

SUB THEME 11

Political Economy and Sustainable Transformative Approaches

The Role of Sovereign Credit Risk in Domestic Stock and Bond Market Co-Movements

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Introduction

Stocks and bonds are the two prominent financial instruments, whose correlation plays a crucial role in investors' asset allocation decisions. The inclusion of assets in a portfolio often depends on the correlation between the selected assets, making this relationship important for portfolio optimization, risk management, and hedging strategies (Dimic *et al.*, 2016). Furthermore, policymakers increasingly rely on information about the joint behavior of stocks and bonds when determining policy actions to regulate and maintain the stability of a country's financial system and economy. Therefore, significant efforts have been made over the past decade to understand the nature of the fundamental relationship between these two assets and the factors driving it. Despite these efforts, a complete understanding of the field has not yet been attained.

The previous literature documents that the stock and bond co-movement is influenced by various macro-finance and economic variables (Viceira, 2012; Asgharian, Christiansen and Hou, 2015, 2016, 2023; Costantini and Sousa, 2022) and global factors (Dimic *et al.*, 2016). However, this relationship has not yet been extended in the literature to consider the effects of sovereign credit risk on it.

Sovereign credit risk means the possibility of the government defaulting on its debt. The relationship between sovereign credit risk and stock and bond market co-movement may not seem immediately relevant to the stock and bond market co-movement since sovereign credit risk mainly affects the government bond market. Although sovereign credit risk primarily affects the government bond market, its impact on the stock market cannot be ignored. As Chen, Roll and Ross (1986) state, "any systematic variables that affect the economy's pricing operator or that influence

dividends would also influence stock market returns”. Therefore, news about a country's present and future credit quality will impact the risk premiums of the companies operating in the country, affecting stock prices. The sovereign credit risk problem, thus, becomes a generalized market risk, leading the private sector to absorb the sovereign credit risk in what might be termed a public-to-private risk transfer (Corzo, Gomez-Biscarri and Lazcano, 2012). This is evident from, numerous instances, such as the 2008 global financial crisis, the European sovereign debt crisis, and the economic repercussions of the COVID-19 pandemic, which have highlighted the interconnectedness between sovereign credit risk and financial market co-movement.

This warrants the need to establish the relationship between sovereign credit risk and stock and bond market co-movement to understand the strength of the impact of sovereign credit risk on stock and bond market co-movement.

Data and Methods

Our dataset consists of data from 25 countries including a mix of developed and emerging markets. The start dates of the sample period are different across countries, with the earliest being 14/12/2007 and the latest being 22/8/2012. The data cutoff date for all countries is 2/2/2024. We use sovereign CDS spreads - a market-based indicator - as our sovereign credit risk proxy. We utilize the DCC-GARCH model to measure stock and bond market correlations, and the ARDL-bounds testing approach to assess the long- and short-run impact of sovereign credit risk on the stock and bond market co-movement. ARDL approach allows us to observe both permanent and transitory effects of sovereign credit risk on domestic stock and bond market co-movement.

Generalized Form of the Model:

$$DCC_{j,t} = \alpha_1 + \beta_1 SCR_{j,t} + \beta_2 Ln_brd2_{j,t} + \beta_3 Ln_stkr2_{j,t} + \beta_4 VIX_t + \beta_5 US_Tbill_t + u_t$$

$DCC_{j,t}$ refers to the dynamic conditional correlations between the country j 's local stock market and bond market at time t

$SCR_{j,t}$ refers to the sovereign credit risk of country j at time t

$Ln_brd2_{j,t}$ refers to the local bond market volatility of country j at time t

$Ln_stkr2_{j,t}$ refers to the local stock market volatility of country j at time t

VIX_t refers to the international investors' risk aversion at time t

US_Tbill_t refers to the global risk-free rate at time t

Empirical Result and Discussion

We have identified several key findings. First, we find that emerging markets and countries severely affected by financial crises typically experience positive co-movements between their domestic stock and bond markets¹. In contrast, financially stable countries are more likely to experience negative co-movements². This suggests that market stability significantly influences the nature of stock-bond correlations. Second, sovereign credit risk, as measured by sovereign CDS spreads, predominantly causes domestic stock and bond markets in the selected countries to move in tandem³, both in the short and long term. This indicates that sovereign credit risk exerts contagion effects on domestic financial markets, leading to increased correlations between asset classes. However, in a few stable countries⁴, sovereign credit risk triggers negative co-movements between stock and bond markets, providing evidence for the flight-to-quality phenomenon and the decoupling of financial markets. These findings align with the literature on financial contagion and flight-to-quality, where increased sovereign risk either pulls asset classes together or drives them apart depending on the market's perceived safety of sovereign bonds (Baur and Lucey, 2009; Beirne and Fratzscher, 2013).

Third, our results reveal that asset correlations are more strongly linked to sovereign CDS spreads in the long run than in the short run. Nonetheless, a larger number of countries exhibit a significant short-run relationship between stock-bond co-movement and sovereign CDS spreads compared to the long run. This disparity highlights the complex and dynamic nature of the relationship between sovereign credit risk and asset correlations over different time horizons.

¹ South Africa, Hungary, Italy, Spain, Portugal, Greece, China

² Japan, the USA, the UK, Germany, France, Australia

³ Austria, China, Czech Republic, Italy, Spain, Norway, Poland, UK

⁴ Canada, Germany, USA

Fourth, we observe that while some countries display consistency in the short-term and long-term results, others exhibit a divergence between these time frames. This inconsistency suggests that the impact of sovereign credit risk on stock-bond correlations is not uniform across countries and can evolve differently depending on a country's specific economic and financial conditions.

Finally, our findings emphasize that sovereign credit risk is a crucial determinant of both the long-term and short-term relationship between stock and bond markets. The heterogeneous responses of stock and bond markets to sovereign credit risk have significant implications for portfolio management. Specifically, our study reveals that increased sovereign credit risk diminishes diversification benefits in most domestic markets, particularly in emerging markets and those that have already faced financial turbulence. In these countries, both stocks and bonds may be perceived as risky during periods of heightened sovereign credit risk, thus making them less effective as alternative investment options.

For more financially stable countries, however, bond markets may still provide diversification benefits during periods of increased sovereign risk. This finding underscores the importance for investors and portfolio managers to carefully consider alternative investment strategies during periods of elevated sovereign credit risk, rather than relying solely on domestic stock and bond markets. The differential impact of sovereign credit risk on financial markets should guide investors in constructing portfolios that are resilient to the adverse effects of such risks, particularly in volatile economic environments.

Our findings suggest that sovereign credit risk has the potential to destabilize domestic financial markets by increasing the correlation between stock and bond returns, thus to mitigate these risks, policymakers should consider implementing adequate measures to enhance financial stability. Especially, in emerging markets and economies with a history of financial turbulence, there is a need for stronger regulatory oversight and the development of robust financial infrastructures to cushion the effects of sovereign credit risk.

Concluding Remarks

Overall, this study contributes to the literature on financial market co-movements by providing new evidence on the role of sovereign credit risk in shaping the dynamics between stock and bond markets. Future research could explore the transmission channels of sovereign credit risk among domestic financial markets and how other financial assets respond to sovereign credit risk, thereby offering a more comprehensive understanding of the effects of sovereign credit risk on domestic markets.

Keywords: *Sovereign Credit Risk, Stock market, Bond market, co-movement, Developed Markets, Emerging Markets*

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