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Hard or Soft Pegs? Choice of Exchange Rate Regime and Trade in Africa

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Summary. — This paper revisits the link between fixed exchange rate regimes and trade in the context of Africa's exchange rate arrangements, differentiating the effects of hard pegs (currency unions) from conventional soft pegs. Using a novel dataset of exchange rate regime classification, the paper augments the gravity model of bilateral trade flows with measures of currency unions and conventional pegged arrangements, and benchmarks Africa's experience against the rest of the world. We find that in both samples, currency unions and pegs increase trade *vis-à-vis* more flexible exchange rate arrangements through channels in addition to reduced exchange rate volatility; however the effect is almost twice as large for Africa. In addition, the trade-generating effect of pegs is at least as large for Africa as that of currency unions, suggesting that pegs could present a viable option—perhaps an alternative to currency unions—to promote trade in the region.

Key words — currency unions, fixed exchange rate regimes, Africa

1. INTRODUCTION

The renewed interest in regional integration initiatives—particularly, in monetary unions—since the launch of the euro, has in some cases overshadowed concerns about the asymmetry of shocks accruing to the economies, the absence of adequate mechanisms to respond to the shocks, and the lack of institutional prerequisites to support a common currency. A case in point is Africa where several monetary integration initiatives are under consideration, but their feasibility has been questioned repeatedly on the basis of Mundell's (1961) Optimum Currency Areas theory. [1]

A key objective of the proposed African monetary unions is to boost international trade. [2] Indeed, following the seminal work of Rose (2000), the trade-generating effect of currency unions (CUs) has been well established empirically, notably for Africa (Masson & Pattillo, 2004; Tsangarides, Ewenczyk, Hulej, & Qureshi, 2009). While joining a CU represents a more credible commitment to maintaining exchange rate stability, it may also entail higher economic and institutional costs before and after the CU formation. Further, as is evident from the recent global financial crisis, not abiding with the institutional prerequisites could have destabilizing effects in the face of shocks not only for the country in question, but for the entire currency union. A pertinent question therefore is whether a suitable alternative exists for Africa—one that promotes trade through lower transaction costs, exchange rate volatility and uncertainty, but retains some flexibility and places fewer demands for policy coordination—such as pegging to an anchor currency.

This paper empirically investigates the viability of conventional pegs as a possible choice to enhance bilateral trade for Africa by comparing their effect with that of CUs. While previous studies, for example, Klein and Shambaugh (2006), Adam and Cobham (2007), and Qureshi and Tsangarides (2010), show that pegs are significantly more pro-trade than flexible arrangements, we extend the analysis to examine Africa, and focus explicitly on the relative importance of hard (CUs) *versus* conventional (soft) pegs for the region. To this end, we use a novel dataset of International Monetary Fund's (IMF) exchange rate regime classification, which provides information on both de jure and de facto exchange rate classifications for the past three decades, to account for possible discrepancies between the officially announced and practically followed regimes, and their potentially different macroeconomic implications. [3]

Further, our empirical analysis addresses some important econometric concerns—particularly, those pertaining to the treatment of omitted variables in bilateral trade models—raised in previous literature in the context of CUs and trade. Specifically, applying recent developments in the estimation of bilateral trade flow models, we put forward quantitative estimates obtained through a range of estimation methods including controlling for dyadic fixed effects (with and without time-varying country specific effects), and the Hausman Taylor approach, which permits the estimation of time-invariant variables.

Our findings based on a sample of 159 countries over 1972–2006 suggest that both hard and soft pegs increase trade for Africa *vis-à-vis* more flexible exchange rate arrangements, and that this effect is almost twice as large than for an average country in the world sample. Importantly, the effect of conventional pegs for the region appears to be at least as large as CUs. In addition, CUs and pegs appear to have an effect over and above that of exchange rate volatility indicating that other factors associated with more stable exchange rate regimes such as lower transactions costs and uncertainty also play a significant role in promoting trade. There is also some evidence of an indirect effect of pegging with an anchor currency—typically realized through the stabilization of exchange rate against other currencies pegged to the same anchor—pointing to both direct and indirect bilateral trade gains achieved from pegging for Africa. These results are robust to a variety of specifications, estimation methods, and variable definitions.

In what follows, Section 2 reviews monetary arrangements in Africa and summarizes relevant literature. Section 3 outlines the empirical strategy adopted in the paper, and discusses

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relevant estimation issues. Section 4 describes the data. Section 5 presents the estimation results and the sensitivity analysis. Section 6 concludes.

2. EXCHANGE RATE ARRANGEMENTS IN AFRICA

Africa has a rich experience with different types of monetary arrangements, which provides useful information and an opportunity for comparison of economic performance under different policy regimes. Several of the existing monetary arrangements in the region result from choices countries made during or after the colonial era: former British colonies moved from currency boards to flexible exchange rates after achieving independence, while after World War II, former French colonies and France set up a monetary arrangement in the form of the CFA franc (CFAF) zone. The CFAF zone comprises 14 countries grouped into two monetary unions, the WAEMU and CEMAC. [4] A special case is the monetary union project in the ECOWAS. Founded in 1975, the ECOWAS is an organization of 15 members (8 of which are the members of the WAEMU), with the mandate to promote regional economic integration. Since April 2000, the five non-WAEMU members of ECOWAS (Nigeria, The Gambia, Ghana, Guinea, and Sierra Leone) have formed a second monetary area, the WAMZ, and established a convergence process toward launching a common currency. [5]

Regional trade initiatives also exist in Eastern and Southern Africa, and plans are underway for the establishment of a Tripartite Free Trade Area by 2012 that would encompass 26 countries and integrate three overlapping trade pacts, namely the Common Market for Eastern and Southern Africa (COMESA), the East African Community (EAC) and the Southern African Development Community (SADC). In addition, members of the East African Community (Kenya, Uganda, Tanzania, Rwanda, and Burundi) aim to create a currency union by 2015, and an extension of the Southern Common Monetary Area (Botswana, Lesotho, and South Africa) is also being considered.

Much of the earlier research on monetary arrangements in Africa was carried out in the context of the CFA franc zone and examines whether economies in the CFA franc zone have fared better or worse than their neighbors that are not part of the zone. [6] The asymmetry of shocks accruing to the sub-Saharan African (SSA) economies has also been studied extensively (e.g., Bayoumi & Ostry, 1997; Fielding & Shields, 2001; Hoffmaister, Roldos, & Wickham, 1998). In general, studies find little correlation between disturbances to real output *per capita* among the SSA countries. Recent literature has, however, focused on analyzing the feasibility of forming the various envisaged monetary unions in the region, particularly, the ECOWAS; and questioned the readiness of adopting a common currency by the member states (see, e.g., Bénassy-Quéré & Coupet, 2005; Debrun *et al.,* 2005; Tsangarides & Qureshi, 2008).

In the context of trade, Masson and Pattillo (2004) and Tsangarides *et al.* (2009) examine the impact of currency unions, and find that sharing a common currency substantially increases Africa's bilateral trade. This is an important finding particularly considering Africa's low integration in global markets as well as the low level of intra-regional trade. Although the share of intra-regional trade in Africa has increased over the years, it still remains substantially small (about 12%; Table 1). The share of CFA zone member countries' trade with each other in total trade is also small at about 8%, and has stayed fairly constant over the past decades. Several explanations have been put forward for Africa's trade marginalization, including slow economic growth, unfavorable geographical factors, weak investment climate, poor macroeconomic management and trade policies, and constraints to factor mobility. While the various existing and proposed regional monetary integration initiatives mark an important step toward trade promotion, it is also essential to consider that as argued by Mundell (1961), a common currency may make real adjustments to asymmetric shocks more difficult—especially in view of the poor systems of fiscal transfers and the limited financial sector development in Africa. [7] This makes it crucial to analyze the impact of alternative monetary arrangements for the region that could act as viable substitutes to hard pegs.

3. EMPIRICAL METHODOLOGY

In line with recent literature, we employ the gravity model of bilateral trade flows to investigate the link between exchange rate regimes and trade in Africa. The gravity model represents trade between two countries as a function of their respective economic sizes, and obstacles to trade (such as transportation costs, tariffs, and non-tariff barriers), which increase trading costs between them. To the extent that exchange rate policy influences currency conversion costs, exchange rate volatility as well as uncertainty, trading costs would also depend on the exchange rate regime in place such that more stable exchange rate regimes are expected to reduce these costs, and affect bilateral trade.

We therefore augment the conventional gravity model with measures of fixed exchange rate regimes, specifically, CUs and pegs, and estimate the benchmark specification of the following form:

$$\log(X_{ijt}) = \beta_0 + \sum_{k=1}^{N} \beta_k Z_{ijt} + \gamma CU_{ijt} + \delta DirPeg_{ijt} + \lambda_t + v_{ij} + u_{ijt}, \quad (1)$$

Table 1. *Share of Africa's intra-regional trade, 1970–2010 (in percent)*

	1970–79	1980–89	1990–99	2000–10
SSA: exports to SSA countries[a]	7.06	7.37	10.63	11.83
SSA: trade with SSA countries[b]	7.37	8.37	12.46	12.15
CFA: exports to CFA member countries[a]	6.94	7.13	6.82	6.34
CFA: trade with CFA member countries[b]	6.69	7.15	8.06	7.57
CFA: exports to SSA countries[a]	9.72	11.00	12.37	13.07
CFA: trade with SSA countries[b]	9.72	11.56	14.85	15.74

Source: IMF's DOTS database.
[a] Share in total exports to the world.
[b] Share in total trade (exports and imports) with the world.