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Exchange rate fluctuations and international portfolio rebalancing ☆



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ABSTRACT

We present empirical evidence for several hypotheses of how exchange rates are affected by investors' cross-border equity portfolio rebalancing decisions. Our results are based on comprehensive, daily-frequency datasets of foreign exchange market transactions and equity market capital flows undertaken by nonresident investors in Thailand in 2005 and 2006. We find that net purchases of Thai equities by nonresident investors systematically lead to an appreciation of the Thai baht. Furthermore, higher returns on Thai equities relative to those on a reference market are associated with subsequent sales of Thai equities by foreign investors as well as a depreciation of the Thai baht, although the latter effect is not statistically significant.

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1. Introduction

Understanding how international capital flows help determine exchange rates has been a long-standing objective of international finance research. The significant growth of international capital flows over the past few decades has also contributed to a broad-based interest in this topic. Researchers, investors, and policy makers alike are interested in understanding the forces that drive flows in foreign exchange markets and, more generally, the relationships between external capital flows and developments in the domestic financial system. These relationships affect the stability of the financial system as well as broader economic developments and conditions.

In this paper we examine the influence of equity market related capital flows on exchange rates, using data for Thailand, a large and important emerging market economy. We make use of a novel and so far unused dataset which spans two years' worth of comprehensive daily-frequency FX market transactions between licensed FX dealers in Thailand and their nonresident customers. In addition, we also use data on transactions by nonresident investors in the Thai stock market. The datasets were compiled by the Bank of Thailand (BOT) and the Stock Exchange of Thailand (SET) and cover the years 2005 to 2006. While our results are based on data for a specific country, we view our results as shedding light on portfolio balance effects in all economies that possess reasonably well developed financial markets and not just for Thailand.

With incomplete markets for hedging of FX risk, assets denominated in various currencies must differ in at least this aspect of risk. Optimizing investors will split their portfolios of stocks, bonds, and other financial assets between assets denominated in domestic currency and various foreign currencies, in proportions that depend on expected rates of return, risks, and expected risk premia. If expected rates of return or any other component of the portfolio choice problem change, international capital flows should occur as investors rebalance their asset holdings across countries. The approach taken in the studies that formalized this notion is commonly called the portfolio balance approach.²

Portfolio balance models examine how capital flows help explain both the sign and the magnitude of exchange rate fluctuations. Unfortunately, early attempts to verify empirically the implications of these models were generally unsuccessful; see Frankel (1983) for a survey. The lack of empirical evidence in favor of the portfolio balance hypothesis reflected several different factors. First, many of the early studies relied on fairly low-frequency data, such as monthly and quarterly data. Because capital flows can fluctuate considerably from day to day, the use of low-frequency data tends to reduce the signal-to-noise in the capital flow series and thus makes it less likely that one can detect any links between capital flows and exchange rates. Second, the early portfolio balance models focused mainly on riskless assets, such as bonds. This focus owed at least in part to the fact that solution methods for general equilibrium models in which asset prices can fluctuate unpredictably had not yet been developed. Third, the analysis was mainly concerned with the effects of changes in the *supply* of financial assets; in contrast, little was done to model explicitly the demand side of asset markets. Moreover, the asset demand functions used in the early portfolio balance literature were not based explicitly on microfoundations. Finally, portfolio balance models - as well as the more or less contemporaneous "monetary" models of exchange rate determination - performed poorly out of sample, and their ability to forecast exchange rates was no better, and often worse, than that of the random walk model (see Cheung et al., 2005; Meese and Rogoff, 1983).

In recent years, however, general equilibrium portfolio balance models have been developed which should be immune to the first three critiques. This has led to a renewed interest in the empirical relevance of this class of models. The remainder of this paper is structured as follows. The following section presents the main empirical portfolio rebalancing hypotheses. The next section provides an overview of the foreign exchange and equity markets in Thailand and describes the datasets. Section 4 presents the empirical findings related to our hypotheses. Section 5 concludes.

¹ The data for the Thai stock market have also been used by Chai-Anant and Ho (2008). Phongpaichit and Baker (2008) provide a general overview of developments in the capital markets in Thailand since 1997.

² See Kouri (1976), Branson (1977), Frankel (1983), Branson and Henderson (1985), and Lewis (2006).

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