Factors Influencing Currency Convertibility in Economic Community of West African States (ECOWAS)

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Abstract

This purpose of this study is to examine factors influencing currency convertibility in West Africa. The study used panel co-integration method to analyze the data from 1982 to 2008. Co-integration relationships are observed between the macroeconomic fundamentals. The findings are: First, the countries are homogeneous enough to form a monetary union. Secondly, the findings show that misalignments within the band are usually allowed, even though the tests for convergence indicate that there is conditional convergence in the exchange rates. The study recommends that for effective currency convertibility in the region the frequent government intervention in exchange rates should be reduced.

Keywords-Currency convertibility, monetary union, panel co-integration, single currency, West Africa

1. Introduction

The positive impact of currency convertibility on economic integration is one of the major issues in international trade policy and has attracted serious attention from researchers. It has been argued that currency convertibility enhances monetary integration and it makes transactions between countries easier and more efficient and thus eliminates uncertainty about exchange rates among member countries' currencies. However, it is not without costs. For an instance the surrender of the alternative use of policy tools, such as exchange rate and the inevitable exposure of member countries to disturbances arising from any part the union and so on are seen as some the consequences of the monetary union. Therefore, the extent to which the macroeconomic fundamentals affect the realization of the objective remains an empirical issue. Therefore, this study examines factors influencing currency convertibility in the Economic Community of West African States (ECOWAS). This is important because it will help us understand how misalignment in the exchange rates affect competitiveness, the speed of the real exchange rates convergence and assesses the applicability of monetary union in ECOWAS based on the analysis of their real exchange rate.

The West African Monetary Zone (WAMZ) plans to introduce a common currency, the Eco by the year 2015. Nigeria is the lead nation. "The WAMZ was formed in 2000to attempt and establish a strong and stable currency to rival the CFA franc, whose exchange rate is tied to that of the euro and is guaranteed by the French Treasury.

The eventual goal is for the CFA franc and Eco to merge, giving all of the West and Central Africa a single stable currency. The launch of the new currency is being prepared by the West African Monetary Institute based in Accra, Ghana. This is intended to be the forerunner of a common central bank. However, several members of the WAMZ's countries suffer from weak currencies and chronic budget deficits, which are currently plugged by their central banks printing more and more notes of decreasing real value". A number of criteria have been agreed upon by WAMZ countries for the setting up of a single currency for the region, four are classified as primary while five are regarded as secondary. The primary criteria include: First, the benchmark for inflation to single digit, i.e. less than 10 percent. Second, the gross foreign currency reserve at any given time should be greater than or equal to three months of import. The third is that the central bank financing of the budget deficit for member nations should not be more than ten percent of the previous year's tax revenue and the primary criteria are that the ratio of the budget deficit to GDP should be less than or equal to five percent of the GDP.

The targets for secondary convergence criteria include: first, domestic arrears in local currency should be zero percent. Second, fiscal revenue/GDP ratio should not be below twenty percent. The third is that the age bill to total revenue ratio should be at least30 percent. The fourth is that there are should be stability in the real exchange rate and it should be positive at any given time. WAMZ countries were able to meet up with three of the primary criteria by 2006, except for inflation whose average was 11.5 percent a little above the target of ten percent. This is, however, an average value for individual countries (WAMI, 2006).

The Gambia had the lowest inflation rate of 1.4 percent, while Guinea had the highest inflation rate of 39.1 percent a serious disparity in inflation rates within the region. History has shown that the past has been ugly for the region; none of the set target was achieved. The region is still among the poorest in the world with bad governance and weak institutions as reported by Benassy-Quereand Coupet (2005) and Roudet, Sexagaard and Tsangarides (2007). One major question to ask here is, can the goals of ECOWAS ever be achieved? Many solutions have been proffered by several authors, including its ede (2002), Obadan (2002), Masson and Pattilo (2003) and WAMI (2006, 2007, 2008). Masson and Pattilo (2003) argue that trade liberalization as a precondition for successful monetary unification with an independent single currency. The creation of a monetary zone has been high on the programs of ECOWAS members since inception in 1975, Clark and MacDonald, (1999). In order to achieve this, member nations have agreed to integrate monetary and fiscal policies to eventually create a common market, to create a single currency and improve welfare of members through intra- regional trade. The members were enthusiastic at the formulation of the regional body and pursue these objectives with vigor, intra-regional trade could not be stimulated (Ojo, 2003).

This was attributed to the non convertibility of currency in the region (Itsede, 2002). The objective to form a single monetary union in the region is still far away from being realized. Instead, five Anglophone countries (Ghana, Nigeria, the Gambia, Liberia, Sierra Leone and Guinea Conakry have initiated another monetary union tagged WAMZ which was hoped to merge with Union Economique et Monetaire Quest Africaine (UEMQA), after its takeoff. However, the ECOWAS has for a long time worked towards a single currency for the region without success. Though several factors have attributed to the failure, such as instability in the exchange rate policies, lack of convertibility of currencies of some countries among others were the factors responsible for lack of success. Previous works have not incorporated currency convertibility as a medium term goal in the establishment of a single currency for the region.

2. Literature Review

The term currency convertibility has many definitions in the literature, but a few of them are universally and even generally acceptable. Black (2003) defines currency convertibility as any currency whose holder can change into foreign currency without permission from the authorities. In other words a currency is said to enjoy unrestricted convertibility if there are no restrictions on its exchange into a foreign currency for any purpose including an asset purchase (capital exports). This view is also expressed by Pearce (1981) who defines currency convertibility as the removal of exchange restriction on capital exports, so that residents have the right to export at the official exchange rate. The West African Monetary Institute (WAMI) defined currency convertibility as a currency which is freely offered and accepted for transactions across national borders. On the other hand, Bordo and Jonung (2001) view convertibility as a commodity with fixed weight (gold for example) that could be converted into currency or national notes. Two important points can be deduced from these definitions: one is that currency convertibility is simply a process of exchanging a currency for another or buying and selling of foreign currency.

The second is that it is a removal of foreign exchange restrictions. Both views however, converge to one point that currency of a country can be freely converted into foreign exchange at market determined rate of exchange.

Its ede (2002) argues that a currency is said to be convertible if it can be easily into a foreign currency at a prevailing exchange rate for any purpose that is; for current account or capital account purposes. Ng (2002) and Rose (2000) observed that currency convertibility encourages foreign investment as it opens the local economy to the outside world. They viewed China as a typical example of a country that introduced currency convertibility by opening her economy and has suddenly become an economic hub of Asia. Once an economy is open with local convertible currency, the free flow of goods and capital also increase, hence the economy becomes diversified in terms of tradable and non-tradable goods and services (Westerlund, 2005).This study is based on convertibility of currencies towards the formation of a monetary union. Convertibility and has a lot in common with exchange rate since it is the exchange rates determine full convertibility of a currency. It is therefore, necessary that in the study of convertibility, exchange rate of currencies should be the foundation of this research work. WAMI (2006) documented that many developing countries, especially those with rudimentary markets for bonds, equities and real estate, the exchange rate is probably the most important asset price affected by monetary policies including the convertibility of currencies.

When the exchange rate is floating, tightening of the monetary policy increases interest rate, raises in the demand for domestic asset, hence leads to an appreciation of the nominal and at least the real exchange rate (Benassy-Quere and Coupet, 2005). In this section, therefore, some of the studies on equilibrium exchange rate will be reviewed. Several empirical exchange rate models are well documented (see Shone, 1999; MacDonald, 2002; Bordo and Jonung, 2001; Barnett and W. Kwag, 2005; MacDonald and Dias, 2007), these models have been designed to explain exchange rate in term of macroeconomics fundamentals. Two of the models stand out as the most dominant in the literature. These are portfolio (assets) balance models and the monetary models of the exchange rate determination (Barnett and Kwag 2005). Generally speaking, monetary models are meant to understand the fluctuations in exchange rate over time. The monetary model approach is made up of the sticky price and flexible price models. In this model, the interest rate parity holds with foreign and domestic assets perfect substitutes. The sticky two – country monetary model of exchange rate determination, first introduced by Dornbusch (1976) while the flexible price model was later introduced in the literature by Frenkel (1976) and Bilson (1978). The difference between the two models is that inflation is excluded in the latter model, while interest rate is excluded in the former. Hooper and Morton (1982) proposed a monetary model combining both the two models. The model has also been used for instance by Yang and Leatham (2001).

Yang and Leatham (2001) and Barnett and Kwag (2005) in the study of U.S. dollar/British pound exchange rate, Barnett and Kwag (2005), made use of the Asset Model Approach. Co-integration is then used to test for long run movement in the macroeconomic variables determining the US dollar/UK pound exchange rate. Yang and Leatham (2001) also derived the monetary exchange rate model from economic fundamentals using quarterly data from Germany, Japan, United States and United Kingdom; they applied long run co-integration test (Johansen and Juselius, 1990). They tested for the existence of a long run relationship between the exchange rate and certain macroeconomics fundamentals, their result gave credence to the monetary model of exchange rate determination. Recently, Sartore et al. (2001) using the same euro-dollar exchange rate built an area-wide model from the flexible price monetary model considering the simultaneous equilibrium of exchange rate, money and the goods market, applying co-integration analysis in the presence of structural break and taking into account the joint behavior of bilateral exchange rate, interest rate differential and growth rate. These studies did not take into account the cross-country effect usually considered in panel data (referred to as individual effect). For this reason, this study explicitly recognized this effect.

3. Methodology and Sources of Data

To examine the objective the study employs panel unit root and co integration estimating techniques. The study uses data from 15 member countries excluding Mauritania, which had pulled out of ECOWAS in 2000. The data were collected from the International Monetary Fund. The quarterly data are from the first quarter of 1982 to fourth quarter 2008, while the annual data were from 1982 to 2008. To obtain data with uniform frequency, the annual data are transformed to quarterly using Boot Feibes – Lisman function (Boot et al, 1967). This function is calculated by minimizing a quadratic function of disaggregated series and is incorporated in the Grocer 1.3 in Scilab 4.1.2 software.

The Macroeconomic variables used are real effective exchange rate (rer), net foreign assets (nfa), real interest rate differential (rir), openness (op), terms of trade (tot), fiscal balance (fb), commodity prices (pr) and real grosses domestic product per capita (rgdpc). These are collected for five West African countries which include Nigeria, Ghana, The Gambia, Cote D'Ivoire and Sierra Leone. Cote D'Ivoire is chosen to represent UEMOA, since these countries have a common central bank with a common currency, the official exchange rate and interest rates are the same. On data limitation, there are lots of uncertainties associated with the equilibrium values of the exchange rates. This is because there is no universally accepted method to select the fundamental variables that affect real exchange rate. In economic theory for example, the purchasing power parity, uncovered interest parity and Balassa-Samuelson effect and their initiatives are often used for decision on ad hoc basis to influence a region or country's exchange rates.

The data input for this study are data related to currency convertibility rate more especially those that were made available to the international Monetary Fund (IMF) and the World Bank by ECOWAS countries as official exchange rates. For the purpose of this research, only data for some selected member countries were obtained with a view of assessing their impact on how they converged towards equilibrium for purpose of having a single currency for the region. Considering the population size for this study, which covers the whole of West Africa? This is made up of 15 member countries; again to conduct research using data obtained for each country is cumbersome. Therefore, secondary data were obtained on 5 selected countries namely Nigeria, Ghana, Sierra Leone, Gambia and Cote D'Ivoire (representing all the 8 members of the Communaute Financiere Africaine – CFA in the region with one Central Bank).The equilibrium exchange rate models are specified as

$$rer_{it} = \beta_0 + \beta_2 nfa_{it} + \beta_3 rir_{it} + \beta_4 OP_{it} + \beta_5 Pr_{it} + \beta_6 rgdpc_{it} + \beta_7 tot_{it} + \beta_8 fb_{it} + u_{it} \quad (1)$$

where rer_{it}, nfa_{it}, rir_{it},OP_{it},Pr_{it}, $rgdpc_{it}$, tot_{it} and fb_{it} denote real exchange rate, net foreign assets, real interest rate differential, openness, price, real gross domestic product per capita, terms of trade, and fiscal balance.

If the normal exchange rate is used in the model and consumer price indices are included and the variables are used in raw form instead of the derived form, equation (1) reduces to the flexible price monetary model of Frenkel (1976) and Bilson (1978). According to Barnett and Kwag (2005), the asset approach model has remained the dominant exchange rate determination model obtained from monetary fundamentals. For the countries in West Africa several interventions took place either in terms of government intervention in economic policies, i.e. the devaluation of the CFA franc, the Ghanaian Cedi and the introduction of several adjustment programs in Nigeria (Chiawa, Imande and Gulumbe, 2001) or the effect of wars. We therefore introduce dummies in model (1) to take care of these effects as follows:

$$rer_{it} = \beta_0 + \beta_2 nfa_{it} + \beta_3 rir_{it} + \beta_4 OP_{it} + \beta_5 Pr_{it} + \beta_6 rgdpc_{it} + \beta_7 tot_{it} + \beta_8 fb_{it} + \beta_9 Du_{it} + \beta_{10} Dt_{it} + u_{it} \quad (2)$$

whereDu_{it} and Dt_{it} are the breaks in intercept and trend respectively.

4. Empirical Results and Discussion

4.1 Unit Root Test Results

To estimate the long-run real exchange rates model for the five West African countries, it is proper to determine the order of integration of the series. The literature suggests that the real exchange rate is non stationary, since the fundamental variables that could determine long-run real exchange rates are not stationary (Clark and MacDonald, 1999; Maeso-Fernandez, Osbat and Schnatz, 2008). Also based on the deviation of the real exchange rate from the purchasing power parity (PPP) assumption and the violation of the law of one price, it is evident that the real exchange rate has unit root (Groen and Lombardelli, 2004). This gives room for the test of the order of integration in the real exchange rates and their fundamentals for Nigeria, Ghana, Cote D'Ivoire, The Gambia and Sierra Leone.

The results of the IPS panel unit root tests as reported in Table 1. The tests indicate that most of the series are non stationary in levels when individual effects are added, but stationary when differentiated once. A few exceptions are observed for some of the series, especially when the linear trend was added to the equation. Even though the series are not stationary in levels, the first differences of the series with the addition of the trend made the series non stationary again. However, the results of the univariate unit root tests and the panel unit root tests show that the series are non stationary at level. Therefore, we proceed to model the series as 1(1) series.

Table 1: Panel Unit Root Tests

Variable	**IPS t- bar test**		**Hadri test**	
	No trend	**Trend**		
rer	0.429	0.619	9.155 (0.000)	7.191 (0.000)
Δrer	-17.290	-17.307	-0.847(0.801)	0.513 (0.304)
nfa	-1.673	-1.041	6.928(0.000)	3.070(0.001)
Δnfa	-18.662	-18.790	-0.986(0.838)	0.028(0.489)
rir	-2.695	-1.664	6.531(0.000)	6.480(0.000)
Δrir	-26.501	-27.515	-1.261(0.896)	1.406(0.920)
op	-1.130	-1.028	11.366(0.000)	6.905(0.000)
Δop	-3.060	-1.700	1.594(0.056)	1.508(0.066)
pr	-2.770	-2.110	6.999(0.000)	7.463(0.000)
Δpr	-2.280	-2.642	-0.720(0.764)	-0.855(0.804)
tot	0.140	-1.183	7.209(0.000)	1.933(0.027)
Δtot	-3.161	-1.613	-1.323(0.907)	0.106(0.458)
fb	-0.023	0.375	4.440(0.000)	5.046(0.000)
Δfb	-4.473	-1.161	-0..756(0.775)	-1.5230(0.936)

4.2 Panel Co-integration Tests Results

The procedure adopted here for testing panel co- integration is to first determine whether the variables are co-integrated and then proceed to examine the long-run coefficients. The residual panel co-integration tests employed are the tests by Pedroni (1999), Kao (1999), the Cumulative Sum of Recursive Residuals test (CUSUM) of Westerlund (2005) and the Moving Sum of Recursive Residuals (MOSUM) test. After the presence of co-integration is confirmed, the long run parameters are obtained using Panel Dynamic Ordinary Least Squares (DOLS) proposed by Kao and Chiang (2000) and the pooled mean group estimator (PMGE) by Pesaram et al. (1999). A wide variety of methods are applied to test for co-integration as suggested by MacDonald, R. (2002). The DOLS and PMGE are estimated in STATA 11 using XTREG and XTPMG modules. The XTREG model has to be adjusted to include leads and lags of the repressors'. The CUSUM and Hansen tests are then applied to determine the stability of the models. The results of the residual – based tests are summarized in Tables 2 and 3. In the Pedroni test conducted with a constant, the parametric panel t-statistic and the group t-statistic gave significant value at 5% while nonparametric panel t-statistic and the nonparametric group t- statistic were significance at 10%, the remaining results appear not to be significant. The story is not too different when a trend is included in the test though there is a slight improvement in the power. The parametric panel t- statistic, group t-statistic and the nonparametric panel t-statistic are now significant at 1%, while the group t- statistic is significant at 5%, the remaining results appear not to be significant. On the whole, only panel v- statistic bore the opposite sign.

Table 2: Pedroni Co-integration Test

rer, nfa, rir, op, pr, rgdpc, tot, fb.	**Test Statistic (with constant)**	**Test Statistic (Constant & trend)**
Panel v statistic	-0.16011	-0.11004
Panel ρ statistic	-0.18400	-0.70566
Panel t statistic (non-parametric)	-1.35890	-2.33685
Panel t statistic (parametric)	-1.76173	-3.26050
Group ρ statistic	-0.09219	-0.04822
Group t statistic (non– parametric)	-1.40913	-1.81053
Group t statistic (parametric)	-3.51713	-4.53490

Nsecs = 5. T. periods = 108, No of regressors = 7 All reported value are distributed N(0,1) under null unit root or co-integration. Panel stats are weighted by long run variances. The tests are conducted with time dummies, trend and weights. Critical values 2.13 at 1% 1.65 at 5% and 1.285 at 10%.To sum up, Pedroni co-integration test showed that there is co-integration between exchange rate and its fundamentals since the null hypothesis is rejected for most of the cases except panel v-statistic which bears the opposite sign seePedroni (1999).

Table 3: MOSUM, CUSUM and Kao Residual Co-integration tests

	Test Statistic	P-value	Critical values 10%	5%	1%
Kao (ADF)	-7.9436	0.0000	-	-	-
CUSUM	1.9840	-	1.285	1.645	2.33
MOSUM	1.5420	-	1.285	1.645	2.33

The result of panel Augmented Dickey Fuller (ADF) test by Kao (1999) shows too that the variables are co-integrated since the null hypothesis of the unit root is rejected. The results of CUSUM test show that it is significant at 1percent while MOSUM is significant at 5 percent and 1 percent. These tests all confirm the existence of co-integrations relations among the real exchange rates and their determinant in West Africa. The implication of this result to this study is that these variables have long run relationship with the real exchange rates of the countries. With these results co-integration is accepted in the data and estimates of the co-integration parameters can now be made using panel DOLS, PMGE and Fully Modified Ordinary Least Square (FMOLS) similar toMaeso-Fernandez, Osbat and Schnatz (2008) and Pattichis, Mratheftis and Zenios (2007).

4.3 Results of Long- run Co-integration Parameters

This section will discuss the long run co-integration results for PMGE, FMOLS and DOLS in Table 4. The implication for the existence of co-integration relationship among these variables is that they contribute to the determination of real exchange rates in the countries of West Africa in the long run. The test for DOLS are conducted using both fixed and random effects for DOLS (1.1) and DOLS (2.2) and Housman test is used to discriminate these result in pairs. The Housman test result for DOLS (1.1) and DOLS (2.2) are shown below:

Denote α = DOLS (2.2) and β = DOLS (1.1). The test is H_0 : difference in coefficients are not systematic. The $X^2(25) = (\alpha - \beta)' \{(\text{var}(\alpha) - \text{var}(\beta))^{-1}\}(\alpha - \beta) = 88.55$ comparing with the table value, $X^2(25) = 37.6525$. The null hypothesis is thus rejected showing that DOLS (2.2) is superior to DOLS (1.1). Hence, DOLS (2.2) becomes the right choice with fixed effect model. For Pooled Mean Group Estimation (PMGE), the optimal lag of 2 is chosen by the modified Akaike Information criterion (AIC). Using the Bartlert Kernel, an optimal bandwidth of 2 is selected for the Fully Modified Ordinary Least Squared (FMOLS). The results of the long run panel co-integration tests (panel DOLS, FMOLS, and PMGE) show that three variables *rir, op, rgdpc* have the expected sign for FMOLS, four variables *rir, op, rgdpc,* and *fb* have expected sign for DOLS, while in the panel Autoregressive Distributed Lag (ARDL) *rgdpc and fb*bear the required positive sign. This suggests that the signs and magnitudes of the coefficients are robust to the econometric approach chosen.

Table 4: The Long-run results

Variables **Dependent. var***rer*	**FMOLS**	**DOLS**	**PMGE (ARDL)**
Nfa (Net foreign assets)	-0.0128 (1.36)	0.0024 (2.66)	0.0117 (5.55)
Rir (Real interest rate)	0.0113 (3.00)	0.0099 (5.88)	-0.0088 (0.32)
Op (Openness)	-0.6125 (3.10)	0.0074 (0.91)	-0.6873 (3.53)
Pr (price)	0.5050 (2-51)	1.2470 (11.10)	1.5169 (6.07)
Rgdpc (Real Gross Dom. Prod)	0,4413 (2.69)	0.0356 (0.34)	0.0592 (0.34)
Tot (Terms of trade)	0.0672 (1.37)	0.083 (1.40)	0.1052 (1.16)
Fb (Fiscal balance)	-0.0042 (0.01)	-0.259 (0.820)	0.6030 (1.11)

The absolute values of t- ratio are in parenthesis.

The results show that the all the variables exert significant influence on real exchange rate. For instance, the net foreign assets, real interest rate differentials, openness, prices, real GDP per capita, the terms of trade and fiscal balance have strong long run relationships with real exchange rate. This is in agreement with the findings in Pattichis et al. (2007). The highest t-ratio for DOLS is at the price variable, while openness for FMOLS and PMGE carry significant values for the two variables. Both variables are expected to influence the real exchange rate as increases in domestic prices can cause real exchange rate to the depreciate. This is noticeable more in developing countries like the countries in this study. Empirical results confirm that improvement of the terms of trade entails a real exchange rate appreciation as all three results tally with the PMGE having the largest coefficient. Economically this implies wealth effect dominates the income effect. The effect of net foreign assets on the real exchange rate is same for DOLS and PMGE as both carry the positive sign.

FMOLS however, carries the negative sign. It should be noted that the sign of net foreign assets is inconclusive, that is it could be positive or negative. In other words, an accumulation of the net foreign assets leads to real exchange rate appreciation. If on the other hand the country starts paying interest on foreign liabilities, real exchange rate depreciates (Drine and Rault, 2003). The long run panel co-integration relation using the PMGE with individual constant and dummies is:

$ec_t^{rer} = 0.01167nfa - 0.00078rir_t - 0.687312op_t + 1.516904pr_t - 0.592054rgdpc_t + 0.10519tot_t + 0.6030186fb_t$.(3)

The equation above can be interpreted as follows: the coefficient 0.01167 of the net foreign assets *(nfa)* is the estimated output elasticity because the real exchange rate *(rer)* and *(nfa)* appear in logarithms. Similarly a 1% increase in rer will induce a – 0.00078% increase in the real interest rate *(rir)*, -0.6873% for openness *(op)*, 1.516904% for price *(pr)*, for real gross domestic product *(rgdpc)*, 0.1052% for terms of trade *(tot)* and 0.603186% increase in fiscal balance *(fb)*.The long run co-integration relations for the panel DOLS and the panel Fully Modified Ordinary Least Squares (FMOLS) are shown in Eq. (4) and (5) below.

$ec_t^{rer} = 0.0024nfa + 0.0099rir_t + 0.0074op_t + 1.247pr_t + 0.4413rgdpc_t + 0.083tot_t - 0.259fb_t$, (4)

$ec_t^{rer} = -0.0128nfa + 0.0113rir_t - 0.6125op_t + 0.505pr_t + 0.4413rgdpc_t + 0.0672tot_t - 0.0042fb_t$.(5)

The interpretations given to the estimated elasticity's follow the same way as the PMGE equation above. Finally the results in the three models show that price has the highest elasticity. This means that the real exchange rates of currencies in the West African sub - region are mostly affected by price increases.

5. Conclusion

Factors influencing currency convertibility in Economic Community of West African countries (ECOWAS) have been examined using panel co integration techniques. The model of equilibrium exchange rate for these countries has been formulated using the behavioral equilibrium exchange rate (BEER) as proposed by Clark and MacDonald (1999) to determine the long run relationship between the exchange rates and the macroeconomic fundamentals in a panel setup. Also, the models are used to investigate misalignment in the exchange rates. That is to determine the extent of the exchange rates convergence to test degree of convertibility. In addition, the speed of adjustments of these real exchange rates to return to their equilibrium values is calculated and a convergence criterion set for these currencies.

Testing for equilibrium real exchange rate is crucial for countries wishing to come together to form a monetary union. It is important for members to know the appropriate exchange rate for which to join the union and this can only be done when exchange rates are at equilibrium. The findings indicate that West African countries are good candidates for a monetary union, even though the convergence is conditional. The speed of convergence is tested and found to be homogeneous. Finally, the study shows that countries selected as samples are homogeneous enough to form a monetary union. This conclusion is based on the empirical findings of the study, since the misalignments are within an allowed exchange rate band. The paper recommends that there should be no frequent government intervention in trying to regulate the foreign exchange market if monetary union is to be achieved within ECOWAS countries. This is a serious repercussion in allowing the market to adjust back to equilibrium position. For currency convertibility, further studies are recommended in selection of fundamental variables in equilibrium exchange rate studies. The fundamentals used in this paper were fiscal balance, real gross domestic product, terms of trade, openness, real exchange rate and real interest rate.

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