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Global monetary conditions versus country-specific factors in the determination of emerging market debt spreads☆

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A B S T R A C T

US interest rate policy is shown to have a significant influence on emerging market bond spreads, but it is important to allow for non-linearities: US interest rates affect secondary market spreads differently, depending on countries' debt levels. Moderate debtors suffer little impact from an increase in US interest rates, while a country close to the borderline of solvency would face a much steeper increase in its spread. A 200 basis points increase in US short-term interest rates would increase emerging market spreads by 6–65 bps, depending on debt/GNI ratios.

1. Introduction

How interest rate policies in major industrial countries affect the pricing of emerging market debt remains an unresolved issue. Despite its very important policy and practical implications, our understanding of this link is shaped more by episodic evidence—in 1991, 1994, and 2003, sharp swings in emerging market spreads coincided with a cyclical shift in the stance of US monetary policy—than by rigorous research and robust empirical findings. One point of view, popularized by the financial press, emphasizes the role of investors' risk tolerance or risk appetite, even though such factors are likely driven by a host of global macroeconomic conditions and uncertainties, including potentially the pace of changes in US interest rates, and are more directly relevant to the equity market than fixed income

☆ The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the views of the World Bank, its Executive Directors, or the countries they represent.

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bond markets. And, while a considerable literature exists on the determinants of emerging market debt spreads over US treasury securities, that literature is disappointingly inconclusive concerning the effects of the global interest rate environment. For instance, Arora and Cerisola (2000), Min et al. (2003) and Ferrucci et al. (2004) find that the level of US interest rates plays a considerable role in the determination of EM bond spreads—spreads widen as US rates go up—but Kamin and von Kleist (1999) argue that there is little explanatory power of industrial country short-term interest rates, once one controls for credit quality. Eichengreen and Mody (2000), in contrast with all of the above, find that syndicated bank loans to EM countries tend to respond positively to increases in US interest rates, and the spread on those loans responds *negatively*—though this surprising result is very sensitive to regional differences. Furthermore, studies focusing on the US corporate bond market have also found a negative relationship between credit spreads and US Treasury yields (Longstaff and Schwartz, 1995; Duffee, 1996, 1998; Colin-Dufresne et al., 2001),[1] as predicted by structural models of credit risk following Merton (1974).

Existing studies of the link between US interest rates and EM bond market spreads have several weaknesses. A major shortcoming of the existing literature is the lack of attention paid to the non-linearity in the relationship between US interest rates and EM spreads. Indeed, the spread incorporates a default probability in a non-linear way, and the effect of higher world interest rates itself affects the default probability non-linearly. For instance, at low rates of interest and in periods of favorable economic activity and low debt in developing countries, a rise in US interest rates may have little effect on investors' estimates of the probability of repaying—and indeed, on the objective likelihood of that repayment. In contrast, when the EM borrower is at the borderline of its ability to repay, a given increase in US rates may push the borrower over the edge, sharply increasing the probability of default. Such a scenario may have occurred, for instance, in 1982 and 1994, when Mexico in particular had a large amount of short-term debt which it had difficulty servicing in the face of rising US interest rates.

A further aspect of that non-linearity is that sharp shifts of expectations of default probabilities may be self-fulfilling, and correspond to jumps between multiple equilibria. Indeed, those expectations can be rational because higher interest rates will increase the likelihood that countries cannot meet their debt service obligations. While models with sunspot equilibria are sometimes criticized as just adding an extra indeterminacy because what triggers the jumps between equilibria is not explained, in international capital markets, that role may be assumed by global liquidity conditions and the "appetite for risk." When estimating the parameters of the model, we divide the sample into crisis and non-crisis periods. We also include proxies for international liquidity and for contagion in financial markets. Indeed, given that there are investors in EM bonds that are common across countries, it is natural to expect that a crisis in one country should be associated with higher spreads in other markets, if they both are the result of a changed attitude to risk or liquidity.

Another improvement relative to the current literature is our use of more recent data (until June, 2004)—and longer time series; this may help to distinguish between hypotheses. In particular, we use monthly data for individual country Emerging Market Bond Index Plus ($EMBI^+$) spreads, available from JP Morgan, which is a major dealer in emerging bond markets, and extending back for some countries to 1991. The bonds are issued in US dollars, so that spreads reflect credit risk—the probability that the borrower will not repay. The set of countries includes all the major sovereign borrowers, and the data are based on trading in secondary markets of Brady bonds and Eurodollar issues. Our sample includes the following 17 countries: Argentina, Brazil, Bulgaria, Colombia, Ecuador, Mexico, Morocco, Nigeria, Panama, Peru, the Philippines, Poland, Russia, South Africa, Turkey, Ukraine, and Venezuela. We estimate an unbalanced panel, with data availability varying from country to country. While the data on spreads are based on secondary market data, they provide many more data points and allow a finer appreciation of the effects of interest rate increases than primary market data. Moreover, with transaction volumes in secondary markets surpassing those in primary markets by several fold, spreads

[1] Also studies by Leake (2003) and Boss and Scheicher (2002) focusing, respectively, on the UK and Euro-corporate bond markets, find a small negative relationship between credit spreads on sterling investment-grade corporate bonds and the level and slope of the term structure of UK interest rates.