

ECONOMIC
RESEARCH
FORUM



منتدى
البحوث
الاقتصادية

2008

working paper series

ARE THE CONDITIONS FOR THE
ADOPTION OF IT SATISFIED IN MOROCCO?

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Working Paper No. 444

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October 2008

This work has benefited from a financial grant from the Economic Research Forum. The contents and recommendations do not necessarily reflect the views of the Economic Research Forum

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Abstract

The objective of this paper is to explore the feasibility and efficiency of inflation targeting as a new monetary strategy in Morocco. Inflation targeting (IT) is a strategy that aims primarily at controlling inflation and makes it its main objective, but it goes well beyond the simple adoption of a quantitative goal for inflation. A central bank following IT has to set up well-defined rules and performance goals for which it is held accountable by the media, the markets and the government. IT framework is demanding in terms of institutional and economic conditions. These conditions include: **central bank independence, accountability and transparency**, a sound financial system, fiscal discipline and a flexible exchange rate regime. Through the analysis of the recent monetary and fiscal policies in Morocco and a systematic examination of the fulfillment of the IT conditions we argue that Morocco is not yet ready for IT and a transition period would be required. The possibility and the risks linked to the adoption of IT in Morocco are explored through a formal model in the last section of this paper.

ملخص

تهدف هذه الورقة إلى دراسة مدى جدوى وصلاحيّة تبني سياسة استهداف تحجيم التضخم كاستراتيجية نقدية جديدة في المغرب. إن سياسة استهداف تحجيم التضخم (IT) هي استراتيجية تهدف في المقام الأول إلى السيطرة على التضخم وجعله هدفها الرئيسي، ولكنها تتعدى مجرد التبني لهدف كمي معين للتضخم. إن البنك المركزي الذي يتبع سياسة استهداف تحجيم التضخم يجب أن يضع قواعد واضحة وأهدافاً للأداء يحاسب عليها أمام وسائل الإعلام والأسواق والحكومة. ويستلزم إطار العمل لسياسة استهداف تحجيم التضخم توافر مجموعة من الشروط المؤسسية والإقتصادية وتشمل هذه الظروف إستقلالية البنك المركزي والمسؤولية والشفافية ووجود نظام مالي سليم وانضباط ضريبي ونظام مرّن لسعر الصرف. وبناءً على تحليل السياسات النقدية والضريبية الحالية في المغرب (الفصل 2) وإجراء إختبار منهجي لمدى تحقق شروط تطبيق سياسة استهداف تحجيم التضخم فإننا نقول إن المغرب ليست مؤهلة بعد لتبني هذه السياسة وأن الأمر سوف يحتاج لفترة انتقالية. وقد تم تناول الاحتمالات والمخاطر المرتبطة بتبني استراتيجية استهداف تحجيم التضخم في المغرب في نموذج منهجي بالفصل الأخير (الفصل 4) من هذه الورقة.

Introduction

The objective of this paper is to explore the feasibility and efficiency of inflation targeting as a new monetary strategy in Morocco.

Inflation targeting (IT) is a strategy that aims primarily at controlling inflation and makes it the main objective of monetary policy, but it goes well beyond the simple adoption of a quantitative goal for inflation. A central bank following IT has to set up well-defined rules and performance goals for which it is held accountable by the media, the markets and the government. However, unlike a passive monetary policy rule, IT gives the central bank enough discretion to attain its inflation target and also to pursue other objectives, such as real output stabilization. This signifies that the central bank has a single main target, which is to lower inflation to a specified level, but may still be concerned with output volatility (Taylor, 1993) as long as it is consistent with its inflation target. The feasibility and the potential benefits of IT depend on the credibility of the central bank, and therefore on its accountability and transparency and on the willingness of the government to comply with the discipline required for IT.

Indeed, it is commonly admitted that the IT framework is demanding in terms of institutional and economic conditions.

One of the fundamental institutional requirements is **central bank independence** which enables it to freely adjust its instruments of monetary policy to attain its objective of low inflation. Independence implies that the central bank has enough discretion in the conduct of monetary policy, and in particular that it can decide to finance or not to finance the government budget. Moreover, there should not be any political pressure on the central bank to target any objective inconsistent with the achievement of the inflation target.

The second institutional condition is **accountability**. A central bank, once given the autonomy and the means to accomplish its specified task has to become accountable for its actions to the public and to its elected representatives, concerning the successes or failures of its policy. The public must have the capacity to punish incompetent policymakers. This creates better incentives for policymakers to do their jobs well (Mishkin, 2002), and implies periodic reporting requirements to the government and to parliament¹.

Accountability requires a greater **transparency**, materialized by the publication of central bank forecasts. Increased bank transparency is desirable because it reduces uncertainties and helps to ensure that expectations are consistent with the objective of price stability. Nonetheless, only an optimal level of transparency is needed; a very high degree of transparency is not desirable and may reduce the central bank's effectiveness.

To carry out IT, the existence of a well-developed financial system, including a sound financial market, is important. This is a necessary condition to pursue an independent monetary policy. The lack of indirect monetary instruments will slow the financial market, which in turn will reduce the monetary policy effectiveness, leading to a delay in impacting inflation. It has been shown that financial instability is a serious threat to the success of IT (Mishkin, 2000).

A sound fiscal system and fiscal discipline as well are necessary before IT can even be attempted (Masson, Savastano and Sharma, 1997). There is a wide consensus among economists that fiscal dominance may hamper the conduct of an independent monetary policy. Although fiscal dominance means there is an excess of fiscal policy pressures on the monetary policy and a heavy

¹ The need for central banks to be accountable provides an additional reason why they should have explicit nominal anchors. If there is no nominal anchor, the criterion upon which the central bank is judged becomes far less clear and consequently it becomes harder to hold accountable.

reliance on seigniorage, it is narrowly related to other factors, namely a shallow capital market, a fragile banking system and the lack of the central bank independence.

IT also requires a flexible exchange rate regime and that there should be a sole predominant target for monetary policy. Having more than one target may destroy the credibility of the central bank, given the conflicts between objectives. When a country chooses a fixed exchange rate regime, the exchange rate target subordinates the monetary policy to its requirements and is likely to lead to deviations from the targeted inflation rate.

Monetary authorities have to be also able to model inflation dynamics in the country and to forecast the inflation to a reasonable degree (see Jonsson, 1999) In other words, central banks should have enough knowledge about the monetary transmission mechanisms (MTM).

The soundness of the financial system and the ability for the central bank to conduct an independent policy are the most crucial of all these conditions and will therefore be examined in more details in section 1. A preliminary analysis of the recent monetary and fiscal policies in Morocco presented in section 2 is deemed necessary as it will shed some light on the readiness of Morocco for IT. which is even more demanding than the policies it has adopted. How successful with its current policies?The other IT conditions will be dealt with in section 3. In section 4, the possibility and the risks linked to the adoption of IT in Morocco are explored through a formal model.

1. Financial Sector Reforms and Soundness

An ambitious reform process of the Moroccan financial sector was launched in the early nineties; its objective was to modernize this sector and to make it more efficient. The reforms first targeted the banking sector and monetary policies (1991-1995) before turning to the stock and bond markets and to savings institutions starting in 1996.

These reforms have been quite successful, and Morocco now has one of the most modern and most developed financial systems in its region. However, financial markets remain shallow and highly restricted, and the government still plays a predominant role, specifically in terms of ownership over most of the financial institutions.

There are currently two supervisory authorities in charge of credit institutions in Morocco:

(i) The Ministry of Finance is in charge of instituting monetary policies and credit instruments in addition to instruments aiming at protecting the liquidity and the solvency of the credit institutions;

(ii) the Central Bank, Bank ElMaghrib (BM), created by the June 1959 Royal Decree (Dhahir). According to this law, many objectives are assigned to BM. It is to maintain the stability of the currency and preserve its purchasing power and to contribute to the overall economic growth of the country. It is also responsible for credit distribution and refinancing mechanisms, and plays a major role in managing the country's exchange reserves and controlling banking activities.

The 1993 Banking Law also distinguishes between two groups of credit institutions, namely banks and other financial intermediaries. The law defines 8 different types of other financial institutions, ranging from leasing to factoring or consumption loan companies. The main difference between these institutions and banks is that the former are not allowed to accept sight deposits or deposits with a maturity of less than 2 years. In addition, there are four specialized financial institutions. These are the *Caisse Marocaine des Marchés* (CMM), a limited liability company authorizing banks to make loans to finance public or quasi public contracts, the *Caisse de Dépôts et de Gestion* (CDG), which collects and directs savings, grants loans and makes advances to local authorities, *Bank Al Amal* which finances investment projects for nonresident Moroccan nationals, and *La Banque des Collectivités Locales* which arranges loan transactions for local governments.

1.1. The Financial Market

The Moroccan financial system integration within the global financial system remains very incomplete, except through ownership links. The system's focus is on financing the kingdom's economy, and foreign activities are generally limited to those that support the domestic business, such as serving the needs of Moroccans living abroad and the restrictions on capital account transactions are still important. Capital account restrictions apply mainly for residents, while transactions by non-residents are much less restricted.

Only fifty three (53) companies are currently quoted on the stock exchange, with a total market capitalization equivalent to 28% of the GDP. The primary market of government securities (bonds and treasury bills) functions well, but the secondary market remains limited to repo-operations. The financing of the treasury has changed significantly during the 1990s. Government securities became the main financing instruments, mandatory holding of government debt instruments were abolished, and reliance on borrowing from the central bank was sharply reduced.

Besides restructuring the already existing stock market, the new legislation created several regulatory bodies and strengthened the institutional framework for bonds and money markets. Since August 1995, the stock exchange has been managed by the SBVC (Société de Bourse des Valeurs de Casablanca), which was privatized within the framework of the financial sector reforms. By 2003, 14 stock broking companies were operating in the market, each being shareholders with equal fractions of the SBVC, and 55 companies were listed for trading. The legislation imposes a 10 to 15 percent withholding tax at source on dividends applicable to both domestic and foreign investors but securities are exempt from capital gains tax.

The financial authorities also created a Council on Securities Markets Ethics (CDVM), a regulatory body whose primary objective is to protect investors from fraud in securities markets and monitor the proper functioning of the capital market. Even though it was intended to enjoy large autonomy from the government, this body has been in fact under constant criticism from market professionals because it is confined to a mere advisory role, where most decisions are still made at the Ministry of Finance.

Following the reforms, two types of mutual funds were established, the FCPs and the SICAV. The first category corresponds to investment funds operating as co-ownerships of transferable securities. Their shares are issued and purchased at the request of any subscriber or shareholder at the net asset value. The minimum share capital of an FCP has been set to Dh 1 million. SICAVs on the other hand are limited liability companies whose purpose is to manage a portfolio of transferable securities and available funds. The capital of the SICAV is augmented anytime a new subscriber is admitted to the trust set to a minimum of Dh 5 million.

As to the bond market, by 1995 its institutional framework was completed. New methods of Treasury securities auctioning were put in place, maturities were standardized with due dates of 13, 26 and 52 weeks for short-term papers, 2 to 5 years for medium term issues and 10 to 15 years for long term bonds, and the treasury securities market was opened to individuals and non-residents.

1.2. The Banking System

The banking system dominates the financial system and consists of two sub-sectors: 14 multipurpose banks and 5 specialized banks. The sector accounts for the bulk of financial system assets (60%) and is strongly linked with the other components of the financial system. The aggregate banking sector assets amounted to 90% of the GDP at the end of 2003. The Moroccan state continues to play an important role as a controlling shareholder of banks. The public banking system represents 43% of the total banking system assets.

The urban areas in Morocco have been well served by a highly developed banking system of public credit institutions and private banks. However, a large number of Moroccans still put their savings in jewelry or real estate or, as is the case in the rural areas, in livestock or land, and they do not make use of the banks' credit facilities for private consumption purchases. Nonetheless, Morocco is relatively highly monetized even in remote local markets.

BM, along with its current currency, the Dirham, was created in 1959 as a public institution having all of its capital subscribed by the state. BM has always administered foreign exchange, extended credit to commercial banks, and acted as a banker to the government, to other banks, to other credit institutions, and to certain state enterprises. Paper money issued by the central bank was backed by gold or convertible currency (the currency of Morocco's major trade partners) in the amount of at least one-ninth of all dirhams in circulation.

The central bank had a broad array of intermediate monetary policy instruments, such as interest rate levels, purchase of treasury bonds, and the maintenance of reserves. Morocco has had a history of effective monetary and credit policy.

Commercial banks have been permitted to offset purchases and sales of foreign currencies on behalf of their customers but must use the rates established by the central bank and must report daily the balance of their foreign exchange operations. No foreign exchange market existed in Morocco to permit banks to trade with each other, and imports or exports of the dirham are not permitted.

Before the reforms, the monetary authorities intervened heavily to promote the financing of specific sectors of the economy deemed crucial to the development of the country. Their objective was to induce banks to grant priority financing to support four main sectors of the economy, namely small and medium-sized enterprises, the export sector, the agricultural sector, and the housing sector, especially the low-income segment. Until the early nineties, foreign investment was subject to tight restrictions and/or approval by the monetary authorities, and the "Moroccanization" decree of 1973 limited foreign ownership to 49 percent to ensure local control.

However, as a result of the reforms undertaken by the country, most of the above restrictions were abolished in order to allow the financial sector to promote economic growth through more efficient allocation mechanisms.

The reform program also included policies intended to reduce the role of the state in the management of banks. A vast, comprehensive program of privatization was launched in 1994 and more than sixty state-owned enterprises have been privatized since the start of the reforms, including four banks in 1995. However, four banks still remain under the control of the state but only one is currently profitable. The Crédit Populaire Marocain (CPM) group is the uncontested banking sector leader, accounting for 30.26 percent of total bank deposits and 21.34 percent of extended credit by 2002. The government launched the privatization of the CPM in 2002 by relinquishing 21 percent of the CPM to the regional Banques Populaires. This was to be followed by the sale on the stock market of the government's remaining 20 percent share by the end of 2003. Conversely, the other three state-owned banks have colossal loans in arrears attributed by observers to corruption and inefficient management practices of these institutions, which have forced the authorities to launch restructuring programs in conjunction with the other commercial banks in order to prevent a banking sector crisis.

In addition, and to comply with international standards on banking regulations, banks were required to meet the prudential ratios designated by the Basle committee (see appendix 2). The financial reforms also brought about changes to the overall structure of the financial sector.

To increase competition among banks, the government opened some banks' capital to private participation, both domestic and foreign. The new regulation also enhanced banks' authority in lending decisions and cancelled the "Moroccanization" decree of 1973 which restricted foreign

ownership in strategic sectors to 49 percent. Consequently, foreign ownership in Moroccan banks has become widespread and several foreign banks currently hold majority control in major Moroccan banks².

1.3. The Interest Rate

The first step of the reforms consisted in increasing the domestic interest rates to positive real levels prior to their gradual full liberalization. Deposit rates were first targeted by the reform in July 1990, shortly followed by medium and long-term lending rates in October 1990 and short-term lending rates in January 1991, although interest rate liberalization was not fully effective until February 1996. The minimum lending rate, the “*Taux de Base Bancaire*” (TBB) has been set since January 1998 at 8 percent for short-term loans, 8.25 percent for medium-term, 9 percent for long-term loans and 8 percent on export loans since October 1997. Banks’ loans are also subject to a maximum “usury” rate, the “*Taux Effectif Global*” (TEG), which is set by the Central Bank every 6 months and which was around 15 percent in 2000. In view of the low level of inflation since 1996, this usury rate is in fact too high and has not been a significant constraint on bank lending policies. The general, if uneven, the decline in the rate of inflation is portrayed in the graph 1:

2. Monetary and Fiscal Policies in Morocco

Since in the early 1990s, Morocco has adopted a rather fixed exchange rate regime with the Dirham pegged to a basket currency. The country succeeded in implementing tight demand management policies to contain the rise in prices of non-tradable products. The capital account restrictions have allowed the authorities to maintain a pegged exchange rate in combination with an independent monetary policy. Monetary policy itself aims at maintaining price nominal exchange rate stability. Hence, more than one objective is pursued; this is done through an informal quantitative framework, using indirect instruments. Monetary policy is also constrained by the current fiscal policy. Fiscal dominance is not felt strongly because the government benefits from exceptional privatization income but the structural fiscal deficit is high and may transform in the near future in a serious challenge.

2.1. Monetary Policy: A Historical Perspective

The current policy is actually the outcome of a gradual process, which is worth presenting briefly. Since its independence in 1956, especially since 1960, Morocco has witnessed three main phases in its monetary policy, in line with the changing economic and financial conditions.

Phase 1: The 1960s-1982 Period

Monetary policy since independence has generally been prudent except for some periods, such as between 1979 and 1984 during which the rising budget and balance of payments deficit required direct government intervention in monetary policy. Indeed, the late 1970s and early 1980s involved economic instability in Morocco, as in most developing countries. Budget deficits were very large, inflation reached record levels and external debt came to exceed GDP. Economic growth slowed down significantly, inflation and unemployment soared to double-digit levels, external debt (as percent of GDP) and debt service (as percent of export proceeds) reached alarming levels, in addition to experiencing a chronic balance of payments deficit throughout the period 1979-1984. The money supply grew much faster until 1983. It is worth noting that the largest price increases were those of foodstuffs, transport, and housing. Hence, the poor were the hardest.

² The French Société Générale, BNP Paribas and Crédit Lyonnais hold majority control in SGMB, BMCI and CDM respectively, AXA controls 20 percent of BMCI and 10 percent of BCM, and Crédit Agricole-Indosuez holds 14.6 percent of Wafabank.

Phase 2: the 1983-1992 Period

Given the scale of financial imbalances and the exhaustion of foreign exchange reserves in the early 1980s the government of Morocco had, in 1983, to ask for a partial rescheduling of its external debt and to implement a structural adjustment program (SAP). Supervised and financed by the IMF and the World Bank, this program has been designed to restore the fundamental macroeconomic balances, and to gradually establish a monetary policy based on market mechanisms. The reform plan had two components, a general stabilization program under the supervision of the IMF and a sectoral and structural adjustment program under the World Bank. The IMF program, which spreads over a period of five years, and which was divided into three eighteen-month duration stand-by arrangements, aimed primarily at reducing both the country's current account and fiscal deficits to 4 percent of GDP by 1986. Annual GDP growth targets were set at 3 percent and the country was strongly encouraged to avoid external borrowing in order to reduce the pressures on the balance of payment and the treasury. On the other hand, the World Bank program covered a wider range of sectors and had as one of its primary targets to liberalize prices and eliminate price subsidies, including the interest rates. Trade liberalization was also on the World Bank's agenda, which hastened devaluation of the Moroccan Dirham³.

As far as the monetary policy is concerned, it is worth noting that during this phase the hierarchy of objectives of monetary policy was reversed, giving priority to restoring fundamental macro balances while growth was not the top priority. Structural financial reforms were not the first priority either. The primary role of the financial sector was then to respond to the financing needs of the government and of public sector enterprises, as well as to grant credit at preferential rates to government-defined priority sectors. Credit to the private economy was tightly controlled by the government through the central bank. In order to control bank intermediation and to submit the financial system and monetary policy to government needs, mandatory asset holdings used to be enforced⁴.

Phase 3: the 1992-2005 Period

By 1993, the financial sector was incorporated into the adjustment process and interest rate and credit liberalization was integrated in the main reform program. During this third period, the monetary authority therefore lifted the credit restrictions and adopted indirect control instruments, and the role of the monetary policy was reshaped. Growth became the government priority concern. The monetary policy sought to ensure that the productive sector enjoyed adequate funding.

At the same period, Morocco has started to carry out a monetary targeting strategy based on growth rates of M3. However, the difficulties BM has faced in reaching this target have led it to consider a narrower aggregate, namely M1. The current practice of monetary policy implementation is facilitated by the existence of rather strict capital account restrictions. At present, M1 constitutes the reference for monetary policy, whose increase has been fixed for most of the recent years within a range of 6 to 7%, assuming that real GDP growth rate was at 3.5 to 4.5%, the inflation rate at 2 to 3% and the velocity of money was constant. Although the monetary authorities' official target is to preserve the stability of the currency, monetary targeting

³ The Dirham had been devaluated by 50 percent against the French Franc and the Deutschmark and by 30 percent against the US Dollar and the British Pound at the start of the reforms. Measures to reduce tariff and non-tariff barriers led to a progressive opening of the economy to international competition and imports were gradually deregulated.

⁴ It was chiefly question of mandatory holding assets in the form of required reserves, "Plancher d'Effet Public", (PEP henceforth, which is the minimum portfolio of T-bills banks were required to hold), CNCA (Caisse Nationale de Crédit Agricole) 1-year deposit notes and 1-year maturity T-bills were enforced to control bank intermediation.

and price stability are announced as main policy objectives; which means that the central bank had multiple objectives.

2.2. Monetary Policy Instruments

The main instrument that has been introduced is the open market operations. It is worth noting that the effectiveness of such instrument depends heavily on the degree of development of the financial market. Being aware of the need to meet the necessary condition to the implementation of a policy based on indirect monetary instruments, the Moroccan monetary authority has introduced major modifications to the refinancing procedure at the central bank in 1995. Banks' demand for central bank refinancing permits the indirect control of credit activity through increasing or decreasing the interest rate on advances granted to the banks.

More specifically, the new legislation offers banks three different options to replenish their liquidity. Initiated by BM, the first option consists of REPOs at 1 week by tender. Once a week, banks communicate their liquidity needs to BM along with the interest rate they're willing to pay. The central bank then sets its lending rate and only those offering a rate higher than the one set by BM are satisfied. The second option conversely is left to the initiative of the banks which can request funds from the central bank up to twice a week in the form of 5-day REPOs to cover their additional liquidity needs, paying an interest rate obviously higher than the one charged for the first option. As far as the third option is concerned, either the banks themselves or the central bank can initiate it when a given bank's account at the central bank has a debit balance at the end of the day. It consists of 24 hours REPOs at a different rate depending on which party requests the refinancing. If the transaction is initiated by the bank, the interest rate charged corresponds to the 5-days REPOs rate plus 4 points; otherwise it is equal to the 5-days REPOs rate plus 6 points if initiated by BM.

The absence of a deeper money market open market operations have not been effectively used by the Moroccan monetary authority. BM tried at least three times in order to adjust the monetary policy framework (1995, 1999, end of 2003). The unfulfilled conditions forced BM to resort again to the rules-based instruments, more specifically to the reserve ratio (see below).

From the second half of 1999 onwards a persistence excess of liquidity has appeared due mainly to flow of foreign currencies generated by the privatizations, the favorable trend in tourist earnings and transfers of Moroccans living abroad. In order to mop up the surplus and stop the fall of the interbank rate, BM therefore resorted to liquidity withdrawal operations, almost continuously between October 1999 and December 2002, by selling its entire portfolio of Treasury bills on the secondary market. Nonetheless, the effort seemed insufficient to mop up the liquidity excess; hence, BM had to raise the monetary reserve ratio in 2002 and in 2003.

The conduct of monetary policy through reliance on market operations is based on the central bank monopoly of money creation. In general, a central bank can either set the price for base money, or it can target the quantity it provides to the system. When markets are not developed enough and therefore reliable price information are lacking, the central bank may be forced to rely on quantities (monetary aggregates, credit, or components of the central bank's balance sheet) as indicators or intermediate targets for monetary policy. Quantitative variables are then more reliably measured and monitored (Svensson 1997a) but the linkage between the short-term rates, monetary aggregates and inflation is not clearly understood.

In the early stages of financial reforms, decisions to modify official interest rates may remain politically difficult, even if the law gives the central bank full authority to adjust its policy rates, thereby bringing about rigidity in the upward movement of the rate. In the context of such markets, quantities (of the base money for instance) rather than the interest rate may be used as an operating target for monetary policy. This would be even more so when the technical capacity of the central bank is limited, the balance is likely to be tipped further away from the anchor that

relies on fine and well-informed judgments by policymakers and toward relatively simpler and more rule-based frameworks. Therefore, simple money rules (such as relatively mechanical money/credit growth targets) or simple exchange rate rules (such as fixed exchange rate regime) have been the preferred option for anchoring monetary policy in Morocco.

In the case of Morocco, the money target growth (Δb^*) was set at a level consistent with the projected GDP growth rate (g) plus the expected rise in prices (Δp):

$$\Delta b^* = g + \Delta p$$

The development in foreign assets (NFA) corresponded to a balance of payment target, so as to bring foreign exchange reserves to a level considered sufficient in terms of months of imports.

$$\text{Base} = \text{NFA} + \text{NCG} + \text{NCB} \text{ (or borrowed reserves)}$$

$$\Delta m^* = k \Delta \text{Base}$$

NCG: credit to government; NCB: credit to the private business.

The increase in lending to the private sector, which is closely linked to the trend in economic activity, was set at a level slightly higher than the rate of growth at current prices. The development in claims on Government was managed in a way that the Treasury's reliance on monetary financing was consistent with the monetary target and with the planned coverage of the budget deficit, taking into account the expected growth in foreign assets and lending to the private sector. In order to reach its objectives and in order to sterilize the excess liquidity resulting from growth in foreign exchange reserves and from financial resources extended to the treasury by central bank, the monetary authority had more active recourse to the monetary reserve ratio (see graph 4). Overall, the authority succeeded in bringing prices under control, and in accumulating considerable foreign reserves.

2.3. The Lending Policy

In order to assess Moroccan banks' attitude towards private sector investment lending, one should have an idea about the use banks make of the deposits collected. The bulk of deposits are converted into loans that benefit primarily the public sector and the largest private firms of the country. The remainder is then allocated to consumption related loans and to small and medium-size enterprises, with a residual portion being deposited at the central bank and/or used to buy government papers. Data published by BM reveal that credit to companies and to individuals (mainly consumption and housing loans) have indeed been steadily increasing over the past decade at the expense of credit to individual entrepreneurs and that credit rationing is still very acute in Morocco despite the ongoing financial reform. Although Moroccan banks are not lacking resources, and although they could lend more at the current market rate to private investors, they prefer to restrict their lending activity because of the high default risk. Although it's been decreasing over the past decade, short term lending remains predominant and is used primarily to finance overdrafts; which amounted to 37.6 percent of total commercial bank credit in 2001. Another reason that might explain this behavior is that private sector investment lending is also constrained by weak demand resulting from insufficient investment returns in Morocco. Prohibitive cost of capital appears also to be an obstacle to higher loan demand. It is worth noting that that demand for loans would increase without being more risky if banks managed to reduce interest rates (as well as other costs associated with the loan allocation process).

However, inefficiency problems along with lack of competition have led banks to keep rates high, and hence deter demand for investment loans. Indeed, what might be noticed from the interest rates dynamics is the following: although most of interest rates (deposit interest rates) are decreasing, the lending rates are not following; and the spread between these rates is getting wider. An essential explanation of this behavior is that the important level of NPLs is discouraging bank from financing enterprises (see Table 1).

A recent study on the Moroccan manufacturing sector published in 2002 and carried out by the Moroccan Ministry of Commerce and Industry in conjunction with the World Bank reveals that reinvested earnings finance 62 percent of the surveyed firms' investment needs, with banks classified far behind as the second source of financing with a low 20 percent. The main reasons highlighted by the study as to why Moroccan business avoid lending include the prohibitive amount of guaranties required by banks to secure the loans along with very high interest rates on loans. Banks collateral requirements make it impossible for several promising projects lacking the required guaranties to be financed. In addition, the problems associated with the insolvency of two major specialized banks have significantly increased the proportion of overdue loans in the banking sector to 17.3 percent of total loans by 2000. Because of this surge of loans in arrears, banks are now required to reorganize their lending portfolio and therefore apply more stringent requirements on loan applicants. Furthermore, and as a result of the lack of investment opportunities mentioned earlier, those who can offer the required guaranties do not borrow anymore and jam banks with their money, hence creating excess liquidity in the market.

The presence of a sizable portfolio of nonperforming loans weighs heavily on the cost of credit. The fact that these nonperforming loans are concentrated among large enterprises further penalizes SMEs. The significant effort made by stakeholders to clean up the balance sheets of banks—particularly the write-off of a substantial number of nonperforming loans that had been fully provisioned—has already helped to reduce this impact.

2.4. Fiscal Policy

It is true that compared to its fiscal imbalance of the eighties, Morocco has managed to significantly reduce its fiscal deficit and its public debt to an affordable level.

Arguably, the new fiscal and monetary policies have contributed to lowering inflation. However, this does not mean that monetary policy is not under fiscal dominance any longer. A closer observation of the recent fiscal policy indicates rather the opposite.

First of all the availability of privatization funds and of foreign currencies has created the illusion of abundance of resources. The current account has indeed eased in Morocco mainly as a result of high remittances from nationals working abroad and a rather low rate of investments. The low rate of investment is arguably caused by the crowding out of private investments by the high level of public expenditures. The fact is that the structural fiscal deficit has been much higher than the transitory deficit, and fiscal discipline remains a problem. In Morocco, the rate of fiscal deficit excluding privatization revenues has increased after 1995 and has been around 5% during the 2000- 2005 period. Unless this trend is radically changed, which is socially and politically a real challenge, sooner or later, this fiscal gap will generate excessive pressures on monetary policy.

The current fiscal deficit is also the outcome of the pressures on fiscal revenues due to trade liberalization, especially to the implementation of the trade agreement with the European Union and most of all to the high degree of tax evasion. Potentially tax revenues may be substantially increased if further reforms are implemented to improve the fiscal administration capacities.

In the meantime, the expenditure side of the budget remains inflexible. Standard and Poor's recently downgraded Morocco's country risk outlook from stable to negative.

The government has repeatedly but unsuccessfully announced its commitment to reduce its fiscal deficit, in particular since 2000. The political transition allowing for a pluralistic participation and the huge social and regional gaps, in particular those gaps between the rural and urban areas and the high level of urban unemployment are generating strong pressures on the budget and leading to higher expenditures. Hence, there is more room for mastering the fiscal deficit through increasing revenues rather than lowering expenditures or at least expenditure growth; but this is also a real political challenge.

On average, the level of public debt in Morocco exceeds 70%. Such situation is emerging as a serious concern. Reducing this public debt ratio and in particular that of foreign currency-dominated debt is therefore necessary to reduce the vulnerabilities in a context of a more exchange rate flexibility.

For the time being, in Morocco, despite the progress achieved with respect to the development of the government debt market and the moderate level of inflation, the government still relies on seigniorage revenues in order to close the transitory gap between its revenue and its expenditure flows. It is true that the reliance on seigniorage revenues is often higher in developing countries due to low and unstable incomes and poor tax collection procedures but this is not consistent with IT, and is likely to hamper the central bank's independence.

3. Are the Other IT Conditions Fulfilled in Morocco?

In this section, we review and analyze the other important IT conditions and check whether they are met in Morocco or not. Central bank independence, accountability, transparency and the forecasting capacity of the central bank through its knowledge of the monetary transmission mechanisms are the main conditions to be examined.

3.1. Central Bank Independence

To assess the degree of independence of BM, the computation of an independence index will be very helpful. To this end, three types of indexes have been constructed using the methodology of Debelle and Fischer (1994), Bodart (1990) and Loungani and Sheets (1997). These indexes were computed on the basis of a questionnaire composed of 14 questions (see appendix A). The questions cover political, economic and institutional aspects⁵. The first index discards the political aspects and assigns equal weights to goal independence and to economic independence (hereafter DF index). The second index is called the Buba index. It was used to measure the gap between the former Bundesbank, widely known for being highly independent, and any other given central bank. To construct such an index, we consider only questions for which the Bundesbank makes non-null scores; these questions are assigned equal weights (details in appendix A). Finally, an index that takes into consideration all the questions and assigns to them the same weight is computed; we called it General index (G index).

The indexes we consider in this paper differ from each other according to the weight structures. To compute these indexes, each "yes" response to Q1, Q3, Q4 and Q7, Q8 scores one point, every "no" response to Q5, Q6, and Q9... Q14 also scores a point and each "yes" to the three subparts of Q2 is worth one-third of a point. Non-clear answers receive half a point. Finally the indexes are computed by taking into account the structures of weights. A higher score signifies greater central bank independence. A number of central banks are reported on table 4 as comparators.

According to Buba index as well as to G index, BM is far from being independent. It scores 0.32 and 0.45. BM seems however to be more independent according to these metrics than central banks of France and Spain, but it appears to be less independent than the central bank of Tunisia. Indeed, not only is BM's governor is appointed by the executive branch but also six of the government representatives sit on the BM board, each representing a Ministry. The BM Council is composed of the governor, the vice governor or the director general of the BM, a representative each from the Ministry of Finance, the Ministry of Economic Affairs, the Ministry of Industry, the Ministry of Agriculture, the Ministry in charge of Local Government, and the Social and Economic Council, together with five members each nominated for three years and having proved expertise in monetary and financial affairs. The new statutes of the BM do not specify the term, condition or even causes for which the government may decide to eventually dismiss the governor.

⁵ We have used the same questionnaire as Loungani and Sheets (1997).

This makes it hard for BM to insulate against political pressures. As a consequence, BM could not be deemed politically independent. As to the instrument independence, according to the DF index, BM scores (0.52) better than some countries having already moved to IT (Poland and Hungary). From this point of view, BM could be considered as instrument independent. In other words, it is free to manage its instruments so as to reach its specific goals. The information conveyed by DF index, which contradicts the one delivered by the other two indexes, should be taken with great care as it reflects more legal statutes than facts.

As for the relationship between the Ministry of Finance and the BM, the new statutes have brought important clarifications. The separation between monetary and fiscal operations is satisfactorily defined and is reinforced by the revised Statutes of the BM. These prevent the granting of direct financial assistance to the state, except for cash facilities, which are also regulated. This measure is intended to force the government to seek public source for financing its needs, and to induce banks to hold assets that would be eligible for BM monetary operations. However, in practice, as mentioned above, the reliance on seigniorage remains important

3.2. Oversight, Transparency and Accountability of the Central Bank

The primary objective of the Moroccan monetary policy is the maintenance of price stability. This objective is clearly stipulated in the new statutes, together with the new Banking Act. However, the process of formulating and reporting monetary policy decisions is not completely transparent. In general, greater transparency is shown by the publication of central bank forecasts. As a matter of fact, transparency should focus on the operational objective of the central bank. As far as Morocco is concerned, the framework of the monetary policy is still an informal quantitative framework; it includes the intermediate targets as well as the rules and the procedures.

The central bank has not been accountable to the public in the matter of monetary policy. BM is accountable only to the government. The government owns the central bank and is allowed to use it according to its development plans. Although the Moroccan government had a certain respect for the stability of the macroeconomic environment it has kept the central bank under its control and has reserved for itself the power of oversight of BM. There are auditors but their role is to check the accounting practices of the central banks, and the amount of information provided to the public concerning monetary policy is limited to the publication of vague comments on financial and monetary aggregates, prices, economic growth and exchange rates. Very little is published on the conduct of monetary policy. While BM has started to publish the targets for its monetary intermediates aggregates on the "Annual Report", it does not publish a numerical target for inflation. Furthermore, BM does not assess systematically the monetary policy outcomes compared with the declared objectives. Again, BM's reports do not explain progress made toward achieving monetary policy objectives. They are devoid of any forecasting exercise concerning the future inflation dynamics. BM still does not publish press releases of the executive board-meeting; however, it does publish on its website a summary of the council's discussions during its quarterly meeting with vague statements about its future intentions. An interesting but weak oversight of the conduct of monetary policy by BM is the requirement of the Moroccan law that the government appoints an officer that oversees the management of the affairs of BM. The officer is an ex-officio member of the council and he could force a second reading of any decision made by the council but he has no vote. Although, the functions of the officer seem to be concerned with accounting books and management of the daily affairs of BM, his temporary veto allows him to exercise some power of persuasion as to the conduct of monetary policy.

There is only a vague notion of accountability emphasizing responsible management of the affairs of the central bank. There are no explicit norms to measure BM's performance in terms of achievements of the goals of monetary policy.

The requirement of a quantitative control on credit and its distribution, the lack of a clear performance indicator, the lack of independence from the executive branch of the government, the composition of the council, and the monotony of the council's justification of the setting of the interest rate compromise the independence of BCT and its credibility.

3.3. The Transmission Mechanisms (MTM)

It is commonly admitted that among the serious obstacles central banks face, when implementing their monetary policy, is the uncertainties surrounding the MTM. Such uncertainties weaken the effectiveness of the monetary policies and postpone the credibility building. In the specific case of Morocco, the abundance of liquidity brought about by the workers remittance and the privatizations revenues hampers and weakens the monetary transmission mechanisms.

Despite its strategic importance, the MTM has received fairly little interest in Morocco. Thus, BM's knowledge about how its decisions act upon the goal variables remains very uncertain. In particular, it has no precise idea which is the most prevailing channel and about the necessary lags for the effects of the policy to achieve its objectives. BM does not have models, which reflect the functioning of the economy.

The main mechanisms (or channels) will be explored here. The purpose is to try to identify their characteristics and, hence, to assess what it takes for a central bank to build the required analytical and forecasting capacity. Since this is a first attempt in this area for Morocco, our result will be tentative and partial, but they may indicate how much more work is left to be done. Only two channels will be examined: the interest rate mechanism and the credit mechanism.

The Interest Rate Pass-through in the Moroccan Context

Interest rate changes directly affect the economic activities of agents. Changes to the short-term interest rate are the first important step in the transmission of monetary policy. Consumption and investment decisions made by households and firms are expected to be changed as the rate of interest rate charged to them by banks and other financial institutions changes.

A critical element of the transmission of monetary policy is the degree and speed at which changes in the short-term policy rate are transmitted to retail rates faced by firms and households and to long term rates. For the interest rate channel (the money view) to work effectively and efficiently, changes in the short-term policy rate should feed into the bank and other market rates. This process is called the interest rate pass-through. The critical issue here is this "interest rate pass-through" complete enough? Complete pass-through occurs when a movement in the money market rate leads to a **one for one** change in other rates; while retail rates are said to be 'sticky' when they respond slowly to movements in the money market rate. A complete or high pass-through would suggest that a given change in the policy rate will have a larger effect on retail rates. If the financial system is well-diversified in terms of institutions and products, policy signals will transmit quickly and more fully onto market rates; while a higher degree of volatility in the money market rates makes it difficult for market participants to disentangle noise from policy signals and this may reduce the pass-through.

We therefore begin our exploration of Morocco's transmission mechanisms by attempting to gauge the pass-through from money market rates (we use the interbank rate as a proxy for the money market rate) to short and long bank lending rates (SLR and LLR) and deposit (6-month (ID6) and 12-month (ID12) fixed term) rates, and discuss possible sources of stickiness associated with movements in retail rates.

To obtain a better sense of how sensitive retail rates in Morocco are to money market rates, the speed and size of the pass-through will be compared to those of other emergent countries. In order to compute the pass-through, we examine both the long-and short-run dynamics of administered

rate changes. First, the long-term relationship between the administered rate and the market rate is as follows:

$$y_t = \alpha_0 + \sum_{i=1}^m \alpha_i y_{t-i} + \beta_0 x_t + \sum_{i=1}^n \beta_i x_{t-i} + u_t$$

Where y_t represents the endogenous (lending or deposits) rates; x_t denotes the corresponding interbank rate (which is assumed to be exogenous); u_t is the disturbance term; m and n indicate the optimal lag lengths. The long-run equilibrium associated with this equation could be expressed as:

$$y^* = \theta_0 + \theta_1 x^* + u^*$$

Where θ_1 stands for the long-term multiplier, which has to be calculated as:

$$\theta_1 = \frac{\beta_0 + \sum_{i=1}^n \beta_i}{1 - \sum_{i=1}^m \alpha_i}$$

A full pass-through in the long run is reflected by $\theta_1=1$. An imperfect pass-through ($\theta_1 < 1$) could be caused by the existence of market power, a lack of market contestability, switching costs, or information asymmetries. If the long-term pass-through is found to be overshooting ($\theta_1 > 1$) in lending markets, this can be interpreted as a situation where banks increase lending rates to compensate for higher risks instead of rationing credit.

As it stands out from the results reported on Table 7, the pass-through seems to be incomplete to all retail rates. It is worth noting however that the magnitudes of pass-through coefficients associated to lending rates are weaker than those associated to deposits rates. The spread between the short money rate (which could play the role of the marginal cost of funds) and lending rates could be explained in the Moroccan case by the lack of competitiveness between banks. Indeed, the lesser the degree of competition, the higher this spread is likely to be. This lack of competition could be due to regulation, collusion on the part of financial institutions or fixed costs of entering the market. These factors are likely to influence the degree and the speed at which such pass through occurs.

3.4. The Lending Channel/Credit View

One striking characteristics of the Moroccan banking system is that that credit to companies and to individuals (mainly consumption and housing loans) have indeed been progressively growing at the expense of credit to small enterprises (individual entrepreneurs). Indeed, deposits are converted into loans that benefit primarily the public sector and the largest private firms of the country. The remainder is only partly allocated to consumption related loans and to small and medium-size enterprises, the residual portion being deposited at the central bank and/or used to buy government papers (Alauoi, 2004). In other words, although Moroccan banks are not lacking resources, they pursue a credit rationing policy consisting in restricting their lending activity because of the high default risk. Such credit rationing, which deprive a tremendous number of small enterprises from this major source of finance, is still very severe despite the ongoing financial reform.

One reason that might explain this behavior is that private sector investment lending is perhaps constrained by weak demand resulting from insufficient investment returns in Morocco. Excessive cost of capital seems to be an important barrier to higher loan demand. Indeed, it is to

be noticed (see figure 2 and 3) that although most interest rates (deposit interest rates) are decreasing, the lending rates are not, and the spread between these rates is getting higher. This is the demand side.

The supply side, or the credit view, also seems to be significant. Moreover, banks are restricting their supply of loans as they require prohibitive collaterals to secure the loans along with the very high interest rates. Alaoui (2004) reports that re-invested earnings finance almost 62 percent of the firms' investment needs, with banks classified far behind as the second source of financing with a low 20 percent. The likely explanation of this behavior is that NPLs are discouraging banks from financing enterprises.

Let us say clearly that at this stage of our investigation, we realize that even though some results have come out and many hypotheses were raised, it remains rather incomplete. The same is true about the model presented in the next section. This shows that BM will have to invest a great deal in acquiring analytical tools for successful adoption of IT.

4. Monetary Instruments and Inflation: A Formal Assessment

One of the preconditions of a successful inflation-targeting framework is the existence of a stable and predictable relationship between the monetary policy instruments and inflation. In this section, the statistical linkages between monetary policy instruments and inflation in Morocco are analyzed in order to assess the predictive content of some financial variables such as the interest rate or the reserve money. The econometric model that shall be used makes use of the VAR methodology to find the relations between the instruments of monetary policy.

The model is applied to quarterly Moroccan data comprising the 1990:1-2005:4 periods. The variables included in the models are the reserve money (B), consumer price index (CPI), nominal exchange rate (NEER), real gross domestic product (GDP), and the inter-market interest rate. The investigation is conducted using unit root and cointegration tests, and the multi-equation VAR framework. Impulse response functions (IRF) and variance decompositions (VDC) are also used in order to explore the dynamic structure of the system. The IRF represents the expected response of each variable in the system to a one standard deviation shock in one of the system variables. The VDC shows the percentage of the expected k-step ahead squared prediction of a variable induced by innovations in each variable.

The Model

A structural VAR can be written as:

$$A_0 y_t = A(L) y_t + u_t \quad (1)$$

Where y_t is a vector containing the economic variables, A_0 is a matrix of impact multipliers, L is a lag-operator, $A(L) = \sum_{i=1}^k L_i$ contains structural polynomials, and u_t gives the structural disturbances with the covariance matrix Σ_u :

$$\text{Var}(u_t) = \Sigma_u \quad (2)$$

The structural form of a model cannot be estimated without additional information; the sampling information contained in the reduced form of Eq.(1) is not sufficient to estimate all of the parameters in A_0 . Therefore, the need for identifying restrictions arises. In order to identify A_0 , two kinds of identifying restrictions are made (Cholesky decomposition): first, the covariance matrix of the structural disturbances is assumed to be diagonal, implying that the structural shocks are orthogonal. Second, the matrix A_0 is assumed to be lower triangular. For the empirical

analysis at hand, the assumption that A_0 is lower triangular is critical. It imposes a recursive form on the contemporaneous correlations in the system. This implies that the first variable responds only to its own shock, the second variable responds to the first variable plus to a shock to the second variable, and so on. Finally, the last variable in the system reacts without delay to all shocks, but disturbances to this variable have no contemporaneous effect on the other variables. This recursive scheme entails that the ordering of the variables has important implications for the identification of the shocks. In this paper, the ordering was chosen on the basis of the speed with which the variables respond to shocks. At the end, we put the interest rate variable. By putting the interest rate in the last position, one implicitly assumes that the monetary authorities respond to all the other variables contemporaneously.

BM's reaction function includes all the contemporaneously variables. This might be a logical hypothesis when working with annual or quarterly data. In contrast, the interest rate has no immediate impact on the other variables. Its impact is perceptible with a time lag. Concretely, the orders chosen are the following: (IPI, CPI, NEER, MMR) or (IPI, CPI, NEER, B). We have chosen these two specifications because of the lack of a priori information on the monetary instrument the BM uses. The reader may notice that these specifications differ only by the nature of the monetary instrument; the first assumes that the BM uses the interest rate as its main instrument whereas the second supposes that reserve money is the preferred instrument. Overall, according to this picture, the monetary policy does not have any contemporaneous effect, which may be rationalized by assuming the existence of time dependent rules, convex adjustment costs, menu costs or building and delivery lags.

Estimates and Results

Before testing for cointegration, standard unit root tests (ADF and Phillips– Perron tests) have been performed to investigate the existence of unit roots in the variables in levels as well as in their first differences. All variables are found to be $I(1)$.⁶ This finding allows for estimating the restricted form of the VAR model described in Equation (1), namely the error correction form of the VAR or VECM. The lag lengths of the VECM are determined by the shortest lag length that produces serially uncorrelated residuals. The lags that have been selected are four. It should be noted that Johansen's method is very sensitive to the lag lengths used in the system (Stock & Watson, 1993). Some authors suggest reporting results of different lag lengths (See for instance, Swanson, 1998). In order to estimate the dimension of the co-integration space, the trace statistic is reported on Table 7. Trace statistic tests the null hypothesis of no co-integration ($r=0$) against the general alternative of one or more co-integrating vectors ($r>0$). As long as the null is rejected, we have to increment the r and test again. When the null rank $(\Pi)=r$ ceases to be rejected, we may conclude that there are r co-integrating vectors.

For the results reported on Table 8, there seems to be more than one cointegrating vector in each model. Specifically, in case of model M1 three cointegrating relationships have been found whereas only two relationships have been found in case of model M2. Overall, these findings show that a stable linkage exists between the monetary instruments and the CPI. However, the linkage between financial variables and real variables is rather weak. Indeed, it stands out from the four-variable model that inflation is an inertial phenomenon in Morocco, and financial variables (interest rate and reserve money) innovations are not economically and statistically important determinants of prices, but price shocks are. For instance, at two-year horizon (a horizon typically relevant for the inflation targeting strategy) the reserve money variances do not account more than one percent in the prices variability; such contribution remains stable even at a longer horizon (three-year or more). More than this, the interest rate variances contribution in prices variability is totally absent (see Table 8). In other words, variances in prices are mostly

⁶ These results are reported in the appendix.

explained by their own shocks, and the monetary policy instruments have almost no effect on prices. Consequently, policy linkage between inflation and monetary policy instruments seems to be weak and unpredictable⁷. In all cases, money innovations, devaluation or interest rate shocks do not dominate as suggested by the literature review. However the specification summarized by model M2 shows that there is a causal relation going from prices to money, that is, price shocks cause money supply to increase.

The IRFs results show that interest rate shocks do not have any effect on output, while the reserve money appears to be a more effective monetary instrument. An unexpected positive shock of one standard deviation induces a significant increase in output as shown by Figure1 (top-right graphic). Such findings imply that reserve is a more appropriate measure of the monetary policy stance than the inter-bank interest rate. Nonetheless, the two variables do not seem to have any significant impact on prices. These findings may serve as a case against IT in Morocco because for a successful inflation-targeting regime, monetary policy instruments such as money supply, interest rates and exchange rates must contain predictable information about the future path of inflation.

Conclusion

The necessary conditions for the successful adoption of IT have been reviewed; the overall result is that many of the prerequisites of IT are not yet gathered.

The fiscal deficit as well as the public debt observed in Morocco are high and are likely to bring about an inflationary pressure that could undermine the effectiveness of the inflation targeting regime. The recourse to seigniorage revenue is still high implying that the risk of an inflation surge is not completely discarded. The financial system did benefit from the reforms implemented in Morocco since the early nineties but it still needs to be strengthened further. Establishing accurate forecasts of inflation and having accurate knowledge of the MTM is not an easy task, and little has been done to accomplish it. The lack of knowledge of the transmission mechanism will further complicate the implementation of IT.

Crucial reforms are to be pursued before Morocco becomes ready for IT. These reforms are in fact needed for any sound monetary policy choice.

⁷This finding do not seem to vary even when other variables are added to the VAR models such French output, or other domestic variables.

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Appendix A: The Central Bank (CB) Independence Questionnaire:

This appendix presents the questionnaire that may be used in order to compute the main indexes of central bank's independence mentioned throughout the text. The reader may find more details about how to compute them in Bodart (1990), Debelle and Fisher (1994) and Loungani and Sheets (1997). In order to construct the central bank independence index, appropriate weights should be assigned to each of the following questions.

Q1: Does the CB law stipulate price stability as the central macroeconomic objective of the CB?

Q2: Does the CB control the "instruments of monetary policy"? ("Instruments" are (i) open-market operations, (ii) reserves requirements, and (iii) discount rates)

Q3: Is there any bending legal limit imposed on the direct financing of the government by the CB?

Q4: Is the government allowed to receive any direct financing from the central bank?

Q5: Is the central bank subject to government directives in the execution of the monetary policy?

Q6: Can the executive branch or the parliament dismiss the governor of the CB if there is conflict regarding the monetary policy?

Q7: Does the term of office of the CB governor exceed the election cycle?

Q8: Does the term of office of the CB board exceed the election cycle?

Q9: Is the governor appointed by the executive branch (The President, Ministry of Finance...)?

Q10: Are any of the other CB members appointed by the executive branch?

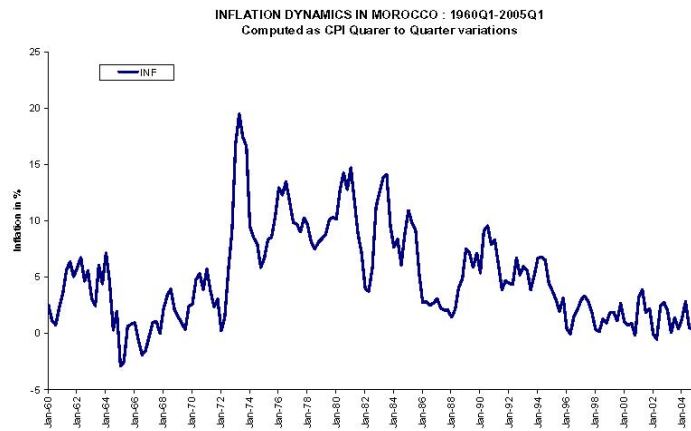
Q11: Is the number of CB board members appointed by the executive greater than the number appointed by other bodies?

Q12: Does a government official or representative sit on the CB board?

Q13: Does a government official or representative sit on the CB board without a vote?

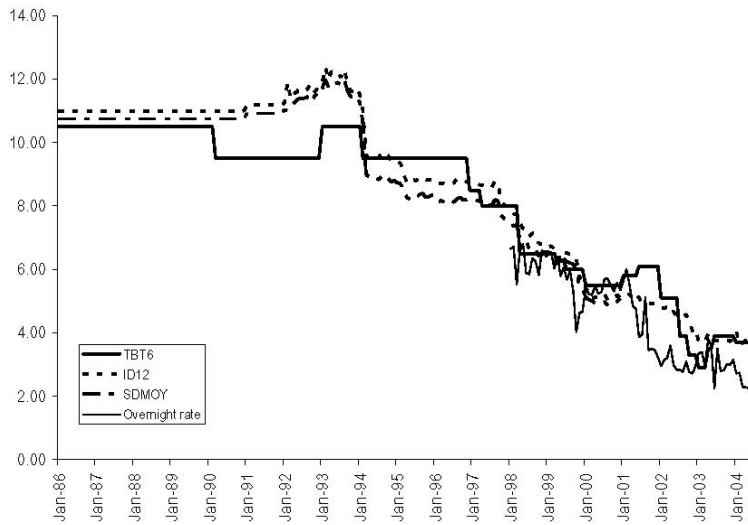
Q14: Does a government official or representative sit on the CB board with a veto?

Graph 1: Inflation Dynamics in Morocco

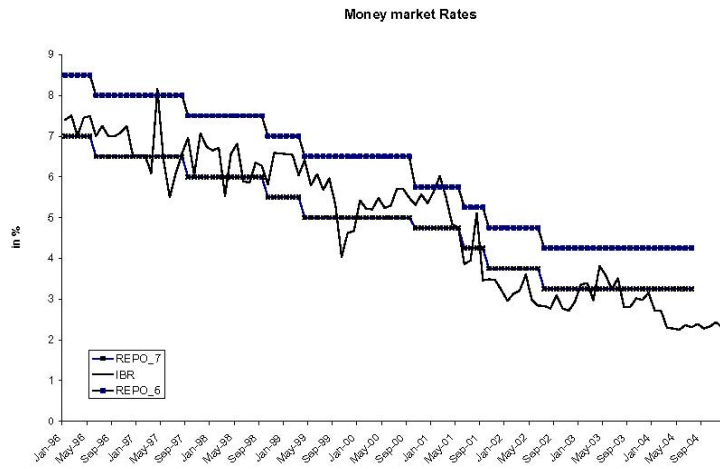


Graph 2: Interest Rates Dynamics in Morocco

Fig.2 : Interest rates dynamics

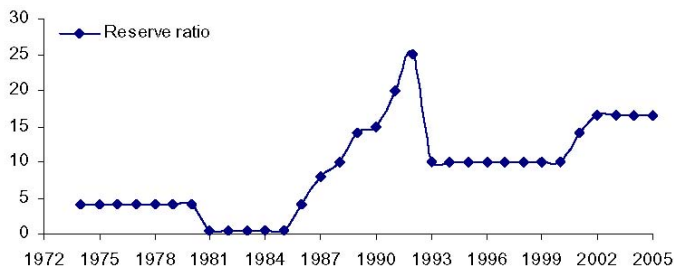


Graph 3: Money Market Rates

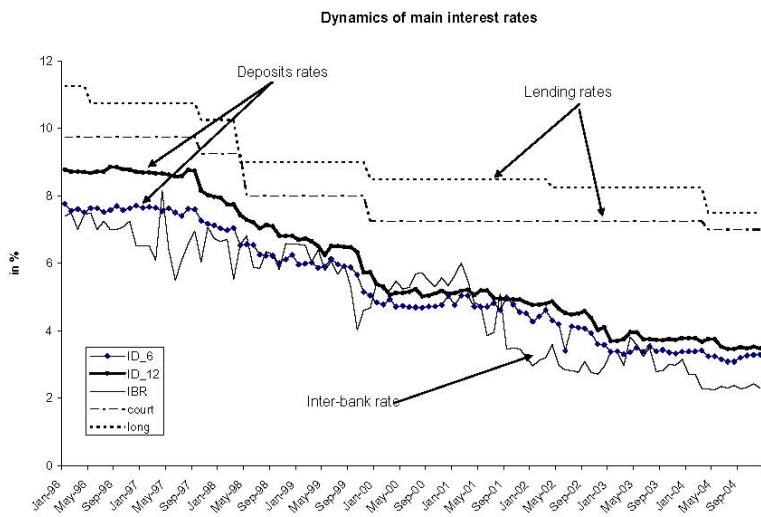


Graph 4: Reserve Ratio

Fig.1: Reserve ratio

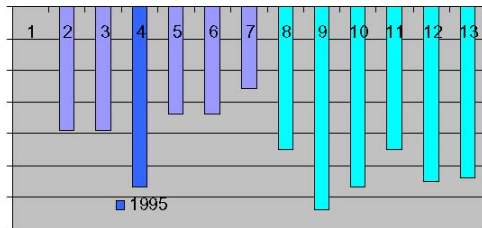


Graph 5: Dynamics of Main Interest Rates



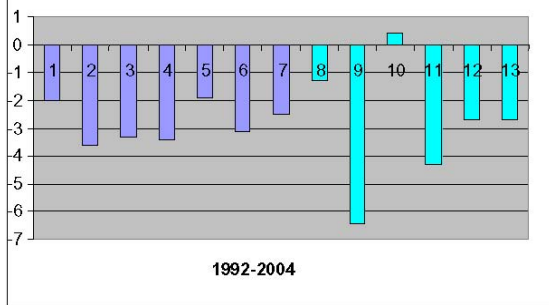
Graph 6a and 6b: Fiscal Deficit in Morocco

6a

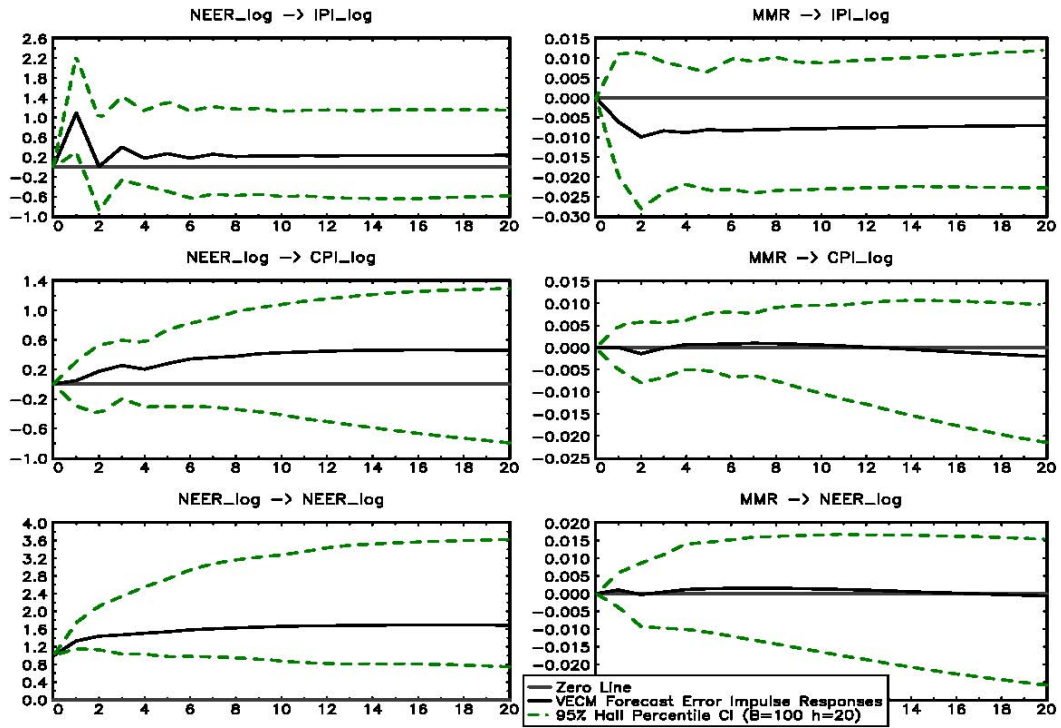


6b

Fiscal deficit including privatization revenue

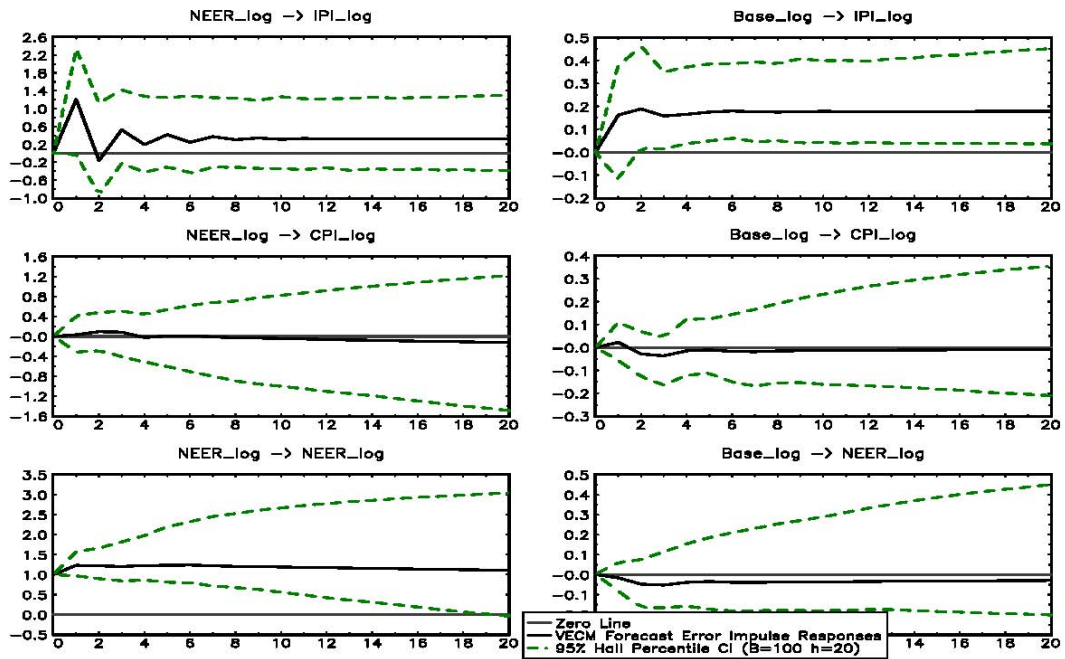


Graphs 8: Impulse Responses for the VAR Model M1 of IPI, CPI and NEER⁸



⁸ These are responses to one standard deviation, ± 2 standard errors.

Graph 9: Impulse Responses for the VAR Model M2 of IPI, CPI and NEER⁹



⁹ The responses are computed to one standard deviation innovations ± 2 standard error.

Table 1: Asset Quality Indicators of Moroccan Banks: 1997-2004

	1997	1998	1999	2000	2001	2002	2003	2004	2005
Gross NPL (%)	17	15	15	17	16	17	18	19.4	16
Provision (%)				47	52	54	54	59.3	58.6

Notes: (1) in percent of gross assets; (2) in percent of NPL.

Source: IMF

Table 2: Saving and Investment Rates (1998-2004)

	1998	1999	2000	2001	2002	2003	2004
National Saving (%GDP)	21,8	23,1	22,1	27,6	26,8	27,5	27,5
National Investment (%GDP)	22,0	23,7	24,1	22,3	22,9	23,5	24,1

Source: Ministry of Finance, Morocco

Table 3: Moroccan Fiscal Policy Indicators: 2000-2005

	2000	2001	2002	2003	2004	2005	Reference
Inflation	1.9	0.6	2.8	1.2	1.5	2.0	2.7%
Seigniorage ⁽⁴⁾	0.69	4.38	0.86	3.82	3.26	2.68	<1%
Government balance	-6.4	-5.7	-4.7	-5.3	-4.9	-5.5	
Budget deficit ⁽¹⁾	5.9	5.6	4.5	4.9	4.8	5.9	<3%
Public debt ⁽¹⁾⁽³⁾	81.5	74.7	71.4	68.5	65.8	69.9	<50%
Fiscal deficit ⁽¹⁾	6.4	5.7	4.7	5.3	4.9	5.5	

Notes: (1) in percent of GDP, excluding grants and privatization receipts. (2) These statistics are average values referring to the three years preceding the adoption of the IT regime. (3) Gross debt including net central bank credit to government. (4) The monetary seigniorage is defined as the change in % in the monetary base by nominal GDP.

Source: Author's calculations and IMF.

Table 4: Test Scores on Central Bank Independence¹⁰

Central bank	Goal Independence	Economic Independence						Political Independence						Indexes			
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	G Index	DF Index	Buba Index
E.C.B	1	1	1	1	1	1	1	1	0	0	0	1	1	1	0.79	1	0.9
Germany	1	1	1	0	1	1	1	1	0	0	1	0	1	1	0.71	0.88	1
Spain	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0.36	0.13	0.4
France	0	1	0	0	0	1	0	1	0	0	0	0	1	0	0.29	0.13	0.4
Bulgaria	1	1	1	1	1	1	1	1	1	0	0	1	1	1	0.86	1	0.9
Czech Rep	1	1	1	0	1	1	1	1	0	0	0	0	1	1	0.64	0.88	0.9
Hungry	0	1	1	0	1	1	1	0	0	0	0	0	1	1	0.50	0.38	0.7
Poland	0.5	1	1	0	0	1	1	0	1	0	1	1	1	1	0.61	0.5	0.7
Tunisia	0.5	1	1	0	1	1	0	0	0	0	0	0	0	1	0.39	0.63	0.55
Morocco	0.5	1	1	0	0	1	0	0	0	0	0	0	0	1	0.32	0.52	0.45

¹⁰ The indexes of many countries, which have been introduced as comparators, have been also computed.

Table 5: Institutional Conditions

Institutional conditions	Status	Comments
Instrument independence	YES (in principal)	The BM provides sufficient statutory autonomy in this regard since it is free to manage its instruments to reach its goals. But, it is far from being politically independent.
Effective policy instrument	YES (in principle)	The monetary instruments the BM utilizes are fixed by law; they are set out in articles 24, 36 and 39 of the statutes of the BM and described in greater details in various circulars. The 2005 revised statutes give the BM complete autonomy in selecting the instruments. The BM uses mainly market-based refinancing procedures: open market operations, weekly liquidity auctions and bids for liquidity.
Exchange rate regime	NO	The exchange rate regime followed in Morocco is of a fixed type. The Dirham is pegged to a basket of currencies, and the Moroccan monetary authorities still maintain a strict control on capital movements (mainly on outflows).
Transparency	YES (in principle)	The BM monetary policies as well as the changes in monetary instruments announced through regular public information service (annual report, BM website). The BM issues statements to the public on the progress towards meeting monetary policy objectives. Though the BM seems to be transparent about its objectives (2 new statutes), it is not yet enough transparent about the technical procedures (model) it utilizes to reach these goals. Unfortunately, forecasts about the future inflation dynamics are not published because they are not produced. It is worth noting that contrary to Tunisia, Morocco has not yet met the IMF's conditions of Special I Dissemination Standards.
Is the financial system enough developed?	NO	The financial system is still fragile. The weak banking system precludes the BM from raising its rates when necessary. The capital market is shallow. The BM role as a lender of last resort, in the absence of an effective supervising role, might create a hazard moral problem rendering the financial instability more likely. There is a lack of coordination between the Ministry of Finance and the BM.

Table 6: Economic Conditions

Economic conditions	Status	Comments
Price index for targeting?	CORE inflation or a new CPI index excluding some components must be constructed.	The current Moroccan CPI index does not seem suitable since it contains a large share of administered or regulated components.
Fiscal non-dominance	NO	The fiscal situation is emerging as a serious concern. The deficit remained within an acceptable range only when privatization receipts are included. In the meantime, the expenditure side of the budget remains inflexible. In response to the vulnerability of the fiscal position, Standard and Poor's recently downgraded Morocco's country risk outlook from stable to negative.
Sufficient knowledge about transmission mechanism	NO	BM recognizes that there is no sufficient knowledge about the transmission mechanism issue. The abundant of liquidity, which is brought about by the workers remittance and the privatizations revenues, hampers and weakens the monetary transmission mechanisms.
Technical ability and forecast provision	NO	BM does not have models to produce forecasts and to explain how the economy functions. Though BM statutes have been revised in 2005, the new organization chart is nonetheless devoid of a research department whose main mission ought to be, among others, forecasting prices and inflation. The studies that help to understand the economy are lacking (such as transmission mechanisms, forecasting, etc...)

Table 7: Long-term Relationship and the Degree of Pass-through in the Long-term:

$$y^* = \theta_0 + \theta_1 x^* + u^*$$

	Markup	Degree of pass-through
ID6	0.037	0.769
ID12	0.025	0.816
SLR	0.217	0.191
LLR	0.372	0.480

ID6: : six month lending rate

ID12: 12 month lending rate

SLR: Short term lending rate

LLR long term lending rate

Note: (*) denotes the rejection the null hypothesis at 5%. The optimal lag for computing the Trace Statistic was computed using to the FPE criterion and was found to be 4 for the two models M1 and M2.

Table 9: Forecast Error Variance Decomposition (in %) in Model the M1/M2

Quarter	FEVD of prices (CPI)			
	IPI	CPI	NEER	MMR/B
4	9/8	87/92	0/0	0/0
8	18/5	69/92	12/1	0/1
12	33/4	48/94	19/1	0/1
Quarter	FEVD of activity (IPI)			
	IPI	CPI	NEER	MMR/B
4	88/86	2/1	7/7	3/7
8	87/82	3/1	5/5	4/11
12	87/79	4/1	4/4	5/16
Quarter	FEVD of the exchange rate (NEER)			
	IPI	CPI	NEER	MMR/B
4	1/1	1/2	98/98	0/1
8	3/1	2/2	95/95	0/1
12	5/2	4/4	91/94	0/1
Quarter	FEVD of the monetary instrument (MMR/B)			
	IPI	CPI	NEER	MMR/B
4	0/42	19/3	16/11	64/44
8	1/50	26/2	18/11	57/38
12	3/54	29/1	16/9	52/36