International Journal of Economic Studies and Management (IJESM)
ISSN 2789-049X
Int. J. Econ. Stud. Manag. 2, No.1 (MAY-2022)

Morocco's exchange rate regime reform: motivations and transition strategy

Zineb OTMANI

Laboratory of Economic Analysis and Modelling (LEAM)

Faculty of Law, Economics and Social Sciences, Souissi Mohammed V University, Rabat, Morocco

Radouane RAOUF

Laboratory of Economic Analysis and Modelling (LEAM)

Faculty of Law, Economics and Social Sciences, Souissi Mohammed V University, Rabat, Morocco

Abstract: Economic history is marked by many events that revived the debate on the role of monetary policy and the exchange rate regime. The abandonment of national barriers, the interdependence of international financial markets, the repetition and contagion of financial crises, have led to a reconsideration of the choice of exchange rate regimes and the clarification of the arbitrations they cover, Moreover, monetary authorities and economic policy makers have shown hesitation and distrust about the exchange rate regime to be adopted. The post Bretton-Woods era was marked by a rush for flexibility. Countries have now had the free choice to adopt the exchange rate regime best suited to their needs. Since then, this issue has not lost its timeliness and continues to be refreshed by new research perspectives. In Morocco, it is no longer a question of the choice between fixity or floating, but rather of the degree of fixity or flexibility to be retained, the current exchange rate regime is a fixed parity regime with the attachment of the dirham to a basket of currencies, mainly the euro (60%) and the dollar (40%), which has contributed to the establishment of a macroeconomic stability framework. It is in this perspective that the debate around Morocco's transition to a floating exchange rate regime has resurfaced, the IMF says in this respect that Together with structural reforms, this regime could help Morocco meet the challenges of competitiveness and likely contribute to boosting growth in the medium term." Since 2013, Bank Al-Maghrib (BAM) has been working on the implementation of instruments (analysis and forecasting) enabling it to successfully transition to a more flexible exchange rate regime.

Keywords: exchange rate, reform, exchange flexibility, macroeconomic stability.

Digital Object Identifier (DOI): https://doi.org/10.5281/zenodo.6600526

1. Introduction

Economic history is marked by many events which have fueled the debate about the role of monetary policy and the exchange rate regime. The abandonment of national barriers, the interdependence of international financial markets, the repetition and the contagion of financial crises, have led to reconsider the choice of exchange rate regimes and to clarify the trade-offs they cover, Moreover, monetary authorities and economic policy makers have shown hesitation and mistrust about the exchange rate regime to be adopted. The aftermath of Bretton-Woods was marked by a rush for flexibility. Countries have now had the freedom to adopt the exchange rate system best suited to their needs. Consequently, this issue has not lost its relevance and continues to be refreshed by new research perspectives. In Morocco, it is no longer a question of the choice between fixity or floating, but rather of the degree of fixity or flexibility to be retained. The current exchange rate regime is a fixed parity regime with dirham attached to a basket of currencies, mainly the euro (60%) and the dollar (40%), this regime has contributed to the establishment of some macroeconomic stability, However, it seems that it’s no longer adapted to the current situation of the Moroccan economy. Indeed, the combination of internal factors, (The announcement of the new statutes of BAM, A trade deficit that continues to grow, Mixed evolution of foreign reserves, Prudent and pragmatic liberalization of the capital account...) and external factors, marked by a context of globalization of capital flows, has made the Moroccan economy more vulnerable to exogenous shocks and requires, for this purpose, a greater capacity for adjustment and absorption of shocks. It is in this perspective that the debate around the transition of Morocco to a floating exchange rate regime has resurfaced, the IMF affirms as such that “Together with structural reforms, this regime could help Morocco meet the challenges of competitiveness and likely help boost growth in the medium term” (1). Since 2013, Bank Al-Maghrib (BAM) has been working on the implementation of instruments (analysis and forecasting) enabling it to successfully transition to a more flexible exchange rate regime. through this paper we will review, firstly, the exchange rate policy in Morocco, how it has evolved over time as well as the various reforms implemented by the monetary authorities. In order to focus, subsequently, on the analysis of the macroeconomic performance of the current exchange rate regime in order to identify the factors motivating its reform, the prerequisites for its success, as well as the possible steps to successfully transition to more flexibility.

2. Moroccan Foreign Exchange Policy Review

Since its creation in 1957 the Moroccan dirham has gone through several stages in the evolution of its nominal price. First, it was directly linked to the French franc (FF) because of Morocco’s political relations with France and the importance of French foreign demand in the structure of Moroccan foreign trade, but since 1970 the instability of the international financial system has significantly affected the stability of the Moroccan exchange rate. In May 1973, the link with the French franc was broken by the adoption of a basket of currencies, in which the FF accounted for a large share of 38% but declined to 25% in 1980 in favor of the US dollar, which rose from 15% in 1973 to 32% in 1980. These changes do not reflect any change in France’s share of Moroccan foreign trade, since between 1973 and 1980 France’s share of the Kingdom’s foreign trade declined from around 47% to 41%, Spain’s share rose from 7% to 12%, although the weight of the Spanish peseta remained unchanged at 15%. nevertheless, there was no clear link between the composition of the foreign exchange basket and the country structure of Morocco’s foreign trade. During the same period, the exchange rate initially appreciated by more than 15% of its effective rate and then depreciated by about 85% as a result of the oil shock on the dollar.

In order to deal with the requirements of the new international economic environment, the public authorities have undertaken a series of reforms, starting by the implementation of the 1983 structural adjustment plan (SAP) with the aim of modernizing and liberalizing the economy. The creation of an interbank exchange market in Morocco in 1996 was the crowning achievement of these reforms. Following the SAP, the Moroccan exchange rate policy had the effect of generating a latent movement of real depreciation since it was based on repeated devaluations (16.5% in 1983 and 9.3% in 1990) (2). At the beginning of 1993, following its accession to the obligations of Article VIII of the IMF, Morocco has introduced the convertibility of the dirham for current foreign trade transactions, anchored in a basket of currencies of the main trading partners with a weighting kept secret. If the exchange rate is freely fixed on the market, Banque Al Maghreb intervenes to keep the fixed exchange rate around the central parity. This choice offered the advantage of importing a certain credibility in terms of inflation while avoiding the risks of a currencymismatch and limiting exchange volatility and its disruptive effects on the terms of trade (3). In this context, important measures have been taken to boost the foreign exchange market and contribute to the growth of foreign capital flows. Between 1990 and 2000, Dirham appreciated by 17%, which penalized the competitiveness of Moroccan exports. This prompted the Moroccan authorities to devalue the national currency slightly in order to boost the competitiveness of its products, despite the fact that they preferred to concentrate their efforts on consolidating the financial system and reducing the debt burden.

On April 2001, the monetary authorities readjusted the weightings of the currencies in the reference basket as Dirham price competitiveness weakened against the euro and US dollar-denominated external debt increased. The basket now consists of two currencies: the euro and the dollar, with 80% and 20% weighting respectively. The objective of this restructuring is to reduce the fluctuations of the dirham (+/- 0.3%) against the currencies of Morocco's main trading partners.

It is only from 15 January 2018 that the parity of the dirham is again determined within a band of fluctuation of plus or minus 2.5% against a central rate set by Bank Al-Maghrib on the basis of a basket of currencies composed of the euro and the US dollar to the tune of 60% and 40% respectively, as part of the transition to more flexibility in the Moroccan exchange rate regime.

3. Macroeconomic performance of the exchange rate regime

The expected well-being of exchange rate regimes derives from their ability to ensure external stability, which, by promoting trade and capital movements, contributes to internal equilibrium and sufficient growth. Thus, the appreciation of the performance of an exchange rate regime is generally associated with the control of inflation, the level and volatility of economic growth, the volatility of the exchange rate and the vulnerability to exchange rate crises.

Morocco's exchange rate regime has always been designed to ensure a certain stability of the Dirham vis-à-vis its main partners, with a view to achieving balance of payments equilibrium. Since independence, the kingdom has been engaged in a series of structural reforms aimed at improving the economic situation. However, economic growth in Morocco is characterized by a boom-and-bust trend, with peaks and valleys depending on changes in agricultural production, which has always been highly dependent on weather. Indeed, according to the HCP, from 1960 to 2017, growth fell 10 times below zero and rarely surpassed 5%. The most important performances were, in general, achieved following a sharp fall in the growth rate in the previous year, and even worse, they are often followed by weak growth. As a result, the evolution of growth is characterized by high volatility. Note that the growth rate recorded an average of 3.9% between 1990 and 2017.

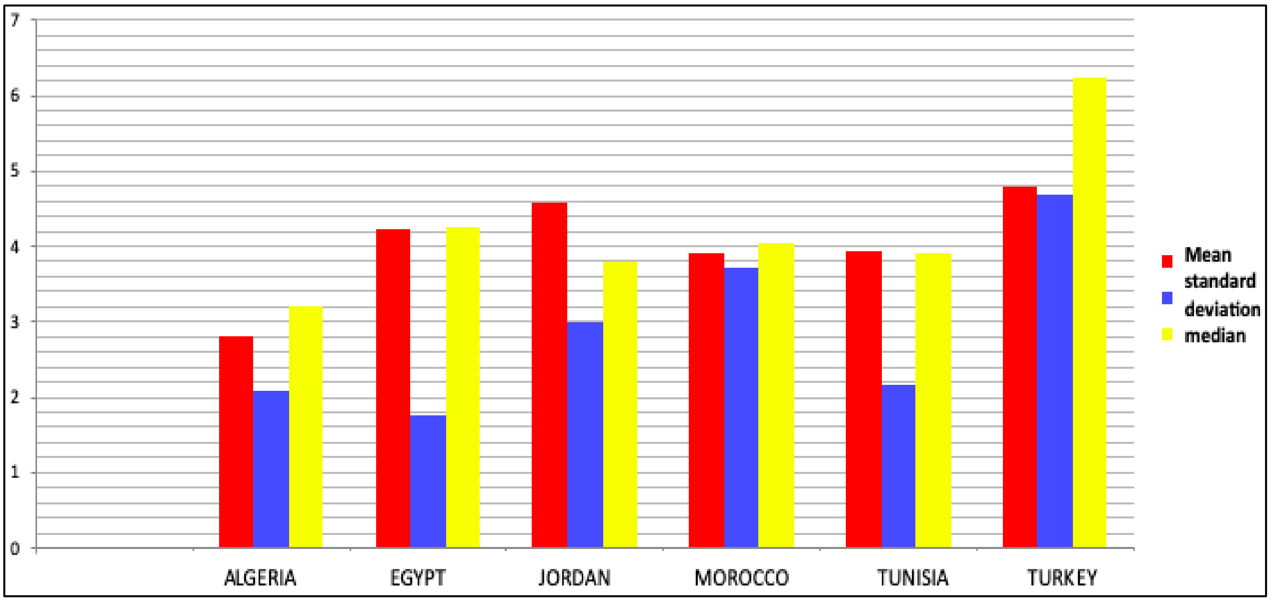

Figure 1: Average level of growth and volatility 1990-2017

Source: Elaboration of authors based on data from the IMF

According to the de facto classification, the lowest level of inflation is found in fixed and floating exchange rate regimes. The average level of inflation associated with these two regimes is 7.5% and 7.2% respectively. Unlike intermediate rate regime which have the highest average level of inflation at around 10%

Table 1: Average level of inflation by exchange rate regime (1990 - 2010)[1]

	Mean	Median	Standard deviation
Fixed rate regime	7,5	10,8	7,2
intermediate rate regime	5,8	8,8	5,2
Floating rate regime	7,5	7,9	7,1

In Morocco over the last 20 years, inflation, measured by the change in the consumer price index, was maintained around 1.4%, notably with the fall in the prices of petroleum products, the notable fall in the food index and the fall in prices of the majority of commodities on world markets. The consumer price index moved below the 2.0% mark except for the years 2002, 2006 and 2008 respectively by 2.8%, 3.3% and 3.9%. Given the structure of the national economy, the level of inflation is mainly related to relations with trading partners, it is an imported inflation considering the importance of imports (up 9.2% in October 2018 compared to the same period in 2017) and exports in the average household consumption basket.

[1] Ragbi aziz, 2014 « Ciblage de l'inflation et flexibilisation du régime de change au Maroc »

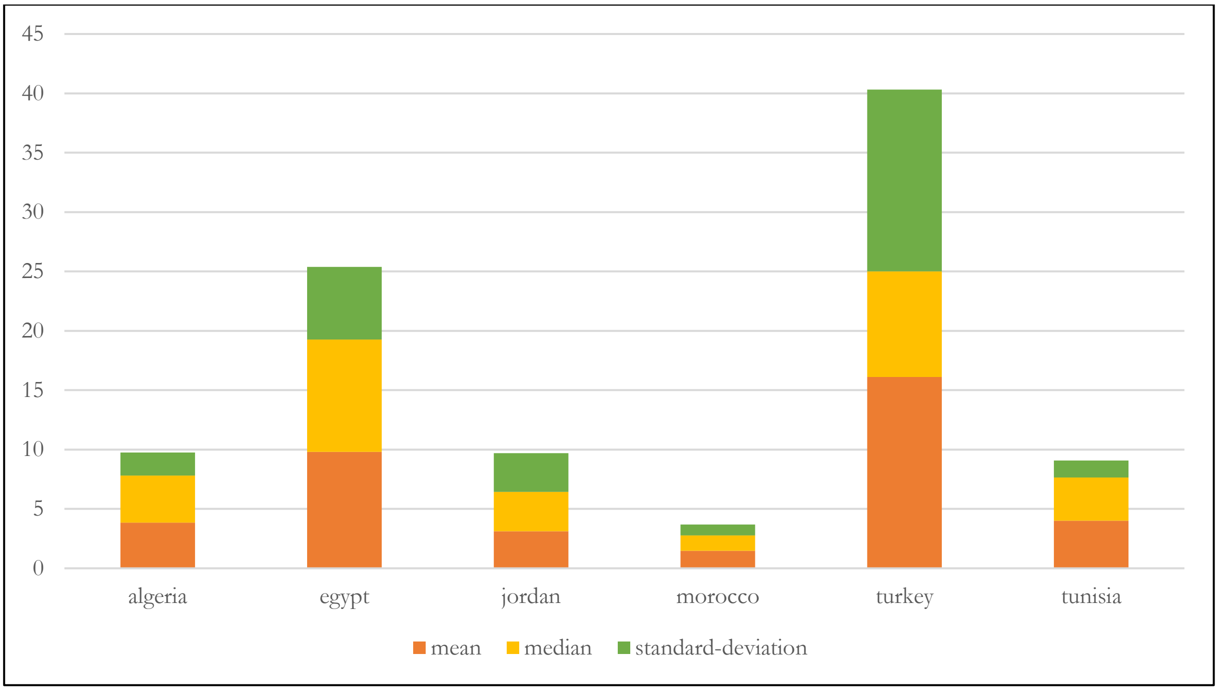

Figure 2: Average level of inflation and volatility 2000-2020

Source: Elaboration of authors based on data from the IMF

the evolution of the consumer price index over the last 20 years shows a relatively moderate trend in price increases.

Prices are expected to continue rising in 2022 at levels above the average of the last decade. External effects and drought are expected to further increase national inflation uncertainties. Inflationary risks would remain uncertain in the short term. Rising prices for imported raw materials and the crisis in the Black Sea region combined with a dizzying rise in barrel prices to around $140/barrel were likely to keep the rate of inflation during 2022 at relatively high levels

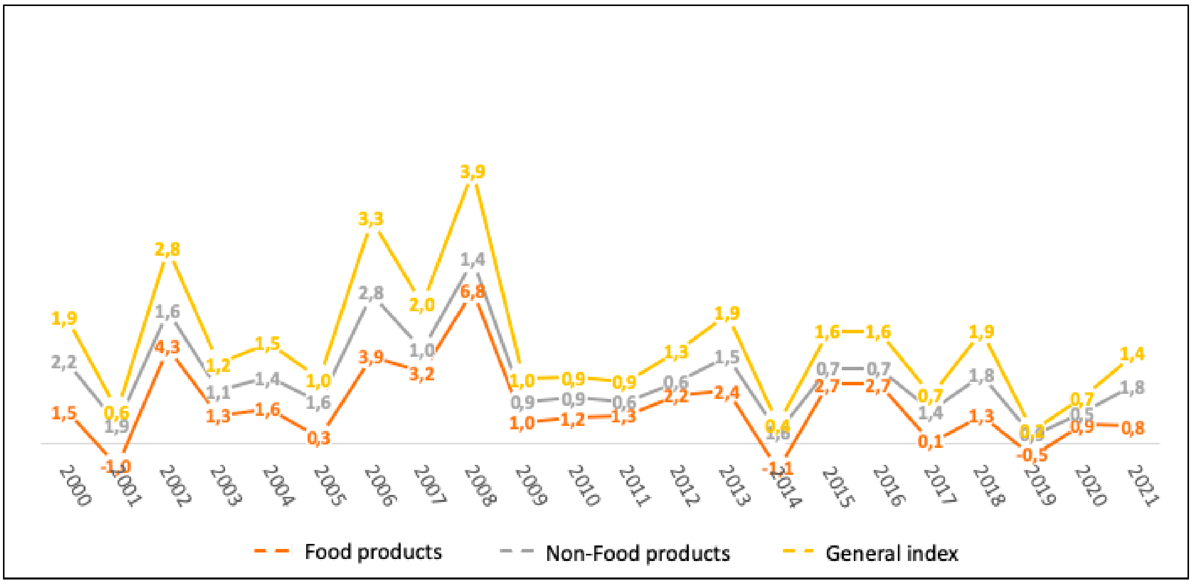

Figure 3: Evolution of inflation in Morocco from 2000 to 2021 in %

Source: Elaboration of authors based on data from the HCP

Thus, the conventional fixed parity regime chosen by the Moroccan monetary authorities is combined with the best performance in terms of price stability compared to other types of exchange rate regime. In the end, the exchange rate regime as adopted by Bank al Maghrib allowed for moderate inflation, with relatively strong real growth. This inflation control reflects an overall downward trend observed internationally over the past two decades outside of the COVID-19 pandemic years. However, the level of growth is quite vulnerable, because of internal considerations (agriculture and therefore climatic conditions) and pressures related to exogenous shocks.

4. Motivating factors for exchange rate reform

Analysis of the macroeconomic performance of the exchange rate regime in Morocco shows that the conventional fixed parity regime adopted by the Moroccan monetary authorities has contributed to the protection of the economy against external shocks and to price and exchange rate stability headcount. At the same time, the impact of the agricultural component, which remains highly dependent on climate change despite the modernization of the agricultural sector and the launch of the Green Morocco Plan, On the evolution of economic growth skews the examination of the effect of the fixed exchange rate regime on economic activity in Morocco, especially since, through recent experiences, fixed exchange rates remain the most vulnerable to exchange rate crises. Indeed, the need to evolve the current exchange rate regime towards more flexibility is driven by other factors. In particular, the independence of monetary policy, the fall in the level of foreign reserves and the gradual opening of the capital account.

4.1. Independence of monetary policy

In a global context characterized by increasing monetary integration, the operational framework of monetary policy has undergone a significant reshuffle. Indeed, the announcement of BAM’s new Statute in 2006 awarded the central bank, in one hand, the price stability as its main objective and in the other hand the operational independence to achieve it. Similarly, these statuses give it considerable autonomy in the implementation of its monetary policy (setting intervention rates, determining the ratio and the method of calculating the monetary reserve, ...). This contributes to its credibility.

The reading of the current monetary policy in Morocco reveals the pursuit of two objectives: Price stability defined by the new statutes of Bank Al-Maghrib and exchange rate stability with reference to the IMF classification of Morocco’s monetary policy framework. Given the IMF’s de facto classification, it is clear that fixed exchange rate regimes subordinate monetary policy to the defense of exchange rate parity. The loss of monetary policy autonomy is accentuated by the degree of rigidity of the nominal exchange rate. Similarly, it is concluded that this system does not allow for the simultaneous achievement of internal and external balance.

Thus, in this context characterized by the dominance of the external objective, the interventions of the monetary authorities to support the exchange parity, may undermine the inflation target by creating inflationary pressures and thereby reducing the central bank’s credibility. This situation is presented by Mundell’s triangle of incompatibility, according to which it is difficult to ensure the internal objective of price stability because of the freedom of capital movements and the rigidity of the exchange rate regime.

4.2. Declining international reserves

In the aftermath of the currency crisis of the 1990s, it is confirmed that a low level of foreign exchange reserves undoubtedly contributes to increasing the vulnerability of countries to financial crises. Thus, the crisis had a lesser effect on countries with a high level of foreign exchange reserves. Similarly, the sustainability of flexible exchange rate regimes is conditioned by the holding of a low level of reserves compared to fixed regimes where their maintenance requires a broad base of foreign exchange reserves.

More generally, an examination of the remaining of Morocco’s trade balance shows a deficit which is constantly widening because of the greater than proportional increase of imports over exports. This trade deficit is most acute at the level of the balance of payments, limiting the level of foreign reserves.

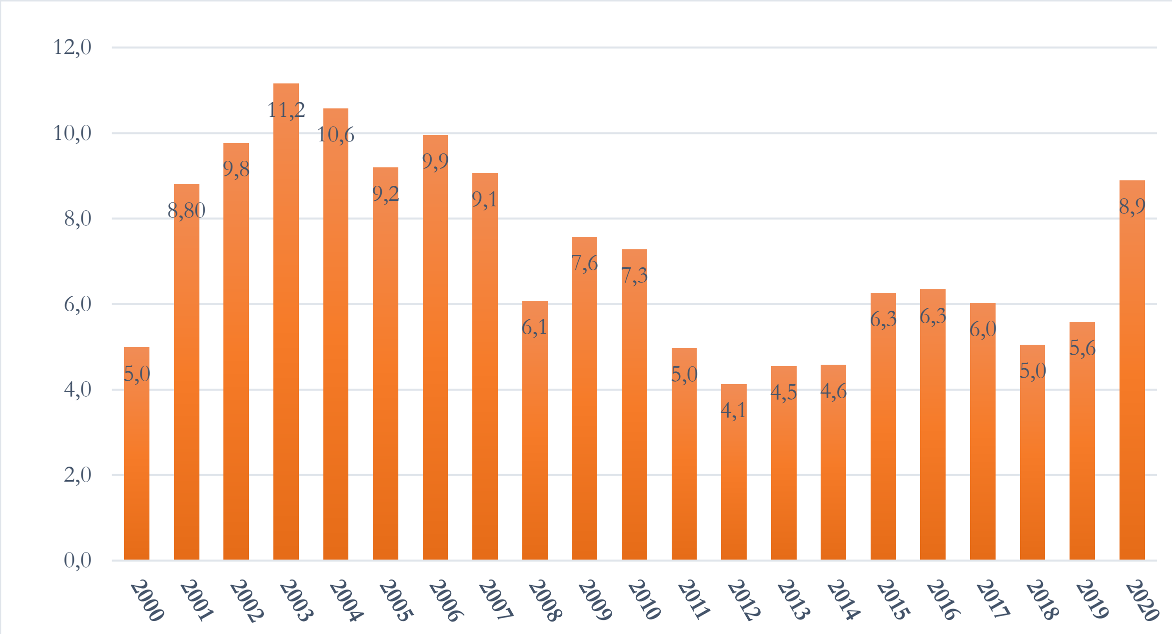

Figure 4: Evolution of foreign reserves in Morocco 2000-2020 (In months of imports)
Source: Elaboration of authors based on data from the world bank

Figure 4 above shows that foreign reserves in import months have declined quite significantly since the onset of the financial crisis in late 2007. This decline continued until the end of 2013, from about 8 months of imports to 4.3 months in 2013. Although their level fell slightly in 2019 due to the spread of COVID-19, however, the situation remains quite comfortable with more than 8 months of imports of goods and services in 2020 despite the fact that foreign exchange reserves continue to be subject to strong tensions.
This change is mainly due to higher international commodity prices, lower exports, lower FDI and a contraction in Moroccan Residents Overseas (MREs in French) transfers. This change in foreign reserves is binding on the central bank and would call into question the sustainability of the current exchange rate regime.

4.3. The prudent and gradual opening of the capital account

In order to strengthen the integration of the Moroccan economy into the world economy, the Moroccan monetary authorities have been conducting since the early 1980s a vast reform program on the liberalization of its financial system. In this sense, a range of measures for the opening of the capital account has been put in place, in order to promote FDI, to accompany the opening of trade and the integration of Morocco into the world economy notably through the conclusion of several free trade agreements (see Figures 4 and 5).
Among the most important deregulations are:

- The liberalization of foreign investment in Morocco and foreign financing for resident companies in the early 1990s;
- Accession to Article VIII of the IMF Statute in 1993, which deals with the liberalization of day-to-day operations;
- The introduction of the foreign exchange market in 1996;
- The 2002 liberalization of foreign investment for resident commercial banks, in accordance with regulatory foreign exchange positions;

- Authorization of commercial banks to make foreign currency investments abroad, to acquire sovereign securities and to grant loans in dirhams to non-resident foreigners for the financing of the acquisition of real estate in Morocco;
- The introduction of instruments for hedging against the risk of price and interest rate fluctuations and the system of foreign exchange options for hedging against foreign exchange risk;
- The possibility for companies to invest abroad, up to 30 million dirhams, in projects related to their activities;
- The possibility for UCITS to carry out foreign currency investment transactions within the limit of 10% of the value of all the assets in their portfolio (Securities, Receivables, liquidity and other assets);
- Approved intermediary banks, insurance and reinsurance undertakings, pension funds, UCITSs and management companies on behalf of UCITSs are authorized to open foreign currency accounts and to acquire hedging instruments against foreign exchange, interest rate or price risks, within the limits of authorized positions;
- etc.

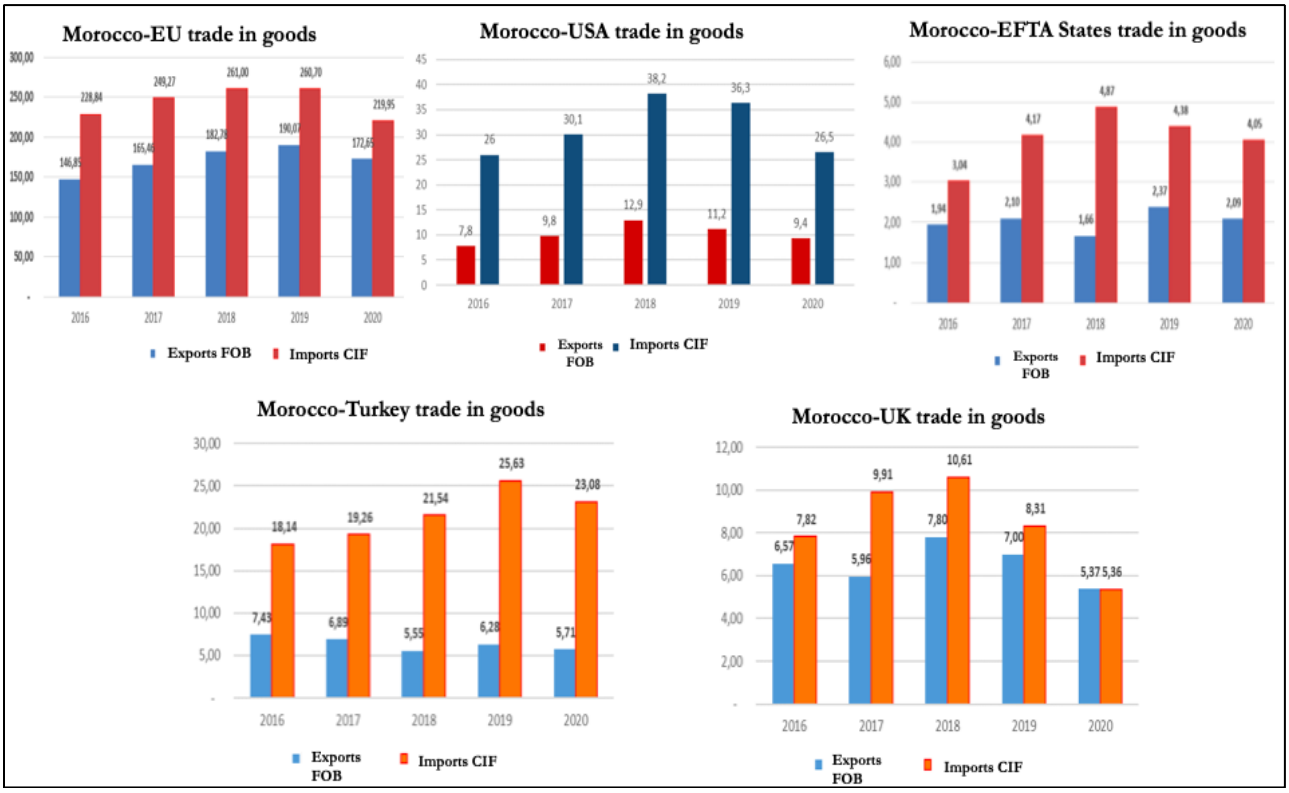

Figure 5: Morocco’s trade under the free trade agreements in billions of *MAD*

Source: The Ministry of Industry and Trade of morocco

5. The Prerequisites for Exchange Rate Reform

The International Monetary Fund (IMF) has described Morocco’s move to a more flexible exchange rate regime as a “historic” and “successful” reform that will put the Kingdom on the path to “accelerated growth.” Thus, the assessment of the situation in Morocco with regard to the prerequisites for the transition to a more flexible exchange rate regime is generally favorable with a currently resilient macroeconomic framework allowing the reform of the exchange rate regime to begin, this resilience should be observed throughout the transition process towards a more flexible exchange rate regime

5.1. A relatively developed foreign exchange market

The transition to a more flexible regime cannot be undertaken without considering the characteristics of the foreign exchange market. The latter must be sufficiently liquid and efficient to better explain the evolution and formation of the exchange rate. Indeed, as part of an integral process of liberalization and modernization of the economy, the creation of the Moroccan exchange market in 1996 marked the end of BAM’s monopoly in the centralized management of currency prices. From now on, the level of the exchange rate is determined according to the evolution of supply and demand by all the players in the exchange rate activity. Several hedging techniques against foreign exchange risk have also been introduced. However, the Moroccan foreign exchange market remains relatively young and its functioning does not allow it to fully assist companies to improve their performance on foreign markets.

The move towards greater flexibility must lead the monetary authority to review its intervention strategy on the currency money market. Formal foreign exchange management allows authorities to put in place well-defined management rules, supporting the achievement of a target exchange rate level, whereas in the case of discretionary management, the public authorities do not announce the exchange rate objectives or the rules for intervention to be used. Generally, FX flexibility encourages discretionary interventions to correct foreign exchange misalignments, reduce price volatility and calm market disruptions. Indeed, the central bank must consider the degree of transparency it must allocate to its interventions. Some authors see transparency as a tool for effective interventions through increased credibility, while others see it as a hindrance. It is agreed by consensus that a minimum of discretion is essential to ensure that monetary authorities are ahead of the curve in the implementation of their exchange rate policy, while a certain level of transparency should improve their credibility.

It is true that Morocco has made great strides in the liberalization of foreign exchange and that, according to the monetary authorities, the foreign exchange market remains relatively developed. Nevertheless, according to some economists, BAM should continue its liberalization process by gradually introducing exchange rate floating while limiting itself to a supervisory role and not a market regulator.

5.2. Credibility of Bank Al-Maghrib’s monetary policy

Under a flexible exchange rate system, monetary policy becomes a powerful instrument for adjusting the economy, owing to the independence of the money supply from the balance of payments situation. Thus, currency control within the framework of monetary policy is a fundamental condition for the adoption of a more flexible exchange rate regime. Experience shows us that the move towards flexibility forces the central bank to abandon foreign exchange targeting as one of the commitments of the chosen monetary strategy. This can be done gradually with the possibility of widening the margins of fluctuation according to the degree of easing of tensions between the objectives pursued by the public authorities and also in relation to the objective of price stability. From now on, the adoption of a new nominal anchor becomes very useful to curb the effects of uncertainty regarding the level and volatility of the exchange rate on market expectations. For Morocco, the IMF states that the Moroccan monetary framework will have to evolve in order to allow the transition to a more flexible exchange rate. The adoption of a nominal anchor for monetary policy, for example in the form of an inflation-targeting regime, instead of the exchange rate, would ensure monetary independence and help maintain a more appropriate policy mix. combined with a more open capital account.” Morocco’s monetary policy focuses on price stability as its main objective and is currently much more akin to the targeting of reflecting inflation, political will to adopt a real inflation targeting strategy in order to preserve the country’s competitiveness.

6. Transition Process and Strategy

In order to ensure the success of the reform for the transition to a more flexible exchange rate regime, the monetary authorities have decided to adopt a gradual approach with a view to better managing any risks related to such a transition and to the market and economic operators to gradually adapt to the new regime, In this sense, broad consultations have been undertaken with all the parties concerned for the development of the foreign exchange and hedging market against financial risks.

Within this framework, a three-phase process represents the draft roadmap that was jointly developed with the central bank (see Figure 6), the final objective of this process is to achieve an exchange rate regime where the prices of the various currencies against the dirham will be determined by the market through the supply and demand of currencies. Adjustments will be made through prices, not volumes, in terms of determining the parity of the dirham exchange rate No target will be set. Interventions on the foreign exchange market will be aimed solely at ensuring adequate liquidity in market currencies. The main accompanying measures in this respect relate to:

- Implementation of the law on financial futures and introduction of an over-the-counter market;
- Revision of the General Instruction on Foreign Exchange for 2017;
- Bill on foreign exchange transactions and on the Exchange Office;
- Circulars of Bank Al-Maghrib relating to the foreign exchange market;
- Development of the Treasury bill quotation market.

In this same perspective, a communication strategy has been put in place and will have to be deployed at each phase of the transition.

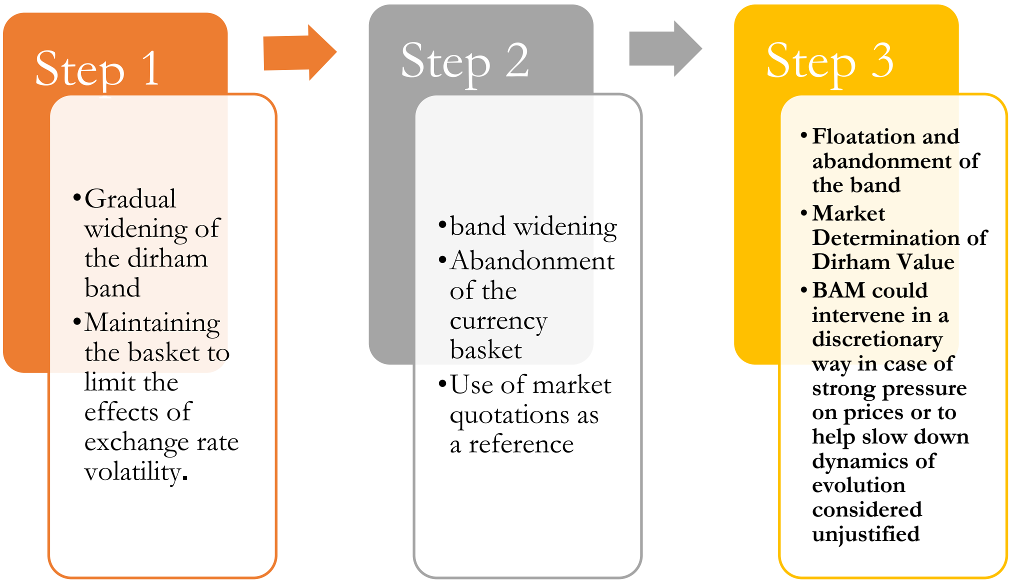

Figure 6: key steps for a successful transition to flexibility

In turn, the IMF states that Morocco could now gradually relax its exchange rate, starting from a position of strength. The authorities' intention to move to a new exchange rate and monetary policy regime is noted with satisfaction, as a more flexible exchange rate would help the economy absorb external shocks and maintain its competitiveness. As the external position and the position of the reserves have improved, and the main general and operational conditions are in place, the current situation is favorable for such a passage.

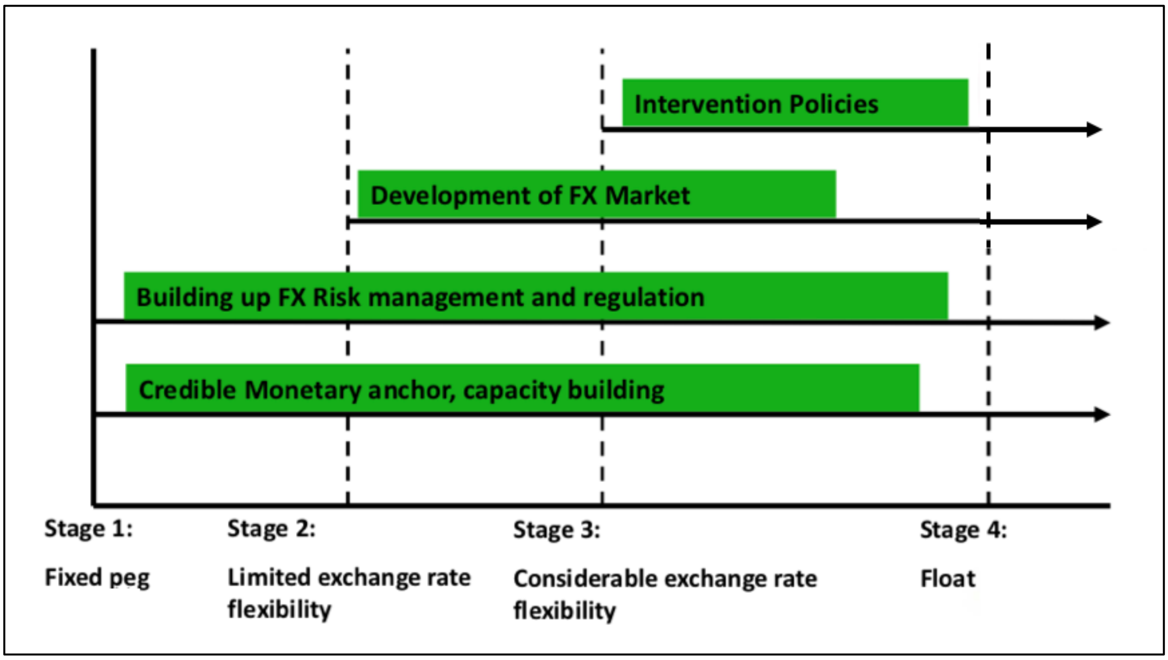

Figure 7: IMF Orderly Transition Process

Source: from IMF WP/04/126

7. Conclusion

Since its creation, the exchange rate regime in Morocco has been seen as an instrument for consolidating the economic policies put in place by the public authorities. Several objectives explain its evolution: the maintenance of price stability, the adjustment of external imbalances and the strengthening of the external competitiveness of Moroccan exports. In view of the profound structural changes in the Moroccan economy and its increasing openness to the outside world, the move towards a more flexible exchange rate regime constitutes a fundamental reform in order to strengthen the competitiveness of the national economy, its resilience to exogenous shocks and the level of its potential growth. However, the transition to more flexibility is not without risk, it would be accompanied by massive inflows of foreign capital motivated mainly by expectations of appreciation of the domestic currency and the interest rate differential. This would lead to a situation of bank over-liquidity and excessive reserve growth leading to greater inflationary tensions and an increase in financial fragility and currency risk. It is now essential that any decision on a country's exchange rate policy is considered in line with the overall direction of its medium and long-term objectives. However, whatever the exchange rate regime, nothing can replace the conduct of a sound, credible and better coordinated macroeconomic policy, In this sense, the success of the exchange rate reform is conditioned by the support of several policies and accompanying measures that can be put forward to ensure a better transition, which, in turn, is only one of a number of reforms aimed at improving the competitiveness of the economy and further strengthening the national productive fabric.

References

[1] FMI, Consultations de 2013 au titre de l'article IV du statut de l'FMI, Rapport du FMI No. 14/65, Mars 2014.

[2] El BOUHADI A., ELKHIDER A., KCHIRID EL. & El Abbassi I. (2008). "THE Exchange Rate Determinants in Morocco : An Empirical Investigation" MPRA Paper n_ 24115, p : 4.

[3] Esmak, H., Firanou, Z., « Exchange Regime Choice with Multinomial Panel Data: Case of the North African Countries », International Journal of Economics and Financial Issues, Vol. 4, No. 4, pp.745-757, 2014.

[4] Aguir,A., « Stabilité, croissance, économique et ciblage d'inflation », l'université Grenoble Alpes, 2016

[5] Ghosh,A., &Ostry,J., « Le choix du régime de change, Nouveau regard sur une vieille question : faut-il choisir un régime fixe ou flottant ou une solution intermédiaire? », Finances & Développement, Décembre 2009.

[6] Aloui & Sassi,H., « Régime de change et croissance économique : une investigation empirique », Économie internationale 2005/4, N° 104, p. 97-134

[7] Martarello De Conti,B. &Valente,F., « les discussions théoriques autour du choix d'un régime de change dans les pays émergents ».

[8] GHANEM,D., thèse de doctorat, « politique monétaire et régime de change dans les pays du moyen orient et d'Afrique du nord »

[9] FMI, Consultations de 2015 au titre de l'article IV du statut de l'FMI, Rapport du FMI No. 16/35, février 2016.

[10] Gharbi,H., « la gestion des taux de change dans les pays émergents, la leçon des expériences récentes », Revue de l'OFCE, octobre 2005.

[11] Allegret,J-P., et al., « Le choix d'un régime de change dans les pays émergents et en développement peut-il être optimal en dehors des solutions bipolaires ? », Revue économique 2011/2 (Vol. 62), p. 133-162. DOI 10.3917/reco.622.0133

[12] Pisani-Ferry,J.& Park,Y.C « Exchange rate policies in emerging asian countries ».

[13] Bouoiyour,J., Marimoutou,V., & R.Serge, « Taux de change réel d'équilibre et politique de change au Maroc : une approche non paramétrique ».

[14] Bouoiyour,J., Emonnot,C. and R.Serge, « Intermediate Exchange Rate Regimes in Emerging Economies: The Case of Morocco »

[15] Sfia,M. « Le Choix du régime de change pour les économies émergentes »,MPRA WP n° 4075, 2007

[16] Bakkou,O., « The Suitable Exchange Rate Regime for the Moroccan Economy », International Journal of Economics and Financial Issues Vol. 4, No. 3, 2014, pp.612-621

[17] Ragbi,A., « Ciblage de l'inflation et flexibilisation du régime de change au Maroc » université mohammed 5 rabat ; 2014

[18] CAMARA,Y., Thèse de doctorat « Régimes de change et performances économiques en Afrique Subsaharienne ».