

[論 説]

Is Central Franc Zone Suitable for Introducing a Common Currency?

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Abstract

This paper examines whether the “currency union” in CFA (Central Franc Zone) is suitable or not from the view of business cycles and trade. In order to examine the suitability of currency integration, optimum currency area (OCA) criteria has been employed. This paper develops a procedure for applying OCA theory to CFA and examines the criteria while taking into account the endogeneity among variables. The gain in active trade flows and the convergence of business cycles, from eliminating nominal exchange rate variability through the formation of a currency union, is large. Adopting the Euro for currency union is much more reasonable than adopting dollar for each CFA country.

Keywords: business cycles, CFA, common currency, exchange rate, trade

JEL classification: F33, F37

1. Introduction

The origin of the CFA franc arrangement dates back to the colonial times when it was decided to employ currency in the dependent territories to avoid the need to

bring currency. At the end of World War II, two “issuance houses” were in charge of currency for the French colonies in Africa. In the run-up to independence, these institutions were renamed Banque Centrale des Etats de l’Afrique de l’Ouest (BCEAO) and Banque Centrale des Etats de l’Afrique Centrale et du Cameroun (BCEAC). Even after independence, the BCEAO and BCEAC remained in place led by France and with their headquarters in Paris. For those newly independent countries that opted to stay within the franc zone, the main aspects of their currency matters remained with the former colonial power.

Today, the principal members of the CFA franc zone are France and the two African economic and monetary unions that developed from the country groups served by the two issuance houses—the Central African Economic and Monetary Community (CEMAC, with the BEAC as its central bank) and the West African Economic and Monetary Union (WAEMU, with the BCEAO as the central bank). CEMAC has six members: Cameroon, the Central African Republic, Chad, the Republic of Congo, Equatorial Guinea, and Gabon. WAEMU has eight members: Benin, Burkina Faso, Cote d’Ivoire, Guinea- Bissau, Mali, Niger, Senegal, and Togo. The CFA franc zone links three currencies: the CFA francs issued separately by each bank, and the Euro. Both CFA francs are limited to the Euro (previously to the French franc) at the same rate per Euro. However, the CFA francs are issued by two distinct central banks and are independent of each other. Each CFA franc is nominally convertible into the Euro, but they are not directly convertible into each other. France guarantees the peg of the CFA franc to the Euro (Gulde, 2008).

A striking aspect of the economic landscape of the CFA franc zone is the heterogeneity not only between the two unions but even within each grouping. Although the CFA franc is based on shared history, the level of regional economic integration has remained low. The production structures and macroeconomic and structural indicators for WAEMU and CEMAC differ significantly. Compared to Europe, CFA’s diversity is

quite substantial. The economy of the Central African zone depends significantly on oil prices while that of the West African zone is dependent on a more diverse set of agricultural commodities. This presents further questions of the long-term viabilities of the CFA franc. The optimum currency theory proposed by Mundell (1961) and Kenen (1969) may not be suitable for this area. However, the fourteen countries have introduced a common currency. There may well be other economic conditions and benefits beyond the framework of Mundell and Kenen for introducing a single or common currency in CFA.

This paper focuses on business cycles and trade intensity and considers whether the “currency union” in CFA countries is suitable or not from the aspect of business cycles and trade. It examines empirically the criteria of traditional OCA theory in connection with trade.

This paper is structured as follows. The following section 2 reviews the current state of OCA theory and considers the relationship between business cycles and trade taking into consideration the endogeneity among economic variables. Further variables for participation in the common currency area are then identified. The next section 3 discusses OCA indices. Finally this paper ends with a summary.

2. OCA Theory and its Application to CFA

2.1. Theoretical Background

OCA theory has been employed to examine whether or not currency integration is suitable or not especially in Europe. Although there have been few direct empirical studies on the benefits and costs of the CFA franc arrangement, a more general strand of literature looks at the real effects of nominal exchange rate arrangements to see whether there is a systematic difference in economic performance between fixed and floating exchange rate systems. The consensus seems to be that fixed exchange rates

lead to lower inflation and more fiscal discipline in developing countries; the direct effects of the nominal exchange rate regime on growth differs among studies and is mostly not statistically significant. For the CFA franc zone specifically, the benefits for lower inflation are confirmed by Masson and Pattillo (2004). The exchange rate system and the common monetary institutions have been credited with helping the zone for many years to achieve lower inflation and more macroeconomic stability than other countries in Africa. There may well be second-round benefits; there is agreement in the literature that lower inflation in itself can provide important additional advantages for the stability of the economic situation, and longer-term benefits for financial development.

OCA theory, which was developed by Mundell (1961), McKinnon (1962), and Kenen (1969), has been a popular tool for the analysis of currency integration, particularly with the reference to Economic and Monetary Union (EMU) in Europe.

OCA theory considers several criteria. First, it stresses the importance of similarities among business cycles or shocks. Asymmetric business cycles and shocks bring the need for policies. Second, degree of openness is considered. A country in which trade within the area accounts for a high proportion of domestic output can profit from participating in a common currency area. A third consideration in OCA theory is factor mobility. High labor mobility facilitates adjustment to the adverse effects of asymmetric shocks and reduces the pressure for exchange rate adjustments. Finally, product diversification is proposed as an alternative channel. A country that produces highly diversified products is less vulnerable to sector-specific shocks.¹

For the first and second criteria, there has been some discussion regarding their validity. This paper focuses on these points. Closer trade relations may result in a convergence of business cycles. Moreover, similar business cycles create good conditions for policy integration and the creation of a common currency union. On the other hand, Frankel and Rose (1998) suggested that the two criteria are endogenous. Eichengreen

(1992) showed the existence of endogeneity of OCA criteria. Krugman (1993) and Bayoumi and Eichengreen (1993) on the other hand pointed out that as countries become more integrated, they specialize more. Frankel and Rose (1998) showed that in some cases the correlation between two countries' output increases unambiguously with increased intensity of trade links between the countries. It is important to keep in mind that it is not trade intensity alone that induces the convergence of business cycles. This paper takes this into account.²

2.2. Empirical Test

This paper employs empirical tests to examine OCA theory criteria as follows:

$$\log \text{corr} (E_i, E_j) = a + b \log (T_{ij}) + u_{ij}, \text{ where } T_{ij} = T_{ij}/(T_i + T_j) \quad (1)$$

$\text{corr} (E_i, E_j)$ stands for the correlation of economic activity. This paper uses gross domestic product (GDP) as an indicator of economic activity.³ T_i denotes the bilateral trade (export plus import) intensity between countries i and j . u_{ij} represents the myriad influences on bilateral activity correlation, and a and b are the regression coefficients to be estimated. All the data are yearly. The sample period is from 1995 to 2006 and from 1992 to 2002.⁴ Of course, the object of interest is the coefficient b . The sign of b tells us whether the correlation of economic activity is endogenous to trade. Its sign tells us whether the correlation of economic activity is low or high. The sign of the coefficient deserves particular notice because it qualifies the economic importance of the effect.

Some countries are likely to follow their monetary policy toward important trading partners. In this case, they lose the ability to set monetary policy independently of their neighbors. An ordinary least squares (OLS) regression of bilateral activity may be inappropriate in some cases. To identify such circumstances, an instrumental variable method is employed. The regressions are instrumented by exogenous variables of trade

flows. This analysis uses a gravity model. The variables used in the two-stage OLS are (log of) income, income per capita, distance, and geographic adjacency, which are typically used with gravity models. The result is as follows:

$$\begin{aligned} \log \text{ corr } (E_i, E_j) &= 0.700 + 0.091 \log (TI_{ij}) + u_{ij} \\ &\quad (16.95) \quad (2.981) \\ \text{S.E.: } &0.205 \quad \text{adj.R}^2: 0.320 \end{aligned}$$

At this stage, trade intensity has a significant and positive effect on the correlation of business cycles. The business cycles of industrial production seem to be somewhat better explained by trade.

Next, trade structure is taken into account. Trade intensity alone may be insufficient for analyzing the correlation of economic activity. Taking into account the endogeneity may be important. Frankel and Rose (1998), Kalemli-Ozcan, Sorensen, and Yosha (2001), and Krugman (1993) stressed the importance of trade structure versus the endogeneity hypothesis of OCA criteria. The estimated equation is as follows:

$$\begin{aligned} \log \text{ corr } (E_i, E_j) &= a + b \log (TI_{ij}) + c \log (TS_{ij}), \text{ where } TS_{ij} \\ &= 1 - (\sum_l X_{ij} - M_{ij}) / (\sum_l (X_{ij} + M_{ij})) + u_{ij} \end{aligned} \tag{2}$$

TS stands for trade structure as measured by the Grubel-Lloyd indices. X and M denote exports and imports.

Equation (2) also can be estimated using two-stage OLS using the same industrial variables. The variables in this instance are the same as in equation (1). The result is as follows:

$$\begin{aligned} \log \text{ corr } (E_i, E_j) &= 0.698 - 0.010 \log (TI_{ij}) + 0.115 (TS_{ij}) + u_{ij} \\ &\quad (16.125) \quad (-0.628) \quad (6.722) \\ \text{S.E.: } &0.285 \quad \text{adj.R}^2: 0.357 \end{aligned}$$

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The coefficients of trade structure are highly significant in the specification. In so far as the countries with close trade links have highly similar trade structures, the endogeneity hypothesis of OCA criteria is confirmed. This case reveals that trade intensity has no direct effect on the correlation of business cycles. Therefore, the analysis drops the term *trade intensity* from estimated equations. The result is as follows:

$$\log \text{corr} (E_i, E_j) = 0.650 + 0.087 \log (TS_{ij}) + u_{ij}$$

(28.006) (7.605)

S.E.: 0.205 adj.R²: 0.533

The results show that the correlation of business cycles of trading partners is not driven by the simple aggregation of shocks transferred between the countries via direct trade channels. Not only the direct effect of bilateral trade but also the structure of foreign trade induces the synchronization of countries' business cycles. Again, when describing the CFA franc zone, the countries may tend to specialize in producing different products, this should make them more susceptible to asymmetric shocks and in line with the OCA theory argument, less suited for a common currency. This high degree of economic diversity should be discussed in the context of the argument about endogeneity of the OCA criteria.

3. The Endogeneity Hypothesis of OCA Criteria and Indices of OCA

Most CFA countries have increased intra-trade gradually. They are relatively open economies. Increased bilateral trade intensity may lead to the divergence of business cycles if the increase in trade is due to the increased specialization as predicted by the view of traditional OCA theory.

The development of these countries has been strongly influenced by growing

exports to developed countries. The convergence of developed countries and other countries have increased recently.

Recently, many studies have been published on the analysis of Central and Eastern Europe (CEE) countries. The reason is that soon after participation to the EU in 2004, the new EU member states will have to consider a timetable for accession to the Economic and Monetary Union (EMU). Some studies have applied the same kind of method to this area.⁵ Comparing these studies, the correlation is generally high. Some CFA countries have a lot of signs of convergence with developed countries.

In this section, I use equations estimated in the previous section to evaluate the potential correlation of business cycles. Table 1 is the result.

Table 1
Comparison of Business Cycles of CFA Countries and Euro Zone/U.S.

	Euro Zone	U.S.
CEMAC		
Cameroon	0.56	0.44
Central African Republic	0.71	0.60
Chad	0.45	0.46
Congo Republic	0.57	0.32
Equatorial Guinea	0.54	0.29
Gabon	0.68	0.62
WAEMU		
Benin	0.49	0.47
Burkina Faso	0.68	0.49
Cote d'Ivoire	0.73	0.62
Guinea-Bissau	0.44	0.50
Mali	0.58	0.50
Niger	0.54	0.47
Senegal	0.60	0.58
Togo	0.61	0.47

In general, it is more reasonable than adopting the U.S. dollar for each CFA country. However, some countries show different results. The differences are not large. Trade between the unions is low and each union imposes its external tariff. Capital flows between the zones are restricted, and the exchange of banknotes is prohibited. Further effort would be needed to realize a more appropriate zone, which enables it to bring merits. These are not surprising results given that globalization of economic activity and significant progress in the coordination of economic policy has been ongoing.⁶ However, potential business cycle correlations for some countries show small differences. Some countries need a fast convergence of business cycles for introduction of a common currency. For realizing this condition, higher openness and higher shares of trade will be needed. In some countries, less convergence will be predicted than for the remaining CFA countries. Adopting the Euro for currency union is generally appropriate.

4. Conclusions

This paper considered whether or not the “currency union” in CFA countries is suitable from the view of business cycles and trade. There is some doubt about whether there is a causal relationship between trade and business cycles. Frankel and Rose (1998) demonstrated that trade links alone do not ensure the convergence of business cycles if countries are not sufficiently similar. This paper provides one solution.

If a common currency is introduced, the gain in active trade flows and convergence of business cycles, from eliminating nominal exchange-rate variability through the formation of a currency union, would be large. Many countries have been satisfied with the criteria of OCA with Euro area. In the choice of currency integration, it is concluded that the Euro is more logical in some cases than the U.S. dollar. This debate has been characterized by a multitude of different policy proposals. For example,

whether or not economic growth will be realized is a primary consideration.⁷ It is not sufficient to employ only OCA's theory.

With increasing financial globalization, volatile oil and raw materials prices, and some difficult regional security problems, the CFA franc arrangement now confronts great challenges. Among them are, for example, the prolonged real appreciation of the currency brought about by the movement of the Euro against the U.S. dollar, and significant changes in export prices for the two unions. A strong exchange rate undermines export competitiveness in 2007. All but one of CEMAC's members are oil exporters with production and price increases reflected in sizable oil booms in some countries. In contrast, there have been sharp declines in world prices for cotton, the main export of some WAEMU countries. Both unions also face the costs and disruptions of regional conflict and the related political and socioeconomic instability in some of their members. This influence may be influencing CFA zone on the theory of OCA. Further research will be needed not only from academic fields but also from policy authorities and the business world.

Endnotes

1. New criteria for OCA theory have been introduced recently. For example, Dixit (2000) and Carlin, Glyn, and van Reenen (2001) have proposed inclusion of the degree of policy integration and similarity between rates of inflation as factors for consideration.
2. Frankel and Rose (1998) stressed that if intra-industry trade accounts for a high share of bilateral trade, trade intensity increases the convergence of business cycles in Organization for Economic Cooperation and Development (OECD) countries.
3. These data are not detrended. Partner countries should be growing together. If one is stagnating while one is growing, it will cause difficulties to estimate.
4. The data are from Direction of Trade Statistics and IFS (IMF).
5. See, for example, Estrin and Urga (1997), Boone and Maurel (1998, 1999), Korhonen (2003), Fidrmuc (2003).

6. Bayoumi and Eichengreen (1993) showed that correlation in CEE countries and Germany has been higher in the 1990s.
7. Kurihara (2003) analyzed this problem.

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