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Emerging market bond spreads: The role of global and domestic factors from 2002 to 2011[☆]

Mike Kennedy[a,*], Angel Palerm[b]

[a] Queens University, Dunning Hall, Room 209, Kingston, Ontario, Canada K7L 3N6
[b] OECD, Paris, France

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ABSTRACT

We address the importance of external versus domestic conditions in determining emerging market bond (EMBI) spreads. Using principal components, we derive a measure of global risk aversion, which is shown to have a significant and, when interacted with a country's foreign debt to GNI ratio, nonlinear effect on these bond spreads. Our model, estimated using Pooled Mean Group techniques, which also incorporates country-specific variables (foreign debt, fiscal policy, debt servicing and political risk), is able to track developments in emerging market bond spreads over the period May 2002 to October 2011 quite well. From mid 2002 to mid 2007, the model suggests that just over two thirds of the decline in these spreads on average reflected improved fundamentals, with the rest due to easy credit conditions. During the 2008 crisis, virtually all of the run-up in emerging market spreads was due to the large increase in our measure of risk aversion. A model of the measure of risk aversion is also estimated, which identifies as its key drivers, the outlook for growth in the major OECD and large non-OECD economies as well as US credit supply conditions.

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[*] Corresponding author. Tel.: +1 613 533 2259, +1 902 299 0145.
E-mail address: kennedym@econ.queensu.ca (M. Kennedy).

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1. Introduction

The interest rate spreads that emerging market economies pay to borrow in international financial markets over those of US Treasuries – EMBI spreads[1] – measure not only their costs of funds but as well provide a gauge of their financial fragility and vulnerability. These features of the data have generated a great deal of empirical research in policy, business and academic circles,[2] aimed at understanding their determinants. An important focus of this research is on the role of external versus country-specific factors.

To examine the issue of external versus domestic factors, we look at the period from May 2002 until October 2011, which seems ideally suited for this purpose. To begin with, during this time period shocks emanated largely from advanced economies, notably the 2008 credit crisis that started in the United States. But in contrast to earlier periods, it was also a time when a number of emerging market economies were making genuine progress toward improving macroeconomic fundamentals (lowering inflation and improving fiscal balances), although progress on structural reforms was less pronounced. Examining this period should allow us to gauge any benefits these economies may have realised from their policy efforts when faced with large external shocks. While this sample period excludes a time when many emerging market economies suffered home-grown crises, these events have been well covered by others. That said, we recognize that there is a cost to excluding the earlier period in that some information is lost.

To determine the role of external conditions on EMBI spreads, we construct a measure of global risk aversion (hereafter, risk) based on the first two principal components calculated from a number of US and EU corporate bond spreads of varying degrees of risk as well as a US equity-price risk premium. In a model, estimated using Pooled Mean Group (PMG) techniques, we find this measure to have a significant and non-linear effect on EMBI spreads. The model also assigns important roles to country-specific factors – external debt, fiscal policy, interest payments and political risk. In dynamic simulations, the model is able to track actual spreads quite closely. In addition, based on a credit-channel framework, we find that the constructed risk measure is well explained by measures of global aggregate demand and US credit supply conditions. We use the first model to examine developments in EMBI spreads over the first half of the sample period as well as during the 2008 financial crisis and the second to investigate more closely the forces that drove the sharp run-up in external risk conditions in December 2008.

The plan of the rest of the paper is as follows. The next Section (2) presents a brief description of the basic theoretical model of EMBI spreads (something that has become an “industry standard”) coupled with a selective (hopefully representative) review of the empirical literature. The subsequent 3 sections (3–5) deal with the construction of the model for EMBI spreads and describe, respectively: the data used (where attention is paid to our proposed risk measure); the estimation strategy and empirical results; and the performance of the model over the first half of the period and during the 2008 global crisis. Section 6 presents our model of the risk measure and discusses the contribution of its main drivers. The final section concludes with some policy implications.

2. The underlying theoretical model and empirical literature review

We follow the literature[3] and assume that investors at time “*t*” equalize the *expected* yield between a US Treasury bond (the risk-free rate) and a risky emerging-market instrument of similar maturity, taking into account the probability that a country may default. If investors are risk neutral, financial markets are competitive and the recovery rate in case of default is zero,[4] we can obtain a simple relationship between the log of the spread – $\ln(s_{\mathrm{it}})$ – and a set of exogenous macro fundamentals, x_{jit},

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[1] The acronym EMBI stands for Emerging Market Bond Index, from which the spreads are calculated.

[2] A large number of these studies originated in international institutions, like the World Bank, the International Monetary Fund and the Bank of International Settlements. Cunningham et al. (2001) and Ferrucci (2003) discuss how the Bank of England uses these spreads in assessing financial stability. For a business application see Ades et al. (2000) of Goldman Sachs.

[3] The model used here owes it origins to Edwards (1984), while our derivation follows closely that of Ferrucci (2003), Dailami et al. (2008) and Bellas et al. (2010).

[4] If the recovery rates were assumed to be constant, the results would not materially change. See Eaton and Gersovitz (1981) for a version in which the recovery rate is non-zero.

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