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Credit default swaps and sovereign debt markets

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ABSTRACT

This study investigates the link between the price discovery dynamics in sovereign credit default swaps (CDS) and bond markets and the degree of financial integration of emerging markets. Using CDS and sovereign bond spreads, the price discovery mechanism was tested using a vector error correction model. Financial integration is measured using news-based methods. We find that sovereign CDS and bond markets are co-integrated. In five out of seven sovereigns (71%), the bond market leads in price discovery by adjusting to new information regarding credit risk before CDS. In 29% of times, CDS markets are the source of price discovery. We also find a positive correlation of 0.67 between the degree of financial integration and the bond market information share. The evidence suggests that changes in sovereign credit risk and bond yields are significantly influenced by common external (global) factors, while country-specific factors play an insignificant role.

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1. Introduction

A credit default swap (CDS) is a contract that provides insurance against a default by a particular company or sovereign entity. The borrower company is known as the reference entity and a default by the company is known as a credit event. The buyer (usually the bondholder) of the insurance (CDS) makes periodic payments (premium) to the insurance seller and in return obtains the right to sell a

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bond issued by the reference entity for its face value if a credit event occurs (Hull et al., 2004). The rate of payments made per year by the buyer is known as the CDS spread. The credit default swap market has grown rapidly since the International Swaps and Derivatives Association (ISDA) produced its first version of a standardized contract in 1998. According to ISDA, the global notional outstanding volume of credit derivatives transactions¹ was \$26.3 trillion at mid-year 2010, up from \$631.5 billion in 2001.

The academic literature by Duffie (1999) and Hull and White (2000) suggests that in the absence of market friction the arbitrage forces CDS spreads to be approximately equal to the underlying bond spreads, BS (sovereign bond yield less risk-free rate), since the CDS spread is equal to the risk premium paid to make the bond riskless. Therefore, the CDS and bond spreads are positively correlated². Both spreads should provide efficient allocation and pricing of credit risk. A lot of studies have focused on the price discovery role of sovereign CDS and BS, but with mixed results (see, for example, Blanco et al., 2005; Ammer and Cai, 2007; Chan-Lau and Kim, 2004, among others). None of these studies attempted to link price discovery in pricing credit risk to financial integration. The global integration of the credit risk market should yield more efficient pricing of credit risk due to more information flowing across the globe.

In this study, we attempt to investigate two main questions: First, which market (sovereign CDS or BS) leads in price discovery? This issue remains unresolved given the mixed evidence from various studies. We investigate this issue after accounting for potential structural breaks caused by the 2007/2008 financial crisis. Second, in making investment decisions, sovereign bondholders would be interested in assessing not only the price discovery role of CDS and BS but also how well integrated the price discovery “leader” is with the global financial markets. So, what is the link between price discovery and financial integration? Galindo et al. (2010) argue that while financial integration is a channel through which adverse financial shocks lead to credit contractions and increases in interest rates, it also helps credit markets to deepen and the cost of finance to decline in the absence of adverse external financial shocks.

The answer to how the bond market is integrated with the global financial markets remains elusive. For example, while Adam et al. (2002), Adjouté and Danthine (2004), Codogno et al. (2003), Kim et al. (2005), Baele et al. (2004) and Barr and Priestley (2004) conclude that the world bond market is not integrated, Codogno et al. (2003), Powell and Martinez (2008) and Longstaff et al. (2007) find that movements in the yields on government bonds are driven primarily by changes in international risk (common external) factors, implying integration. This brings to the fore the question as to whether emerging economies should pursue financial integration in the hope that exposure to and competition from global markets and institutions will strengthen the domestic financial markets and institutions.

In light of the above arguments, it is unclear whether financial integration increases market efficiency in the pricing and allocation of risk or the relationship between the efficient pricing of credit risk and financial integration. The primary aim and contribution of this study is to link credit risk pricing efficiency to the degree of global financial integration of emerging markets. We also assess whether the pricing of credit risk is influenced by global or domestic factors. These findings can assist investors and portfolio managers in evaluating which information (global or domestic) they should pay more attention to in the pricing of credit risk.

Briefly, our results are as follows. In all seven sovereigns, CDS and BS are co-integrated; hence, a long-run equilibrium relationship exists between CDS and bond markets. In the short run, the BS consistently lead the CDS in price discovery by stronger Granger-causing of the CDS. These results are robust to the number of lags and are largely consistent with long-run dynamics, where in five (Argentina, Colombia, Turkey, South Africa and Brazil) out of seven sovereigns (71% of times) the sovereign bond market leads CDS in price discovery by adjusting to new information regarding credit risk before the bond markets. For the Philippines and Mexico, the CDS markets are sources of price discovery. We also find a strong positive correlation of 0.67 between the degree of financial integration and bond market information share. The evidence suggests that changes in sovereign credit risk and

¹ For an extensive survey of emerging derivatives markets, please refer to Lien and Zhang (2008).

² Akdoğan and Ghadwick (2013) explore why the risk premium captured by the credit default swap (CDS) and bond spreads reveals a significant difference between the two spreads although they should theoretically be equal.

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