Revue Française d'Economie et de Gestion

ISSN : 2728- 0128

Volume 2 : Numéro 10

IMPACT DU TAUX DE CHANGE SUR LA CROISSANCE ECONOMIQUE AU MAROC

IMPACT OF EXCHANGE RATE ON ECONOMIC GROWTH IN MOROCCO

Ichraq GUECHATI
Doctorante
Ecole Nationale de Commerce et de Gestion Settat,
Université Hassan Premier, Settat- Maroc
Laboratoire des études en Finance, Comptabilité et Gestion« LEFCG »
I.guechati@uhp.ac.ma

Mustapha CHAMI
Professeur d'enseignement supérieur
Ecole Nationale de Commerce et de Gestion Settat,
Université Hassan Premier, Settat – Maroc
Laboratoire des études en Finance, Comptabilité et Gestion « LEFCG »
Mostapha.chami@uhp.ac.ma

Date de soumission : 11/08/2021

Date d'acceptation : 08/10/2021

Pour citer cet article :

GUECHATI. I & CHAMI. M (2021) « IMPACT DU TAUX DE CHANGE SUR LA CROISSANCE ECONOMIQUE AU MAROC», Revue Française d'Economie et de Gestion «Volume 2 : Numéro 10» pp : 71-92.

Abstract

Morocco has portrayed a wider currency fluctuation band of +/- 2.5% within a fixed price. Through this, its economy indicates a shift towards a pliant exchange rate regime. Because of the shift, the country's economy will acquire a macroeconomic tool that will function as a shock absorber while allowing faster alteration at a lower cost. On the contrary, the lack of this sort of tool may require a contraction in demand that can help restore external balances. Regardless of its possibilities, restoring external balances results in a cyclical slowdown in growth. This indicates that managing a flexible exchange rate regime requires numerous actions. Therefore, the most significant step taken is widening the fluctuation bands. This makes the central bank a backbone since it plays a significant role in smoothing out exchange rate swings.

For the economic state of Morocco, the Moroccan data is compared to that of Dirhams' real exchange rate concerning the long-term connection with its essentials. The comparisons are made by viewing the terms of trade, government spending, GDP growth rate, trade policy, foreign capital flow and Gross Fixed Capital Formation between 2013 and 2020. Besides, this study examines the impact of remittances and their consequences on economic policy.

Keywords: Persistence; Cointegration; Misalignment; VAR; Rate of exchange system; Economic cycle; Remittances; Economic growth.

Résumé

Le Maroc a dépeint une bande de fluctuation des devises plus large de +/- 2,5% au sein d'un prix fixe. À travers cela, son économie indique une évolution vers un régime de taux de change souple. En raison du changement, l'économie du pays se dotera d'un outil macroéconomique qui fonctionnera comme un amortisseur tout en permettant une modification plus rapide à moindre coût. Au contraire, l'absence de ce type d'outil peut nécessiter une contraction de la demande qui peut aider à rétablir les équilibres extérieurs. Quelles que soient ses possibilités, le rétablissement des équilibres extérieurs se traduit par un ralentissement cyclique de la croissance. Cela indique que la gestion d'un régime de change flexible nécessite de nombreuses actions. Par conséquent, la mesure la plus importante prise est l'élargissement des bandes de fluctuation. Cela fait de la banque centrale une épine dorsale car elle joue un rôle important dans le lissage des fluctuations des taux de change.

Pour la situation économique du Maroc, les données marocaines sont comparées à celle du taux de change réel du Dirham concernant la connexion à long terme avec ses essentiels. Les comparaisons sont effectuées en observant les termes de l'échange, les dépenses publiques, le taux de croissance du PIB, la politique commerciale, les flux de capitaux étrangers et la formation brute de capital fixe entre 2013 et 2020. En outre, cette étude examine l'impact des envois de fonds et leurs conséquences sur la politique économique.

Mots clés: Persistance; Cointégration ; Désalignement; VAR ; Système de taux de change; Cycle économique ; envois de fonds ; Croissance économique.

Introduction

The suitable stage, which defines the equilibrium of an authentic rate of exchange, has to be selected carefully since not doing it with the seriousness it deserves may result in influencing the external and internal balances of the economy in a negative manner. The same misinterpretations may result from having misaligned literature. Irrespective of the influences it causes, misalignment shows an insufficient rule of exchange that is an expensive external balance. Therefore, it influences resource allocation, catastrophe, and also well-being.

Even though there is no doubt that remittances encompass a passive income source for the individuals found in the developing nations and particularly for the poorest families in those countries, there exist a lot of controversies pertaining to the microeconomic effects of such transfers. A rate of exchange that is done below the actual value may lead to the surplus of a current account through reducing the imports and increasing the costs of acquiring more productive exports. A devalued currency has the ability to escalate the current account through exhausting the reserves of foreign exchange. As of now, Morocco applies the mechanism of a basket peg exchange that has an incidence of a high euro of 80% in the basket. Although, there is a normal consideration stating that a flexible exchange system has better suitability concerning the current needs of Morocco and that the country's government has a plan to move towards establishing one. After a short while, the currency will be more flexible. The authorities in charge of monetary issues apply such sums in the determination of trading weight baskets to compensate for the increasing gap created by the country and her associates of trade and to evade any loss occurring as a result of competition in pricing. Therefore this paper seeks at answering: ***is economic growth in Morocco depends on its exchange rate?***

To answer the research question, the study undertakes various stages. First, the study examines various information obtained from previous research done by other scholars concerning the matter. Through this, the research develops a wide range of information related to the study's subject. The study extracted information from numerous scholars to develop the gap in the study. After identifying the gap, the research examines different research methodologies that will help gain information about the subject of study. Within the section, the methodical process is explored. The section develops and compares the qualitative and quantitative methods of data collection from which a selection of the most effective method is done. From it, the data analysis techniques are explored. Examining the distribution of current costs, on the other hand, might yield some intriguing results. After developing the data collection method, the paper proceeds to explore the result obtained from various sources. This includes figure and table that shows the economic status of the subject of study.

1. Problem statement

The proper level is the real rate of exchange equilibrium. It is critical because a lack of observation can negatively influence the economy's internal and external balances. The inflows that result from foreign exchanges such as FDI (foreign direct information), remittals obtained from overseas citizens, and the ones produced through the exportation of goods and services, all lead to a rise in the local currency demand. On a different spectrum, the importation of goods and services and the repayment of debt services lead to the rise in demand for foreign currency.

2. Literature review

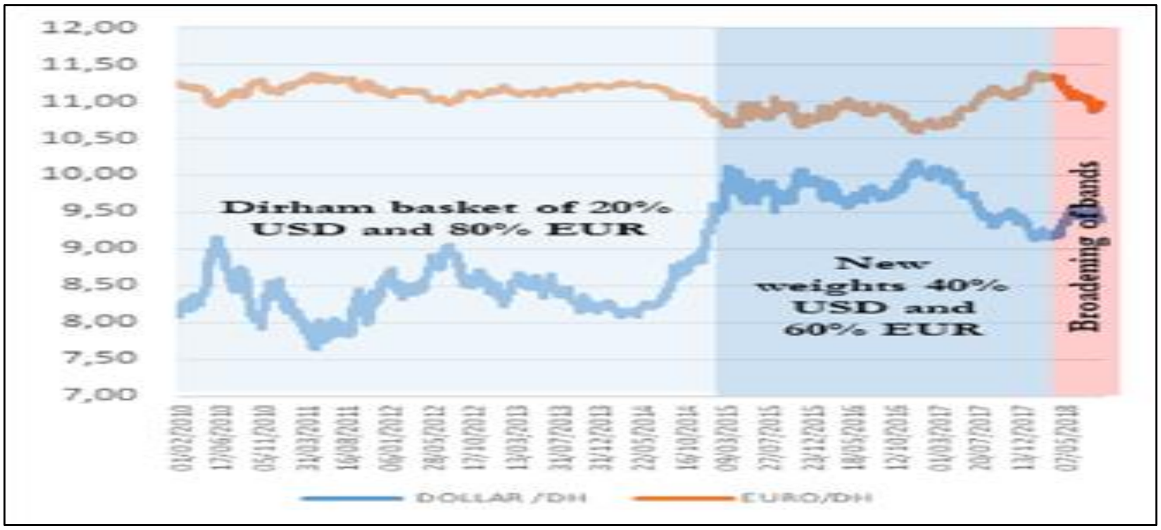
According to empirical research, flexible exchange rate arrangements allow economies to react at a lesser cost than fixed regimes. In a study released by the Bank of Canada, Gervais, Schembri, and Suchanek (2011) confirmed how flexible exchange rate regimes reached their optimum. Using data from 22 rising economies, both further reiterate how costs of lower adjustment have reduced even during an external shock in a flexible exchange rate system relative to a fixed one. Moreover, they caution that qualities of shock absorption inflexible systems are not ideal because shocks are only partially absorbed when they reach real economic activity.

Nonetheless, economists disagree with the study's conclusion, and research findings are still susceptible to sample size and study time. Pancaro (2016), in research released by the European Central Bank, concluded that there is no empirical connection between adjustment costs in the occurrence of an external shock and existing exchange rate regimes from a sample of industrialized countries. For example, if all other factors were equal, this move would have resulted in a 4.9 billion dirham rise in Morocco's trade deficit in the first half of 2012 due to the currency effect. The consequent imbalance results from the increase in value of imports of 8 billion dirhams in addition to a rise of 3 billion in dirham exports.

A worldwide setting necessitates a more flexible exchange rate policy management (Agénor & Pierre-Richard 2015). With free markets, the emergence of new and better actors in the global economy, the establishment of new economies, and the growth of international alliances demonstrate the significance of the exchange rate as a tool for extending economic policy. In the instance of Morocco, an extra factor emerged as a result of the introduction. Consequently, the exchange rate needs to be flexible to attract foreign investment in a country and its inclusion into global commerce. As opposed to its acceptance for low- and emerging-income countries, it might considerably enhance a country's vulnerability to foreign speculation. Until then, Morocco's exchange system has been broadly administered (Friedman, 1953). The grading scheme in Morocco's currency is the dirham, which is defined by a basket. The exchange rate regime, often known as the technique of a basket of major currencies, determines the dirham's external value.

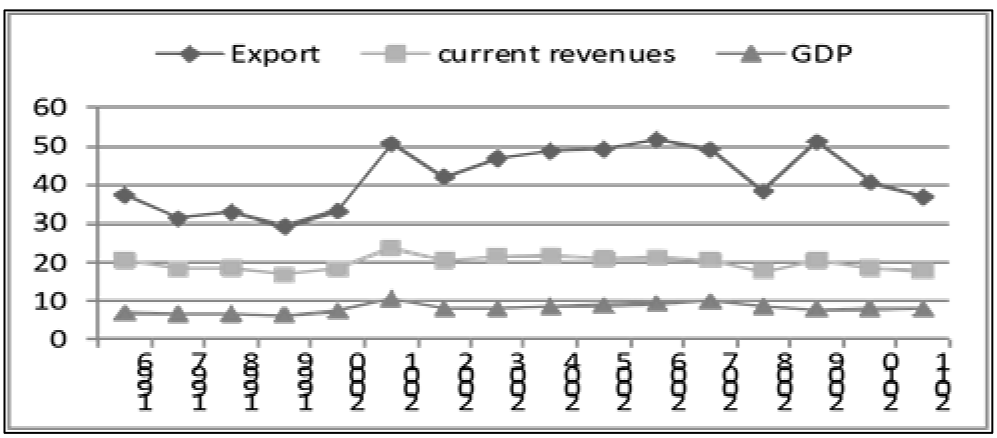
The weights of international currencies are established in general by the geographical distribution of Morocco's foreign commerce. This multi-currency incorporation aims to reduce changes in exchange rates from different currencies collected based on swings from different directions. Also, remittances have remained critical to Morocco's GDP and balance of payments due to their significance. According to Figure 2, Morocco's average yearly impact on GDP remained at 8.7 percent between 2010 and 2014. Consequently, they recorded an average annual inflow of foreign currency of up to 46 percent of export revenue, including an excess of 20 percent of total revenue from their current account of the balance of payments. Moreover, they are accountable for an estimated 26 percent of the total deposits in the banking system, based on the Hassan II Foundation of 2005. According to the figures, remittances have significantly influenced the Moroccan economy's short and long-term growth.

FIGURE 1: DIRHAM EXCHANGE RATE



Source: Bank Al Maghrib

FIGURE 2: RATE OF REMITTANCES ON EXPORTS, CURRENT REVENUES AND GDP (1996-2011)



Source: https://www.researchgate.net/figure/Incidence-of-remittances-on-GDP-exports-and-current-revenues-of-the-balance-of-payments_fig7_272510641

TABLE 1: RELATIONSHIP FIGURES AS AT 2013

	hp_l_Remitt	hp_l_Ita_GDP	hp_l_Spa_GDP	hp_l_Fra_GDP
hp_l_Remitt	1	0,5792	0,7721	0,6092
hp_l_Ita_GDP		1	0,8659	0,3114
hp_l_Spa_GDP			1	0,4012
hp_l_Fra_GDP				1

Source: Made by Data stream, 2014

After the survey on transfers by Moroccans residing abroad, findings by the Hassan II Foundation indicate the significance of these arguments (2008). According to the report, 70.95 percent of money transfers were used for the migrant's and his family's current costs, 7.71 percent for investment, and 20.90 percent for deposits. Consequently, current needs have accounted for up to 70 percent of remittances, leaving only 8 percent for investment.

Examining the distribution of current costs, on the other hand, might yield some intriguing results. Realistically, the observation is that 64 percent was utilized for migrants and cohabiting requirements from their stay in Morocco; another 19 percent for family needs across the rest of the year; and 15.6 percent remaining for extended members who did not belong to the migrant ménage. As a result, the distribution tends to demonstrate how self-interest is the fundamental determinant for Moroccan transfers.

2.1. An Empirical Analysis of Remittances and Economic Development

Several analysts believe that remittances negatively influence Morocco's economic growth, despite their substantial impact on the country's major macroeconomic factors. According to empirical research, flexible exchange rate arrangements allow economies to react at a lesser cost than fixed regimes. In a study released by the Bank of Canada, Gervais, Schembri, and Suchanek (2011) confirm how optimal flexible exchange rates regimes are. Using data from 22 rising economies, both further reiterate how costs of lower adjustment have reduced even during an external shock in a flexible exchange rate system relative to a fixed one.

2.2. VAR Model

In a Vector Auto-Regression approach and using Variance decomposition, our model uses eight variables. It considers monthly data from Datastream from 2013 to 2020, regular pricing from 2013, and a single nation, Morocco. We utilize a number combination ranging from 1 to 8 as the values for reading VAR results:

1. Remittance
2. GDP per capita, as defined by Solow's theory
3. Labor force growth
4. Actual effective exchange rate
5. Capital growth
6. Trade balance
7. Gross secondary school enrolment rate, as a measure of human capital
8. Overall government basic balance, as a quantity of fiscal policy's influence on economic growth
9. General government structural balance, as a measure of fiscal policy's impact on economic growth.

2.3. Summary of work

In a study released by the Bank of Canada, Gervais, Schembri, and Suchanek (2011) confirmed how flexible exchange rate regimes reached their optimum.

3. Methodology

This chapter sets out the methodological processes of the research. It develops and compares the quantitative and qualitative methods. Finally, the chapter concludes with the limitations of the study. For this study, it was elected to follow a qualitative methodology. This fits well with the exploratory focus, but it is used to gain a deep understanding of the topic by offering an analytical approach that fills all the gaps and deficiencies of the subject of study.

3.1. Data Collection

When studying a new area, a significant consideration is what type of data would be most appropriate. Distinguishing between primary and secondary sources is considered essential when researching since it depicts whether the author reports first-hand views or interprets existing material second-hand.

On the one hand, to fully explore a subject, it is preferable to follow primary research. The value of primary data is that it allows the researcher to control the information considered, the study design, and manage the formats in which the data is collected. The challenge with primary data is ensuring that sufficient, valid data is gathered to meet the study's objectives and deliver validity and reliability (Ramlo, 2019).On the other hand, secondary data, which comes from already publicized information and prior studies, can be valuable and beneficial in creating a foundation of understanding (Ramlo, 2019). The function of secondary data research is to interpret primary sources, analyze, critically review and draw conclusions that add value to the reported primary material. Additionally, in the conduction of secondary research, the material can be easily assessed, offering quick knowledge and support to the focus of the primary research. For this study, it was felt that there was a need to ensure secondary data collection that should be qualitative in nature. With this in mind examination of the qualitative approach was undertaken.

Reviewing the various options of the qualitative method and evaluating them against the study objectives, it was felt that the most appropriate format to adopt was selecting secondary data. This means that the researcher will not collect the data directly since the sources are already available by previous researchers that have published the information (Ramlo, 2019). For the specific study, data will be collected through online articles. The rationale for this is that each online source has a different perspective of the impact of Morocco's exchange rate economic growth. The reason for this is that this format allowed for some level of control over the areas discussed but also provided flexibility for further exploration and support. Thus, this type of data will provide more significant insights into the research subject and support hypotheses and further investigation.

3.2. Data Analysis

It is recognized that raw data alone cannot provide sufficient information to provide answers to the research questions and meet the objectives. Therefore, the raw data from the secondary research was coded and analyzed using a summative content analysis approach. This required examining data from online sources with a subsequent interpretation of their presence and context (Greening, 2019). The approach aimed to identify clear patterns and perceptions in regard to the economic growth of Morocco. The process adopted for the content analysis was to first study through each online source that has information about the economic trends of the subject of the study.

The rationale for this strategy is that it will identify the economic trends of the subject of study and, more specifically, how the impact of the exchange rate on the economic growth of Morocco. Although this is a lengthy process, it is effective for qualitative research as it allows for more outstanding in-depth evaluation and comparison of a comprehensive and potentially varying set of data as Greening, (2019) notes.

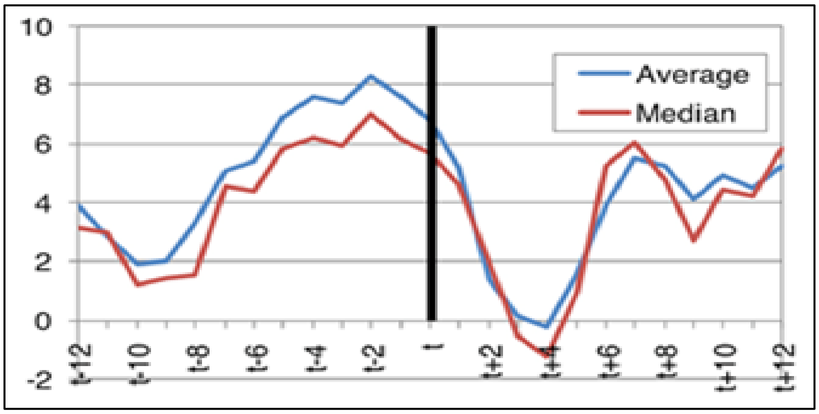
3.3. Study limitations

With any study, there is recognition that unless the work is conducted in highly controlled laboratory conditions, there are likely to be limitations in the development and overall undertaking of the work. The current study has several limitations that need to be identified as any conclusions drawn will need to take these into account. The first is that the focus of the work is based on existing sources that do not permit further exploration. This was due to the time and resources available for the study and it is initial exploratory work. Any future examination of the economic growth of Morocco would therefore need to incorporate data, either quantitative or qualitative, from economist and online sources.

4. Result and discussions

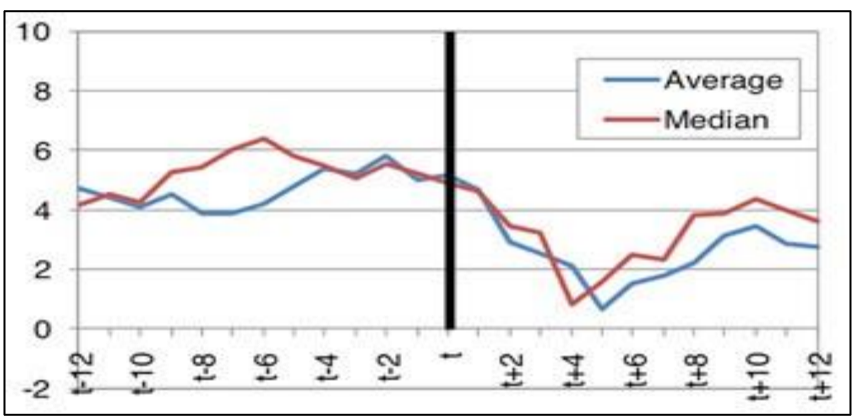
The figure below show the quarter, which entails how external shock manifests via a comparatively declined current account. The subsequent period is connected to the adjustment phase. From the table, it is experienced that flexible exchange rate policies offer the central bank additional freedom to carry on independent monetary policy. Furthermore, the flexible exchange rate plays a vital role as a shock absorber. As a result, monetary policy has more autonomy in fulfilling initial objectives and creating monetary conditions that are best suited to local macroeconomic realities. Flexible systems proponents believe that they absorb external shocks and act as a self-regulating stabilizer in the domestic economy. Permitting a rate of exchange fluctuation in one way or the other to lessen the influence of an initial shock on real economic activity can be described as absorption.

FIGURE 3: THE FIXED RATE OF EXCHANGE (GROWTH IN %)



Source: https://www.policycenter.ma/publications/role-flexible-foreign-exchange-system-macroeconomic-adjustment-case-morocco

FIGURE 4: THE FLEXIBLE RATE OF EXCHANGE RATE (GROWTH IN %)

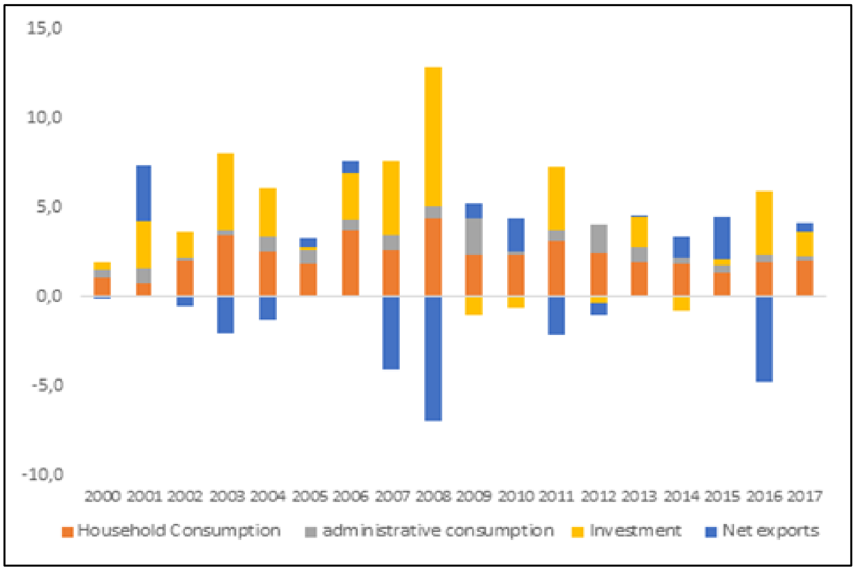


Source: external stability, real exchange rate adjustments and the exchange rate regime in emerging market economies. Bank of Canada (2011). Retrieved at https://www.policycenter.ma/publications/role-flexible-foreign-exchange-system-macroeconomic-adjustment-case-morocco

Using a fact-based approach, we can better grasp how this process operates. This is to prove that when exchange rates are fixed, there is a drop in foreign demand, which results in a drop in exports and domestic output, and employment rate. Adjustment in this situation can be expensive and have an impact on economic activities in the country and the labor market in the region. However, according to Gervais Olivier, Schembri Lawrence, & Suchanek Lena (2001), flexibility in the prices and nominal wages can result in a less restricted adjustment. This is to suggest that the availability of opposing extraneous shocks, a fixed rate of exchange in conjunction with decreasing rigid prices and wages, does not affect domestic export prices, expressed in foreign currency. In addition, competitiveness can lead to a contraction in output and employment in the downward stage of the cycle,

In a fluctuating rate of the exchange system, however, adverse shocks to extraneous demand cause the domestic currency to depreciate proportionally, causing export prices to move lower, retaining cost-effectiveness. Not only are export genuine, but import prices are rising, and domestic demand is shifting to domestic items due to the price shift (Ilzetzki Ethan, Reinhart Carmen, Rogoff & Kenneth 2017). Depreciation may have resulted from the modification. As a result, agricultural growth appears to have steadied at lower levels, with economic activity being damaged and suffering 1.8% points between 2012 and 2013. The Moroccan economy entered a period of forced adjustment beginning in 2013 to restore the broader macroeconomic framework's viability. The Treasury's funding demand reached 7.4 percent of GDP, in addition to foreign imbalances. The aim was to reestablish both internal and foreign macroeconomic balances.

FIGURE 5: THE RATIO OF DEMAND ELEMENTS TO TOTAL GROWTH (%)



Source: https://www.policycenter.ma/publications/role-flexible-foreign-exchange-system-macroeconomic-adjustment-case-morocco

4.1. VAR model

Before estimating VAR, it's a good idea to do the Dickey-Fuller test with 12 delays, which is required to check if the eight variables in the model's history series are stationary, based on the correlogram study. This demonstrates that the procedure is not static. As a result, the eight variables may be transformed into logarithms and logarithmic differences.

TABLE 2: EXPLORATORY DATA ANALYSES

	Pseudo SD	**10-Trim**	**IQR**	**Maximum**	**Minimum**	**SD**	**mean**
d_l_remitt	1,248	6,752	2,074	4,2457	1,2078	1,0896	6,9156
d_l_kform	1,665	4,156	2,054	4,2454	1,9854	1,6875	4,3269
d_l_Trade	1,785	7,054	1,784	6,7812	4,1258	1,3895	7,2649
d_l_K	1,254	4,057	1,745	6,2448	4,6525	1,0198	4,6987
d_l_Publ.ex	1,457	6,025	1,458	6,2565	4,8565	1,0852	6,2365

d_l_Exch_rate	1,596	7,179	2,962	9,2937	5,7025	1,0963	7,1963
d_l_LbForce	1,254	10,564	1,493	4,2587	1,9025	1,4289	10,5866
d_l_GDP-pr		8,264	2,698	10,9648	4,9632	1,4325	8,5261

Source: Elaborated by ourselves

TABLE 3: CORRELATION MATRIX

	d_l_GDP-pr	d_l_LbFor	d_l_Exch	d_l_Publ.ex	d_l_K	d_l_Trade	d_l_kform	d_l_remitt
d_l_GDP-pr	1							
d_l_LbForce	0.7160	1						
d_l_Exch_rate	0.8025	0.2948	1					
d_l_Publ.ex	0.7785	0.9405	0.1917	1				
d_l_K	0.7468	0.9026	0.1801	0.9147	1			
d_l_Trade	0,7037	0.8498	0.7557	0.9092	0.8822	1		
d_l_kform	0.7140	0.7589	0.1198	0.8633	0.8713	0,831	1	
d_l_remitt	0,8309	0.9008	0.8798	0.9758	0.9335	0,9331	0,8745	1

Source: Elaborated by ourselves

By examining the table above, it is actually to say that capital creation, trade, public expenditure, remittances, and the rate of exchange are intertwined. In particular, the relationship between remissions and K shows a 0.9 rate. This value is also shown between remissions and labor force as well as remissions and general government structural balance. However, the table indicates a significant correlation in the above pairs at the 1% level, given that the correlations are more vital than 0.90%. Through this, the analysis of the table confirms the existence of a solid link among the variable selections. With that regard, the result invites the use of a VAR to validate the long-term macroeconomic impact.

4.2. VAR Results

With a VAR and two delays, we continue our investigation into the causal connection between eight variables. The results of the model with eight variables are presented in the table below.

TABLE 4: RESULTS FROM 8-VARIABLES VAR SIMULATION

[dep/ind]	Coeff.	Std.Err.	p-value
c [1;1]	0.093131	0.01160	4.51e-016***
c [4;1]	0.010893	0.01303	0.0000***
c [8;1]	0.905010	0.02260	0.0000***
c [2;2]	0.012616	0.00155	4.51e-01***
c [3;3]	0.062665	0.00771	4.51e-01***
c [4;3]	-0.06075	0.01032	4.02e-01***
c [8;3]	-0.07855	0.01984	7.53e-05***
c [4;4]	0.04091	0.00503	4.51e-01***
c [5;5]	0.067257	0.00827	4.51e-01***
c [6;5]	0.02668	0.01202	0.0265**
c [7;5]	0.04304	0.01001	1.72e-05***
c [8;6]	0.042404	0.01604	0.0082***
c [7;7]	0.048315	0.00594	4.51e-01***
c [8;8]	0.086875	0.01069	4.51e-01***

Source: Elaborated by ourselves

When we evaluate the model as a whole, the diagnostic tests estimate the lack of autocorrelation difficulties in the residuals for both interruptions. At the same time, the Wald statistic confirms the significativity of variables regarding any delay, except for the last hold. Further testing indicates that all of the VAR estimate's general issues have been resolved. The stability criteria, in particular, are grounded on the computation of eight values smaller than integrity and scrutiny visuals of the increasing quantity of the remainders estimated recursively. As illustrated, except for the underlying link between a variable and itself, all variables were significant at 1%, except for trade (6) and capital growth (5), which were significant at 5%. The following are the results: Remittances impact growth via a one-way system with a value regressor of 0.90, the highest of all coefficients. Using partial quadratic coefficients, we may estimate that the remittance regressor influences economic growth by 84 percent.

The research also yielded an intriguing result: remittances have a poor relationship with the other factors necessary to evolution concepts. This confirms that in a country like Morocco, the link among remissions and growth is more direct than the concepts' suggestions. This is grounded in the fact that the remissions do not explain the accumulation of real capital. Instead, a faint explanation of the trade balance (0.04) and the real exchange rate (-0.07). The first finding empirically backs up the conclusion obtained by the Hassan II Foundation's remittance study. The second is supported by Morocco's currency rate regime: a basket peg system. We may infer those remittances and economic growth as having a solid long-term relationship supported by impulse-response analysis.

We describe the response function of a stationary VAR to an external shock on GDP or remittance growth as follows: (yn) i,j=yit jt, h (i,j,n) remittance = (yn) i,j=yit jt,

In a typical VAR model, y represents GDP growth in time (t), j is a symbol given to an exogenous shock for (n) times, and jt reflects the consequence of the shock. The above equation represents the response of the i-th h I j, n) variable to the j-th h I j, n) variable to the j-th h I j, n) variable to the j-th h I j, n)

4.3. The Theoretical Reference Model

- ***Valuation of ERER and Measurement of Misalignments***

The cointegration method applied to non-stationary series will be used to determine the equilibrium real exchange rate (ERER). We must first identify the variables and specify the time series econometric research features before we can estimate the model.

4.4. Description and excerption of model variables

The fundamental hypothetical model described above establishes a long-term link between the real exchange rate and its essentials. The essentials involved include trade terms, trade policy, foreign interest rates, foreign capital flows, and government expenditure. It's worth noting that the lack of data for some macroeconomic factors forces us to make some guesses. The first is about government spending: because we can't distinguish between tradable and non-tradable products, we use the log of government spending as a proxy (LDP). The second is concerned with trade policy. According to the research, the percentage of foreign trade-in value in nominal

GDP approximates the degree of openness of the economy. According to Dadush Uri (2015), this type of approximation would result in BCGDP. This is because the approximation is supported by the fact that everything else is identical. The increasing trade relaxation aids in the intensification of trade and price intersection. In our instance, we're talking about the conventional opening rate, calculated by adding up the exports and imports then dividing by GDP. Through is the TOUV will be acknowledged. Capital flows are approximated by net inflows of foreign direct investment for their portion. They will be given an IDE grade.

Additionally, there is an application of the growth rate of the actual GDP as a substitution of doing a quantification affecting the Balassa-Samuelson. There is an anticipation that the actual GDP's rate of coefficient growth rate has a negative value as far as the development of the economy is concerned, which has a follow up of the increasing differences between the standard yield in the sector that can be trodden, leading to the appreciation of the actual exchange. The actual efficient rate of exchange of the Dirham, which is an important variable in this study model, had a determination by applying the method provided by the finance ministry of Morocco under the Directorate General of Economic Policy.

Moreover, there is a viewpoint of significance in the supplementation of the model that has factors compared to the ones described by the theoretical model, obtained from the vital empirical investigation regarding the basics of exchange rates. The establishment in log (LGFCF) in estimating the impacts of both intangible and tangible investments regarding the actual rate of exchange - the Gross Fixed Capital Formation in log (LGFCF) to quantify the influence of intangible and tangible investments on the actual rate of exchange. The log of external public debt (LEPGPD) demonstrates the influence of external interest rates on the actual rate of exchange.

4.5. Testing the stationarity of fundamental variables

This study surveys the statistical features of multiple sequences through the application of the unit root assessments like Shin, Schmidt Phillips, Phillips-Perron test Kwiotowski, Augmented Dickey-Fuller, and the Augmented Dickey-Fuller to measure the concept that there is a type of convergence that is long-term found between the basics and the rate of exchange. After which, through the application of two procedures, Johansen strategy being one of them, there will be an evaluation of the connection existing on the convergence of the long-term situation found between the basics and the rate of exchange. The study will make a comparison of the unit root theory against the substitutional stationary theory. The results of the fundamental stationary test are as follows:

TABLE 5: UNIT ROOT TEST ON THE MODEL VARIABLES

Part A: ADF Test on the variables in level				
Variables	stationarity	Critical Value tc (with the threshold 5%)	value ADF (t)	model *
LGFCF	Yes	- 3,56	- 7,22	Model 3
BCGDP	No	- 3,56	- 1,22	Model 3
TMCHE	No	- 3,56	- 0,29	Model 3
LEPGDP	Yes	- 2,96	- 3,89	Model 2
CRGDP	Yes	- 2,96	- 11,16	Mode2
TOUV	No	- 3,56	- 2,67	Model 3
LIDE	No	- 3,56	- 2,96	Model 3
LDP	No	- 3,56	- 2,43	Model 3
ERER	yes	- 2,96	- 5,26	Model 2
Part B: ADF test on the variables in first difference				
LGFCF	Yes	- 1,95	- 11,87	Model 1
BCGDP	Yes	- 1,95	- 5,88	Model 1
TMCHE	Yes	- 2,96	- 4,93	Model 2
LEPGDP	Yes	- 1,95	- 8,08	Model 1
CRGDP	Yes	- 2,95	- 4,22	Model 2
TOUV	Yes	- 1,95	- 7,83	Model 1
LIDE	Yes	- 1,95	- 7,69	Model 1
LDP	Yes	- 2,96	- 4,22	Model 2
ERER	Yes	- 1,95	- 2,00	Model 1

Source: Elaborated by ourselves

The stationarity of the series in the first difference can be concluded based on the findings obtained. When every other model of series has been incorporated in the first order, a person can reach integration assessment, which is geared to put together the variables in the fundamental model.

4.6. Estimated long-term relationship

Consider that two requirements must be satisfied for a long-term link between many variables: first, the variables must be non-stationary and integrated into the same sequence. Their stochastic tendencies, on the other hand, must be connected. The cointegration test shows the presence of two cointegrating connections from which one can calculate the VCEM. The trace value of 341.30 > 197.30 rejects the hypothesis of more than 95 percent zero vectors and accepts the alternative hypothesis of at least one cointegrating vector. The following table shows the long-term link between the substantial real exchange rate and the fundamental model.

TABLE 6: LONG-TERM RELATIONSHIP BETWEEN THE REAL EXCHANGE RATE AND THE FUNDAMENTAL

TOUV	CRGDP	LEPGDP	LDP	LGFCF	LTOT	ERER
0,02	0,16	0,40	-1,93	0,50	0,74	1
6,737	20,042	12,989	-11,995	6,169	4,182	t-stat

Source: Elaborated by ourselves

The six elements that play a role in the economy's fundamentals are positive indicators and statistically significant. The model eliminated the remaining variables because they were statistically insignificant. It is the value of the FDI-to-trade-balance-to-GDP ratio. Improved terms of external trade, empirically, leads to an increase in the ERER. Regarding the coefficient of the variable differential growth (a productivity indicator that measures the Balassa-Samuelson effect), Morocco is growing faster than its peers as the real exchange rate rises. It is the dominant effect of product enhancement. In other words, a positive income effect from technology shock leads to an excess of non-tradable products and, as a result, a genuine understanding of the ERER request. A rise in public external debt and gross fixed capital creation, as well as a loosening of trade barriers, are all linked to a real exchange rate appreciation. However, government expenditure has been accompanied by a rate of depreciation.

Conclusion

Where a big shock is lacking, there may be anticipation with Morocco of having a slow transitioning towards a system under control in the coming 10 years, with the significant engagement with the central bank in the international currency markets given conservation in the instance of a substantial downward and or upward pressure in the Dirham.

Implementing such changes have the ability to be affected through successful international experiences. Unsuccessful ventures in macroeconomic management in Latin America have masked efficient macroeconomic management, remarkably in Chile, which is applicable as a model.

Remittances may have much significance in developing a nation facing a high migration rate, and Morocco is one such country. In regard to the results of this investigation, the transfers of cash by the migrants have resulted in vital economic progress in Morocco. Particularly, the VAR investigation found that, between the period marking the year 2013 and 2020, the GDP per capita growth was impacted by remittances in a fundamental unidirectional association. The impact has been estimated at 84%, vitally more crucial in comparison to the reported values of the other variables o microeconomics that support the growth theory. This investigation determined that the effects of remittances fluctuations of the economy's progress never reduced with the change in time, supporting the notion that they serve a progressive engine. In case there is overvalue or undervalue of a currency, the effects can be differentiated.

If there is an undervalued currency, it changes to be very competitive, thus increasing the internal production rate, exports, and investment while reducing the value of exports. It assists in improving employment rates, the GDP, and the current accounts. It is an important result since it determines that the importance of remittances regarding the development procedure is supposed to be considered whenever Morocco decides on her economic policies. That is as well similar to the policies that affect exchange rates. Considering the close ties found between the rate of currencies and remittances, the choices that impact the former may encompass vital results for the dynamics of the economic systems.

Additionally, overstatements are known to demonstrate contradictions in the making of policies that affect macroeconomics. Upscaling the likelihood of currency challenges and balance-of-payments, and thus resulting in the decrease in economic growth. However, the authorities in charge of monetary issues have given increased freedom, considering the lack of vital impacts after the deflation shock, adopting the pricing formula, conservative measures of macroeconomics, and inflexibility of salaries have been applied in Morocco. It is significant to loosen the control of capitals in regard to the complete dirham convertibility. In the same measure, there is a need to create a clear monetary policy that comprises the stability in pricing as the central objective, which allows for the Central Bank to decrease its involvements in the international exchange markets, with the principal aim of floating the dirham.

Merchandise price variations in an upward way that increases pressure on the reserves of international currencies, and in a smaller percentage, an instant stop to the inflows of an FDI are great risks that have the capability of deteriorating the shift towards the approach of the managed floating system. Short-term capital, known to be generally a foundation of micromanagement challenges in the developing economies, is not a vital apprehension for the economy of Morocco. As a result of the low liquidity and narrowness in capital markets on both private and stock debt sides, the flows have for a long time been negligible, protecting the internal economy from the arbitrage of investors between foreign and internal return rates.

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