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Contagion in international bond markets during the Russian and the LTCM crises

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Abstract

The Russian bond default in August 1998 and the long-term capital management (LTCM) recapitalization announcement in the following month represent an unusual period of volatility in international bond markets with bond spreads increasing dramatically across the globe. Using a latent factor model and a new data set spanning bond markets across Asia, Europe and the Americas, we quantify the contribution of contagion to the spread of these two crises. The maximum amount of contagion experienced by any of the countries investigated is about 17% of total volatility in bond spreads, with the main effects due to the Russian crisis. The results also show that both emerging and developed markets experienced contagion during the period.
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1. Introduction

International financial markets have experienced several episodes of financial crisis since the mid-1990s. A major concern of financial market participants, central banks and governments

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during these periods is that a crisis in one country can spread to other markets to create extreme volatility elsewhere in the world. This is the case for the period corresponding to the Russian bond default in August of 1998, followed by the announcement of a recapitalization package for the hedge fund Long Term Capital Management (LTCM) in September, where bond markets in emerging and industrial countries exhibited widespread volatility. The Bank of International Settlements survey of market participants characterised this period as “the worst crisis” in recent times (Bank for International Settlements, Committee of the Global Financial System 1999: p. 40). A special feature of this crisis was that the duration was extremely short, possibly as a result of the aggressive easing of monetary policy by the U.S. Federal Reserve in the period following the recapitalization announcement.

This paper identifies the transmission mechanisms of shocks from both the Russian bond default and the LTCM recapitalization announcement to bond markets in emerging and industrial countries. Most analyses of recent financial crises tend to focus on either currency, banking or equity markets. In contrast, there is little empirical literature on the spread of crises through international bond markets. This is partly because a consistent and comprehensive historical time series database on bonds for many emerging economies is difficult to obtain. It is also partly the result of bond markets being relatively more stable during other financial crises such as the 1997–1998 Asian crisis, where it was equity and currency markets that exhibited relatively greater volatility; see for example Forbes and Rigobon (2002), Bae et al. (2003) and Granger et al. (2000).

The empirical analysis is conducted on a panel of daily bond spreads for a broad range of emerging and industrial countries over 1998. The spreads of the emerging economies are the long-term sovereign bonds issued in international markets relative to a comparable risk-free benchmark, whilst the spreads of the industrial countries are the long-term corporate bonds issued in the domestic economy relative to a comparable risk-free benchmark. One advantage of working with bond spreads is that they reflect the risk premium that investors assign to prospective borrowers. These risks include the perceived creditworthiness of borrowers, the willingness of lenders to take on risk, and the liquidity in the market, all of which are entangled during crisis episodes.[1]

The identification of the transmission mechanisms linking international bond markets is based on specifying a latent factor model of bond spreads. Four types of factors are considered. The first three types of factors include a common factor which impacts upon all bond markets, a set of regional factors, which are common to countries within a geographical area, and country-specific factors which are idiosyncratic to a specific bond market. The fourth type of factor investigated represents the effects of contemporaneous movements across markets having conditioned on the common, regional and idiosyncratic factors. This transmission channel is referred to as contagion as it represents an additional linkage during crisis periods in excess of movements in bond spreads that arise during non-crisis periods; see for example, Sachs et al. (1996), Masson (1999a, 1999b, 1999c), Dornbusch et al. (2000) and Pericoli and Sbracia (2003). An important feature of this modelling strategy is that it is possible to decompose the observed volatility in bond spreads into various components

[1] This interpretation is consistent with the widening of the liquidity premium on otherwise similar assets (e.g. on-the-run 30-year versus off-the-run 29-year U.S. Treasury bonds) following the LTCM recapitalization announcement. The credit risk view of the Russian shock is also consistent with a cash-out of liquid markets with increased credit risks as investors' rebalanced their portfolios.

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