BANK FOR INTERNATIONAL SETTLEMENTS

Central Bank Papers on Monetary Policy Frameworks in the Arab Countries

AMF-BIS Working Party Meeting on
Monetary Policy in the Arab Region

Abu Dhabi - United Arab Emirates
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Papers in this volume were prepared for the first working party meeting of senior officials from Arab central banks organized by the Arab Monetary Fund (AMF) and Bank for International Settlements (BIS) in Abu Dhabi, United Arab Emirates in November 2015. The views expressed are those of the authors and do not necessarily reflect the views of the AMF or BIS, or the central banks represented at the meeting. Individual papers (or excerpts thereof) may be reproduced or translated with the authorization of the authors concerned.

Table of Content

Foreword

Papers collected in this volume were written for the Working Party Meeting on Monetary Policy in the Arab Region, which was organized jointly by the Arab Monetary Fund (**AMF**) and the Bank for International Settlements (**BIS**) in **Abu Dhabi, United Arab Emirates in November 2015**. This meeting took place at a time when the region was feeling the effects of major global and regional economic developments. The purpose of the meeting was to exchange views on the implications for monetary and financial policies of the Arab region. The meeting was attended by participants from 24 central banks and monetary authority agencies. Eight central banks from outside the Arab region took part.

The meeting provided an opportunity to review analysis about many important issues related to monetary policies in the Arab countries. Topics included: the implications of recent global economic and financial developments for monetary policy management; issues related to liquidity management, as government deposits with local banks shrank; and how far Arab financial and non-financial institutions are ready for a tightening in global financial conditions after years of abundant global liquidity.

The meeting has also tackled some other technical issues related to the role of monetary policy in fostering economic growth and achieving price stability, monetary policy tools and transmission as well as the costs, benefits and prerequisites for a successful move towards an inflation targeting (IT) regime. Some papers presented empirical assessments about the channels of monetary policy transmission, noting in particular the impact of financial market developments.

Papers on the operational frameworks and the implementation of monetary policy in **twelve Arab countries** were presented and discussed during the meeting. In addition, papers were presented from central banks from outside the region including **Banque de France and the Bank of Japan**. The papers were subsequently revised by the authors and are published to stimulate discussion. They do not necessarily reflect the views of the AMF or the BIS.

On the experiences of Arab countries adopting fixed exchange rate regimes, the paper of **Saudi Arabian Monetary Agency** (SAMA) highlighted the efficiency of monetary policy in maintaining price and exchange rate stability and fostering economic growth. The paper

explained how strong external and financial buffers have supported the Saudi Riyal peg, which has been under pressure from decreasing oil exports and revenues as well as FX reserves.

The paper of the **Central Bank of Kuwait** referred to some of the recent challenges from the impact of declining oil prices on domestic liquidity and from of the normalization of US monetary policy. Higher dollar interest rates and reduced liquidity would increase the cost of finance and may impact the already slowing rate of credit growth, in turn further dampening activity in the non-oil sectors. Measures by the Central Bank of Kuwait to address these challenges may include adjusting the size of Treasury bond auctions to ensure sufficient liquidity in the market.

The paper of the **Central Bank of Libya** highlighted how the Bank had dealt with the liquidity crisis in 2011, which is considered to be one of the most severe tests of the banking system since the early 1960's. The paper addressed how the central bank's measures helped avoid bank insolvency. The paper of the **Central Bank of Jordan** underlined the role of monetary policy in dealing with the implications of the global financial crisis, the prolonged weakness in the euro area, and rising oil prices on the Jordanian economy since 2008. Many measures have been taken to maintain adequate levels of liquidity in the banking system to ensure sufficient levels of credit extended to private sector.

The Banque du Liban (BDL) paper presented the role played by the central bank in overcoming the repercussions of regional conditions affecting economic growth. The BDL has resorted to unconventional monetary policy tools to support economic activities mainly through a stimulus package of $5 billion during the period (2013-2015) through exemption from legal reserve requirements and soft loans for banks extending credit to productive economic sectors and Small and Medium Enterprises (SMEs). This package proved to be efficient in providing credit to the real sector and contributing around half of real GDP growth. The Bank announced a fourth stimulus package of $ 1 billion in 2016. **The Palestine Monetary Authority** (PMA) paper highlighted the characteristics of the Palestinian economy as a small, open and free-market economy operating in the absence of a national currency, which precludes the formulation of a comprehensive monetary policy. However, the PMA made extensive effort to put in place the requirements for formulating and conducting monetary policy in an efficient way through using

available monetary policy tools, particularly the legal reserve requirement ratio and commencing preparations for engaging in open market operations.

On the experiences of monetary policy management in Arab countries with more flexible exchange rate regimes, the paper of the **Central Bank of Algeria** presented its experience of shifting towards inflation targeting regime starting from 2010. It explains how the central bank had dealt with the excess liquidity resulting from high oil revenues during the period (2003-2014) by using remunerated liquidity withdrawals (reverse auctions transactions) to mop excess liquidity and to keep inflation within the target. On the same theme, the paper of the **Central Bank of Egypt** referred to challenges facing the Egyptian economy after 2011 revolution to restore macroeconomic stability. The paper argues that it becomes paramount for the central bank to capitalize on the steps undertaken since 2005 in its transition towards inflation targeting. A monetary policy regime with an explicit inflation (forecast) target would be better than the current regime with only an implicit anchor via the activation of the untapped expectations channel. In the same context, the **Central Bank of Morocco** had shifted towards a more flexible exchange rate regime in 2010 in a move aimed at absorbing external shocks and strengthening the competitiveness of the national economy. This step came after the implementation of many reforms that had laid the ground for the liberalization of foreign exchange and capital account regulations. The **Central Bank of Tunisia** (CBT) has faced a dilemma of preserving price stability as required by its mandate, while continuing to give support to the government in its aim of boosting economic activity over the four years after the 2011 Revolution. The CBT embarked on radical reforms to modernize its monetary policy framework. The overall objective of this framework is the implementation of a medium-term monetary policy strategy based on inflation targeting to ensure price stability and to increase transparency and credibility of monetary policy.

The paper of the **Central Bank of Sudan** presented an empirical model to elucidate monetary policy transmission mechanisms. The study concluded that claims on government represent a major source of money growth in Sudan, and this reduced monetary policy effectiveness. Furthermore, it highlighted the role of exchange rate stability in curbing inflationary pressures and creating an investment-friendly environment. On the other hand, the paper of the **Central Bank of Mauritania** indicated that the monetary policy stance often shifts due to changes in the external environment. Yet exogenously driven policy changes do not seem to affect bank lending at the margin, which suggests ample scope to strengthen monetary policy effectiveness.

Improving the quality of credit demand, reinforcing supervision and enhancing the institutional infrastructure seem fruitful ways of encouraging banks to finance a wider range of activities and customers.

In conclusion, the meeting served to give policy-makers much food for further reflection. Although specific national circumstances differ, there are many common elements in the formulation of monetary and financial policies. Central banks can learn much from each other.

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BANK FOR INTERNATIONAL SETTLEMENTS

AMF-BIS Working Party Meeting on Monetary Policy in the Arab Region

Background Paper on Monetary Policy

The Hashemite Kingdom of Jordan

Central Bank of Jordan

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25–26th November 2015

Monetary Policy Implementation in The Hashemite Kingdom of Jordan

1. Background

Jordan economy is small with a limited industrial base. Given the uncertainty in the region, and being a small open economy, Jordan is vulnerable to external shocks, in particular, to fluctuations in oil prices and external grants. Hence the Central Bank of Jordan (CBJ) accumulates foreign currency reserves to cushion against negative external shocks and maintain the current exchange rate regime.

The global financial crisis and rising oil prices had important implications on the economy since 2008. In the wake of the crisis, the CBJ gradually pursued expansionary monetary policy to mitigate any repercussions on the national economy; at the same time, it reinforced its pursuit of financial and monetary stability while strengthening the economy's resilience to external shocks. The CBJ also ceased issuance of CDs in October 2008 to maintain adequate levels of liquidity in the banking system. This was combined with cutting interest rates on monetary policy instruments gradually by a total of 250 basis points, in addition to bringing down the required reserve ratio from 10 to 7 percent. FX reserves went up by US$4.5 billion in 2010 (from the end of 2008) reaching a record high of US$12 billion by the end of 2010 (the equivalent of close to eight months of Jordan's imports of goods and services).

Starting 2011, Jordan's external account has faced increasing pressures as a result of higher import prices, lower tourism and workers' remittances receipts, as well as lower grants and FDI inflows. On top of that, the "Arab Spring", the Syrian refugees' influx, and the interruptions of Egyptian gas flow caused several pressures on Jordan's economy. As a result, the central government's fiscal deficit increased by 5 percent of GDP. So there was an expansion in the combined public sector deficit (central government deficit plus losses of the National Electricity Company) by about 10 percent of GDP in just one year. Consequently, the accumulation of the Jordan's buffer of foreign reserves declined to US$ 6.7 billion by the end of June 2012. The CBJ's response plan started with a tightening cycle, increasing its policy rates.

This action aimed at supporting monetary stability in curbing expected inflationary pressures and ensuring a competitive return on the JD-denominated assets would ultimately promote a favorable investment environment in support of sustainable growth. The costly financing of this gap meant that the central bank was constantly losing reserves. That's when the authorities sought IMF assistance through a Stand-By Arrangement (SBA with three main objectives: maintaining macroeconomic stability; ensuring fairer, more equitable policies for the population; and increasing growth prospects for Jordan. With the IMF approval of the final review under the $2 billion Stand-By Arrangement, Jordan became the first Arab country in transition to successfully complete an IMF-backed program.

2. Monetary Policy Objectives

The CBJ law addresses its main objective in maintaining monetary stability, including price and exchange rate stability, and maintaining interest rates at levels that are consistent with the level of economic activity. In addition, to ensuring the convertibility of the Jordan Dinar (JD) and promoting sustained economic growth according to the general economic policy of the government.

A new CBJ law was recently submitted to the Parliament with amendments aim to strengthen the autonomy of the CBJ and to enforce its role in maintaining the financial stability through expanding its scope related to monitoring and supervising the financial institutions, and to maintaining the safety and soundness of banks and other financial institutions.

3. Monetary Policy Instruments

Open market operations (OMO) are monetary policy operations conducted at the initiative of the CBJ. They play an important role in steering interest rates, managing the liquidity situation in the market and signaling the monetary policy stance. The most important instrument is weekly repo/reverse repo auctions, which are applicable on the basis of repurchase agreements. The CBJ also has the option to use outright transactions, Certificates of Deposit (CDs), and foreign exchange swaps.

In addition to that, the CBJ also relies on the reserve requirement (RR) ratio to steer liquidity to levels consistent with policy guidelines. RR rates were unified across banks and deposits (JD- and foreign currency- denominated), gradually declining from 35 percent in 1989 to 7 percent in 2011.

Standing facilities, in contrast to OMOs, are conducted at the initiative of banks. They aim to manage overnight liquidity, signal the general monetary policy stance and bound overnight market interest rates (interbank rate). Three standing facilities are administered by the CBJ:

- Overnight Repos Facility: Banks can use the overnight Repos facility to obtain overnight liquidity from the CBJ against eligible assets. The interest rate on the Overnight Repos Facility normally provides a ceiling for the overnight market interest rate and stand as a benchmark for market lending rate.

- Overnight Window Facility: Banks can use the overnight deposit facility to make overnight deposits with the CBJ. The interest rate on the deposit facility normally provides a floor for the overnight market interest rate, and stands as benchmark for market deposit rate.

- Rediscount Facility: Credit facility in which banks approach the CBJ to borrow funds at the discount rate. It provides secured loans to alleviate pressure in reserve markets. It also helps to reduce liquidity problems for banks and assists in assuring the basic stability of financial market.

4. Key Developments in the CBJ's Monetary Policy Framework: From Direct to Indirect Monetary Policy Control

Direct Monetary Policy Controls in Jordan: Monetary Aggregates Targeting

Since the establishment of the CBJ in 1964, monetary policy was largely passive and accommodative to expansionary fiscal policy. The CBJ had only few instruments and limited capacity to influence monetary conditions. Until 1990, the CBJ had only direct control instruments at its disposal to influence liquidity and credit conditions; including reserve requirements, liquidity ratios and interest rate ceilings. These instruments were adjusted frequently to support bank liquidity and encourage credit expansion, as monetary policy was geared towards supporting the overall government policy of stimulating the economy.

In particular, prior to the mid of 1995 the CBJ used an intermediate monetary target (M2) to support its monetary policy objective of maintaining price stability and the exchange rate peg. Within this

context, CBJ was conducting its monetary policy through a reserve money programming framework. This framework had worked well and the monetary base was well administered by the CBJ until 1995.

As for the exchange rate at that stage, monetary framework relied on a fixed exchange rate with a parity that was pegged to the pound sterling until 1967 before pegging to the USD; however, in 1975 the Jordanian authorities abandoned the USD peg with the breakdown of the Bretton Woods system and pegged the JD to the SDR to avoid excessive fluctuations that might result from pegging to the USD alone.

Indirect Monetary Policy Controls: Interest Rate Targeting

The increasingly growing volatility of the money multiplier's resulted in significant forecasting errors in the monetary base level. After the adoption of economic reforms in early 1990s, the CBJ introduced certificates of deposits (CDs) in 1993, and open market operations were used to influence monetary conditions. By targeting the CDs rate, the CBJ has switched to a new operational framework of monetary policy that relies on indirect monetary policy controls to impact lending and borrowing interest rates of the banking system, as the new intermediate target of monetary policy instead of M2. The new framework of monetary policy can be characterized also by the pegged exchange rate regime with the U.S dollar that has been implemented since 1995, accompanied by capital mobility in 1997.

As a result of imperfect domestic and foreign asset substitutability, the CBJ was able to maintain its autonomy in setting its policy rate. By influencing the CD rate, the CBJ attempted to impact banks' deposit and lending rates to induce changes in the demand for the JD relative to the USD to maintain the peg through CBJ's foreign reserves.

In March 1998, the CBJ introduced the overnight deposit facility which enabled the CBJ to manage money market liquidity on a daily basis and between CBJ's auctions of CDs, and it provided a floor for inter-bank rates which increased the ability of the CBJ to conduct monetary policy. Then, in May 2007 the CBJ simplified its interest rate structure by reducing the corridor width by 125 basis points and replacing the 7 day repo facility- which had been introduced in 1994- with an overnight facility to ensure symmetry with the overnight deposit window. The result was that the CBJ moved away from

solely targeting CDs auction rates toward a corridor system of short-term interest rates with the overnight deposit window rate as the floor and the overnight repo rate as the ceiling.

With the onset of the global financial and economic crisis in 2008, Jordan's external vulnerabilities increased. the CBJ responded by continuing its focus on limiting inflationary pressures and sustaining the attractiveness of Jordanian dinar denominated assets as a saving instrument, in addition to maintaining adequate levels of loanable funds at the banking system to enhance economic activity without compromising monetary stability.

Accordingly, the CBJ ceased the issuance of CDs, to preserve adequate liquidity in the banking system and motivate banks to extend credit to the private sector, a policy that has been supported by several cuts on interest rates between 2008 and 2010.

In the wake of the global financial crisis, and the regional political turmoil, and in order to enhance the attractiveness of saving instruments denominated in JDs, the CBJ raised the interest rates on its key monetary instruments one time (25 basis points) in 2011, and three times in 2012; the first was by 50 basis points on all instruments, while the second and the third raised the interest rate only on the overnight deposit window facility by 50 basis points and 75 basis points, respectively.

On the other side, the CBJ developed the operational framework of monetary policy, in mid-2012, by introducing three new policy instruments: Weekly/Monthly Repurchase Agreements, Outright Agreements, and FX Currency Swaps. The new framework proved to support banks' ability to manage their liquidity, efficiently and effectively, and helped in satisfying their operational and growing financing needs.

In February 2015, the CBJ accomplished the second review of its operational framework through the re-introduction of the CBJ's weekly certificates of deposit (CDs) as an effective instrument to manage banks' reserves. The CBJ introduced also a new policy rate called the "CBJ main rate" to serve as a benchmark to other short-term monetary policy rates, and as a signal to banks and financial markets and which can be used quite flexibly in response to changing economic conditions.

The empirical analysis evidence the ability of the CBJ to shape monetary policy in response to domestic policy objectives, even in the presence of a strong influence from US interest rates. The CBJ was found to respond gradually to changes in US interest rates, while also responding actively to the state of the domestic economy, in particular, to domestic inflation and the output gap, as evidenced by the expansionary monetary policy since 2013. Moreover, after two decades of successfully operating a fixed exchange rate regime, the CBJ has built a credible track-record of maintaining low, stable inflation without restricting economic growth.

5. Monetary Policy Implementation: Main Challenges and Reforms

During the past few years, central banks have extended their role in preserving price and financial stability in response to the crisis. They have lowered interest rates to near zero levels to ease monetary policy, used unconventional monetary policy tools, and provided banks with needed liquidity. As a consequence their balance sheets inflated to unprecedented levels.

In general, I believe that central banks around the globe have succeeded to some extent in preserving price stability and preventing the global economy from falling into a depression. The adopted measures enabled many countries to implement structural reforms of the economy and comprehensive restructuring of government finances.

This led us to the fact that monetary policy is a part of the macroeconomic policies that should be used in a proper manner. We cannot assume that monetary policy should replace fiscal or other policies but rather play a complementary role. The success of central banks has drawn many economists and policy makers to call for the extension of their mandate in particular in the area of financial stability. But I believe that central bank role in monetary policy is to ensure price stability is still credible and should remain unchanged. This does not undermine the importance of regulating and supervising the financial sector as a preventive measure for crises to enhance banks abilities to withstand shocks and mitigate risks that may arise to strengthen the credibility of our mandate in ensuring price stability.

The global financial crisis has had trickledown effects on our economies through different channels, of which:

- First: There has been a sharp drop in oil prices from $147 per barrel in July 2008 to around $60 per barrel in mid-2009.
- Second: There has been a contraction in global demand and, consequently, trade and related activities.
- Third: There has been a tightening of the international credit markets, reducing the ability of the Arab countries to borrow. This tightening also has contributed to a decline in the overall level of Foreign Direct Investment (FDI) flows to the region.

These changes forced us, as central banks, to move into uncharted waters to ensure monetary and financial stability. These effects of the crisis are still rippling, and were intensified as an outcome of the recent developments which are being felt worldwide and in our region; China's rebalancing, Japan's continued slow growth, falling commodities prices in international markets, and the prospect of higher U.S. interest rates. These developments posed serious challenges in our economies and stress the importance of gaining back confidence and banishing uncertainty through intensifying the pace of reform to overcome the structural imbalances in order to foster sustainable growth and creating jobs.

But these developments could have adverse effects on the banking sector during the medium term. In oil importing countries, such as Jordan, remittances of expatriates and tourism receipts, especially from the GCC council, could decline which would result in a shortage in liquidity in the medium term. As for the oil-exporting countries, recent political developments and the sharp decline in oil prices could decrease surpluses in their budgets and external positions, which could affect the level of liquidity available at banks. Therefore, effective management of liquidity and updating the framework of monetary policy are essential for addressing difficulties that may arise in the medium term.

We at the central bank of Jordan understand the necessity of following up with the recent macroeconomic developments worldwide and in the region to ensure monetary and financial stability and create a favorable investment environment. Recently we have taken many measures:

- Updating the operational framework of monetary policy twice in 2012 and 2015, to enhance the effectiveness of the monetary policy implementation and actions.

- Amending the central bank law to enhance the autonomy of the central bank, and extending the central bank objectives to include its participation in maintaining financial stability.
- Drafting a new law for the banking sector and amending the exchangers' law to follow up with the recent developments in the financial system and enhance their operational framework according to the best international standards.
- Extending the supervision umbrella to include Micro-Finance Institutions (MFIs).
- Licensing the first credit bureau which would help lenders in taking decisions and manage their credit risks effectively.
- Issuing instructions of dealing with customers fairly and transparently to enhance the competitiveness of the banking sector and ensure equality and transparency among customers.

6. Conclusion

While the world economy have changed dramatically since the global financial crisis broke out, monetary policy role did not changed, even if monetary policy mandate have taken on new dimensions. In the case of financial stability, our role was extended as a result of the experiences gained in aftermath the financial crisis. Our role and mandate must be defined independently and sensibly to ensure the credibility of monetary policy in fulfilling its mandate under the current conditions and building up confidence in our economies, which is one of the most important factors of development. Therefore, we must have the courage and the ability to implement corrective policies and regulations, even though unpopular, in a manner that could enhance the sustainability of the economy and cushion the effects of financial markets volatility and dysfunction on the real economy and the levels of productivity.

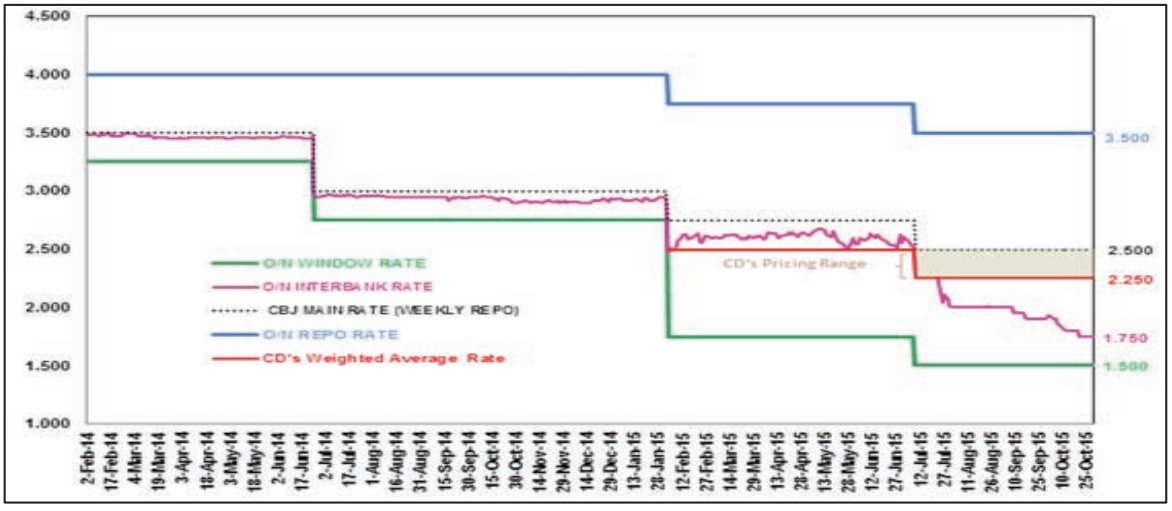
Main Econgomic Indicators

Interest Rate Structure

Year	Weekly/ Monthly Repurchase Agreements	Overnight Deposit Window Rate	overnight repurchase agreements	Rediscount rate	CBJ main interest Rate*
2012	4.25	4.0	4.75	5.0	-
2013	3.75	3.5	4.25	4.5	-
2014	3.0	2.75	4.0	4.25	-
Oct. 2015	2.5	1.5	3.5	3.75	2.5

*: Effective since February 2015.

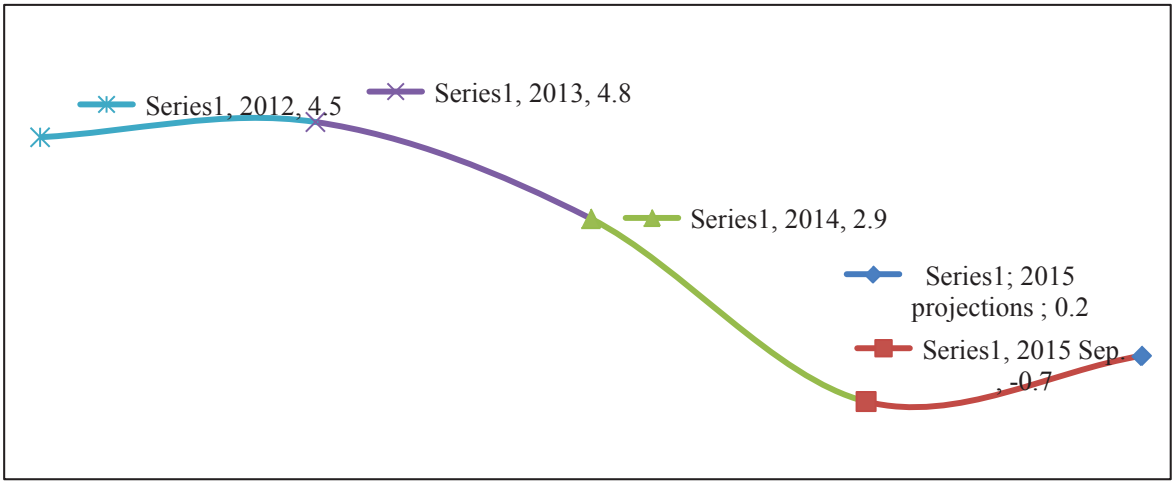
Chart (1): Interest Rate Structure



Inflation Rate

Year	2012	2013	2014	Sep. 2015	projection 2015
CPI	4.5	4.8	2.9	-0.7	0.2

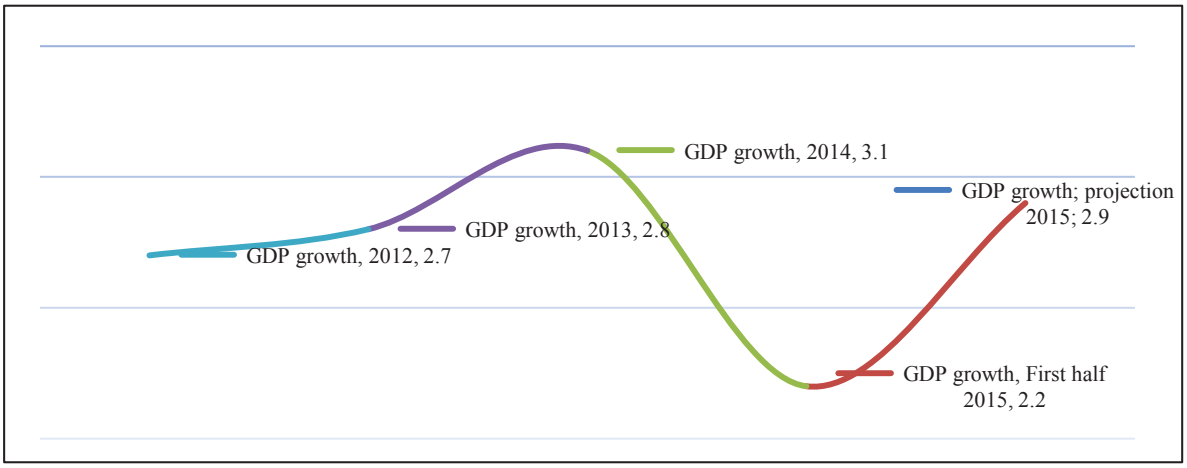
Chart (2): Annual Inflation Rate (CPI) (%)



Economic Growth Rate

Year	2012	2013	2014	First half 2015	projection 2015
GDP growth	2.7	2.8	3.1	2.2	2.7

Chart (3): GDP Growth (%)



Arab Monetary Fund

BANK FOR INTERNATIONAL SETTLEMENTS

AMF-BIS Working Party Meeting on Monetary Policy in the Arab Region

Background Paper on Monetary Policy

The Republic of Tunisia

Central Bank of Tunisia

Presented by

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25–26th November 2015

Monetary Policy Implementation in The Republic of Tunisia

1. Background

Tunisia has faced significant unfavorable internal conditions since December 2010. Social and political unfavorable developments combined with instable geopolitical context have had a significant adverse effect on the Tunisian economy, which led to significant decreases in tourism revenue, export receipt and foreign direct investment. Of course, this has had a significant negative impact on current account balance.

In 2011, the Tunisian economy was estimated to have shrunk by 1.9 per cent due to the internal instability surrounding the 14 January 2011 Revolution, which affected almost all sectors of the economy, most notably tourism and the production of phosphates and their derivatives. In addition, unfavorable condition has resulted in a significant decline in Government revenue and foreign currency reserves. Tunisia's exports notably of textiles, mechanical and electrical goods, saw marked declines. Also, there was an overall decline in industrial production, partly as a result of a decline in international and domestic demand. Commodity price increases along with the Libyan crisis impacted foreign trade.

In 2012, the growth rate posted 3.9%, a technical rebound mainly attributable to the one recorded in manufacturing industries and market services despite shrinking in non-manufacturing industries and in one of the main export-oriented manufacturing industries, i.e. textile and clothing industries. But the economic activity was significantly below its potential.

In 2013, the growth rate decelerated to 2.4% as a result of the decline in agricultural production and slowdown in a number of market services, including tourism and transport, following some certain unfavorable domestic development. The output gap remained negative as the economic activity remains well below its potential.

Over 2014, the economic activity grew at a 2.3% growth rate, in the wake of a domestic demand weakened by investment brakes and the slowdown in consumption, not enough to curb unemployment, especially among university graduate young people. Remaining difficulties in the mining sector as a result of the drop in oil production at the domestic level and a sluggish external demand from the Euro Zone that experienced a deep recession, contributed to

this poor performance. The CBT had to cope with this difficult economic situation marked by a growth that was struggling to get out of the slowdown phase, on the one hand, and raising inflationary tensions, notably, over the first half of the year, on the other hand.

Year 2015, seems to be the worst since 2011 Revolution; the Government expects a very low growth rate of 1%. The first half of the year confirmed a technical recession after two quarters of negative growth rate, mainly due to a deterioration in the indicators of the tourism sector and the sharp decrease in mining and oil production and export.

2. Monetary Policy Objectives

Under Article 33 of the May 2006 Central Bank Law, the priority objective of monetary policy is to preserve price stability. This amendment removed the ambiguity regarding whether the domestic stability of the currency had priority over its external stability. To meet its primary objective, the CBT set forecasts of the medium-term inflation rate as an intermediate objective of monetary policy.

Also, the CBT uses the interest rate as an operational objective to steer all market rates. The introduction in 2006 of a Real-Time Gross Settlement System (RTGS) made it possible to modernize liquidity management through real-time knowledge of account balances at the CBT. The smooth functioning of the market was enhanced by the introduction of an intraday facility, allowed for by the integration of the securities settlement system and the RTGS.

3. Monetary Policy Instruments

The CBT has put in place a set of monetary instruments in line with international best practices. The CBT is able to implement monetary policy in a context of structural surpluses or deficits of liquidity. Its monetary operations are based on efficient infrastructures (RTGS). Also, the CBT works at setting up a securities Delivery versus Payment—DVP system.

Required Reserves

This instrument has an immediate effect on bank liquidity:

- It is used to create a structural liquidity need or to address excess liquidity prevailing on the money market.
- The reserve requirement rates are based on the maturity of deposits**.** Currently, the rate applied on sight deposits (less than 3 months) is 1%. But this rate was modified downward at three occasions in the aftermath on the 2011 Revolution to free additional liquidity from bank's current accounts held at the CBT.
- The maintenance period is 1 month ranging from the first to the last day of a given month.
- Required reserves are noninterest bearing.
- Full averaging during the maintenance period.

Reserve requirement rates underwent several changes since 2002; in particular during the period the CBT had to deal with excess liquidity (2007-2010).

Discretionary Operations

The CBT has at its disposal a set of instruments, but the most important one is its main refinancing operation (MRO) in the form of 7-day auctions:

- **Weekly Calls for Bids (Appel d'offres)**

  The Bank manages the money supply in Tunisia principally through its main discretionary monetary operations: calls for bids (appels d'offres). The call for bids is a weekly auction of a pre-set amount of funds. Every week, the Bank invites bids for deposit or borrowing auctions as it deems necessary. Successful bids are accepted and ranked according to the rate that is bid (i.e. a multiple rate auction). Eligible collateral for borrowers includes treasury bills and bonds and quality bank claims on the private sector.

  With the substantial increase in the CBT refinancing to banks, due to bank liquidity tightening, the Central bank took a set of measures meant to preserve its balance sheet. In particular, it asks banks want to benefit from its refinancing to present at least 10% of collateral in

the form of public securities, starting September 2013. This portion was raised to 20% in January 2014 and then to 40% in January 2015. Also, the Central bank imposed a 10% haircut on bank claims on the private sector since the beginning of 2014. This haircut was further increased to 25% in July 2014.

- **Open Market Operations**

As part of a policy of diversifying and modernizing monetary instruments, open market transactions (OMOs) were introduced for Treasury bills and Treasury bonds in April 2003. In such operations, the Bank announces its intention to engage in OMOs and invites bids. It determines a reference rate below which bids will be excluded and distributes the allotment to the highest price in case of sales, and the lowest in case of purchases. Settlement is effected on the same day. The Bank did not use OMOs in 2011 but it intensified recourse to OMOs over 2012 and 2013 to lighten the risks on its balance sheet. Consequently, the outstanding balance of OMOs reached a highest of TD 1,016.7 million by the end of Feb. 2013, representing one fifth of overall refinancing. Currently the outstanding balance of OMOs is TD 334 million.

- **FX Swaps**

Newly introduced to better tune bank liquidity and therefore steer the interbank interest rate, the FX swap as a monetary policy instrument involves spot purchase (or sale) of Tunisian dinar against foreign currency an simultaneously resell (or repurchase) them forward on predetermined date and exchange rate. The current outstanding (as of 31 August 2015) is 151 MTD.

Non-Discretionary Operations: The Overnight Deposit-Lending Facilities

Overnight deposit or lending facilities are taken at the end of a day, at the initiative of commercial banks to enable them to meet their needs or invest their surpluses of liquidity. Recourse to the overnight lending facility is carried against uptakes of public deeds, claims or valuables of companies and private individuals at a rate of interest equal to the Bank's key rate plus a fixed margin. The overnight deposit facility is remunerated at a rate of interest equal to the Bank's key rate less a fixed margin. The corridor of fluctuation of money market rates is tied to the overnight deposit facility rate

as a floor and the overnight lending facility rate as a ceiling. The key rate is most of the time the median of the corridor[1]. During 2011, the Bank reduced its key rate twice, first to 4 % at the end of June and again to 3.5% in early September. Over 2012, as prices increased, the Bank increased its key interest rate by 25 basis points to 3.75 % at the end of August 2012. Consequently, the limits of the corridor became 3.25 % to 4.25 %. In response to persistent inflationary pressures, the Bank implemented a set of measures:

- Changing the limits of the corridor to 3.5 % to 4.5 % at the end of February 2013, maintaining the key interest rate at 3.75 % resulting in an asymmetric corridor.
- Increasing the key interest rate by 25 basis points to 4 % in March 2013, maintaining an asymmetric corridor of 3.75 % to 4.75 %.

With inflation on the rise, the bank further increased its policy rate to 4.5 % at the end of 2013 and introduced an adjustment to the corridor limits within a range of 25 basis points (4.25 % to 4.75 %). The current level of the key interest rate is 4.75% since end June 2014 and the corridor limits are 4.5%-5.0%.

4. Monetary Policy Main Transmission Mechanisms

Empirical works on the transmission channels of monetary policy have shown that *credit and exchange rate channels are the most operative* and to a lesser extent that of *interest rates*. The latter, despite the indexation of borrowing rates to the money market rate (TMM), tends to increase gradually as markets develop and deepen. However, *the asset price channel* has not yet been tested for lack of relevant data on activity in that market. For the expectations channel, the Central Bank has ensured in recent years to improve its communication strategy in order to strengthen its credibility which will allow it to better anchor inflation expectations of economic agents. Currently the main monetary policy transmission channels are:

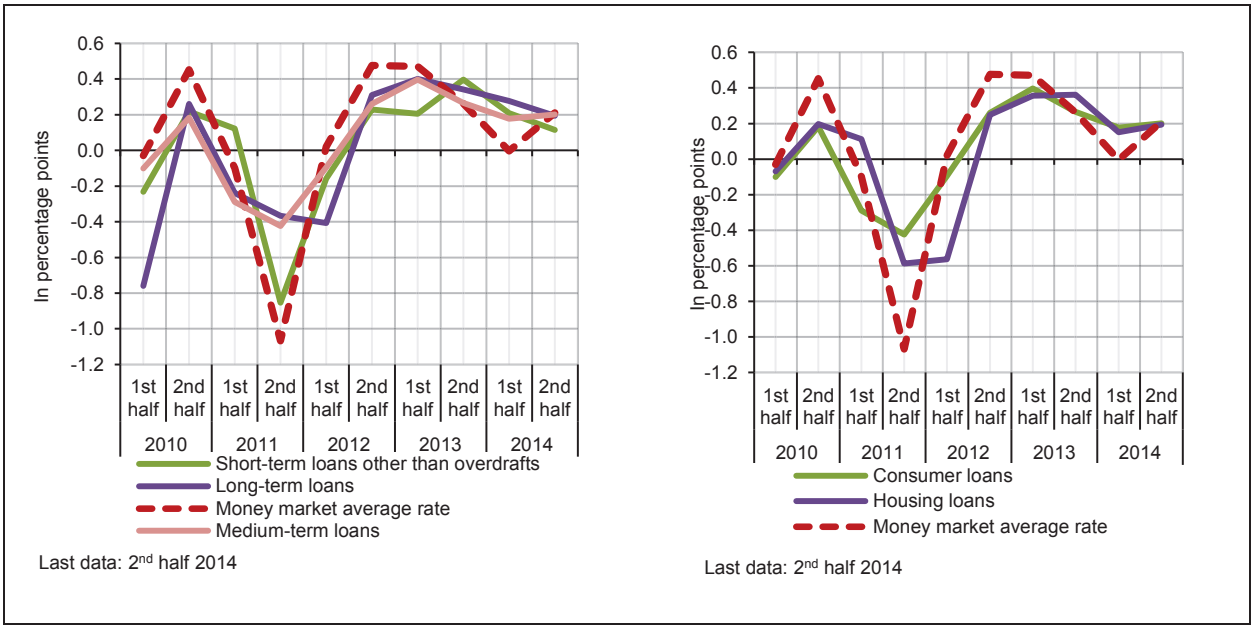
- The interest rate channel.
- The credit channel.
- The exchange rate channel.

[1] In February 2013, the CBT experienced an asymmetric corridor, See below.

The Interest Rate Channel

Most of Tunisia's lending/borrowing rates are indexed on the so called "TMM" which is the money market monthly average rate. This latter is in turn based on the daily interbank market rates. Consequently, any change in the TMM affects almost all lending/borrowing rates. A recent study conducted by the CBT (cf. "Les mécanismes de transmission de la politique monétaire en Tunisie" December 2014) revealed that the most sensitive rates to any changes in TMM are the consumer loan rates.

Graph 1 : Money Market Pass-through to Lending Rates

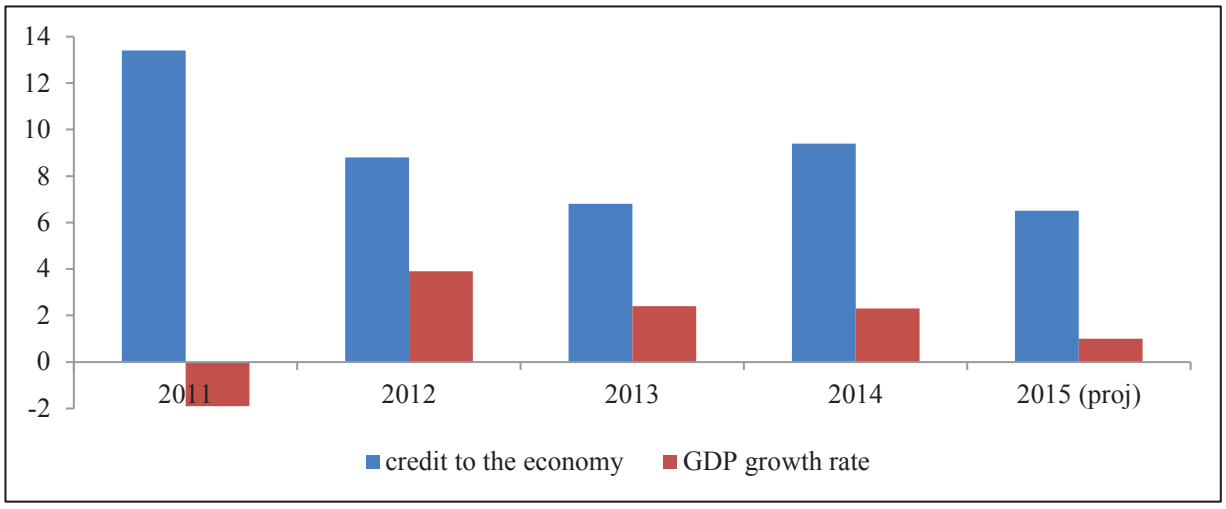


The Credit Channel

Basically, changes in TMM impact lending and borrowing rates. To curb inflation, the CBT increased at four occasions its key rate (table 1). Tighter credit conditions made funding more expansive thus reducing creditworthiness. Meanwhile, with increasing credit risks, and exploding NPLs, banks became more aware about their portfolio, lowering subsequently lending to households and corporates. Also, with uncertain economic prospects and higher borrowing costs, along with the worsening of internal conditions and the slowdown of activity in the Euro Zone, demand for loans decelerated in the aftermath of the revolution thus reducing consumption and investment spending,

leading to a technical recession in 2015. The above mentioned study also concluded that a 100 basis point cut in TMM results in a 3.8% increase in the volume of credit to the economy. Also, changes in short-term rates do not have any significant impact on NPLs. This is mainly due to a more rigorous regulatory framework combined to the commitment to restructure the banking system and to better assess risk taking.

Graph 2 : Credit to The Economy and GDP Growth Rate (yoy)



The Exchange Rate Channel

An assessment of the exchange rate pass-through (ERPT) was experimented recently and the response functions show that any depreciation of the Tunisian Dinar contributes to additional inflation. The transmission is more important to import prices than to producing prices and consumer prices. Import prices are very sensitive to any change in the exchange rate (with a virtual-complete transmission) and react quickly to an exchange rate shock.

The pass-through to producing prices is estimated between 0.5 and 0.7. The pass-through of the exchange rate variations to domestic prices is carried out via two mechanisms: through import prices as a depreciation of the local currency increases product import prices, oriented to final consumption where consumer prices are directly affected, or intermediate consumption that initially impacts production prices before reaching final consumption. Or through change in relative prices and its impact on demand as depreciation of the national currency makes domestic prices more competitive

compared to external prices, increasing thus demand on domestic products and therefore their prices. Empirical studies on the issue yield an incomplete pass-through of exchange rate variations to consumer prices. The openness degree of the economy, the monetary policy credibility and the level of inflation are as many elements that might affect the degree of exchange rate pass-through.

Most of the studies conducted on this subject are aligned and come with a pass-through that varies between 10% and 25%. This result would be explained by several factors of which notably:

- The important share of regulated prices in the basket: the administration of prices in a way that is frequently disconnected from the international price evolution explains, partly, the weak pass-through of the exchange rate in Tunisia. Thus, it has probably constituted a source of weak anchorage of inflation expectations.
- The progressive reduction in the customs duties: In the framework of the Association Agreement with the European Union, Tunisia embarked on a tariff dismantling process that has partially offset the impact of the dinar depreciation up to 2008.
- Relatively prudent monetary and budgetary policies.

Yet, the pass-through might now be in an increase with the rise of imports' share in final consumption (household equipment, transport material, mobile phone, computer hardware…) as well as a skidding inflation.

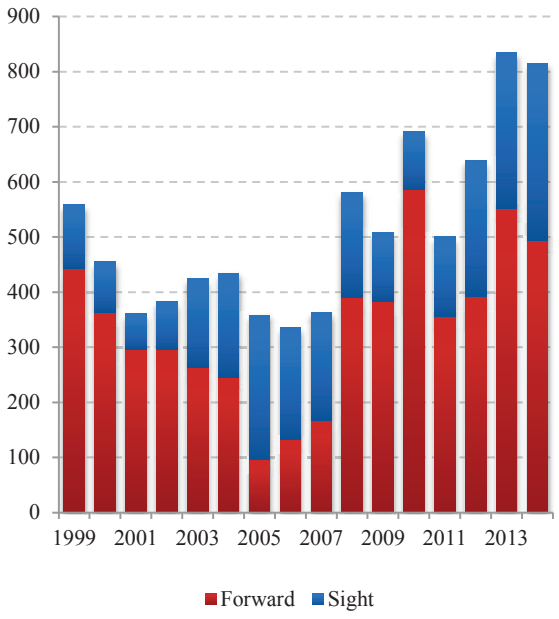
5. Assessment of the Role of Money and Local Currency Debt Market

The money market, in Tunisia, has two components:

- An interbank market where banks can exchange liquidity.
- A compartment reserved to CBT's interventions.

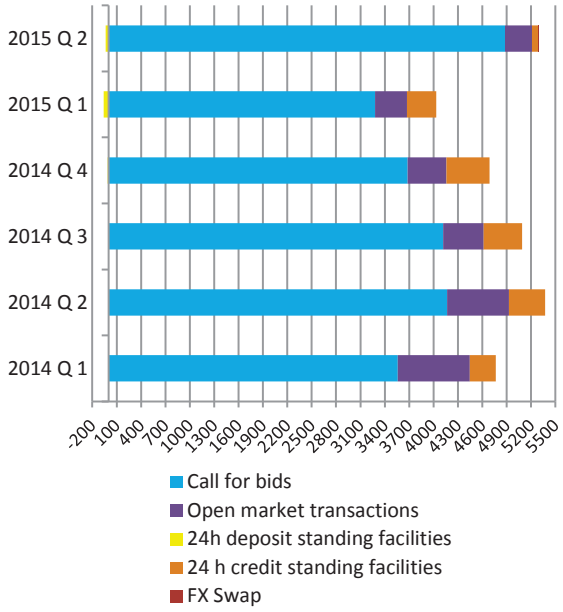
The interbank market is not enough developed to contribute to the emergence of a yield curve. Amounts transacted are still very small. This might be due to the reliance of banks on CBT's refinancing instead of taking the risk on an unsecured market. Maturities on the interbank market scarcely go beyond the month.

Graph 3 : Transactions on the Interbank Market
(Annual Data in MTD)



Graph 4 : Monetary Policy Operations

(Quarterly Data in MTD)



As for rates, the CBT's key rate is a benchmark and banks transact according to the amounts dealt with, the maturity and the price they agree on. At the end of the day, an average interbank market rate is set; this allows calculating the monthly money market average rate, at the end of each month.

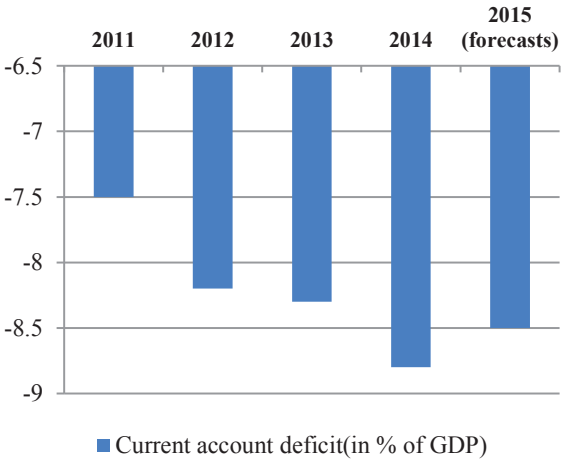
The CBT intervenes on the money market mainly through its main refinancing operations (the call for bids) but also carries open market operations. Recently, FX operations were introduced. Also, banks can ask for overnight deposit or credit facilities. To carry OMO, the CBT purchases (sells) outright Treasury bills and bonds on the secondary market. The CBT is not allowed to buy (sell) any T-bills or bonds on the primary market. The May 2006 CBT law amendments eliminated all forms of direct financing to the State Budget.

6. The Implications of Global, Regional and Internal Economic and Financial Developments on Monetary Policy Implementation

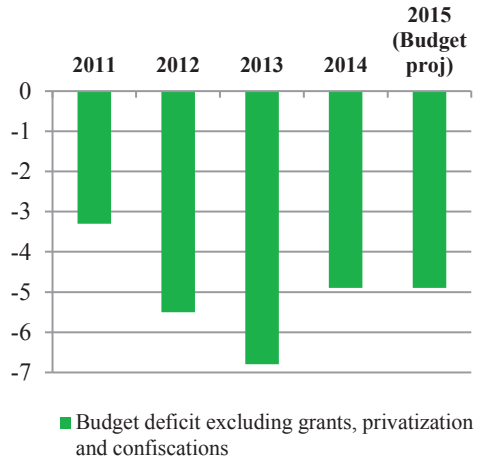
The political, economic and social events that took place after 14 January 2011 led to a sharp drop in production and exports, exacerbated by higher prices for commodities, slower growth in the Euro

Zone in a context of sovereign debt crisis and adverse geopolitical conditions in the region, notably the conflict in neighboring Libya. The consequent decline in income from exports, tourism and foreign direct investment, led to a widening of the overall deficit in the balance of payments; this in turn brought about major tightening in bank liquidity.

Graph 5: Current Account Deficit (% of GDP)



Graph 6 : The Budget Deficit (% of GDP)



Faced with this situation the Central Bank opted for an ultra-accommodative monetary policy in 2011. Measures taken by the Issuing Institution targeted easing of the tight liquidity felt by the banking system during this period, by reducing reserve requirement rates (down from 12.5% to 1%) and meeting virtually all demand for liquidity from banks. This helped offset the negative effect on bank liquidity of the sharp increase in banknotes and coins in circulation (due to massive cash withdrawals).

Table 1: Reserve Requirement Rates on Sight Deposits (%)

Prior to March 2011	March 2011	April 2011	June 2011	January 2014
12.5%	10%	5%	2%	1%

In addition, measures were introduced to lighten financial charges for Tunisian businesses by lowering twice its key interest rate (from 4.5% at the end of 2010 to 4% at the end of June 2011 then to 3.5% early September 2011) and especially to create the conditions most favorable for recovery in private investment as soon as signs of political and social stability would encourage economic agents.

Table 2: CBT's Key Interest Rate (%)

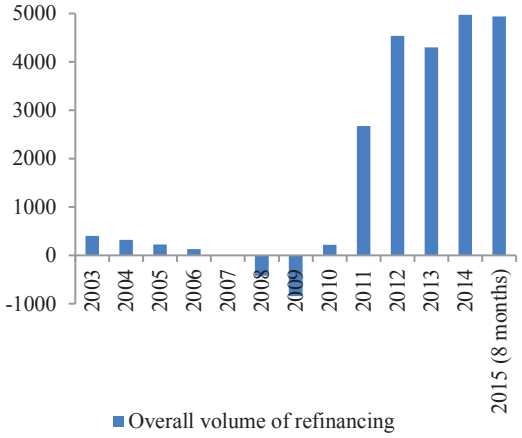
30 June 2011	5 Sept. 2011	29 August 2012	28 March 2013	25 Dec. 2013	25 June 2014
4.0%	3.5%	3.75%	4%	4.5%	4.75%

All along 2011, the monetary policy pursued by the Central Bank set as its overriding priority provision of the liquidity needed to ensure the adequate financing to the economy and to help businesses adversely affected by the difficulties that emerged after the Revolution. To this end, the CBT adopted a set of unconventional monetary policy measures, notably:

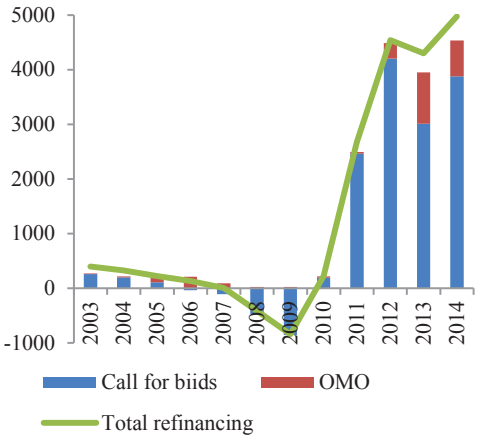
- lengthening of the maturities of call for bids to 1 and 3 months along with its 7-day auctions.
- full allotment of liquidity to banks.

The quality of the banks' portfolio deteriorated further in 2011 due to the economic downturn and banks' liquidity became very tight. The Central Bank of Tunisia supported banks' liquidity via a decrease in the reserve requirement rates and an increase in its refinancing to banks. Since the beginning of 2012, growing inflationary pressure had become a challenge for monetary policy decision-makers. The inflation rate picked up to 5.1% on average vs 3.5% in 2011 and measures of core inflation were on the raise. Given the poor performance of the economic activity, the output gap remained negative, revealing the absence of any tension on the demand side.

Graph 7: Total Volume of Refinancing (average annual data in MTD)



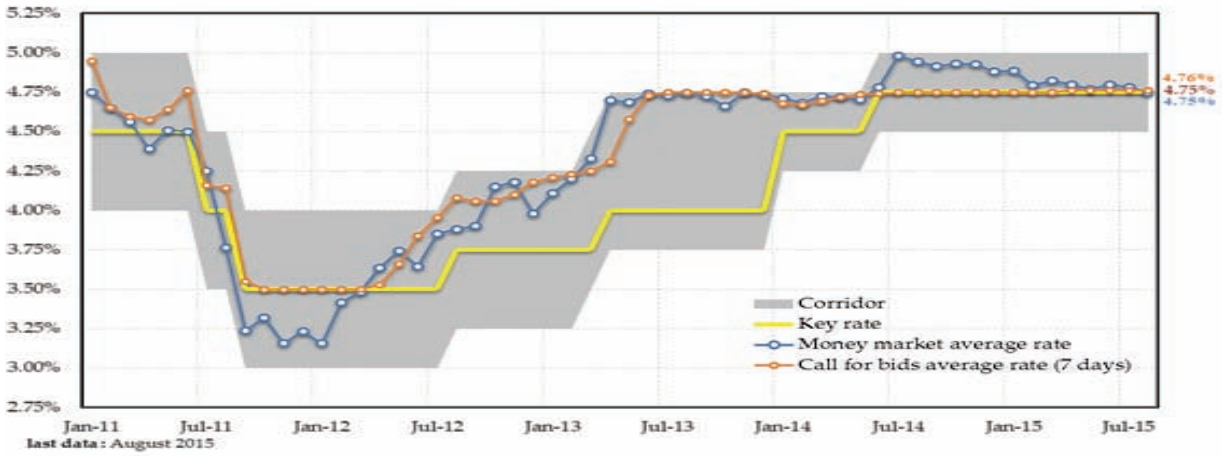
Graph 8: Importance of Call for Bids and OMO in Banks Refinancing



The Central Bank continued to face up a particularly difficult environment both at the economic, social and political scale. Given the risk of persisting inflationary pressures, and their effect on market anticipations, the Central Bank has tightened its monetary policy by increasing its key rate at four occasions (see table 1). Concurrently, it continued to supply the required liquidity to banks while protecting its balance sheet by setting a haircut on credit claims accepted as collateral against refinancing operations and requiring a minimum rate in treasury bonds.

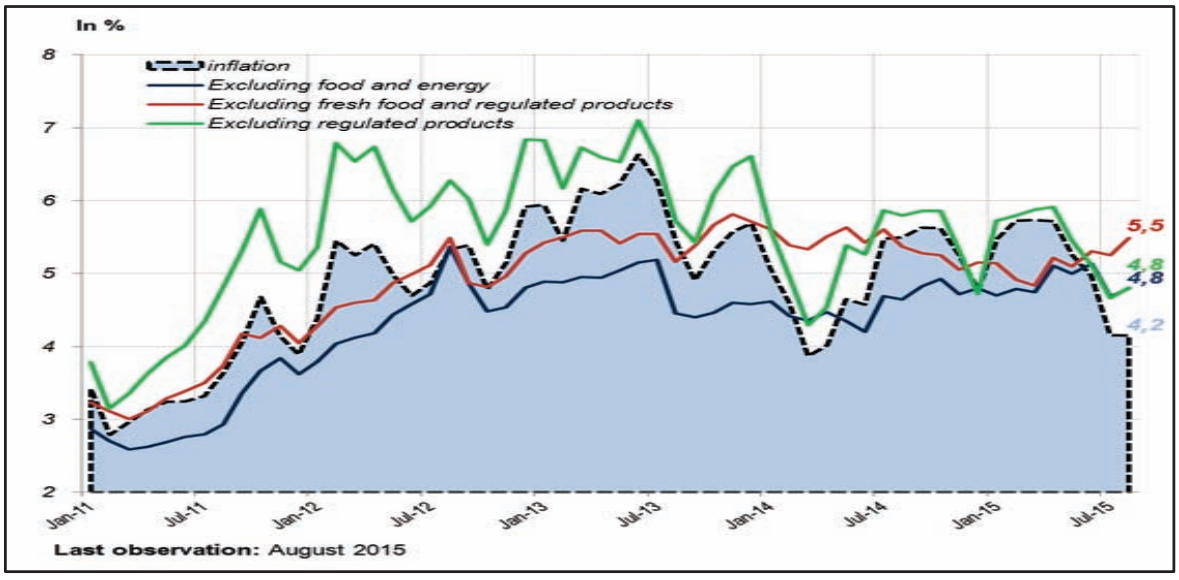
Refinancing to banks is made against presentation of collaterals in the form of treasury bonds or performing loans on the private sector as per provisions of Central Bank statutes. In the same respect, the Issuing Institution required that banks should, as per provisions of circular n°2013-10 of 1st August 2013, present as of September 2013 a minimum portion of 10% in the form of negotiable government securities (Treasury bonds), the rest can be covered by claims. This proportion was raised up to 20% at end 2013 and then to 40% as of January 2015.

Graph 9: Money Market Rates



The year 2013, was characterized by raising inflationary pressure. The inflation rate was on average 5.8% compared to 5.1 % a year earlier and its increase was mainly attributable to wage increases both in agricultural and non-agricultural sectors combined with the ongoing depreciation of the Tunisian Dinar against the main foreign currencies, notably, the euro and the dollar, in addition to the impact of unfavorable weather conditions, which affected agricultural production and exports. Moreover, the government carried out some adjustments of regulated prices, thus affecting domestic price level. For the third year in a row, the output gap remained negative and no inflationary pressure was felt on the demand side.

Graph 10 : Trends in CPI Inflation and Core Inflation

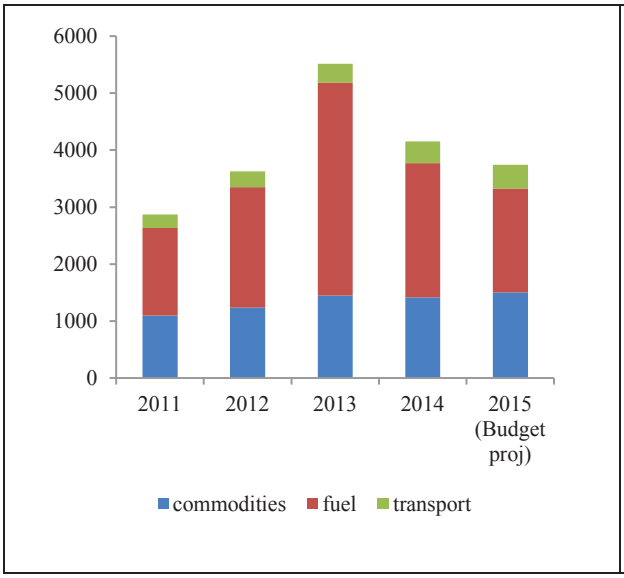


Over 2014, and despite a relative relaxation, the inflation remained high compared to levels recorded prior-to-Revolution. Anticipating this persistence, which is mainly tied to wage adjustment, rising energy prices and the further depreciation of the domestic currency against the main foreign currencies and its impact on economic agents' expectations, the Central Bank tightened its monetary policy, by raising its key official rate by 25 basis points bringing it up from 4.5% to 4.75% on 25 June 2014.

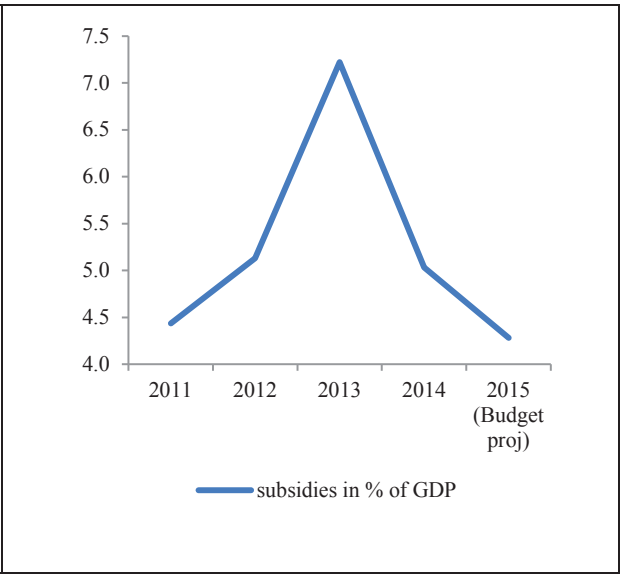
Table 3: Inflation Rates (yoy (%))

Designation	2011	2012	2013	2014	2015 (average 8 months)
Headline inflation (average)	3.5	5.1	5.8	4.9	5.1
Lowest of the year	2.8	4.4	4.9	3.9	4.2
Highest of the year	4.7	5.9	6.6	5.6	5.7
Core inflation 1 (excluding fresh food and regulated prices)	3.6	4.8	5.5	5.4	5.2
Core inflation 2 (excluding energy and regulated prices)	3.0	4.5	4.9	4.6	4.9

Graph 11 : Trends in Subsidies (in MTD)



Graph 12 : Subsidies in % of GDP



Inflation relaxed somewhat in 2015 especially in July and August (4.2%) in favor of a base effect, on the one hand, and a deceleration in foodstuff prices, on the other hand. This compares to a highest of 5.7% during the period (Feb. – Apr., 2015). But the risks remain high. The Government recently decided a wage increase in the public sector and negotiations are underway for the private sector. Added to this, the depreciation of the domestic currency will, with no doubt, contribute to additional inflationary pressure. Core inflation remains high (5.5% for CPI excluding fresh food and regulated prices, in August 2015).

7. Monetary Policy Implementation: Main Challenges and Reforms

Four years after the 2011-Revolution, the CBT faces a dilemma which is how to preserve price stability as per its mandate, and give support to the Government to boost economic activity in a context of technical recession. This difficult situation made it challenging and in particular the unstable geopolitical environment and the morose economic activity in the Euro Zone. The CBT embarked on a trend of reforms aiming at modernizing its monetary policy framework.

To this end, a twining project between the Central Bank of Tunisia and the Banque de France, financed by the European Union was launched in May 2011 in the objective of improving the technical and analytical capabilities of the General Directorate for Monetary Policy's staff, thanks to a narrow cooperation with European central banks mainly the Banque de France and the National Bank of Poland.

The overall objective of this twinning program is, once all prerequisites met, the implementation of a medium-term monetary policy strategy based on inflation targeting to ensure price stability and, through institutional capacity building and analysis prediction of the CBT, increased transparency of monetary policy and strengthening the credibility of the Issuing Institute.

The main challenges consists in the establishment of an analysis and forecasting device (DAP) within the department in charge of Monetary Policy and the necessary structural reforms implemented within the Tunisian economy and in particular the gradual liberalization of the exchange rate, the modernization and deepening of money and capital markets, the consolidation of the banking

sector, and the reduction of the weight of regulated prices. The affirmation of the independence of the Central Bank is also seen as a prerequisite to inflation targeting. Thanks to the strategic two-year-twinning program, the CBT has developed a consistent set of models allowing it to evaluate the stance of the monetary policy - restrictive or accommodative - with regards to developments in the Tunisian economy.

The study of the transmission mechanisms of monetary policy has verified that monetary policy i.e. the manipulation of interest rates in the short term by the CBT was likely to have a decisive influence on economic activity and inflation. This influence is clearly identified in the interest rate channel - actions on the key interest rate impact consumption and investment, and therefore the GDP and inflation - the relative importance of which is grown in the Tunisian economy. Also, as in any small open economy, the exchange rate channel and the credit channel play an important role in the monetary policy transmission. Thanks to the know-how of the experts of the twinning program, the CBT has developed a number of econometric forecasting models to forecast short and medium-term inflation and GDP.

The pursuit of a medium-term strategy of inflation targeting aims at consolidating these achievements. The fight against inflation is the primary objective of monetary policy (it is perceived as a condition for sound and sustainable growth, promoting job creation). It is based on recognition of the critical role of expectations of economic agents in the success of economic policies. These expectations affect their behavior and thereby contribute significantly to achieving the stated objective.

The interest rate channel is the first channel of transmission of impulses of monetary policy, which implies an increasing role of market mechanisms in the financial sphere at large. This is why, the CBT embarked in 2015 on a second twinning program aiming at modernizing its

operational monetary policy framework. In particular, this program will try to reinforce CBT‘s staff capabilities in the domain of liquidity forecasting, to update the regulatory framework governing monetary policy operations, to modernize the instruments of the money market (commercial paper and certificates of deposit) and to set a collateral policy for the CBT.

8. Conclusion

The implementation of reforms in the field of monetary policy has given the CBT a significant qualitative leap. Today, CBT is equipped to conduct forecasts of growth and inflation. It works to strengthen its communication policy, which would allow it to migrate, in time, to a new monetary framework based on an inflation targeting regime.

Arab Monetary Fund

BANK FOR INTERNATIONAL SETTLEMENTS

AMF-BIS Working Party Meeting on Monetary Policy in the Arab Region

Background Paper on Monetary Policy

The People's Democratic Republic of Algeria

Central Bank of Algeria

Presented by

H. E. Dr. Shoaib Al-Hassar

Deputy Governor

Abu Dhabi, United Arab Emirates

25–26th November 2015

Monetary Policy Implementation in The People's Democratic Republic of Algeria

1. Background

The legal framework of the Bank of Algeria operations has been set by law no 90-10 of April 14, 1990 relating to money and credit. After more than a decade of implementation of monetary reforms, the mandate of the Bank of Algeria has been adjusted and supplemented by Order no 03-11 of August 26, 2003 and by Order no 10-04 of August 26, 2010, of which Article 35 stipulates that "the Bank of Algeria is commissioned to ensure price stability as an objective of monetary policy, to create and maintain, in the areas of money, credit and foreign exchange, the most favourable conditions for sustained development of the economy, while ensuring monetary and financial stability".

2. Monetary Policy Objectives

The objectives of monetary policy and the instruments implemented in this area are fixed by the Council of Money and Credit which is the monetary authority, while implementation of monetary policy on the basis of a relevant regulatory framework is entrusted to the Bank of Algeria, which must ensure both the internal and external stability of the national currency as the ultimate objective and the stability of the banking system. For this purpose, inflation targeting inherent in the new framework of monetary policy introduced in 2010 becomes crucial with respect to money and credit quantitative targets which may be interpreted as intermediates goals. Inflation targeting on a medium-term horizon requires appropriate tools for the deepening of the analytical framework that shall support the formulation of monetary policy and its implementation in a flexible manner by the Bank of Algeria. Also, in addition to the model for determining the equilibrium level of the real effective exchange rate used for the simulation of the real nominal effective exchange rate target that underpins that of inflation, the Bank of Algeria has adopted short-term forecasting model for inflation, in the objective of a careful monitoring of the inflation process.

3. The Instruments of Monetary Policy

The legal framework allows greater flexibility to the monetary authority - the Council of Money and Credit - on the development of relevant monetary policy instruments. Indeed, the Council of Money and Credit is vested under Article 62 of the Order relating to Money and Credit of August 26, 2003 with powers in the areas of defining rules of conduct, the monitoring and the assessment of monetary policy. The Council determines the monetary objectives, particularly as regards to changes in monetary and credit aggregates and sets the monetary policy instruments on the basis of monetary projections developed by the Bank of Algeria. The Council establishes the prudential rules applicable to transactions on the money market.

In the conduct of monetary policy, the interventions of the Bank of Algeria in the money market and outside of the money market are set out in the regulatory framework updated in 2009 (Regulation n° 09-02 of May 26, 2009 relating to operations, instruments and procedures relating to monetary policy), in order to take into account international standards regarding central banks interventions. To achieve monetary policy objectives set by the Council of Money and Credit at the beginning of each financial year, the Bank of Algeria has at its disposal monetary policy instruments to use in the money market and outside of money market, which include:

- Open market transactions.
- Standing facilities.
- Discount of credit transactions.
- Reserve requirements.

Open Market Operations

Open market transactions on the money market are carried out at the initiative of the Bank of Algeria which also decides on a fixed or variable rate to use on these transactions. Open market transactions may have maturities of seven (7) days (standard transactions) to twelve (12) months (longer maturity transactions). In the money market, the Bank of Algeria set up the auction transactions or the reverse auction transactions. The instruments used under open market transactions are of three categories:

- So-called "final, definitive or outright operations" (purchases and sales of Government securities and private papers);
- Temporary disposal operations.

The final or outright operations consist of transactions by which Bank of Algeria buys or sells on the market, on a definitive basis, eligible securities. The temporary baying of securities or the temporary withdrawals of liquidity is used for monetary policy transactions below:

- Main refinancing operations or main reverse auction transactions,
- Refinancing operations for longer periods,
- Fine-tuning operations,
- Structural operations.

The main reverse auctions transactions: under the fine-tuning of bank liquidity, banks may be invited by the Bank of Algeria to participate in the reverse operations in order to make deposits of liquid assets through auctions with Bank of Algeria. These are fixed maturity deposits that the maturity is not standardized. For these operations, the Bank of Algeria does net provide guarantees in return.

Standing Facilities

They are intended to provide or take away liquidity from banks. These transactions carried out at the initiative of banks aim to indicate the orientation of monetary policy and frame the overnight money market interest rates. There are two types of facilities:

- The marginal lending facilities.
- The interest-bearing deposit facilities.

The Discount of Government Securities and Rediscount of Credit Transactions

The Bank of Algeria may carry out discount transactions on government securities issued or guaranteed by the State, in favour of banks and financial institutions, including:

- Short term Treasury bills with a maturity equal or lower than one (01) year.
- Medium-term Treasury bills with a maturity of two (02) to five (05) years.

Medium term government securities are eligible to discount only if their remaining maturity is equal or lower than three (03) years. The Bank of Algeria may also rediscount short and medium-term private bills representing trade operations and refinancing transactions carried out by banks and financial institutions. The Bank of Algeria may also grant advances and credits to banks for a period of one year and over. These credits must be guaranteed by pledges of treasury bills and bonds, gold, foreign currencies or private papers eligible for rediscount.

Reserve Requirements

Banks are compelled to constitute mandatory reserves. Such are constituted on the basis of their liabilities collected and/or borrowed in Algerian dinars and of liabilities resulting from off-balance sheet transactions except when these liabilities are due to the Bank of Algeria. Reserve requirements are constituted by credit balances of current accounts opened in the books of Bank of Algeria. The level of reserves requirements set in bank current accounts in the Bank of Algeria shall be the arithmetical average of daily balances recorded in a period of one month during which such reserves have been established. The rate of constitution of these reserves is set at between 0% and 15%. Within this range, the effective rate is set, in accordance with the monetary policy objectives, by the Governor of the Bank of Algeria.

4. Main Transmission Mechanisms of Monetary Policy

The increase in money supply (all means of payment held by non-financial agents) results from the monetization of annual flows of net foreign assets and domestic credit. In Algeria, with the increase in value of hydrocarbon exports from the year 2001 and the correlative surplus of the overall balance of payments, net foreign assets have become the main counterparts of money supply M2. Their outstanding amount is even higher than that of M2, this since 2005. The monetization of these net flows of foreign reserves increases de facto bank liquidity and therefore resources of banks deposited at the Central Bank.

The increase in public spending has also contributed to the dissemination to banks of that liquidity, so that banks no longer resort to refinancing since the early 2002's. Under these conditions, conventional monetary policy instruments such as the interest rates (interest rates on open market operations) and

the rediscount rates that are refinancing costs for commercial banks are not operative to ensure control of the evolution of money supply. The situation of excess liquidity of the banking system has led Bank of Algeria to favor, for the conduct of monetary policy, the appropriate instruments to mop up excess of bank liquidity.

These instruments are the remunerated liquidity withdrawals (reverse auctions transactions) with maturities of one week, three and six months and the remunerated deposit facility. These instruments were implemented by the Bank of Algeria at early 2002 for the first instrument and at early 2005 for the second. The liquidity absorption policy pursued by the Bank of Algeria has allowed, during the period 2002-2014 (excluding 2012), to contain inflation, as measured by the growth of the consumer price index, to an average of 4.19% (3.8% excluding 2012).

5. Assessment of the Role of Money and Local Currency Debt Market

During the period 2000-2008, the continued increase in oil prices and correlatively the value of oil exports resulted similarly in continuous increases of tax revenues from oil which represent on average, nearly two thirds (2/3) of the total budget revenue. Consequently, and despite the increase in budget spending, the state budget has recorded substantial surpluses throughout the period 2000-2008.

These surpluses have allowed the state to constitute financial savings that were housed in the "Revenue Regulation Fund" set in 2000, which represented at the end of 2013 around 34% of GDP. On the other hand, from 2009 until 2013, large increases in public spending, despite the recovery in oil prices, have resulted in budget deficits. But these deficits have been financed without using the savings in the Fund or by increasing the domestic and/or foreign indebtedness.

As a result, the total internal public debt is very low, representing only 7.2% of GDP in 2014. The foreign indebtedness of the state at the same period was about 0.3% of GDP. Under these conditions, the state has kept issuing debt securities (Treasury bills and Government bonds) only for the purpose of maintaining the market for public debt active and allowing insurance companies to set up statutory reserves.

6. The Implications of Global, Regional and Internal Economic and Financial Developments on Monetary Policy Implementation

The sole regional and international economic and financial developments that have an impact on the implementation of monetary policy by the Bank of Algeria are the developments on world markets through prices of oil. It has been observed previously that the continued rise in prices of oil from 2000 to 2009 and the subsequent recovery from 2010 induced a structural excess in bank liquidity that oriented monetary policy towards liquidity absorption instruments (reverse auctions transactions and deposit facilities). As for the developments on the international financial markets, they have no significant impact, neither on the implementation of monetary policy or on the Algerian banking system mainly for the following reasons:

- The very low connectivity of the Algerian banking system to the international financial system (no incoming or outgoing capital flows in the short, medium and long terms).
- The narrowness of the scope of activities of foreign banks branches in Algeria insofar as total assets of these branches represent less than 13% of total bank assets at the end or 2014.

7. Monetary Policy Implementation: Main Challenges and Reforms

With the fall in oil prices starting in June, 2014 and likely to remain at low levels in the medium term and the correlative lowering of hydrocarbon exports by value, the excess in bank liquidity that characterizes the banking system from year 2002 to 2014 will necessarily reverse. Commercial banks will need to refinance and the Bank of Algeria will resume its role of the lender of last resort. The Bank of Algeria will have to implement or re -implement the conventional instruments relating to refinancing of banks (rediscount and open market operations).

Moreover, price stability becoming the ultimate goal of monetary policy; inflation targeting emerges in the future as a new framework of monetary policy. In addition to developing a model for determining the equilibrium level of the real effective exchange rate used for the simulation of the target nominal effective exchange rate that underpins that of inflation and a short term inflation forecasting model. In addition to the objective of price stability requires the identification of the main transmission channels of monetary policy.

Arab Monetary Fund

BANK FOR INTERNATIONAL SETTLEMENTS

AMF-BIS Working Party Meeting on Monetary Policy in the Arab Region

Background Paper on Monetary Policy

The Kingdom of Saudi Arabia

Saudi Arabian Monetary Agency

Presented by

H.E. Dr. Ahmad Al Kholifey

Deputy Governor for Research and International Affairs

Abu Dhabi, United Arab Emirates

25–26th November 2015

Monetary Policy Implementation in The Kingdom of Saudi Arabia

1. Background

Saudi Arabia is an oil-based economy. Therefore, fiscal policy has assumed a dominant role in the management of economic activity. Saudi authorities have long resorted to a countercyclical fiscal policy. And this has enabled the country to scale up savings in good times and spend them in difficult times to ensure the continuation of uninterrupted growth and development. Monetary policy is normally used to support fiscal policy goals. Its principal objective has remained one of maintaining price and exchange rate stability. The Saudi riyal has remained pegged to the US dollar for several decades (at 3.75 since 1986), and it has served the country well by inherently contributing to exchange rate stability and enhancing the investors' confidence. SAMA's policy toolkit also includes a number of time-tested macro-prudential instruments that are used to enhance monetary and financial stability.

2. Monetary Policy Objectives

The basic objective of monetary policy has been to maintain the stability of the general price level and exchange rate. This has enabled households and firms to improve their spending and investment decisions, and hence encouraged longer-term investment in the country with the result of improvement in both job creation and productivity.

3. Monetary Policy Instruments

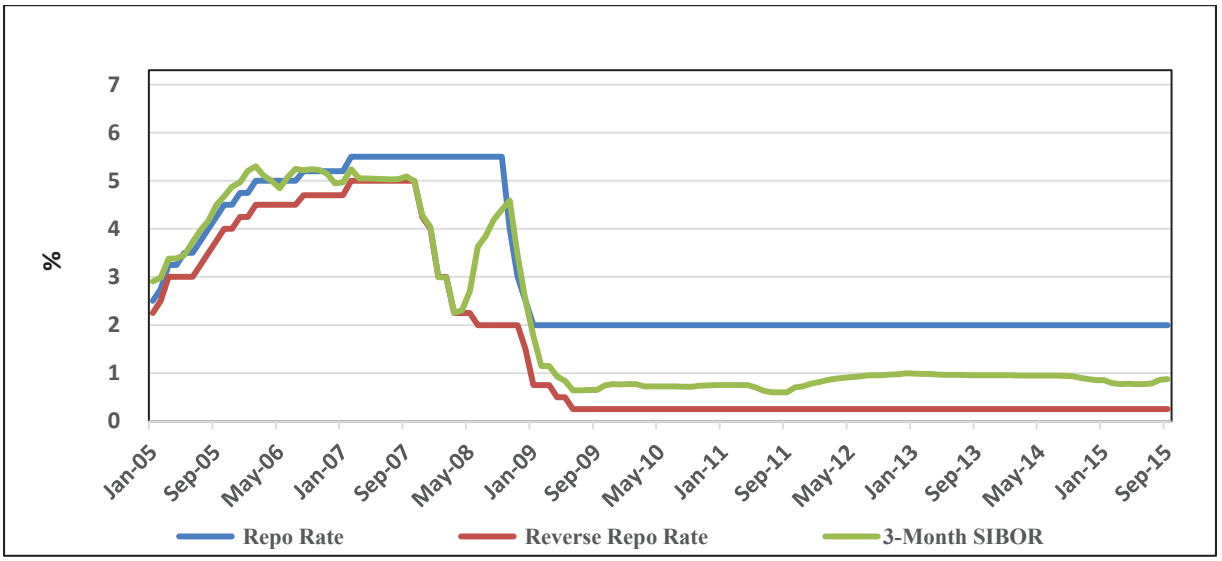
Monetary policy is based on three primary instruments. These include: a policy interest rate corridor, statutory reserve requirements, and the issuance of SAMA bills. SAMA is quite active in terms of management of interbank liquidity to safeguard monetary and financial stability.

Policy Interest Rate Corridor

The policy interest rate corridor that tracks the US federal funds rate is made up of an upper bound (repo rate) and a lower bound (reverse repo rate). The repo rate and the reverse repo rate were last

reduced by 50 bps to 2 percent in January 2009, and by 25 bps to 0.25 percent in June 2009, respectively. Short-term interest rates such as the 3-month Saudi inter-bank offered rate (SIBOR) tend to fluctuate within the policy rate corridor (**Chart 1**). SIBOR is a simple average of the offer rates of a group of leading commercial banks.

Chart 1: Policy Rate Corridor



Statutory Reserve Requirements

These requirements are SAMA's one of the most influential apparatus to control bank supply of loanable funds. At present, banks are required to maintain cash reserves equivalent to 7 percent of demand deposits, and 4 percent of time and saving deposits. Moreover, banks are also required to hold 20 percent of their deposits in the form of highly liquid assets[2] in order to meet eventualities.

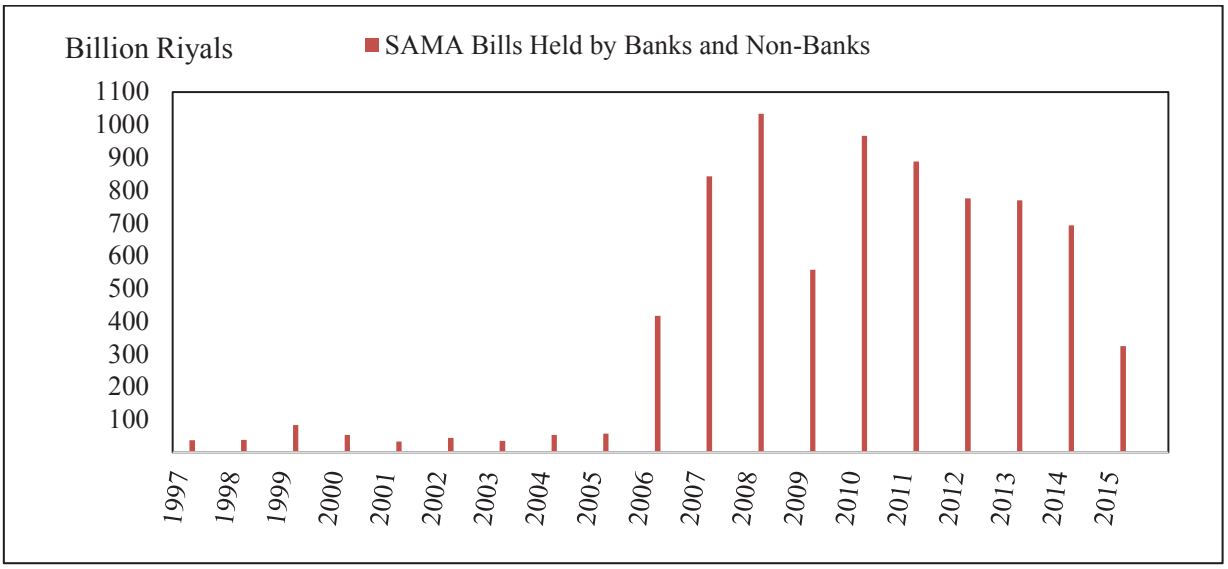
Issuance of SAMA Bills

SAMA bills are issued to banks and non-banks to absorb excess liquidity (**Chart 2**). They are issued in maturities ranging between 1 week and 52 weeks. There is a ceiling on the weekly issuance of SAMA bills to banks (presently valued at SAR 9 billion). However, non-banks are not subject to such a limitation. The ceiling on weekly issuance of SAMA bills to banks is revised occasionally as the last revision was made in February 2010. SAMA has set the interest

[2] These include cash, gold or assets that could be converted into cash within a period of 30 days.

rate on SAMA bills at 80 percent of the reported interest rates in the inter-bank deposit market in order to encourage more transactions in the inter-bank market.

Chart 2: SAMA Bills



4. Monetary Policy: Main Transmission Mechanisms

Monetary policy actions in Saudi Arabia mainly work through the bank credit channel to contribute to achieving price and exchange rate stability. For instance, a change in the repo rate tends to affect inter-bank interest rates, which in turn influence bank lending rates and demand for bank credit by households and firms. Similarly, a change in the statutory reserve requirement directly impacts the quantity of banks' loanable funds and hence their capacity to lend. It is important to note that there are five non-bank specialized credit institutions operating in Saudi Arabia. They were created to extend credit to certain sectors such as real estate and industry. In 2014, their total outstanding loans reached SAR 310.9 billion, equivalent to 25.8 percent of total commercial bank credit to the private sector. Since the five specialized credit institutions do not take deposits, changes in repo or reverse repo rates normally do not impact their credit activity.

5. Implications of Global, Regional and Domestic Economic and Financial Developments for Monetary Policy Implementation

The Saudi economy has remained largely immune to the volatility of global financial markets including the impact of the 2007-08 global financial crisis (**Table 1**). This is the outcome of three key favorable factors as follows:

- Saudi banking sector is well-capitalized, profitable, liquid, and subject to limited external exposure.

- Saudi stock market is subject to limited inflows of foreign portfolio investment.

- Saudi Arabia's external and fiscal buffers are all-time strong.

The recent plunge in oil prices has adversely impacted oil revenue inflows. However, liquidity in the banking system is likely to remain significant owing to large ongoing public spending on the back of ample fiscal space.

Table 1: Key Banking Indicators (%)

	2011	2012	2013	2014
Asset Quality				
Capital adequacy	17.6	18.2	17.9	17.9
Gross NPLs / Total loans	2.2	1.7	1.3	1.1
Profitability				
Return on equity	15	15.1	14.6	18.2
Return on assets	2.1	2.1	2	2.5
Liquidity				
Liquid assets / Total assets	23.7	23.7	21.6	22.3
Customer deposits / Net loans	135.9	131.9	129.3	127.7
Foreign portfolio investment / Total trade	5.3	3.1	5.8	5.7
Government deposits / GDP	36.6	45.6	50.5	35.2

7. Monetary Policy Implementation

Monetary policy in Saudi Arabia is anchored by the Saudi riyal peg to the US dollar. The Saudi authorities have long maintained the peg since it has served the country well by delivering monetary policy credibility, and well-behaved inflation. The peg still remains the optimal choice given the current structure of the Saudi economy largely dependent on oil export revenues.

It is important to note that Saudi authorities have implemented many structural reforms including investment in human capital and physical infrastructure in recent years in an effort to accelerate the pace of economic diversification and lessen dependence on oil. They have also restarted the privatization of state-owned enterprises with the sale of some stakes in the National Commercial Bank, and focused on joint ventures in refining, mining,

petrochemicals, automobiles, pharmaceuticals, and banking to enhance the participation of the private sector in a variety of industrial activities. Therefore, SAMA is likely to have more flexibility in exercising monetary policy in the medium term, in line with future improvements in the structure of the Saudi economy.

8. Conclusion

The monetary policy framework that has been operative in Saudi Arabia has performed well over the years. While it has enabled authorities to maintain price and exchange rate stability owing to effective monetary management, it has also contributed to national growth and development. In recent weeks, Saudi riyal peg saw some pressure due to speculation owing to persistent reduction in both oil export revenues as well as FX reserves. However, external and financial buffers have proved strong enough as dollar-riyal forward rates have normalized.

Arab Monetary Fund

BANK FOR INTERNATIONAL SETTLEMENTS

AMF-BIS Working Party Meeting on Monetary Policy in the Arab Region

Background Paper on Monetary Policy

The Republic of Sudan

Central Bank of Sudan

Presented by

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25–26th November 2015

Monetary Policy Implementation in The Republic of Sudan

1. Background

After the independence of Sudan in 1956, the establishment of a central bank was a priority. A commission of experts from the United States' Federal Reserve, worked together with the Sudanese government to create the Law of the Bank of Sudan for 1959, and in Feb 1960 the Central Bank of Sudan (CBOS) began its operations for the first time. At that time, the main responsibilities of the CBOS represented in the issuance of the national currency, formulating monetary and finance policies, building up a strong, efficient and effective banking sector, maintaining government accounts, and providing foreign currency for the development projects adopted by the government at that time.

In 1983, the CBOS announced the Islamization of the entire banking system mandating all financial institutions operating in Sudan to fully comply with the Islamic laws. These laws prohibited dealing in interest or usury (Riba) in the banking system and stipulated an immediate banks' shift towards using the Islamic modes of finance instead of the interest. At that time the financial environment was not completely ready to absorb such an immediate change, however, the number of banks continued to grow and the entire financial system started to adapt to the newly applied Islamic principles including the branches of foreign banks such as City Bank.

During the period 1989 to 2005, the Islamic finance in Sudan was further deepened and evolved into a fully integrated system with a wide range of Islamic financial institutions and products. That period witnessed the establishment of the "high Shariah Supervisory Board" in 1992, besides many other financial institutions to improve the functioning of the banks under the full-fledged Islamic banking system. These institutions include "Khartoum Stock Exchange", "Deposits Guarantee Fund", "Sudan Financial Services Company", …etc. As a result, the number of operating banks in Sudan continued to grow since that time to reach 29 banks by the end of the year 2005.

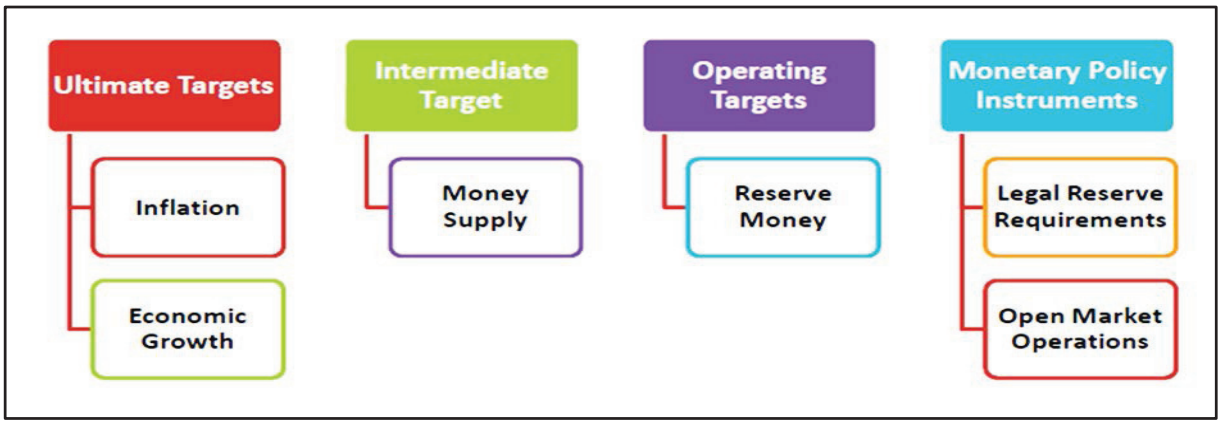
The Wealth Sharing Protocol under the "Comprehensive Peace Agreement" in 2005 stipulated the establishment of a dual banking system constituting of an Islamic banking system in the North and a conventional one in the South Sudan.

After the secession of the South Sudan in July 2011, the Sudanese banking system has become entirely complied with the Shariah and Islamic laws. As a result, all the currently operating 37 banks and their 683 branches across the country operate in accordance to the Shariah principles.

2. The Operational Framework of Monetary Policy

Central Bank of Sudan conducts its monetary policy under a fully-fledged Islamic banking system. Under such a monetary framework, the debt-based monetary policy instruments cannot earn a positive rate of return through interest and cannot be discounted in a secondary market. However, equity-based securities can be traded in the open market, with trading values reflecting market expectations of economic performance, and rates of return. Accordingly, the CBOS relies on Islamic modes of finance and equity-based instruments issued by the government and the Central Bank to provide interbank and credit facilities. In addition, the CBOS employs quantitative control by fixing caps on banks finance to government and imposing unremunerated reserve requirements. Chart (1) summarizes the monetary policy framework in Sudan

Chart (1): Monetary Policy Framework in Sudan



Monetary Policy Objectives

The objectives of the monetary policy under the Islamic and Conventional banking systems may not differ much from each other, as they are both focusing on maintaining price stability. However, the main difference comes in the mechanisms and instruments available to the Central Bank to conduct monetary policy.

The main objective of the Central Bank of Sudan (CBOS) is to maintain price, monetary and financial stability by achieving low inflation rates. This can be attained by targeting the growth rate of the money supply (M2) which represents the intermediate target of the CBOS monetary policy. To target M2, the reserve money is used as the operational target. The CBOS also has other objectives, including providing adequate liquidity to the economy in order to achieve the targeted GDP growth rate, enhancing the contribution of the private sector in the economy through increased bank financing especially to the productive sectors, and, more importantly, achieving stability of the exchange rate within a managed float framework.

Monetary Policy Instruments

To achieve monetary policy objectives, the CBOS uses a combination of monetary policy instruments. These instruments include open market operations (OMOs) and legal reserve requirements. With respect to the OMOs, the CBOS uses different types of Shariah-compliant securities as means to absorb or inject liquidity in the banking system in line with the adopted contractionary or expansionary monetary policy respectively. Furthermore, the CBOS often provides various incentives to banks in the context of moral suasion to induce desired responses in certain policy-related issues.

With respect to the reserve requirements, it represents a cornerstone in conducting monetary policy by the CBOS with the absence of conventional policy instruments such as discount rate in the fully-fledge Islamic banking system in Sudan. The legal reserve ratio increased from 14% of demand and margin deposits in 2004 to 18% in 2013 and remained constant afterward. This increase in the reserve requirements aimed at restricting banks' lending and controlling the growth of monetary aggregates, and thus easing inflationary pressures in the economy. It is worth noting that the CBOS does not currently provide any remuneration on the banks' required reserves held at the Central Bank.

Moreover, similar legal reserve ratios are applied on both local and foreign currency reservable deposits (demand & margin deposits).

The recent years witnessed significant changes in the implementation of monetary policy in Sudan represent in the introduction of (i) The Real Time Gross Settlement Systems (RTGS) in 2011 and (ii) The Liquidity Management Fund (LMF) in 2014. The RTGS contributed to minimizing liquidity risks and improving the efficiency of the liquidity management operations through obliging banks to maintain sufficient funds for covering withdrawals and pledging financial securities as collaterals. The LMF serves as a vehicle to provide liquidity to banks and promote interbank markets through collaborative redistribution of liquidity surpluses to finance banks with liquidity shortages. Since the launch of the LMF in Sep 2014, the CBOS interventions in the money markets have been significantly reduced which in turn eased the inflationary pressures resulting from such interventions.

Monetary Policy Main Transmission Mechanisms

The bank lending channel represents one of the most important channels of monetary policy transmission in Sudan in the absence of the interest rate channel under the Islamic banking framework. The bank lending or credit channel works through the response of credit aggregates to changes in cost of finance and monetary policy instruments mainly reserve requirements. Therefore, the credit channel enhances the real effects of monetary policy through changes in the supply of bank finance.

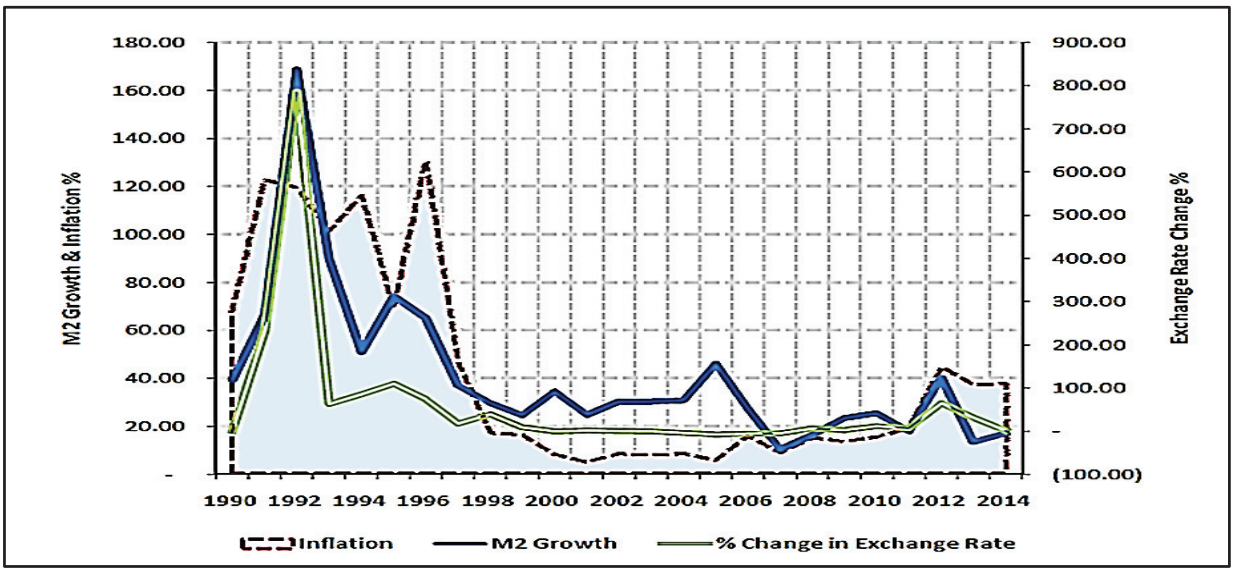
The exchange Rate Channel plays a significant role in transmitting monetary policy in Sudan. The exchange rate channel works through the impact of monetary developments on exchange rates and aggregate demand and supply. In essence, any excessive increase in the money supply would normally lead to a depreciation of the exchange rate, which increases the price of imported goods and services and thereby raises domestic prices and inflationary pressures. The effectiveness of the exchange rate channel depends on the managed-float exchange rate regime applied in Sudan, the extent of exchange rate pass-through and the degree of openness to capital flows

As the result of the prohibition of interest rate by the Islamic banking system, the interest rate channel is not effective in Sudan. In the same way, the existing interbank market in Sudan does

not carry any interest rate which constrains the effectiveness of interbank channel in Sudan. Chart (2) below shows the development of the monetary growth, inflation rates and percentage change in exchange rates in Sudan during the period 1990 – 2014.

Chart (2): Monetary Growth, Inflation Rates & Exchange Rates

During the Period (1990- 2014)



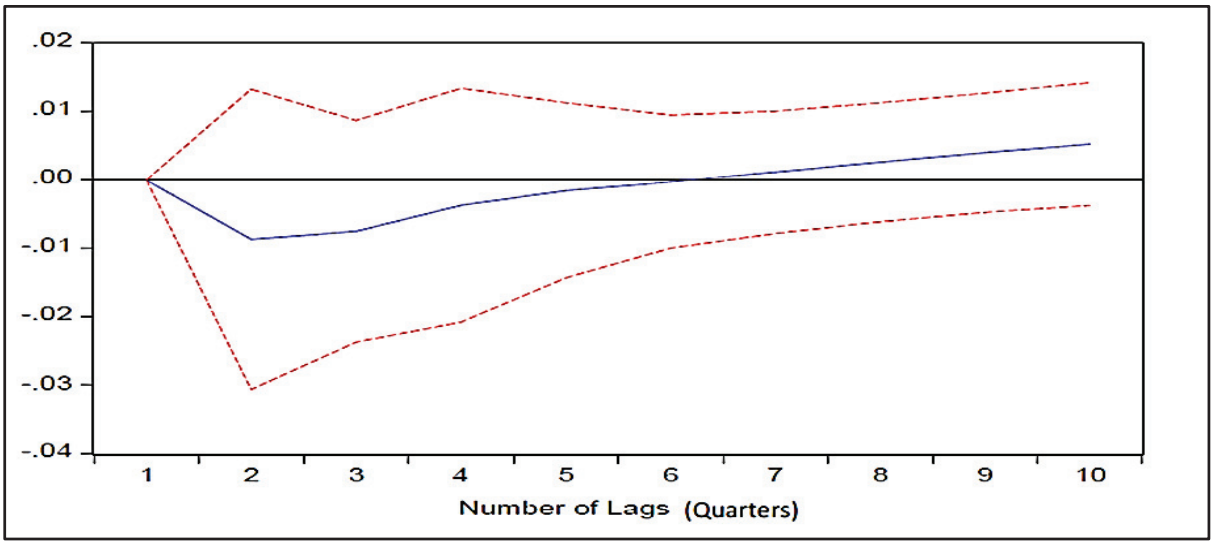
3. Assessment of the Role of Money

From the Central Bank of Sudan perspective, monetary aggregates are considered to be some of the main macroeconomic factors that affect inflation and economic activity in Sudan. Accordingly, the CBOS pays a great attention to smoothing variability in the money supply to achieve price stability as well as providing adequate amount of money to support inclusive growth.

In this connection, the reserve money has a positive and significant effect on inflation rate with a time lag of between 4 to 6 months. This indicates that any monetization of the government deficit eventually leads to high inflation. It is important to note that the time lag between the response of the general price level to a change in the monetary aggregates has been shortened after the secession of South Sudan reflecting a higher speed of monetary policy transmission into higher inflation. Chart (3) below shows the response of the general price level to a positive monetary policy shock. It proves that the increase in the money supply has persistent positive effect on inflation rates with a time lag of about 6 months.

Chart (3): The Response of the General Price Level

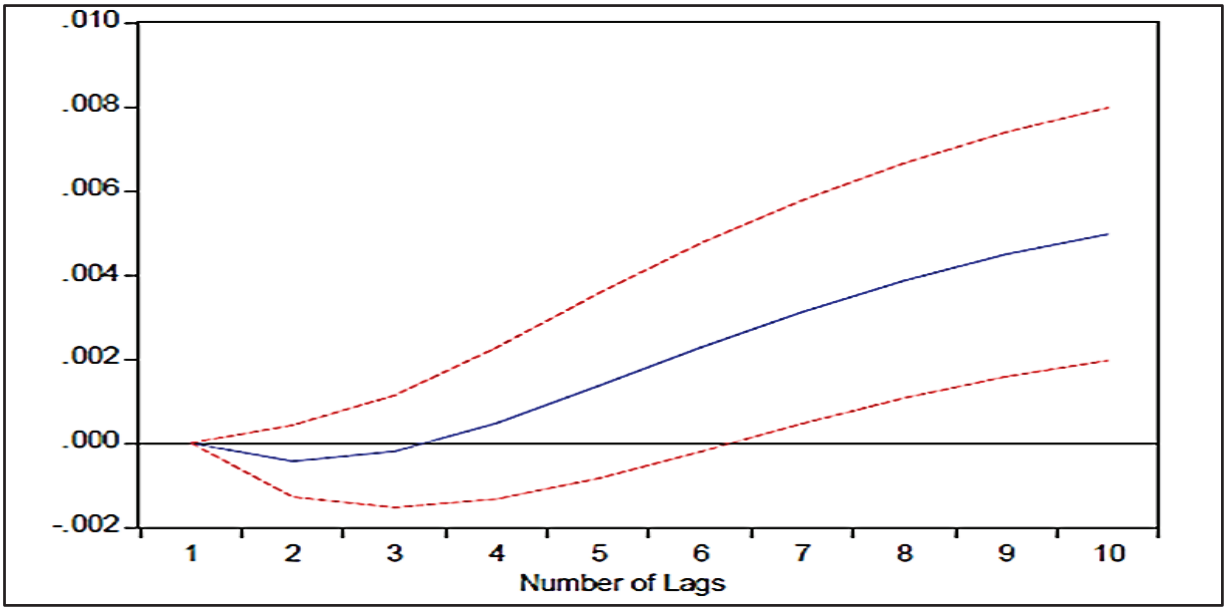
to a Positive Shock in the Money Supply



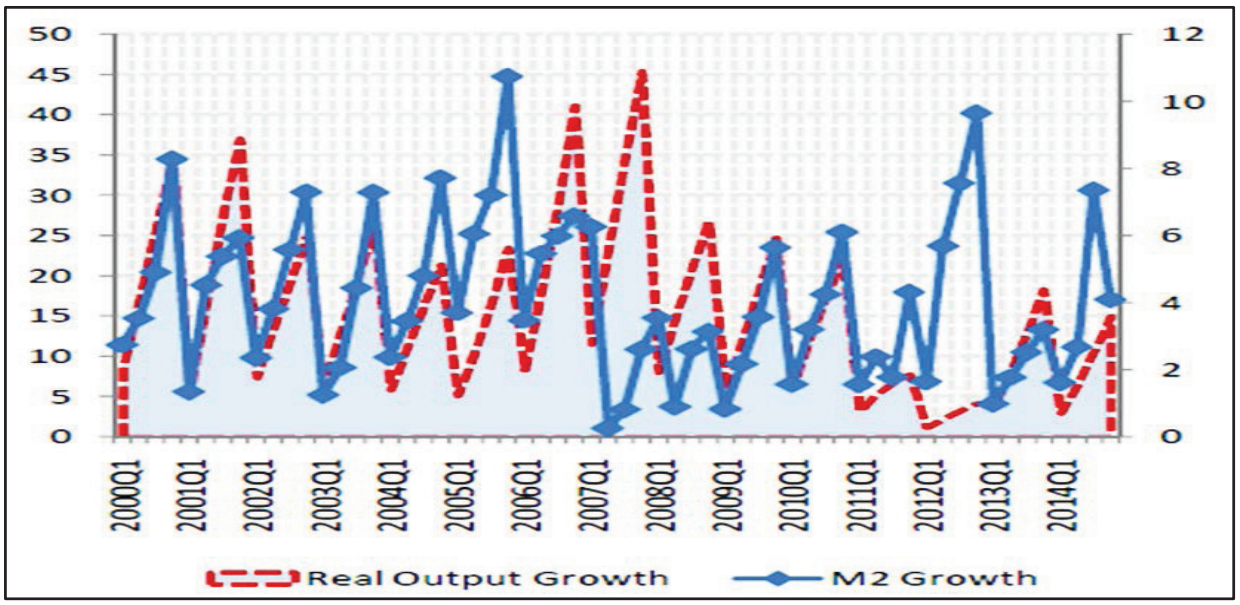
Over the shorter term, the money supply is highly positively correlated with real output growth in Sudan. Figure 4 illustrates the positive correlation between the money supply growth and real out growth, while Figure 5 shows the persistent response of the real output to a positive shock in the money supply in Sudan.

Chart (4): The Relationship Between the Money Supply
and Real Output Growth

(4-1): The Response of Real Output to a Positive Shock in the Money Supply



(4-2): The Relationship Between M2 Growth & Real Output Growth
During the Period (2001-2014)



4. The Implications of Global, Regional and Internal Economic and Financial Developments on Monetary Policy Implementation

Since July 2011, Sudan has faced the challenges of the secession of Southern Sudan, where large oil proceeds were allocated to the emerging state and Inflation and exchange rate pressures have significantly increased. In response to these challenges, the Sudanese government has adopted the "Three-Year Economic Recovery Program (2012 – 2014)" followed by the "Five-Year Economic Reform Program (2014 - 2019)". These economic programs aim mainly to achieve economic stability, generate strong and broad-based growth, and reduce poverty. Towards this end, the CBOS tightens monetary policy and improves the monetary transmission mechanism along with addressing external imbalances by substituting imports, promoting exports and allowing greater exchange rate flexibility.

In the context of the main global, regional and internal economic and financial developments, the lower oil and commodity prices have contributed to easing inflationary pressures and external vulnerabilities while the Sudanese exports such as gold are negatively impacted. However, the final impact was in favor of Sudan given that it is a net importing country.

The Sudanese economy continues to recover from the secession shock growing at 3.6% in the year 2014 and expected to achieve 5.3% real output growth by the end of 2015 supported by a rebound in agriculture, mineral industry, and service activities. Year-on-year inflation dropped from 41.9% in December 2013 to 25.7% in December 2014, and declined further to reach 13.4% in October 2015 helped by tighter monetary and fiscal policies.

Reserve money increased by 19.4% in September 2015 compared to 10.1% during the same period last year reflecting the impact of increased monetization of government deficit and financing of the agricultural season. The non-performing loans have been reduced from 8.3% in Sep 2014 to 6.2% in Sep 2015, while capital adequacy ratio increased slightly from 17.1% in Sep 2014 to 18.0% in Sep 2015 indicating an improvement in the banking soundness indicators during the designated period.

5. Monetary Policy Implementation: Main Challenges and Reforms

From an operational perspective, there are various challenges facing the conduct of monetary policy under the Islamic banking system in Sudan. The lack of short-term securities is considered a key challenge that may undermine the effectiveness of monetary policy. Furthermore, the shallow capital and financial markets have negatively affected the liquidity management in the banking system and the economy at large. In this regard, development of adequate toolkits for money market trading and central bank credit facilities are necessary to dampen inflationary pressures and improve the effectiveness of monetary policy and banks' liquidity management.

More importantly, the negative effects of South Sudan secession and unilateral economic sanctions are counterproductive factors for economic development and financial stability. The fiscal dominance and reliance on central bank financing of the budget deficit represents another challenge that hampers the monetary policy framework in Sudan. Accordingly, a prudent fiscal policy needs to be adopted to support the implementation of monetary policy so as to anchor inflation expectation and achieve price stability.

The CBOS continues its reforms of the monetary and financial system to strengthen the monetary policy framework. These reforms aim at establishing a clear central bank mandate for operational independence and accountability to pursue price stability. In addition, the Improvement of

transparency in the conduct and evaluation of monetary policy is required to make the monetary transmission mechanisms more effective.

6. Conclusion

The monetary policy plays an important role in maintaining price stability and achieving inclusive economic growth in Sudan. This is supported by the evidently positive correlations between monetary growth with both inflation and real output growth. In this regard, the Central Bank of Sudan uses a combination of monetary policy instruments to achieve the desired monetary policy targets of inflation and economic growth. Towards this end, there are some challenges that need to be addressed to strengthen the monetary policy framework and enhance the effectiveness of adopted monetary policies.

Arab Monetary Fund

BANK FOR INTERNATIONAL SETTLEMENTS

AMF-BIS Working Party Meeting on Monetary Policy in the Arab Region

Background Paper on Monetary Policy

The Republic of Sudan

Central Bank of Sudan

Presented by

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25–26th November 2015

Monetary Policy Implementation in The Republic of Sudan

1. Background

The present study investigates the monetary transmission mechanisms and assesses the monetary policy in Sudan; it focuses essentially on examining whether the channels of the exchange rate or the changes altering the monetary base due to monetization of the deficit and bank lending are the appropriate transmission mechanisms. Based on empirical models the study illustrates the effects of the monetary policy on the real sector. Moreover, it also analyzes the dynamics of inflation in Sudan.

This study examined monetary transmission mechanism channels in Sudan using a monthly data covering the period 1998/1-2015/5, in addition to annual data over the period 1970-2014, the results obtained confirmed that it takes about 13 months for changes on money to be reflected in the general price level in a system of equations (namely Bayesian BVAR, ARDL, and VECM). About 67% of the exchange rate adjustments were immediately (spontaneously) reflected in the general price levels indicating a strong exchange rate transmission mechanism. Output growth played a crucial role in reducing inflationary pressures, the results failed to reject the null that money growth does not granger cause inflation or exchange and vice versa[3]. Moreover, both claims on government and credit (finance) to private sector granger cause inflation.

The impulse responses derived from the models clearly visualized the monetary transmission mechanisms which can be traced as monetization of deficit that led to high growth of claims on government and eventually accelerating monetary expansion, which in turn represented a major cause behind exchange rate depreciation and inflationary pressures. The findings conclude that monetary expansion resulted mainly from fiscal dominance, measured by growth of claims on government (implying reliance on central banks to finance the fiscal deficit), which in turn represented the primary source of monetary expansion.

[3] According to cointegration relations.

It's evident that the exchange rate pass-through played an essential role in transmission of economic shocks to domestic economy; however, more research is required to identify real and nominal exchange rate misalignment.

The paper highlighted the main monetary policy objectives and instruments and described the operational framework and signaled the key challenges and methods of reforming the monetary policy stance. Claims on government represent a major source of money growth which in turn reduced monetary policy effectiveness, as a policy recommendation fiscal and monetary authorities are urged to coordinate policy responses to maintain macroeconomic stability and sustain economic development. It's advised to harmonize fiscal and monetary policies to keep money growth in accordance with the objectives of macroeconomic policies, more studies are required to changing monetary policy frameworks by adopting forward looking models and inflation targeting techniques.

Since output proved to be the most influential factor in reducing inflation, the study recommends that Sudan focus on encouraging output by accelerating economic growth in various economic sectors but a real concern on reducing inflation is vital. Maintaining exchange rate stability is critically important to curb down inflationary pressures and to create an investment friendly environment, the exchange played a crucial role in dynamics of inflation, it's advisable to stabilize the exchange rate to reduce volatility of inflation and maintain macroeconomic stability.

2. Theoretical Framework: Monetary Transmission Mechanisms

The monetary transmission mechanism is a process whereby the monetary policy affects the economy. In fact this process follows different channels depending on level of economic development, degree of monetization, financial market structure, fiscal dominance, exchange rate arrangements, advancement of financial innovations and other factors.

Understanding monetary transmission channels is critically important for central banks to ensure an effective monetary policy to achieve various policy targets on one hand, and to insulate the economy from external shocks on the other hand. The empirical work on examining different transmission channels help designing and implementing monetary policy.

Monetary transmission describes how monetary changes or interest rate changes affect real variables such as output or employment. The most important issue is to identify the relevant channel whereby these changes were transmitted to the real sector, is it through bank lending, interest rate, exchange rate, equity or real states prices.

Monetary policy role can be traced back to quantity theory of money (Irving fisher equation); if money exceeds output expansion inflationary pressures are inevitable, therefore, inflation is always a monetary phenomenon. The most important elements in Friedman's monetarist propositions were summarized by Bernanke (2003)[4], the key relationships which include a strong correlation between the rate of growth of money and the rate of growth of nominal income, the time lag of such an effect varies enormously,

however, M. Freidman claimed that money effects on output in the long run is neutral[5] while changes on money supply will affect general price levels in a time lag which was examined for nominal income on average of six to nine months while on general price levels may be extended to almost twelve to eighteen months. Moreover, deficit financing may have inflationary impacts if and only if it resulted in monetary expansion. This proposition is the central thesis of this study.

Many empirical researches[6] were carried out during the last three or four decades to understand the channels by which money growth affects prices both in developing and developed countries. The uncertainty pertaining to which monetary transmission mechanism channel deemed appropriate in developing countries had brought considerable challenges to how monetary policy evolves in different economies with different monetary policy frameworks.

It's important to stress that Lack of data on wages is a clear challenge for modeling transmission mechanisms, even the available data suffers from structural breaks, in the case of the selected group of countries it proved to be extremely difficult to introduce data on labor market. Another challenge was the difficulty to have a record of time series for national

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[4] Ben S. Bernanke (2004) "Friedman's Monetary Framework: Some Lessons" P:
[5] I.e. short terms effects of money on output are expected but monetary policy in the long run is impotent.
[6] See for example Ben S. Bernanke (2002) "On Milton Friedman's Ninetieth Birthday," University of Chicago, November 8, 2002, www.federalreserve.gov/boarddocs/speeches/2002/20021108/default.htm.

accounts or the real sector; however, the study relied on annual data which does not precisely verify transmission mechanisms specifically the short term effects. Noting that even with short ample time series and noisy data the

errors of fitted relationships will have large variances which imply imprecise estimations of the parameters; i.e. the findings may not be plausible. Nevertheless, it is still critically important to have higher sequencing of data (monthly and quarterly).

This study is organized as follows; it reviews the theoretical basis of different channels for monetary transmission mechanisms, hence after, based on two types of data (annually and monthly) it provides an empirical findings for Sudan experience by emphasizing the appropriate channels and examining how monetary aggregates were used to target monetary objectives.

The anchors of monetary policy frameworks can simply be outlined in the following forms:

- Targeting of finance and monetary aggregates.
- Exchange rate targeting.
- Inflation targeting.

While targeting of monetary aggregates spread all over the world as the most dominant anchor during the last three decades, in most cases there exist a contradiction between monetary targeting and exchange rate targeting that is why targeting conflicting objectives reduce effectiveness of monetary policy operations, moreover, due to instability of demand for money, monetary targeting become a risky strategy[7]. On the other hand, inflation targeting is a relatively new monetary policy framework practiced in African countries[8]. It's important to stress here that inflation targeting requires independence of central bank, a well-developed financial markets, fiscal discipline and a considerable knowledge of advanced forward looking models and short-term versus long term forecasting techniques.

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[7] Anil Duman (2002) "inflation targeting as a monetary policy and its applicability to developing countries "Central Bank of Turkey, Ankara – Turkey.

[8] Adopted by South Africa, Mauritius and relatively lite inflation targeting is pursued in Ghana, Uganda, and Kenya

Definitely the adoption of any of the monetary policy framework needs a clear understanding of the transmission mechanisms in the specific country or a group of countries. Hereby, the study highlights some well-known channels:

- Monetary aggregates and Credit channel
  - Exchange rate
  - Interest rate
  - Asset prices
  - Expectations

This study concentrates on investigating the first and second transmission mechanism channels, for the following reasons; i. There is no adequate number of observations to run models revealing other channels. ii. Based on previous studies interest transmission mechanisms proved to be a weak channel in sub Saharan African countries[9]. iii. Financial markets are not well developed so that that price of assets such as bonds, real-estate or foreign exchange cannot reflect truly market forces and influence monetary targets[10].

To examining the proposition that fiscal deficit is inflationary only if it result in money creation or become the major source of monetary expansion in the economy[11], here, the claims on government (COG) indicated in central bank balance sheets besides the credit to private sector which reflect the major components in the Net Domestic Assets (NDA) were incorporated in the model, therefore, its useful to assess fiscal influences by examining the effect of (COG) as a vital indicator for budgetary impacts on the monetary sector, that is by examining the changes in the monetary expansion associated with money injections caused by financing government deficit or domestic credit which may also represent a channel for transmission mechanism need to be studied.

This study focuses essentially on investigating, whether the channels of the exchange rate or the changes altering the monetary base due to monetization of the deficit and bank lending

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[9] Hamid R. Davoodi, Shiv Dixit, and Gabor Pinter (2013) "Monetary Transmission Mechanism in the East African Community: An Empirical Investigation" IMF- WP/13/39

[10] Benedicte Vibe Christensen (2011) :"Have monetary transmission mechanisms in Africa changed?:" BIS Papers No 56.

[11] *Jean-Claude Nachega (2005) "*Fiscal Dominance and Inflation in the Democratic Republic of the Congo*" IMF* - WP/05/221

are the appropriate transmission mechanisms by explaining the case of Sudan economy, I,e based on empirical models the study illustrates which transmission mechanism is illustrating the effects of the monetary policy on the real sector.

Effective monetary policies require independence of the central bank and strong credibility to the public which enhances appropriate expectations and create conducive environment for doing business. Fiscal dominance and severe external shocks left the central bank relatively weak to targeting its objectives. Reserve ratios represent tax on banking and partially explain the gap between the lending and borrowing rates.

3. Monetary Policy Experience in Sudan

Sudan adopts monetary targeting framework for monetary policy operations, where the monetary base is set as an intermediate target to achieve macroeconomic objectives. Quantitative targets were specified as benchmarks such as a ceiling on Net Domestic Assets (NDA) and a floor for net international reserves (NIR). The exchange rate is not targeted, and a managed float system is applied, however, the movements in nominal and real exchange rates were envisaged in designing monetary policies, this is mainly due to the fact that in Sudan exchange rate adjustments play a crucial role in economic stability. The monetary policy operations were conducted within an entire Islamic banking system.

Markets of real estate's in Sudan are not well developed, the majority of the real estate are not registered, moreover, there is no statistical reporting of dealings in these markets where prices are not reflecting speculations (the underlined cause behind various volatilities), supply and demand forces on most cases are nor reflecting prices. Furthermore, the equity market in Sudan is not well developed due to low level of market capitalization in Khartoum stock exchange, then it can easily be recognized that the channel of the equity is inappropriate in explaining monetary transmission mechanism in Sudan. Therefore, it's argued that prices of real states and equity cannot be the appropriate channels explaining monetary transmission in Sudan economy during the last two decades or so.

Monetary Policy Implementation and Main Challenges

Historically, during 1960s and 1970s the interest rate was widely practiced in Sudan, however, since 1980s with gradual introduction of Islamic banking system the economy virtually prohibited the use of interest rate as a tool for monetary policy. The double track system of conventional versus Islamic banking system was practiced post CPA[12] agreement 2005-2011. While post secession of South Sudan a fully-fledged Islamic banking system is adopted.

Sudan ceased credit ceiling policy since mid-1990s where the monetary policy focused on indirect measures and diverted from control and administrative measures. The reforms concentrated mainly on indirect measures to affect monetary policy targets; conversely, the cost of finance measured by Islamic modes of finance was basically controlled. The reserve money is used as a nominal anchor for monetary policy, whereby the broad money (M2) is considered as an intermediate target measured by money multiplier effect in association with macroeconomic objectives set within the macroeconomic policy framework, in addition to certain benchmarks for the Net Domestic Assets (NDA) which comprises both net claims on government NCOG and Claims on private sector.

A managed float exchange rate system is adopted with special consideration given to exchange rate determination to equilibrate the external imbalance. Because of the persistent black market premium indicated by the spread between the official and market rate, the authorities also manipulating the exchange rate policies to bridge the gap and unify the exchange rate as postulated by the economic reforms program that aims at attaining macroeconomic stability and sustaining economic development.

In Sudan a monetary policy committee holds bi monthly meetings to ensure transparency, monetary policy operations were conducted on the basis of intensive reports indicating performance in various economic sectors, moreover, the council of ministers, the parliament, the presidency and the media receive regular reports on performance of monetary policy operations.

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[12] Comprehensive Pease Agreement (CPA)

Foreign and joint banks were strongly encouraged to operate in Sudan, banking system become relatively open to foreign capital during the 2000s; recently 6 licensed commercial banks were entirely owned by foreigners, while almost 50% of the rest (37 banks) reveal crucial foreign capital participation. Performance of financial stability is improving; NPL reported 6% by end of 2014 which is in line with Basel III recommendations, capital adequacy ratio CAR for the banking system reported 13% at the end of 2014, the program of strengthening banking soundness is progressing with other indicators reflecting quality of assets and liquidity ratios and revenue to expense ratios.

Banking supervisors is adopting new methods of stress testing and follow up electronic returns with more appropriate methods of monitoring and evaluation which generally led to enhancement of sound banking indicators. Sudan is adopting Islamic banking where cost of finance in banking system strictly follows Shariah compliance and Islamic modes of finance were practiced more than two decades, this implies that the interest transmission mechanism can also be spelled out, allocation of finance is not based on market mechanism and there is no bank rate or overnight rate. Discounting rate virtually non-exist, discounting of financial papers also is prohibited, financial papers were issued in accordance to Islamic Sukuk criterion.

Fiscal dominance seemed to be a plausible argument in case of Sudan post secession period, since mid-2011 Sudan lost oil revenues, where the government deficit financing in addition to other sources of money growths had led to a massive growth on claims on the government by the central bank, this indicated that money growth during the period attributed mostly to government operations which can be emphasized as temporary advances, the difference between gold purchases and foreign exchange received from gold proceeds and assigned to import of government imports and other obligations[13]. The impacts of fiscal expansion also generated impulse responses pushing the aggregate demand which in turn increased the inflationary pressures and resulted in severe exchange rate deteriorations. Therefore, the main challenge of the monetary policy is the fiscal dominance phenomenon and the external imbalance that resulted in tremendous exchange rate depreciations.

[13] Central bank of Sudan annual report 2014, chapter 4.

The exchange rate changes have severe implications to both the current account transmission mechanism and monetary expansion. Due to successive devaluation of the national currency the economy is overheating, indicating higher inflationary pressures and an increasing gap between the official and parallel market rates (black market premium). In previous studies carried in central bank of Sudan, the exchange rate seemed to play a crucial role in dynamics of inflation[14], therefore, it's obvious there is a need to empirically examine the channel of the exchange rate in the monetary transmission mechanism.

Monetary Policy Objectives

Currently the ultimate monetary policy objectives focus mainly on reducing inflation and stabilizing the exchange rate, the three year economic stabilization program 2012-2014, clearly identified the strategic goal of macroeconomic policies to restore macroeconomic stability. Due to the fact that Sudan witnessed a severe shock of oil losses resulting from secession of South Sudan fiscal and monetary policies seemed to be contractionary, where tough austerity measures were taken to eliminate the budget deficit which included:

- A cut in government expenditure.
- Gradual removal of subsidies
- Exchange rate adjustments

In spite of the tremendous measures adopted to correct for budget deficit, there still a growing concern on the negative impacts of the policy measures which necessitated a shift toward a broad growth strategy outlined in the five year economic reforms program 2015-2019, the main objectives had been directed to accelerate economic growth and raising production and productivity to improve the living standard of the masses. The issue of creating job opportunities and curb down unemployment which become increasingly cumbersome, specifically with flux of the Arab spring revolution.

[14] For more details see Mustafa Mohamed Abdalla (2010) "dynamics of inflation in Sudan (1970-2010) " published by CBOS series No.

In this respect it's clear that the monetary policy turned to be accommodative, however, inflation still intriguing the policy makers tremendously with the growing spread between the official and parallel market exchange rates.

Monetary Policy Instruments

Sudan is adopting Islamic banking, therefore, interest rates were prohibited, in place a range of Islamic modes of finance were practiced , this eventually led to exclusion of the bank rate as a tool of monetary policy, there is no interbank rate, no consideration is given to Taylor rule, cost of finance is not determined within the macroeconomic framework but left to financial institutions to set the appropriate rate with specific indicatives for Murabaha rate which is currently set at 12% per annum[15] , which imply a negative real interest rate .

The legal reserve ratio is intensively used as a monetary policy instrument, initially was set at 13% before secession of south Sudan, then raised to 15% in 2012, and 18% in 2013 which is prevailing up to now, i.e. the monetary policy relied heavily on this tool as a mechanism to reduce money growth, nevertheless, the statistics had shown that sources of money growth were originated mainly from financing government operations reflected in the claims on government and not the credit to the private sector.

The CBOS also activated the open market operations as an important tool for managing liquidity as well as a monetary policy tool, in this regard a weekly auctions were held for buying and selling Islamic Sukuk, the most important instrument to be highlighted here is the Government Musharaka Certificates GMC or namely (SHAHAMA) which was an invented financial paper that incorporates government shares in specific companies, where dividends (profits) of selected group of companies distributed to shareholders annually, currently the annual distributed profit is around 19% . The GMC has quarterly issuance in primary markets, since the asset component of the financial paper is of sizable share it is sold in secondary markets both in Khartoum stock exchange and CBOS auctions. Another financial paper named Government Investment Certificate GIC or (Sarh) also issued and circulated. The CBOS also uses SHIHAB which is a financial paper developed to replace treasury

[15] The average inflation for 2015 is projected at 18% .

bills, it is expected to launch SHIHAB2 in the eve of 2016 as an important instrument for managing liquidity in the short term. Previously, CBOS used foreign exchange market interventions as an instrument of monetary policies; however, this tool is now ceased and no longer exists due to decline in foreign exchange resources.

Assessment of Role of Money and Local Currency Debt Market

Money plays a crucial role in dynamics of inflation and exchange rate adjustments, according to credit regulations local currency debt market virtually non- exist. According to monetary policy rules money is allocated to finance production of goods and services based on Sharia' compliance, mainly no loans were provided and interest cost is not determined in finance operations, but Islamic modes of finance were adopted, therefore, practices of overnight rate basically non exist.

Medium and long term finance is based on Murabaha, Mudaraba, Musharak, Igara, Salam and other modes of finance, no direct loans are offered to whatsoever projects, only contracts based on Islamic banking practices, it is obvious that money is allotted to production. For the short term liquidity management, Islamic Sukuk were introduced to facilitate short term liquidity management through a system of real time settlement system (SRAJ), which liquidates GICs holdings of commercial banks. A new liquidity fund was issued September 2014, where commercial banks were organizing dealing on GICs and other marketable securities in a system liquidating financial papers. Government bonds (GMCs, GICs) are dominant in the stock exchange market and comprise more than 89% of total financial papers in Khartoum stock exchange; therefore, it’s argued that domestic debt market is dominated by government debts.

4. Implication of Global, Regional and Domestic Factors

Recent drop on oil prices may have far reaching implications on Sudan economy and hence the conduct of monetary policies. As a matter of fact, Sudan is not a net oil exporter, currently annual imports of crude oil is exceeding one billion dollars, this shortage is covered by importing from oil sub-contractors to be processed in local refineries to meet domestic consumption of oil products, it's expected that with the drop in oil prices this will represent a positive effect in the balance of payments and the government budget, i.e. oil bill may be reduced by about 60% .

The global slowdown in economic growth caused by a decline in China demand and sluggish growth in the emerging markets may induce further decline in Sudanese exportable goods basically gold and agricultural products, this is a negative shock which may be transmitted to domestic economy in unfavorable way.

However, the decline in wheat prices may have positive effects on Sudan economy, on average Sudan imports two million tons per annum, with the drop of wheat prices it's expected that the wheat bill will be reduced by 50% which will positively affect the balance of payments and the budget. The flow of FDI and remittances of Sudanese working abroad may decline, foreign aid may also decline, therefore, as a matter of fact the overall effect is real challenge to policy makers to maintain macroeconomic stability and accelerate economic growth.

As far as the monetary policy is concerned, in fact the situation is getting much more cumbersome if we consider sanctions and foreign debt burden, the need for counter cyclical monetary policy is important but the process might exacerbate with external shocks and limited room for monetary policy operations to stabilize the national economy, a coordination with fiscal policy is critically important and international cooperation deemed necessary to eliminate sanctions and benefit from HIPC debt cancellation initiative.

5. Monetary Policy Transmission Mechanisms in Sudan: an Econometric Approach

Two main transmission mechanisms will be empirically examined, namely (1) The Seigniorage effect indicated by tremendous increases in claims on government and the features of fiscal dominance in Sudan economy, where deficit financing had increased money growth and imposed severe inflationary pressures. (2) The exchange rate transmission

mechanism, where external imbalances imposed high exchange rate pressures necessitated orderly devaluations which in turn raised inflationary pressures.

6. Methodology and Model specification

The research investigates the dynamic effect of money; mainly by adopting a single equation model, then a system of equations were pursued namely Bayesian Vector Autoregressive (BVAR) and VECM for annual data over the period 1970-2015, in addition to Generalized Method of Moments GMM model of monthly data that cover the period 1998-2015, the time lag of the effect of changes in money supply and exchange pass through is empirically tested, the main results were used for interpreting the implications of external shocks and short term versus long term forecasting adjustments .

In order to empirically examine the monetary transmission mechanisms and assess monetary policy operations the study first estimated autoregressive distributional lag ARDL model, then impulse responses and variance decomposition results were derived from a system of equations building on SVAR , ECM and Bayesian models to verify the effects of monetary aggregates on macroeconomic indicators namely inflation , exchange rate and GDP . it is plausible to identify factors that affect inflation with special emphasis on monetary expansion induced by deficit financing, here the Seigniorage [16] effect is critically important. The model will consider changes in inflation assuming specific factors such as the size of the deficit, seigniorage, exchange rate adjustments and output growth.

ARDL

$$\mathrm{yt} = \alpha + \sum_{i=1}^{p} \lambda \mathrm{y\,t-1} + \sum_{i=1}^{k} \sum_{i=0}^{qj} \mathrm{Xj\,t,t-1+'\beta j,i} + \varepsilon \mathrm{t}$$

Y is the dependent variable which is inflation, while lagged X are dynamic explanatory variables such as money growth, exchange rate and output growth. Standard Akaike, Schwarz and Hannan-Quinn information criteria will be used to determine the appropriate lags, the coefficients reflect the long run responses of inflation to changes in the specified explanatory variables.

[16] seigniorage revenue is measured as the absolute change in M2 in percent of GDP

A cointegrating regression may be derived as follows:

$$dyt = -\sum_{i=1}^{p-1} \lambda * dy\,t-1 + \sum_{i=1}^{k} \sum_{i=0}^{qj-1} dXj\,,t-1+'\beta j,i * -\Theta ECt-1+\varepsilon t$$

A system of equations for four main macroeconomic indicators will be emphasized as follows:

$$inf_t = \alpha_t + \beta 1 M_t + \beta 2\, E_t + \beta 3\, Y_t + \varepsilon \quad (1)$$

$$Yt = \alpha_t + \beta 1 inf + \beta 2 M_2 + \beta 3\, E + \varepsilon_t \quad (2)$$

$$M_2 = \alpha_t + \beta 1 inf + \beta 2\, Yt + \beta 3\, E + \varepsilon_t \quad (3)$$

$$E = \alpha_t + \beta 1 inf + \beta 2\, Yt + \beta 3\, M_2 + \varepsilon_t \quad (4)$$

By introducing the lag of the dependent variables and transforming the system of equations into a regression form:

$$Y_t = \beta_0 + \beta_1 X_{1t} + \beta_2 X_{2t} + \ldots + \beta_k X_{kt} + e \quad (5)$$

The matrix form is constructed as a VAR system:

$$[Y]t = [A][Y]t\text{-}1 + \ldots + [A'][Y]t\text{-}k + [e]t \quad (6)$$

Short term restrictions impose k(k+1)/2 in the 2k2 elements , for accurate specification additional restrictions of 2k2- k(k+1) /2 = k3(k-1) /2. Long term restrictions were embodied in the impulse responses of accumulated which imply that the long run effect of the shock is equal to zero. Adding the error correction term will turn the model to Vector Error Correction Model VECM:

$$\Delta Y_t = \beta_0 + \sum_{j=1}^{k} \beta_j \Delta X_{1t-j} + \sum_{j=1}^{h} \alpha_j \Delta Y_{t-j} + \delta\, Z_{t-1} + \varepsilon_t \quad (7)$$

Empirical Findings

The necessary steps for testing if variables are stationary I(0) or have a unit root stationarity is carried out based on ADF and PP criterion as provided in appendix (1). It seems that all variables were nonstationary at level, but after introducing the first difference the set of the variables entered revealed

I(1) process, then a cointegration test indicated at least two cointegrating equations as displayed in appendix (2) .

Consider the following linear regression model:

$$Y_t = BX_t + v_t, \quad v_t \sim N(0, \sigma^2) \qquad t=0,\ldots,T$$

Bayesian framework

$$H(B|Y) = \frac{G(Y,B)}{F(Y)} = \frac{F(Y|B)\,P(B)}{F(Y)}$$

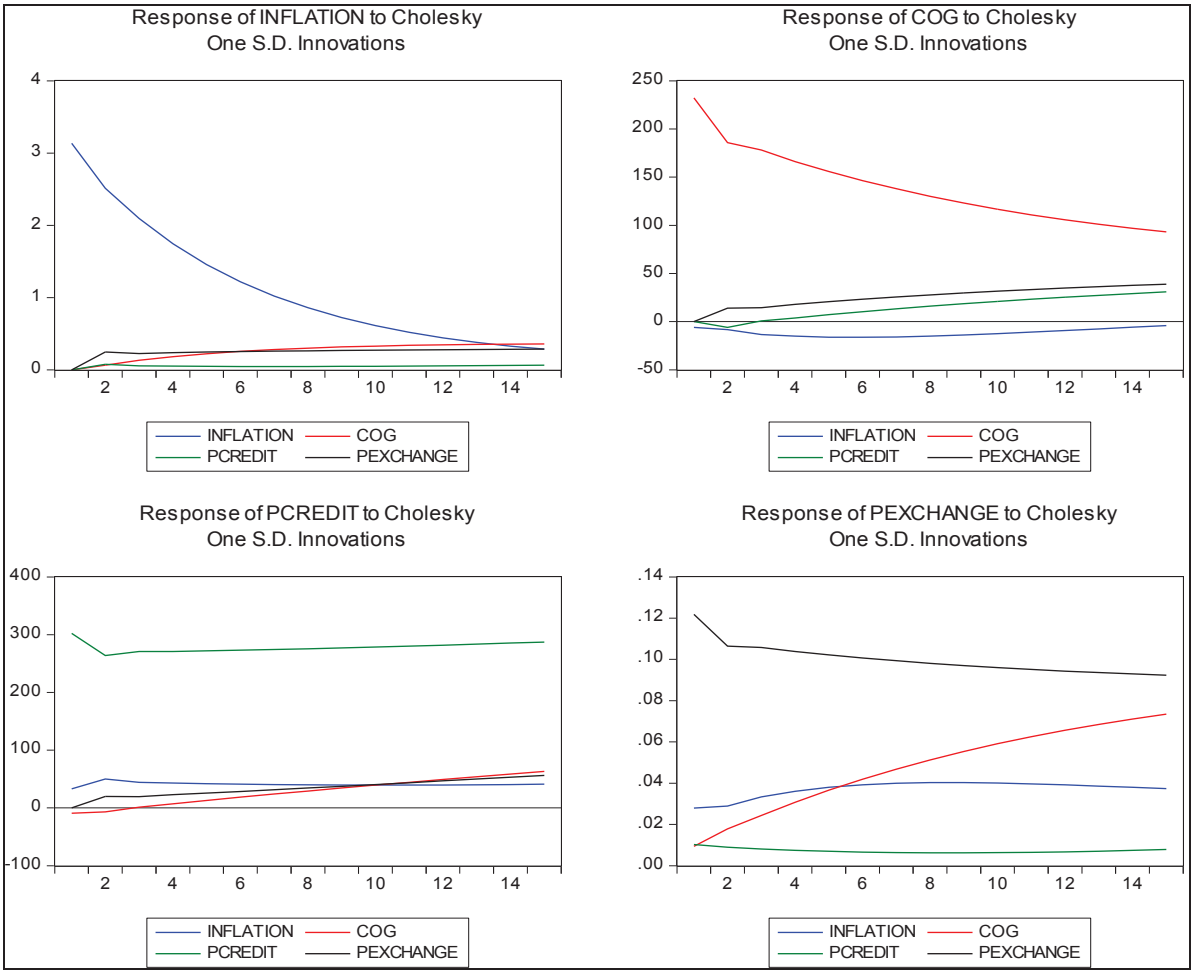
Table (1) Bayesian (BVAR model) : Monthly Data

Prior type: Litterman/Minnesota
Initial residual covariance: Univariate AR
Hyper-parameters: Mu: 0, L1: 0.1, L2: 0.99, L3: 1
Standard errors in ( ) & t-statistics in [ ]

	INFLATION	COG	PCREDIT	PEXCHANGE
INFLATION(-1)	0.782515	-2.029289	5.536161	0.001514
	(0.04409)	(3.36078)	(4.41927)	(0.00179)
	[17.7487]	[-0.60381]	[1.25273]	[0.84594]
INFLATION(-2)	0.034936	-0.843063	-5.836222	0.000634
	(0.03850)	(2.92893)	(3.85139)	(0.00156)
	[0.90733]	[-0.28784]	[-1.51536]	[0.40660]
COG(-1)	0.000180	0.792685	-0.000404	4.12E-05
	(0.00053)	(0.04103)	(0.05364)	(2.2E-05)
	[0.33850]	[19.3178]	[-0.00753]	[1.89808]
COG(-2)	0.000101	0.127340	0.027707	6.40E-07
	(0.00050)	(0.03852)	(0.05029)	(2.0E-05)
	[0.20261]	[3.30608]	[0.55098]	[0.03144]
PCREDIT(-1)	0.000196	-0.02272	0.867162	-5.28E-08
	(0.00037)	(0.02865)	(0.03794)	(1.5E-05)
	[0.52372]	[-0.79309]	[22.8558]	[-0.00346]
PCREDIT(-2)	-0.000172	0.038451	0.135894	-2.14E-06
	(0.00037)	(0.02869)	(0.03801)	(1.5E-05)
	[-0.45885]	[1.34004]	[3.57565]	[-0.14009]
PEXCHANGE(-1)	1.959761	110.1475	167.3026	0.873841
	(0.95187)	(72.9091)	(95.8702)	(0.03909)
	[2.05885]	[1.51075]	[1.74509]	[22.3572]
PEXCHANGE(-2)	-1.637516	-69.83167	-129.8912	0.096556
	(0.92566)	(70.9003)	(93.2297)	(0.03802)
	[-1.76903]	[-0.98493]	[-1.39324]	[2.53942]
C	0.447105	29.27669	-26.63443	0.001105
	(0.46386)	(35.5302)	(46.7200)	(0.01892)
	[0.96388]	[0.82399]	[-0.57009]	[0.05842]
R-squared	0.925357	0.991194	0.999305	0.996252
Adj. R-squared	0.922325	0.990837	0.999277	0.996100
Sum sq. resids	1993.646	10989933	18857133	3.225504
S.E. equation	3.181200	236.1916	309.3889	0.127957
F-statistic	305.2772	2771.823	35431.26	6546.001
Mean dependent	15.39764	3187.060	11932.73	3.463258
S.D. dependent	11.41436	2467.379	11508.45	2.048977

The graph below depicts that the time lag of the effect of money changes in general price level takes about 13 months, which is consistent with results obtained by the single equation model.

Chart (1): Bayesian Model, Impulse Responses

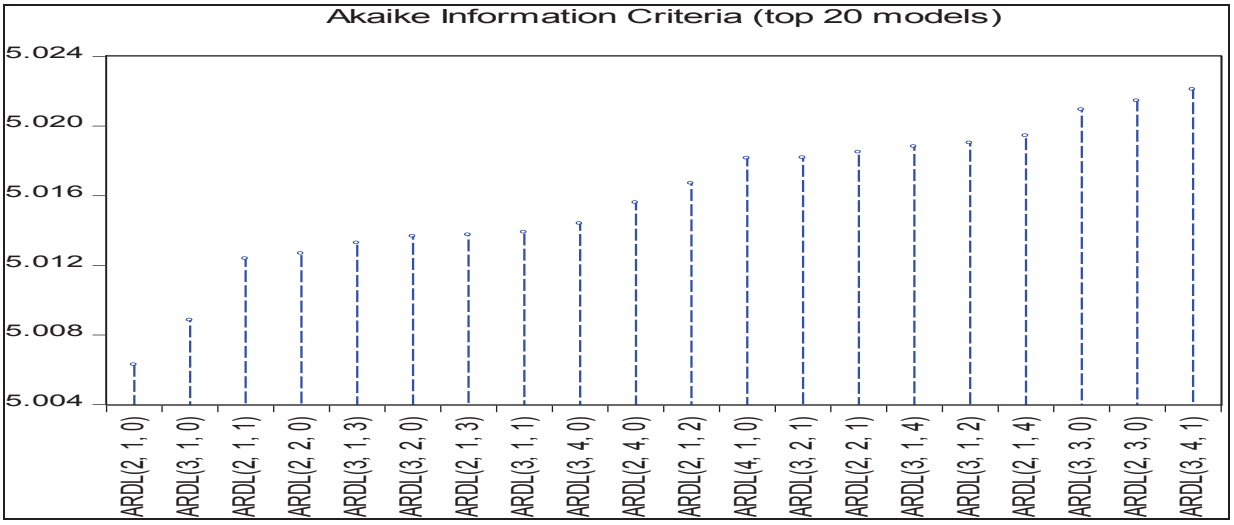


Monetary aggregates were introduced in the BVAR system, where two factors the claims on government and private sector represent the major cause behind money growth, with the exchange rate pressures it is apparent that the exchange adjustments may also represent the shock reflected in the external sector as well as the government sector[17], hence introducing the exchange rate as a factor in dynamics of inflation is critically important. In order to

[17] Because of secession of South Sudan the Sudan lost about 75% of its oil proceeds and 46% of government revenues which represented a severe shock to the economy, growth hd declined tremendously, inflation had risen with clear challenges due to increased cost of living for the masses of the population ,however, due to adoption of a three economic stabilization program 2012-2014, the main indicators in Sudan economy revealed a clear economy recovery assisted with considerable discoveries of gold .

reduc the problem of over parameterization, a Bayesian model is adopted where the model seemed to be highly fit, the lowest adjusted R squared 0.92 , the results of the impulse responses also confirmed that money changes take about 13 months to be reflected in the general price level, this result also confirm that two monetary transmission mechanisms proved to be the main channels of monetary policy in Sudan, monetary targeting represent the main monetary policy framework in Sudan, however, the exchange rate adjustments was also envisaged in various policy packages . According to the monthly data 1998/1-2015/4, the results failed to reject the null that inflation does not granger cause money growth or exchange and vice versa[18]. Moreover, both claims on government and credit to private sector granger cause inflation.

Chart (2): Model selection



[18] According to co integration relations.

Table (2) Monthly Data Model

Dependent Variable: LOG (INFLATION)
Sample (adjusted): 1999M03 2015M04
Included observations: 194 after adjustments
Convergence achieved after 7 interations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(EXCHANGE)	0.839507	0.365528	2.296697	0.0228
LOG(M2)	0.643280	1.234389	0.521132	0.6029
LOG(M2(-1))	-1.479843	1.250667	-1.183243	0.2383
LOG(M2(-2))	0.332876	1.299664	0.256125	0.7982
LOG(M2(-3))	-1.298109	1.333402	-0.973532	0.3316
LOG(M2(-4))	0.447024	1.320022	0.338649	0.7353
LOG(M2(-5))	0.810164	1.314776	0.616200	0.5386
LOG(M2(-6))	1.939224	1.321589	1.467342	0.1441
LOG(M2(-7))	-0.089619	1.316867	-0.068055	0.9458
LOG(M2(-8))	2.242158	1.312422	1.708412	0.0893
LOG(M2(-9))	1.377908	1.316647	1.046528	0.2967
LOG(M2(-10))	-2.319818	1.322374	-1.754283	0.0811
LOG(M2(-11))	-4.247735	1.288654	-3.296256	0.0012
LOG(M2(-12))	-0.809899	1.222626	-0.662426	0.5086
LOG(M2(-13))	2.793614	1.217791	2.294001	0.0230
AR(1)	0.764426	0.048326	15.81807	0.0000
R-squared	0.818436	Mean dependent var		2.466779
Adjusted R-squared	0.802023	S.D. dependent var		0.760536
S.E. of regression	0.338397	Akaike info criterion		0.754356
Sum squared resid	20.26873	Schwarz criterion		1.040715
Log likelihood	-56.17252	Hannan-quinn criter.		0.870311
F-statistic	49.86638	Durbin-Watson stat		1.946538
Prob (F-statistic)	0.000000			
Inverted AR Roots	0.76			

The results obtained indicated that 81.8% of the total variations were explained by the model, to remedy the autocorrelation an AR(1) term is added as an explanatory variable, thus Durbin Watson turned to be DW=1.94 implying such a measurement problem vanished, all coefficients were as expected, the coefficient of the exchange rate initially reflected relatively higher effect 0.81 which is statistically significant at 99% level, however, with a time lag of 13 months the money coefficient become higher 2.7 at the same statistical significance level . The results proved that money and exchange rate are the main determinants of inflation during the period of study.

Table (3): Autoregressive Distributional Lag Model (ARDL)

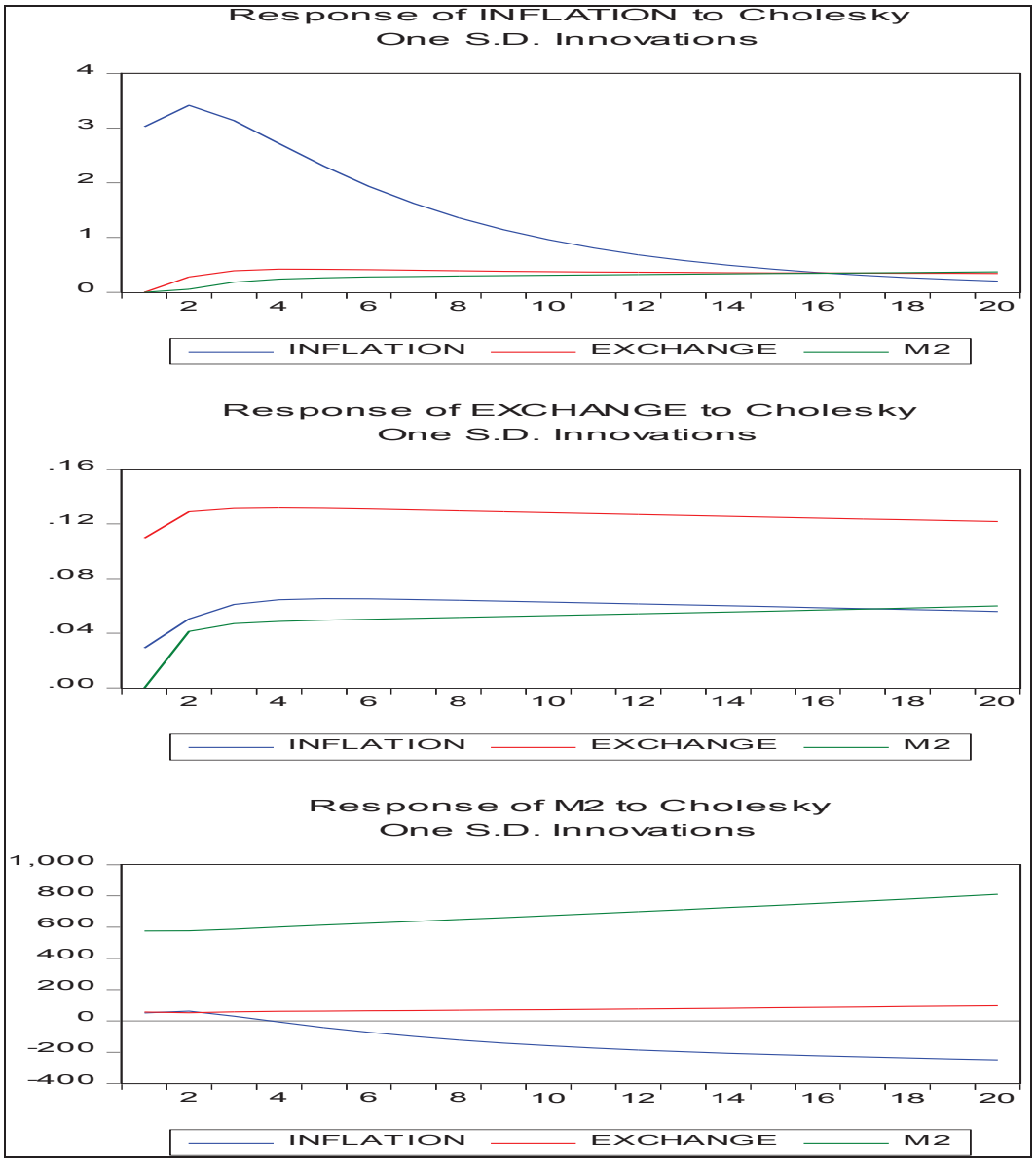
Dependent Variable: INFLATION
Method: ARDL
Selected Model: ARDL (2,1,0)
Note: Final equation sample is larger than selection sample

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
INFLATION (-1)	1.076522	0.06744	15.96257	0.0000
INFLATION (-2)	-0.207066	0.066572	-3.11042	0.0021
EXCHANGE	6.205342	1.707736	3.633665	0.0004
EXCHANGE (-1)	-6.176536	1.702665	-3.627569	0.0004
M2	4.251005	1.772005	2.396157	0.0175
C	0.784248	0.733604	1.069034	0.2863
R-squared	0.935677	Mean dependent var		15.39764
Adjusted R-squared	0.934069	S.D. dependent var		11.41436
S.E. of regression	2.930869	Akaike info criterion		5.017168
Sum squared resid	1717.998	Schwarz criterion		5.114097
Log likelihood	-510.7683	Hannan-quinn criter.		5.056369
F-statistic	581.8626	Durbin-Watson stat		1.992816
Prob (F-statistic)	0.000000			

*** Note: p- values and any subsequent tests do not account for model selection.**

ARDL model explained more than 93% of the total variations in inflation, all model coefficients were statically significant at 99% level except for the constant term, initially AR(1) model and MA(1) models with different ARMA(p.q) ordering were tested, but model seemed to be misspecified, therefore ignored, after comparing Akaike and Shwartz criterion only ARDL results were reported, it is clear the exchange rate and first lag of inflation reveal positive coefficients, while the first lag of the exchange rate and second lag of inflation had an opposite sign but statistically significant, while m2 had shown the lowest coefficients, indicating the previous level of inflation and exchange rate adjustments have greater effect in dynamics of inflation than the monetary expansion.

Chart (3): Response Inflation



The transmission mechanisms of the monetary policy is well explained by the impulse responses indicated in the above graph, where it is clear that money changes take about 14-15 months to be entirely reflected in the general price levels.

Table (4): Cointegration results

Hypothesized		Trace	0.05	
No. of CE (s)	**Eigenvalue**	**Statistic**	**Critical Value**	**Prob.****
none*	0.156135	54.49428	29.79707	0.0000
At most 1 *	0.074558	19.69284	15.49471	0.0110
At most 2 *	0.018407	3.808612	3.841466	0.0510
Trace test indicators 2 cointegrating eqn (S) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level.				
** MackKinnon-Haug-Michelis (1999) p-values				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE (s)	**Eigenvalue**	**Statistic**	**Critical Value**	**Prob.****
none*	0.156135	34.80144	21.13162	0.0004
At most 1 *	0.074558	15.88423	14.26460	0.0275
At most 2 *	0.018407	3.808612	3.841466	0.0510
Max-eigenvalue test indicates 2 cointegrating eqn (s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level.				
** MackKinnon-Haug-Michelis (1999) p-values				
Restrictions:				
B(2,1) = 1				

All model variables were tested for non stationarity using ADF and PP, the results confirmed that the data is non-stationary but after introducing the first difference the whole set of the variables become stationary the case of most economic time series, to avoid spurious regressions the study also made cointegraion tests.

A casual interpretation of the model reveals a dynamic relation between the underlying macroeconomic variables if a cointegration relationship exist implying a long run equilibrium relationship19. The VECM allows for studying a long run equilibrium relationship as well as to reveal how the system deviate temporarily from the equilibrium given a shock effect which can also

[19] This requires also a test of stationarity to avoid spurious regressions, Augmented Dicky Fuller ADF and Phillip Peron Tests will be carried out, see the details on appendix 1 and II .

be traced by the impulse responses to predict for how long the shock may exist or die over time, furthermore. The model can obviously reflect the short term and long term adjustments.

The ARDL model results were also confirmed by investigating the impulse response of a VECM as follows, the findings indicated that an immediate effect of 67% of the exchange rate adjustments will be transmitted to the general price level, while money, whereas, it took almost 13 months for money change effects to entirely reflected in the general price level.

Summary and conclusion

According to results obtained so far, the monetary policy transmission mechanism in Sudan clearly identifies the following conclusions:

- Interest rate transmission mechanism virtually non-exist, the empirical findings revealed that indexes measuring the effect of interest rate seemed to be statistically insignificant, this conforms the reality that Sudan adopts Islamic banking, and interest rate is prohibited.
- Monetization of the deficit and growth of claims on government revealed a strong channel for transmitting money changes to general price levels, indicating that fiscal dominance is persistent in Sudan economy during the period of the study, both descriptive and empirical analysis revealed that sources of money growth were manifested by Seigniorage effect. The aggregate money growth measured by growth of M2 indicated time lag effect of 13 months following the methodologies of single equation, Bayesian VAR and VECM.
- Exchange rate transmission mechanism proved to a strong channel fir monetary policy, whereby dynamics of inflation indicated a strong and vital relationship between inflation and exchange rate.

Sudan reported a strong economic growth during 2000-2008, with an average of 7%, and a single digit inflation with a stable exchange rate around 1$=2.2 SDG, however, after the global financial crisis 2008/9 the main indictors had shown lower growth and remarkable exchange rate and inflationary pressures, moreover, post secession of South Sudan since mid 2011 the economy become increasingly overheating, growth declined massively and inflation shouted high levels and exchange rate depreciation inevitable reduced the purchasing power of the national currency, the good

news is that almost all economic indicators had shown significant improvements, latest available statistics reported that economic growth is 4.4 % in 2014, inflation had been reduced to 11.3% by august 2015, gold proceeds had increased massively replacing

oil losses by 64% in 2012 and lower proportions recently due to decline in gold prices, i.e. the economy is recovering thanks to the three economic stabilization program which helped reducing inflation to tolerable rates and paved the way for further sustainable economic growth.

The monetary transmission mechanism channels is examined in Sudan using a monthly data covering the period 1998/1=2015/5, in addition to annual data over the period 1970-2014, the results obtained confirmed that it takes about 13 months for changes on money to be reflected in the general price level both in a single equation model and a system of equations (namely SVAR, Bayesian VAR and VECM). About 67% of the exchange rate adjustments will be immediately (spontaneously) reflected in the general price level indicating a strong exchange transmission mechanism. Output growth played a crucial role in reducing inflationary pressures.

Output growth proved to be the most influential factor in reducing inflation, the study recommends that Sudan have to focus on encouraging output by accelerating economic growth in various economic sectors. Fiscal dominance represented the main factor behind ineffectiveness of monetary policy in Sudan during various episodes, it is important to reduce deficit financing and control growth of claims on government to maintain macroeconomic stability.

Since demand for money seemed to be unstable and money multiplier become highly volatile with a considerable changes in financial landscape, namely the introduction of financial innovations and the growing electronic money in Sudan its critically important to reconsider the monetary policy framework and adopt forward looking models toward inflation targeting[20] . It is recommended to seek new instruments for monetary policy operations that suits the Islamic banking activities, new financial products as well as short term Islamic Sukuk are encouraged.

[20] The prerequisites also require independence of central bank and restoring macroeconomic equilibrium by reducing internal and external deficits.

It's advised to harmonize fiscal and monetary policies to keep money growth in accordance with the objectives of monetary policy, more studies are required to changing monetary policy frameworks by adopted forward looking models and inflation targeting techniques. The exchange played a crucial role in dynamics of inflation, it's critically important to stabilize the exchange rate to reduce volatility of inflation and maintain macroeconomic stability.

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Arab Monetary Fund

BANK FOR INTERNATIONAL SETTLEMENTS

AMF-BIS Working Party Meeting on Monetary Policy in the Arab Region

Background Paper on Monetary Policy

The State of Palestine

Palestine Monetary Authority

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25–26th November 2015

Monetary Policy Implementation in The State of Palestine

1. Background

The Palestinian economy is characterized by being a small, open and free-market economy. However, for more than half a century, it has been under the Israeli heavy-handed occupation, which restrained economic growth and development. The Palestinian economy operates within an environment which presents several exogenous monetary and non-monetary factors that impact the rates of economic growth, inflation, as well as interest and currency exchange rates.

Exogenous monetary factors include US and Israeli economic decisions and policies regarding rates of inflation, interest and currency exchange. Exogenous non-monetary factors include years-long, Israeli-imposed restrictions on Palestinian trade and labor movements. Furthermore, the Palestinian economy is affected by the levels of growth and demand in the Israeli economy -being the largest trading partner of Palestine- and by the inconsistent influx of foreign aid.

In addition, the Palestinian economy operates in the absence of a national currency, which precludes the formulation of a comprehensive monetary policy. Currently, three major currencies in circulation (the Israeli shekel, the US dollar and the Jordanian dinar) substitute for the national currency. In view of the absence of a national currency and of a comprehensive monetary policy, the Palestine Monetary Authority (PMA), cannot control money demand, nor can it lower interest rates to stimulate economic activity. Likewise, it cannot use exchange rate variations to absorb internal and external economic shocks which may impact economic stability.

This note was prepared as a background paper intended to shed light on the most prominent aspects of Palestinian monetary policy mainly the operational framework, implementation mechanisms, and the implications of international, regional and local developments.

Monetary Policy Objectives

The PMA assumes several responsibilities usually assigned to central banks; its main goals consist of the following[21]:

- Maintaining monetary stability by targeting low and relatively steady inflation rates.
- Ensuring the stability of the financial system, composed of the banking and the non-banking financial sectors.
- Promoting economic growth and lowering unemployment rates by implementing government's general economic policies, particularly with respect to public finance (the budget), employment and structural reform.

Maintenance of monetary stability (i.e. stability of domestic prices) represents the primary goal of monetary policy in Palestine, since securing reasonable domestic prices sustains consumer purchasing power, and hence benefits both savers (by protecting the value of their savings against inflation) and investors (by allowing more effective planning for future projects' costs).

To fulfill its most important role of ensuring the stability of the financial system (both banking and non-banking), the PMA has developed a system, in line with best international practices and standards, to license, regulate and supervise both on-site and off-site banks, money changers and specialized lending institutions. Furthermore, the PMA conducts quarterly stress testing for individual banks and the banking system at large under an array of scenarios of varying macroeconomic and financial difficulty. At the same time, the PMA has been keen on coordination with the Palestine Capital Market Authority (PCMA), which is charged with oversight of the rest of the non-banking sector (mainly insurance, leasing and mortgage companies).

In 2008, to bolster its supervisory role, the PMA established and operated, with remarkable success, a Credit Bureau, which amasses information and reports (on request) on borrowers' credit standing and history. Members of the Credit Bureau include banks operating in Palestine, specialized lending

[21] Article (5) of Law No. (2) of 1997 on the Palestine Monetary Authority.

institutions and certain public, and private sector institutions and companies (leasing companies, service providers, real-estate developers, retail tradesmen, the Student Loan Fund, and court rulings related to banking credit lawsuits).

By end 2013, the PMA established a system to insure bank deposits by founding the Palestine Deposit Insurance Corporation (PDIC), which insures accounts up to a $10,000 limit per depositor[22], thereby covering 93 percent of the total number of depositors with banks. The PDIC's goal is to foster a financial safety net, protect depositors, encourage savings, maintain financial stability and eventually spur economic growth in Palestine. In the event of liquidation of any bank operating in Palestine, the PDIC is responsible to promptly compensate its depositors within the limit of the stipulated insurance cap mentioned above; remaining depositors' rights are settled according to a separate set laws and regulations on liquidation procedures.

It is worth mentioning that during the meeting of donor countries held in New York on September 26, 2013, the World Bank has commended the authorities on establishing the PDIC, to reinforce the financial safety net and enhance financial stability in Palestine. The establishment of PDIC comes at a time when the banking system enjoys high financial solvency, with a capital adequacy ratio of approximately 20 percent, far above the ratio set by the Basel principles core requirements. Other international financial institutions also welcomed the establishment of the PDIC, which was granted membership of the International Association of Deposit Insurers (IADI) in November 2013.

The PMA's Monetary Operations Department (MOD) has the key responsibility of safekeeping and managing reserve funds (both mandatory, regulatory reserves and non-mandatory deposits) placed by banks with the PMA. MOD employs the larger portion of these funds as highly liquid deposits with foreign banks; the remaining portion is invested in the form of government bonds, entirely or mostly issued by the Jordanian government. A significant portion (about USD 100 million) of PMA reserves are invested in the World Bank's Reserves Advisory and Management Program (RAMP). This program provides consultancy and training services to staff responsible for management and investment of reserve fund portfolios of participant central banks.

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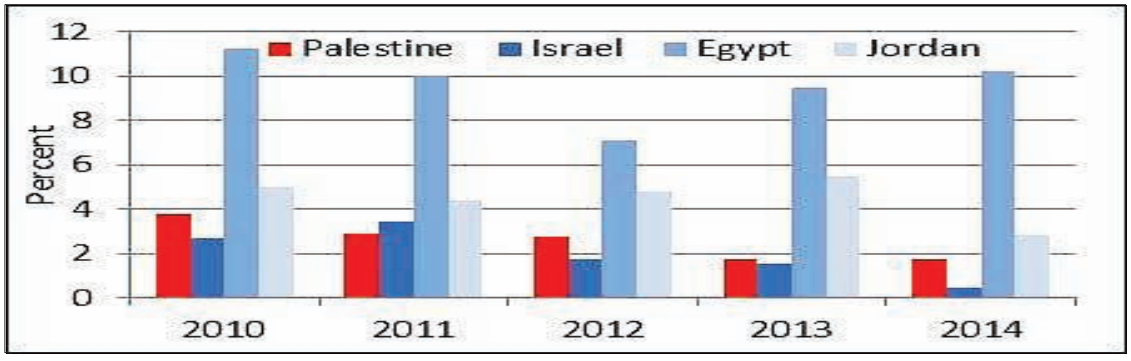
[22] Pursuant to the Law by Decree No (7) of 2013 on the Palestine Deposit Insurance Corporation issued on 29 May 2013 and published in the Palestine Gazette, issue (101), on 20 August 2013.

2. Monetary Policy Instruments

Monetary policy instruments are limited and primarily used for macro-prudential purposes aimed at safeguarding the soundness of the banking sector's finances. As previously explained, given the absence of a national currency, the PMA cannot control the domestic money supply and is subsequently unable to influence, in any considerable measure, commodities' and services' local prices, i.e. the inflation rate. Nor can it significantly affect domestic interest and exchange rates.

In any case, it is worth noting that the general price level and inflationary pressures in Palestine have been, and still are, relatively low, in comparison with many other countries, especially neighbouring ones. Analysis indicates that inflation in Palestine is, to a great extent, imported, reflecting mainly global food and fuel prices. Thus fluctuation in inflation rates in Palestine depends on: (i) on the cost of imports, which in turn reflects inflation and exchange rates in trading partner countries (mainly Israel); and (ii) global prices of oil and food, which have the highest weight (50 percent) in the Palestinian consumer basket. Likewise, price levels in Palestine are affected by changes in the exchange rate of the Israeli shekel against the US dollar, given that the bulk of consumer goods in the Palestinian market is imported[23].

Chart (1): Inflation Rates in Some Neighboring Countries
(2010-2014)



Source: - Palestinian Central Bureau of Statistics (PCBS).

[23] Since they are basic, indispensable commodities and cannot be produced locally, such as fuel, raw materials and food products, or produced locally but at a capacity that does not fully meet the market needs, such as food products and various industrial products.

In most instances where countries suffer from high inflation, monetary authority attempts to contain inflation pressures by using one or a combination of conventional monetary policy instruments that raise the interest rate. These instruments include the required reserve ratio, the discount window rates offered to banks by the central bank, and open market operations (i.e. trading in bonds and treasury bills to inject or absorb liquidity into or out of the market). These instruments serve to reduce domestic aggregate demand and, consequently, contain inflation. In the case of Palestine, however, since inflationary pressures and inflation rates are low and generally under control, the need for the use of such monetary policy instruments for this purpose diminishes.

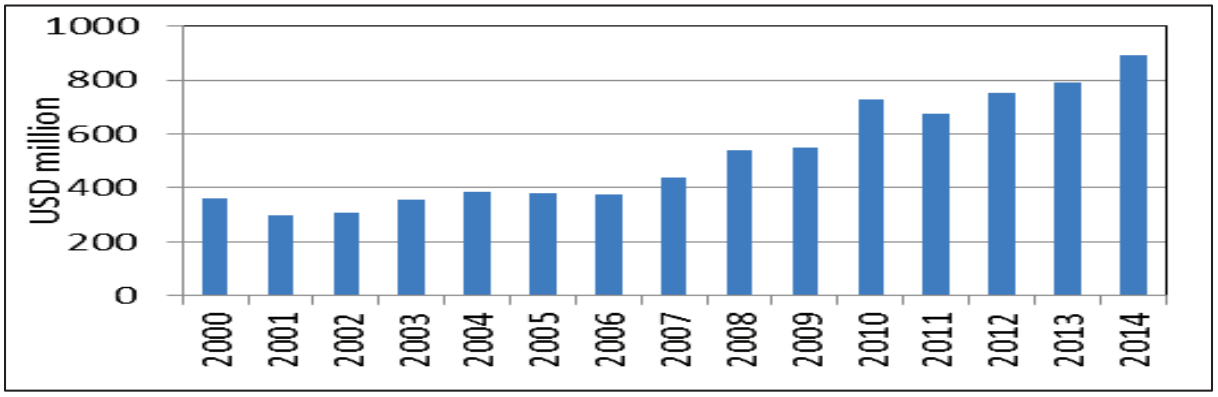
Although it does not conduct refinancing operations or acts as banks' lender of last resort, PMA does assume the task of providing liquidity to banks operating in Palestine. This happens when these banks accumulate cash surpluses in Israeli shekel that cannot, in the short-term, be converted to US dollars to meet customers' dollar demand. Such a situation arises due to the fact that Palestine has a predominantly cash-based economy, while most import payments are executed by banks on behalf of customers through wire-transfers. As a result, banks oftentimes face a shortage in transferable funds despite the availability of large sums of money in their vaults. In such instances, and upon the request of the bank, the PMA funds the bank’s account with deposits that are fully backed by foreign currency deposits. In other words, provision of liquidity to banks by the PMA is priced as a foreign currency swap.

On a different note, given the absence of a domestic financial market in government bonds, or a yield curve, the PMA does not currently conduct open market operations. In this context, it is worth mentioning that the PMA has persistently urged the Palestinian government to reduce direct borrowing from the banks in favour of indirect borrowing through government bonds issued by the Ministry of Finance and managed by the PMA. In April 2014, these efforts finally culminated in the Cabinet's decision to issue bonds, a major achievement for both the PMA and the Palestinian government. If implemented, the decision will mark the first time government bonds bearing the name of the State of Palestine are issued since 1947, the last year in which such bonds were issued in the country. It was anticipated that in the first phase three-year bonds worth USD 100-200 million would be issued solely to banks, through securitizing part of the outstanding sovereign debt to local banks. In consequence, the bond issue will stimulate the interbank market, enhance financial stability

and expand the role of the payments system (BURAQ), through which transfers among banks are processed. Such issue will also allow better government management of public debt, and pave the way to deepen and develop the local capital market. It must be noted that the bond issue will not increase government indebtedness but merely reshuffle it, nor will it effectively expose the government or the banking system to any additional risks. However, most importantly, the issuance of government bonds will present the government with a tool to finance budget deficits and help develop monetary policy in Palestine. It will also contribute to reduce government's reliance on foreign funds and increase its resort to the local economy's resources to finance economic development.

Moreover, within the frame of its future plans, the PMA is considering the introduction of certificates of deposit (CDs) to be initially marketed to banks operating in Palestine. This instrument would promote the stability of the financial system, help develop the local capital market, supply necessary liquidity to the payments system on a day-to-day basis, and, when necessary, serve as a form of collateral that banks offer to the PMA against loans. Also, this is expected to help develop the interbank market by enabling banks to extend loans to one another against such CDs as collateral. Also by issuing CDs, the PMA establishes the use of a key monetary policy instrument; it can create a yield curve and influence interest rates in the local market, even in the absence of a national currency, by offering a benchmark/reference rate of interest which banks will find it difficult to ignore. CDs can also contribute to promoting PMA's ability to manage overall liquidity in the system by injecting or absorbing money into or out of the market.

Chart (2) : Required Reserve at PMA
(2000-2014)



Source: - PMA Database.

As for the required reserve ratio, it is the least used, yet the most powerful tool, currently available to the PMA to influence money supply, and subsequently, economic activity. Obviously, the higher the required reserve ratio, the lower are the money multiplier, the money supply and the impact on economic activity. It is worth mentioning that over the years until 2009, the PMA imposed variable required reserve ratios for various currencies in which deposits were denominated (specifically, 8 percent for Israeli shekels, 14 percent for Jordanian dinars and 10 percent for US dollars and other foreign currencies). From 2009 onwards, the PMA has been imposing a unified required reserve ratio equal to 9 percent regardless of the deposits' currency.

Additionally, the PMA currently allows banks to retain up to 20 percent of these required reserves for the purpose of raising liquidity levels of the payments system. Moreover, in order to boost liquidity, the PMA frequently resorts to placing a portion of these reserves with banks as time deposits.

3. Monetary Policy Main Transmission Mechanisms

In view of the limited array of monetary policy tools available to the PMA, the credit channel represents the main monetary policy's transmission mechanism to the economy. As opposed to its nearly non-existent effect on the exchange and interest rates, and prices in general, monetary policy can have an impact on the supply of credit on offer to various private sector borrowers. Thus banks offer preferential lending rates to certain geographical regions (the Jerusalem area) or investments (in the SMEs sector). Also, the PMA has lately reduced the ratio for the calculation of the risk reserve base to become 1.5 percent of net direct facilities instead of 2 percent; as for net indirect facilities, the ratio remained unchanged at 0.5 percent.

Regulations on housing and mortgage lending by banks on the basis of a dynamic loan to value (LTV) ratio is another example of preferential risk-based credit extension. In this approach, housing and mortgage loans' terms (duration, and value versus value of the real estate) are linked with the borrower’s credit score. A credit score is assigned to a bank customer after thorough analysis of his credit conduct. This procedure has encouraged borrowers to observe contractual credit conditions, as compliant borrowers get a greater opportunity to receive better rates for longer terms. A loan can be as high as 85 percent of the appraised real-estate value and for a period as long as 25 years.

Moreover, instructions encourage customers with high credit risk scores to adjust their credit positions and improve their scores in order to raise their chances to obtain better financing terms.

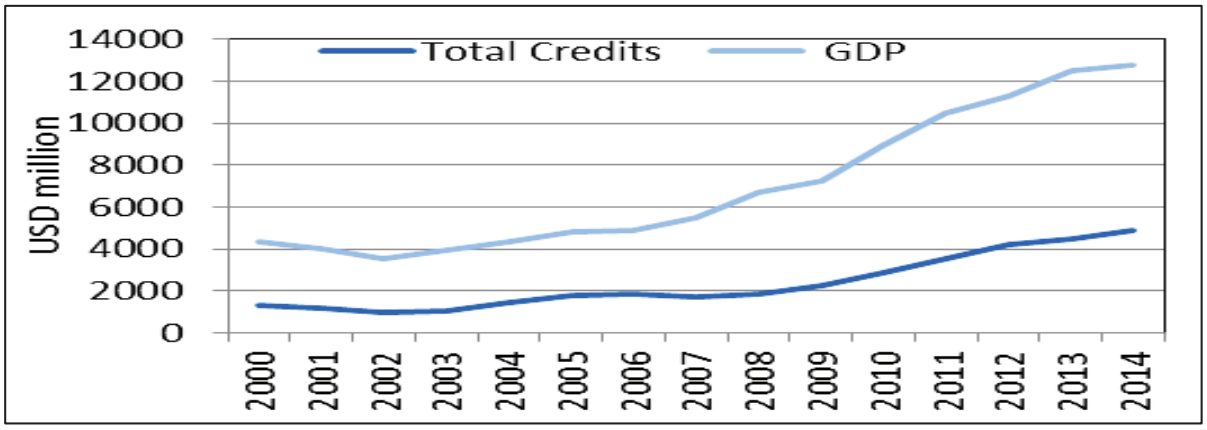
Also within this context, are the unprecedented decisions made by PMA in order to alleviate citizens' suffering in Gaza Strip (GS). As soon as the latest aggression against GS ceased, the PMA issued instructions to all banks requiring their branches operating in GS to postpone the collection of loan instalments. These instructions were implemented started from the beginning of the Israeli aggression in July 2014 until the end of 2014. According to these instructions, instalment payments due were to be postponed for individuals, institutions and companies, without charging extra fees or additional interest on delayed payments. Banks were also exempted from maintaining required reserves on borrowers' delayed payments. The prerequisite of an advance payment of 10 percent for rescheduling non-performing loans was also waived under these instructions. In order to promote the banks' capacity to support GS citizens, the ratio for calculating the risk reserve base was lowered from 2 percent to 1.5 percent of net direct facilities, (while the ratio for net indirect facilities remained unchanged at 0.5 percent).

On a related note, and in the wake of the latest war on GS, the PMA launched, in cooperation with the World Bank Group, a Credit Guarantee Facility (CGF) initiative for the purpose of encouraging small enterprises in GS. The initiative will help banks develop special banking tools to enable enterprises to overcome the challenges that were created by the war and encourage the banking system to fulfil its role in boosting the economy while adhering to sound banking standards.

4. Assessment of the Role of Money and Local Currency Debt Market

As mentioned above, bank credit is regarded as the main conventional transmission channel of monetary policy to economic activity. This explains the close linkage between growth of bank credit and the overall economic growth rate. However, as mentioned earlier, the absence of a national currency rendered PMA un able to devise and implement a fully-fledged monetary policy. However, the Palestinian banking sector has achieved remarkable progress in different areas, as described below. Chart (3) demonstrates that the correlation between nominal GDP and bank credit is a statistically significant and strong one, with a linear correlation coefficient of 98.8 percent.

Chart (3): Relations Between Bank Credit and GDP
(2000-2014)

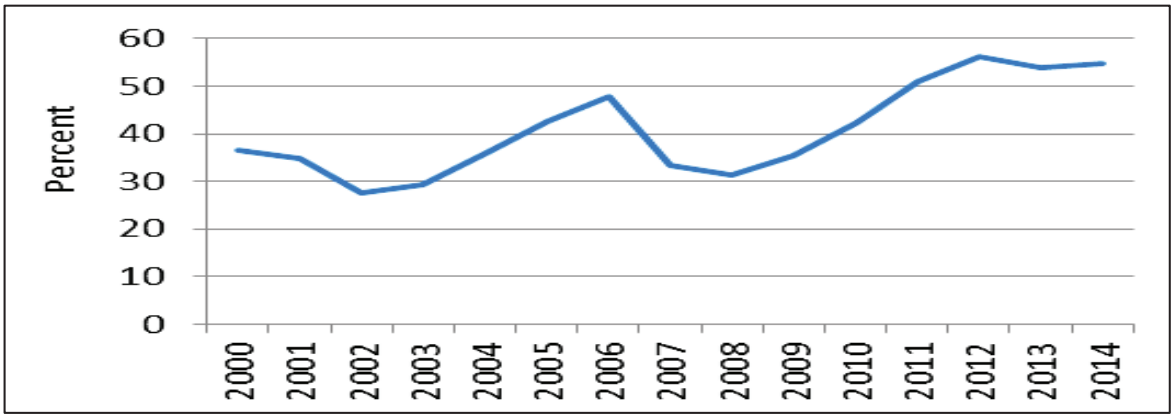


Source: - PMA Database.

Also notable is a persistently upward time trend for both GDP and bank credit variables, with the exception of a relative drop in the years which witnessed sharp security and political turmoil, for example, in 2006 and 2007, concomitant with political instability associated with the Gaza-West Bank schism.

Signaling the mounting domestic capacity to employ deposits, the loan-to-deposit ratio rose from 36.5 percent at end 2000 to 54.8 percent at end 2014. Figure 4 shows that following a decline in 2007, this ratio was highest in 2012. This marked rise in the credit/deposit ratio magnified the influence of the banking sector on the real economy and GDP growth.

Chart (4): Credit-to-Deposit Ratios
(2000-2014)



Source: - PMA Database.

Although the increase in aggregate demand in recent years since 2007 was key to credit expansion, PMA's efforts and actions also contributed. These include the following:

- The launch by PMA of an array of advanced programs, systems and services compliant with best international practices. These include the following: a Credit Registry System, a Credit Scoring System, a Bounced Checks System, a Suspended and Lost Checks System, the National Payments System, an Automated Clearing System, the IBAN System, a system for Public Key Infrastructure (PKI), the Electronic National Switch, and a dynamic loan-to-value mortgage credit system.
- PMA's policy was intended to gradually reduce bank placements abroad and deploy deposits back to various sectors of the national economy. Accordingly, banks were required to lower the ratio of placements abroad from 65 percent to 60 percent in April 2009, then again to 55 percent in August 2009. This policy has met increasing success, given that placements abroad to total deposits dropped from 52.6 percent in 2000 to 39.4 percent in 2014.
- Expanding the geographical reach of banking services, reflecting PMA's expanding bank-branching policy and its effective role in disseminating banking knowledge among the general public. This was achieved through various awareness campaigns that addressed the rights and duties of clients and various types of bank transactions. The PMA also strived to improve complaints handling, develop banking services and products at reasonable prices, and encourage transparency, and full disclosure with regards to these products and services, in a manner consistent with the best and most modern international practices.
- Issue of a set of instruction to banks regarding fair lending, proper fees and commissions, and other measures aimed at advancing banking services and promoting economic activity.
- The relative stability Palestinian territories witnessed since 2007, which was coupled with the implementation of economic various reforms incorporated in the Reform and Development Plan, (2008–2010); the State-Building: Our Future Plan, (2011-2013); and the National Strategic Plan for Public Finance Management, (2014-2016). These plans reflected positively on the economy and its growth rates. Furthermore, government policies to rationalize expenditures, increase tax collection and promote developmental projects have spurred domestic aggregate demand, and consequently, the demand for bank credit.

However, despite its aggregate demand expansionary effect, the credit channel remains susceptible to the adverse impact of prevailing political and security conditions on the general investment climate and overall economic activity. Yet, the PMA has been keen to reinforce the credit channel by introducing several measures and systems to help boost the credit

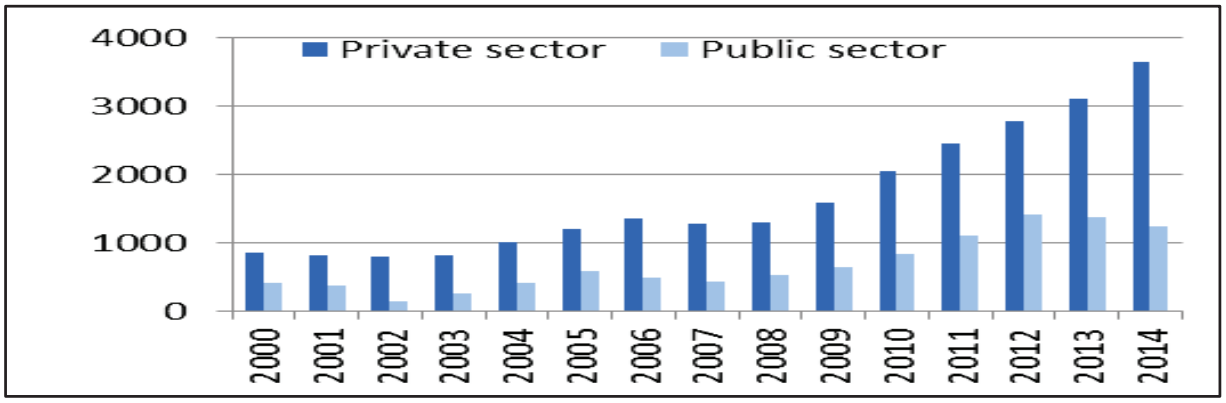
granting process and mitigate risks by continuous enhancement of the Credit Bureau, risk-based banking supervision, and trust in investment environment[24].

The effective role of bank credit in rejuvenating economic activity becomes evident by assessing whether credit to government was crowding out credit available to the private sector. Figure 5 shows that credit extended to the private sector has been growing over time, especially in the years following 2008. The average annual growth rate of private sector credit reached 11.7 percent during the period (2000 -2014), totaling about USD 3.7 billion by end 2014. This hike in private sector credit coincided with a rise in credit provided to the public sector, (mostly credit granted to central government). The average annual growth rate of credit to the public sector over the period 2000–2014 reached 14.7 percent to about USD 1.2 billion by end 2014. As a result of the growing government reliance on borrowing directly from banks, the PMA was obliged to set forth a limit on public credit equal to the total ownership equity of all banks combined, which currently amounts to around USD 1.5 billion.

It is worth mentioning that during 2010-2012, credit granted to the public sector witnessed an alarming increase triggered by the financial crisis that affected government and led to dwindling levels of foreign aid. Thus, the average annual growth rate of credit to the public sector reached a 30 percent high, exceeding banks aggregated ownership equity, at 111.6 percent by end 2012. However, over the following couple of years, this ratio gradually fell to 100.9 percent in 2013 and 84.6 percent in 2014.

[24] In January 2011, the Palestinian Investment Promotion Law No. (1) for 1988 was amended pursuant to Law by Decree No (2) for 2011, which is the second amendment to this law following the one in 2004. The amendment aims at improving the investment climate in Palestine having included important additions intended to simplify procedures related to investment and offer extra incentives and exemptions for special projects that contribute to boosting exports or creating job opportunities and pushing the development process forward.

Chart (5): Credits to Private and Public Sectors,
(2000-2014) (USD Million)



Source: - PMA Database.

In general, however, the increase in credit granted to the public sector came at the expense of receding bank placements abroad, which decreased in relation to total deposits from 52.6 percent at end 2000 to 39.4 percent at end 2014; it did not reflect the crowding out of credit extended to the private sector. This is indicative of reforming banking policies aimed at redirecting private sector savings into the local economy, and enhancing the role of financial intermediation (i.e. mobilizing and redirecting savings from surplus units to deficit economic units).

It is also worth noting that bank credit is well spread across various economic activities, (productive and services alike), with virtually no signs of sectoral concentration, except for a disproportionate share granted to the public sector. The share of credit to the various economic sectors remained below the maximum concentration limit (20 percent) stipulated by PMA instructions.

5. The Implications of Global, Regional and Internal Economic and Financial Development on Monetary Policy Implementation

Essentially due to PMA's and banks' generally conservative and prudent foreign investment policies, the Palestinian banking system has been subject to marginal exposure to international financial markets. It should be noted that more than 74 percent of the Palestinian banking system’s placements abroad are employed as funds and deposits with a number of foreign banks and 25 percent in other investment tools, while no more than 1 percent is extended as credit to non-residents. Generally, placements abroad are subject to stringent supervision by the PMA, which monitors the concentration

of placements at state, financial institution and currency levels. Additionally, PMA's supervision is intended to safeguard against bank investment in financial derivatives except for hedging purposes and in nearly negligible amounts.

However, the implementation of monetary policy in Palestine is affected by certain regional developments. On one hand, as a consequence of its coerced dependence on its Israeli counterpart, the Palestinian economy is influenced by the Israeli monetary policy and the degree of steadiness of the Israeli shekel as a currency of trade and a major constituent of Palestinian banks' assets. Also, the Palestinian's financial system is indirectly affected by price fluctuations, demand for Palestinian labor force in the Israeli market, Israeli restrictions to Palestinian trade, and the inconsistent transfers by Israel of tax proceeds (clearance revenues) to the Palestinian side.

On the other hand, the Jordanian economy is the second most influential economy affecting economic and financial stability in Palestine, owing to the close ties and interconnectedness of the two economies, especially between their banking sectors. Despite the limited effect on the local economy of the trade exchange with Jordan (constituting merely 2 percent of total imports and 6 percent of total exports), the relatively high significance of the Jordanian dinar as a major currency of savings, and the crucial importance of Jordanian banks in the structure of the Palestinian banking system make the stability of the Jordanian financial and monetary systems crucially vital to the Palestinian economy.

At the local level, the fiscal performance of the Palestinian government directly and indirectly affects the stability of the banking sector, which constitutes the most important component of the financial system. Likewise, Jordan's (and Israel's) economic growth is regarded as a most prominent variable influencing credit granting by Palestinian banks, alongside variations in the interest rate on the Jordanian Dinar (and Israeli Shekel).

Monetary Policy Implementation: Main Challenges and Reforms

The implementation of monetary policy in Palestine faces several challenges, including:

- The absence of a Palestinian currency.

- The cumbersome bank-to-bank and bank-to-branch liquidity management as a result of restrictions and impediments imposed by Israel.
- The fragile relationship between banks operating in Palestine and correspondent banks in Israel.
- The incomplete legislative structure, which hinders the passage of laws, in particular the law on movable and immovable assets, compounded by the absence of specialized financial courts.
- The Israeli-imposed lack of control over borders and crossings and the associated obstacles to freedom of movement and access.
- The internal political schism and geographical divide between Gaza Strip and the West Bank, and lack of control over large areas of the West Bank (Area C).

PMA's reform efforts have been commended by both the IMF and the World Bank, which both acknowledged in numerous reports PMA's preparedness to transform into a modern central bank. The reports supported the institutional reforms PMA implemented since 2007, including: PMA restructuring in order to meet basic functions assigned to central banks; enhancing effective banking risk-based supervision and a modern regulatory framework; developing robust payments, and credit structures; monitoring of compliance to regulations and systems, especially governance guidelines and the Palestinian Anti-Money Laundering Law; requesting banks expedited but judicious implementation of Basel I, II, III banking core principles. In addition, PMA has subjected banks to a wide range of mandatory or prudential practices, rules and buffers, including required reserve ratios, minimum capital adequacy ratios, desired liquidity ratios, limits on credit and foreign investment concentration and associated currency fluctuations. Since 2008, the PMA has been monitoring banks' compliance to instructions consistent with principles and recommendations of the Basel Committee, corporate governance and best practices with respect to mergers and acquisitions. Furthermore, the PMA will strive to pass a new central bank law that ensures its independence and provides it with the legal cover for the issuance of a national currency, which will enable it to formulate and implement a comprehensive monetary policy.

6. Conclusion

Despite the fact that it does not conduct a comprehensive monetary policy in the customary sense, as a result of the absence of a national currency, the PMA made relentless effort to put in place the requirements for formulating and conducting monetary policy in future. This included making arrangements for data collection; developing instruments for economic and financial monitoring and analysis; preparing studies and periodic reports like, the Annual Report, the Financial Stability Report, the Inflation Report, and the Quarterly Economic Report. Additionally, PMA's Research and Monetary Policy Department has focused on replacing retrospective review methods by a prospective predictive approach to economic research; this will allow better tracking and forecasting of economic growth and inflation trends and macroeconomic disturbances. Such research methodology will help PMA provide private and public sector decision makers with informed advice on inflation developments, outlooks and risks, thus fulfilling its duty as an economic and financial advisor to the government.

Simultaneously, the PMA employed accessible monetary policy tools, particularly the required reserve ratio. The PMA also commenced preparations for engaging in open market operations, following the Palestinian Cabinet's approval to issue government bonds in April 2014, which still awaits implementation.

The PMA is also tasked with the management and investment of its foreign reserves, in a manner which gives priority to safety and liquidity over undue profits, and secures a satisfactory level of foreign currency reserves. This will help maintain a stable and credible Palestinian currency, when issued. Furthermore, the PMA (i) monitors domestic currency exchange market and deposit and lending interest rates, and (ii) makes necessary operational decisions, especially occasional intervention to provide and secure necessary short-term liquidity in the desired currencies to banks, so they can match supply and demand needs.

Arab Monetary Fund

BANK FOR INTERNATIONAL SETTLEMENTS

AMF-BIS Working Party Meeting on Monetary Policy in the Arab Region.

Background Paper on Monetary Policy

The State of Kuwait

Central Bank of Kuwait

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25–26th November 2015

Monetary Policy Implementation in The State of Kuwait

1. Introduction

Monetary policy in Kuwait has been quite accommodative in recent years. The Kuwaiti Dinar (KD) exchange rate, based on a currency basket of important trading partners of the country, has been relatively stable. Discount Rate (the primary official policy rate) has stayed, in line with rates on the US dollar, at a historical low of 2 percent since October 2012. This monetary policy stance has been maintained to be supportive of conditions that reconcile aggregate demand with price stability. Growth of main monetary aggregates (e.g. broad money (M2), domestic credit, private sector deposits) has been in the moderate range in recent months, testifying to the appropriateness of prevailing monetary stance.

This paper is organized as follows. Section II discusses the objectives of monetary policy in Kuwait. A discussion of frequently used monetary and macroprudential policy instruments is presented in Section III. Section IV concludes with some thoughts on the monetary policy challenges Kuwait is likely to encounter in the near future.

2. Monetary Policy Objectives

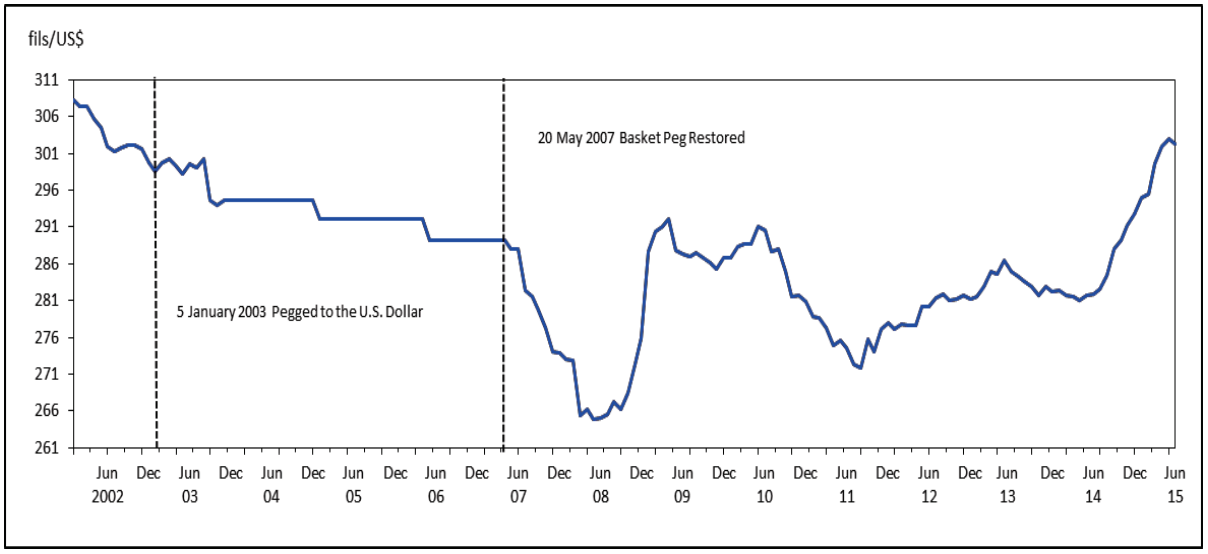
Monetary policy in Kuwait is set and implemented by the Central Bank of Kuwait (CBK) in accordance with the Law No. 32 of the year 1968 concerning Currency, the Central Bank of Kuwait and the Organization of Banking Business which stipulates the following objectives for the central bank: (a) to issue currency on behalf of the State, (b) to secure the stability of the Kuwaiti currency and its free convertibility into foreign currencies, (c) to direct credit policy in such a manner as to assist the social and economic progress and the growth of national income, (d) to supervise the banking system in the State, (e) to serve as banker to the government, and (f) to render financial advice to the government.

More specifically, the objectives of monetary policy may be highlighted as follows:

Exchange Rate Stability

The KD exchange rate regime has seen only a few changes since 1975. Up to 4 January 2003 it was tied to a weighted basket of currencies of Kuwait's most important trading partners. From 5 January 2003 a peg at 299.63 Kuwaiti fils ±3.5% to the US dollar was introduced, which reverted to the previous weighted basket scheme from 20 May 2007. Over the course of history the pegged exchange rate regime has remained stable and credible, through sound macroeconomic policies backed by ample foreign exchange reserves. Chart (1) shows the evolution of the KD exchange rate[25] over the period 2002-2015 (June).

Chart 1: Evolution of the KD Exchange Rate 2002:01 - 2015- 06
(end of period)



Source: Central Statistical Bureau.

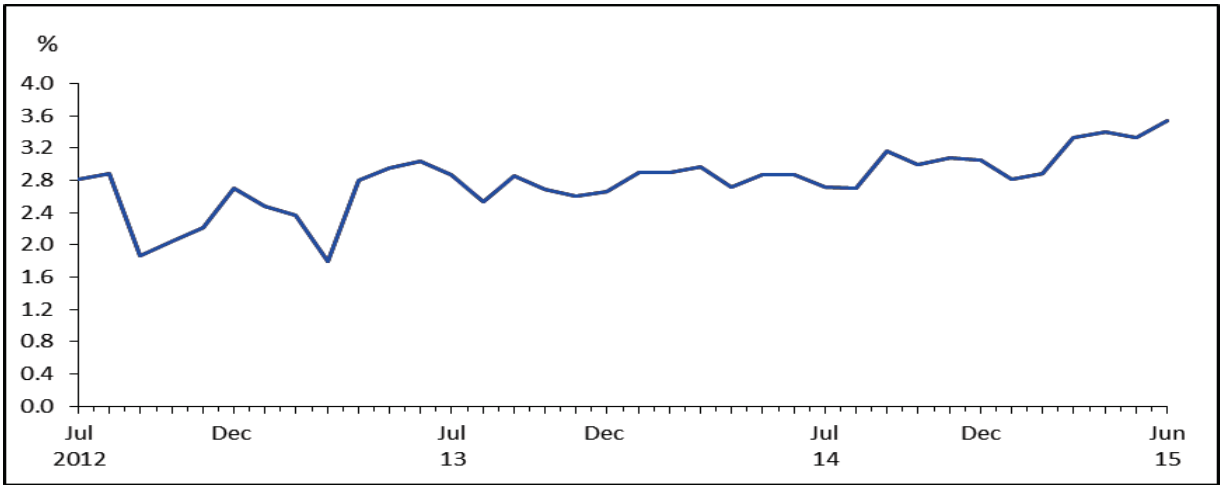
Price Stability

Maintaining price stability is the primary objective of the CBK and of the monetary policy for which it is responsible. The pegged exchange rate provides a nominal anchor for inflation. While CBK does not have an explicit inflation target, it constantly monitors price developments with a view to keep inflation within acceptable levels and, as evident from Chart (2) below, has been reasonably successful in this pursuit.

[25] All data from CBK, unless otherwise specified.

Chart 2: Consumer Price Index Inflation

(year on- year)



Source: Central Statistical Bureau.

Interest Rate Policy

Even though there is little room for an autonomous interest rate policy when the exchange rate is pegged[26], Kuwait has somewhat more room to maneuver owing mainly to the fact of money demand being mostly for transaction purposes rather than for acquiring portfolio assets. Thus CBK can exercise some flexibility in setting its interest rates at a level which, while maintaining close alignment with US dollar interest rates, is able to attain a positive interest rate differential in favor of the KD.

Financial Stability

Recently maintaining financial stability has come to be accepted as an objective of central banks in addition to their traditional mandate of price stability. Securing financial stability however requires the use of various micro- and macroprudential tools in addition to the usual instruments of monetary policy.

[26] As a small open economy with free capital movement Kuwait is subject to the impossible trinty which states that it is impossible to have all three of the following at the same time: a fixed exchange rate, free capital movement, and an independent monetary policy.

3. Monetary and Macroprudential Policy Instruments

Interest Rate Policy

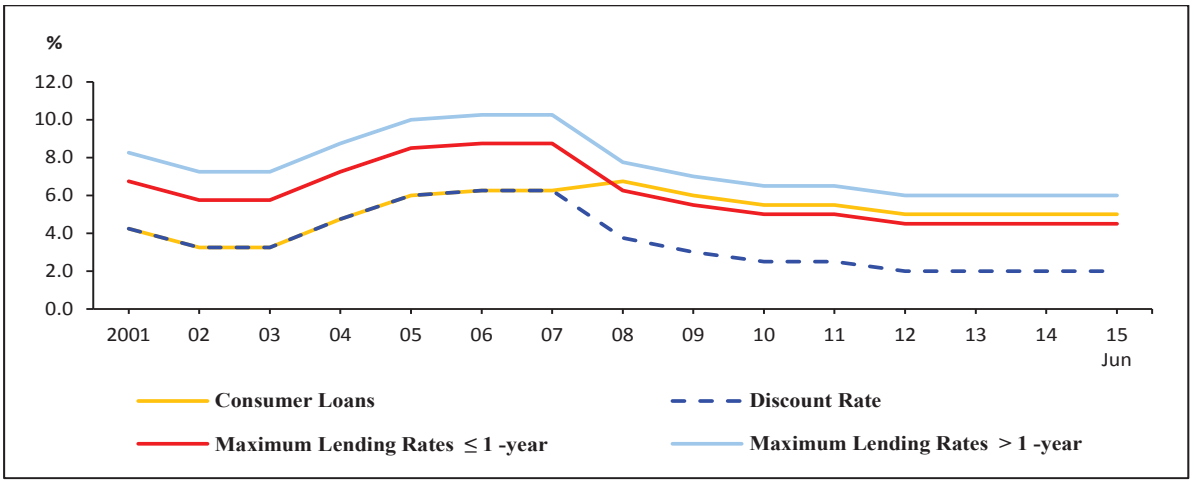
The primary official policy rate used by CBK to influence domestic interest rate is the Discount Rate which sets, within margins, the maximum rate of KD lending. Special provisions apply for consumer loans and installment loans. There is no minimum on deposit rates. These rates were liberalized starting January 1995 when all floors on interest rates banks can offer on customer deposits were lifted. Table 1 and Chart 3 show the structure of interest rates in Kuwait for the period 2001-2015 (June).

Table 1: Structure of Interest Rates 2001 – 2015 (June)

(percent per annum)

End of Period	Discount Rate	Consumer Loans	Maximum Lending Rate	
			≤ 1-year	> 1-year
2001	4.25	4.25	6.75	8.25
2002	3.25	3.25	5.75	7.25
2003	3.25	3.25	5.75	7.25
2004	4.75	4.75	7.25	8.75
2005	6.00	6.00	8.50	10.00
2006	6.25	6.25	8.75	10.25
2007	6.25	6.25	8.75	10.25
2008	3.75	6.75	6.25	7.75
2009	3.00	6.00	5.50	7.00
2010	2.50	5.50	5.00	6.50
2011	2.50	5.50	5.00	6.50
2012	2.00	5.00	4.50	6.00
2013	2.00	5.00	4.50	6.00
2014	2.00	5.00	4.50	6.00
2015 (June)	2.00	5.00	4.50	6.00

Chart 3: Structure of Interest Rates 2001 – 2015 (June)
(Lending Rate Ceilings, in percent per annum)



In addition to the discount rate CBK uses an intervention rate [27] as an operating target to manage day-to-day liquidity in the banking system as well as to influence domestic deposit rates. The intervention rate is the rate at which CBK intervenes in the interbank market. The most used intervention rate is the interest rate (currently 0.625% for 1-month deposits) at which local banks' deposits for specified periods are accepted by the CBK.

For Liquidity Management

CBK has at its disposal a number of instruments for controlling system liquidity. These include direct intervention in the money market through taking/placing deposits, issuance of CBK Bonds, issuance of public debt instruments, repurchase operations of various maturity, foreign exchange swaps, overnight facilities, etc. Monetary instruments commonly used by CBK for liquidity management are discussed in some detail below.

Direct Intervention and Tawaruq

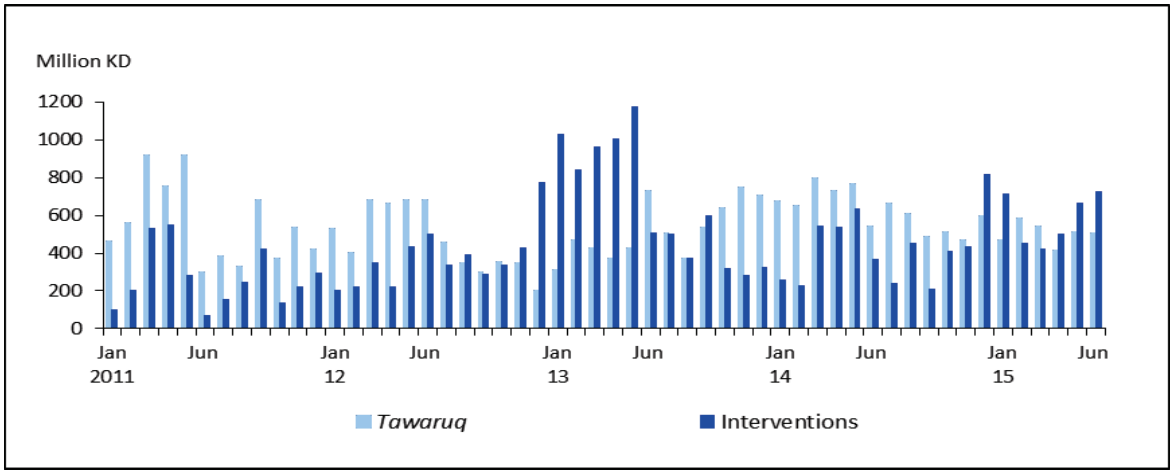
Direct intervention is used for withdrawal/injection of liquidity in the banking system and to establish the appropriate level of KD interbank deposit interest rates in line with policy objectives.

In addition to direct intervention which applies to conventional banks, CBK uses Shariah-compliant monetary instrument Tawaruq to perform similar operations with Islamic banks. This

[27] Intervention rates are set at the discretion of the CBK, and are not declared

instrument was devised because Islamic banks cannot acquire interest-bearing assets. Specifically Tawaruq is used for absorption of excess system liquidity for periods equivalent to liquidity withdrawal operations performed with conventional banks through the use of a monetary transfer agreement with underlying values linked to the price movements of a specific commodity. Chart (4) shows the amount of liquidity absorption by CBK during the period 2011-2015 (June)[28].

Chart 4: Liquidity Absorption By CBK
(Month Total)

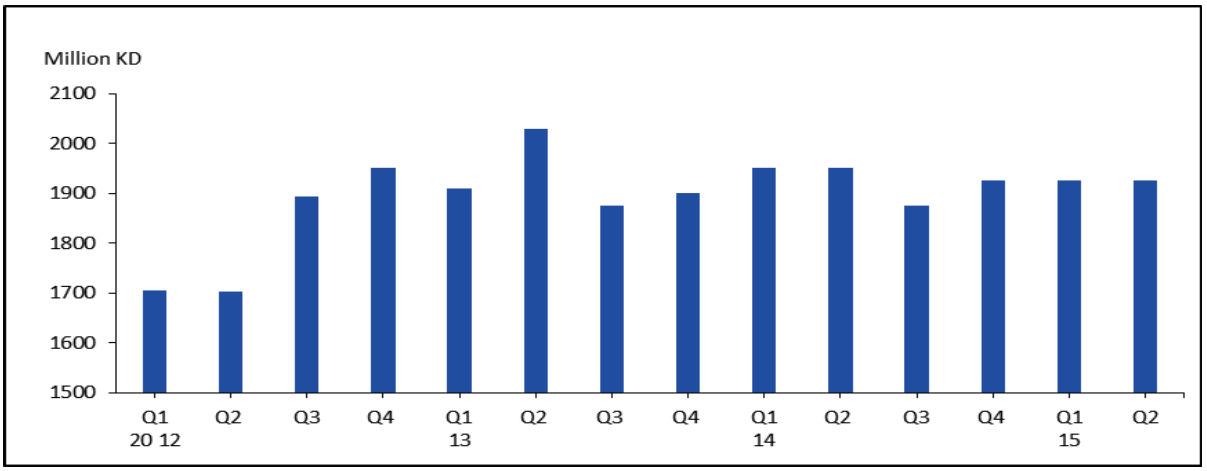


- **CBK Bonds**

Re-introduced August 2005, CBK Bonds represent direct obligations of the CBK, aimed at absorbing surplus system liquidity and influencing the KD wholesale interest rate structure. During 2014 CBK bonds worth KD 6150 million were issued, registering a marginal increase (1%) over the 2013 level of KD 6092 million. CBK Bonds worth KD 3075 million were issued in the first 6 months of 2015. Chart 5 shows the amount of CBK Bonds outstanding over the period 2012-2015:Q2.

[28] Of 1 week and 1 month duration.

Chart 5: Outstanding CBK Bonds



Treasury Bills and Treasury Bonds

Public debt instruments in the form of Treasury Bills and Treasury Bonds of different maturities were introduced in December 1987, which established a reference KD interest rate yield curve (initially up to 7-year maturity, augmented in August 2012 with the introduction of 10-year Treasury Bonds). Treasury Bills and Bonds are tradable and represent instruments of the highest quality and liquidity. Issuance of Treasury Bills has been suspended since July 2012 in view of the growing usage of CBK Bonds that provide the CBK with more flexibility and greater control both in terms of distribution of the bonds as well as in setting the target rates. Table 2 and Chart 6 show the issuance of Treasury Bonds for the period 2012-2015 (January – June). Balance of public debt instruments for the same period is presented in Chart (7).

Table 2: Public Debt Instruments: Issuance Treasury Bonds

Period	Year of Maturity						Value (KD million)					
	1	2	3	5	7	10	1	2	3	5	7	10
2012	18	2	2	1	1	1	1345.0	100.0	100.	50.0	20.0	20.0
2013	21	1	1	1	1	1	1050.0	50.0	50.0	25.0	22.3	20.0
2014	22	2	0	0	0	1	1100.0	100.0	0	0	0	10
2015 (Jan – Jun)	13	1	1	0	0	0	650.0	50.0	50.0	0	0	0

Chart 6: Issuance of Treasury Bonds

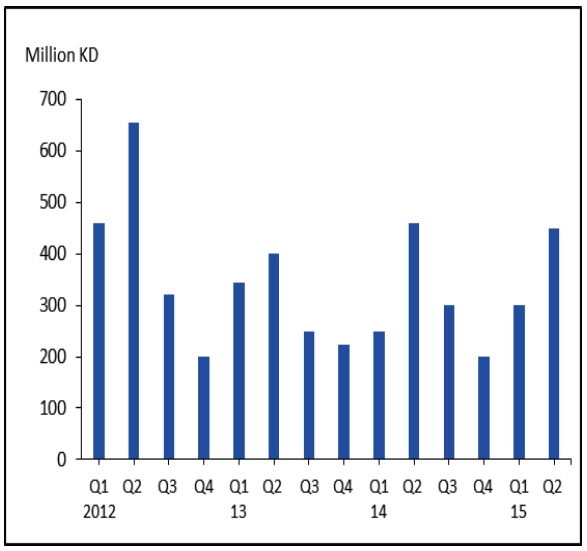
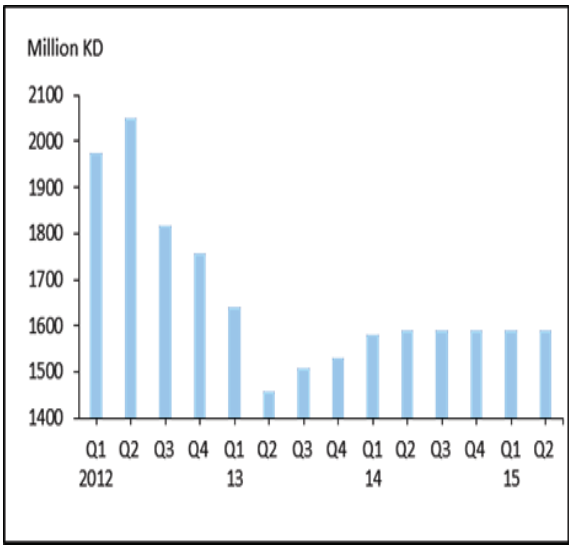


Chart 7: Balance of Public Debt Instruments



In addition to new issues of Treasury Bills and Treasury Bonds CBK may also influence system liquidity by intervening in the secondary market through buying outstanding Treasury Bills and Treasury Bonds from authorized institutions on a predetermined price/yield basis calculated against the residual maturity of the instruments. Sometimes repos (repurchase operations) of various maturities (typically overnight, 1-week, and 1-month) are used for this purpose.

- **Foreign Exchange Swaps**

Provision of providing KD against the receipt of approved foreign currency (typically US dollar).

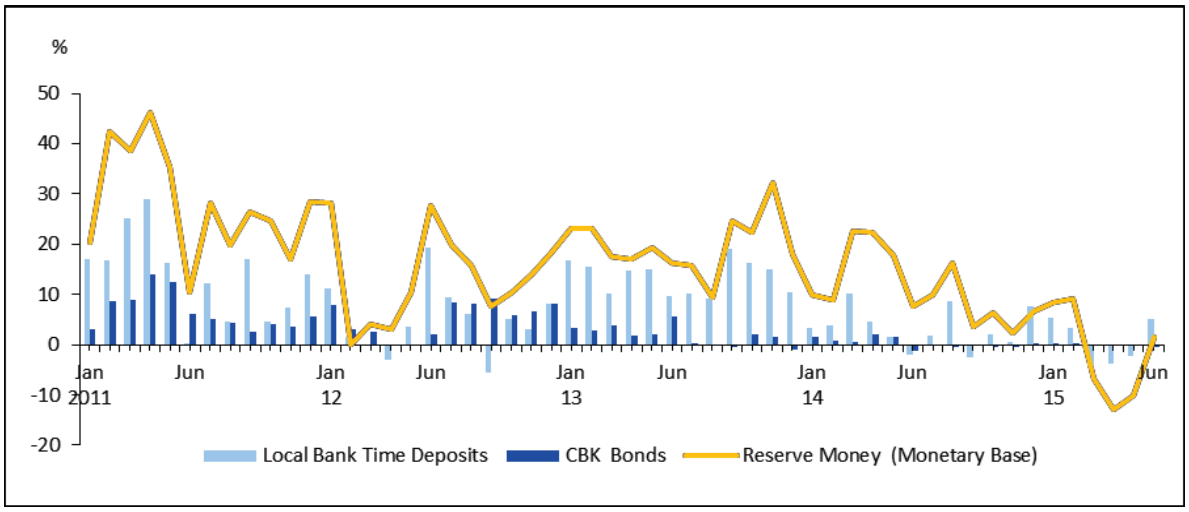
- **Overnight Facilities**

Facility available to banks to obtain overnight KD liquidity on a fully collateralized basis in the event of an unexpected decline in liquidity, which would otherwise result in an overdrawn balance.

The contribution of two major liquidity management tools (a) local banks' time deposits with CBK and (b) CBK Bonds to the growth of the monetary base (Reserve Money) during the period 2011-2015 (June) is shown in Chart 8. It is seen that taking/placing of deposits from/with local banks has been more dominant relative to liquidity management through issuance of CBK Bonds. Notable too is that the outstanding balance of CBK Bonds has nearly levelled off since mid-2013, leaving liquidity management mostly to the manipulation of local banks' deposits with CBK.

Chart 8: Contributions to Monetary Base Growth

(Year-on-Year)

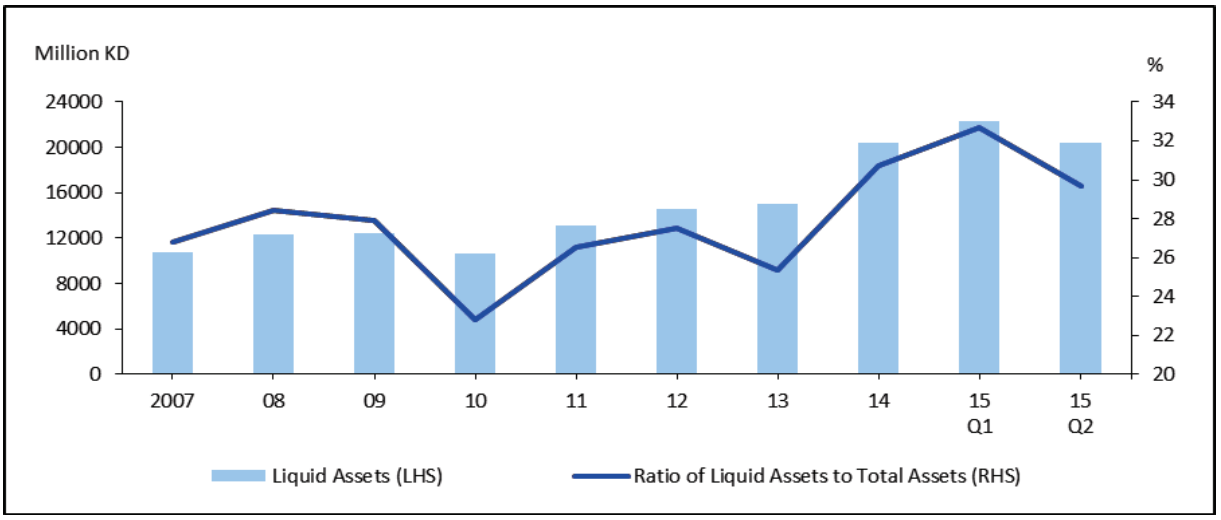


- **For Financial Stability**

Monetary policy by its macro nature is considered a blunt instrument for achieving financial stability. Therefore complementary macroprudential policy is also utilized for managing the risks to financial stability. Macroprudential tools commonly used by the CBK include: general provisions (1% of cash items, 0.5% of non-cash items), capital to assets ratio (minimum 3%), liquidity requirements (18% of customer deposits), cap on securities lending (maximum 10% of total lending), loan-to-value ratios, loan-to-income ratio (installment cap at 40% of income), general countercyclical capital buffer requirement, special capital buffer requirement for systemically important banks, limits on open foreign exchange position/currency mismatch, limits on maturity mismatch, and limits on exposure concentration.

The evolution of banks' liquid assets of maturity less than 3 months and its ratio to total assets is presented in Chart 9. As can be noted from the chart, banks' liquid assets (of <3 months maturity) has been on a rising trend since 2010. During 2014 these assets were up by KD 5.4 billion to reach KD 20.4 billion.

Chart 9: Banks' Liquid Assets
(of < 3 months maturity)



4. Monetary Policy Challenges

There is a risk that low oil prices may reduce financial sector liquidity. The precipitous fall in oil prices since mid-2014 resulted in a fiscal deficit equivalent to 4.4% of GDP in FY2014/15. If low oil prices persist, it might reduce the flow of deposits from the government and related entities, which constitute an importance source of loanable funds for the Kuwaiti banking sector. CBK should be ready to take timely measures which may include, among others, adjusting the size of Treasury Bond auctions. Any increase in the issuance of public debt, however, needs to consider its impact on CBK's foreign reserves and the capacity of the banking system to absorb the additional government debt without crowding out private credit. As banks shift their assets to long-term public debt, the issue of pricing complications may arise.

It is expected that the US Federal Reserve will raise its policy rate before the end of this year signaling a beginning of tightening monetary policy. This is likely to lead to higher discount rate (and thus because of the ceiling the maximum lending rate) in Kuwait and, given the expected pass-through because of anticipated liquidity constraints, will raise other interest rates. This hike in interest rates poses a monetary policy challenge in that the increased cost of credit may impact the already slowing rate of credit growth, in turn further dampening activity in the non-oil sectors.

Arab Monetary Fund

BANK FOR INTERNATIONAL SETTLEMENTS

AMF-BIS Working Party Meeting on Monetary Policy in the Arab Region.

Background Paper on Monetary Policy

The Republic of Lebanon

Banque Du Liban

H.E. Mr. Raed H Charafeddine

First Vice-Governor

Abu Dhabi, United Arab Emirates

25–26 th November 2015

Monetary Policy Implementation in The Republic of Lebanon

1. Background

For the fourth consecutive year, the Lebanese economy has not been shielded from the unfavorable regional developments to a great extent, specifically the spillover risks from the Syrian crisis. In effect, the main economic indicators, namely foreign trade, tourism, investment and consumption for instance, have been witnessing steady decrease since 2011. In addition, the debt-to-GDP ratio has risen from 130 percent to about 143 percent; and debt is expected to increase again in 2015 by about $4 billion to exceed $70 billion.

Yet, despite all of these challenges, the Lebanese economy was able to achieve real annual growth of two percent in 2014, while inflation remained below 4 percent, in line with BDL's objectives. Meanwhile, GDP growth is expected to be almost flat and inflation rate to be negative in 2015.

A stable monetary policy, a solid and highly liquid banking sector, confidence in the markets and in the Lebanese Lira, as well as steady flow of remittances from the Lebanese Diaspora have been the main components that enabled the economy to maintain its relative strength.

Challenging circumstances never inhibited the Lebanese banking sector to flourish. Its performance remains healthy with total banking activity growing by around six percent and with total assets of banks exceeding $180 billion in August 2015, as compared to $142 billion in December 2008. Bank deposits grew by an average annual rate of six percent to reach a new level of $156 billion in August 2015, with a dollarization ratio of 65 percent after peaking at 77 percent in early 2008. In parallel, lending activity registered around five percent growth during the first half of 2015, with total credit to the private sector exceeding $53 billion in August 2015, as compared to $25 billion in 2008. The loan dollarization ratio continued its downward trend to reach 74.8 percent at end-2014, its lowest recorded level in more than two decades. The Lebanese banking sector's high levels of liquidity enable commercial banks to finance the government and private sector needs while maintaining a stable interest rate structure.

Chart (1): Total Private Sector Deposits of Commercial Banks

(USD millions)

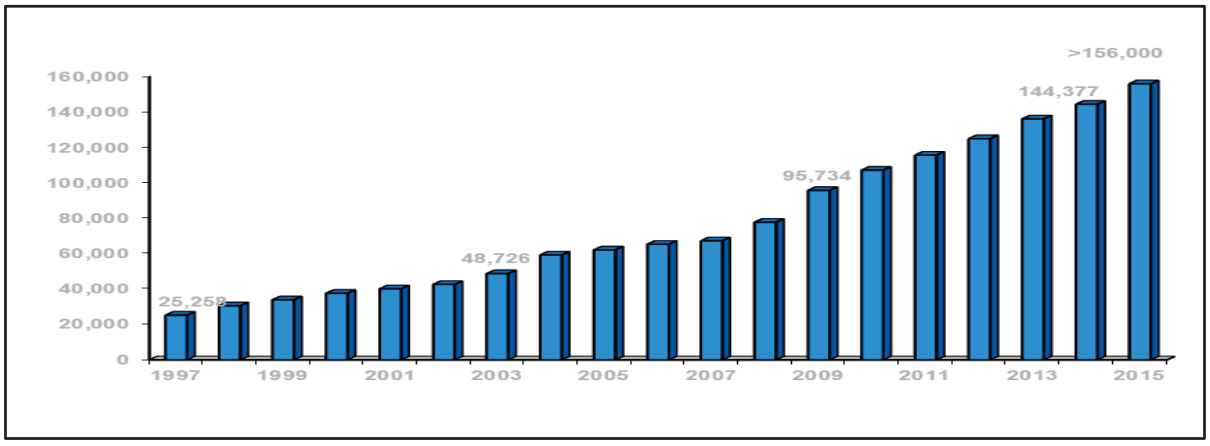


Chart (2): Commercial Banks' Equity

(USD millions)

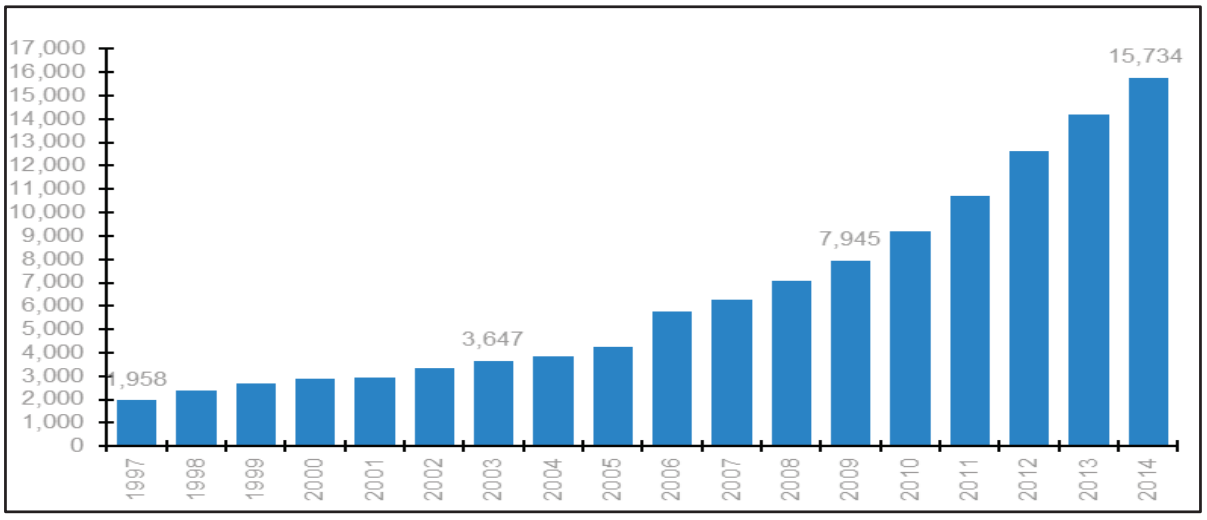
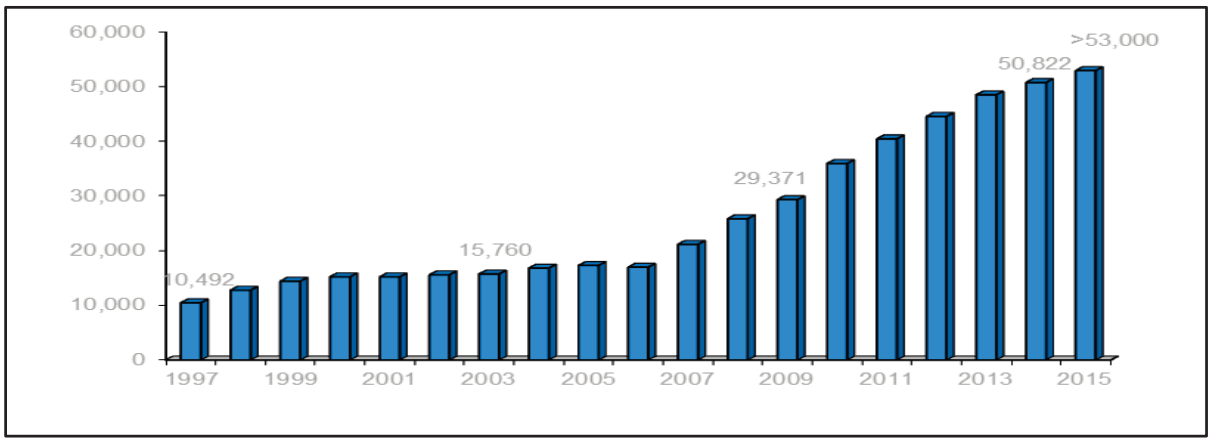


Chart (3): Total Banks' Loans to the Private Sector

(USD millions)



2. The Operational Framework of Monetary Policy in Lebanon: Objectives, Instruments, and Transmission Mechanisms

At the monetary operational level, Banque Du Liban (BDL) has been committed to ensure the basis for sustained social and economic growth through achieving the objectives of maintaining exchange rate and interest rate stability, developing money and financial markets, enhancing payment systems and money transfer operations, managing liquidity, targeting inflation, and contributing in the management of public debt.

The attainment of these objectives has been pursued through the prudential and efficient use of several instruments: first, BDL's record level of foreign assets, which have exceeded $38 billion in June 2015 excluding gold, thus providing it with sufficient means to confront any crisis and safeguard exchange rate stability; second, BDL's prudent intervention in the bonds markets, aiming at stabilizing interest rate without disrupting market mechanisms; third, BDL's initiatives in providing stimulus packages and enhancing equity financing in the context of developing money and financial markets; fourth, BDL's development of a domestic payment system that provides a secure platform for e-services in the Lebanese financial sector; fifth, BDL's efforts in managing excess liquidity that exceeds $16 billion, aiming at curbing inflationary pressures, through issuing certificates of deposits and encouraging lending in local currency to productive, residential, environmental, and educational projects; sixth, BDL's effective management of public debt through its continuous commitment to allocate financial resources for the cost of this debt.

As for the transmission mechanisms of monetary policy, BDL has been utilizing several channels through which monetary policy can affect aggregate demand, some of which are conventional while others lie within nonconventional contexts.

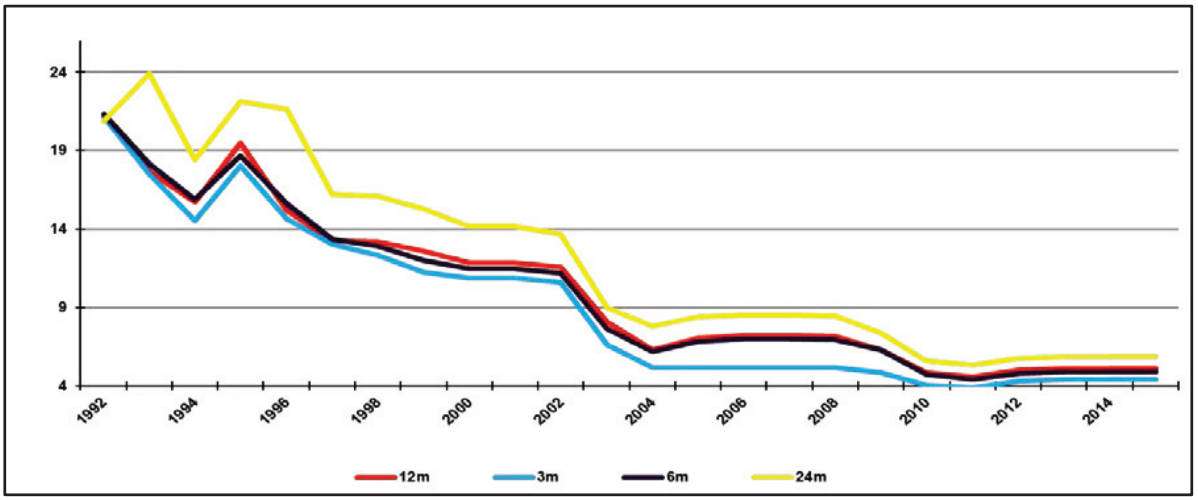
Conventional Transmission Mechanisms

Interest Rate Channel

BDL has strived to maintain a stable interest rate level that is market-relieving and superior to Lebanon's credit ratings, without disrupting market mechanisms, hence securing effective sources of financing for private and public sectors and enhancing financial inclusion, which reaches around 47

percent in Lebanon, compared to 18 percent in the Arab World, according to the Global Financial Inclusion Index (Findex).

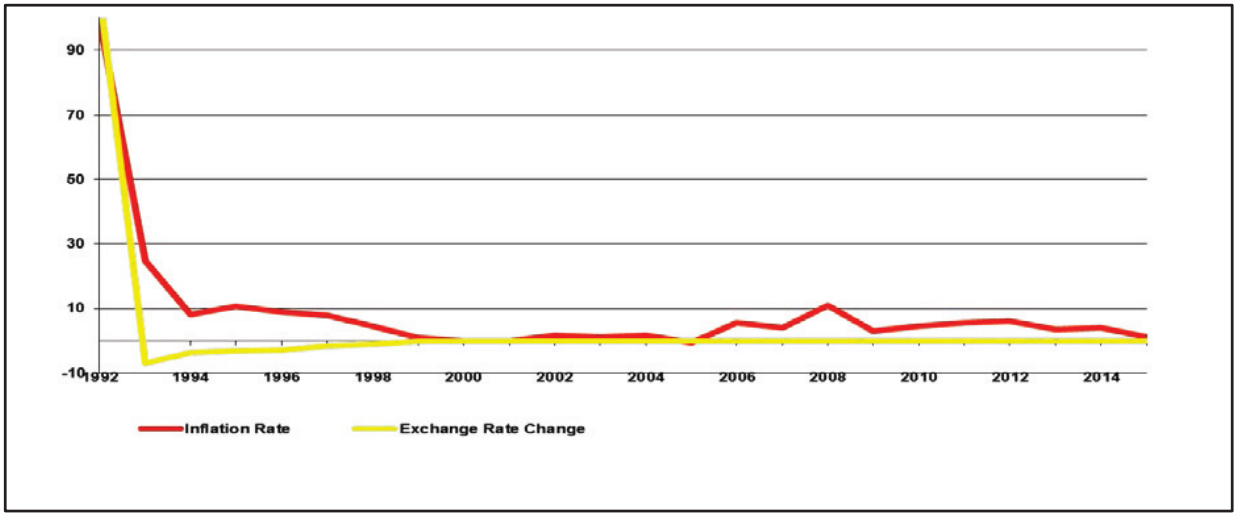
Chart (4): Primary Market Rates On Treasury Bills



Exchange Rate Channel

BDL has adopted a policy of managed exchange rate regime, keeping the LL/USD rate within a narrow band that has been set at LL 1501-1514 to the dollar for the past decade and a half. This policy served the purpose of safeguarding the stability of local currency, thus enhancing the confidence and demand for local currency and curbing the deposit and loan dollarization rates.

Chart (5): Inflation Rate Versus Exchange Rate Change



Equity Financing Channel

In the context of developing money and financial markets, BDL has initiated the Capital Markets Authority, aiming at augmenting equity financing, specifically oriented towards securing financing resources for SMEs while curtailing exhaustive debt costs.

Nonconventional Transmission Mechanisms

In light of unfavorable regional developments and their spillover repercussions on the Lebanese scene, the Lebanese economy has witnessed a relative slowdown in activity, with foreign trade and tourism receipts being adversely affected while investment and consumption having slowly but steadily declined. Consequently, BDL has resorted to nonconventional financial engineering tools that benefit the economy and society. These tools serve to support the government in creating the necessary conditions for sustainable growth, providing the potentials to revitalize the labor market, reinforcing social and environmental security, and promoting human development. They include:

The Provision of Stimulus Packages

BDL resorted to nonconventional monetary policy tools to stimulate internal demand and sustain the country's growth and job creation potential. The stimulus packages took the form of exemptions from the required reserve ratio and soft loans extended to Lebanese banks in order to boost lending activity and fuel economic growth. These packages, extending from 2013 through 2015 and amounting to a total of $5 billion, proved to be successful by contributing around 50 percent of real GDP growth. These included incentives to support housing, education, renewable energy projects, innovative projects, research and development ventures, entrepreneurship, and other productive sectors of the economy. Moreover, BDL announced a fourth stimulus package amounting to $1 billion for the year 2016.

Creating Knowledge Economy

More recently, BDL placed additional focus on targeting the knowledge industry, as being considered a strategic comparative advantage for the Lebanese economy. Lebanon's highly qualified human capital is apt to effectively turn innovative ideas into successful businesses, creating room for new

employment opportunities, therefore expanding the country's GDP and ensuring sustainable development. Believing that this is the new growth model, and having faith in the Lebanese youth, BDL accordingly issued Circular 331 in August 2013 to encourage Lebanese banks to invest in the equity capital of startups, incubators, accelerators, and other companies working in the knowledge economy. This innovative scheme made available around $400 million to support creativity and innovation. Some $250 million has been committed by the banks and invested in start-up funds and companies.

3. The Regulatory Framework of Monetary Policy in Lebanon: Stability, Governance, and Compliance

Developing a sound and secure banking sector has channeled BDL's efforts in the past 20 years in order to build a prudent financial model which has inspired confidence in the system. In fact, lessons drawn from the Lebanese model are similar to many of the recent reforms suggested by international financial regulators, most important of which are: decreasing leverage, regulating derivatives and structured products, strengthening banks capital and liquidity requirements, enhancing the corporate governance and transparency of financial institutions, enabling the central bank to oversee all players in the financial market, drawing a clear demarcation between commercial banks and investment banks, and prohibiting any defaulting of banks that threatens the systemic stability. Furthermore, intensive measures have been enacted towards implementing compliance measures with respect to Anti-Money Laundering and Countering the Financing of Terrorism (AML/CFT), risk management and effective internal control, and global sanctions.

Improving Financial Stability

BDL has equipped the banking sector with the appropriate regulatory and supervisory framework that is in line with international standards for the sake of reinforcing prudent precautionary regulatory measures. Such regulations aim at deepening the resilience of the banking sector against risks in general, without contradicting with free market rules. Hence, banks were required to: maintain high levels of liquidity; exceed international standards on capitalization requirements; comply with investment and balance-sheet regulations; and avoid excessive leveraging along with building adequate provisions.

In this context, BDL has always assured high levels of liquidity in the Lebanese banking sector, thus enabling commercial banks to finance the government and private sector needs and aiming at thrusting growth and development, while maintaining a stable interest rate structure. BDL's prudent efforts in managing this liquidity are also of an utmost importance for curbing inflationary pressures within the objective of four percent. In terms of capitalization, Lebanese banks are exceeding the required ratio of 10 percent, as stated by Basel III, and have even exceeded the rate of 12 percent, which is the objective to be attained by the end of 2015. Exposures of Lebanese banks operating abroad are regularly monitored and assessed by BDL.

BDL has historically regulated banks' dealings with derivatives and structured products by forbidding banks from making subprime investments both domestically and overseas. BDL has also regulated the on-and-off-balance sheet operations and ensured that the off-balance sheet assets were related to the actual solvency of the banks. Moreover, BDL has issued circulars regulating consumer loans and requiring the formation of provisions, intended as preventive steps to avoid any future crisis. Accordingly, BDL has set out lending regulations that place a ceiling of 50 percent on the value of an equity portfolio and a requirement of a 20 percent down-payment on foreign exchange operations. In order to prevent a real estate bubble, banks are not allowed to lend more than 60 percent of a project's value. In addition, BDL has set maximum acceptable levels for consumer lending, so as not to exceed 45 percent of the household income with a maximum limit of 35 percent for housing loans.

BDL has strived for a well-organized financial market through regulating the establishment and management of all financial market participants, including financial institutions, brokerage firms, collective investment schemes, and money dealers. All these institutions are under the supervision of the Central Bank and the Banking Control Commission. BDL has also set a clear distinction between the role of commercial banks and investment banks, which has protected both banks' and customers' interests. Moreover, BDL plays a key role in the development of domestic payment systems. It has regulated e-banking to provide a secure platform for e-services in the Lebanese financial sector, stressing compliance with international norms and standards in order to promote safety and improve efficiency of the multi-currency payment system in Lebanon. In order to enhance economic efficiency, BDL has adopted real time online connections with the financial sector through

implementing the Real Time Gross Settlement (RTGS) system for domestic settlement, offering the banking and financial sectors a secure, reliable and real time method of payment that adheres to international standards. Moreover, BDL has set in place the automated Retail Payment and Clearing System (BDL-CLEAR), a low value - high volume bulk payments system, for clearing retail payments, including cheques, direct debits, and card transactions.

BDL has strived to preserve the reputation of the banking sector by reinforcing anti-money laundering measures while maintaining banking secrecy; encouraging small banks to merge with bigger ones in order to avoid bankruptcies or losses to depositors; solving the problem of non-performing loans by allowing creditors to reschedule their loans over a 10-year period; imposing academic, technical, and ethical requirements for staff in key banking and financial positions; and promoting the export of banking services by supporting the regional expansion of leading Lebanese banks. BDL has further established the Financial Stability Unit whose mission is to monitor the financial sector in Lebanon in order to avoid any likely crisis, and the Consumer Protection Unit to ensure that banks deal equitably and fairly with all their customers in a transparent manner.

Implementing Corporate Governance Practices

Being aware of the importance of corporate governance in optimizing the performance of the financial sector and protecting the interests of its stakeholders, BDL emphasizes on the compliance with the principles of good governance at all banking and financial managerial levels, including boards of directors and senior management, whereby training programs have been set by BDL for this purpose. This is done in parallel with the creation of appropriate awareness in financial institutions, whereby compliance units were established to protect the banks. This approach aims at increasing transparency and enhancing prudent management as main objectives of BDL policy, which has established for this purpose the Unit of Corporate Governance.

Setting an AML/CFT Process

BDL and Lebanese banks comply with international standards and AML/CFT norms. Hence, BDL regularly reviews and amends its AML/CFT regulations, keeping up with the latest international legal

and technical developments and setting the foundations of a financial sector in line with global financial expectations.

From the perspective of measures taken, BDL had required banks to be fully informed of the laws and regulations governing their correspondents abroad, and deal with the latter in conformity with the laws, regulations, procedures, sanctions, and restrictions adopted by international legal organizations or by the sovereign authorities in the correspondents' home countries, in order not to jeopardize their sound and good reputation, or their relationships with any of their correspondent banks.

In 2012, BDL suggested amendments to the Lebanese AML/CFT law to incriminate terrorist financing acts. The suggested amendment also calls upon lawyers, public notaries and accountants, when carrying on their mission, to notify the head of the SIC immediately of any operation they suspect is linked to money laundering or terrorism; moreover, the amendment introduces financial sanctions for non-compliance with the AML laws and regulations. BDL also proposed a draft law on the cross-border transportation of funds and the exchange of tax information law. All were approved in 2012 by the Council of Ministers and were consequently forwarded to Parliament.

In order to preserve the good reputation of the Lebanese financial sector and prevent money dealers from being used as a safe haven for money laundering, BDL has regulated the electronic transfer of funds, especially the non-official channels to transfer cash, forbidding small money changers from performing cash transfers using these unofficial channels. It also tightened its regulations regarding the activities of exchange institutions, by increasing their initial capital, prohibiting them from carrying out any of the banking transactions, putting restraints on transporting cross-border cash and precious metals, and requesting the appointment of a certified Compliance Officer in order to control the institution's conformity with the AML/CFT law.

In 2012, BDL requested Lebanese banks to abide by the FATCA, the US law that concerns all US taxpayers worldwide, in the context of preserving the sound and good reputation of the Lebanese banking sector, in addition to maintaining its relationship with correspondent banks that comply with FATCA.

Enhancing Risk Management and Effective Internal Control

In 2001 BDL issued circulars that regulate the means by which banks and financial institutions control their operations with their customers in order to avoid any involvement in operations related to money laundering or terrorist financing.

Implementing the notion of the risk based approach, BDL requires banks to adopt a risk-based approach in classifying customers and operations according to the risk levels (low, medium or high risks), taking into account the country risks, customer risks and services risks. It also requested the establishment of risk-based control measures and procedures.

In the scope of risk management, the stage was set through establishing risk policies and monitoring. In 2011, each bank operating in Lebanon was requested by BDL to establish compliance and risk management units and to appoint independent members in their Board of Directors. These units include an AML/CFT Special Committee, an AML/CFT Compliance Unit (in charge of verifying compliance with AML/CFT procedures, laws, and regulations in force), and an AML/CFT Branch Officer in each of the bank's branches in charge of controlling the operations.

Additionally, BDL requires banks and financial institutions operating in Lebanon to strictly implement the Regulations for the Control of Financial and Banking Operations for Fighting Money Laundering and Terrorist Financing, particularly with customers who request the conduct of cross-border operations by way of correspondent banks and financial institutions. It stipulated that banks and financial institutions should follow a risk based approach by verifying the identity of individuals or companies involved in the transaction and those that have economic ownership, as well as by developing procedures to continuously monitor the related operations and accounts. Within this scope, banks and financial institutions must adopt the utmost accuracy and due diligence to the identity of the economic right owner in the operations conducted. Banks are requested to update their database related to AML/CFT information and to notify the SIC about suspicious transactions. In order to further intensify the legal aspect of compliance and risk management, BDL have requested in 2013 banks and financial institutions operating in Lebanon to establish a Legal Compliance Unit that is in charge of identifying and preventing legal risks, taking the required measures to mitigate these risks.

Adopting Global Sanctions Measures

The global scene is witnessing more than ever the interconnection of a diversity of systems to form complex ecosystems that inflict intense compliance requirements, which are undeniably subject to international fluctuating political-economic balances of power. In this sense, BDL, is keen to guard the vital interests of the Lebanese banking sector, as a strategic national sector, through abiding by the international sanctions. This compliance serves the Lebanese banks in maintaining good and clear relations with correspondent banks by avoiding any operations that might expose correspondent banks and jeopardize the relationship with them by involving them in situations contravening the regulations enforced in their respective countries.

4. The Implications of Economic and Financial Developments on Monetary Policy Implementation in Lebanon

At the global level, the IMF estimated global growth at 3.3 percent in 2015, marginally lower than in 2014, with a gradual raise in advanced economies from 1.8 percent in 2014 to 2.1 percent in 2015, and a slowdown in emerging market and developing economies from 4.6 percent in 2014 to 4.2 percent in 2015. In 2016, global growth is expected to strengthen to 3.8 percent. According to the IMF, the underlying drivers for this gradual acceleration in economic activity in advanced economies are easy financial conditions, more neutral fiscal policy in the euro area, lower fuel prices, and improving confidence and labor market conditions. In emerging market and developing economies, the prevailing growth slowdown indicates several factors, including lower commodity prices and tighter external financial conditions, structural bottlenecks, rebalancing in China, and economic distress related to geopolitical factors. However, a rebound in activity in a number of distressed economies is expected to result in a pickup in growth in 2016. The distribution of risks to global economic activity is still negatively manifested. In both advanced and emerging market economies, near-term risks include increased financial market volatility and disruptive asset price shifts, while lower potential output growth remains an important medium-term risk. Similarly, lower commodity prices pose risks to the outlook in low-income developing economies after many years of strong growth.

As for inflation, the regression of oil prices has confronted oil-exporting countries with severe challenges, with aggregate monthly inflation rates reaching its lowest levels in advanced economies. According to the IMF, with the recent rebound in oil prices, fuel end-user prices have started rising. Monthly headline inflation has thus started to rise in many advanced economies, but the impact of disinflationary factors earlier in the year was stronger than expected, particularly in the United States. Hence, core inflation has remained generally stable well below inflation objectives. In many emerging market economies, especially those with weak domestic demand, headline inflation has declined.

Developments in the global monetary systems signal the retention of low long-term interest rates in advanced countries, particularly in the Euro area and Japan, excluding the United States, whereby the long-term interest rate is expected to continue rising after the declaration of the federal reserve to terminate the quantitative easing program, going back to traditional monetary policy practices with the enhancement of the US economic growth. Given the constraints on monetary policy in most advanced economies due to the zero lower bound on policy interest rates, the IMF expected a net positive for the global economy. Moreover, bond yields and risk premiums in emerging market economies have risen broadly in line with those on advanced economy instruments. However, capital flows to those economies are estimated to have decreased in 2015 compared to the second half of 2014, and many have witnessed further currency depreciation.

At the Arab level, a recent AMF report has estimated growth to be 2.8 percent in 2015, compared to 3.1 percent in 2014 and a projected 3.5 percent in 2016. The report highlighted the negative effect of the regression of oil prices on oil-exporting countries, resulting in low expectations in economic growth that is estimated at 2.7 percent in 2015, compared to 3 percent in 2014 and a projection of 3.4 percent in 2016. As for Arab oil-importing countries, the report noted the relative stability achieved in some countries and their benefiting from the regression of international oil prices, with the continuation of implementing economic reformations and investment projects, whereby these countries achieved a growth of 3.4 percent in 2015. The growth rate expectations for 2016 project 3.4 percent for the Arab oil-exporting countries due to expectations of a 9 percent increase in oil prices; likewise, Arab oil-importing countries are expected to witness increase in growth rates due to the improvement in the global economic activity and the levels of external demand, despite the adverse

effect on their financial resources caused by the anticipated increase in oil prices. The problem of high Arab unemployment rates still constitutes one of the main challenges for the Arab region, marking the highest rate of youth unemployment world-wide at 28 percent. In addition, the contribution of the private sector in generating productivity and employment opportunities is still low, indicating the need for developing the Arab business environments and legislative/legal frameworks.

In the context of the strenuous Lebanese political and socio-economic outlook mentioned earlier, which is mitigated by stability of the Lebanese financial-monetary system, the implementation of monetary policy in Lebanon faces intensive internal and regional hardships and opportunities. This implementation is affected by the implications of global, regional, and internal economic and financial developments from several perspectives. First, from the perspective of global, regional, and local relative growth slowdown, accompanied by the decrease in external and internal demand, BDL has been keen to carry on with its nonconventional transmission mechanisms by providing stimulus packages and nurturing strategic national economic sectors, such as the knowledge economy and the financial sector, so as to enhance internal demand and accelerate economic growth.

Second, given the persisting low long-term interest rates in most advanced economies, BDL has been optimizing its role in securing efficient sources of financing for the public sector. Furthermore, BDL has been capitalizing on the advantageous difference in interest rates between foreign currencies and the local currency to enhance local currency deposits and further curb dollarization. Third, the regression of oil prices has not affected adversely the flow of remittances from Lebanese Diaspora, which has reached an estimated $8.9 billion in 2014, hence BDL has given significant importance to its contribution in the formulation of a national strategy for promoting the developmental role of Diaspora remittances.

5. Monetary Policy Implementation in Lebanon: Main Challenges, Opportunities, and Reforms

The implementation of monetary policy in Lebanon is confronted with numerous challenges, linked with several opportunities, and bound to necessary reforms. These challenges, opportunities, and reforms can be expressed as follows:

Macro-Prudential Supervision

Ensuring the resilience of individual financial institutions through more equity capital funding is the most important way to protect them and the whole system from inevitable shocks. However, another equally important challenge that BDL is committed to meet is ensuring the resilience of the system as a whole through macro-prudential supervision, which regulates the stability of the financial system as a whole through two mirror-image functions: to protect the financial system from the economy and the economy from the financial system. This implies protecting the financial system from destabilizing developments encouraged by price-stability practices of the monetary policy on one hand, and protecting the economy from the excesses of the financial system on the other.

Synergy Between Financial Regulation and Monetary Policy

Since the financial crisis, a change of perception has occurred regarding the relationship between financial regulation and monetary policy. As the two policies were traditionally seen in isolation, each pursuing its own goals using separate sets of instruments, the new challenging focus adopted by BDL is to analyze them complementarily together. The reason for this change is the realization that the relationship between the roles of financial regulation and monetary policy is embodied in the interrelatedness between financial systemic risks and disruptive implications on output and price stability.

Enhancing Financial Inclusion

Reaching around 47 percent, financial inclusion in Lebanon scores double the average rate in the Arab region. BDL is continuing its efforts to broaden financial inclusion, so as to restrain shadow banking practices and instill compliance. Hence, BDL encourages bank penetration and promotes new electronic payment methods.

Reinforcing Capital Markets

As a Regulator, BDL aims at overcoming the challenge of financing growth and development through reinforcing capital markets as a source of financing, with its two channels: equity financing and debt financing, while assuring that capital markets enhance or, at least, do not threaten financial stability.

Rallying a Broadly Based Financial Literacy Program

BDL has been vitally involved in the challenge of heightening consumer empowerment through rallying a broadly based financial literacy program, developed to increase the financial literacy of the population. This program involves a range of organizations, including those of the government, state agencies, and non-government organizations.

The SoLoMo Synergy

The dynamic nature of mobile technologies, interlinked with the wide social media penetration and the innovative localization of services, created the so called SoLoMo (Social-Local-Mobile) framework, which posed risks and challenges along with opportunities for mobile financial services. The mitigation of those risks poses challenges that can be met through introducing innovative security high-tech measures that prevents illicit and fraud activities. Moreover, capitalizing on such a revolutionary opportunity requires synergy and integrative approaches between the telecommunication and banking industries.

Mitigating the Costs of Compliance

Having been created for stabilizing the financial sector in order to actualize mutual benefits among financial service providers and consumers, compliance requirements nonetheless have witnessed surging costs due to the increasing complexity of global finance.

As a consequence, the challenge of mitigating the costs of compliance can be approached through finding ways to make the incentives for financial intermediaries consistent with the objectives of safeguarding the interests of the consumers and abiding with compliance requirements.

De-Risking

On the economic security level, the phenomenon of de-risking has received considerable attention lately as an outcome of the global fight against money laundering and terrorist financing. Its negative dimension appears when applied generally and without scrutinizing individual cases in order to avoid the high cost of compliance. In order to mitigate this challenge, BDL tailored regulatory decisions

related to AML as well as dealing with correspondent banks to spare the Lebanese banking sector from de-risking measures.

Simplifying and Automating Know Your Customer (KYC) Requirements

Just as KYC requirements are crucial for due diligence, so is the task of simplifying and automating KYC process, especially when medium sized corporations and SMEs are concerned. From this perspective, banks are faced with the challenge of developing the tendency to shift from pure identification in a traditional sense to examining customer transactions and automating exchange of information through a centralized system.

Monetary Practices Targeting Sustainable Growth and Development

BDL has considered sustainable growth and development to be a continuous challenge and a priority objective to its initiatives. Accordingly, several initiatives were launched by BDL to ensure that the incentives of financial intermediaries are in alignment with the objective of upholding the interests of the consumers and community as a whole. Moreover, another challenge is to direct fiscal practices towards optimal utilization of the surplus liquidity in the financial sector for the purpose of financing infrastructural projects and sustainable-development investments; in addition, innovative and persistent efforts should be exerted to align between monetary and price stability on one hand, and sustainable growth and development on the other.

Strategic Opportunities

In addition to the sectors of banking and knowledge economy, another sector with potentially great positive impact on the economy is that of the yet untapped oil and gas. With new employment opportunities and added fiscal revenues, this sector will be able to bring down the public debt and boost growth and development fundamentally. Furthermore, the flow of remittances from the Diaspora towards Lebanon constitutes a strategic national asset. This asset requires the formulation of an effective comprehensive national strategy, involving the financial sector, for capitalizing on the potential developmental role of the Diaspora.

6. Conclusion

As the strenuous circumstances that our neighbors and the region at large are reflected on the Lebanese socio-economic and political scenes, Lebanon continues to maintain a stable monetary policy, a solid and highly liquid banking sector, confidence in the markets and in the Lebanese Lira, as well as steady flow of remittances from the Lebanese Diaspora have been the main components that enabled the economy to maintain its relative strength.

Being one of the pillars of optimism, the Lebanese monetary authority, represented by BDL, has built a robust financial system managed by a prudent monetary policy. This policy is based on two frameworks: the operational one, comprising its objectives, instruments, and conventional/nonconventional transmission mechanisms; and the regulatory framework of monetary policy, encompassing the elements of stability, governance, and compliance.

The implications of economic and financial developments on monetary policy implementation in Lebanon have global, regional, and local perspectives. Highlighting three areas of influence, i.e. growth, interest rates, and oil prices, these economic and financial developments are reflected in main challenges, opportunities, and reforms that ought to be encountered.

On the strategic brighter perspective, the three national strategic sectors that constitute promising potential prospects for the Lebanese economy are: the resilient Lebanese banking and financial sector that is playing a crucial role in supporting socio-economic stability; knowledge economy, which is based on the advantageous Lebanese human capital and the potential it has to turn Lebanon into a regional hub for innovation; oil and gas, which promises great potential positive impact on the economy. Yet this optimism will not be realized unless it is coupled with the appropriate structural reforms. Hence, barring adverse political and security events, if the economy is to recover and move towards its full potential, fiscal discipline remains a priority.

Arab Monetary Fund

BANK FOR INTERNATIONAL SETTLEMENTS

AMF-BIS Working Party Meeting on Monetary Policy in the Arab Region.

Background Paper on Monetary Policy

State of Libya

Central Bank of Libya

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25–26 th November 2015

Monetary Policy Implementation in State of Libya

1. Background

The Libyan Economy is highly undiversified, depending on earnings from oil and gas exports. Oil exports represent 97% of total exports. While oil revenues represents 95% of government budget earnings. It is vulnerable to oil price fluctuations and to the consequences of interruption in oil production and exports. This situation causes a continuous threat to the earnings of government budget and to secure financial sustainability. Oil and gas production exceeds 65% of GDP, with non-oil sector suffers rigidity due to inherited structural problems. The lack of diversification aggravates short term instability and intensifies the problem of Long term economic growth.

The banking sector dominates the financial sector in Libya, with the banking sector historically used by authorities as vehicle to financing economic development. Therefore, the Libyan financial system is considered a bank - oriented financial system. Sixteen commercial banks and four specialized banks constitute the Libyan banking sector. While the Central bank of Libya comes at the top representing the monetary authority. The Libyan banking sector is considered as a largely state- controlled sector, in which private banks account for only slightly more than 39% of capital. Five private Islamic banks have been granted permission to set up in the cities of Tripoli, Benghazi and Sabha. These banks shall be allowed to operate branches in other cities of Libya. The Libyan banking sector is characterized by high concentration in which one of the largest four banks dominates more than 42% of total assets of the whole sector. Within the structure of the Libyan banking sector, there are five commercial bank having foreign strategic partners acquiring between19% to 49% of its Capital. In addition, there is one offshore bank and twenty four representative offices of foreign banks.

2. Monetary Policy Objectives

According to articles (1) and (2) of the Banking law No.(1) of 2005 and its amendment, the Central Bank of Libya (CBL) is considered as an autonomous institution with the status of a legal entity and independent financial Liability. The bank shall carry out its duties in pursuit of its objectives as stipulated in the aforementioned law within the framework of the government's general policy.

Article No (5) of the Law No.(1) of 2005, outlined the duties and responsibilities of the Central Bank as follows:-

- Issuing the Libyan currency and maintaining its stability within Libya and abroad.
- Managing the government's reserves of gold and foreign exchange.
- Regulating monetary policy and supervising currency transfers and transactions.
- Regulating credit and banking policy and supervising of its implementation within the framework of government's general policy.
- Achieving the goals of economic policy in terms of stabilizing the general prices level and maintaining the soundness of the banking system.
- Managing the liquidity of the national economy.
- Regulating and supervising the foreign exchange market in Libya.
- Providing advice and consultancy to the government on matters related to the general economic policy.

In Carrying out the above- mentioned duties the Central Bank of Libya may take action on the following:-

- Exert control on the amount, type, and period of credit provided by commercial Banks, to ensure that the actual needs of economic activities shall be met.
- Take appropriate measures to deal with economic and financial problems, whether domestic or international.
- Monitoring and supervising institutions to guarantee the soundness of its financial position and performance, and protecting the rights of its depositors and customers.

It is clear that the central bank of Libya is entitled to take actions in formulating and applying of monetary policy in Libya.

3. Monetary Policy Tools

Monetary Policy tools which central banks apply are being classified recently within the Macro-prudential policies in prospective of financial stability in general. The complexity of these tools is

related to the status of the banking and financial sector and the stage of economic development, in addition to the legislative environment. Among the most important monetary policy tools applied by the Central Bank of Libya are the following:-

- Reserve requirement on bank deposits, these reserves have been set at 20% of deposit liabilities.
- Liquidity requirements, all commercial banks are obliged to maintain 25% liquid assets within its total assets in the balance sheet.
- The use of certificate of deposit and repos to manage liquidity within the banking sector.
- Indirect monetary policy tools within the framework of banking supervision and applications of micro-prudential tools.
- Discount rate applicable to loans which are discounted at the central bank.
- The ratios of provisions to non-performing loans, and the type of acceptable provisions.

4. Monetary Policy Developments After 2011

Libya witnessed a revaluation in 2011. The country has entered into a transitional period which is still lasting. During this transitional period the country experienced unfavorable developments, in particular the banking and financial sector was functioning under tremendous pressure. The financial intermediation rule of the banking sector was hindered and the issuing of credit and financing of economic activities has declined affecting negatively the balance sheet of all banks.

However, the Central Bank of Libya has continued functioning as a monetary authority to achieve its mandate. The liquidity crises of 2011 was among the most sever challenges that the banking system has encountered since the early sixties of the last century, however the Central Bank of Libya was able to manage the crises avoiding insolvency of the banking sector. The Central Bank of Libya had issued circulars to the commercial banks in 2011 instructing them to put a ceiling on cash withdrawals set by the central Bank. In addition, the Central Bank had interfered in the foreign exchange market, selling foreign exchange to the public in order to raise cash and to maintain the value of the Libyan Dinar and economic stability. The major developments in monetary policy can be summarized as follows:-

- In 2012, the Transitional National Council (TNC) amended the Banking Law No. (1) of (2005) by the law No. (46) of 2012, whereby Islamic Banking was legislated and organized.
- In 2013, Libya's Parliament, the General National Congress (GNC) adopted the Islamic Banking law No.1 of 2013. The law included resolution to ban interest-based financial services and to make the entire financial system Sharia-compliant.
- Commercial banks were obliged to apply the law No. (1) of 2013, conventional consumer's loans were suspended but corporate financing and other financial sector activities were granted a grace period to transform into an exclusive Islamic financial system by 2015.
- On the light of not being able to develop monetary policy tools suitable to the new legislation related to Islamic finance, the interest rate is no longer available tool of monetary policy to the Central Bank of Libya, in order to affect money supply or to control inflation in the Libyan Economy.

Although Islamic Banking and finance has been applied in many other counties for more than Thirty years now, its applications and practices were at different levels according to the legislative environment, ranging from exclusive transformation into an exclusive Islamic financial system (the case of the Sudan and Iran) to a system where traditional commercial bank are operating along with Islamic banks (Mixed system), (the case of Gulf Cooperation Council Countries (GCC) and Malaysia). The Libyan case is quite different since the commercial banks in Libya are not yet ready to transform to a fully Islamic banking system.

The commercial banks were not able to adjust their business models to cope with the new legislative environment. Therefore, their net interest incomes have started to diminish. Providing specific Islamic banking product like Murabaha was not enough for commercial Banks in Libya to generate incomes sufficient to offset loses.

5. Challenges To Monetary Policy in Libya

The global economy has been dominated by strong downside risks to growth, in view of declines in commodity prices and rising geo-political tensions. Developments in the international oil market have intensified these risks particularly for oil exporting countries, in the wake of recent episode of falling

oil prices. Libya, being an oil exporting country has been affected even more drastically than other oil exporting countries due to the decline in its oil production and exports as a result of unfavorable internal conditions.

The decline in oil prices during the last quarter of 2014, and the first quarter of 2015, coupled with diminishing oil production and ban of oil exports due to security problems has led to decline in oil revenues to unprecedented levels during the history of the Libyan economy. Oil revenues have dropped from$ 44.0 bn in 2010 to around$ 13.6 bn in 2014, with a decline ratio of 65%.

In the meantime, foreign exchange spending has not declined proportionally to the decline in oil revenues. The decline in foreign exchange spending did not exceed 10% between 2010 and 2014. The shortage in foreign exchange earning was financed by the use of foreign exchange reserves of the Central Bank of Libya. Since the Libyan Dinar was begged to the Special Drawing right (SDR) of the International Monetary Fund (IMF), the Central Bank of Libya was obliged to use its reserves in order to defend the Libyan Dinar, and to ensure that the official rate stayed about the same. However, the rising demand and dwindling supply of foreign exchange has led to the emergence of parallel market (black market), and a large arbitrage premium has been created between the official window and the black market, while the official exchange rate of the Libyan Dinar was applied to all foreign exchange transactions including fiscal accounting and private sector.

The main challenges to monetary policy in Libya could be summarized as follows:-

- The exchange rate pressures reflect the significant contraction in the supply of foreign exchange in the Libyan foreign exchange market.
- The government budget receipts have declined leading to a budget deficit of more than L.D. 30 bn.
- Even though Inflation remained within the single-digit rate of about 7% , the budget deficit and the growing government spending coupled with internal conditions threaten the maintenance of price, monetary and financial stability.

- The depletion of the Libyan foreign exchange reserves due to the widen gape between foreign exchange receipts of the Central Bank of Libya and foreign exchange spending and the continued rise of demand for foreign exchange, threaten the stability of the Libyan Dinar.
- The significant rise in money in circulation as component of money supply, coupled with a stagnant economy, threaten to exert inflationary pressures in the economy and to disrupt monetary and financial stability.
- The ban of interest-based financial services and the suspension of consumer's loans followed by the termination of corporate financing by 2015, without developing alternative Islamic financial product disrupt the functions of the financial system and hinder the financial intermediation mandate of the banking sector.
- The lack of the appropriate monetary policy tools to manage liquidity and to control money supply in the new legislative environment; tending to make the entire financial system sharia-compliant, has restricted the Central Bank of Libya from playing a major rule in controlling inflation.
- The distortion of credit policy in the banking sector due to the expansion of lending activities by specialized bank during the previous decade, using a subsidized interest rate have led to the decline of Loans to Deposits ratio to less than 25%.
- The Lack of interbank market providing hinders the ability of the banks to better manage the liquidity levels.

Arab Monetary Fund

BANK FOR INTERNATIONAL SETTLEMENTS

AMF-BIS Working Party Meeting on Monetary Policy in the Arab Region.

Background Paper on Monetary Policy

The Arab Republic of Egypt

Central Bank of Egypt

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25–26th November 2015

Monetary Policy Implementation in The Arab Republic of Egypt

1. Background

The Central Bank of Egypt (CBE) was founded in 1961 according to law No. 163 of 1957 and its amendments. According to law No. 88 of 2003 of the central bank, the banking sector and money, the CBE is a public legal body directly subject to the president. The law entrusts the CBE with the formulation and implementation of monetary policy, with price stability being the primary and overriding objective.

In 2004, the board of directors agreed to establish several committees to facilitate the compliance with the objectives of the law No. 88 of 2003, of which the monetary policy committee (MPC) convenes on Thursday every six weeks to decide on appropriate actions with respect to key policy rates. The MPC consists of seven members of the board, including the CBE's governor and two deputy governors. To enhance transparency, the MPC's decisions are communicated to the market through a statement, which is released on the CBE's external website immediately following each MPC meeting. Furthermore, a monetary policy department (MPD) was established with the aim of providing objective monetary policy analysis, assessment, and modalities of communication with the market through its research and other functions.

In 2005, according to the presidential decree No. 17, a coordinating council for monetary policy was established under the chairmanship of the prime minister. The purpose of this council is to enhance consistency of the economic objectives among the government and the central bank. Members are the ministers of finance, planning, investment and the governor of the CBE, the two deputy governors, in addition to a number of some international experts.

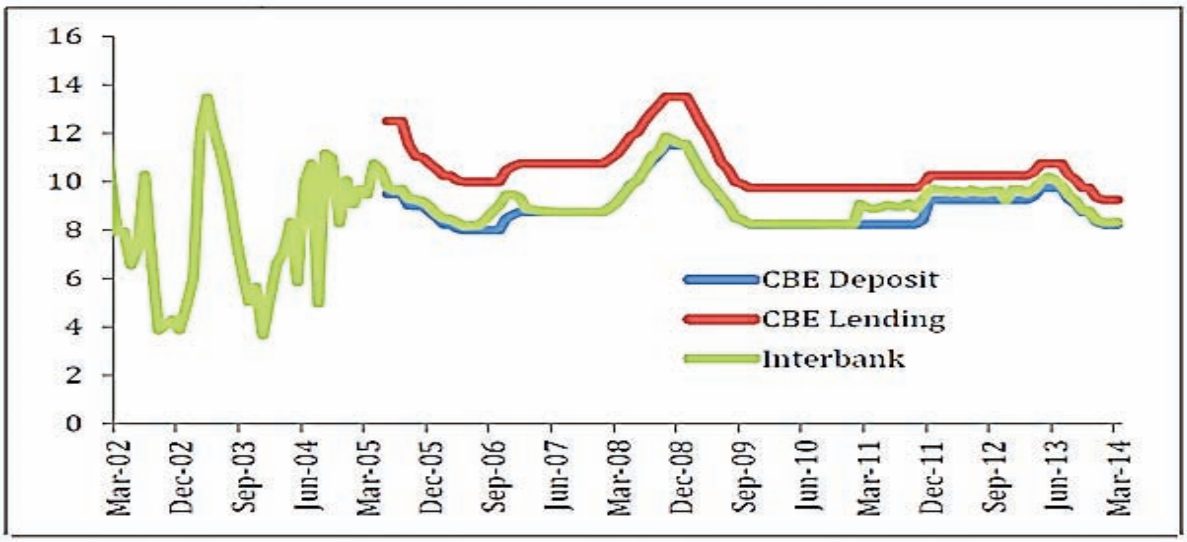
2. The Current Monetary Policy Regime

Monetary policy regimes can be categorized into a regime with an implicit nominal anchor and there are alternative frameworks adopted by central banks, namely: money targeting, exchange rate targeting and inflation targeting (Czech National Bank, 2014). On June 2, 2005, the CBE's monetary policy framework abandoned a money targeting regime in favor of putting in place an inflation targeting regime. Over the transition period, which expanded to date, the monetary policy regime

could be expressed as a regime with an implicit nominal anchor, as the CBE does not publicly pre-announce an inflation target or a succession of targets that it is determined to achieve.

However, the CBE moved from a quantitative operational target, excess reserves, to a price target, overnight interbank rate, in June 2005. It launched two overnight standing facilities, one for deposit and one for lending, which define a corridor within which the interbank rate should fluctuate. The corridor system limited the volatility of interbank rates witnessed during the monetary targeting regime and enabled monetary policy implementation to control interbank rates via the adjustment of key policy rates, i.e. the rates of open market operations and standing facilities **Chart (1)**.

Chart (1): Overnight Interbank and CBE Corridor Rates
(Monthly average, in percent)



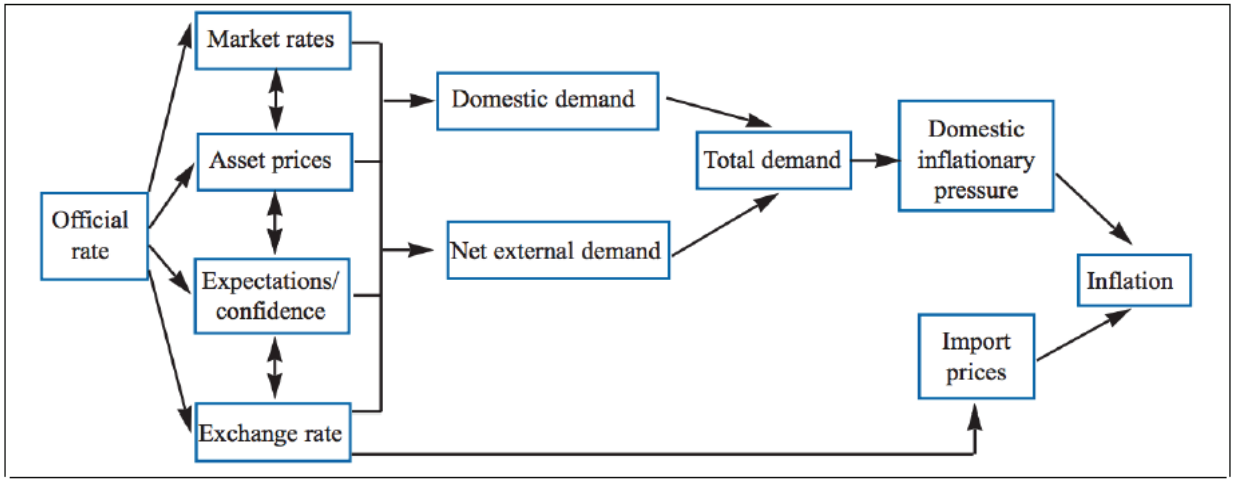
Source: Monetary Policy Department, Central Bank of Egypt.

The Transmission Process

The model of the economy used for monetary policy analyses at the Monetary Policy Department (MPD) is based on the principles of the new neoclassical syntheses (Goodfriend and King,1997). In this context, over the short-run, monetary policy can affect real activity and successively inflation given the existence of imperfections, but it has little direct effect on the supply capacity. Over the long-run when equilibrium is restored, monetary policy determines only the nominal value of goods and services i.e. the general price level.

Chart (2), describes key channels of the transmission of changes in the official rate to inflation. The figure is from the Bank of England (2012) as it embodies the MPD's view, which is also in line with the transmission mechanism published by many central banks. Changes in key policy rates immediately transmit to market interest and exchange rates. There is a direct effect of exchange rate changes on domestic inflation via prices of imported goods. The other effects are indirect and occur via changes in aggregate demand. These are induced by both, long- term interest rates –either directly or via their effect on asset prices– and the exchange rate. It is important to highlight that it is real interest rates, particularly the longer-term, that affect other asset prices and spending in many transmission channels. Nominal wage and price rigidities imply that a change in the nominal policy rate affects real interest rates directly. Long-term interest rates are defined as an average of the current interest rate and the expected future path of interest rates Thus, expectations play an important role, as policy can have an impact on both, inflation expectations and expectations of future rates. Woodford (2003) regards management of expectations as a primary responsibility of the monetary authority.

Chart (2): The Transmission Mechanism of Monetary Policy



Note : For simplicity, this chart does not show all interactions between variables, but these can be important.
Source: Monetary Policy Committee, Bank of England.

Changes in expectations, market rates, asset prices and the exchange rate then impact aggregate demand and inflation. According to Boivin, Kiley and Mishkin (2010) the transmission channels can be categorized into neoclassical channels, in which financial markets are perfect, and non-neoclassical channels that involve imperfections, other than nominal wage and price rigidities, referred to as the credit view.

The importance of non-neoclassical channels is difficult to assess, because the theoretical guidance for this type of macroeconomic empirical research has been limited. Neoclassical channels are built upon the core models of investment, consumption and international trade. For investment, the key channel is the direct interest rate channel operating through the cost of capital (Jorgenson, 1963) and the closely related Tobin 's (1969) q channel. For consumption, the channels operate through wealth effects and inter-temporal substitution effects, in terms of the life-cycle hypothesis of saving and consumption developed by Brumberg and Modigliani (1954). For trade, the direct channel operates through the exchange rate and its effect on net exports.

To quantify the magnitude, persistence and time-span of policy impulses, while striving to incorporate the findings of the science of monetary policy about the transmission process, particularly Lucas's (1976) critique, price rigidities, and the importance of expectations, the MPD developed with IMF-technical assistance a semi-structural quarterly gap-model for policy analysis with partly forward-looking economic agents. The model is semi-structural because equations have clear micro-based foundations and can be derived from first order principles of rational agents, however, some ad-hoc rigidities and features were added to replicate the Egyptian data. The model is a gap model because of the assumption that the evolution of any real variable has two basic components. The first component is the trend, which is the part driven by economic fundamentals and out of the scope of monetary policy. The second component is the gap, which represents the behavior of a variable within the business cycle, and can be determined by monetary policy actions in the medium term horizon.

The model encompasses around sixty equations. However, it can be described using four behavioral equations known in the literature as (1) New Keynesian Phillips curve (NKPC), (2) Uncovered Interest Rate Parity (UIP), (3) output gap equation (IS-curve), in addition to (4) a monetary policy rule (Taylor-rule). These set of equation are completed using some important identities and definitions. The basic equations are in the Appendix. The NKPC (equations 1-5) incorporates partly forward and backward looking expectations. It satisfies the long-term monetary policy neutrality condition as the parameters in front of the expectations sum up to one.

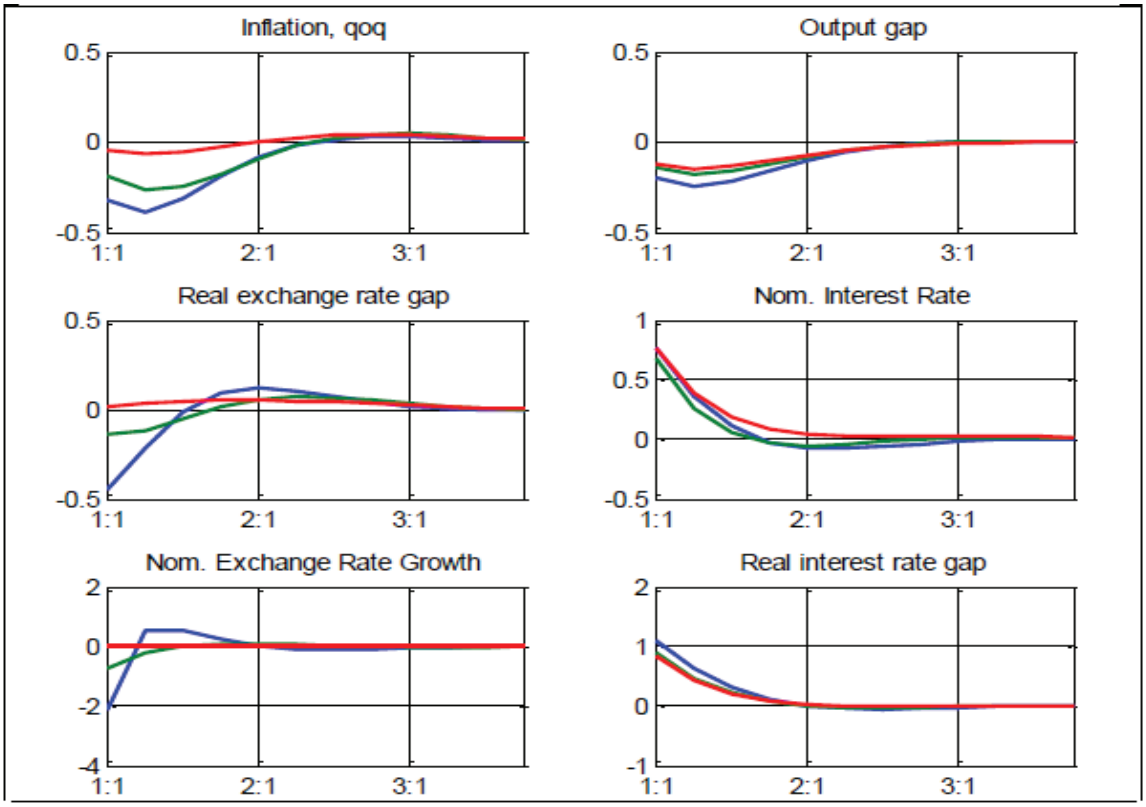
Furthermore, the equation postulates real marginal costs (RMC) as a source of inflation. The UIP (equations 6-8) was modified from standard UIP representation, which in its simplest case relates the expected exchange rate to interest rate differential and to the risk premium. Here it was designed to allow for interventions by the CBE. The output gap (equations 9-10) allows for persistence and is inversely related to real monetary conditions index (RMCI) and positively related to the foreign output gap. The monetary policy rule (equation 11) proves a standard monetary policy reaction function under inflation targeting, but further captured the effects of different monetary policy regimes[29].

Consequently, responses to a monetary policy impulse can be analyzed under different policy regimes, which is especially useful during the transition from the current regime with an implicit nominal anchor to a pure inflation targeting regime. Impulse-Response functions are presented in Figure 3. The blue line indicates a pure inflation targeting regime, the red line indicates a fixed exchange rate regime, and the green line indicates an intermediate regime. Results imply that monetary policy has the strongest and fastest effect on inflation in a pure inflation targeting regime and the weakest in a fixed exchange rate regime. In the intermediate regime, the full impact of a 1 percentage point interest rate shock on inflation is around 0.3 percentage points. It takes around 6 months to reach the full impact and the shock is not persistent as effects fade away completely after around 2.5 years. This is somewhat faster than what Al-Mashat and Billmeier (2008) estimated using a VAR-model, quantifying the impact of a monetary policy measure on inflation to take around 9 months and to fade away completely after 3 years. In part, the reason why the semi-structural model exhibits faster dynamics is that it contains an endogenous policy response function, i.e. a monetary policy reaction consistent with fulfillment of an inflation target. Such a reaction is necessary in the

[29] In the context of IMF technical assistance to the CBE, two experts from the Czech National Bank spent 6 consecutive months in 2008 with the Monetary Policy Department at the CBE to design a small open economy gap model with forward looking expectations and with the endogenous monetary policy response, which can be classified as a reduced form New Keynesian Model (NKM). Model properties, impulse responses and forecasting abilities were assessed. The model provided acceptable assessment of initial conditions and reasonable forecast results and alternative policy response scenarios through 2009Q1 before challenges started to emerge. The Monetary Policy Department amended the original model in an attempt to solve the disconnect that started to emerge between the observed inflation and the model generated measures of inflationary pressures that continued following the successive supply shocks that faced the economy. While improvements continue to be tested on the core model, other near-term forecasting models are used to forecast inflation and present to the Monetary Policy Committee every quarter.

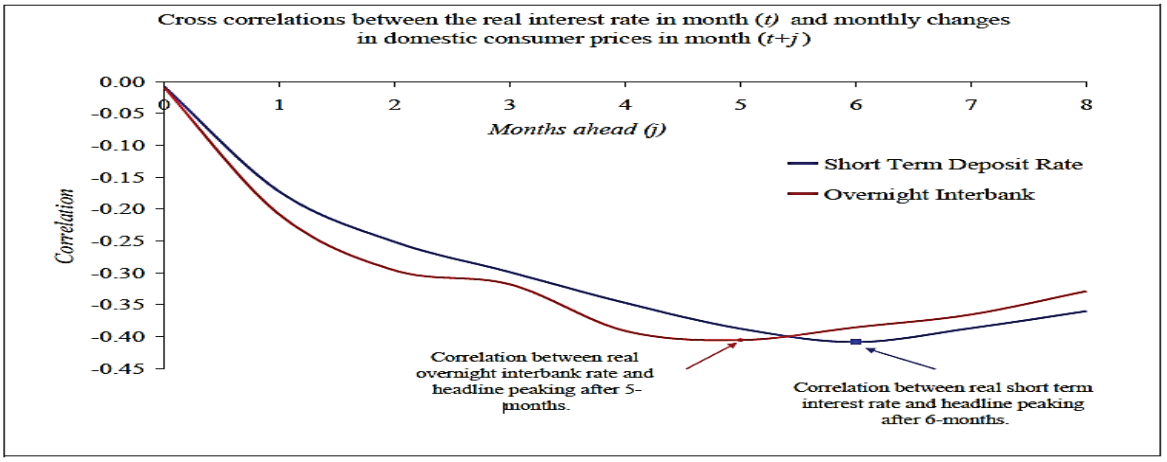
transition towards an inflation targeting regime. Analyses via cross correlations reveal similar results to the semi-structural model, albeit with a somewhat stronger magnitude Chart (3).

Chart (3): Responses to 1 Percentage Point Monetary Policy Impulse in Semi-Structural Model



Source: Monetary Policy Department, Central Bank of Egypt

Figure 4: Cross Correlations of Interest Rates and Inflation



Source: Monetary Policy Department, Central Bank of Egypt.

The Role of Money

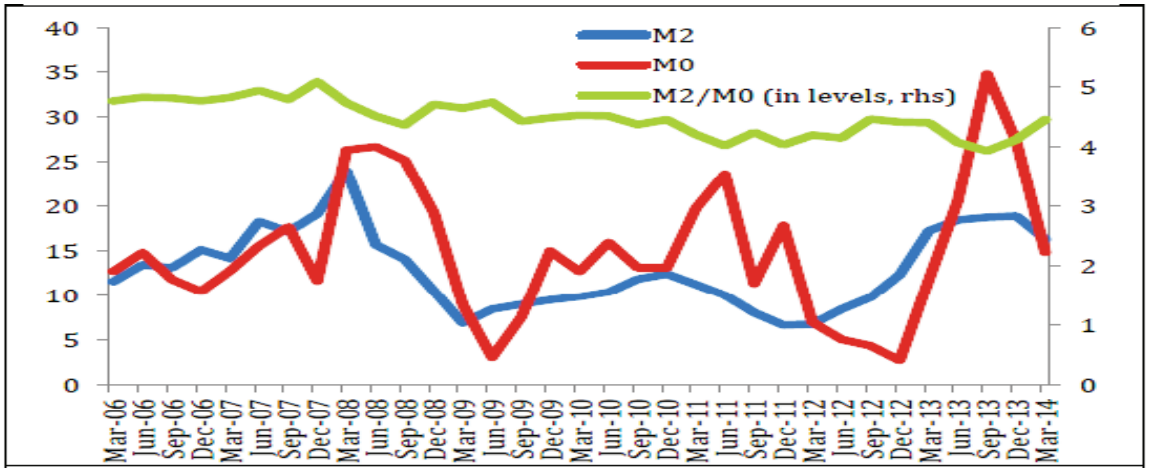
Based on the New Keynesian model described above, which has become the principal workhorse among central bankers and academic economists for forecasting and policy analyses, short-term interest rates have become the main policy instrument without direct concern for monetary aggregates (Beck and Wieland, 2010). In part, that is why the CBE's monetary policy framework moved from a quantitative operational target (excess reserves) to an interest rate target (overnight interbank rate) in June 2005. Under money targeting, broad money serves as an intermediate target that provides information about the expected path of the ultimate target (prices), as the inflation forecast serves as an intermediate target under inflation targeting.

The central bank strives to control the intermediate target via its operational target, which is excess reserves or base money more generally in the case of monetary targeting, and short-term interest rates in the case of inflation targeting. The most important reasons for abandoning money targeting are related to the potential timely instability of money demand and velocity, in addition to the limited ability to control broader monetary aggregates via base money or excess reserves, i.e. the instability of the money multiplier.

More recently in Egypt a significant wedge between M2 and M0 appeared in abrupt phases as in June 2011 and September 2013 (Figure5). In many countries, sources of the instability were largely the result of a combination of deregulation and a wave of financial innovation by banks and other financial entities that resulted in important changes in the way that the public held their financial assets, significantly affecting the various measures of money (Freedman and Laxton, 2009). In the words of the Governor of the Bank of Canada (Bouey, 1982) "we didn't abandon the monetary aggregates, they abandoned us".

Figure 5: Broad Money (M2), Base Money (M0), Money Multiplier (M2/M0)

(End of quarter, year-on-year growth, in percent, unless otherwise stated)



Source: Monetary Policy Department, Central Bank of Egypt.

Patinkin (1965) explains the transmission process of money to prices via the real balance effect, after clarifying that the supply and demand dispositions of economic agents depends on their real money balances (M/P), which is part of their net assets. Money is an asset only when it is "outside money", i.e. a liability of the public sector (Central bank / government). Higher outside money then raises the initial money volume at temporary constant prices, which raises real money balances and net assets of economic agents. Higher net assets spur higher consumption to savings ratio, which cause excess demand for goods and services and thus higher prices.

The transmission mechanism via short-term interest rates is different compared to the transmission mechanisms outlined in many textbooks, which begin with changes in money supply. It may also seem to differ from the central tenet in monetary economics that 'inflation is always and everywhere a monetary phenomenon" (Friedman, 1963). However, the central message of Friedman's proposition remains basically intact, if we shift our attention away from monetary aggregates, and look at interest rates or prices more generally (Shirakawa, 2014). For each path of the policy rate there is an implied path for monetary aggregates (Bank of England, 2012). For instance, a cut in policy rates induces reduction in bank lending rates, which would likely lead to higher loan portfolios and broad money.

The monetary view is usually motivated by the quantity theory of money developed, among other, by Fisher (1911). The theory suggests that the price level (P) varies directly and proportionally with the quantity of money (M). It is derived from the identity, equation of exchange (Mill, 1848),

$$\boldsymbol{Mv \equiv PY^r}$$

After assuming the stability of the velocity ($\boldsymbol{v}$) of money and the exogenity of the real GDP ($\boldsymbol{Y^r}$), yielding:

$$\mathbf{P}= \boldsymbol{M}\ \frac{\bar{v}}{\overline{Y^r}}$$

According to Duwendag (1999), the inflation theory above can be transformed into a money demand theory as follows:

$$\boldsymbol{M^d\ =\ \frac{1}{\bar{v}}\ P\overline{Y^r};M^d\ =\ \overline{M^S}}$$

This theory states that the money holding of economic agents is a constant percentage of their nominal income, which in equilibrium is equal to the exogenous money supply. Fisher (1916) assumes that velocity is constant over the short term because it mainly depends on institutional and technical factors like developments of payment systems and payment habits of economic agents, which vary relatively slowly. Pigou (1917) and Marshall (1923) additionally explain money holdings as one form of net asset holdings; hence they stress the importance of factors such as opportunity costs. However, Pigou argues that these factors are constant over the short-term or exhibit a stable relationship to the nominal GDP. A more explicit formulation of the role of opportunity costs among other factors were then developed by the Keynesian (1936) liquidity preference theory and other modern money demand theories.

An error correction specification (Andrle et al., 2013) that allows for both, short- and long-run dynamics, and illustrates the role of velocity and liquidity shocks can be presented as follows:

$$\boldsymbol{\Delta m_t\ =\ w_y\,\Delta\,y_t\ -\ w_{rs}\,\Delta\,rs_t\ -\ \Delta v_t\ +\ w_m\,\widehat{m}_{t-1}\ +\ \mathcal{E}_t^{m_d}}$$

Changes in demand for real money balances ($\boldsymbol{\Delta m_t}$), where ($\boldsymbol{m_t = M_t - P_t}$), depend on the growth rates of output (Y_t), the nominal interest rate (rs_t), velocity (v_t), and the real money gap ($\widehat{m}_t$). The real money gap is defined as the error–correction term, i.e., the deviation between real money balances from their long run trend:

$$\widehat{m} = m_t - (\theta_{const} + \theta_y y_t - \theta_{rs} rs_t - v_t)$$

Velocity is assumed to follow the autoregressive process in first differences:

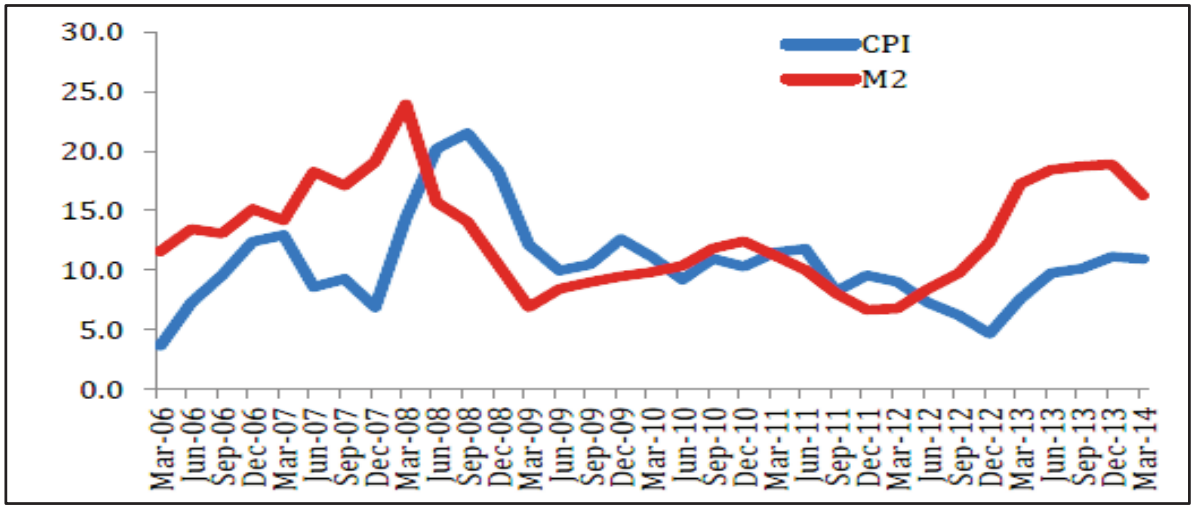
$$\Delta v_t = p_v \Delta v_{t-1} + (1 - p_v)\Delta\overline{v} + \varepsilon_t^v$$

This specification implies that we can distinguish two types of exogenous changes in money demand: liquidity $\varepsilon_t^{m_d}$ and velocity ε_t^v shocks. These shocks drive a wedge between the final outturn of monetary aggregates and the monetary policy stance. While shocks to velocity have persistent effects on the demand for money, liquidity shocks have temporary effects, with persistence determined by the error–correction specification of money demand.

Al-Mashat (2009) and more recent empirical work internally within the Monetary Policy Department (2013), covering the period between 2003:Q1 and 2013:Q3, examine the effect of the real money gap on inflation. These exercises were motivated by the principle that in the long term, there is a positive relationship between monetary aggregates and the general price level (Figure 6).

A money growth persistently higher than the growth of the real economy will ultimately impact inflation.

Chart 6: Money and Inflation
(end of quarter, year-on-year growth, in percent)

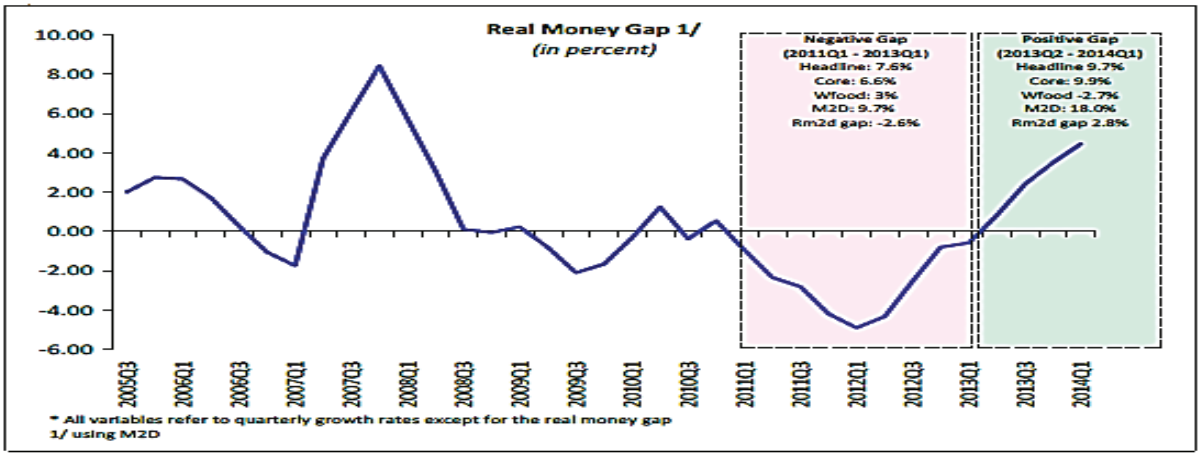


Source: Monetary Policy Department, Central Bank of Egypt.

The recent study shows that a positive money gap has been building up since the end of 2012 and during 2013, which contributes to underlying inflationary pressures, chart (7). The gap has been widening at a rapid pace to reach 3.5 percentage points as of 2014:Q1 up from 0.8 percentage points recorded in 2013:Q2. This comes as the largest real money gap since 2007:Q4. It is worth to mention

that the emergence of the money gap was largely driven by excess borrowing of the government from the banking system. During the first 8 months of fiscal year 2013/14, the share of net claims on the government of the total change in broad money was 116 percent.

Chart 7: Real Money Gap
(in percent)



Source: Monetary Policy Department, Central Bank of Egypt.

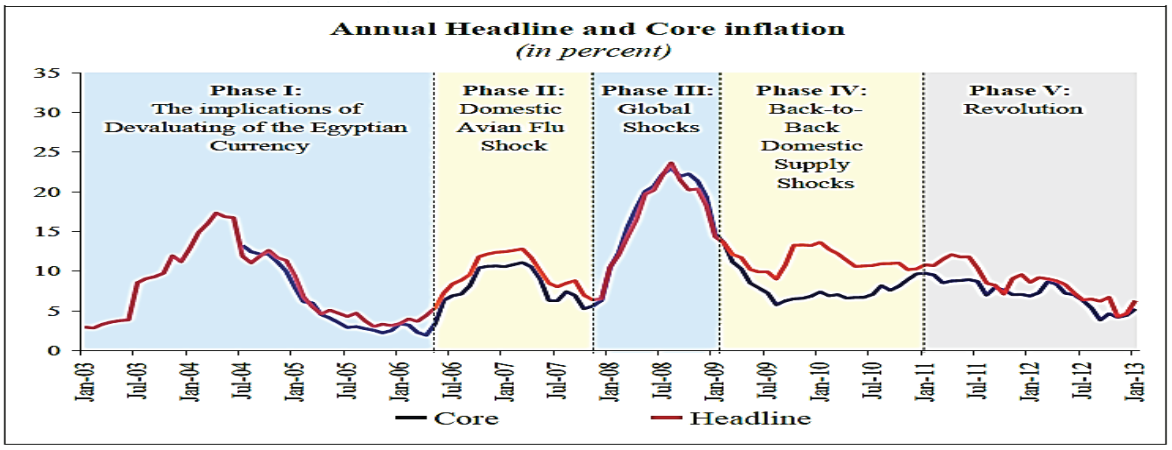
Thus, while monetary aggregates are neither an operational nor an intermediate policy target, they provide corroborative and sometimes leading indicators of the course of spending behavior, especially that they are available in advance of much of the national accounts data. Moreover, shocks to spending can have their origin in the banking system and not directly caused by changes in interest rates. For instance, this can occur via a credit crunch caused by losses of capital on non-performing loans which lead to tighter lending conditions (Bank of England, 2012).

3. The Recommended Monetary Policy Regime

Performance and Challenges of the Current Monetary Policy Regime

Inflation has undergone several phases, where it was largely affected by successive supply shocks, in addition to one short period of demand pressures in 2008, Chart (8). These shocks were mainly characterized by food supply shortages along with disruptions in distribution channels of butane gas cylinders. In 2003 and 2004, as well as more recently, the exchange rate depreciation has led to more widespread price increases across the CPI basket.

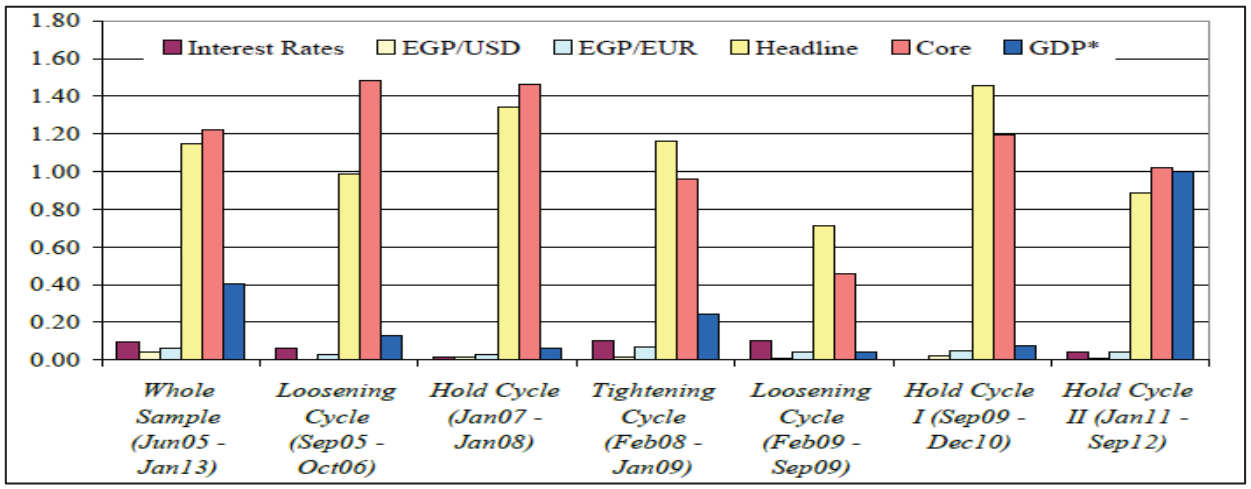
Chart 8: Cycles of Inflation
(year-on-year growth, in percent)



Source: Monetary Policy Department, Central Bank of Egypt.

Splitting the monetary policy cycles into six periods with conditions characterized as either tight or loose, it is clear that the volatility of the monetary policy tools, whether the interest or the exchange rate, were significantly lower than the volatility of both GDP growth and the two inflation measures, chart (9). In fact, the volatility of inflation was more than 12 times that of the overnight interest rate and 24 times that of the exchange rate. This indicates that it was the monetary policy objectives that acted as shock absorbers, rather than the monetary policy tools[30]

Figure 9: Variability of The Tools Vs. Objectives
(standard points)

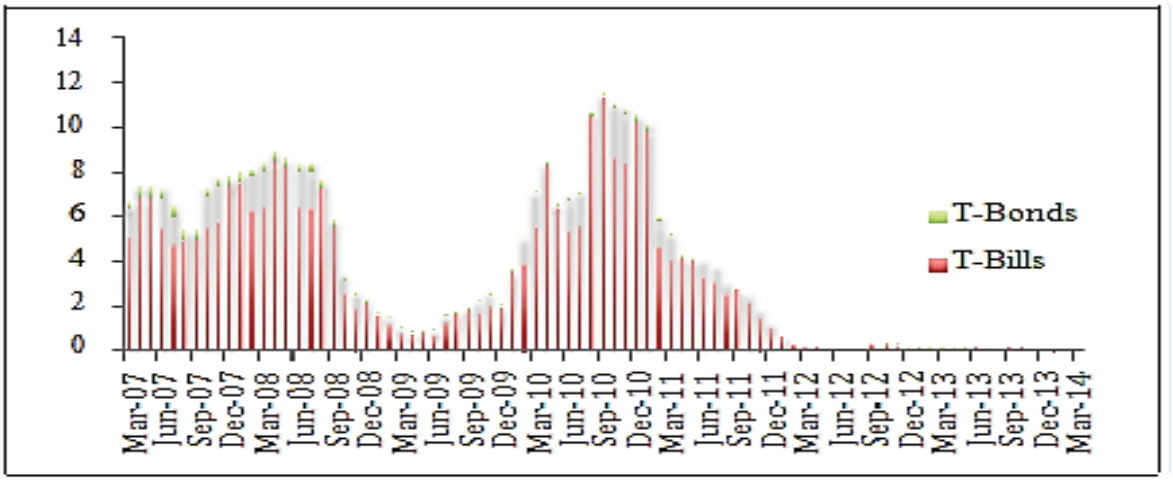


* GDP Chart include data until September 2012 excluding 2011 Q1
Source: Monetary Policy Department, Central Bank of Egypt.

[30] It is worth noting that there was a structural break in the GDP growth rates since the revolution in 2011, which dropped from an average of 5.1 percent in 2009 and 2010 to an average of -0.8 percent in 2011, increasing the volatility by 13 times compared to the period between September 2009 and December 2010.

Furthermore, the capital flight following the 2011 revolution, chart (10) undermined the transmission of changes in interest rates to exchange rates.

Chart (10): Foreign Holding of Government Securities
(in USD billion)



Source: Monetary Policy Department, Central Bank of Egypt.

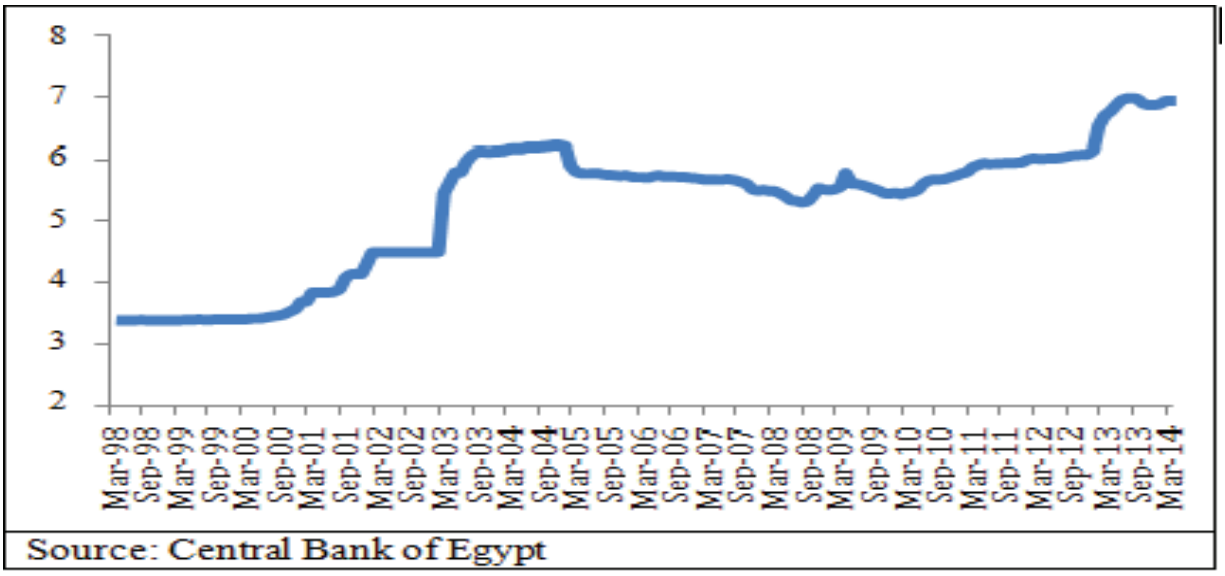
The lack of an explicit and sustainable nominal anchor weakened the effectiveness of the monetary policy framework and made it difficult to use the expectations channel, which, as described above, can be regarded as a primary responsibility of the central bank. Moreover the lack of coordination with other economic ministries about the inflation objective exacerbated the repercussions of supply shocks on inflation outturns.

The Need For an Explicit, Sustainable Nominal Anchor

It is the role of a monetary policy framework to provide a nominal anchor to the economy. A nominal anchor is a nominal variable that monetary policy can use to tie down the price level. The economy's general equilibrium forces determine a set of relative prices. Assuming that there are N-markets in the economy, the number of equilibrium relative prices should therefore be N-1. In this general equilibrium framework, the nominal scale of the economy, i.e. the price level in terms of domestic currency, is not determined. Thus, fixing the price of any nominal variable would determine the nominal scale of the economy (Martinez,2010). Traditionally, the exchange rate has served as the main nominal anchor in Egypt with long periods of nominal exchange rate stability followed by occasional depreciations, chart (11).

Chart (11): The EGP/USD Exchange Rate

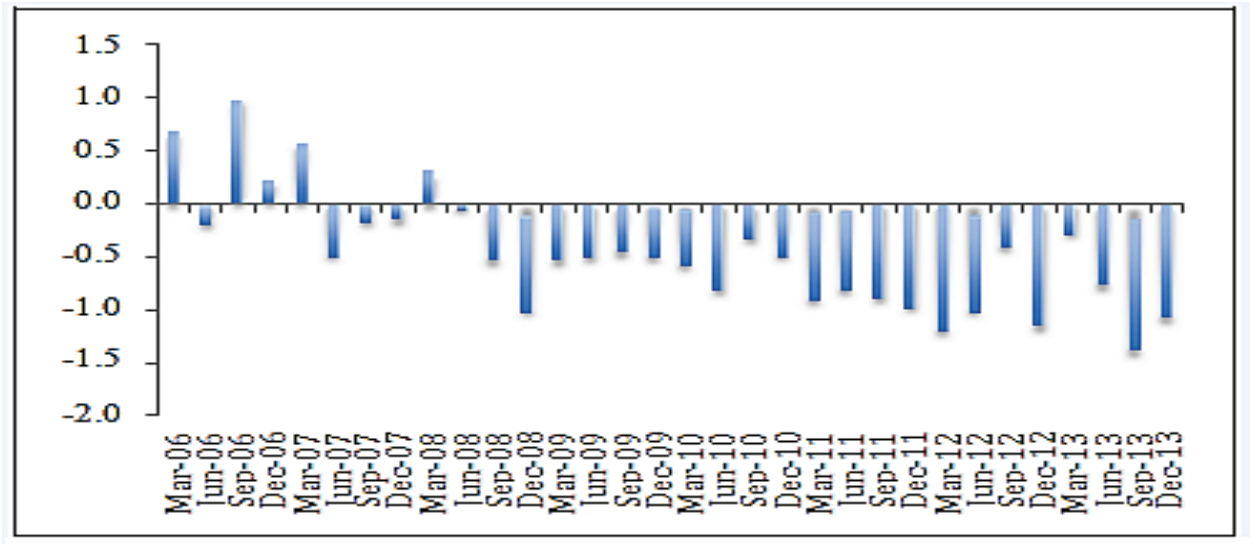
(monthly average, in levels)



However, for the exchange rate to sustainably serve as a nominal anchor, the current account balance must exhibit sustained surpluses to accumulate reserves in order to strengthen the central bank's credibility in pursuing its exchange rate management regime and its ability to combat speculative attacks. However, this is not the case as actual current account balance outturns, excluding official transfers, has frequently recorded deficit in the previous years, chart (12).

Chart 12: The Current Account Balance as %GDP,

Excluding Official Transfers



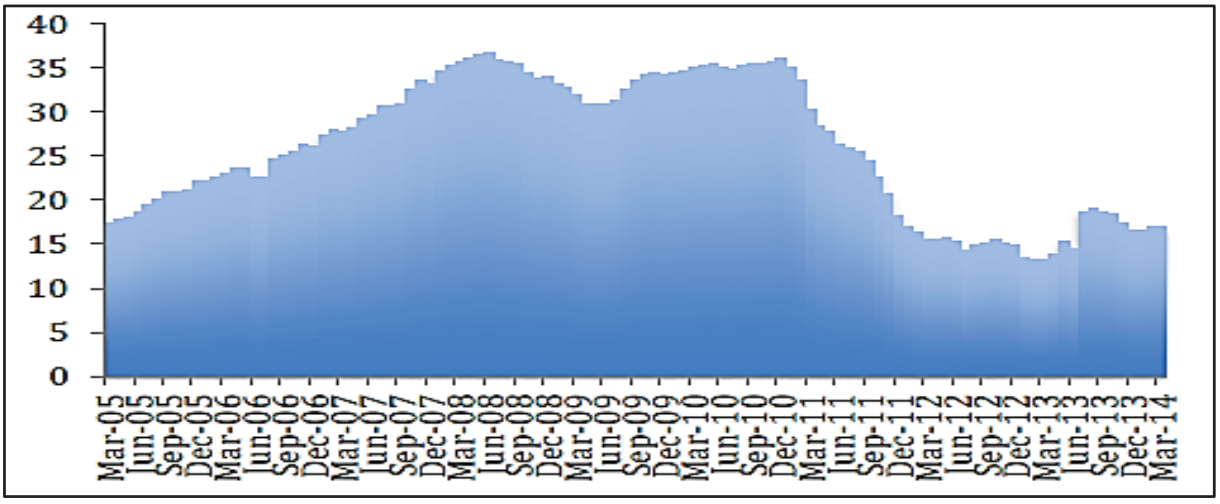
Source: Monetary Policy Department, Central Bank of Egypt.

Even taking official transfers into account, gross international reserves are close to the threshold of three months of next year's imports chart (13), which is considered the minimum level consistent with external viability.

Nevertheless, dollarization per se did not occur in the banking system following the 2011 revolution given a set of administrative rules and controls that prevented it in addition to the rationing of foreign exchange auction volumes. Consequently, exchange rates in unofficial markets emerged.

Chart (13): Gross International Reserves

(in USD billions)



Source: Central Bank of Egypt.

Thus, it can be concluded that under such an environment it is difficult to credibly pursue exchange rate targeting. In addition, it would undermine the independence of monetary policy to pursue domestic stability objectives in the context of the open economy trilemma (Obstfeld and Taylor, 1997) and optimal monetary policy. Furthermore, the loss of international competitiveness would be exacerbated, leading to a further deterioration of external balances.

Consequently, in the context of the monetary policy regime categories highlighted in the overview, and as money targeting was abandoned in June 2005 as described above, we recommend inflation targeting as the sustainable monetary regime with an explicitly announced inflation target and communicated forecast to anchor expectations of economic agents. This recommendation is in line with the objectives of the CBE's monetary policy framework change in June 2005.

Recommended Monetary Policy Regime: (Flexible) Inflation Targeting

The science of monetary policy reflected in the elements of the new neoclassical syntheses has received consensus by almost all academic economists and central bankers. Even the lessons from the 2007-2009 global financial crises did not in any way undermine or invalidate them (Mishkin, 2010). The monetary policy strategy that follows from the elements of the new neoclassical synthesis is referred to in the academic literature as flexible inflation targeting. It involves a strong, credible commitment by the central bank to stabilize inflation in the long run, often at an explicit numerical level, but also allows for the central bank to pursue policies to stabilize output around its natural level in the short run.

The main difference between this suggested regime and the current regime is the explicit announcement of a numerical target, a nominal anchor; and guiding expectations of economic agents towards this anchor via a well-designed communication strategy that is transparent and reflects the CBE's understanding of the economy. Compared to the current regime, it can only result in improved performance, as the CBE would be able to employ an additional transmission channel, the currently untapped expectations channel. The cost of dealing with the successive supply shocks that have faced the Egyptian economy are expected to decline as expectations become better anchored.

In the literature, a relatively long list of requirements has been identified for countries to successfully operate an IT framework. These requirements include, but are not limited to: (i) a strong fiscal position and entrenched macroeconomic stability, (ii) a well-developed financial system, (iii) central bank instrument independence and a mandate to achieve price stability, (iv) reasonably well-understood channels between policy instruments and inflation, (v) a sound methodology for devising inflation forecasts, and (vi) transparent policies to build accountability and credibility. The background for implementing IT— in particular the initial conditions— has been very diverse among IT countries, including the initial inflation rates at the time of inception, the degree of exchange rate flexibility, the level of financial sector development, the government's fiscal position, and the levels of economic growth. Experience has shown that the transition to IT can vary greatly from one country to another. For instance, Chile spent more than 10 years in a transition from quasi IT to fully- fledged IT. On the other hand, Brazil's transition was triggered by a crisis and continued for only a number of months.

Al-Mashat (2011) assesses and contrasts Egypt's preparedness for inflation targeting and highlights a number of key points. Banking Law 88 of 2003 grants the central bank of Egypt instrument independence and declared price stability as the overriding objective. The CBE has enjoyed operational (instrument) independence as monetary policy decisions are the sole responsibility of the Monetary Policy Committee (MPC) within the CBE. Moreover, the CBE has strengthened its analytical and forecasting capabilities despite data shortcomings. Alternative models to forecast inflation have been developed. Assessing and improving the current forecasting models used in monetary policy formulation is a continuous process. Furthermore, in the Egyptian context, to enhance transparency and help anchor inflation expectations, MPC's decisions are communicated to the market through a monetary policy statement, which is released on the CBE's external web-site after each meeting. In addition, the MPD has completed an inflation report, which was shared with several central banks and international organizations for feedback. While the report is presented during MPC meetings, it has not been published yet. Nonetheless, compared to other emerging market countries that have adopted IT, Egypt's budget deficit has been considerably higher and widened following the revolution as reflected in the size of the public debt. A widening budget deficit is not uncommon in the period leading up to the implementation of inflation targeting, since in some cases it marks the culmination of a crisis that forces the abandonment of a currency peg. A process of fiscal consolidation is underway in Egypt which is consistent with the move towards inflation targeting.

Hence from the analysis in Al-Mashat (2011) it appears that there is nothing inherent in Egypt's economy that would disqualify it from adopting an IT framework, notwithstanding a few areas of improvements such as consolidating the fiscal position through a transparent medium-term fiscal consolidation strategy and improving the macroeconomic database.

Challenges of the Inflation Targeting Framework

The challenges of adopting inflation targeting would not be Egypt specific. The theory of optimal monetary policy starts by specifying an objective function that represents economic welfare, and then maximizes this objective function subject to constraints that are provided by a macro-econometric model of the economy (Mishkin, 2010). Both the objective function and the constraints are based on the principles of the new neoclassical synthesis and are embodied in a linear quadratic framework with a representative agent.

However, the dynamic behavior of the economy may well exhibit nonlinearities in response to some shocks. Moreover, the use of a quadratic objective function does not reflect the extent to which most individuals have strong preferences for minimizing the incidence of worst-case scenarios. Furthermore, the distribution of shocks hitting the economy is more complex. In some instances, the uncertainty facing the economy is clearly skewed in one direction or another. In addition the shocks hitting the economy may exhibit excess kurtosis, that is, tail risk, because the probability of relatively large negative disturbances is higher than would be implied by a Gaussian distribution. Finally, as developments in the financial sector can have a major impact on economic activity undermines the representative-agent framework.

4. Conclusion

Egypt's main challenge following the three-year transition after the 2011 revolution is the restoration of macroeconomic stability: sustainable economic growth, low and stable inflation, the viability of external and fiscal accounts. At the center of macroeconomic stability is the expected fiscal consolidation, which involves price adjustments of many administered goods and services with a direct impact on inflation. Therefore it becomes paramount for the central bank to capitalize on the steps undertaken since 2005 in its transition towards inflation targeting. A monetary policy regime with an explicit inflation (forecast) target provides benefits versus the current regime with only an implicit anchor via the activation of the untapped expectations channel. Inflation targeting would minimize the macroeconomic loss expected from the fiscal consolidation underway.

5. Appendix

Equations of the Monetary Policy Department's Semi-Structural Gap Model.

$$\pi_\tau^{Core} = b_{11}\pi_{\tau-1}^{Core} + (1-b_{11})\pi_{t-1} + b_{12}\, rmc_t^{Core} + \varepsilon_t^{Core} \quad (1)$$

$$\pi_t^{Food} = b_{21}\,\pi_{t-1}^{Food} + (1-b_{21})\pi_{t-1} + b_{22}\, rmc_t^{Food} + \varepsilon_t^{Food} \quad (2)$$

$$\pi_t^{Adm} = b_{31}\,\pi_{t-1}^{Adm} + (1-b_{31})\pi_t^{Core} + \varepsilon_t^{Adm} \quad (3)$$

$$\pi_t = Iw^{Core}\pi_t^{Core} + Iw^{Food}\,\pi_t^{Food} + Iw^{Adm}\pi_t^{Adm} \quad (4)$$

$$rmc_t^{Core} = b_{13}(w^{US}\,\hat{z}_t^{US} + w_t^{US}\,\hat{z}_t^{EU} + \hat{z}_t^{Food}) + (1-b_{13})(\hat{y}_t) \quad (5)$$

$$s_t^{US} = c_1 s_t^{USTar} + (1-c_1)[s_{t+1}^{US} + (-i_t + i_t^{US} + prem_t)/4 + \varepsilon_t^{UIP}] \quad (6)$$

$$\Delta s_t^{USTar} = c_3\Delta s_{t-1}^{USTar} + (1-c_3)[\pi_t^{Tar} - \pi_t^{US} + \Delta z_t^{US}] \quad (7)$$

$$s_t^{USTar} = s_{t-1}^{US} + \Delta s_t^{USTar}/4 \quad (8)$$

$$\hat{y}_t = a_1\hat{y}_{t-1} - rmci_t + \varepsilon_t^{Demand} \quad (9)$$

$$rmci_t = a_2\hat{r}_t - a_3[w^{US}\hat{z}_t^{US} + (1-w^{US})\hat{z}_t^{EU}] \quad (10)$$

$$i_t = d_4[d_1 i_{t-1} + (1-d_1)(i_t^{Neutral} + d_2(\pi_t - \pi_t^{Tar}) + d_3\hat{y}_t) + \varepsilon_t^{MP}] + (1-d_4)$$
$$[\Delta s_{t+1}^{US} + i_t^{US} + prem_t + \varepsilon_t^{UIP}] \quad (11)$$

π	Overall inflation	$prem$	Country risk premium
$\pi^{Core}, \pi^{Food}, \pi^{Adm}$	Core, highly volatile food items and administrated price inflation	π^{Tar}	Domestic inflation target
rmc^{Core}, rmc^{Food}	Indicator of future inflation - real marginal cost for core and highly volatile food price inflation	π^{US}	US inflation
z^{US}, z^{EU}	Real exchange rate gap computed against US and EMU	Δz^{US}	Trend in real exchange rate appreciation against US
z^{Food}	Gap of relative world food price	$rmci$	Real monetary condition index
$\hat{y}$	Output gap	$\hat{r}$	Real interest rate gap
s^{US}, s^{EU}	Nominal exchange rate EGP/USD and EPG/EUR	ε^{UIP}	Shock to nom. Exchange rate
$s^{USTar}, \Delta s^{USTar}$	Target level for EGP/USD exchange rate and growth of exchange rate target	$\varepsilon^{Core}, \varepsilon^{Food}, \varepsilon^{Adm}$	Price mark-up shocks
i	Overnight interest rate	ε^{MP}	Monetary policy shock
i^{US}	US nominal interest rate, 3M TBills		

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BANK FOR INTERNATIONAL SETTLEMENTS

AMF-BIS Working Party Meeting on Monetary Policy in the Arab Region.

Background Paper on Monetary Policy

The Kingdom of Morocco

Bank Al-Maghrib

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25–26th November 2015

Monetary Policy Implementation in The Kingdom of Morocco

1. Background

Since the establishment of Bank Al-Maghrib in 1959, the conduct of monetary policy in Morocco has undergone several changes to keep pace with developments in the national economy and the financial system in particular. With the start of the economic openness and liberalization process in the 1980s, monetary authorities gradually abandoned direct intervention in the market. As such, Bank Al-Maghrib started intervening in the money market to regulate liquidity, and undertook reforms to boost this market and diversify sources of corporate financing.

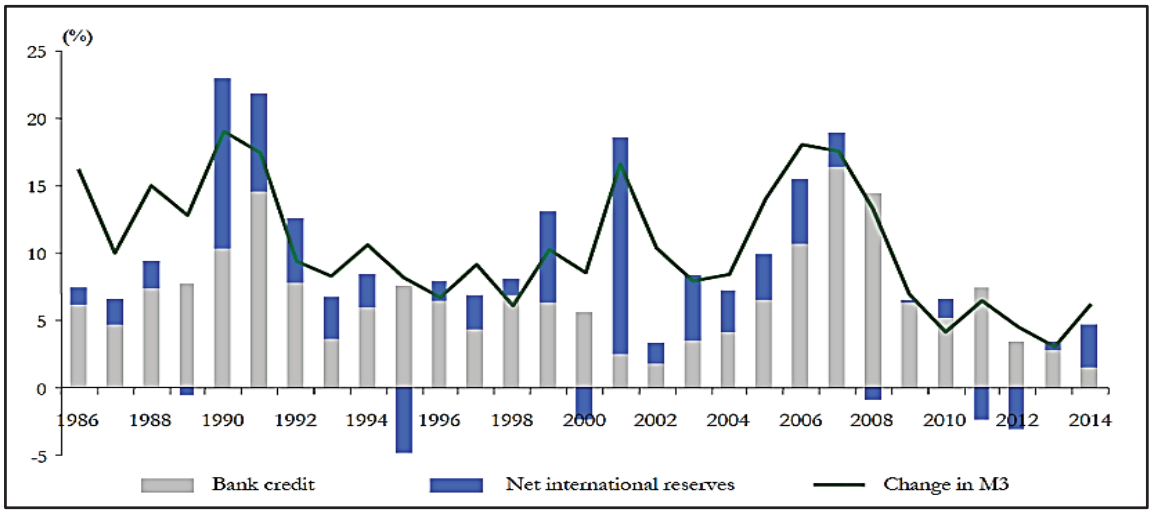
In 2006, the conduct of monetary policy saw a significant change in Morocco. Upon the entry into force of its new Statutes assigning it the overriding mission of preserving price stability, the central bank adopted a new analytical framework, similar to that of central banks with an inflation targeting framework.

Currently, the central bank conducts its monetary policy in a context of strong synchronization of the national economic cycle with that of the euro area, Morocco's main trading partner. Moreover, the national currency is pegged to a basket of currencies made up of the euro for 60 percent and the U.S. dollar for 40 percent. However, monetary policy has a degree of autonomy given the non-perfect substitutability between domestic and foreign capital markets with a capital account fully open for nonresidents but partially open for residents.

2. Monetary Policy Strategy in Morocco

Before 2006, to achieve its objective of monetary stability –and implicitly price stability–, the Bank targeted monetary growth based on its price and growth forecasts. This approach revealed its limitations due mainly to financial innovations causing instability in money demand. Considering the nature of the exchange rate regime, the massive increase in foreign reserves in the early 2000s reduced the effectiveness of monetary policy in Morocco, which led Bank Al-Maghrib to change its policy framework.

Chart 1: Contribution of Bank Credit and Net International Reserves to M3 Growth



The new Statutes, effective since 2006, give independence to the central bank, reflected in particular in the composition of its Board, consisting of independent personalities recognized for their expertise in economic analysis and finance, and the restricted resort by the Treasury to financing from the central bank.

At the same time, the Bank has implemented a new strategic framework for monetary policy, as the Board decisions are now based on the assessment of inflationary pressures and risks to medium-term inflation forecasts. These pressures are gauged according to their source (internal or external) and nature (real or monetary sector) in a forward-looking approach based on a multi-criteria analysis incorporating many indicators.

To keep inflation on a path consistent with the objective of price stability, the Bank has two main instruments, i.e. the key rate on its advances and the required reserves that regulate banks' liquidity by requiring banks to keep on their demand deposits with Bank Al-Maghrib a proportion of their liabilities.

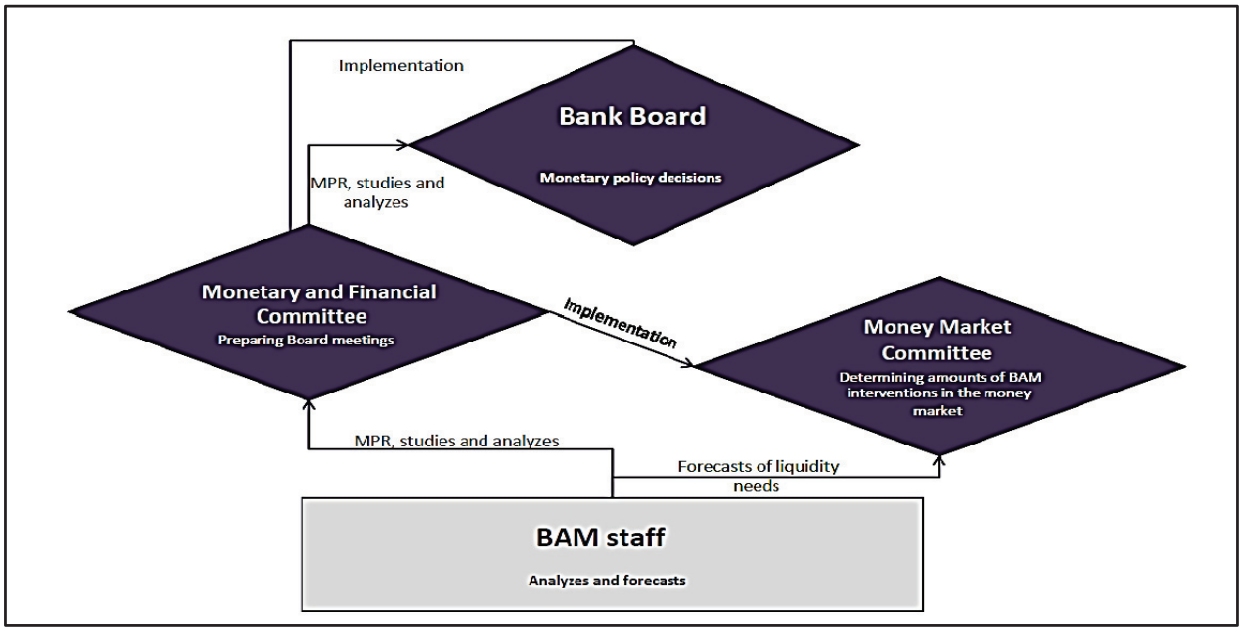
To ensure the transmission of its decisions to the real economy, the Bank has as its operational target the interbank weighted average rate, which is a benchmark for other markets. The Bank keeps this

rate close to the key rate through weekly injections responding to the banking system's liquidity needs.

This transmission is facilitated by the credibility that the Bank seeks to continuously strengthen by ensuring the transparency of its decision-making process. After each quarterly meeting of its Board, the Bank publishes a press release announcing the monetary policy decision and its basis, organizes a press conference by the Governor, and publishes the Monetary Policy Report (MPR).

In the same context, the Bank maintains constant dialogue with the banking system through quarterly meetings at general manger level to explain the monetary policy decisions and six-month meetings between the Governor and banks' CEOs. It also pursues a proximity policy with businesses, organizing meetings to communicate about the various measures taken in their interest and ensure greater consideration of their needs. Very small, small and medium-sized enterprises (VSMEs), in particular, receive special attention from the Bank. Several measures have been taken in this regard, including the recent creation of a funding mechanism to encourage banks to further finance these enterprises.

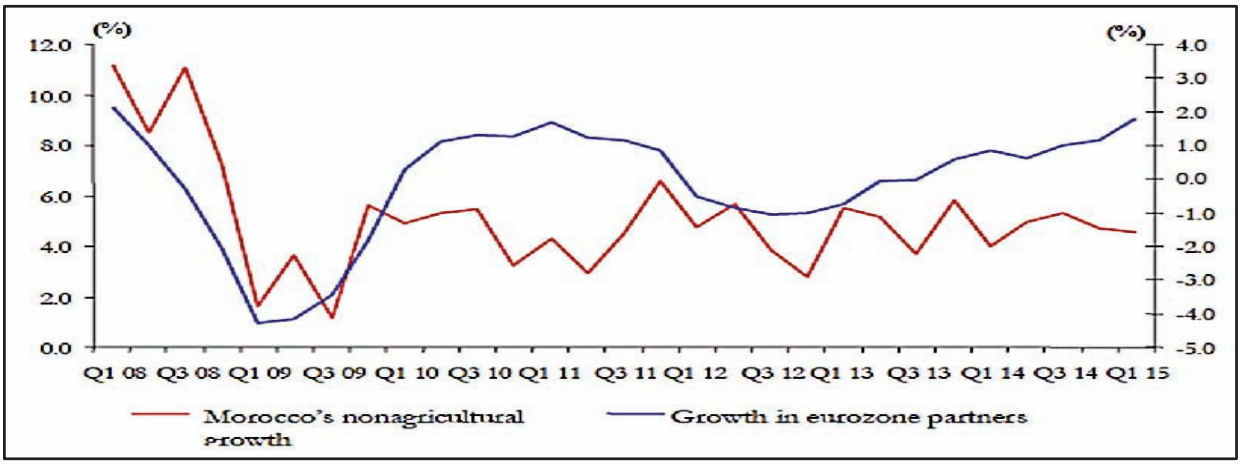
Chart 2: Decision-Making Process



3. The Analytical Framework of Monetary Policy

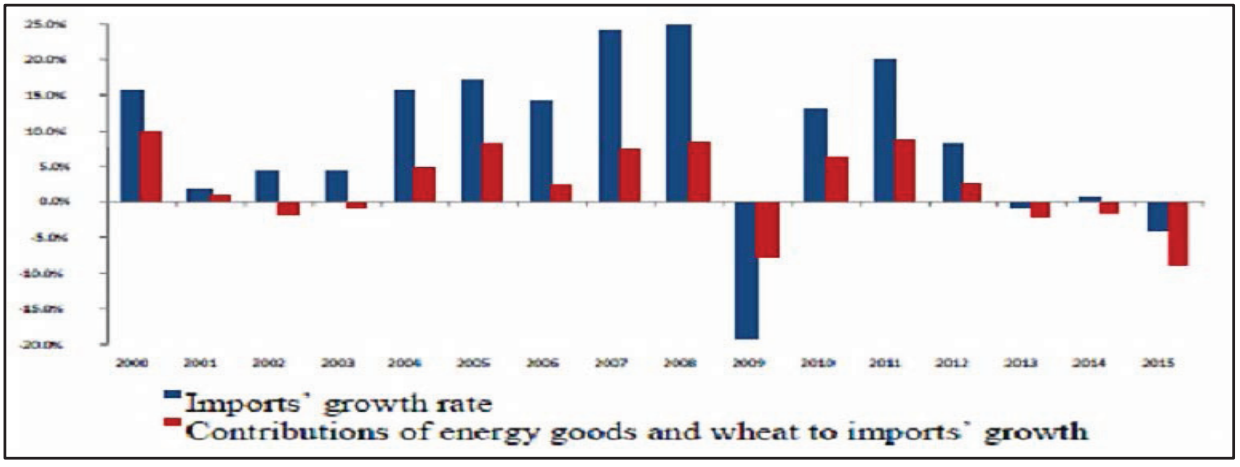
The analytical framework of monetary policy in Morocco is designed to accommodate a broad set of indicators and information to better assess medium-term risks to price stability, based on a two-pillar approach: the real economy and the monetary sphere. The analysis of the real sector is based on an in-depth review of recent economic developments, both internationally and nationally.

Chart (3): Trend in Nonagricultural Growth in Morocco
and its Eurozone Partners



Since Morocco's nonagricultural business cycle is highly synchronized with the growth of it's Eurozone partners, the analysis of the real pillar is initiated by analyzing international economic indicators (growth, unemployment, inflation, etc.).

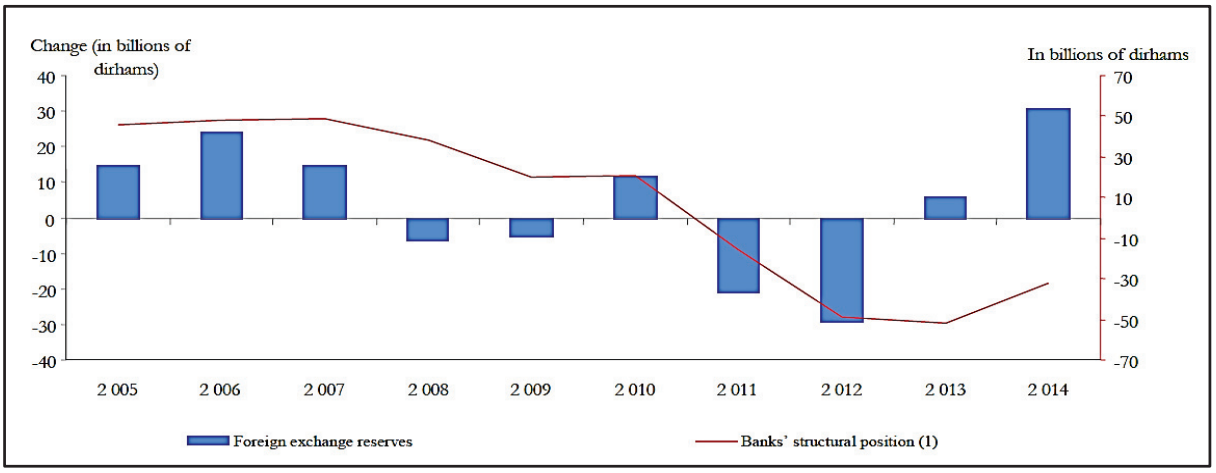
Chart (4): Change in the Contributions of Energy Goods
and Wheat to Import's Growth



Similarly, special attention is given to developments in international commodity prices,

particularly oil and wheat, which impact the current account and foreign exchange reserves as well as inflation. It should be noted that since the reform of the subsidy system in September 2013, changes in international oil prices directly feed through to domestic retail prices. These analyzes are used to make external accounts projections, especially foreign demand and net international reserves (NIR). The latter are crucial for monetary policy decisions in Morocco in view of its fixed exchange rate regime and the fact that reserves are the main factor impacting bank liquidity.

Chart 5: Change in NIR and the Structural Liquidity Position of Banks (SLPB)



(1): The SLPB corresponds to the net effect of autonomous factors on banks' liquidity. It is calculated as follows: SLPB = Net foreign exchange reserves of the central bank + Net position of the Treasury – Currency in circulation + Other net factors.

Domestically, analyzes of the real pillar are based on national accounts aggregates, wages, unemployment, output capacity utilization rate, fiscal developments, etc. These analyzes, which are both retrospective and prospective, are used to estimate the output gap and the capacity utilization rate that are the main indicators measuring inflationary pressures from the real economy.

Chart (6): Change in Non Agricultural Output Gap (in %)

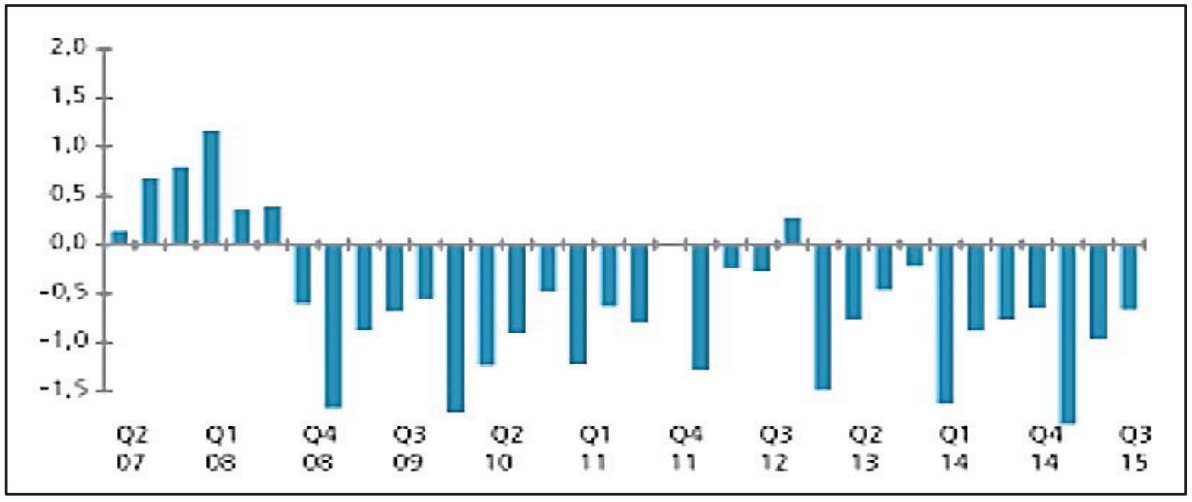
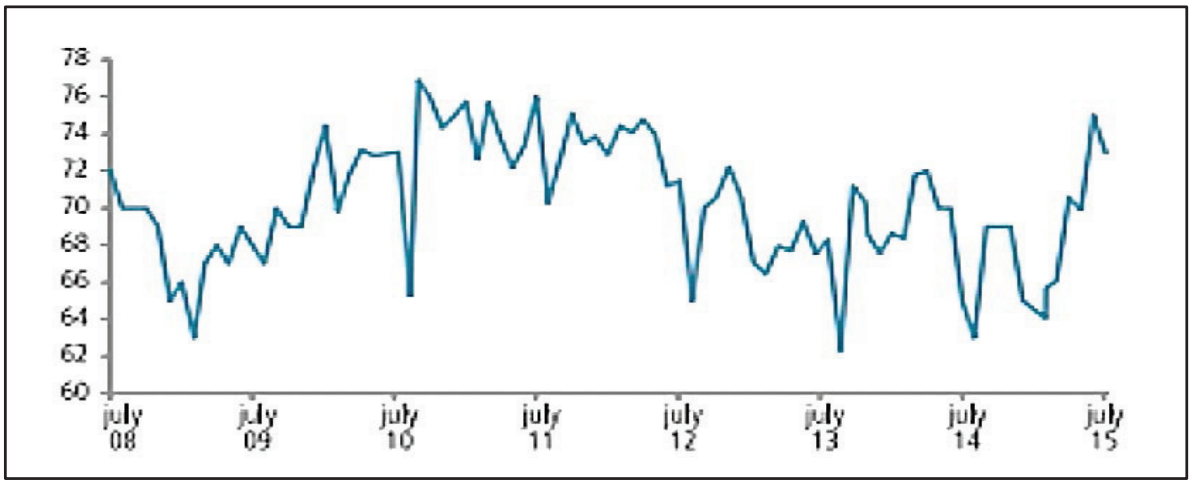


Chart (7): Industrial Capacity Utilization Rate (in %)



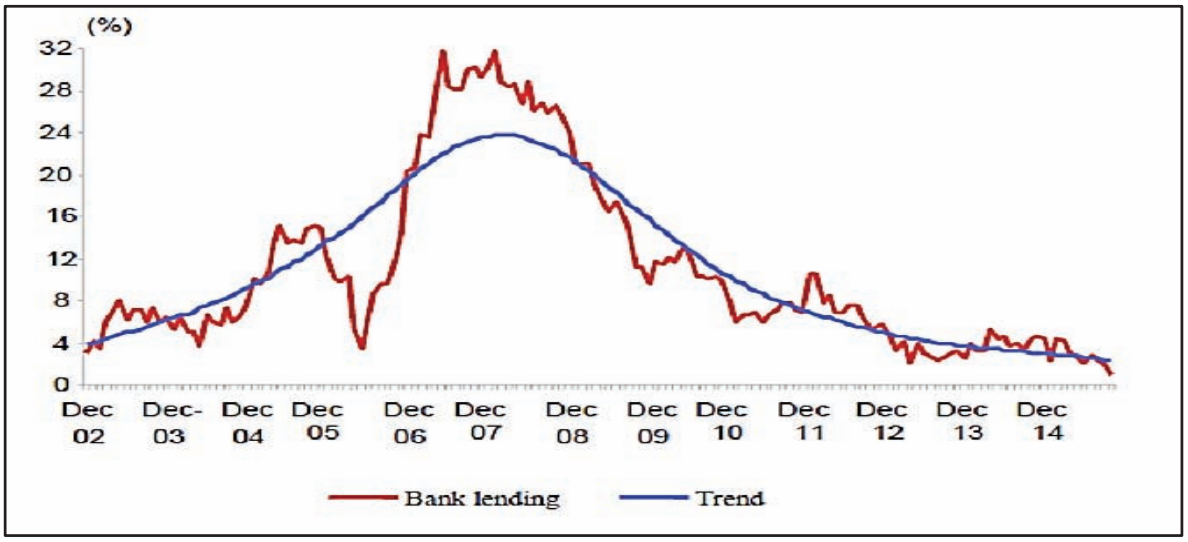
The analysis of the "monetary and financial" pillar covers banking liquidity, interest rates, monetary aggregates, bank credit, etc. Bank lending receives special attention, given the importance of bank financing and the role of credit in the transmission of monetary policy decisions to the real economy. These analyzes serve as the basis for the forecasting of the path of money gap[31] which is the main indicator of inflationary pressures from the monetary sphere. They are complemented by a reading of the major developments in the assets market, with a zoom on the property market, the stock market

[31] It corresponds to the real growth rate of potential economic activity less the average rate of decline in the speed of currency in circulation.

and the debt market, allowing considering institutional sectors' wealth effects and their impact on inflation.

Chart 8: Change in Money Gap
(in % of The Equilibrium Balance of M3 in Real Terms)

Chart 9: Change in Bank Lending (In %)



In the end, all the conclusions drawn from the analysis of the two pillars as well as recent developments in inflation allows making inflation forecasts over an eight-quarter horizon (the horizon of monetary policy in Morocco). These projections are analyzed based on the various risks surrounding them in the medium term, particularly those related to changes in partner countries' GDP,

interest rates in the euro area, non-energy import prices, diesel retail prices and nonagricultural production.

Chart 10: Inflation and Core Inflation

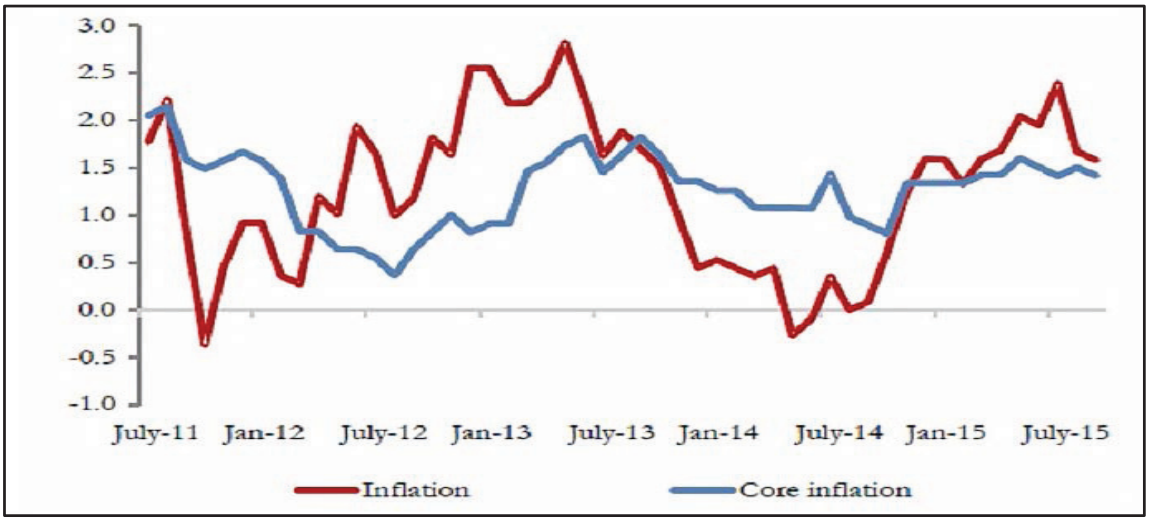


Chart 11: Projections of Inflation
Q4 2015 – Q1 2017

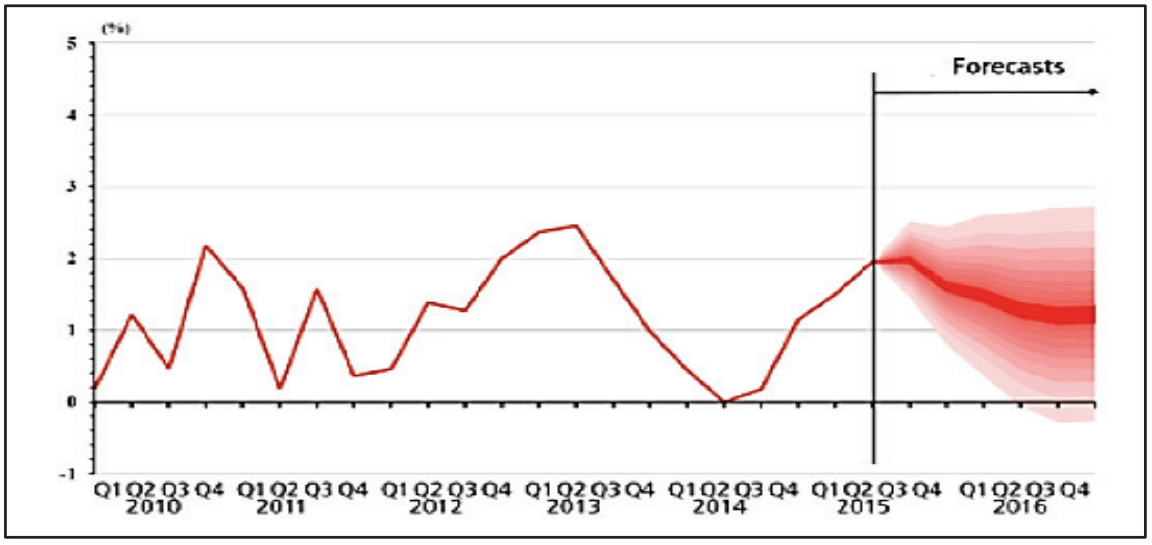
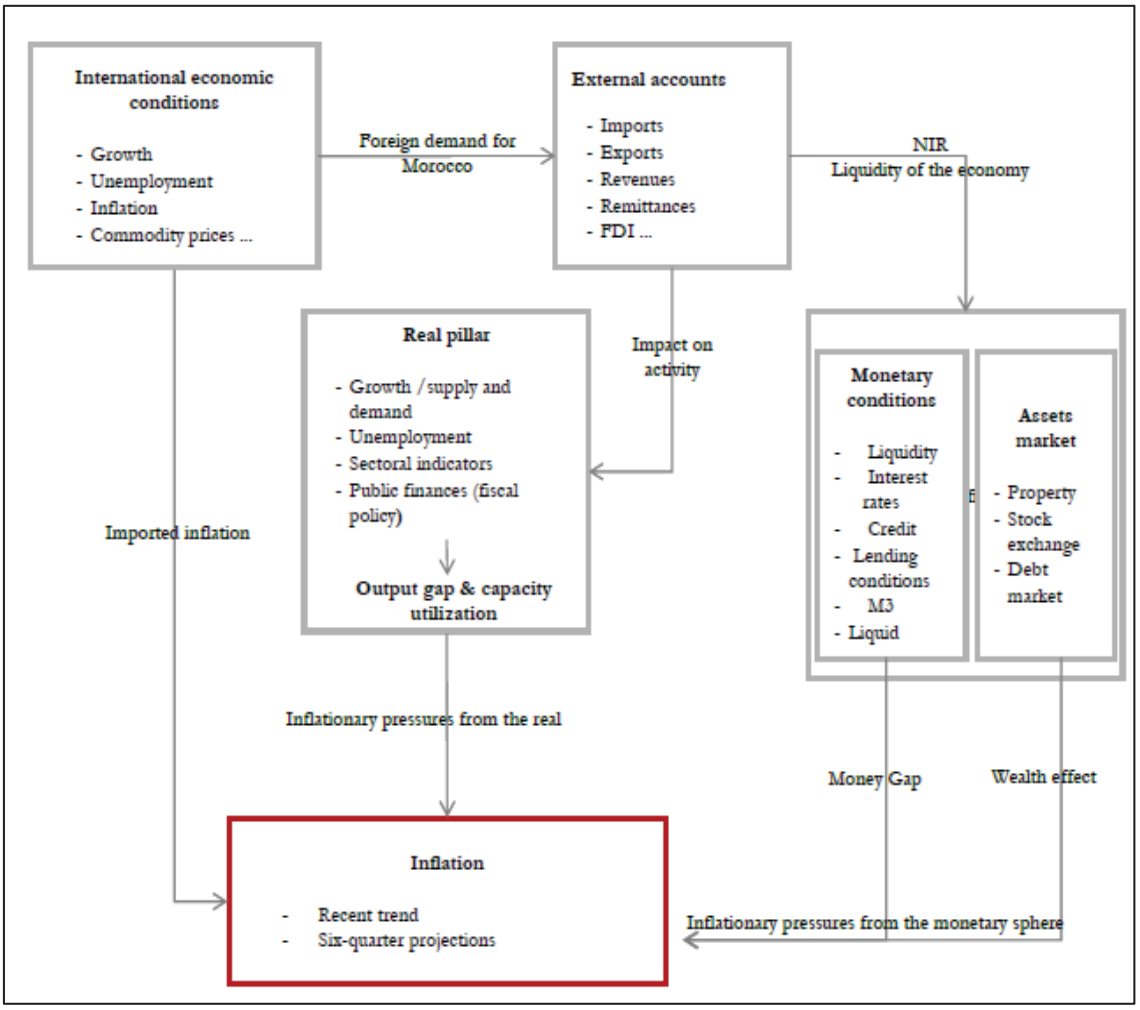


Chart 12: Monetary Policy Analytical Framework



These analyzes are based on a forecasting system that draws on the best practices and better meets the requirements of the expected transitions of the Moroccan economy to a gradual flexibility in the exchange rate regime and explicit inflation targeting. The architecture of this system rests on an integrated approach providing coherence between macroeconomic forecasts for all relevant variables. It is built around a monetary policy model, as a reference tool of medium-term macroeconomic forecasts, and several satellite models that drive and complete the central model.

The central model consists of four interconnected blocks, namely aggregate demand (growth), aggregate supply (inflation), external sector and monetary policy. It is an economic cycle model which models growth from the demand side in order to better understand, firstly, the external and internal sources of inflationary pressures and, secondly, the transmission of monetary policy decisions to the real economy. Particular attention is given to the modeling of each component of demand, from

household and general government final consumption to investment and goods and services' exports and imports. For a closer examination of price dynamics, the analysis of inflation distinguishes regulated prices, energy prices, volatile food prices and core inflation. Meanwhile, the external sector is exogenous and includes, in addition to foreign demand for Morocco, interest rates and inflation rates in partner countries, the bilateral euro/dollar exchange rate and commodity prices. Finally, the block of monetary policy is adjusted to the current monetary policy strategy in Morocco, with a fixed exchange rate and an open capital account for nonresidents. The central bank's monetary policy reaction function is endogenous and can predict the path of interest rate considered consistent with the objective of price stability.

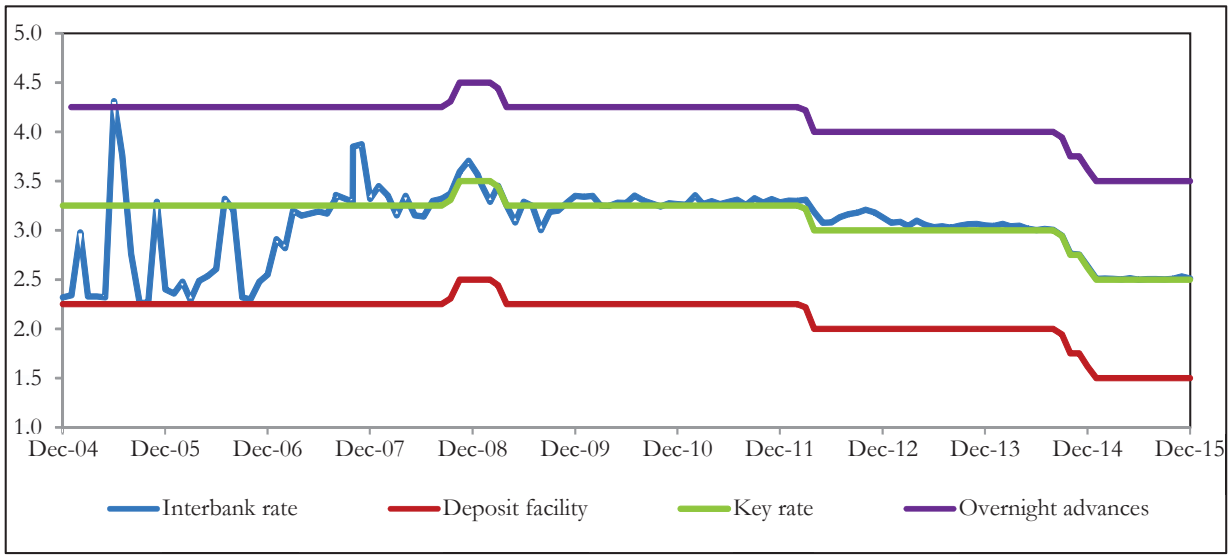
The system also allows establishing a forecast baseline scenario considered most probable, in addition to different simulation scenarios of the impact of exogenous shocks (growth and inflation in partner countries, commodity prices, changes in the monetary policy of the ECB, etc.) or endogenous shocks (from monetary policy, agriculture, the removal of subsidies for regulated prices, etc.) on the main variables of the model.

All of these analyzes are supported by an informational system structured around a statistical database composed of data produced by the Bank and other partners. This database is enriched by the conclusions of regular surveys conducted by Bank Al-Maghrib, namely the lending conditions survey, the inflation expectations survey and the business survey in industry.

4. Monetary Policy Implementation and Recent Decisions

Since the adoption of the new analytical framework and setting the interbank rate as the operational target, Bank Al-Maghrib has put in place specific arrangements to make projections for the main autonomous liquidity factors and understand their impact on the structural position of banks' liquidity. The Bank has thus managed to gradually control the trend of its operational target and significantly reduce its volatility.

Chart 13: Change In The Interbank Weighted Average Rate (%)



The Bank intervenes in the money market through several instruments:

- Main refinancing operations: seven-day advances and liquidity withdrawals.
- Fine-tuning operations: advances and liquidity withdrawals for a period less than seven days.
- Standing facilities at the initiative of banks: overnight advances and liquidity withdrawals.
- Long-term operations: foreign exchange swaps, advances and liquidity withdrawals for a period above seven days.
- Structural operations: issuance of debt securities, purchase/sale of securities in the secondary market, and required reserves.

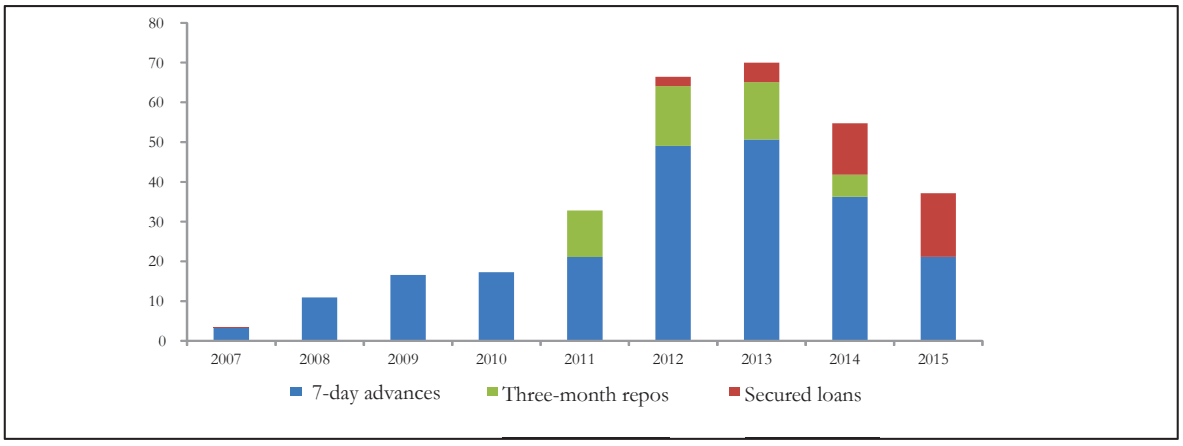
Depending on the structural liquidity position of banks, Bank Al-Maghrib constantly adjusts its interventions in the money market, which are generally carried out through its main operations, namely seven-day advances and liquidity withdrawals.

After a period of excess liquidity where the Bank intervened in the money market through liquidity withdrawals, banks' structural liquidity position entered a phase of shortage starting from 2007.

In response to the scope of liquidity needs and their sustainable nature, the Bank had to increase the volume of its injections from 24 billion dirhams in 2011[32] to 62.2 billion dirhams in 2012 and 69.6 billion dirhams in 2013. In 2014, the eased deficit in banks' liquidity together with improved foreign exchange reserves led to a reduction in the volume of the Bank's interventions to 54.7 billion dirhams, an improvement that continued gradually in 2015.

In addition to the continued adjustment of its interventions in the money market and amid a difficult economic context, in connection with the effects of the international crisis on the Moroccan economy, Bank Al-Maghrib introduced several changes to its monetary policy. Indeed, the Bank has repeatedly cut its key rate and the reserve requirement ratio, and initiated a series of measures to ease pressure on banks' liquidity and improve credit supply, particularly for VSMEs.

Chart 14: Change in BAM Interventions in the Money Market
(Billions Dirhams)

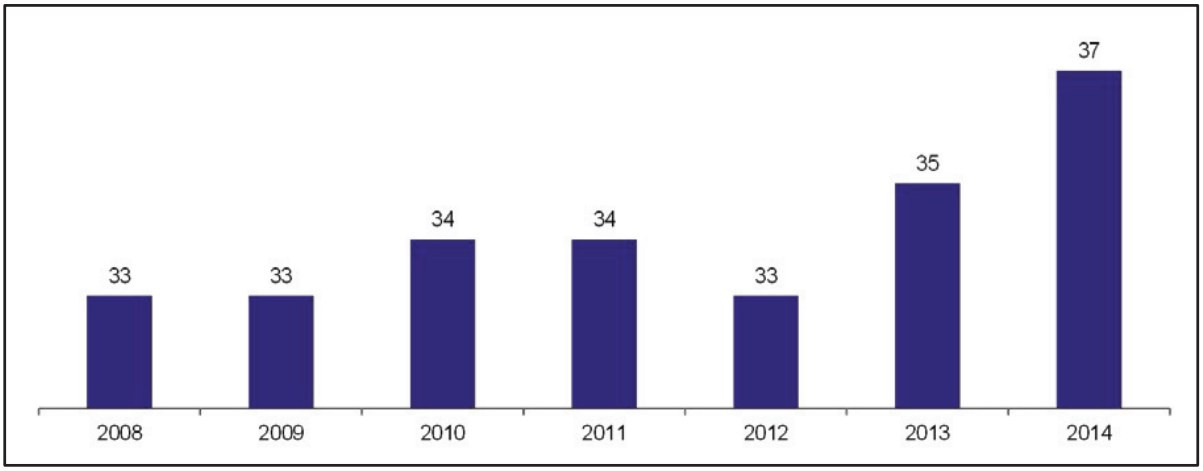


The Bank cut its policy rate four times, down to an all-time record low of 2.5 percent in December 2014, and repeatedly reduced the required reserve ratio, from 16.5 percent in 2008 to 2 percent in March 2014. At the operational level, the Bank expanded the scope of eligible collateral for monetary policy operations to certificates of deposit[33], in April 2011, and debt securities on VSMEs, in March 2012. It has also extended the term of its interventions since September 2011 to three-month repos.

[32] End-of-week average.
[33] Securities issued by banks for a maximum period of seven years.

Since December 2013, the Bank has used unconventional tools to further support the funding of VSMEs. Indeed, Bank Al-Maghrib has put in place a program allowing banks to benefit from one-year advances, equal to the amount of loans they intend to grant to VSMEs. Banks can also obtain additional refinancing equal to the volume of loans to industrial or export-oriented VSMEs. The program has seen strong participation from banks; by the end of 2014, outstanding loans granted within this framework reached 18.9 billion dirhams, or 43 percent of the total amount injected at end-December. Moreover, the Bank is currently establishing an observatory for VSMEs with the aim of developing an in-depth understanding of the productive fabric and enhancing regular communication on services and measures in favor of this category of enterprises. Actions in favor of VSMEs have yielded encouraging results. Indeed, Morocco is well-positioned in the financing of these businesses, as the share of loans granted to them in the total outstanding bank lending to corporations stands at 37 percent in 2014, one of the highest in the MENA region.

Chart 15: Share of loans to VSMES in Total Outstanding
Bank Lending to Corporations (%)



More recently, the Bank has adjusted the method of its intervention in the money market by adopting a new rule for the distribution of seven-day advances, with the aim of favoring banks that are more dynamic in the credit market and contribute more to the transmission of monetary policy decisions.

5. Monetary Policy Transmission

The transmission of monetary policy decisions in Morocco takes place in a context marked by the preponderance of fixed-rate loans (84 percent of outstanding loans in 2014) and a low level of

disintermediation, with a bond market dominated by large corporations. Despite these constraints, the accommodative stance of monetary policy in recent years has had positive results overall, as lending rates trended down from 6.38 percent in 2011 to 6.0 percent in 2014 and 5.73 percent in 2015. Since the last two cuts in the key rate late 2014, the overall weighted average rate has decreased by 54 basis points.

Chart (16): Weighted Average Lending Rate

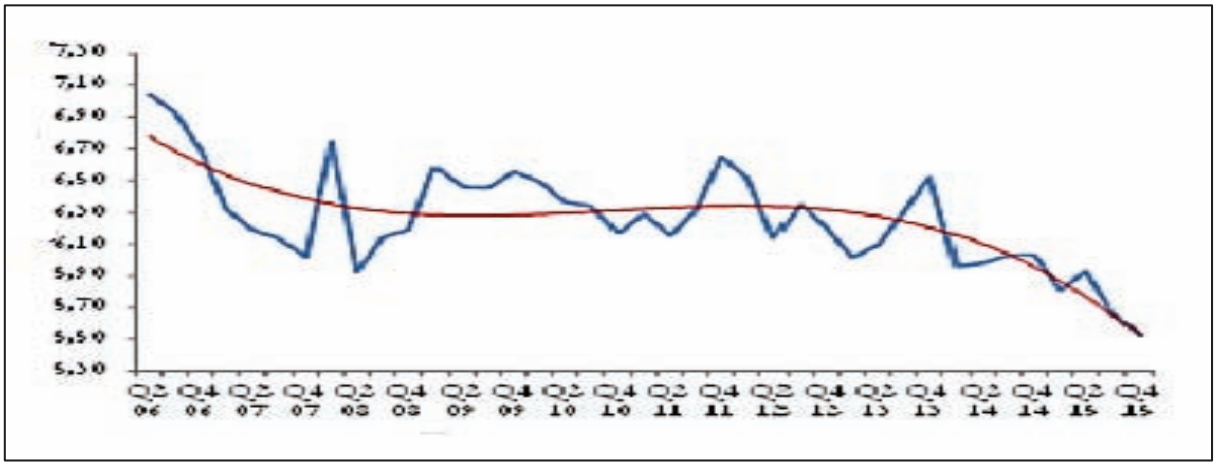
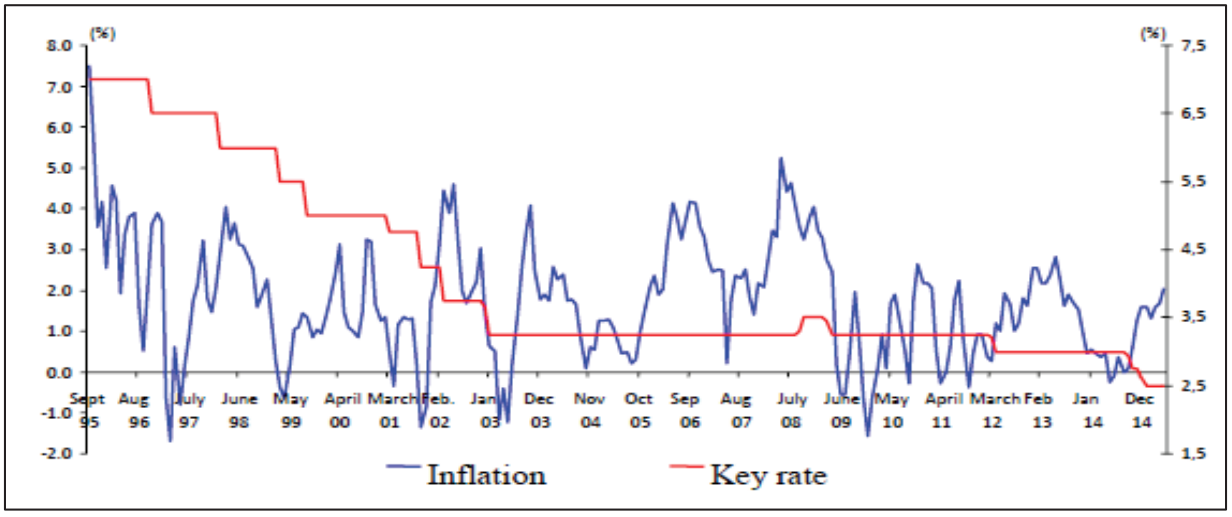


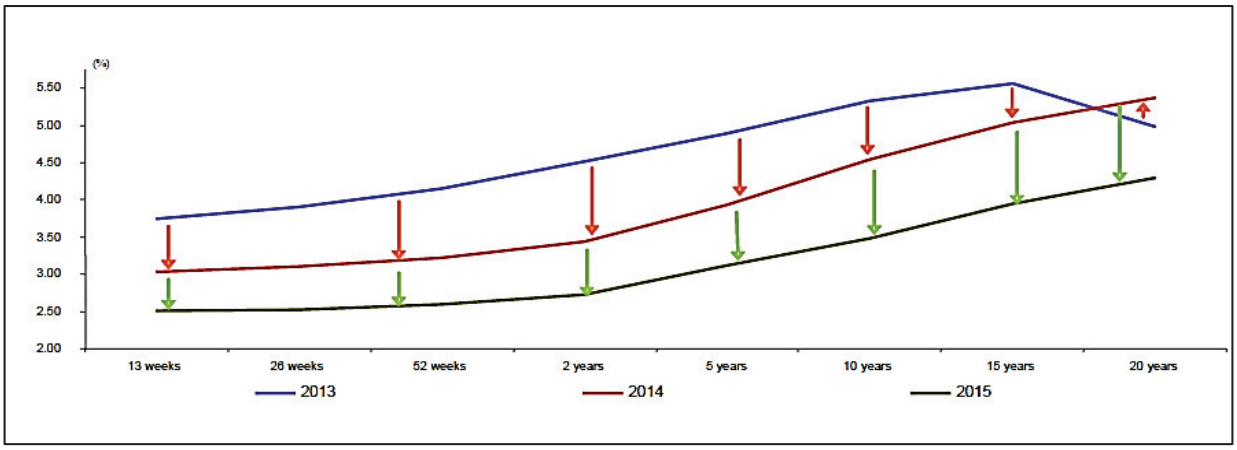
Chart (17): Key Rate and Inflation



By way of illustration, following the two decisions to lower the key rate in September and December 2014, the level of the yield curve has trended down, impacting rates in the private debt market and boosting bond issuances which expanded significantly to 10 percent of GDP in the fourth quarter 2014 as against an average of 7 percent in 2013. Similarly, the market of mutual funds registered an

important growth in the fourth quarter 2014, as net subscriptions reached 19 billion dirhams, representing 54 percent of total subscriptions for the full year

Chart 18: Yield Curve



However, with the continued low momentum in nonagricultural activities, credit growth remains sluggish despite the easing of supply conditions, as shown by the results of Bank Al-Maghrib quarterly survey on lending conditions. The survey reveals that demand for credit remains weak, reflecting the slow recovery in nonagricultural activities.

6. Outlook and Challenges

New draft Statutes of Bank Al-Maghrib are under consideration. Taking into account the lessons learned from the recent international financial and economic crisis, the goal of this reform is to align central bank law with the best international standards, by strengthening the independence of Bank Al-Maghrib, empowering it in particular to define the objective of price stability and extending its mandate to financial stability that has become a major concern since the recent financial crisis. In this regard, the Bank set up, two years ago, a financial stability committee which prepares, in particular, an annual report on this mission.

On another front, Morocco has embarked since the 1980s in a process of gradual openness and liberalization of its economy. It has signed several free trade agreements (numbering 55 today) and plans to make Casablanca a regional financial hub. It has already started a gradual liberalization of foreign exchange and capital account regulations. The latter, fully open for nonresidents, was modified in 2007, allowing financial firms and Moroccan companies to make capped investments

abroad. In 2010, these caps were revised upward. All these elements argue for the transition to a more flexible exchange rate regime that would help absorb external shocks and strengthen the competitiveness of the national economy.

This transition is not an easy task; international experiences have indeed shown that it is often carried out against a background of strong crises. It is also accompanied by large devaluations or depreciations. To avoid such a transition, the Moroccan authorities are working to ensure the fulfillment of a number of prerequisites, especially permanent macroeconomic balances, notably the fiscal position, the building-up of a sufficient level of foreign exchange reserves, and the preparation of both the banking sector for the challenges of the new environment and operators for the management of foreign exchange risks.

The transition to a more flexible exchange rate system would provide more independence to the monetary policy and facilitate the transition to an inflation-targeting framework, which would improve the transmission of monetary policy decisions and strengthen its effectiveness (better anchoring of expectations).

The Bank has been preparing for these shifts a few years now, by strengthening its analytical and forecasting capacity, improving its information arrangements, and enhancing communication and transparency. In this regard, the IMF already considered in 2011, as part of its Article IV consultation report, that “BAM has the necessary independence, expertise, technical resources, range of instruments, and level of foreign reserves to introduce an inflation-targeting framework and a flexible exchange rate”.

Arab Monetary Fund

BANK FOR INTERNATIONAL SETTLEMENTS

AMF-BIS Working Party Meeting on Monetary Policy in the Arab Region.

Background Paper on Monetary Policy

Islamic Republic of Mauritania

Central Bank of Mauritania

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Governor Counselor

Abu Dhabi, United Arab Emirates

25–26th November 2015

Monetary Policy Implementation in The Islamic Republic of Mauritania

1. Background

In recent years, Mauritania's economy has benefited from macroeconomic stability and high growth in the context of contained inflation, responsible macro policies, high iron ore prices, windfall donor assistance, and scaled-up public investment. Real GDP growth averaged over 5 percent in the past decade owing to the exploitation of the country's large fishing and mineral resources, most notably iron ore but also copper and gold. The nominal exchange rate against the U.S. dollar slightly depreciated (by 2 percent) since end-2012; but appreciated in real terms owing to the inflation differential between Mauritania and its trading partners. Inflation remains in check and is expected to stay moderate over the medium-term (within the approximate 4-5 percent range), thanks to lower international food and fuel prices, and a prudent monetary policy stance. The near-term outlook remains favorable despite slower economic activity and lower iron ore prices. Real GDP growth is projected to decline to 5.5 percent in 2015 because of lower growth in mining activity and lower private investment and consumption. Larger-than-envisaged declines in main export prices would further reduce exports and foreign direct investments and cast doubts on mining expansion plans, dimming growth prospects and worsening fiscal balances. External shocks could expose vulnerabilities in the banking system, exacerbating a negative shock to growth and financial stability.

Mauritania's monetary policy stance often shifts due to changes in the external environment. Yet exogenously driven policy changes do not seem to affect bank lending at the margin, which suggests ample scope to strengthen monetary policy effectiveness. A necessary pre-condition of more policy traction is a more inclusive financial sector. Strengthening the quality of credit demand, reinforcing supervision, and enhancing the institutional infrastructure seem fruitful avenues toward encouraging banks to finance a wider range of activities and customers.

2. The Operational Framework of Monetary Policy

Monetary Policy Objectives

Under section 38 of Ordinance No. 004/2007 dated 12 January 2007 on the statute of the Central Bank of Mauritania (CBM), the main objective of monetary policy is to maintain price stability. The CBM's intermediate target is the broad money aggregate M2, but there is no officially defined operational target. This leaves four candidate indicators that could, in principle, contain information about the monetary policy stance:

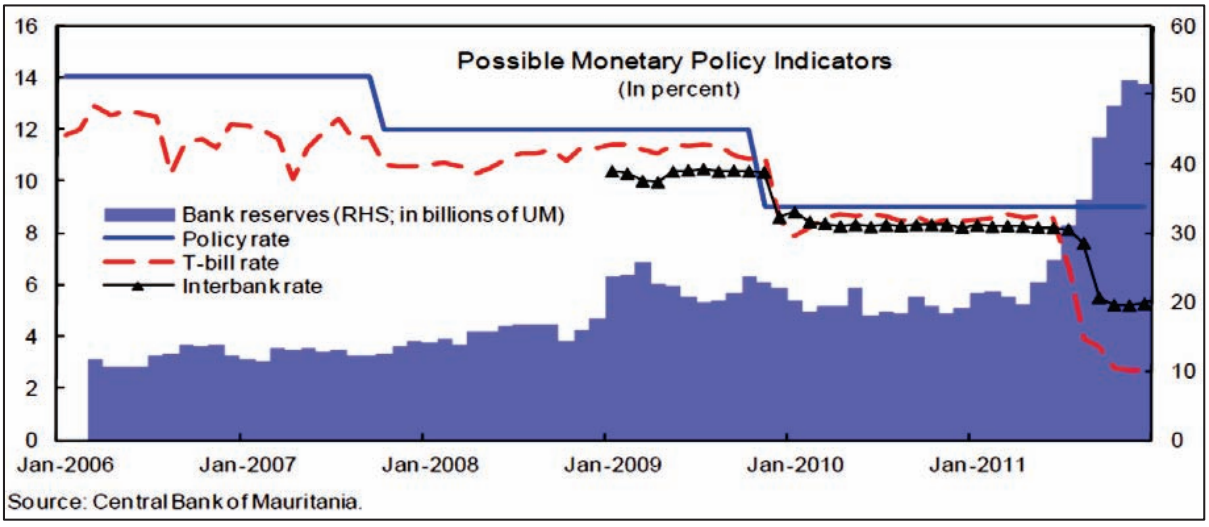
- **The policy rate** plays next to no role in determining banks' funding costs. Banks rarely use the CBM's refinancing facility, which is priced at the policy rate. The monthly stock of outstanding central bank credit to the banking sector has remained unchanged since 2009. The rate itself changes infrequently, with the last change dating back to November 2009.

- **The T-bill rate** mostly varies according to the Treasury's domestic financing needs, although there have been a few episodes of T-bill issuances for monetary purposes in the past. The CBM does not conduct open market operations.

- **The interbank rate** closely follows the T-bill rate as all interbank transactions are collateralized against T-bills. However, the interbank market is shallow. Some of the largest banks avoid this market entirely because of a lack of transparency and because of counterparty risk. The CBM does not intervene directly in this market.

- **Bank reserves** are unremunerated. Free (or excess) reserves, the amount of reserves above the required 7 percent of resident deposits (reserve requirement), is liquidity available for payment purposes. If free reserves reach a level that is above some precautionary threshold, banks have an incentive to use this liquidity for lending.

Chart (1): Monetary Policy Indicators

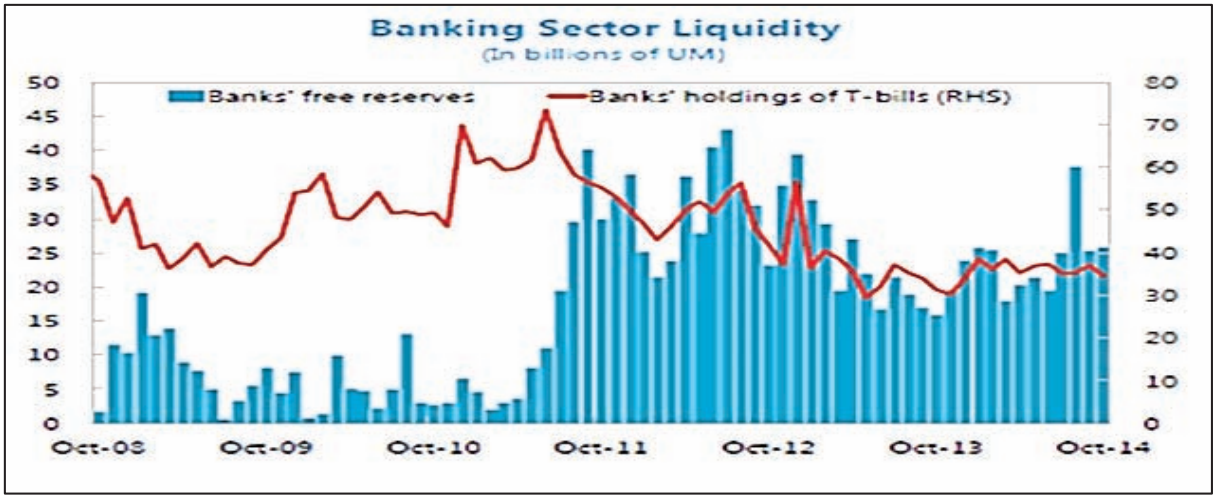


Given that the policy rate has little to no relevance to banks and that T-bill and interbank rates mostly depend on fiscal policy, the only indicator that can signal the stance of monetary policy on a consistent basis is banks' holdings of central bank reserves.

Monetary Policy Instruments

Under the current management of monetary policy, in addition to the reserve requirement the central bank has two instruments, namely: the auction market for Treasury bonds and the refinancing of banks to the initiative against Treasury bills.

Chart (2): Banking Sector Liquidity



Currently, the auction market for Treasury bonds is the primary instrument on which the CBM intervention to act based on free reserves of banks (total reserves minus reserve requirements). The

amounts awarded in this context should be used in part to finance the Treasury's needs (target public finances) and another part to manage bank liquidity (monetary objective). In practice, the emitted volumes are used only budgetary targets.

By the end of 2010, Mauritania experienced a large positive terms of trade shock leading to involuntary surges in bank liquidity. The recent run-up in commodity prices boosted Mauritania's foreign exchange receipts, notably those from iron ore exports. To address longstanding external vulnerabilities, the authorities used this opportunity to build up foreign exchange reserve buffers. In the process, the size of the central bank's balance sheet expanded, with a larger international asset position giving rise to a local currency counterpart in the form of banking sector liquidity.

Absent active sterilization efforts, positive terms of trade shocks result in looser monetary conditions. This scenario materialized in Mauritania last year. For the first time in years, financing needs of the Treasury were lower than the sterilization objective of the CBM. With a stronger budget position, the Treasury was hesitant to issue T-bills solely for monetary purposes, while the CBM did not have the financial resources to undertake large-scale sterilization operations on its own account. The only instruments left in the CBM's liquidity management toolkit were reserve requirements and the sale of foreign exchange. The former was not used because of marked differences in liquidity positions across banks, and the authorities' policy objective of accumulating international reserves limited the use of the latter. Illustrating the liquidity overhang, T-bill yields fell to historic lows of just below 3 percent.

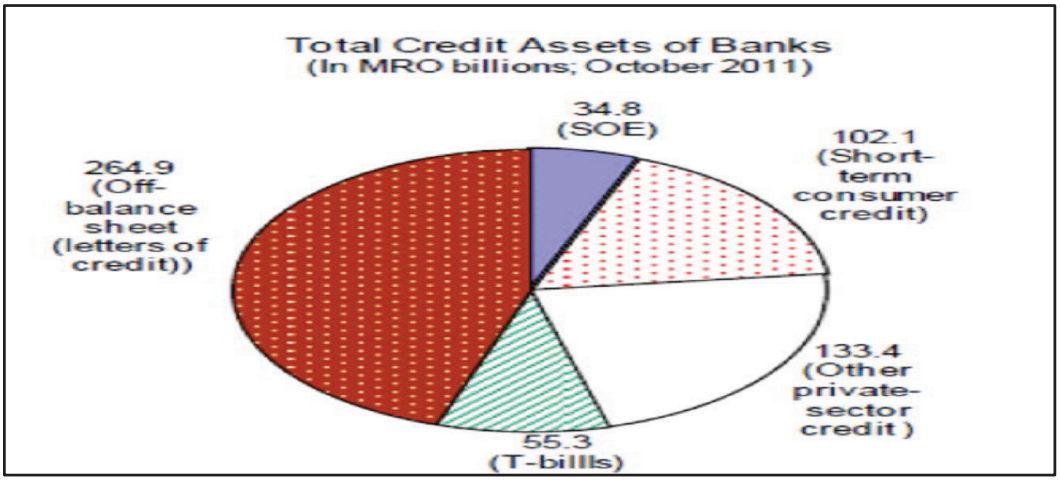
Monetary Policy Main Transmission Mechanisms

Three of the four traditional channels of monetary policy transmission interest rates, asset prices, and the exchange rate are unlikely to be very effective in Mauritania, as the institutional prerequisites of these channels are missing:

- Consumers and companies do not have significant savings that would allow them to adjust their consumption and investment patterns over time.
- Asset markets with real-time price information do not exist.

- The closed capital account prevents the exchange rate from adjusting to monetary policy changes. This leaves only one possible transmission channel which is the bank lending channel.

Chart (3): Total Current Assets of Banks



Source: Central Bank of Mauritania

In general terms, credit markets in Mauritania are considered too shallow to effectively transmit impulses from monetary policy to the rest of the economy. The banking sector's limited reach is a key constraint. Only a limited number of economic actors have access to bank finance. Banks in Mauritania tend to focus on providing banking services to their parent group and affiliated parties. Other significant revenue sources are letters of credit, short-term consumer credit, and lending to government and state-owned enterprises—all forms of relatively low-risk credit.

As a consequence, concentration risk is very high. The 20 largest loans of Mauritanian banks, either to state-owned companies or affiliated parties, represented 30 percent of all loans at the end of 2010. This is in line with the high levels of concentration risk seen in other countries in the Middle East and North Africa (MENA), the region where portfolio concentration is highest.

The underdeveloped interbank market is another factor that hampers bank lending and monetary transmission. Banks are uncertain about their ability to cover unexpected liquidity needs at short notice because of weaknesses in the two existing short-term refinancing options:

- The interbank market is shallow, and some of the largest and most liquid banks almost never lend to other banks, despite strict collateral requirements.
- The CBM's ability to fill its role as a lender of last resort is not firmly established. Banks are therefore reluctant to accept maturity mismatches that would result from using excess reserves to lend more to the private sector. And changes in the individual banks' liquidity position do not tend to affect the rest of the system, often making the distribution of liquidity across the system inefficient.

Assessment of the Role of Money and Local Currency Debt Market

With the opening of the money market for legal and natural persons involved in it to sell or buy market securities, there are three compartments:

- The interbank market.
- Refinancing of the CBM.
- The market for Treasury bills.

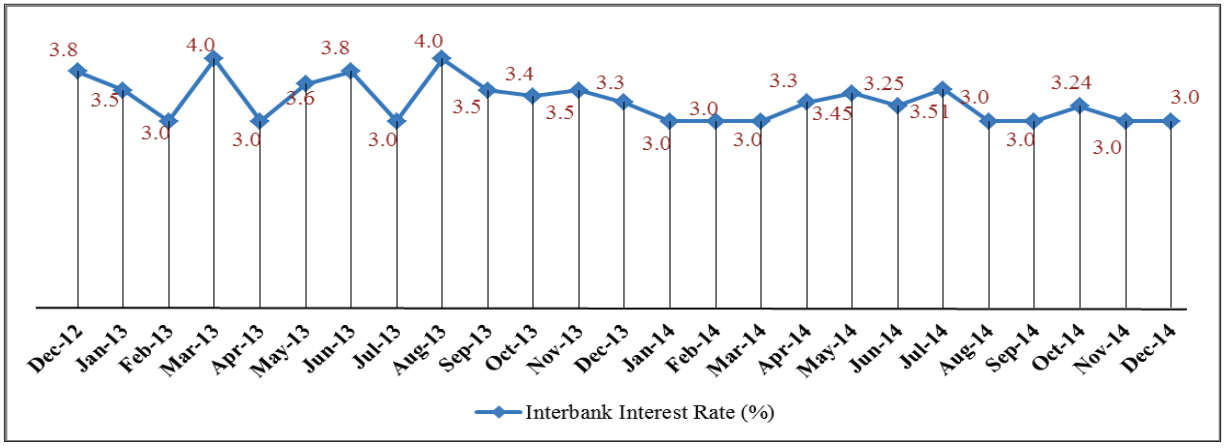
The operations on the interbank market remain a small amount. Recently, the rise in Treasury bill rates has encouraged some banks to reduce their stock of precautionary reserves.

The very limited development of the interbank market does not seem related to a problem of instruments, since the pension arrangements delivered is in place and working well in the opinion of banks. It is quite likely that the banks have a reluctance to transmit information on their liquidity position of their competitors.

The absence of a secondary market for treasury bills also means that there are few options available to bank liquidity managers, resulting in higher demand for precautionary deposits and in return it does not encourage the development of the interbank market. Banks also justify their need for high precautionary liquidity by the high volatility of liquidity withdrawals by their customers.

Liquidity exchange between primary banks in 2014 amounted to MRO 88 billion instead of MRO 61 billion in 2013 for repo transactions. Liquidity exchange between banks has focused on maturities between 1 and 5 days and a weighted average interbank rate down 3.5% in 2013 to 3.2% in 2014.

Chart (4): Evolution of the Interbank Interest Rate

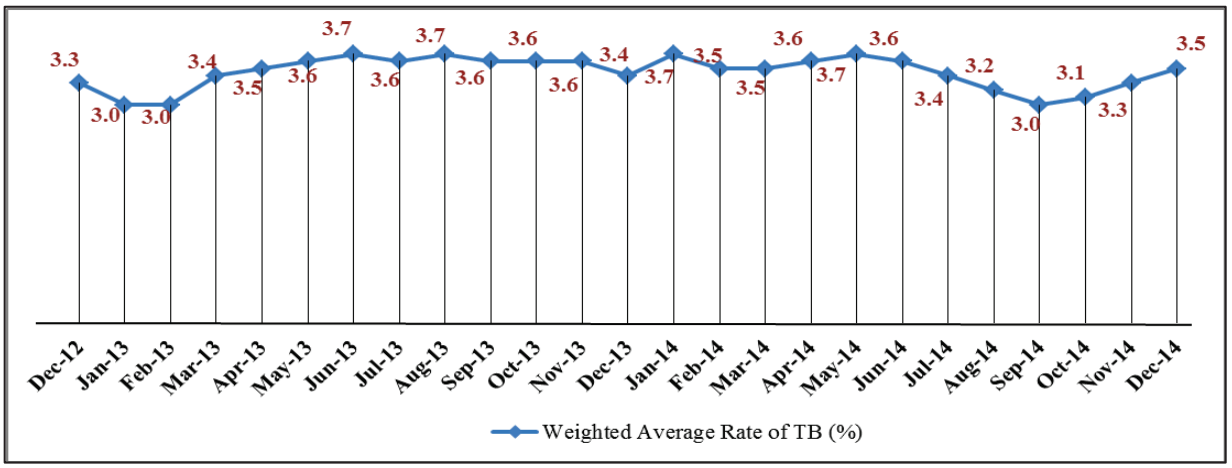


It is through its easy taken by refinancing repurchase of treasury bills that CBS plays a role of lender of last resort and protect the banking system one-off liquidity shocks. The CBM refinancing volume totaled MRO 1.6 billion in 2014 against MRO 5.7 billion in 2013. Liquidity management is based mainly on the award of short-term bills treasure. The flexibility and consistency, with which the Treasury bill market was managed, enabled the absorption of a significant portion of bank liquidity. The mobilized amounts were used to finance the needs of the Treasury consistent with the objectives of public finances and partly to contain the evolution of bank liquidity to reduce its impact on the foreign exchange market.

Treasury bills emissions have focused exclusively on short-term bills treasure with maturities of 4, 13, 26 and 50 weeks. The outstanding amount of treasury bills increased from MRO 69.7 billion to MRO 79.4 billion at 31/12/2013 to 31/12/2014 an increase of 13.9%.

The weighted average rate of Treasury bill auctions remained quite low throughout the year, ranging from a high of 3.74% and a minimum of 3.20%. This is explained by the low amounts announced at Treasury bill auctions compared to the relatively high level of bank liquidity. Over the whole of 2014, the weighted average rate has dropped slightly to stand at 3.5%.

Chart (5): Evolution of the Average Yield of Treasury Bills



3. The Implications of Global, Regional and Internal Economic and Financial Developments on Monetary Policy Implementation

Mauritania continues to be one of the fastest-growing economies in the Middle East and North Africa region. Growth in 2012–14 remains elevated supported by infrastructure investment, increasing mining production, and strong services activity. Inflation fell to a three-year low in August but has picked up recently on higher gas prices and domestic food prices. The near-term outlook remains favorable, but vulnerable to external shocks. Larger-than-envisaged deterioration in terms of trade beyond the declines in iron ore prices realized in 2014 and projected for (2015–16) would require a rapid policy response. Vulnerabilities in the banking system could be exposed, and these could exacerbate a negative shock to growth.

In the short term, Mauritania needs to rebuild foreign reserve buffers to mitigate the impact of possible future external shocks. The country has already suffered a recent terms-of-trade shock, which demonstrated the economy's vulnerability to swings in global commodity prices, particularly those for metals. At the same time, Mauritania as a net oil importer has benefited from the sharp drop in oil prices. Nonetheless, the country had to use a substantial part of its foreign reserves to weather the impact of the shock. Higher prices of oil or food—the country relies heavily on food imports to satisfy domestic demand—would bring about

another substantial deterioration in trade and current account balances. Other things equal, a 20 percent rise in world food prices would result in a 10 percent decrease in Mauritania's foreign reserves, assuming the shock is fully absorbed with reserves. Similarly, a 20 percent increase in oil prices would deplete reserves by more than 15 percent. Because Mauritania is very vulnerable to such external price shocks, both through its food and oil product imports and commodity exports, it needs to maintain a sufficient level of foreign reserves to ensure the economy's stability in the face of exogenous price changes. Additionally, the country's optimal level of reserves is between three and six months of overall imports, whereas under current baseline projections reserves are only forecasted to reach three months of total imports in 2020 (they will temporarily reach that threshold in 2015 because of a fall in capital imports as mining expansion projects are delayed). Mauritania thus needs to focus on rebuilding external buffers over the coming years back to and above the levels seen in 2013.

The CBM's role in times of stress needs to be strengthened. The authorities should take advantage of the present contained inflation to adopt a formal liquidity forecasting framework and enlarge the set of liquidity management tools. This will help to formalize monetary policy; improve the transmission mechanism to the real economy, and strengthen institutions and governance for the conduct of monetary policy. By managing liquidity more effectively, the CBM would be in a better position to reduce FX intervention. The recapitalization of the CBM should be undertaken to support its conduct of monetary policy.

Efforts to strengthen financial stability should continue. Building on progress in strengthening banks' capitalization and liquidity, the CBM should strictly enforce the existing regulatory framework, which will require revising the banking law to provide legal protection of staff in the exercise of their competencies.Natural resource endowments provide ample opportunities for development. Mining GDP is projected to expand rapidly during the next five years as large projects come on stream. Sustained growth outside the mining sector would need to be supported by continued structural reforms to promote private sector development and economic diversification through improvements in the business environment and higher human capital, while protecting the most vulnerable. Promoting access to credit and financial inclusion are also required for private sector development.

Table (1): Downside Scenario: Key Variables

Downside Scenario: Key Variables, (2015-20)						
	2015	2016	2017	2018	2019	2020
Real Output Growth (%)	5.5	6.4	4.8	4.7	4.8	4.9
Difference VS Baseline	0.0	-0.4	-0.2	-3.3	-3.6	-0.1
Overall Fiscal Balance excl. Grants (% of Non Extractive GDP)	-4.7	-3.4	-3.7	-3.9	-2.9	-1.4
Difference VS Baseline	-2.5	-1.8	-2.0	-2.3	-2.0	-1.6
External Financing (% of GDP)	0.0	0.0	0.0	6.3	9.6	8.8

4. Monetary policy Implementation: Main Challenges and Reforms

Monetary conditions are favorable to strengthening the monetary policy framework. The authorities are considering the evaluation liquidity conditions for adoption a formal liquidity forecasting framework and enlarge liquidity management tools. In the context of contained inflation, the CBM has relied on indirect monetary policy instruments (FX interventions and T-bills) to reduce liquidity, leaving its policy rate and reserve requirements unchanged since 2009. However, FX interventions will be constrained by lower reserves as an instrument for managing liquidity. The CBM called for a start to formalizing monetary policy and the liquidity management framework in the context of weak inflationary pressures with a view to strengthening governance and institutions for the conduct of monetary policy; and agreed with the authorities on expanding the instruments to include standing facilities and deposit certificates.

It should be noted that implementing a strategy to develop these instruments needs to go in parallel with the recapitalization of the CBM to ensure its operational autonomy and facilitate bearing the costs of monetary policy. Although inflation has remained contained in recent years, a volatile global outlook and pressures on FX reserves could result in rapid changes in price expectations. The CBM is ready for a proactive use of reserve requirements if demand pressures materialize ahead of reforms, given the limited effectiveness of the interest rate transmission mechanism.

Chart (6): Monetary Policy Implementations:
Some Challenges and Recommendations

Challenges	Recommendations
Shallow interbank market	• Enhance transparency by regular publication of banks' financial statements. • Standardize model Islamic contracts for interbank transactions.
Weak liquidity management framework	• Quarterly update the monetary program tables in order to establish medium-term monetary objectives and set a daily liquidity forecasting system. • Widen the range of instruments to manage liquidity (standing facilities, seven-day Treasury bills), examine issuing Islamic securities, and use the average for the establishment of the reserve requirement.
Weak transmission mechanism	• Develop a yield curve by separating auctions for Treasury bills and bonds with different maturities. • Gradually securitizing the CBM's claims on the government using marketable securities with longer maturities.

5. Conclusion

The Mauritanian banking sector finances a limited number of economic actors and activities, which limits the influence of monetary policy. For monetary policy to be more effective, the banking system needs to broaden its reach. The main challenge is to make the banking sector more inclusive by encouraging banks to lend to a wider range of clients. The level of private-sector credit to GDP itself, on the other hand, does not raise immediate concerns. Reforms aimed at boosting the amount of credit-worthy demand and ensuring adequate supply, as well as improvements in the institutional infrastructure, could go a long way towards extending the reach of the banking sector.

Arab Monetary Fund

BANK FOR INTERNATIONAL SETTLEMENTS

AMF-BIS Working Party Meeting on Monetary Policy in the Arab Region

Background Paper on Monetary Policy

The French République

Banque de France

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Abu Dhabi, United Arab Emirates

25–26th November 2015

The Decline in the Price of Oil:
The Role of Supply and Demand Shocks

1. Introduction

- Commodity prices have declined significantly since July 2014.
- The macroeconomic impact of the fall crucially depends on the causes underlying these variations together with the expected duration of the shock.
- Oil prices are not determined only by oil supply shocks but they are driven by both demand and supply components (e.g. Kilian, AER 2009).
- Changes to world business cycle conditions (global demand shocks) have direct effects on the economy and an indirect effect through the price of oil.
- This explains why the correlation between oil prices and real activity has been unstable over time.
- Hence, understanding the specific nature of the shock is crucial to determine the optimal monetary policy responses.

Chart (1): Brent Crude Prices
(USD/ Barrel)

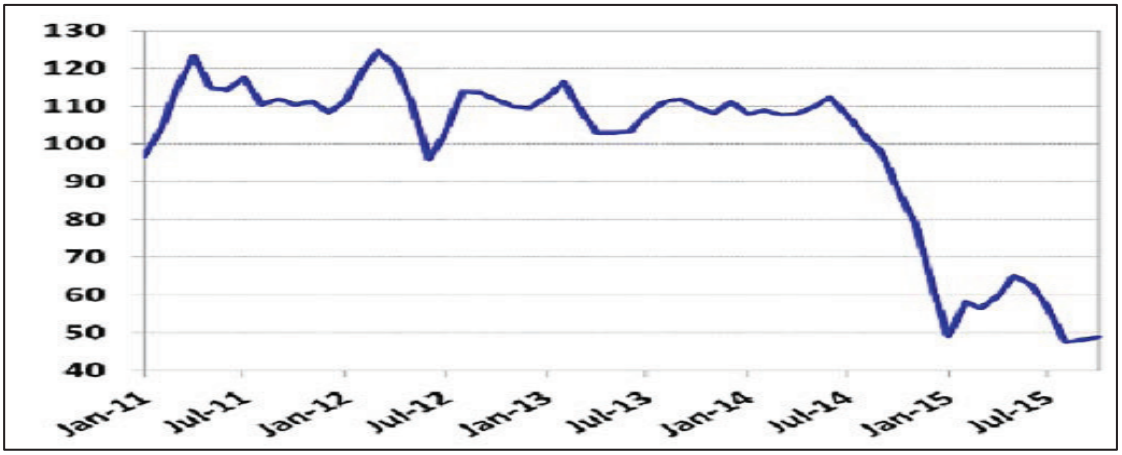
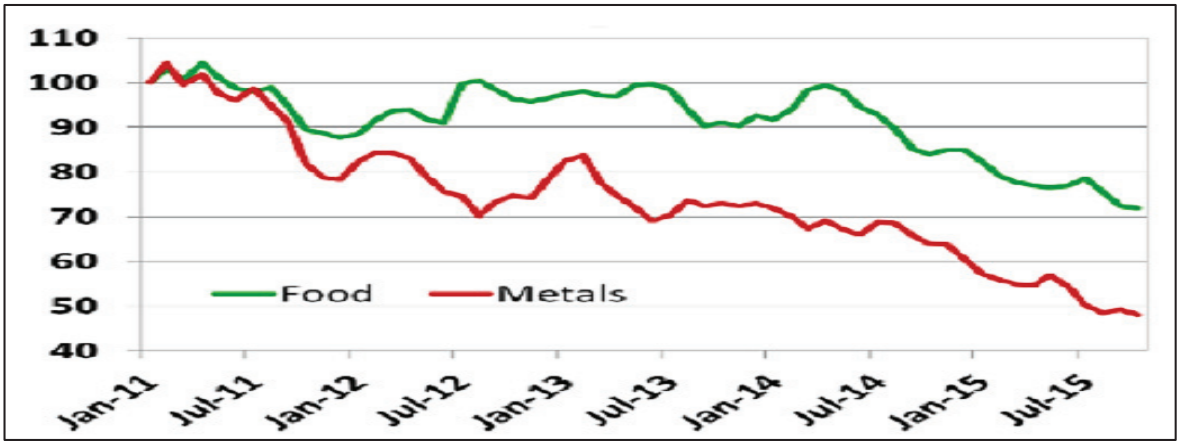


Chart (2): Other Non- Fuel Commodity Price Indices
(Jan 2011 = 100)

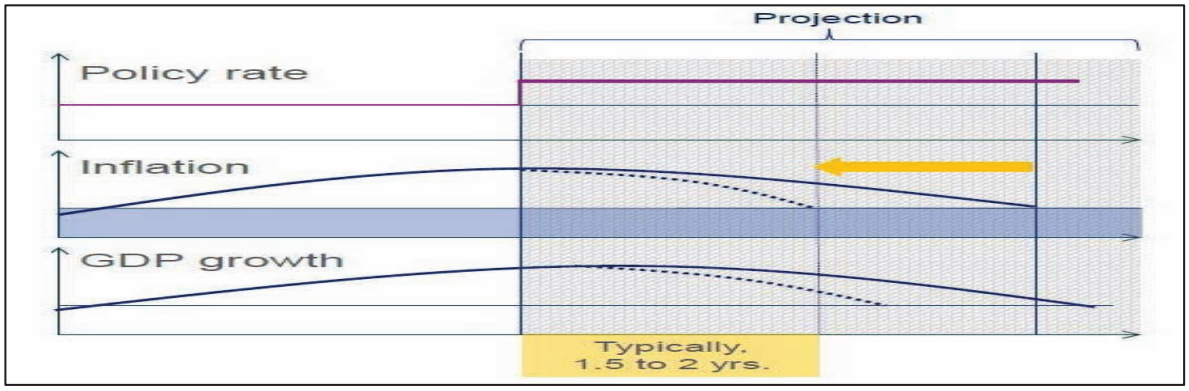


Source: IMF Primary Commodity Database.

2. Demand Shocks Typically Call for a Shorter Policy Horizon

The optimal monetary policy response always depends on the specific nature of the shocks. .For a wide variety of shocks (e.g. demand shocks) prompt reaction will not only preserve price stability but will also help stabilize the economy." (Letter of President Duisenberg to Econ Committee, 13 December 2001).

Chart (3): Expansionary Demand Shock

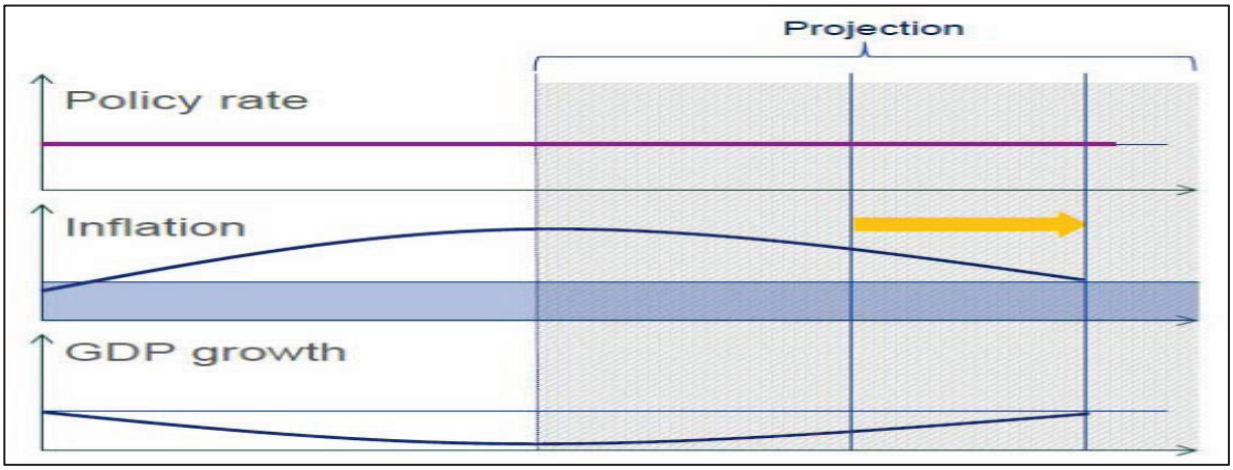


3. Supply Shocks Typically Call for a Lengthening of the Horizon

“In the case of some other shocks (e.g. of a cost-push nature) a gradual response is appropriate to avoid unnecessarily high volatility in real activity. ”(Letter of President Duisenberg to Econ Committee, 13 December 2001).

But it poses a challenge to monetary policy: temporary vs. persistent effects; implications for inflation expectations .

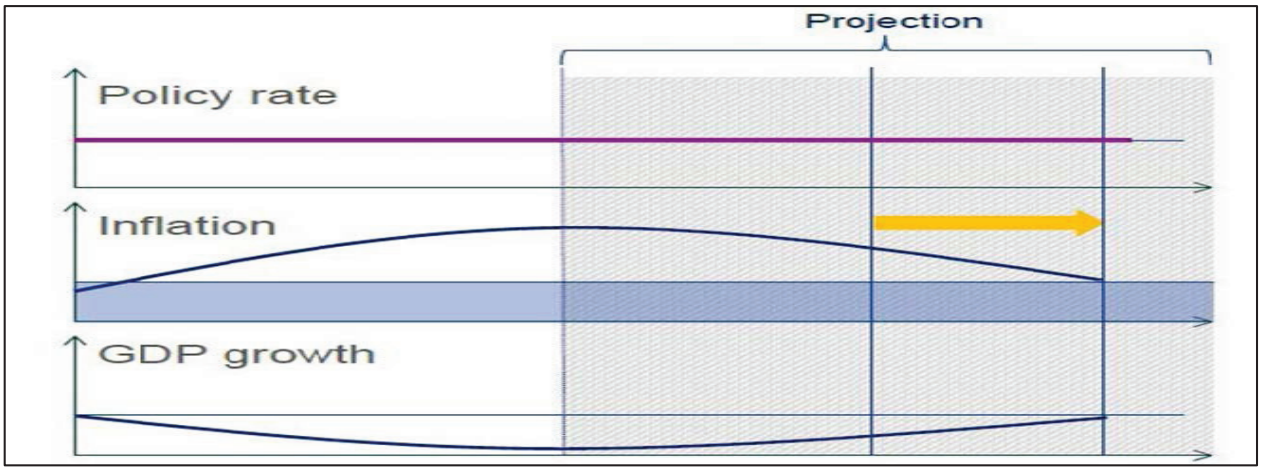
Chart (4): Adverse Supply Shock



But Only as Long as Inflation Expectations are Well- Anchored

- "If a supply shock leads to a disanchoring of long- term inflation expectations, the outcome is similar to a pure demand shock, requiring a forceful response". (Speech of President Trichet at the ECB Watchers conference 5 September 2008).
- But the length of the medium term cannot be arbitrarily extended to a horizon that would amount to discretion and would risk rendering. the primary objective null and void.

Chart (5): Degree of Anchoring of Expectations



The Oil Price Decline Since July 2014

- The IMF has attributed most of the fall to a shift in the oil supply and estimates an impact on world GDP between 0.3-0.7 percent in the first year (see. e.g. Blanchard and Arezki).
- Others indicate the slowdown in the global oil demand as another important factor behind the decline (e.g. Baumeister and Kilian (2015) and Hamilton (2015)).
- Our internal assessment indicates that various factors have been at play:
  - This is consistent with the observed slowdown in the world oil demand in the second half of 2014 and the announcement of OPEC to keep production unchanged in November 2014.

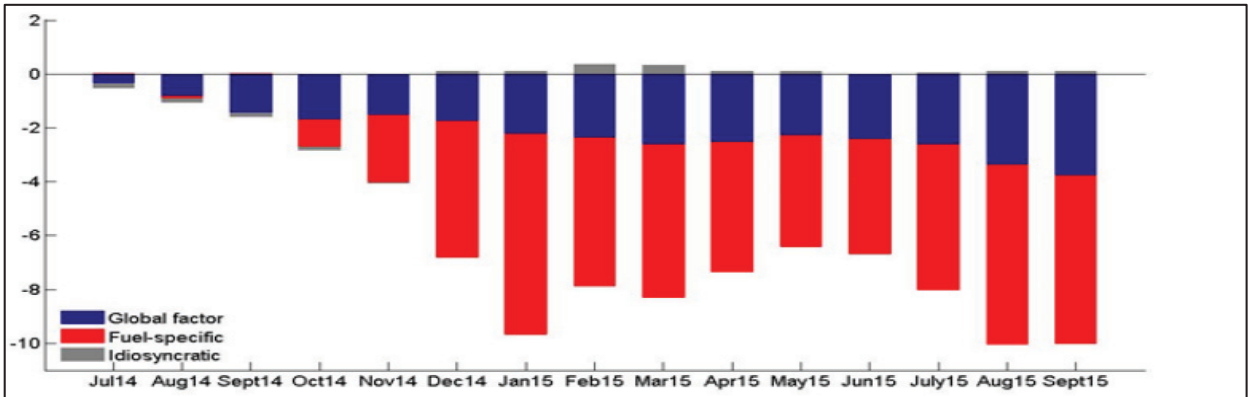
4. The Econometric Approach Used at BDF

- Factor-model decomposition of commodity price changes (Delle Chiaie,Ferrara, Giannone (2015)).
- The approach requires to estimate latent factors from a large-cross section of commodity prices, distinguishing between **common (global) and local (block) factors:**
  - Global factors affect most or all commodity prices (pervasive shocks).
  - Block factors are confined to specific categories of commodities and generate limited co-movement (non-pervasive shocks).
- The distinction between global and local factors hinges on the idea that different shocks have distinct consequences on the cross-correlation between commodity prices:
  - Global demand shocks associated with unexpected changes in real activity are likely to affect all or most commodity prices.

5. Historical Decomposition of the Price of Oil

- Fuel-specific factors explain the largest fraction of the fall, however the global factor is not negligible and account for by 38% of the fall from July 2014 to September 2015.
- The role of the global factor has increased in the most recent months.
- The results are consistent with those based on SVARs for the oil market (e.g. Kilian and Murphy, 2015).

Chart (6): Decomposition of the Price of Oil

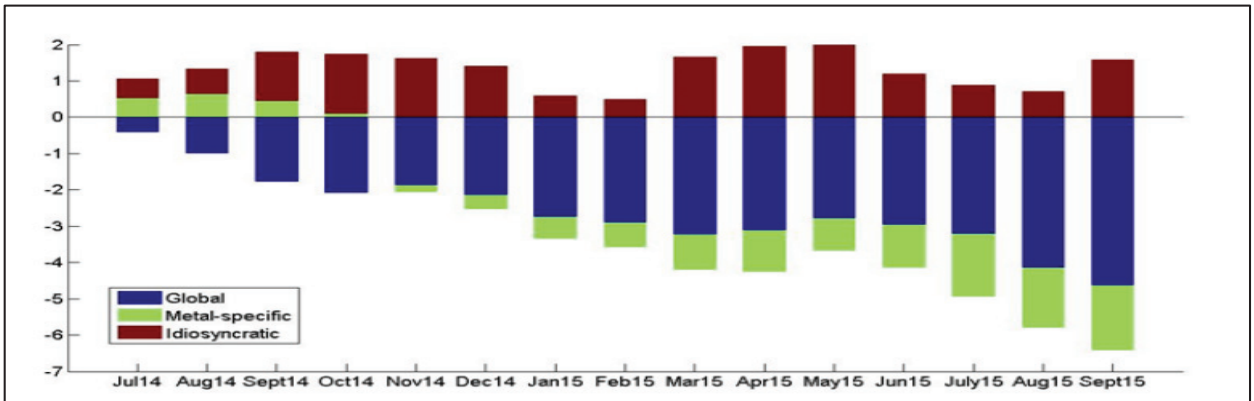


Note: The figure reports at each point in time cumulative changes in the nominal price of oil from July 2014 to Sept 2015. The decomposition is based on the dynamic factor model in Delle Chiaie et al (2015)

6. Historical Decomposition of the Price of Copper

- For metal prices, the global factor explains the largest fraction of the decline (about 70% between July 2014 and Sept 2015).
- This is consistent with the evidence that metal price variations are closely related to changes in global business cycle conditions.

Chart (7) : Decomposition of the Price of Copper



Note: The figure reports at each point in time cumulative changes in the nominal price of copper from July 2014 to Sept 2015. The decomposition is based on the dynamic factor model in Delle Chiaie et al (2015)

7 .Oil Market Outlook

Chart (8) : Oil Market Balance

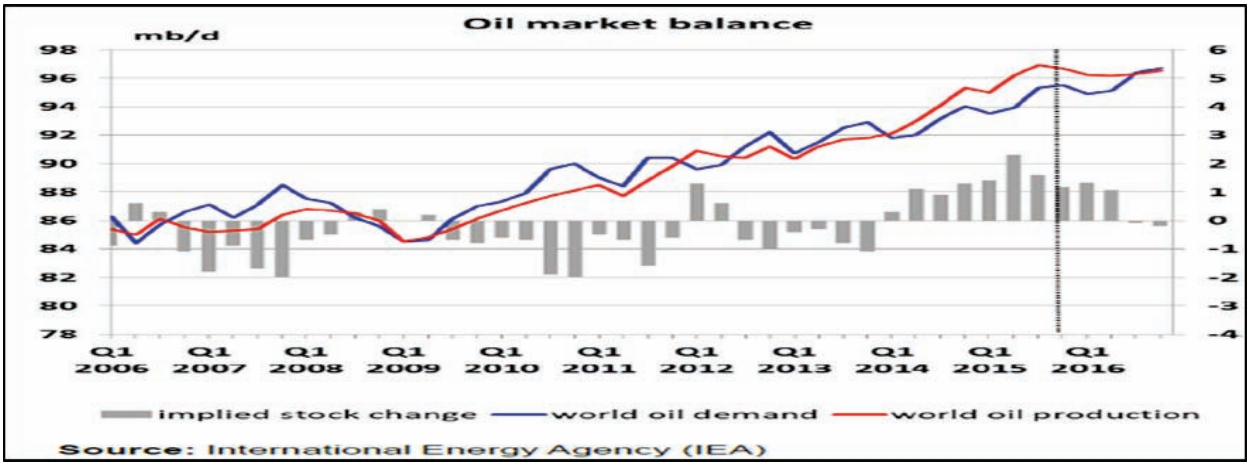


Chart (9): Oil Market Outlook

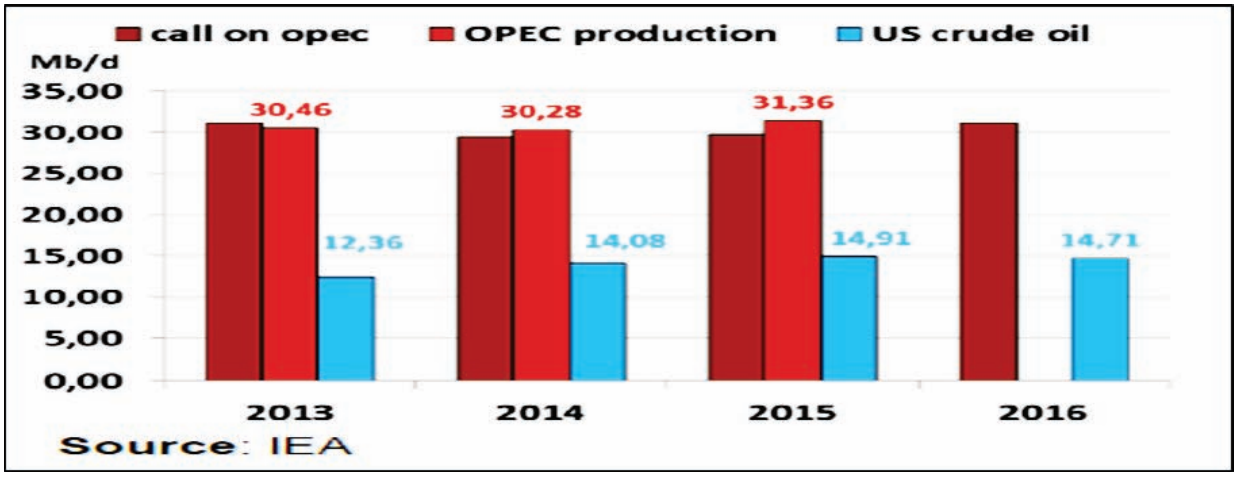
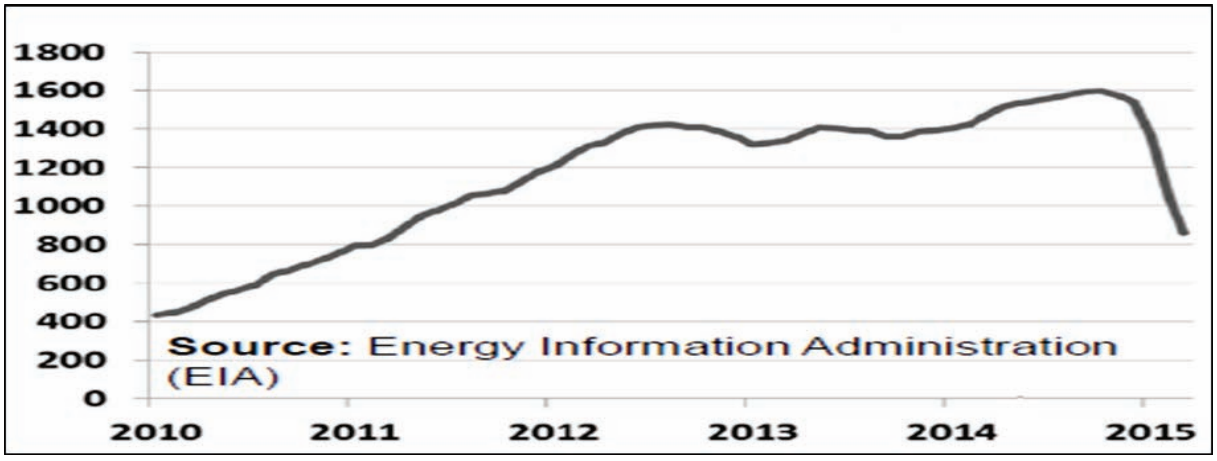


Chart (10): US Crude Oil Drilling Activity



8. Production Prospects: IEA Baseline Scenario

- According to IEA, the share of OPEC in global oil production is expected to increase over the coming decades as a result of:

a) cuts in investments in non-OPEC countries.

b) declining US production from shale formations

Chart (11): Change in Non OPEC Oil Production by Five-Year Periods in the New Policies Scenario

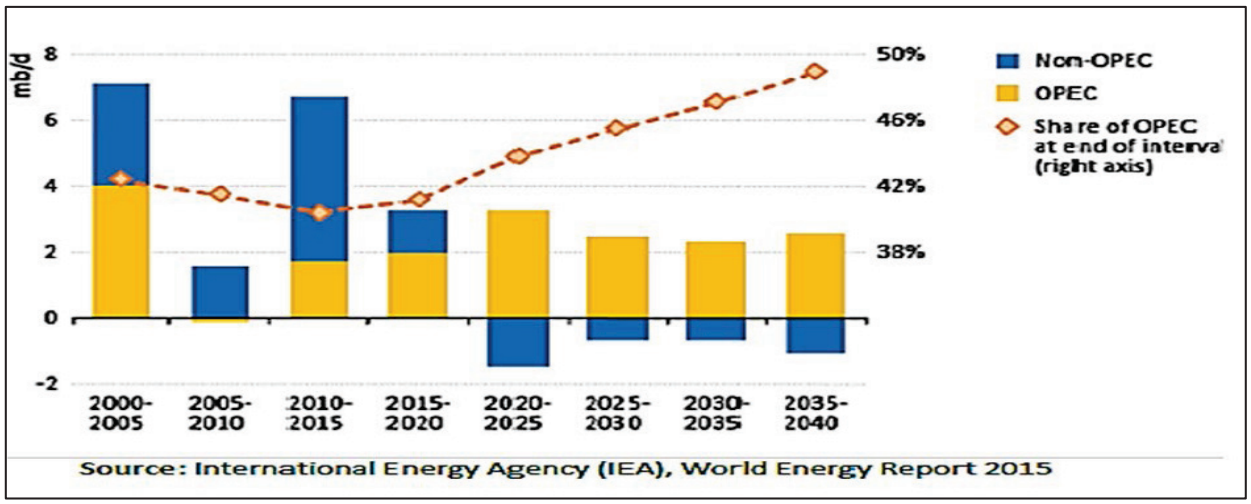
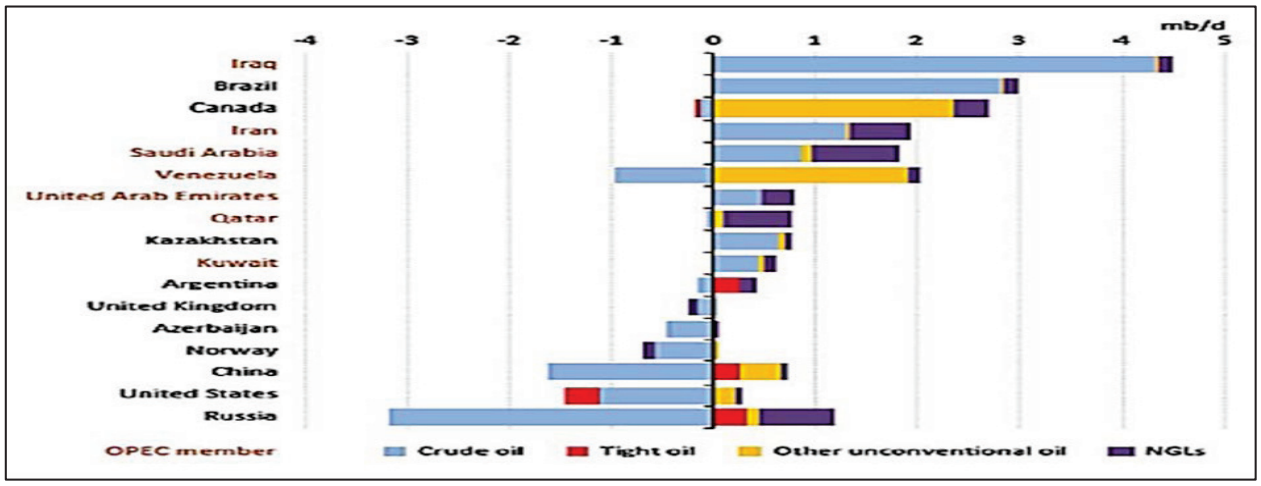


Chart (12): Change in Oil Production in Selected Countries in the New Policies Scenario, (2014-2040)



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Background Paper on Monetary Policy

Japan

Bank of Japan

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25–26th November 2015

Balance Sheet of Bank of Japan & Private Banks

(1) March 2013(Before QQE)

Bank of Japan

tril.yen			
JGSs	128	Banknotes	88
Lending (Operation)	26	Current Deposits	58
CP,SB,ETF REIT, etc.	8	Others	30
Others	14		

Private Banks

tril.yen			
Lending	681	Deposits	1,248
JGSs	366	Borrowing	171
Equity	50	Debt	41
Other Securites	139	Others	216
Depostis with BOJ	55		
Others	384		

(2) March 2015 (change from March 2013 in parenthesis)

Bank of Japan

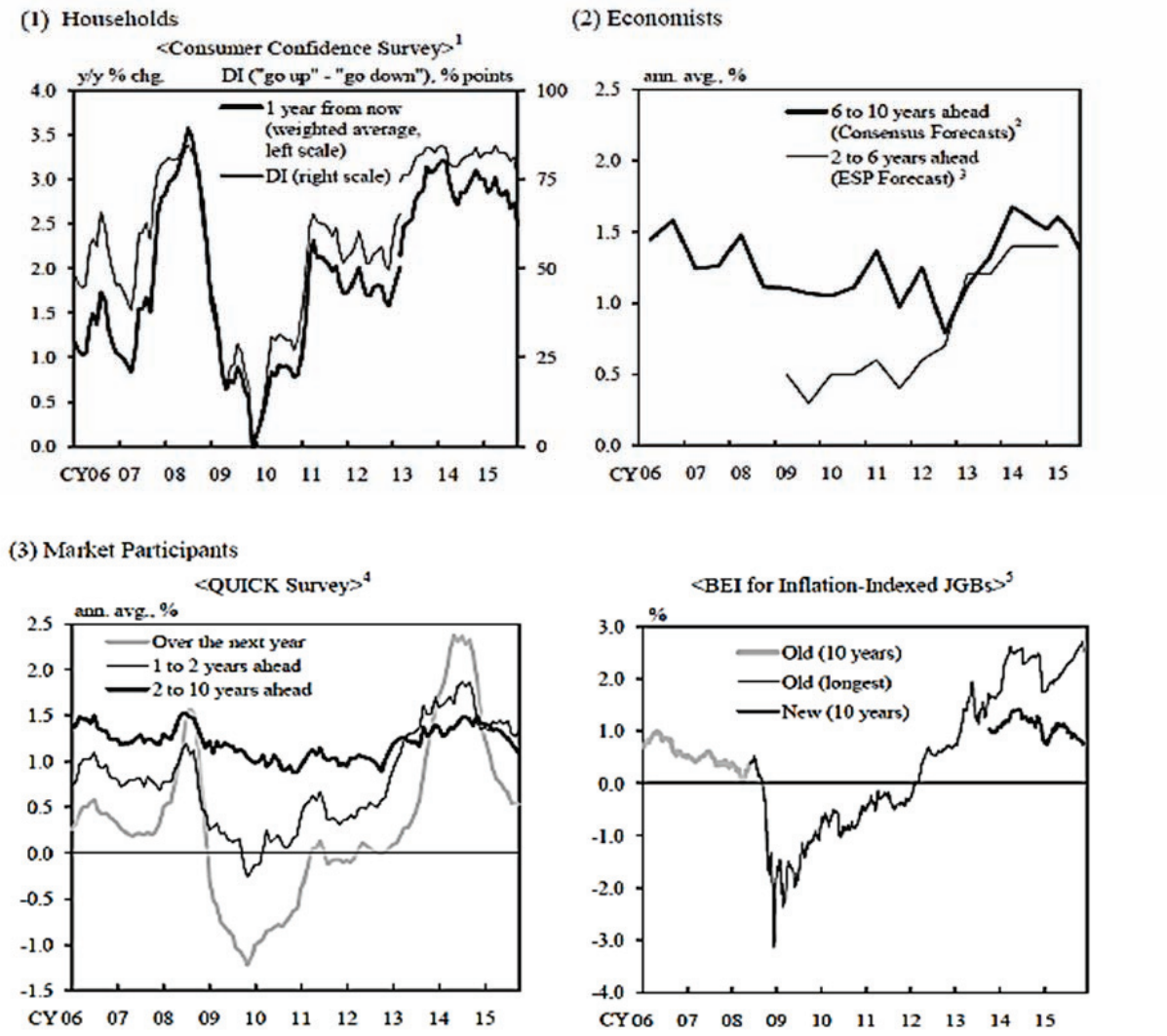
tril.yen			
JGSs	275 (+147)	Banknotes	94 (+6)
Lending (Operation)	36 (+10)	Current Deposits	202 (+143)
CP,SB,ETF REIT, etc.	15 (+7)	Others	44 (+14)
Others	14 (+0)		

Private Banks

tril.yen			
Lending	715 (+34)	Deposits	1,323 (+75)
JGSs	287 (−79)	Borrowing	224 (+53)
Equity	66 (+16)	Debt	43 (+3)
Other Securites	147 (+8)	Others	235 (+18)
Depostis with BOJ	196 (+141)		
Others	414 (+29)		

Source: Bank of Japan, "Flow of Funds."

Inflation Expectations



Notes:

1. The consumer confidence survey asks households to provide their price expectations one year from now. Figures are for all households. The weighted average is calculated based on the following assumption: survey responses chosen by households as their expected inflation rates – "-5% or below", "from -5% to -2%", "from -2% to 0%", "from 0% yo +2%", "from+2% to +5%", "+5% or above" - indicate inflation rate of -5%, -3.5%, -1%, +1%, +3.5%, and +5%, respectively. There is discontinuity between figures up to March 2013 and those thereafter due to the change in the survey method in April 2013.
2. Figures are forecasts made every January, April, July, and October. Those up through April 2014 are forecasts made every April and October.
3. Figures are forecasts made every June and December. The effects of the consumption tax hikes are excluded.
4. From the September 2013 survey, the QUICK Monthly Market Survey (Bonds) has asked respondents to include the effects of the consumption tax hikes.
5. Yield spreads between fixed-rate coupon-bearing JGBs and inflation-indexed JGBs. Inflation-indexed JGBs issue since October 2013 are designated as "new", while the rest are designated as "old". Figures for "old" (longest) are calculated using yield data for issue No.16 of inflation-indexed JGBs, which matures in June 2018.

Source: Cabinet Office, "Consumer Confidence Survey"; Consensus Economics., "Consensus Forecasts"; JCER, "ESP Forecast"; "QUICK Monthly Market Survey (Bonds)"; Bloomberg.