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The credit spread dynamics of Latin American euro issues in international bond markets

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ABSTRACT

This paper investigates two important relationships using the sovereign issues made by major Latin American economies in the international bond market: the determinants of credit spread changes using variables derived from structural and macroeconomic theory and the impact of a default episode on the underlying equilibrium dynamics. We find four significant determinants of credit spread changes: an asset and interest rate factor—consistent with structural models of credit spread pricing; the exchange rate—consistent with macroeconomic determinants and the slope of the yield curve—consistent with a business cycle effect. Also, an intra-regional analysis of sovereign yields reveals a shift in the long-run equilibrium dynamics around the Argentine default on the 23 December 2001.

1. Introduction

In the lead up to the financial crisis in 2007–2008 associated with subprime debt there was a persistent tightening of emerging market credit spreads, which at the time raised considerable concerns among different parties including multilateral financial institutions, investors, practitioners, central bankers, as well as academics. In the past, such credit spread tightening has often signaled the onset of economic and financial crises[1] induced by the formation of pricing bubbles, or the decoupling of

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[1] Credit spreads continued to tighten leading up to the Asian financial crisis.

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economic and financial fundamentals from the asset pricing process. Emerging economies in general and the highly indebted Latin American economies in particular have indeed witnessed a number of credit events which inevitably led to such crises of these economies in the recent past.[2] While different arguments for this persistent tightening of credit spreads have been provided, we do not yet know the precise economic reasons for this behaviour.[3]

It is the objective of this paper to provide further insights into these important issues by modelling the credit spreads and yields of issues by key Latin American sovereign issuers (Brazil, Chile, Colombia, Mexico and Venezuela). US$ denominated bonds issued by these sovereigns in Eurobond markets represent nearly one-half of the entire US$ outstandings. The sample period covers daily yields from 25 February 2000 to 13 January 2006 and comprises 1483 observations for 18 bonds. Sovereign issues also benefit from being the most liquid and actively traded of this class of securities.

Investigating the determinants of emerging market credit spreads and understanding the complex equilibrium dynamics that exist in these markets also allow an understanding of the more general mechanisms underpinning the behaviour of credit spreads. Despite several attempts by researchers to identify the determinants of change in credit spreads, much uncertainty remains (Turnbull, 2005). In addition, much of the existing empirical literature investigating the determinants of credit spreads is limited to bond issues by corporations based in mature financial markets.

Although credit spreads incorporate the likelihood of default in relation to a riskless bond, the causes and consequences of default in sovereign settings differs from that of corporate settings.[4] Structural models of pricing credit-sensitive instruments in a corporate setting predict asset and interest rate factors are the key determinants of credit spreads (measured by the interest rate difference over a risk-free benchmark, typically a US$ government bond). While there is a general consensus in mature financial markets that these two factors are the main drivers of corporate credit spreads (Collin-Dufresene et al., 2001), the generality of this proposition to emerging markets is limited given the institutional differences. Of particular importance for this study is the critical issue that the applications of structural models, which capture the dynamics of the firm in a risk-neutral setting, have not been adequately applied to sovereign settings. Duffie et al. (2003) argue that the decision by a sovereign issuer to default on its debts is driven largely by political factors, which inevitably have economic and political ramifications, including a loss of reputation.

Essentially, institutional arrangements governing bankruptcy laws provide the necessary framework to deal with issues arising from the default of a private economic agent. This allows corporate bond holders recourse to a national bankruptcy code in the event of a default by the issuer. However, there are no such clear-cut procedures governing defaults in sovereign settings. Thus, understanding the forces that drive the credit spreads of these instruments and the dynamic relationships that exist between them remains a critical task in the pricing process.

When it comes to pricing risky bonds, it is industry practice to attach a yield spread (credit spread) over a risk-free benchmark to reflect the markets' assessment of an issuer's credit worthiness and the associated default risk of a given fixed income instrument (De Almeida et al., 1998). Structural models of default,[5] such as the model proposed by Longstaff and Schwartz (1995), provide a simple

[2] For example the 1994 Mexican crisis, 1997 Asian Financial Crisis, 1998 Russian default and 2001 Argentine default are some of the notable crises that occurred in the region.

[3] For example, Kamin and Kleist (1999) argue that the decline in emerging market credit spreads is not well supported by the improvement in emerging market fundamentals. In the recent past, strong risk adjusted returns from emerging market sovereign issues have attracted many institutional investors to actively engage in portfolio asset allocation. Low mature market interest rates and favourable global liquidity conditions have also been attributed to the declining trend in emerging market spreads (IMF, 2006). It is therefore not surprising that in this climate, gross issuance of bonds and notes in the international market by emerging market countries increased by 37% in the third quarter of 2005 compared with the previous year and sovereign issues were the biggest issues in most of these emerging markets (BIS, September 2005).

[4] The nature of sovereign default and the consequences arising from such default have been highlighted in empirical and theoretical literature—Eaton and Gersovitz (1981), and Bulow and Rogoff (1989).

[5] Merton (1974) formalised this theoretical base and developed a model for pricing risky debt by introducing a risk structure of interest rates. Although this framework was widely used by subsequent researchers (Geske, 1977; Ingersoll, 1977) a major problem is that default is assumed to occur only when the firm exhausts its entire assets whereas firms usually default long before assets are exhausted. Black and Cox (1976) extended the previous work of Merton (1974) by explicitly modelling the