private banks, compared to 27.9% and 20.9% respectively in 2009. Overall, the profitability of banks' own funds is appreciable. This is a relatively high rate compared to those observed in several emerging countries. For example, the rate of return on Algerian banks' capital is among the strongest in comparable emerging countries (19.0% in Turkey, 20.3% in Indonesia, 16.8% in Malaysia, 14.7% in Brazil, 20.8% in Chile and 20.4% in China; in South Africa this rate is 20.9%).

With regard to the return on assets, the rate recorded in 2011 by private banks (4.5%) is much higher than that of public banks (1.8%). Overall, the rate of return on bank assets in Algeria was 2.1% in 2011, 2.2% in 2010 and 1.8% in 2009.

Compared to public banks, private banks produce more important products on activities remunerated in commissions. Their interest margin rate (interest margin/gross income) is therefore lower (44.4% in 2011 compared to 44.2% in 2010) compared to those achieved by public banks (73.6% in 2011 compared to 71.6% in 2010). In contrast, interest-free charges (excluding interest charges/gross income) of public banks are higher (34.8% in 2011 compared to 31.6% in 2010) than those of private banks 30.8% in 2011 compared to 30.9% in 2010). General operating expenses per unit of gross income of public banks are lower (38.4% in 2011 compared to 35.8% in 2010) than those of private banks (44.0% in 2011 compared to 44.2% in 2010). Indeed, the share of personnel costs in the net banking income of private banks is larger than that of public banks which, moreover, did not have to build up additional provisions on non-performing loans redeemed by the Treasury in 2010 and 2011.

Although the rate of non-performing loans of public banks remains high, the return on assets of Algerian banks (2.1% in 2011) is close to those recorded in major emerging countries. For example, the return on assets in 2011 was 2.2% in Turkey, 2.3% in Indonesia, 1.5% in Malaysia, 1.5% in Brazil, 1.6% in Chile and 1.3% in China, and 1.5% in South Africa.

The cost of banking intermediation in Algeria is therefore on the whole comparable to that recorded in the aforementioned countries. Although not negligible, it does not reflect the existence of monopolistic situations or marked dominance of a group of actors. At the same time, beyond individual situations, it does not reveal a lack of overall profitability of the banking sector, which could prove a factor of weakness in times of crisis.

5. The resilience of the Algerian financial system to external shocks:

5.1. The main vulnerabilities of the Algerian financial system:

Financial stability does not appear to be a major concern in Algeria, although it depends on continued government support as the underlying profitability is weaker than would be expected from the financial strength indicators. Various risks (including oil price volatility and credit risk) should be closely monitored. Neither the first round effects of the global crisis nor its second round effects had a significant impact on the financial system. As we have seen, the State has ample room for manoeuvre to strengthen public banks in case of need. The private segment of the banking sector has been restructured and now consists only of foreign banks, most of which are subsidiaries of international institutions rated. The following vulnerabilities require special attention:

- ***Credit Risk:*** It remains the most important risk for the financial sector. The corporate sector, made up mainly of state-owned enterprises, has reduced its debt and thus its leverage in recent years, under the effect of injections of state capital for investment financing purposes. The repeated interventions of the State in the banking system have transferred the losses of the public banks to the State's balance sheet. Household debt is largely limited to mortgage credit, which is subject to strict prudential standards (loan-to-value ratio capped at 70% and debt-to-income ratio at 40%), and the ban on consumer loans helps contain credit risk.

- ***Hydrocarbon risk:*** Algeria's low level of trade and financial integration into the global economy protects it from external shocks. However, given that hydrocarbon exports account for almost all exports and that more than two-thirds of the State's direct revenues come from the same sector, the banking system is very sensitive to oil shocks. By extension, the hydrocarbon risk also becomes a concentration risk for the State because of its dependence on oil revenues. The ease of access to credit in the expansion years paves the way for an increase in credit risk during the contraction phases.

- ***Liquidity risk:*** In the event of liquidity shocks, the risk is mitigated by the possibility for banks to use the central bank's financing facilities. Moreover, as there is no inflow of foreign capital into the financial system, the risks associated with sudden outflows are non-existent.

- ***Foreign exchange risk:*** the banking sector is largely protected against foreign exchange risks. Foreign currency loans are prohibited in Algeria, while various capital control measures require exporters to repatriate all export proceeds, converted up to 50% in national currency. As a result, the balance sheet risks are negligible. Moreover, banks do not have a large international presence, which limits the impact of direct shocks coming from abroad.

- ***Interest rate risk:*** Interest rate risk is currently limited: bonds are held to maturity, duration asymmetry appears low and key rates have been unchanged for years. It will, however, need to be monitored more closely in the future as capital markets develop and interest rates play a greater role in monetary policy; most credit contracts have a floating rate clause.

- ***Governance risks:*** The governance of public banks, as highlighted in the assessment of compliance with supervisory practices, is a source of concern. The high level of non-performing lending by public banks is partly due to weak governance and related risk management and information technology (IT) systems, as well as the lack of alignment of incentive schemes. As banks invest in new sectors of activity, including housing and SMEs, new governance risks could emerge.

5.2. Resistance of the Algerian financial system to scenarios of possible external shocks

A series of stress tests were carried out to assess the sensitivity of the banking sector to various risks. Given the relatively short time period for which data on non-performing loans were available, sensitivity tests were used to investigate bank vulnerabilities, rather than solvency tests in a macroeconomic scenario. The exercise included a top-down analysis of 20 banks and a bottom-up stress test of six public banks using individual bank data for the end of 2012. The scenarios were based on the assumption of a global oil shock6, a prolonged slowdown in the European economy, and used the latest available projections from the IMF World Economic Outlook. The magnitude of each shock has been calibrated from historical peaks in non-performing loans, expert judgment, and the experience of several countries.

The analysis was limited by the lack of historical and granular data. As such, there is no information on the distribution of maturities of assets and liabilities and, in the absence of a longer time series of historical and accurate non-performing loans; it is difficult to determine the relationship between a macroeconomic scenario and financial risks. In addition, a large part of the non-performing loans in the banks' portfolios are awaiting public debt redemptions. Finally, there continue to be inconsistencies in information on non-performing loans and reported financial strength indicators.

Stress tests indicate that credit concentration, and particularly lending, are the main banking risks, and that public banks are the most vulnerable. In the credit risk scenario—based on a 10 percentage point increase in non-performing loans—the capital ratio of three public banks (representing 27% of total assets) falls below the regulatory minimum of 08%, but they remain solvent. The State being the owner, the cost of the recapitalisation (0.5% of GDP excluding hydrocarbons) would be absorbed by the budget, as has been done in the past. The strong exposure of public banks to large public enterprises in sectors such as manufacturing, construction and commerce increases their sensitivity to sector-specific shocks. The three largest public sector borrowers account for 38% of total lending. A default scenario for these borrowers would result in the insolvency of six banks, five of which are in the public sector, indicating that the concentration risks are high.

Most banks hold liquidity buffers sufficient to withstand a large liquidity shock, and interest rate and exchange rate shocks have a limited impact on the banking sector. A liquidity stress test was carried out to assess the ability of banks to cope with daily withdrawals of 5-10% per day for five days. The results showed that banks could face a large deposit rush for five days, as most have a high stock of liquid assets. Total liquid assets accounted for 108% of short-term liabilities in 2012, so banks have room to manoeuvre in the event of sudden withdrawals or a general deterioration in financing conditions. Banks have little exposure to interest rate risk. In a yield risk scenario, the stress test results show that they are not sensitive to a parallel upward movement in interest rates of 400 basis points, as they hold few long-term financial instruments. Exchange rate shocks have a negligible impact because banks can only have small open exchange rate positions, and the indirect effects are limited because the non-hydrocarbon export sector is still underdeveloped. Finally, public banks are more resilient to various multi-sector shocks than their private sector counterparts.

6. Conclusion:

In the light of the indicators mentioned above concerning the strength of the banking sector, it appears that the situation of Algerian banks does not deviate significantly from those observed in comparable emerging countries. It remains, however, that the public banking sector is weakened by the level of non-performing claims on private groups with informal structures. It should be noted that these are not recent appropriations but are generally distributed before 2007. Although the provision of these credits constitutes a loss for the community, the high level of provisioning that the public banks have constituted makes it possible to cover a significant part of the expected risks. Public banks should continue to improve their credit risk management, especially in the private sector.

Indeed, the stability analysis carried out by the IMF shows only a moderate vulnerability of the financial system to shocks, this result is consistent with the aggregate index of banking stability that we have built, Indeed, despite the sharp deterioration of the partial macroeconomic and financial vulnerability index, as of the end of 2007, the indicators of strength and profitability are showing satisfactory results. Stress tests carried out by the IMF in the framework of the FSAP indicate that the concentration of credit and especially that of loans are the main banking risks, and that public banks are the most vulnerable. In particular, they are highly exposed to large State-owned enterprises in the manufacturing, construction and commercial sectors, and are therefore at the mercy of company and sector-specific shocks. That said, Algeria’s external and budgetary room for manoeuvre is substantial, thanks to high oil prices. The Algerian financial system has not been very affected by the global financial crisis due to its limited international exposure. Bank deposits are sufficient to finance low levels of bank credit. Restrictions on capital movements limit Algerian institutions' foreign investment, and unlike some other emerging economies, parent companies of foreign affiliates have not been subjected to severe hardship.

6. References:

- Alawode, A.et M. Al Sadek (2008), “**What is financial stability**”, *Financial Stability Paper* Series N° 01, Central Bank of Bahrain.
- Borio, C., (2009) « **L’approche macroprudentielle** », *Revue de la stabilité financière* n°13, pp. 35-46
- Čihák, M., A. Demirgüč-Kunt , E. Feyen et R. Levine (2013) “**Financial development in 205 economies, 1960 to 2010**”, *National Bureau of Economic Research*, Working Paper 18946, Cambridge
- Corsetti, G., P. Pesenti et N. Roubini (1998) “**Paper triggers: A model of the Asian crisis**”, *NBER*, Working Paper N°6783
- Demirgûç-Kunt, A. et E. Detragiache (1998) “**The determinants of banking crises in developing and developed countries**”, *IMF Staff Papers* 45 N° 01, pp. 81-109
- Drumetz, F. et C. Pfister (2010), ***Politique monétaire***, de Boeck.
- Eichengreen, B. et C. Arteta (2000) “**Banking crises in emerging markets: presumptions and evidence**”, *CIDER Working Paper* N° 115, Center for International and Development Economics Research, University of California
- Hanschel, E. et P. Monnin (2005) “**Measuring and forecasting stress in the banking sector: Evidence from Switzerland**”, Dans “Investigating the Relationship between the Financial and Real Economy”, *BIS Papers*, N° 22, pp. 431-449
- Illing, M. et Y. Liu (2006) “**Measuring financial stress in a developed country: An application to Canada**”, *Journal of Financial Stability*, Vol. 02, Issue 3, p 243–265.
- Mikhail, V. O., E. Ryan, B. Timothy, G. Dieter et J. O. Stephen (2011) “**The Financial Stress Index: Identification of Systemic Risk Conditions**”, *Document de travail* 11-30, Federal Reserve Bank of Cleveland
- Towe, C. et D. Gressani (2014) « **Algérie, évaluation de la stabilité du système financier** », *Rapport du FMI* N°14/161, Département des marchés monétaires et de capitaux.