Research Article — **Open Access**

Is the Monetary Policy of the WAEMU Credible? An Empirical Analysis Based on the Rule Forward Looking

Nahoussé Diabate*

UFR Sciences Economique et de Développement, Université Alassane Ouattara, Bouaké, Côte d'Ivoire

Abstract

This study aims at making available to the Central Bank of West African States (BCEAO) authorities an additional decision tool that would enhance their transparency and credibility. Therefore the Taylor rule, which connects the level of short term interest rates in output gap and the gap between the rate of inflation and the inflation target the mass money was introduced, net foreign assets and a dummy variable to capture the effects of the 1994 devaluation of the generalized method of moments (GMM) particularly suitable in the context of "Forward looking rules" is used here. The results obtained from annual data (1985-2014) shows that the estimated rule does not pretty much describe the behavior of money market rates over the period. Moreover, it seems that Central Bank of West African States (BCEAO) gives more and more weight to support the activity and the stabilization of prices, anything that weakens its effectiveness and credibility. Our results confirm the need for the central bank to return to its policy primarily based on inflation targeting sit for the credibility of its monetary policy.

Introduction

Since the early 90s, several solutions have been developed to demonstrate the effectiveness and credibility of monetary policies. These policies include the adoption of rules in the conduct of monetary policy. However, there are two types of policy rules. There is a passive side rules which are rules granted to the Central Bank so that it cannot take more inconsistent decisions from those it has pledged to take the start of the period [1,2]. But, on the other, given that the global environment is constantly changing, there are rules activists generally defined by the rule [3] subsequently developed by several authors [4].

Activists rules provide that the trend of monetary policy may be changed based on risky events that affect the economy. Active rules or contingent rules are rules that will ensure credibility both in the long term and the short term. Furthermore, several studies have shown the superiority of the rules of policies, which themselves have evolved from the targeting of monetary aggregates to varying targeting policies reflecting the goal of monetary policy [5]. Indeed, several theories emphasize the link between an active monetary policy rule and efficacy/credibility of monetary authorities. The idea is that the longer the central bank is committed to follow a precise and predetermined monetary policy rule, the more transparent and credible the policy is. But this type of solution allows maintaining credibility, there are two necessary conditions. In order that the rule announced by the authorities necessarily be credible in the long term. Otherwise, it must ensure the stability of the price over the long term. They also equally require a total transparency both in terms of the rule announced as well as that the information it contains. In other words, it must be public. An example of active rule is the Taylor rule. It specifies changes in interest rates of the Central Bank in accordance with the evolution of two variables: the real output and inflation.

For other authors, a monetary policy is all the "more good" it allows to mediate effectively between the stabilization of the product (short term objective) and the maintenance of the prices stability (medium objective and long term), which are desirable objectives from the perspective of social welfare [6]. The formulation of the monetary policy of BCEAO is at least goes the implicit way in the same logic, that of supporting the economic activity understood as an opportunity for the stabilization. In these conditions, of the current economic situation how to define in the case of Central Bank of West African States (BCEAO), a monetary policy rule that allows at best to base establishes its credibility? What are the implicit weights of inflation and production in the decisions of Central Bank of West African States (BCEAO)?

As for the Taylor rule, several adaptations were made to it by central banks through around the world. This is the case of the works of [7], on the experience of the European Central Bank (ECB). In the case of Germany, [8] evaluated the behavior of the BUNDESBANK during the period from 1985 to 2004, holding the keeping hypothesis of interest rates smoothing. Basing themselves on the same hypothesis [9] derived a "rule" of Taylor type a European fictitious Central Bank (ECB) have followed since the creation EMS (1979-2003). In general, studies on the eurozone conclude that the monetary policy is well represented by simple Taylor rules [7,9]. In the Canadian case, [10] finds that the Central Bank of Canada (BCC) act having a behavior of smoothing interest rates. Among the authors who studied the case of African economies let 'we name [11-13]. In the case of Tunisia, basing oneself on the trimestrial data from 1997 to 2011 [12] finds that the Taylor rule can be adapted to the Tunisian Central Bank.

In the case of UEMOA countries, several studies have been conducted. The first study is from [11], that is an acceptable approximation of BCEAO behavior. Using trimestrial data from 1991 to 1999 this estimate, which provides fixation of Central Bank of West African States (BCEAO) interest rates takes into account reflects the economic fundamentals, such us the output gap (an indicator of tension on the market of goods), the money market rate differential, the passed value in the interest rate, a constant that is proportional to the sum of the target inflation rate and the real interest rate balance. The results obtained as much on annual data on trimestrial data show as the estimated rule describes reasonably well the behavior of money market

*Corresponding author: Nahoussé Diabate, UFR Sciences Economique et de Développement, Université Alassane Ouattara, Bouaké, Côte d'Ivoire, Tel: (+225) 59459147; E-mail: fnahousse@yahoo.fr

rates. The second was [13] which consisted to analyse the adequacy of the simple Taylor rule with the monetary policy of Central Bank of West African States (BCEAO). From annual data, it leads to the result that the Taylor rule, in its initial version, is not consistent with the monetary policy of Central Bank of West African States (BCEAO).

Various empirical analyses that were the subject of this literature review have the same limits. Indeed, the studies mentioned above do not focus on steadiness of the variables stationary, anything that can lead to erroneous results. In addition, the estimates of the rule interest rate using single equation methods of the Taylor rule have been criticized by [14] based on the fact that the structural parameters related to the preferences of monetary authority and structure of the economy, cannot be recovered.

In sum, it appears that the strict adaptation of the Taylor rule in the other countries remains less relevant and this can lead to wrong decisions makings by the monetary authorities. The objective of this work is both descriptive and normative. This is i) first, to verify whether the reaction function of Central Bank of West African States (BCEAO) can be rewritten in terms of a simple rule of active monetary policy combining an inflation and production target and other fundamental variables ii) secondly, to make available to the monetary authorities an additional decision tool that would reinforce their transparency and credibility. To achieve these goals, we organize in which follows: Section 2 presents the monetary environment at Central Bank of West African States (BCEAO) and the way monetary policy is conducted. Section 3 presents a simple model to formulate a Central Bank of West African States (BCEAO) reaction function. Section 4 is to put in a prominent position the methodology. Section 5 analyses the results of the estimates of the "Forward-looking rules" by the generalized moment method (GMM). Section 6 will deal with the conclusion.

The context of monetary policy at Central Bank of West African States (BCEAO)

The institutional frame of monetary policy in the WAMU is regulated by a number of key texts including the Treaty of WAMU of 14th November 1973, the agreement between France and the member countries of the WAMU December 4th 1973, the Treaty of the Economic and Monetary Union of West Africa (UEMOA) on 10th January 1994 and the status of Central Bank of West African States (BCEAO). The management of the central bank is entrusted to a board of director's orientation while the monetary policy and the definition of instruments are the responsibility of a Monetary Policy Committee (MPC) led by the Governor. Each state member has within it an agency depiction of the central bank in which a National Credit Council seat and meets studies the conditions of working the banking system as well as the methods of financing of the national economy.
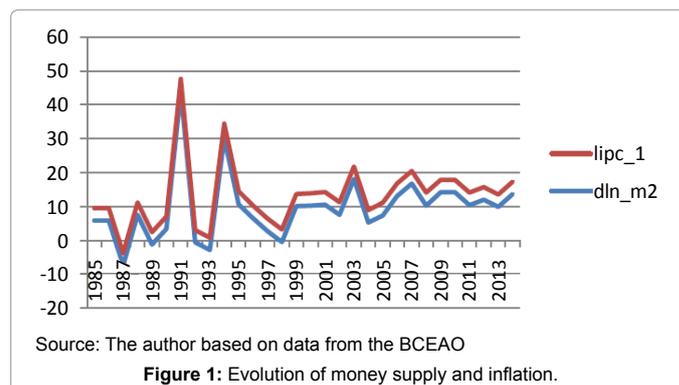
As the institutional frame, the implementation of monetary policy in the area has experienced developments that can be summarized into three main phases: i) The period 1962-1975 is characterized by a stable international economic environment, ii) in July 1975 EU is seen find itself with a money market aiming at whose objective was to keep and recycle the resources in the area, iii) the 1980s the keeping and recycling of experiencing upheaval as doctrinal and empirical. It is in this new context of financial innovation that monetary policy of Central Bank of West African States (BCEAO) will still know a reform in October 1989. This one confirms the setting of the new management system currency and credit revolving around three requirements: i) the reduction of the role of the central money in favor of an increased mobilization of domestic savings; ii) the gradual renunciation to the
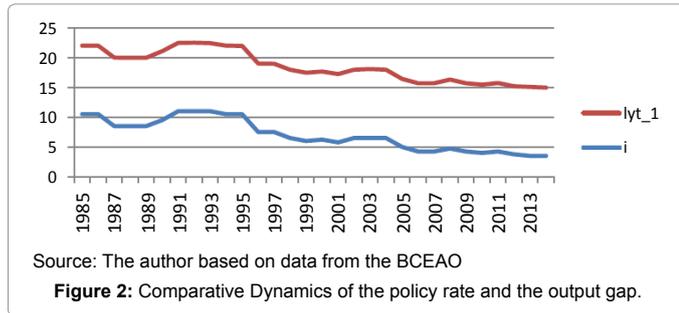
administrative mechanisms in favor of more flexible and incentive policy instruments; iii) The strengthening of banking supervision including the establishment of a supranational structure of control, the Banking Commission of the WAEMU.

For its financial programming, Central Bank of West African States (BCEAO) watches closely the monetary aggregates particularly aggregate M2 and its evolution. The chart 1 confirms this relative intuition of the synchronization between inflation and money supply over the period 1985-2014. As matter of fact around, some shifting, this chart shows the existence of a positive connection between inflation and money supply. On the chart, we see that the impact of the 1994 devaluation has led to a strong growth in the money supply and inflation (Figure 1).

But since the financial liberalization reforms begun in 1989 ordered via those undertaken in 1993 and 1996 (the procedure of reform), the monetary policy is based on a greater reliance on market mechanisms, confirming the option of an indirect regulation of bank liquidity. The interest rate thus became a key tool in the monetary regulation, and especially after the effective abandonment of the credit controls in January 1994. Indeed, the policy rate has strengthened the renewed monetary market of WAEMU by giving it a second wicket (the weekly sale by auction). Thus, the policy rate is based on the open market, the promotion of the interbank market and the liberalization of banking conditions. Moreover, it revolves around the key rate of the Central Bank applicable to the main refinancing wickets. These interest rates at the Central Bank of West African States (BCEAO) are threefold: i) the call for tender rate, ii) repo rate, iii) the discount rate.

Since liberalization, the importance of the money market has increased in the management of the monetary policy of Central Bank of West African States (BCEAO). The boost given to the key rates should therefore be transmitted to the money market by modulating the system of interest rates in the direction desired by the central bank. Graph 2 tries to capture the dynamics of the pension rate and the output gap calculated using the Hodrick-Prescott filter (GapHP). The output gap is supposed to translate inflationary or deflationary future prospects. While production tends to exceed its potential level, the economy falls into a boom-bust cycle, investment and consumption to bolt resulting ceteris paribus an upward trend in prices; the opposite effect is obtained when the output deviates negatively and significantly from its potential level. However, the studies of the decisions of the central bank in recent years foreshadows that the rate setting takes into account the economic conditions including inflationary pressures, resulting both from the abundant liquidity and the expansion of the production (Figure 2).

Source: The author based on data from the BCEAO

Figure 1: Evolution of money supply and inflation.

Source: The author based on data from the BCEAO

Figure 2: Comparative Dynamics of the policy rate and the output gap.

Model

A generalization of the Taylor rule is the following:

With

$$i_t = \overline{i_t} + p_t + \beta_e\left(p_t - \hat{p}\right) + \beta_y y_t \qquad (1)$$

With β_e and β_y the non-negative parameters called reaction parameters, and $\hat{i_t}$ it the rate of neutral real interest. Moreover, according to several authors [11,15], this original rule has to undergo some changes to take into account the realities of practicality reflect. As a matter of fact, in reality, central banks to limit the volatility of interest rates, prefer to make a gradual change of these ones. This limitation of volatility is justified by the desire on the part of monetary authorities to maintain their credibility first, and avoid shock surprises that would financial disturb markets secondly. Some authors such as [8] in their pioneering work offer to consider this behavior "smoothing of the interest rates" in the reaction functions of central banks. Econometrically, this amounts to considering that the current interest rates partially adjust the target interest rate either:

$$i_t = \left(1 - \theta\right)i_t^* + \theta i_{t-1} + \varepsilon_t, 0 < \theta < 1 \qquad (2)$$

Where θ is a parameter indicating the degree of smoothing of the current interest rate on past interest rate, or degree of inertia of the monetary policy? By substituting i^* by its value in (1), one obtains:

$$i_t = \left(1 - \beta\right)\left[\overline{i} + p_t + \beta_e\left(p_t - \overline{p}\right) + \beta_y y_y\right] + \beta i_{t-1} + \varepsilon_t \qquad (3)$$

These rules are called Backward-looking rule.

In the formula proposed by Taylor, the interest rate depends on the output gap and the inflation gap observed during the same quarter. Whereas the central bank during its decision making, does not have these current values. At most, it in its possession, with a delay preliminary estimate of these aggregates largely subject to corrections [16]. It is therefore reasonable to think that the action of the central bank can affect neither the inflation nor the short-term income. Thus, in order to have the desired effects of the monetary policy on the output and the inflation, it is necessary to replace their current values by their anticipated. The previous equation (Equation 3) can therefore be rewritten in a form given by [15] as follows:

$$i_t = (1 - \theta)\left[\overline{i} + \theta_\pi(E(p_{t+n}/\psi_t) - \hat{p}) + \theta_y E(y_t/\psi_t)\right] + \theta i_{t-1} + \varepsilon_t \qquad (4)$$

Where $E(./\Psi_t)$ indicates the conditional expectation to information available in the central bank at time t, that is to say when it makes its decisions. Ψ_t thus materializes all of this decision information, n the horizon of expectations (1, 2, 3... years). This rule has a forward character since it explicitly seeks the future inflation; it is known as the forward-looking rule. To take into account the specificities of each economy, it is necessary to make additional changes to the original

Taylor rule. This is clear from the integration of additional arguments as explanatory variables, which may have an impact on the decisions of the monetary authorities in setting policy rates. Thus, the equation of the rule in the forward-looking version takes the following form:

$$i_t = \left(1 - \theta\right)\left[\overline{i} + \beta_\pi\left(E\left(P_{t+n}/\Psi_t\right) - \hat{p}\right) + \beta_y E(y_t/\Psi_t) + \theta_z E\left(\left(X_t - \hat{X}\right)/\Psi_t\right)\right] + \theta i_{t-1} \qquad (5)$$

With X, a vector of extra explanatory variables, $\hat{X}$ their desired level and θ_z a vector, containing the weight accorded by the authorities to these variables in decision making.

To consider the empirical frame, it is necessary to correctly specify the reaction function in the context of BCEAO and present the difficulties linked its estimate.

$$i_t = \theta i_{t-1} + \left(1 - \theta\right)\left[\alpha + \beta_\pi E\left(\left(p_{t+2}/\psi_t\right) - \hat{p}\right) + \beta_y E(y_t/\Psi_t) + \beta_z E\left(\left(X_t - \hat{X}\right)/\Psi_t\right)\right] + \mu_t \qquad (6)$$

With $\mu_t \rightarrow$ i.i.d

The equation can be written as:

$$i_t = a_0 + a_1 i_{t-1} + a_2 E\left(\left(p_{t+4}/\Psi_t\right) - \hat{p}\right) + a_3 E(y_t/\Psi_t) + a_4 E\left(\left(X_t - \hat{X}\right)/\Psi_t\right) + \mu_t \qquad (7)$$

To give the model a valuable form, one method is to replace the anticipated unobservable variables by the observed values. The model then becomes[1]:

$$\begin{cases} i_t = a_0 + a_1 i_{t-1} + a_2\left(p_{t+4} - \hat{p}\right) + a_3 y_t + a_4\left(X_t - \hat{X}\right) + v_t \\ v_t = \eta_t - a_2 \varepsilon_{t+4}^\pi - a_3 \varepsilon_t^y - a_4 \varepsilon_t^z \end{cases} \qquad (8)$$

Methodological Approach

To investigate the adequacy of the Taylor rule to economies, several authors have proposed various theoretical and empirical models that rival relevance [11,13]. But they are not performed with the necessary statistics care. Some variables used in some countries (ECCI of the Côte d'Ivoire and the three of Mali) do not seem to be stationary. This can lead to the production of fallacious. Our study wears away these shortcomings by the initial test of stationary series which is a starting condition for the application of the GMM. These tests determine the degree of integration of the panels. We can quote: tests of [17,18] (IPS). But long before, the homogeneity test is important when working on panel data.

For the implementation of our approach, we literally follow the method of [8]. In such an investigation, we use the repo rate on loans of one day. The annual inflation measured by $P_t = \dfrac{100 \times (\pi_{t-1})}{\pi_{t-1}}$ where π denotes the logarithm of the price index harmonized and real GDP to measure the output. To determine the output gap, we use the methodology based on the filter of [19], a linear trend and a quadratic trend. The output gap is constructed as the difference between the potential and current production $y_t = \dfrac{100 X\left(PIB_t^y - PIB_t^T\right)}{PIB_t^T}$

The estimate of equation (7) by the generalized method of moments, thanks to its robustness, does not require that the residuals are normally distributed, but just to specify the set Ψ_t of the variables that can influence the decision-making of the monetary authorities' money in time t, forming the set of instrumental variables in the estimation.

---

[1]The relationship between the parameters and starting coefficients satisfy the following formula:

$$a_1 = \theta; \alpha = \frac{a_0}{1 - a_1}; \beta_z = \frac{a_4}{1 - a_1}; \beta_\pi = \frac{a_2}{1 - a_1}; \beta_y = \frac{a_3}{1 - a_1}$$

Nevertheless, we may be faced with the problem that some instrumental variables are not needed and skew the results of our estimates. To test this, we carry out a standard test, the J-test for the validity of the over-identifying restrictions.

Data

This study uses annual data from 1985 to 2014. Two main data sources are used: the "World Development Indicator" of the World Bank and BCEAO. Table 1 in the appendix shows the model variables.

By the analysis of Table 2, statistics show that the data are characterized by very large differences in the values of certain variables. Statistics of gap types indicate standard deviations 997.84 for the money supply (M2) and 397.71 for net foreign assets (aen). These differences are probably related to differences in development among the member countries of the WAEMU. To correct this situation, we have chosen to use in this analysis a log transformation. The results, using Stata 12 are given in the table below.

Econometric Results

Several tests are needed before the model estimation. The aim is to verify the assumptions under which the model estimation can be efficient. The tests we present are the homogeneity test and the unit root test.

Homogeneity test

The worthless hypothesis of this test is that there is only a common hunt, no individual effect. The result is an F statistic with (N-1, NT-N-K-1) degree of freedom. If we reject the worthless hypothesis, then it must include the individual effects in the model. With a p-value (0.0000), we reject the worthless hypothesis of the presence of a common intercept (Table 3).

Unit root test

Tests recently developed are this of test [17] and testing [18]. We use in this study the last two tests. The results of the unit root tests in panel are consistent and show that all variables are integrated of order one except the variables lipcet lyt and dln_m2 which are stationary at this level (Table 4).

Result of the estimate by MMG

In this section, we proceed to the estimate a reaction function of Taylor forward-looking type for the frame of BCEAO using GMM that proves to be the most suitable in terms of economic theory (Table 5). The test of Hansen (p=1.00) and the second order autocorrelation test of [20] (p=0.871) did not reject the hypothesis of the validity of variables in delayed level and difference as instruments and the autocorrelation of second order hypothesis.

From the results of the estimate, the partial adjustment coefficient of the interest rate is negative and significant (-0.25), which tend to show a tendency to fix the interest rate level in terms of its passed value. The sign of this value of the smoothing coefficient of the interest rates is contrary to those of other authors [21]. Furthermore, our results contradict the simple rule [3] makes the implicit assumption that the fixing of short-term interest rate is independent of the passed value of this one.

The coefficient associated inflation is positive and significant (0.02). Although small, it is consistent with the predictions of the economic theory [11]. The lesson we can draw from this result is that the policy of BCEAO is no longer focused only around the objective of fighting against inflation, other determinants involved in the decision making. This result is consistent with Article 8 of the statutes BCEAO, which states that without prejudice to this inflation target, the Central Bank

Variables	Description	Data source
I	rate of BCEAO	BCEAO
m2	money supply M2	BCEAO
Aen	Net foreign assets of the states with the BCEAO	BCEAO
Yt	$y_t = \dfrac{100 X \left(PIB_t^y - PIB_t^T \right)}{PIB_t^T}$	World Bank (WDI)
Ipc	$P_t = \dfrac{100 \times (\pi_{t-1})}{\pi_{t-1}}$	World Bank (WDI)

Source: Author

Table 1: Description of variables and sources of data.

Variables	Observations	Mean	Std. Dev.	Min	Max
I	210	7.02	2.58	3.5	11
m2	210	839.62	997.84	9.2	6363.8
Aen	210	247.87	397.71	-572.8	1812.9
Yt	210	1287.19	12.70.98	-41626.81	95723.92
Ipc	210	3.15	6.52	-7.79	39.16

Source: Calculations based on data

Table 2: Descriptive statistics of the model variables.

I	Coef	Std.err.	T	p>|t|	[95% conf. Interval
lpc	0.596581	0.0118232	5.05	0.000	0.0363411 to 0.0829751
b89	-0.178741	0.397976	-0.45	0.654	-0.9636058 to 0.6061238
b9093	1.896556	0.2415941	7.85	0.000	1.420098 to 2.373014
ln_m2	1.155992	0.1169502	-9.88	0.000	-1.386634 to -0.9253497
aen	-0.0010041	0.0002573	-3.9	0.000	0.0015116 to -0.0004966
Yt	-2.60 e-06	5.79e-06	-0.45	0.654	-0.000014 to 8.81 e-06
J	0.2951425	0.0448193	6.59	0.000	0.2067525 to 0.3835325
const.	11.82257	0.8868829	13.33	0.000	10.07351 to 13.57163
sigma_u	1.013561				
sigma_e	0.9806172				
rho	0.5165155	(fraction of variance due u_i)			
F test that all u_i=0		F(6, 196)=13.02			Prob>0.0000

Source: Calculations based on data

Note: The test concluded in favour of the presence of specific effects, so we can apply the methodology of panel data

Table 3: Homogeneity test.

	IPS		LLC		Degree of integration
	Coefficient	p-value	Coefficient	p-value	
I	1.54	0.94	-1.39	0,09	I(1)
Di	-12.39	0.00	-11.35	0.00	I(0)
Lipc	-5.83	0.00	-5.69	0,00	I(0)
Laen	5.73	1.00	3.04	1.00	I(1)
dlaen	-4.48	0.00	-1.30	0.10	I(1)
ln_m2	5.99	1.00	3.11	0,99	I(1)
dln_m2	-6.21	0.00	-5.55	0.00	I(0)
Lyt	-6.86	0,00	-4.00	0.00	I(0)

Source: Author's calculations.

Table 4: Unit root test.

	Settings	Estimated coefficients
Delay interest rate	θ	-0.25**
Inflation rate	β_π	0.02**
Output gap	β_y	-0.5*
Net foreign assets	β_{aen}	-0.025**
money supply	β_{m2}	0.26**
Effects of devaluation	β_{dev}	1.37**
Constant	a_o	5.94*
AR(2)	0.16	
p-value	0.871	
z-stat	0.00	
P-value	1.000	
F-stat	2000.64	
p-value	0.000	

Note: The level of statistical significance is denoted as **5%, *10%
Source: Author's calculations from data

Table 5: Results of the estimation by GMM.
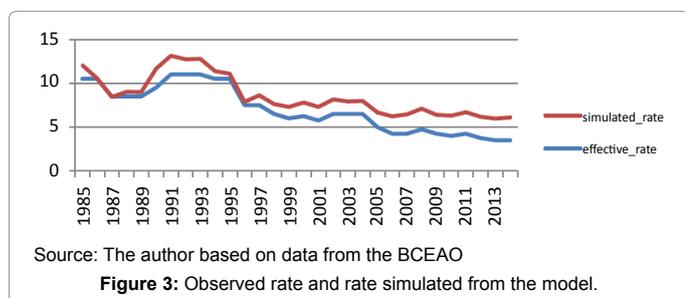
Source: The author based on data from the BCEAO
Figure 3: Observed rate and rate simulated from the model.

shall support the economic policy of the Economic and Monetary Union of West Africa (UEMOA), for a sound and sustainable growth.

Regarding the gap of business, with a negative signe (-0.5), it seemed appeared at first sight in contradiction with the theoretical foundations of the model. However, its interpretation leads to an interesting result. Indeed, taken in absolute value, it is higher than the inflation in determining the key rate of the central bank. This result shows that the monetary policy of BCEAO is generally more influenced by the level of production. In other words, the inclusion of output gaps in union eventually bequeaths to the second place the objective of fighting against inflation. Moreover, it contradicts the conclusions of the work of [22] according to which, the weight given to the economic activity is very low compared to that accorded to inflation. Indeed, a key rate cut by the central bank has the effect of increasing production. This was demonstrated by [23].

Regarding the money supply, its weight (0.26) is positive, contrary to the predictions of economic theory. This is an indication

that the evolution of the money supply figures prominently in the process of decision making of BCEAO authorities and confirms our previous results. This demonstrates that, in fact, the central bank opts increasingly for a disconnection between inflation and money supply. Indeed, according to a study of [24], the forecasting inflation of IPC in the WAEMU is due to 82.6% to its own innovations to 3.8% to those of the nominal effective exchange rate, 8.8% to imported inflation developments and to 4.8% for the change in the money supply.

The coefficient associated with significant net foreign assets (-0.025) confirms the importance of this variable in the policy of the central bank. Indeed, in practice, the net foreign assets are an important variable in the specific case of a monetary zone with a fixed exchange.

The selected binary variable concerns the three years preceding the devaluation (Bn9193). It has appeared statistically significant and presents the expected positive sign. The positive sign of Bn9093 means that on an average, the monetary authorities have adjusted the rates on the rise, on the account of the devaluation of the FCFA expectations.

From what precedes, it is clear that BCEAO deviates gradually from its main objective that of the inflation target, anything that prejudices its credibility.

Moreover, the following graph showing the graphic representation of simulated rates from this model and the effective rate, confirms it (Figure 3).

Conclusion

This work aims at estimating the BCEAO reaction function, in order to give its monetary policy strategy a more credible and effective frame. A Taylor rule type "Forward looking" is estimated using annual data.

The latter takes into account the smoothing of interest rates and we assume that the Central Bank reacts to projected inflation differentials of 6 quarters, and to those of other variables anticipated for the same period. The methodology used for estimating the rule "Forward looking" is the GMM which takes into account the endogenous nature of the regressors and the autocorrelation of errors. In this context, we estimated the Forward model taking into account the inflation gap and the output Gap, the M2 money supply, the net foreign assets and a dummy variable to capture the effects of the 1994 devaluation. The estimated Taylor rule has permitted to remark a more systematic response of the Central Bank in relation to the output gap, in addition to the importance conferred to foreign assets movements, inflation and the money supply. Generally it is noted in this context, a persistence of interest rate reflecting a trend of the monetary authorities to set the interest rate according to past ones. Furthermore, the weight given to inflation is much lower than that accorded to the economic activity, which is in contradiction with the fact that inflation is the overriding objective of the monetary policy. Besides, our model "Forward looking" does not describe accurately the historical behaviors of BCEAO, and explicitly confirms the need for BCEAO a return to its policy based on inflation targeting.

References

1. Kydland E, Prescott C (1997) Rules rather than discretion: the inconsistency of optimal plans. Journal of Political Economy 85: 473-492.

2. Barro J, Gordon R (1983) A positive theory of monetary policy in a natural rate model. Journal of Political Economy 91: 589-610.

3. Taylor J B (1993) Discretion versus Policy Rules in Practice, Carnegie Rochester Conference series on Public Policy 39: 195-214.

4. Levin A, Wieland V, Williams JC (1999) Robustess of Simple Monetary Policy Rules under Model Uncertainty [éd.] B, Taylor John. Monetary Policy Rules. Chicago: University of Chicago Press 263-318.

5. Rudebuscg GDL, Svensson (1999) Policy Rules for Inflation Targeting [éd.] B, Taylor John. Monetary Policy Rules. Chicago: University of Chicago Press 203-262.

6. Svensson LEO (2003) Escaping from a Liquidity Trap and Deflation: The Foolproof Way and Others. The Journal of Economic Perspectives 17: 145-166.

7. Sibi F (2002) Optimal monetary policy in the euro area: inflation arbitrage - production - smoothing of interest rates. Paris: Université Paris I Panthéon Sorbonne, CNRS 2002.

8. Clarida R, Gali J, Gertler M (1998) Monetary policy rules in practice: some international evidence. European Economic Review 42: 1033-1067.

9. Mésonnier JS, Renne JP (2004) Taylor Rule and monetary policy in the euro area. Paris: Banque de France.

10. Srour G (2001) Why Do Central Banks Smooth Interest Rates? Bank of Canada, Working Paper 2001-17. Ottawa, Ontario, Canada.

11. Tenou K (2002) The Taylor rule: an example of a policy rule applied to the case of the BCEAO. Notes Information and Statistics of the BCEAO. 523: 1-21. Dakar, Senegal.

12. Lajnaf R (2013) Taylor rule and conduct of monetary policy in Tunisia. International Journal of Innovation and Applied Studies 3: 271-283.

13. Prao S (2014) Taylor Rule and monetary policy in the UEMOA zone. European journal of social law 22: 96-118.

14. Favero CA, Rovelli R (2002) Macroeconomic Stability and the Preferences of the Fed: A Formal Analysis, 1961-98. Journal of Money, Credit, and Banking 35: 545-556.

15. Kamgna SY, Nguenang C, Talabong H, Ould I (2009) Central Bank reaction fonction and monetary policy credibility: The case of BEAC. MPRA, Paper No. 16557, Munich, Allemagne.

16. Svensson LEO (2002) Inflation targeting: Should it be modeled as an instrument rule or targeting rule? European Economic Review 46: 771-780.

17. Levin A, Lin CF, Chu CSJ (2002) Unit Root Test in Panel Data: Asymptotic and Finite Sample Properties. Journal of Econometrics 108: 1-24.

18. Im SY, Pesaran MH, Shin Y (2003) Testing for Unit Roots in Heterogeneous Panels. Journal of Econometrics 115: 53-74.

19. Hodrick R J and Prescott EC (1997) Post-War US Business Cycles: An Empirical Investigation. Journal of Money, Credit and Banking 29: 1-16.

20. Arellano M, Bond S (1991) Some tests of specification for panel data:Monte Carlo evidence and an application to employment equations. Review of Economic Studies 58: 277-297.

21. Kozicki S (1999) How Useful are Taylor Rules for Monetary Policy. Federal Reserve Bank of Kansas City Economic Review 2: 5-33.

22. Fiodendji K (2015) What Do Reaction Functions Tell Us About Central Bank's Preferences? MPRA Paper N0. 66296, Munich, Allemagne.

23. Clarida R, Jordi G, Gertler M (2002) A simple framework for international monetary policy analysis. Quarterly Journal of Economics 49: 879-904.

24. Dembo TM, Hounkpatin M (2007) Link between money and inflation in the WAEMU countries. Document of Study and Research of the BCEAO, Dakar, Senegal.