



The dynamic relation between foreign exchange rates and international portfolio flows: Evidence from Africa's capital markets

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ABSTRACT

We examine the nexus between real foreign exchange rates and international portfolio flows using monthly data for the period 1997:1 to 2009:12 for Egypt, Morocco, Nigeria, and South Africa. We analyze the full sample period and two sub-periods, distinguished by the relative volume and volatility of portfolio flows. We find international portfolio flows, in Africa, to be non-persistent and relatively volatile. Granger causality tests and innovation accounting from vector autoregressions show that the dynamic relationship between portfolio flows and foreign exchange rates is both country-dependent and time-varying; and these findings are robust to alternative VAR specifications.

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1. Introduction

How volatile and/or persistent are portfolio flows? Do fluctuations in real exchange rates contain information that informs the decisions of international portfolio investors? Do international portfolio investment flows have a discernible influence on observed changes in the real exchange rates? This study is the first serious attempt at answering these questions in the African context. In theory, the relationship between balance of payments items and foreign exchange rates can be explained by two major strands of the literature. On the one hand are the traditional macroeconomic models of exchange rates determination categorized as the monetarist approach (Frenkel, 1976), the portfolio balance approach (Dooley & Isard, 1979), or a variety of general equilibrium models (Stockman, 1980). The traditional models focus largely on medium- to long-run foreign exchange rate determination but have not performed very well in empirical tests (Cheung, Chinn, & García Pascual, 2005; de Blas, 2010; Meese & Rogoff, 1983; Yuan, 2011).¹

On the other hand, the many failures of macro-based models to explain exchange rates changes have given rise to the burgeoning strand of literature that springs from market microstructure. The microstructure approach, concerned with the empirical link between order flow in foreign exchange markets and foreign exchange rate changes, focuses on the short-run, and has shown that foreign exchange order flow² indeed predicts exchange rate movements (e.g., Daniélsson, Payne, & Luo, 2002; Evans & Lyons,

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¹ However, evidence that some macroeconomic factors may have some predictive power on exchange rates exists in recent literature. For instance, Qiu, Pinfold, and Rose (2011) demonstrate that purchasing power parity has a predictable and sizable influence on future exchange rates in market-based economies with freely floating exchange rates.

² Order flow, a measure of buying/selling pressure, is the net of buyer-initiated orders and seller-initiated orders.

2002). Further, there is evidence that the order flow is the channel through which macroeconomic information that is publicly and simultaneously released to all market participants (Love & Payne, 2008), and expectations of future macro-variables (Evans & Lyons, 2007), are partially impounded into asset prices and exchange rates.

Given the empirical success of the microstructure approach, there is clear need to better understand the link between balance of payments movements (probably a major cause of order flows in the foreign exchange markets) and exchange rate movements. Indeed, as Hau and Rey (2006) argue, the foreign exchange order flow is itself tied to endogenous portfolio flows which emerge under optimal dynamic investment in an incomplete market setting; thus, the exchange rate dynamics is based largely on the financial market structure rather than traditional macroeconomic determinants. This argument is strengthened by Müller-Plantenberg (2010) who explains that the exchange rate is driven by the demands and supplies of currencies in the foreign exchange market which, in turn, are influenced by the different types of transactions that economic agents undertake such as sales of domestic financial assets.

Empirically, many studies have found a relationship between portfolio flows and exchange rates. Froot, O'Connell, and Seasholes (2001) find a positive contemporaneous covariance between net portfolio inflows and dollar equity and currency returns; they attribute the co-movement to the information content of flows. Siourounis (2004) finds evidence suggesting that a good portion of exchange rate movements for Germany, Switzerland, the UK and USA can be explained by net cross-border equity flows. Brooks, Edison, Kumar, and Sløk (2004) find that inflows into the US equity markets and direct investment flows finance the current account deficit and allow the dollar to remain strong; conversely, large and initially unanticipated outflows from the euro area appear to account for a substantial part of the dollar's fall and persistent weakness. More recently, Heimonen (2009) presents results indicating that an increase in the euro area equity returns with respect to USA equity returns causes an equity capital outflow from the euro area to the USA; and that this equity flow generates an order flow in the foreign exchange markets, which leads to an appreciation of the US dollar.³

Emerging market economies have also attracted some studies. The influential work of Edwards (1998), conducted with quarterly data of Latin American countries, shows that in seven out of the eight countries studied, it is not possible to reject the hypothesis that capital flows influence real exchange rates; and, in three of the eight countries, it is not possible to reject the two-way causality hypothesis. Strikingly, the data shows no evidence that the real exchange rate causes capital inflows. Kim and Singal (2000), with data from twenty emerging market economies over 1976–1996, find that foreign investment flows exert a calming influence on foreign exchange rate volatility; the resulting lower currency risk in turn, encourages foreign investors to invest more at a lower required rate of return. Jongwanich (2010) finds that both portfolio investment and other financial assets investment (including bank loans) elicit a faster speed of real exchange rate appreciation than foreign direct investment inflows.

In the African region, where developments in international capital flows have not received much research attention, the literature is thin. Ndung'u and Ngugi (1999) find that a unit shock in the volatility of Kenya's capital flows leads to an initial decline in the real exchange rate followed by a continuous rise, with no signs of the effects dying out: however, volatility in capital flows only accounts for a small percentage of the innovations from the real exchange rate, implying that there is weak feedback from the real exchange rate movements to the volatility in capital flows. Buffie, Adam, O'Connell, and Pattillo (2004) observe that incipient capital inflow to Africa places acute short-run pressure on the foreign exchange market, dramatically undermining the case for a floating exchange rate. Early studies, conducted on the back of the liberalization campaign by the Bretton Woods institutions, focused largely on official development assistance (e.g., Kasekende, Kitabire, & Martin, 1996). Other studies have investigated aggregate private capital flows of Africa (Buffie et al., 2004; Ndikumana, 2003) but have not decomposed them into foreign direct investments (FDI) and portfolio flows. These omissions, commonly ascribed to data difficulty, have meant that policy measures cannot be prescribed that touch specifically on the various components of the financial account. Therefore, in order to aid the formulation of directed policy, it is important to understand the linkages between real exchange rates and portfolio flows in Africa.⁴

Portfolio flows are chosen for this analysis for two reasons. First, portfolio flows, by their nature, are more temporary and more volatile than foreign direct investment and "other investment flows" (see e.g., Kodongo & Ojah, 2011) and are therefore likely to pose a greater challenge to monetary policy if they inform changes in real exchange rates. Second, the literature has concentrated on the relationship between real exchange rates and capital flows in general (in the aggregate), leaving a knowledge gap on the role of portfolio flows, in isolation, on real exchange rates changes, and vice versa. Because they are relatively less explored, Africa's capital and foreign exchange markets provide a fitting laboratory for examining these possible important linkages.

The rest of this paper is structured as follows. Section 2 presents the data and examines their basic characteristics. Section 3 presents and discusses results of our baseline tests and robustness checks. Section 4 concludes.

2. Data and preliminary analysis

2.1. Data

In this study, we investigate the relationship between real exchange rates and net portfolio inflows for the African region, represented by Egypt and Morocco (Northern Africa) and Nigeria and South Africa (Sub-Saharan Africa). Observations are sampled at

³ Sturges (2000) also observes that a correlation exists between bond returns and foreign currency returns.

⁴ Using a panel specification of annual data, Kodongo and Ojah (2011) report some causality from real exchange rates to cross-border flows of African countries, with stronger effects documented between exchange rates and trade balance and direct investment flow, respectively, than between exchange rates and portfolio investment flow.

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