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FISCAL DISCIPLINE AND REAL EXCHANGE RATE STABILITY IN A HETEROGENEOUS MONETARY UNION: THE CASE OF WAEMU

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ABSTRACT

This research work aims to analyze the nominal convergence of budgetary variables resulting from the respect of the convergence criteria and the impact of convergence indicators on the exchange rate volatility inner the WAEMU members States. From that end we have conducted the empirical analysis of budgetary convergence in the WAEMU zone by using variables such are: expenditure, incomes and budgetary balances. In order to reach our goal, we have adopted the methodology used by Barro et Salai-Martin (1992) which methodology is implemented by the European Union through the work of Villien et al. (2003). This methodology is consisted of following in the course of the timing an indicator of variable dispersion which may stand as a typical margin or the variance. The results show a global trend to budgetary variables convergence. And then, we have assessed the different indicators of sigma convergence on the profitable exchange rates differential in the WAEMU zone. The model used has revealed the existence of a mechanism of correcting error between the desired exchange rate observed in the zone.

1- INTRODUCTION

The principal determinant of a monetary system stability is the mastery of the currency external value. The currency external value depends on the exchange rate. Thus, the first aspect of the monetary system stability is the mastery of the exchange rate. From that reason, in 1980s, the exchange policy appears as an essential factor of economic policy implemented in the developing countries Economy. However, their access to political independence till to the beginning January 1994, where the zone francs members States have never ask for the manipulation of nominal exchange rate of their currency as a tool of economic policy for stimulating the economic growth. The lack of nominal exchange rate manipulation as an economic regulation tool in those countries is due to their membership towards a fixed parity zone and also to the international convertibility of francs CFA guarantee attributed by France under some monetary agreements. As zone francs state member, the opportunity in terms of monetary and exchange policies is limited (Duchaussoy, 2018). West African States central Bank is common to WAEMU member States. Due to the guarantee of convertibility offer by France, the decision to modify the parity of CFA must require the consent of not only the government of African member states of franc zone but also of the French Government. However, due to the incorporation of the franc CFA currency to French franc by a fixed parity, all fluctuations of the French currency in relation to other currencies has an impact on the franc CFA. As a result, one can consider that all fluctuations in French franc, the terms of exchange, the productivity growth and other fundamental elements cause that of the franc CFA and that the appreciation and depreciation of the nominal exchange rate of franc CFA is the direct result of the competitiveness or non-competitiveness of the French economy. However, even if the nominal exchange rate remains unusually fixed in relation to international currencies. The real exchange rate evolves in function of differentials of inflation with the partnering countries and also the exchangeable goods in each of the countries of the Union. Henceforth, these countries will come to use the real exchange rate as an instrument of economic policy to influence positively the economic growth (Nubukpo, K. 2012). On January 10th 1994, the countries in the franc Zone in general and those in the west African monetary Union in particular were affected by the competitive devaluation by their common currency: This official change of parity was supposed to generate the macro economy advantages in term of competitive improvement of the economy of the zone and in terms of correction of structural imbalance than the external accounts of the countries shown in the monitoring of this devaluation. But their theoretical advantages concealed in reality the important macro economy cost that can sum up to the decline of purchasing power of economy agents and aggravation of precariousness (Blancheton, B. et Bordes, C., 2007). These effects are not only unpopular but also electoral costly for the well-established governments. If the adjustment of parity permitted to correct certain macroeconomic imbalance, to foresee their resurgence required to put up the new guard rail, to deepen or to stir up other domains of cooperation .Thus in order to impose a multilateral supervision of national economic policies to avoid in future the compromise of the stability of the union, the authorities agreed to complete the monetary by an economy cooperation in budget and fiscal terms. This is the contact of stability and growth which is the first measure of contribution in the change of parity to common currency. In total, the pact of convergence aimed to assuring a best budgetary discipline in support of the common monetary policies in order to create a suitable condition to the stability of price with a strong and a durable growth. The devaluation of franc CFA, the only monetary adjustment since the birth of the zone in 1948, gave the opportunity to question the absence of coordination of budgetary policies in the zone (Nubukpo, K. 2016). In this category, the member states set up the mechanisms of multilateral monitoring of economic policies to the image of criteria of drawing up the convergence created by Maastricht agreement in 1991. Such initiative could favour the reinforcement of the European Monetary Union.

Could the imposed budgetary discipline by the convergence pact reduce the real exchange rate instability to single currency in WAEWU?

2-Macroeconomic performance and necessary adjustment of exchange rate in the WAEMU

The economic performance of the WAEMU zone made reference for longtime in the sub region and franc zone (plane P. and Ary Tanimoune N.; 2005). At the start of 80's, the second oil crisis and the reduction of the price of primary product of exportation conducted nevertheless the important supplied macroeconomic imbalances of distortion of relative price that will be the origin of the devaluation of franc CFA in January 1994. Most of the states were found in effect the capacity of reducing the appreciation of the effective real exchange rate, that is to say the augmentation of the price of non-exchangeable goods in relation with the price of the given exchangeable goods by world market. In this context of worldly deflation, the WAEMU zone paid the consequences of a very unsuitable international condition in the cause of first subjects (ENDA CACID, 2012). It equally paid the full price of the laxity in the matter of budgetary economics and public debt immediately after the independence.

In other terms, in a context of monetary union where the power of seigneur exempted to the treasury, the absent of availability of franc CFA conducts to the areas of comparable public payment to the constituted external areas shortage of currency.What do we mean by the problem of price or by the accumulations of debts most of the economies of the WAEMU zone incoming to know these imbalances. And before the impossibility of correcting them by the use of monetary and budgetary instruments, the devaluation finished by imposing as solution of last result. The table N°1 relates the scale of these macroeconomic imbalances.

Table 1 : Economic variables before devaluation (1983-1994)

	GDP	Exchange terms	Basis budgetary balance (out of donation)	current balance from abroad (out of donation)	Effective exchange rate (Basis 1994)	Real GDP (billions Fcfa)
	Growth rate (%)	Average/ GDP (%)	1994	2003		
Benin	2.5	-1.70	-2.07	-6.95	113.91	552.73
Burkina Faso	3.27	3.32	-1.12	-9.88	125.27	968.82
Cote d'Ivoire	0.68	-5.27	-9.96	-12.08	90.58	5337.59
Mali	3.27	-1.26	3.07	-14.58	124.39	696.15
Niger	1.22	-4.11	-4.54	-9.97	166.12	694.88
Senegal	1.93	-0.80	-0.08	-9.04	125.08	1481.00
Togo	-1.10	-5.15	-4.74	-10.83	119.06	181.68

Source: Computations from the RSM BCEAO

In the considered 10 years, (1984 -1993), averagely the economic growth of the union was weak, in the order 1.6% or 1.4% depending on one's thought on a simple average or pondered by the relative weight/mass of internal products (1993).

Côte d'ivoire contributes to over 50% in consolidate GDP of the zone pulled the performance of the union to the basis. During this period the annual average degradation of exchange terms ,that is to say the relation of price of exportation of imported goods was equally notably in particular for Côte d'ivoire (-5.27%), Niger (-4.11%) and Togo (-5.15%) this evolution considerable weighted on the formation of budgetary balances and on the growth performances.

The fall of international course has a consequence for the deadline of the distribution of income (effect and demand) and discouraging the production of primary products (effect of offer).

The over-evaluation of exchange rate of this period has not aided the resolution of problems (Jacquemot P., 2017). A more premature devaluation would probably allow the increase of internal incitement to the production by a rise of relative price and notably the real price of purchase to the producers of primary products (c.f. Collange and plane (1994)).

The effective real exchange rate presents a great disparity given of 90.58 for Cote d'Ivoire at 166.12 for Niger. Only Cote d'Ivoire presents an effective real exchange rate close to nominal rate. This justifies by the nature and the volume of external exchange of this country.

Table 2 : Macroeconomic variables after devaluation

	GDP	Exchange terms	Basis budgetary balance (out of donation)	Current balance from abroad (out of donation)	Effective exchange rate (basis 1994)		Real GDP (billions FCFA)
	Growth rate (%)		Average (%GDP)		2005	2015	2015
	2005-2015		2005-2015				
Benin	5.29	-0.36	1.95	-6.18	68.69	83.59	871.30
Burkina Faso	4.41	-1.91	-1.58	-14.13	69.63	72.65	1381.48
Côte d'Ivoire	2.80	-1.85	0.05	0.33	62.65	76.17	6712.66
Mali	5.32	-2.76	-0.33	-10.00	70.53	78.30	1063.44
Niger	3.35	-2.51	-3.43	-9.15	69.95	79.47	940.80
Sénégal	4.78	-2.91	1.03	-7.55	66.45	68.27	2214.00
Togo	2.89	0.40	-0.78	-12.48	69.43	84.63	262.34

Source : Computations from the RSM BCEAO

The situation after 1994 is the advantage of economies of the WAEMU zone. Certainly, the exogenous factors were less unsuitable than the previous period as it suggests the variation of the exchange terms, but the national economic policies were also more effective, contributing to a certain recovery of budgetary balances and above all to the recovery of the growth (Ary Tanimoune, et al., 2008). With an annual rhythm of 4.4% and 3.7%, during the period (2005-2015), depending on what one refers to the simple or pondered averages, the GDP of the performance of WAEMU is sufficiently enhanced to allow the evaluation of the level of average year by habitant. This performance is partly the consequence of identify competitiveness. The budgetary balance of the base is equally redressed significantly in relation to this time with the political support of the devaluation.

The effective real exchange rate is sensibly depreciated with the change of parity and the economies conserved a significant part of this gain of competitiveness because of the monetary discipline. Even from 1995 to 2004 there was a loss of competitiveness by the exchange rate around 7 FCFA of appreciation, on does not observe a very great disparity of effective real exchange rate between the member states of the union. From 62.5 for Cote d'Ivoire to 70.53 for Mali, a margin type of real effective exchange rate establishing at 6.80 in1995.Then years later, that is to say in 2004,the disparity of exchange rate is increased or enhanced from 8 point to 14.25, a margin type between the minimum of 68.27 for Senegal and the maximum of 84.63 for Togo.

3-Description analysis of indicators of the budgetary sigma convergence.

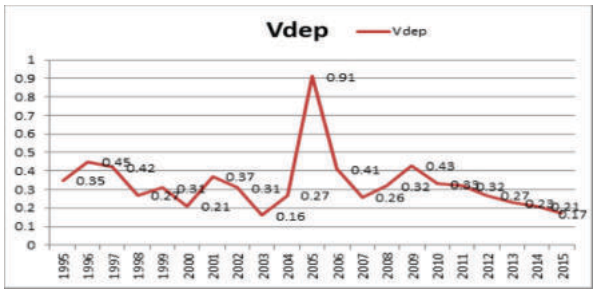
There exists diverse ways of appreciating the phenomenon of convergence. One of them shows on the evolution of a measure of the dispersion of different budgetary variables that returns to the notion of convergence (Barro and sala-i-martin, 1994). It consists of study of the evolution of the variance or the margin- type of a variable in cross section. One will evaluate the observed principal tendency in the course of the period 1990-2012 through the construction in the first stage of indicators of budgetary convergence to know the indicator of budgetary balances of sigma convergence, the expenses and public income in the WAEMU zone. The indicator of convergence will then be used as

σ-convergence = $\sqrt{(V\_(t+I))}$ for i=0,1,.....,p

With $V_{t+1} = \sum_{j=1}^{N} n_j (X_j - \bar{X})^2$ et $\bar{X} = \sum_{j=1}^{N} n_j X_{jt}$ with $N = 7$ et n_j le coefficient of ponderation to individual is the GDP ratio of individual/total GDP. Such indicator reduces when convergence appears (budgetary balances, public expenditures and public incomes).

The progress of indicators values from sigma convergence of budgetary variables within WAEMU are stated as follow:

3.1 Sigma convergence of public expenditures.



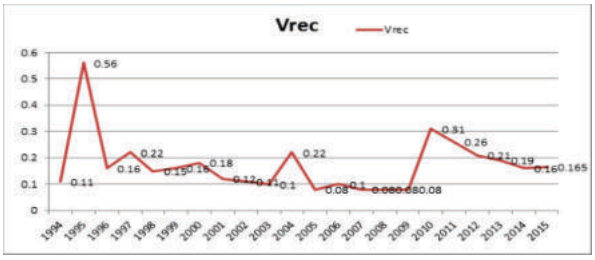
Graph1: Evolution of the sigma convergence to public expenditures.

Source : From author computation

We note a reduction of the dispersion of public expenditure on the first half of the studied period. In effect, the variance of public expenditures is progressing from 20.23% in 1994 to 10.47% in 2002 is based on 9.76%. However we note in this part, respectively the divergences between 1995 and 1996, 1998 and 1999 and above all during the period 1999-2003. On the other hand, the monitoring of the signature of the pact of stability and growth in WAEMU, notably the period 2003-2005 was characterized by an increasing of the margin type of public expenses in the union that attains the highest point in all the period of study. This situation would constitute one of the reasons that would continue the eight country of the WAEMU to the pact of signature. The respect of criteria of convergence during the first two years after their implementation was marked by a strong movement of convergence of public expenses. In effect, during the course of this period, one observed a remarkable decreasing of indicators of the sigma convergence of public expenses close to 64.65. However this movement was stopped in 2007 and also appears reversed during the course of the period 2007-2009.

From the year 2009, one observes again a movement in adverse of the indicator of the sigma convergence of public expenses of WAEMU in the course of the period 2009-2015.

3.2-Sigma convergence of public incomes.



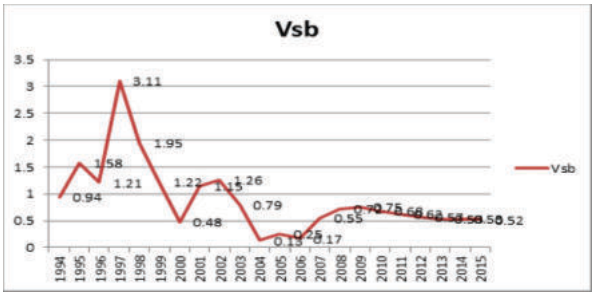
Graph 2: Evolution of the sigma convergence of public incomes

Source : From the author computation

As we could notice on the graph N°2, the convergence of public incomes originated from the start of the year 1995 and is carried out practically till the start of the year 1997, and we notice the decreasing indicator of the sigma convergence of public income of 40%. This movement interrupts from 1997 and one observes also a tendency of accumulation of the dispersion. Thus, this last allowance from 15.32% in 1996 to 21.64% in 2007 against a decline of 6.32% during the period 1997-1998.

Also, in relations to the basis year 2000, date of signature of the stability pact, one observes a movement of convergence of public income till 2009; the year from which appears again a very remarkable increasement of the variance of public incomes in the union in the course of the period 2009-2010 of 23.26%. This is translating by the decline of supplied effort by the states of the union in the respect of accepting commitments to the signature of pact of January: 2000 in the course of the period 2009-2010 in relation to that of 2004-2009. However, one observes again a tendency to the convergence from the year 2010 that can explain the realization of most of member states from the necessity of a convergence of budgetary income towards the solidification of the monetary union.

3.3-Sigma convergence of budgetary balances



Graphics3: Evolution of the sigma convergence of budgetary balances.

Source : From the author computation

One observes an increase of the dispersion of budgetary balances during the first half of the 90's.

Actually, the variance of budgetary balances in the union is entered from 0.8767 in 1994 to 3.1131 in 1997, a remarkable increase of 2.2456 points. This period was followed by a strong tendency to the convergence in the course of the period 1997-2001 with an estimated decline of more than 2.6 points.

Such increase of the indicator of the sigma convergence of budgetary balance in the WAEMU can be explained by the CFA devaluation with disadvantages to master the important budgetary deficits due to the increase of debt cost from 2001 – 2002 and 2003 – 2004. We could note respectively an increase of budgetary balances variance opposed to the convergence of budgetary balances on the period 2002 – 2003.

The first year following the pact of stability signature shows a higher movement to decrease of indicator of sigma convergence to budgetary balances. Such aspect explains effective criteria on convergences and more particularly the ongoing ratio of interior and foreign debt reaching the level of GDP which turns around 70%. However, this movement had stopped in 2002 and seems to a reverse during 2006 – 2007; which is characterized by the higher variance of budgetary balance hits 29.3%.

4-Empiric studies synthesis

Considered as best balanced or unbalanced indicators of foreigner sectors the real exchange rate .When it changes has an important effect on economy .It appears fundamental in dependent foreigner economy like those of the countries of WAEMU zone, for it represents the price of the local currency in relation to the foreigner currency used in foreigner commerce. It's certainly important to the competitive exchange rate that correctly reflect the real national-

economic considered The world bank overestimate that the degree of overestimation averagely 75% between 1974 and 1984. The degree of overstimulation and under stimulation of TCR is measured in real balance to the balanced real exchange. TCR whose definition defers from one author to the other in 1971 Robert Musndell in a modal macroeconomics applied to low economy defined as TCR as the relative price of international commodities in relation to domestic goods which allows to reach simultaneously. The three markets namely : monetary market domestic market and foreigner market (Edward, 1989). It comes to Dornbush in 1974 and 1980 in a higher modal in an opened dependent economy to define the TCRE as the relative price of the exchangeable goods I compare to the exchangeable goods allows not only to match the revenue but also to reach at the same time the balance over the exchangeable goods and that of non-exchangeable goods. According to Williamson (1985) and Edwards (1989), the TCRE is defined as TCR that assures the equality. The deficit or the surplus of the standing account and the indicated capital flow of that concerned countries are search for to obtain the internal balance in other word the TCR which guarantee there is simultaneous balance in intern and external balance. The World Bank also considers on the average and over evaluation of 10% of a country reducing the growth rate of PIB and some exportation of 0.8% and 1.8% respectively (Edward 1989). This figure /rate justify that one is more interested in the variable that modifies effective exchange rate

There are many ways to calculate the TCR. In this present study the TCR is represented by the effective or real multilateral exchange rate (Edward, 1989)

Other approaches of calculation concerns the real bilateral exchange rate or simply the ratio of average prices of exchangeable goods over the price of the non-exchangeable goods (Devaraja 1993, Kouassy and Borhoun 1993; Pegatiana 1994; Couharde et al., 2011)

The real effective exchange rate (TCER) defined as the ratio of the price index of the country of the reference in local currency over the price index to the consumption of the concerned countries. The price index of the country of the reference is weighted by the part of those countries in the total commerce (importation and exportation).

The real balance change rate is not observed but constructed from the relation that exist between it and the real observed or the actual rate for its construction one uses the modal structural factors as developed by Edwards (1989) and applied by Cottan and Al. (1990) Ghura and Grennes (1992) Pegatiena (1994) Pedassou (1996) and a Bouveret A. and Sterdyniak H., 2005). This modal presents on advantages in comparison to the PPA approach the measure where the real balance exchange rate in the measure where it permits and modified continuously to reflect the processes known by the variable structural .conceptually, the two approaches are different and can run in a distinct direction (1989).

The economy and the real change rate to identify the real variable following as determined evolution of the real balance change rate. (Edwards 1989). The exchanging terms, control capital.

The commerce control, the consumption capital and technique process. But when it comes to the observed effective exchanging it's affected but not only the real variable but also the changing monitories. Since we are in a period of macroeconomics series, it's very important to proceed to diagnosis tests before the validation of the modal and uncork at least over the results presentation.

5- Methodology of empirical analysis

Based on the identified variables in the synthesis of literature, the approaches in terms of volatility or variance of currency rate allows to affirm that Villieu and al (2003) to retain as principal determinants of volatility. Actually, even if the Keynesian theory recognizes a positive effect on the production and on the use of budget deficits by the multiple effects and it is also admitted that no matter the financing mode, budgetary deficits could lead to imbalances on the exchange rate. So, from that end it impacts the expenditures levels and consequently the budgetary incomes.

5-1 Specification of the model

In their analysis, Villieu and al have retained in addition to the volatility of the budgetary expenditures, budgetary incomes and budgetary balances even the volatility of petroleum prices. That is why things must be taken into account for the real exchange rate in WAEMU and then, largely explained by the level of inflation. According to Bamba Diop in 2011), where the inflation in WAEMU affects the worldwide petroleum cost (by Dembo Toe in 2010), however the option of worldwide substitution petroleum prices based on inflation is relevant. Then, the relation between the exchange rate and the convergence budgetary measures rate can be grasped through the following equation:

$$Lvolchang_t = \beta_0 + \beta_1 Lvoldep_t + \beta_2 Lvolrec + \beta_3 Lvolsold + \beta_4 Lvolinf + DUM94 + \mu_t$$

with:

Lvolchang, exchange rate logarithm variance
Lvoldep, public expenditure logarithm variance
Lvolrec, public incomes logarithm variance
Lvolsold, budgetary balance logarithm variance
Lvolinf, inflation rates logarithm variance

5-2 Source of data and estimation procedure

In this survey, we will use African Development Bank (ADB) data (public expenditures, public incomes and the official GDP). The real exchange rate derives from the work documents of the study and also from the international Center of study and research for Development (CERDI), the nominal GDP is extracted from International Monetary Fund (IMF) database (World Bank outlook database; October 2008). However, in order to have a series of observations of at least 30 years, we have to complete the data of ADB by those of WAEMU multilateral watch report; the missing years. Anyway, the econometric estimations will be realized from the software Eviews-5.

Yet, regarding that we are facing the macroeconomic series, it important to experiment diagnostic tests before passing to validation tests of models and finally going through interpretations of results.

6-Economic results presentation

The test of causality showed the existence of a high relation of causality in double sense between PIB of union and the exchange rate inside of WAEMU. Thus the production validities lead to the exchange rate variation .In the same way the inflation causes a high production .this can be justify by the use of the nominal GDP in the modal. We recall that the nominal GDP use the standing currency in the evaluation of production values. All revenue and the budgetary balance. Actually one tests the non-causality against bran causality the stationary test of Dickey-fuller apply to five variable of the modal permit us to remark that no variables of the modal is stable in a level of Johansen is applied to variables of the modal .shows the existence of a relation of co -integration up to 5%.

6.1-Estimation results

To validate the modal we went through many tests like the modal of specification test .the test of auto-correlation of the errors. The prediction test of modal, the significance test of variables, the force of balance reception determined as the coefficient of delayed dependent variables is negative and significant up to 5% which mean that there is a mechanism of

feedback in other word back to the balance in case of an oxygen choc over the variables .The modal of correction is then valid.

The significance test of variables used here is the students test. one notice that with the associate probability that the following variable have their significant coefficient up to 5%. it's about the variance of expenditure.

The variance of sale budgetary

All those variances are meaningful in short and long term but it is important to notice that the significance in short term is more refined than long term because globally the gap of reliance is around 1% in short term and 5% in long term

With the R2=0.85 we can say that the modal is globally significant since the dependent variables explains to 85% the independent variables

In conclusion one can retain the estimate form of the modal as follow:
The elasticity of short term of the exchange rate in comparison to the public incomes is 0.05, which means that if the variance of the public incomes increases to 10% the variance of the exchange rate in WAEMU increases to 4.2%

The elasticity of short term of the exchange rate in comparison with the inflation is equal to 0.252, which means that if the variance of the inflation rate increases to 2.5%

In a long run:

The elasticity of long term of the exchange rate in relation with the public is β6/β5,0.10/0.59=0.17which mean that if the variance of the public expenditure increases to 10%, the variance 1.7%

The elasticity in long term of the exchange rate in the comparison with the budgetary sale is β8/β5 to be 0.08/0.59=0.13 which means that if the variance of the exchange rate in WAEMU increases to 1.3%

The elasticity in long term of the exchange rate in comparison with the inflation is β9/β5to be 0.2/0.59=0.33 .but since the coefficient in not significantly from o to 5% for relation between the insurers of budgetary of convergence and the volatility of inflation rate of union that will make the currency chapter.

Dependent Variable: D(LVCHANG)			
Variables	Coefficient	t-Statistics	Prob.
C	3.163444	5.907146	0.0010
D(LVDEP)	0.583997	3.414906	0.0042
D(LVREC)	0.051086	-0.241238	0.0716
D(LVSB)	0.420114	-0.353608	0.0277
D(LVINF)	0.252981	0.272203	0.0086
D(DUM94)	1.470808	-4.552901	0.0002
LVCHANG(-1)	-0.598329	-7.428146	0.0000
LVDEP(-1)	0.104201	0.687635	0.0504
LVREC(-1)	0.098064	-0.749936	0.0430
LVSB(-1)	0.082477	0.446638	0.0605
LVINF(-1)	-0.195895	-1.932794	0.0692
DUM94(-1)	-0.452838	-2.885385	0.0199

6.2-Resultats and interpretation

The model well confirm the existence of a positive and significative correlation between the volatility of the exchange rates and the volatility of the budgetary convergent indicators. Actually, the budgetary indicators coefficients are significantly positive at 5% and this is valid not only for the short-term coefficient but also for the long term ones.

Interpretation of the error correction coefficient:
We notice that the coefficient associated to the call force is negative (-0.59) and significantly different from zero on the threshold statistic of 5% (their study is superior at 1.96 in absolute value).It then really exist a mistake correction mechanism at long-term the imbalances between the volatility the exchange rates and and budgetary convergence indicators. Compensate themselves so that the four series have a similar evolution.

0.59 represent the speed at which any imbalance between the expected levels and the exchange rate is absorbed in the year following any crisis. Then it's possible to adjust 59% of the imbalance between the desired exchange rate and the final exchange level of the year following a crisis.

From what have been said upper, we can retain that impacts on the exchange rate in the WAEMU correct themselves at 59% by the feedback effect. In other words, an impact noticed on exchange rate during a year is entirely absorbed in about two years ago.

Interpretation of the flexibility

- At short term

The flexibility of the exchange rate compared to the public expenses is 0.58 which means that if the variation of the public expenses increases by 10%, the variation of the exchange rate in WAEMU increases by 5.8%.

The variance of sale budgetary the inflation variance
All those variance are meaningful in short and long term. But it's important to notice that the significant in short term is more reformed than long term because globally the gap of reliance is around 1% in short term and 5% in long term.

With R2=0.85. WE can say that the model is globally significant since the dependent variables explain to 85% the independent variables.

In conclusion we can retain the estimate form of the model like. the elasticity of short term of the exchange rate in the comparison to the public incomes is 0.05%, which means that if the variance of public incomes is to 10% the variance of the exchange rate in WAEMU increase to 4.2%.

The elasticity of long term of the exchange rate in comparison with the inflation is equal to 0252, which means that if the variance of the inflation rate increases to 2.5%.

In long term

The elasticity of long term of the exchange rate in ration with the public is β6/β5; 0.10/0.59= 0.17 which mean that if the variance of the public expenditure increase to1.7%.

The elasticity in the long term of exchange rate in comparison with the budgetary sale is β8/β5 but 0.08/0.59=0.13 which mean that the variance of the sale budgetary increase to 10% the variance of the exchange rate in WAEMU increase to 1.3%. The elasticity in long term of the exchange rate in comparison with the inflation is β9/β5 then, 0.2/0.59=0.33. But since the coefficient is not significantly different from 0 to 5%.

Since we are in period of macroeconomic series, it's very important to proceed to diagnosis tests before the validation of the modals and uncork at least over results show.

7- CONCLUSION:

This article demonstrates empirically that the respect of the criteria of convergence accelerates the budgetary convergence in the center of the union and then, gives a positive impact over the discount of volatility of the real exchange rate in WAEMU. From a model of error correction, we estimate a relation in short and long terms between the volatility of exchange rate and the volatility of indicators of sigma convergence budgetary. The result confirms that there is a positive and significant correlation between the diffusion of the budgetary incomes and also the diffusion of the basic

budgetary sale. Such positivity is stronger through the sales and the expenditures than the revenues in one hand (the elasticities are respectfully 0.42; 0.58; and 0.05 and then, it is also stable in the long term than in the short term.

A specific point in the findings need to be stressed since it is based on the chock towards the exchange rate in WAEMU may be corrected at the level of 59% through the effect of "feedback". In other words, a chock on the exchange rate is noticed during a given year entirely resolved on the period of about two years.

The force value reminder reaching 0.59 represents the speed at which all disequilibrium between the desired levels and the effective exchange rate is resolved during the year following the whole chock.

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