

Inflation Targeting Policy Under Fixed and Floating Exchange Rate: Analysis Through the Simulation of a Semi-Structural Model for Morocco

Politique de ciblage d'inflation sous le taux de change fixe et flottant : Analyse par la simulation d'un modèle semi-structurel pour le cas du Maroc

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Abstract:

Morocco has shown its intention to adopt the inflation targeting policy. The latter requires the meeting of a set of preconditions for its implementation as the independence of the central bank, transparency and flexibility of the rate of change. In the literature, considerable importance has been given to the prerequisite of floating change for the success of this new monetary regime. The objective of this paper is to define the most advantageous exchange rate regime for Morocco as part of its vision to adopt the inflation targeting policy. Indeed, it focuses on the analysis of the responses of impulse functions to supply, demand, monetary policy and exchange rate shocks under fixed regime at first and under floating exchange rate regime at second. To do so, a semi-structural model called the "Quarterly Projection Macroeconomic Model" (QPM) of a small open economy will be applied to the case of Morocco, providing an adaptable framework and enabling a comprehensive examination of various potential scenarios. Consequently, the flexible framework of this model allows switching between the fixed and floating regime within in the context of the inflation targeting policy and facilitates the extraction of meaningful comparisons by evaluating the macroeconomic implications inherent to each of these scenarios. The main purpose is to determine which exchange rate regime would be best suited to the Moroccan context. The observation resulting from this analytical work argues that the readjustment of the economy takes place more quickly under the floating exchange rate regime. Also, the return of inflation to equilibrium occurs more quickly in the case of a floating exchange rate regime.

Key words : QPM, fixed exchange rate regime, floating exchange rate regime, impulse functions, macroeconomic implications.

Classification JEL : E52

Paper type : Empirical Research

1. Introduction

In the era of globalization, worldwide financial integration, and openness marked by substantial capital movement, and with central banks increasingly striving for greater autonomy, it becomes imperative to embrace a flexible stance regarding exchange rates.

This aligns with the notion of the "impossible trinity" introduced by Mundell in 1960 (Mundell, 1960), which suggests that attaining full monetary policy independence is unattainable when capital can move freely within a fixed exchange rate system. Moreover, Mundell's 1963 research confirmed that a fixed exchange rate regime causes imbalances within the balance of payments (Mundell, 1963).

Indeed, today, the inflation targeting regime is widely embraced as the primary strategic framework for monetary policy on a global scale. Some economists contend that the successful adoption of inflation targeting necessitates the fulfillment of specific institutional prerequisites, which should be underpinned by the existence of structural prerequisites to guarantee its efficacy.

Concerning these institutional prerequisites, research conducted by (Mishkin, 2000) and (Batini & Laxton, 2007) identified four crucial components as part of them : central bank independence, credibility, transparency, and exchange rate flexibility. Within the economic literature, particular emphasis has been placed on the flexibility of the exchange rate, to the extent that it is deemed a pivotal requirement for the implementation of inflation targeting, as underscored by (Masson et al., 1997).

Morocco stands out as a pioneering country that aspires to implement inflation targeting policy in a leadership position, without the need to react to a domestic financial crisis or external pressures. Morocco's situation stands out from other countries due to the economic stability it has maintained, with the exception of the period of the COVID-19 pandemic.

Therefore, the Moroccan authorities have implemented a plan to gradually open their economy. This program includes various major initiatives such as massive investment in infrastructure, review of financial markets, transformation of the socio-educational system, and encouragement of the development of export-oriented industries.

The authorities, during the 2000s, clearly expressed their intention to move to a more adaptable exchange rate regime as well as a monetary policy focused on inflation targeting. This transition aims to increase the room for maneuver for macroeconomic policies, to mitigate the impact of disruptions from outside and to strengthen the competitiveness of the dirham.

In 1950, upon the introduction of the dirham, Morocco adopted a strategy that blended a fixed exchange rate with capital control measures. This approach was designed to uphold a measure of autonomy in the execution of its monetary policy. Presently, the Moroccan dirham is determined in relation to a basket consisting of both dollars and euros, allowing for the regulation of capital-related transactions while retaining influence over interest rates and monetary policy instruments.

Empirical data, as indicated in the works of (Obstfeld & Taylor, 1997) and (Obstfeld et al., 2005) , highlight that it is impossible to simultaneously reconcile three major objectives: the free movement of capital, a fixed exchange rate, and total independence of monetary policy.

This paper focuses on the analysis of the reactions of impulse functions in response to supply, demand, monetary policy and exchange rate shocks, considering Morocco's transition from a fixed exchange rate regime to a floating exchange rate as part of inflation targeting. Indeed, it should be noted that the simulations are developed using IRIS toolbox in the MATLAB environment.

The main objective is to determine which exchange rate regime would be most appropriate in the Moroccan context, as part of a prospective vision oriented towards the adoption of the inflation targeting policy.

To do this, the model discussed in this paper is a model of a small open economy called the "Quarterly Projection Macroeconomic Model" (QPM) applied to the case of Morocco. Indeed, the QPM in its canonical version remains a flexible framework that can be customized to fit a specific economy (Amarasekara et al., 2018; Andrieu et al., 2013; Angelini et al., 2019; Benes et al., 2017; Benk et al., 2006; Benlamine et al., 2018; Bokan & Ravnik, 2018; Botha et al., 2017; Carabenciov et al., 2008; Grui & Vdovychenko, 2019; Hlédik et al., 2016; Marioli et al., 2020; Mkrtchyan et al., 2009; Musil et al., 2018; Strasky, 2005; Teodoru & Toktonalieva, 2020).

In fact, we will start by a literature review discussing the inflation targeting policy, the exchange regime and the relationship between them. Then, we will construct a model tailored to Morocco's unique attributes, facilitating the shift between fixed and floating exchange rate regimes within the framework of inflation targeting, with the objective of delineating the disparities between these two regimes. To accomplish this, we will outline the model's equation system that characterizes the economic behavior, followed by the calibration of the variables. Subsequently, we will scrutinize the simulation outcomes and conduct a comparative analysis between the fixed exchange rate regime and the floating exchange rate regime under inflation targeting.

2. Literature review

The emergence of economic crises that affected several countries, notably East Asia in 1997, Russia in 1998, Brazil in 1999 and Argentina in 2002, has been explained by several theories that they are due to their adoption of a rigid regime of change. Indeed, the restriction of the regime of change, leading to a high probability of capital movements and a depreciation of the local currency, has encouraged many economies to abandon this type of regime.

Otherwise, the appearance of inflation targeting policy stems from the ineffectiveness of old monetary policies which were based on fixing the exchange rate and controlling monetary aggregates. It is worth noting that international experiences have demonstrated the effectiveness of inflation targeting policy. Several studies have defended this line of ideas as (Neumann et von Hagen, 2002) and (Svensson, 2010).

However, the inflation targeting policy requires a flexible exchange rate regime as a *sine qua non* condition for its implementation. Many economists have validated this observation such as (Masson et al., 1997), (Mishkin, 2000) and (Batini et Laxton 2007). Indeed, its primacy has been highlighted in the literature.

The exchange rate is considered to be a fundamental determinant in the effectiveness of inflation targeting policy and in price stability in general. From a practical point of view, this is proven by the experiences of countries which have adopted this monetary regime. From a theoretical point of view, this correlation is also validated by Keynesian and monetarist models. The latter set out the role of the flexible exchange rate regime in the success of monetary policy. The inflation targeting policy is a monetary framework which aims for a target inflation rate considered optimal for the entire economy as opposed to the old monetary regimes which to ensure price stability go through targeting monetary aggregates and the exchange rate. As a result, the flexible exchange rate regime allows the central bank to integrate other objectives as it helps it to strengthen its independence. Hence the importance of exchange rate flexibility in the effectiveness of inflation targeting policy.

In another register, the importance of the flexible exchange rate is explained in the case where the central bank is faced with a conflict of objectives. In other words, in the context where the central bank aspires to the simultaneous targeting of inflation and the exchange rate via the interest rate. The credibility of monetary policy and its ability to anchor expectations would be negatively impacted.

On the other hand, the effectiveness of monetary policy within the framework of the fixed exchange rate regime in terms of achieving price stability has been denounced by several research studies. It is an illusion according to (Tornell & Velasco, 2000), in the sense that the balance provided by the fixed exchange rate is not ensured in the long term.

In terms of shocks, the research work of (Edwards & Yeyati, 2005) demonstrated that the fixed exchange rate is incapable of absorbing them. In fact, it is important to emphasize that terms of trade shocks are predominant in economies adopting a fixed exchange rate regime. This hypothesis is highlighted by studies (Broda, 2001). Unlike the fixed exchange rate regime, the flexibility of the exchange rate makes it possible to counteract shocks through the speed of the reallocation of resources (Marouani et al., 2000).

Joint targeting of inflation and the exchange rate impacts the success of the inflation targeting policy. This is demonstrated by some economists such as (Amato et Gerlach, 2002). Since the exchange rate of the domestic currency is depreciating, the Central Bank would be encouraged to suddenly increase the short-term interest rate. Such a situation would negatively impact the results of commercial banks. As a result, the banking sector would become weakened, potentially becoming a major obstacle to the success of the inflation target policy.

In another register, (Pétursson, 2009) was interested in studying the link between inflation targeting policy and exchange rate volatility. His work concludes that the implementation of inflation targeting, conditioned by a flexibilisation of the exchange rate regime, does not generate high volatility of the exchange rate because a moderate level of volatility of the exchange rate is not considered costly for the economy. Indeed, the exchange rate can be adjusted in the event of a shock by making a few adjustments. Indeed, the exchange rate is considered a shock absorber with the exception of an excess of elaborate adjustments.

In the same vein, the research work of (Edwards, 2006) demonstrates the attenuation of exchange rate volatility within the framework of the inflation targeting policy. Other research based on multiple models confirms this observation, in this case the VAR model used by (Sabbán et al. 2003) and the signal extraction model used by (Pétursson, 2009). Thus, the relationship between inflation targeting and excess exchange rate volatility is denounced.

Otherwise, some economists argue that implementing an inflation targeting policy necessitates meeting several institutional prerequisites, which should be complemented by the existence of structural prerequisites to maximize their efficacy. In terms of institutional prerequisites, research conducted by (Mishkin, 2000) and (Batini et Laxton 2007) has identified four crucial elements that serve as such prerequisites among them, we find out the exchange rate flexibility. Nevertheless, several arguments coalesce around the notion that monetary policy conducted under a fixed exchange rate regime performs less effectively when compared to economies that are more open and adopt a more flexible exchange rate regime. Moreover, it exposes the economy to greater vulnerability in the face of external shocks. Specifically, (Benlamine et al. 2018) argue that countries adhering to a fixed exchange rate regime tend to place a stronger emphasis on two fundamental objectives: maintaining exchange rate stability and sustaining their foreign exchange reserves. In this regard, a study conducted by (Benlamine et al., 2018) revealed that, for the period spanning from 2000 to 2016, the European Central Bank, for instance, resorted to a significantly higher number of interventions to adjust its policy rate, compared to the Bank Al-Maghrib (BAM)

Modeling inflation targeting, as a strategic framework for monetary policy, was first proposed in the pioneering work of (Giannoni, M., et Woodford, M. 2004) and (Svensson, 2007) who assigned a quadratic loss function to the central bank. It is an additive function of the square of the inflation gap and the square of the output gap weighted by a coefficient. Inflation gaps prevent deviations in the inflation rate from its target value and which must be closed by monetary policy. The coefficient associated with the output gap reflects the importance given by the central bank to cyclical fluctuations in the economy and measures its counter-cyclical

nature. The value of this coefficient varies over time and depends on the credibility of the central bank in the fight against inflation.

On the other hand, the effectiveness of monetary policy within the framework of the fixed exchange rate regime in terms of achieving price stability has been denounced by several research studies. It is an illusion according to (Tornell et Velasco, 2000), in the sense that the equilibrium provided by the fixed exchange rate is not ensured in the long term. In terms of shocks, the research work of (Edwards et Yeyati, 2005) demonstrated that the fixed exchange rate is incapable of absorbing them.

In the light of this literature, a model will be developed allowing the transition between the fixed and floating regime under the inflation targeting to analyze the reactions of impulsion functions following demand, supply, and monetary policy shocks under the two exchange regimes.

3. Model

3.1 Theoretical presentation of the model

The model chosen for the simulations in this paper is the QPM (Quarterly Projection Macroeconomic Model) tailored for a small open economy and it is inspired by the work developed by (Benlamine et al., 2018). This model encompasses key components such as the IS equation, the Phillips curve, the Taylor rule, and the equation that delineates uncovered interest rate parity.

IS Equation :

$$\hat{y}_t = b_1 \hat{y}_{t-1} - b_2 mci_t + b_3 \hat{y}_t^* + \varepsilon_t^y \quad (1)$$

This equation establishes a link between economic activity, measured by the output gap, and monetary conditions which are determined by changes in the real exchange rate and the real interest rate. In addition, it takes into account foreign demand, quantified by the output gap of the main trading partner, while also integrating the impact of the structural demand shock.

The terms in the equation are :

$\hat{y}_{t-1}$: The output gap at date t-1 ;

mci_t : The monetary conditions index ;

$\hat{y}_t^*$: The foreign production gap ;

ε_t^y : The demand shock.

The coefficients b_1 , b_2 et b_3 respectively measure the effect of production in t-1 on current production, the sensitivity of current production to variations in monetary conditions and the sensitivity of current production to variations in foreign production.

Phillips Curve equation :

$$\pi_t = a_1 \pi_{t-1} + (1 - a_1) E\{\pi_{t+1}\} + a_2 rmc_t + \varepsilon_t^\pi \quad (2)$$

This is the equation that governs overall inflation. It describes how inflation changes taking into account inflation expectations and economic activity. This relationship assumes that production costs increase with economic activity, meaning that higher costs translate into higher prices. Additionally, incorporating inflation expectations is essential because producers anticipate the future when setting prices. It should be noted that the form of this equation is inspired by the work of (Christiano et al., 2005); (Galı et Gertler, 1999). The changes in domestic and imported exchange rates are approximated by fluctuations in the output gap and the real exchange rate gap, respectively.

We note that :

π_{t-1} : Lagged inflation;

π_{t+1} : Expected inflation ;

rmc_t : Real marginal cost;

ε_t^π : Cost-push shock.

The coefficients a_1 and a_2 respectively measure the effect of inflation in t-1 on current inflation and the sensitivity of inflation to variations in marginal cost. The term $(1 - a_1)$ measures the effect of anticipated inflation for period t+1 on current inflation.

Taylor Rule :

$$i_t = g_1 i_{t-1} + (1 - g_1)(i_t^{neutreal} + g_2(E_t[\pi_{t+4}] - \pi_{t+4}^T)) + g_3 \hat{y}_t + \varepsilon_t^i \quad (1)$$

The Taylor rule is the term used by the central bank to determine the interest rate. Indeed, it was used in the work carried out by (Clarida et al., 1998) and (Woodford, 2000). Thus, the monetary policy rule indicates how the central bank should adjust the nominal interest rate based on certain particular economic conditions. This equation

We note that :

i_t : Nominal interest rate ;

$i_t^{neutreal}$: Natural interest rate ;

$\hat{y}_t$: Output gap ;

ε_t^i : Monetary policy shock.

Given that the coefficients g_1 , g_2 et g_3 respectively measure the interest rate smoothing parameter, the weight relating to the stabilization of inflation and the weight relating to the output gap.

Uncovered interest rate parity :

$$S_t = (1 - e_t)E_t\{S_{t+1}\} + e_1 \left[S_{t-1} + \frac{2(\pi_t^T - \bar{\pi}_t^* + \Delta \bar{Z}_t)}{4} \right] + \frac{i_t^* - i_t + prem_t}{4} + \varepsilon_t^s \quad (2)$$

This equation represents uncovered interest rate parity in the context of a flexible exchange rate regime. However, it presents a limitation in not taking into account the fixed exchange rate regime. It is therefore essential to modify it to adapt it to this specific regime. Having a model capable of taking these two regimes into account will subsequently allow us to make comparisons between them. The corresponding equation for the fixed exchange rate regime is:

$$S_t = S_{t-1} + \varepsilon_t^s \quad (5)$$

2.2 Model calibration

Before moving on to the simulation, a crucial step is to assign values to the parameters of our model. To this end, we will rely on reference studies carried out in Morocco, such as those carried out (Achour, 2019), (El Othmani, 2018), (Benlamine et al., 2018).

Our selection is aimed at ensuring that the model accurately represents the Moroccan economy. Nevertheless, since there are multiple potential values for the same parameter, we will prioritize values sourced from Bank Al-Maghrib's research due to their credibility.

Creating a model that perfectly mirrors the Moroccan economy is undoubtedly challenging. Nonetheless, our goal is to construct a model that faithfully captures the fundamental attributes of the Moroccan economy.

The table below presents our chosen parameter values, along with their descriptions and sources:

Table 1 : Parameter Calibration

Equation	Parameter	Description	Value	Source
Equation IS	b_1	Persistence of production	0,31	(El Othmani, 2018)
	b_2	Monetary conditions index	1	Author
	b_3	Sensitivity of domestic production to foreign demand	0,5	Author
	b_4	Weight of real interest rate and exchange rate in the monetary conditions index	0,32	(El Othmani, 2018)
Phillips Curve	a_1	Inflation effect in t-1 on current inflation	0,5	(El Othmani, 2018)
	a_2	Sensitivity of inflation to changes in marginal cost	0,2	(Benlamine et al., 2018)
	a_3	Weight of output gap	0,7	(El Othmani, 2018)
Taylor Rule	g_1	Smoothing parameter for the policy rate	0,8	(El Othmani, 2018)
	g_2	Weight of inflation targeting	1,25	(El Othmani, 2018)
	g_3	Weight of economic cycle smoothing	0,34	(El Othmani, 2018)

Source : Author

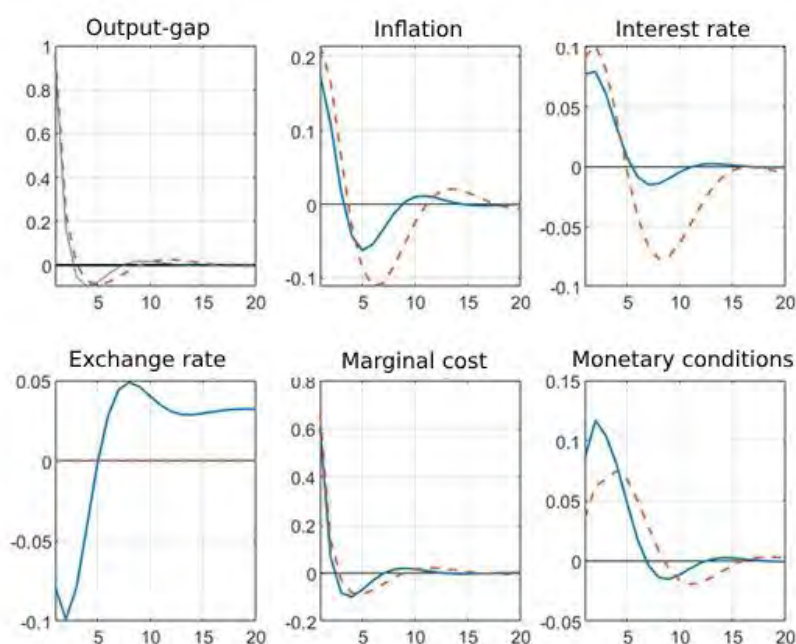
4. Model results and interpretations

In this section, we will examine and compare floating and fixed exchange rate regimes in the context of inflation targeting policy using impulse functions. This comparison will allow us to highlight the advantages and disadvantages of each exchange rate regime. Therefore, we will be able to determine the exchange rate regime that seems most favorable to adopt for the Moroccan economy, taking into account its specific characteristics.

We note that the dashed line represents the fixed exchange rate regime. However, the continuous line represents the floating exchange rate regime.

Thus, our model is capable of taking these two regimes into account. Therefore, it will subsequently allow us to make comparisons between them. The uncovered interest rate parity equation is used to carry out all the simulation exercises as it's presented in the model's section.

Figure 1: Demand shock between the fixed and floating regime



Source: MATLAB

We start by studying the effect of the demand shock. A demand shock directly leads to an increase in the output gap, as is clearly described by the IS equation. This increase in the output gap will push inflation upwards. Faced with high inflation and a positive output gap, the central bank's choice is to increase its interest rate in order to reduce inflation and narrow the output gap.

In accordance with the study work of (O. Blanchard et Galí, 2007), this observation reflects the effectiveness of monetary policy in managing demand shocks because the output gap and inflation are simultaneously driven upwards. In the case of a demand shock. The central bank stabilizes both simultaneously by increasing the rate, which (O. Blanchard et Galí, 2007) called the “divine coincidence”.

On the other hand, and as a consequence of the increase in the interest rate, the exchange rate will appreciate. This increase comes from the fact that the domestic interest rate, the rate set by the central bank, is higher than the foreign rate which will generate an appreciation of the currency, in accordance with the uncovered interest rate parity.

Indeed, following the appreciation of the currency and the increase in the interest rate, monetary conditions will be unfavorable. This observation is apparent in the graph through the increase observed in the curve of the monetary conditions index. It is important to indicate that it is the increase in the real interest rate which affects monetary conditions, that is to say that the increase in the nominal rate by the central bank must be greater than the increase in the inflation to guarantee the rise in the real interest rate.

However, in the case of a fixed exchange rate regime, we see that the demand shock, as in the case of a flexible regime, generates an increase in the output gap (Svensson, 2000).

The positive output gap will increase inflation, through the Phillips curve. Faced with this situation, the central bank will intervene by increasing the interest rate in order to reduce the inflation rate, which is its main mission. But also, to bring the output gap back to its equilibrium level as a second objective for the central bank.

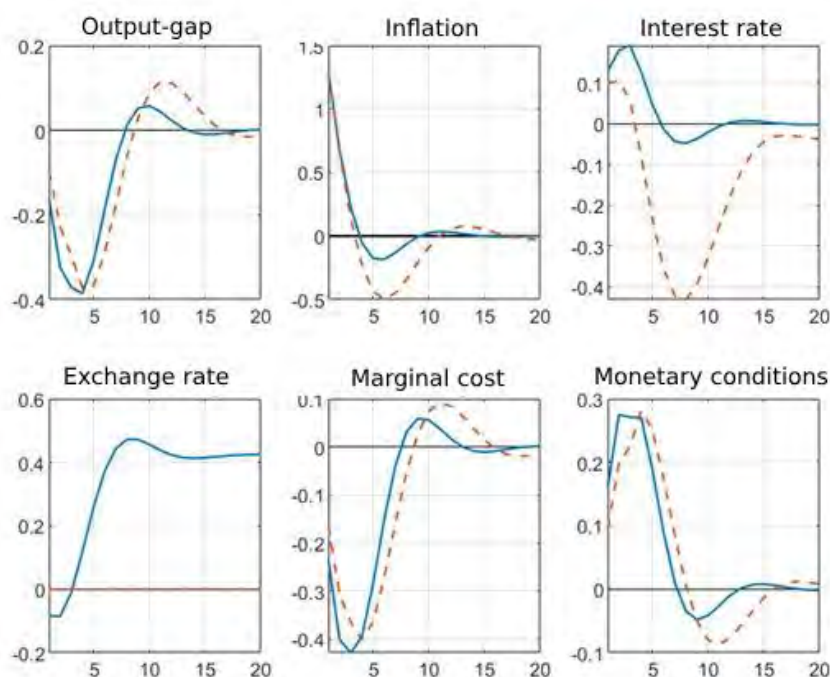
On the other hand, monetary conditions are deteriorating due to the increase in the nominal interest rate dictated by the central bank. As a result, there will be a gradual decline in demand

through the fall in the output gap to its potential level, which will make it possible to decelerate the inflation rate to bring it back to its target as well.

The effect of a demand shock in both regimes is almost similar and initially gives an increase in the output gap. This increase in the output gap will push inflation upwards but in a relatively more pronounced manner in the fixed change regime. The reason comes down to the fact that the appreciation of the rate of change in the flexible regime will moderate the pressure on marginal cost and then on inflation.

Faced with inflation beyond its target, the central bank's reaction is to increase the nominal interest rate. This increase is relatively greater in the fixed regime given that it is marked by more accentuated inflation. This is to guarantee the transmission of the effect on the real interest rate.

Figure 2: Supply shock between the fixed and floating regime



Source: MATLAB

According to the Phillips curve, a supply shock, also known as a “cost-push shock”, results in an instantaneous increase in inflation. A supply shock can be interpreted, for example, as an increase in commodity prices.

This increase in inflation will generate an increase in the nominal interest rate as a reaction from the central bank to counteract the increase in inflation. But this increase in the nominal interest rate through its effect on the real rate, through monetary conditions, will penalize production and give rise to a negative output gap.

However, rising inflation will also appreciate the local currency. This will result in a drop in foreign demand and a more pronounced demand for foreign goods, which will further penalize the output gap. On the other hand, the drop in demand will generate less pressure on costs, through the fall in real marginal cost, which will moderate the inflationary shock.

We note that macroeconomic stabilization of the supply shock requires that the real interest rate evolves in the direction that destabilizes the output gap. This comes from the fact that the central bank gives more importance to stabilizing inflation than to stabilizing the output gap. What we took into account when calibrating Taylor's rule.

However, in the case of fixed exchange regime, the supply shock implies a rise in inflation beyond its target. The instant rise in prices will push the central bank to increase the nominal interest rate.

However, this decision will lead to a deterioration in monetary conditions which will penalize the level of production and push the economy towards a recession.

The negative output gap will generate less pressure on costs, through the fall in real marginal cost, which will reduce the inflation gap until the latter returns to its target.

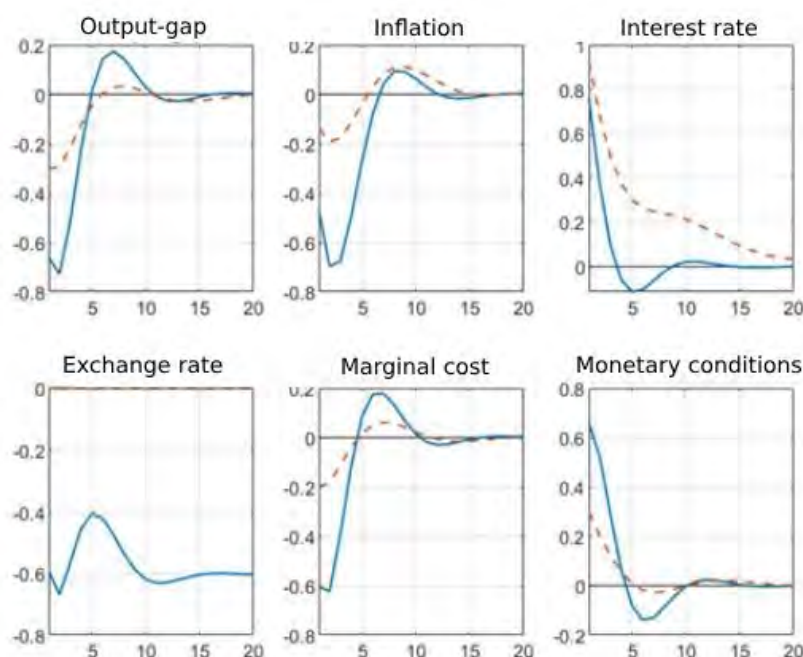
Thus, the supply shock, whether under the fixed or floating exchange rate regime, results in an increase in the inflation rate. The central bank, faced with this situation, will react by increasing the nominal interest rate. However, the rise in the interest rate is more accentuated at the level of the floating exchange rate regime.

We notice a more pronounced deterioration in monetary conditions in the floating exchange rate regime than that observed in the fixed regime because the appreciation of the exchange rate also adds to that of the increase in the real interest rate. Whereas in the fixed regime, only the interest rate channel is operational. This means that the drop in the output gap is greater in the floating regime as is clearly shown in the figure.

Furthermore, the drop in demand will generate less pressure on costs, through the fall in real marginal cost, which will moderate the inflationary shock. However, we note that marginal costs are pulled down more accentuated in the floating regime because of the appreciation of the exchange rate. This makes production factors denominated in foreign currencies more affordable.

Faced with this situation, the central bank will increase its interest rate, and more significantly within the framework of the floating regime for the reasons mentioned previously, in order to counteract the increase in the inflation rate until it returns to its equilibrium. At the same time, the output gap will gradually return to its equilibrium through the depreciation of the real exchange rate due to the drop in prices generated by the drop in costs.

Figure 3: Interest rate shock between the fixed and floating regime



Source: MATLAB

A monetary policy shock leads to a rise in the interest rate. This increase in the nominal interest rate results in a deterioration in monetary conditions which will directly impact the level of production and give rise to a negative difference in the output gap. The latter, through the Phillips curve, will induce a drop in the inflation rate.

Concerning the exchange rate, the latter will appreciate due to the fact that the domestic rate will be higher than the foreign interest rate. This difference between these two rates will lead to greater demand for the local currency in the foreign exchange market, which will increase its value.

The increase in the rate which adds to the appreciation of the nominal exchange rate will further worsen monetary conditions and further widen the negative difference in the output gap.

However, given the negative output gap and inflation below its target, the central bank will gradually lower its key rate in order to bring production back to its potential level and inflation towards its target.

Under the fixed exchange regime, a monetary policy shock results in an increase in the nominal interest rate. The empirical work of (Cushman, D. O., et Zha, T. 1997) confirms this observation. This increase in the nominal rate will worsen monetary conditions and push the output gap and the inflation rate downward.

On the other hand, the fall in the output gap will moderate cost pressures and push inflation further down. This effect is clear from the inflation rate curve which undergoes an additional decline.

Thus, the increase in the nominal interest rate in both types of exchange rate regimes leads to a deterioration in monetary conditions. As a result, these monetary conditions lead to a negative output gap, and this gap is more pronounced in the floating exchange rate regime.

Furthermore, the reduction in the output gap and the appreciation of the exchange rate, resulting from the monetary policy shock, lead to a decrease in real marginal cost, which then translates into a decline in inflation. It is important to note that this fall in inflation is less marked in the fixed exchange rate regime, because the exchange rate channel is neutralized there.

To restore price stability and return production to its potential level, the central bank will reduce the key interest rate. This observation is valid for both types of regimes.

In the light of the analysis of the reactions of the impulse functions following the different shocks simulated under the fixed and floating regime, we deduce that the return to price stability occurs more quickly in the case of the floating exchange rate regime (Hoffmann, 2007); (Obstfeld et Rogoff, 2000) and (Obstfeld et al., 1985). The same goes for the economic cycle. This conclusion appears to be in agreement with the Keynesian and monetarist theoretical models.

5. Conclusion

This paper focuses on the analysis of the responses of impulse functions to supply, demand, monetary policy and exchange rate shocks, in the context of a transition of Morocco from a fixed exchange rate regime to a floating exchange rate, while adopting the inflation targeting policy. The main objective is to determine which exchange rate regime would be best suited to the Moroccan context, within the framework of a forward-looking perspective which aims to implement the inflation targeting policy. It's noteworthy that the latter supposes, based on international experiences, greater flexibility of the exchange rate regime.

Thus, in evaluating which exchange rate regime is most suitable for Morocco in the context of inflation targeting, we need to consider various aspects of economic performance and stability. First, the importance of Exchange Rate Flexibility : One of the key considerations in this transition is the necessity for exchange rate flexibility. Inflation targeting typically involves the central bank using interest rates to manage inflation. In a fixed exchange rate regime, the central

bank is constrained in its ability to respond to inflationary or deflationary pressures by adjusting the exchange rate. Therefore, moving towards a floating exchange rate regime allows for more flexibility in managing inflation.

Second, transmission Channels: In a floating exchange rate regime, exchange rate movements have a more direct impact on inflation. When a currency depreciates, it can lead to an increase in import prices, which can contribute to inflation. Conversely, a stronger currency can have a dampening effect on inflation. This additional transmission channel can be an advantage when trying to control inflation within the target range.

Third, shock absorption: The findings suggest that under a floating exchange rate regime, the economy responds more robustly to shocks, whether they are supply, demand, monetary policy, or exchange rate shocks. This ability to absorb shocks effectively is a crucial element in maintaining economic stability, especially in an era of global economic uncertainties.

Fourth, speed of adjustment: The simulations indicate that a floating exchange rate regime allows for a quicker adjustment of both the economy and inflation to their equilibrium levels. This is a favorable outcome, as it implies that the economy can return to stability more rapidly following shocks. A fixed exchange rate regime, on the other hand, may lead to prolonged adjustment periods.

Finally, policy implications: The results point to the importance of considering the transition to a floating exchange rate regime alongside the implementation of an inflation targeting policy. The central bank's ability to respond to inflationary pressures is enhanced in this framework, and the economy becomes more resilient to external shocks.

In conclusion, while the move from a fixed to a floating exchange rate regime may introduce certain complexities, the overall benefits of greater flexibility, improved shock absorption, and faster adjustments appear to make it a more suitable choice when implementing an inflation targeting policy in the Moroccan context. This transition has the potential to enhance the effectiveness of monetary policy and contribute to greater economic stability and resilience in the face of various shocks.

Evidently, the impacts of shocks are more pronounced in a floating exchange rate regime. This heightened response is primarily attributed to the fact that in a floating regime, exchange rate fluctuations introduce an additional transmission channel for economic changes. This dynamic isn't present in the fixed exchange rate regime due to the dormant nature of the exchange rate channel.

Nevertheless, the outcomes of various simulations conducted in this study consistently indicate that the stabilization of the economy and the adjustment of inflation to its equilibrium transpire more swiftly under a floating exchange rate regime compared to the fixed exchange rate regime.

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