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## Real exchange rates, trade balance and capital flows in Africa

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### ABSTRACT

We analyze the intertemporal causal relationships between the real exchange rate and trade balance and cross-border capital flows in Africa. We use annual data of nine major African countries for the period 1993–2009. Through panel VAR techniques, we document some causality from real exchange rates to cross-border flows of African countries. Results however differ amongst the three kinds of flows examined and are not uniform across different country clusters. Our findings lend support to the classical balance of trade theoretical view in which the net effect of a depreciation of the domestic currency is an improvement in the domestic country's balance of payments position in the short-run.

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## 1. Introduction

Africa's capital and foreign exchange markets have witnessed a remarkable metamorphosis since the late 1980s, when multilateral lending agencies, led by the International Monetary Fund (IMF) spearheaded the drive for reforms on a number of economic fronts. The reform measures pushed by IMF included liberalization of the foreign exchange markets and the capital account and relaxation of import and export restrictions. Thus, in most countries in Africa today, governments have instituted policies that freed up their markets to imports, allowed foreign investors varied degrees of access to their capital markets and adopted some form or another of the flexible foreign exchange regime. When

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exchange rates are not fixed, they respond to cross-border trade and investment activities. Similarly, since changes in foreign exchange rates influence perceptions about risk of foreign investments, it is reasonable to expect trade and capital flows of a country to be affected by changes in the value of the country's currency.

Theoretically, the relationship between international trade and capital flows on the one hand and foreign exchange rates, on the other, can be explained by a dichotomy of proposals loosely characterized as either the balance-of-payments approach or the portfolio balance approach. The balance of payments approach, which rests on the *flow* concept, postulates that financial markets are equilibrated only “in the margin” so that the exchange rate is determined to equilibrate the flow supply of (demand for) foreign exchange from a current account surplus (deficit) with the net desired additions (subtractions) of foreign assets by holders of financial assets (Kouri, 1976). Under this approach therefore, the demand for foreign exchange is determined by the amount which domestic residents spend on imports and the supply of foreign exchange is determined by the amount which foreign residents spend on domestic exports, both measured as a flow of foreign money (Mussa, 1976).

Thus, a depreciation of the domestic currency increases the price of imports and foreign capital assets in terms of domestic money and reduces the price of exports and local capital assets in terms of foreign money; the net effect of this is an improvement in the domestic country's balance of payments position in the short-run. This analysis may be extended to incorporate the J-curve effect, whereby the inelasticity of demand in the short run results in the failure of the Marshall–Lerner condition<sup>1</sup> in the period immediately following a change in the exchange rate (Bilson, 1979). The J-curve effect postulates that a country's balance of payments deficit may worsen just after its currency depreciates because the effects on volume of imports are, in the short-run, dominated by the price effects; eventually, as the changes in nominal exchange rates are translated into real exchange rate changes, the price effects are overcome and a gradual upturn is witnessed in the balance of payments position.

Classical economists also believe that foreign exchange rate changes drive private investment flows. According to da Costa (1966), there are at least two reasons to believe that devaluation of the domestic currency would affect the inflow of international private investments. First, it eliminates the impending threat of a change in the exchange rate when a currency is obviously overvalued. Secondly, devaluation, insofar as it improves the foreign exchange position, makes possible a more liberal trade and foreign exchange policy and encourages foreign investments because it makes amortization and profit remittances relatively freer. These views point to a unidirectional causality in which foreign exchange rate changes drive the flow of cross-border trade and capital flows with a positive correlation.

Another school of thought in the causality debate springs from the portfolio balance model espoused by monetary economists. The essence of the portfolio balance approach is that the exchange rate, as a relative price of monies, is viewed as one of the prices that equilibrate the international markets for various financial assets (Kouri, 1976). As Frenkel (1976) points out, when considering monies for the purpose of determining the exchange rate, the relevant concept is that of a *stock* rather than of a *flow*. Therefore, the theory is stated conveniently in terms of the supply of and the demand for these moneys: the critical equilibrium condition is the requirement that the demand for the stock of each national money must equal the stock of that money available to be held; flows of funds occur in order to correct existing monetary disequilibria or to prevent new disequilibria from emerging (Mussa, 1976).

The portfolio balance model allows one to distinguish between short-run equilibrium and the dynamic adjustment to long-run equilibrium (MacDonald & Taylor, 1992): in the short run, the scope for goods arbitrage may be limited, and accordingly, purchasing power parity may only obtain for a limited set of commodities (Dornbusch, 1976). Under these conditions, it is useful to abstract altogether from the detail of goods markets and rather view exchange rates as being determined solely by the interaction of supply and demand in the assets markets at a point in time (in the short-run); however, the current account through its effect on net asset positions, and therefore on assets markets,

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<sup>1</sup> The Marshall–Lerner condition postulates that if the sum of import and export demand elasticities add up to more than one, then devaluation should improve the trade balance in the long-run.

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