

Report Type

Mid Term Award Report

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Faculty/Department

Cambridge Endowment for Research in Finance

Project Title

Sovereign risk and global macroeconomic conditions

Project Start Date

Jan 15, 2016

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Amount Awarded

n/a

Project Abstract

This paper develops a model of how global macroeconomic conditions affect sovereign bond valuation when debt and default policies are endogenous. It identifies a new bond risk premium arising from a country's exposure to the global business cycle. Weak and volatile economic performance during recessions increases a country's default probability more than strong and stable performance during expansions reduces it, leading to countercyclical and unconditionally higher sovereign credit spreads. Importantly, the risk premium associated with the exposure to severe but low-frequency changes in global macroeconomic conditions complements the compensation for exposure to smaller but higher frequency systematic shocks. The model predicts that the bond risk premium is higher for countries that are more exposed to the global business cycle, particularly around recessions. The paper also provides empirical evidence for this prediction using sovereign bond data for emerging countries over the 1994Q1-2018Q2 period. This work is joint with Jeanneret (HEC Montreal) and S. Andrade (University of Miami).

Activities and Achievement

The paper shows that macroeconomic risk has a significant impact on sovereign debt pricing. The model with macroeconomic risk generates sovereign credit spreads that are countercyclical with respect to the global business cycle and unconditionally high, closely matching the data. In the absence of macroeconomic risk (i.e. there is no expansion/recession but one average state in the economy), the model credit spread becomes mostly acyclical. Calibrating the model with quarterly real GDP data for 40 emerging countries from 1994Q1 to 2018Q2, average credit spread equals 312 bps, compared to 248 bps in the case without macroeconomic risk. On average, the premium for macro risk equals 64 bps or 21% of the total credit spread.

Macroeconomic risk leads to higher sovereign credit spreads because it raises both the quantity and the price of sovereign risk. There are two partially offsetting effects on the quantity of sovereign risk. Exposure to the global business cycle increases the quantity of sovereign risk. This effect cannot be offset by the country's decision to select a lower indebtedness level. Exposure to the global business cycle increases the 5-year default probability from 7.67% to 10.85% (matching the data). The price of risk also increases as both default risk and investors' marginal utility of consumption are higher during recessions. Therefore, when investors care about macro risk (Epstein-Zin), they price sovereign debt as if recessions arrive sooner and last longer. The ratio of risk-neutral to actual default probabilities is 1.25, meaning that sovereign debt is priced as if default risk were 25% greater than in the reality. Notably, this channel vanishes when investors have power utility.

The paper also provides empirical support for these predictions. Exposure to the global business cycle contributes to explain cross-sectional differences in sovereign bond excess returns.

Dissemination

The paper has been presented to various conferences/seminars (EFA, HEC-McGill winter workshop, Conference of the Swiss Society for Financial Market Research, University of Cambridge...) and is now being submitted to a finance outlet and conferences (AFA-AEA, FMA...).

Outputs

Bibliographical reference:

Andrade, Sandro C. and Ekponon, Adelphe and Jeanneret, Alexandre, Sovereign Risk and Global Macroeconomic Conditions. University of Miami Business School Research Paper No. 3162853. Available at: SSRN: <https://ssrn.com/abstract=3162853>

Major Difficulties and Any Other Issues

None

Web Links

Available at SSRN: <https://ssrn.com/abstract=3162853> or <http://dx.doi.org/10.2139/ssrn.3162853>