

## **BALANCE SHEET EFFECTS, EXTERNAL VOLATILITY, AND EMERGING MARKET SPREADS**

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This paper studies the determinants of emerging market spreads, and thus of the cost of borrowing for emerging market sovereigns, using recent data from JP Morgan's EMBI+ index for a panel of 19 countries. Controlling for traditional spread determinants, we focus on three additional factors whose importance is suggested by recent work: external shocks, the balance sheet effect of real devaluations, and the degree of current account leverage. We find clear and strong evidence that the variables in the foregoing categories have an economically and statistically significant relationship with spreads. In particular, we find a major role for the terms-of-trade volatility and the level of current account leverage in explaining spread variation. The result on current account leverage establishes an important link between a factor shown to make countries more vulnerable to sudden stops of capital flows, and the premium required by international investors on their foreign debt.

*JEL classification codes:* C33, F34

*Key words:* balance sheet effects, emerging market debt, external volatility, country risk premium

### **I. Introduction**

The study of emerging market spreads, defined as the difference between the yield on emerging market bonds and the yield on US Treasury bonds with the same or similar maturity, extends back to Edwards (1984, 1986). Spreads on debt reflect several factors. In addition to a premium for the probability of default on the

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underlying bond and the recovery rate that investors assume they will receive in the event of default, spreads may include an additional premium related to the liquidity of the underlying bonds, the prevalent degrees of liquidity and risk-aversion in the market, and even tax privileges realized by the investor.<sup>1</sup> In this study, we focus on highly liquid, dollar denominated debt instruments of emerging market sovereigns that are traded in international markets and included in JP Morgan's EMBI+ index.

Panel data studies of emerging market spreads that focus on "classic" determinants of sovereign risk include: Rowland and Torres (2004), Ades et al. (2000), Eichengreen and Mody (1998), Min (1998), and Cantor and Packer (1996). A good survey can be found in Sobrinho (2004). The "traditional" candidates for the determinants of sovereign spreads, which have found to be significant statistically and/or economically in at least one of these studies, include: the economic growth rate, the debt-to-GDP ratio, the reserves-to-GDP ratio, the debt-to-exports ratio, the exports-to-GDP ratio, the ratio of debt service-to-GDP, the fiscal balance, international interest rates, the default history of the country, net foreign assets, and the domestic inflation rate. We try most of these candidates as control variables in the present study.

Despite the contributions of the above literature to understanding the determinants of emerging market spreads, however, an understanding of the importance of balance sheet effects in the presence of sudden stops of capital inflows, and macroeconomic volatility, in provoking financial and debt crises is much more recent. Important papers on the latter topics, respectively, include Calvo, Izquierdo, and Talvi (2003), Calvo, Izquierdo, and Mejia (2004), and Catão and Kapur (2006).

The primary contribution of the present paper is to demonstrate that both balance sheet effects and terms-of-trade volatility have economically and statistically significant effects on the spreads of emerging market sovereigns, after controlling for a variety of other factors that have been shown to affect spreads. In particular, we establish a robust link between the degree of current account leverage, a key variable in determining the impact of sudden stops of capital inflows, and emerging market spreads. We define the degree of current account leverage, following closely

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<sup>1</sup> See, e.g., Huang and Huang (2003) for evidence that structural credit risk models for corporates calibrated to reproduce observed default frequencies tend to systematically underpredict spreads, and Pan and Singleton (2008) for a recent discussion of global liquidity and risk factors as determinants for sovereign CDS spreads. Although we do not include measures of international liquidity or risk aversion directly in our regressions, we do control throughout for fixed year effects, and this should capture any direct effects on spreads from time variation in the preceding factors.

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