

## Comment

**Kevin Cowan:** The main empirical fact motivating this interesting empirical paper by Alicia García-Herrero and Alvaro Ortíz is summarized in figure 2. The figure highlights an extremely high contemporaneous correlation between the emerging market bond spread (the EMBI spread) and the spread between the returns on Baa-rated corporate debt in the United States and U.S. Treasury bills.

This correlation has three possible explanations. First, shocks originating in developed economies could be driving the spreads of emerging market bonds. The canonical example of a developed economy shock is the Enron crisis in the United States. In this case, Wall Street was a source of instability for emerging markets. The second explanation is that shocks originating in one emerging market are transmitted to other emerging economies and the U.S. corporate market. Several recent papers have discussed this mechanism. One set of papers argues that contagion may occur because investors' risk appetite falls as a result of the negative wealth effects of financial crises, leading investors to reduce the overall share of all risky assets in their portfolios, including other emerging market bonds and U.S. corporate bonds.<sup>1</sup> An alternative explanation is that changes in the perception of the risk of emerging markets' bonds leads to a portfolio shift away from all risky assets.<sup>2</sup> In both cases, Wall Street is a carrier rather than the source of instability. The third explanation is that common macroeconomic events drive both spreads, so that there is no causality in the relation, only a correlation of variables. In particular, a large literature links corporate spreads to the U.S. business cycle, which in turn could be affecting the risk on emerging market debt.<sup>3</sup>

1. For example, Broner, Gelos, and Reinhart (2004).

2. Schinasi and Smith (2000). Although several recent papers argue that information distortions can also generate contagion from one emerging market to another (see, for example, King and Wadhvani, 1990; Calvo, 1999; Calvo and Mendoza, 2000), it is not clear that all of these models should also generate a spike in the U.S. high yield spread.

3. See, for example, Duca (1999).

Several earlier papers also identify the correlation shown in figure 2.<sup>4</sup> García-Herrero and Ortíz's main contribution is to propose a framework that controls for the common macroeconomic variables discussed in the third point above. In addition, the paper takes a stand on the first versus the second point, arguing that changes in the spreads of emerging market bonds are driven by events in the financial markets of developing countries themselves. This last distinction is probably minor from a policy perspective: in either case, external shocks to the supply of funds to a particular emerging economy are responsible for the variance in the spreads. The distinction is more important from an empirical perspective, however.

Emerging markets face highly volatile borrowing costs. Over the period 1994–2005, for example, the variance of the EMBI yield was three times higher than that of the U.S. Treasury bill yield. García-Herrero and Ortíz argue that part of this volatility is due to events in international financial markets, rather than events in the emerging market economies themselves. As such, this paper forms part of a growing literature that emphasizes the role of international financial markets in originating or amplifying shocks to emerging market financing. This leads to two key policy implications. First, emerging economies need to foster policies that reduce their vulnerability to these shocks, in addition to ensuring that domestic policies are not sources of volatility. Second, policymakers in emerging economies need to monitor fluctuations in U.S. and international financial markets closely.

The baseline results of the paper are based on the spread between Baa corporate bonds and U.S. Treasury bills. This spread includes three types of risks, which have different economic implications. The first component of the Baa-Treasury spread is the prepayment premium to investors for the risk that if interest rates fall in the future, corporate borrowers will retire old debt and replace it with new debt at a lower rate. The second component of the Baa-Treasury spread is a liquidity premium, which compensates investors for the greater liquidity of Treasury bonds, especially in times of financial turbulence. Finally, the Baa-Treasury spread also includes a default premium on corporate bonds. These three risks can be split empirically by breaking down the Baa-Treasury spread into two components: the Baa-Aaa spread, which captures the default premium on Baa corporate debt, and the Aaa-Treasury spread, which includes the liquidity and prepayment premiums. Which matters most for EMBI spreads? Using data provided by the authors,

4. Herrera and Perry (2002); Grandes (2003); McGuire and Schrijvers (2003); Dungey and others (2003); González Rozada and Levy Yeyati (2006).

**TABLE 5. Variation of the OLS Regression Reported by García-Herrero and Ortíz<sup>a</sup>**

<i>Independent variable</i>	(1)	(2)
High yield spread	0.375** (0.167)	—
Aaa-Baa spread	—	0.795*** (0.123)
Aaa-Treasury spread	—	0.179 (0.258)
$i^*$	0.129*** (0.033)	0.147*** (0.029)
$y$	0.001 (0.018)	-0.007 (0.224)
Country fixed effects	Yes	Yes

\*\*Statistically significant at the 5 percent level.

\*\*\*Statistically significant at the 1 percent level.

a. The OLS regression pools all countries into a common panel and includes country-specific effects to control for differences in the average spread. Column 1 shows the estimated coefficient on the Baa-Treasury spread; column 2 shows the results when the spread is split into the Baa-Aaa spread and the Aaa-Treasury spread. Data are from table 1. Robust standard errors clustered by year are reported in parentheses.

I estimated a variant of the simple OLS regression reported in table 1, pooling all countries into a common panel. The panel includes country-specific effects to control for differences in the average spread. Column 1 of table 5 shows the estimated coefficient on the Baa-Treasury spread. In column 2, I split the spread into the two components mentioned above. Only the Baa-Aaa spread is significant, suggesting that the correlation between the Baa-Treasury spread and the emerging market spread is mostly driven by the default risk premiums.

As mentioned above, the paper's main contribution is to propose an estimation strategy that controls for macroeconomic variables that simultaneously affect the EMBI spreads and the Baa-Treasury spread (the high yield spread). Specifically, the paper estimates a structural vector auto-regression (SVAR) in which the high yield spread depends on contemporaneous values of  $y$  and  $i^*$  and in which spreads are allowed to vary with contemporaneous changes in global risk aversion and the principal component of a set of country fundamentals,  $P$ .

I have three concerns with this specification. First, it is probably unnecessary to endogenize the high yield spread. As the authors themselves recognize, an extensive literature explores how the high yield spread is affected by U.S. macroeconomic events, so the value added of this result is not evident. It would be simpler to estimate the following specification using OLS:

$$s(t) = aHY(t)(t) + by(t) + ci^*(t) + dP(t) + e(t),$$

where  $s(t)$  is the EMBI spread and  $HY$  is the high yield spread. While this specification lacks the rich lag structure of the SVAR, it offers significant gains in degrees of freedom. Indeed, the authors' impulse response exercises show that most shocks do not have significant effects beyond the first period. Furthermore, it is not clear why asset prices should respond to output, prices, or fundamentals with a lag.

My second concern is with the endogeneity of the country fundamentals,  $P(t)$ . How reasonable is it to assume that  $P(t)$  is not affected by contemporaneous changes in  $s(t)$ ? I am particularly concerned by the fact that international reserves are included in  $P(t)$ . The current SVAR specification assumes that this contemporaneous relation is zero. The estimated coefficients will be biased, however, if this assumption is invalid (which is plausible). A simple way to test this would be to estimate a VAR with a Cholesky decomposition and to test the robustness of the results to changes in the ordering of the  $P$  and  $S$  variables.

My third concern is with endogeneity of the high yield spread ( $HY$ ). If part of the movement in  $HY$  is driven by events in emerging market economies (for example, the Russian crisis in 1998) and if these events have a direct impact on EMBI spreads, then the estimated coefficient on the  $HY$  variable will be biased upwards. The fact that the authors focus on Latin American economies—which have limited direct ties to Russia—makes this bias less likely. It would be interesting to validate this prior using a 2SLS estimation in which an event that was clearly circumscribed to the United States (namely, the Enron scandal) is used as an instrument for the high yield spread.

My final comment regards the SVAR assumptions. In the current setup, the hypothesis is that  $y$  and  $i^*$  only affect spreads through the high yield spread and country fundamentals,  $P$ . The authors could test this hypothesis using the SVAR setup by including  $y$  and  $i$  in the country spread equation. The country spread would thus be the most endogenous variable that could be affected by all the variables. Indeed, it is possible to observe the hypothesis with the current setup for some country spreads.

## References

- Arora, Vivek B., and Martin B. Cerisola. 2001. "How Does U.S. Monetary Policy Influence Economic Conditions in Emerging Markets?" Working Paper 148. Washington: International Monetary Fund.
- Bernanke, Ben S., and Alan S. Blinder. 1992. "The Federal Funds Rate and the Channels of Monetary Transmission." *American Economic Review* 82, no.4: 901–21.
- Bernanke, Ben S., Mark Gertler, and Simon Gilchrist. 1998. "The Financial Accelerator in a Quantitative Business Cycle Framework." Working Paper 6455. Cambridge, Mass.: National Bureau of Economic Research.
- Blanchard, Olivier. 2004. "Fiscal Dominance and Inflation Targeting: Lessons from Brazil." Working Paper 10389. Cambridge, Mass.: National Bureau of Economic Research.
- Broner, Fernando A., R. Gaston Gelos, and Carmen M. Reinhart. 2004. "When in Peril, Retrench: Testing the Portfolio Channel of Contagion." Working Paper 2004-28. Federal Reserve Bank of San Francisco.
- Calvo, Guillermo A. 1999. "Contagion in Emerging Markets: When Wall Street Is a Carrier." University of Maryland. Mimeographed.
- . 2003. "Explaining Sudden Stop, Growth Collapse, and BOP Crisis: The Case of Distortionary Output Taxes." 2002 Mundell-Fleming Lecture. *IMF Staff Papers* 50 (special issue): 1–20.
- Calvo, Guillermo A., Leonardo Leiderman, and Carmen M. Reinhart. 1993. "Capital Inflows and Real Exchange Rate Appreciation in Latin America." *IMF Staff Papers* 40, no. 1: 108–51.
- Calvo, Guillermo A., and Enrique G. Mendoza. 2000. "Rational Contagion and the Globalization of Securities Markets." *Journal of International Economics* 51, no. 1: 79–113.
- Cline, William R., and Kevin J. S. Barnes. 1997. "Spreads and Risk in Emerging Markets Lending." Research Paper 97-1. Washington: Institute of International Finance.
- Dailami, Mansoor, Paul Masson, and Jean Jose Padou. 2005. "Global Monetary Conditions versus Country-Specific Factors in the Determination of Emerging Market Debt Spreads." Policy Research Working Paper 3626. Washington: World Bank.
- Duca, John V. 1999. "What Credit Market Indicators Tell Us." *Economic and Financial Review* (third quarter): 2–13. Federal Reserve Bank of Dallas.
- Duffee, Gregory R. 1996. "The Relation between Treasury Yields and Corporate Bond Yield Spreads." *Journal of Finance* 53, no. 6: 2225–242.
- Dungey, Mardi, and others. 2003. "Characterizing Global Investors' Risk Appetite for Emerging Market Debt during Financial Crises." Working Paper 03/251. Washington: International Monetary Fund.
- Eichengreen, Barry, and Ashoka Mody. 1998. "What Explains Changing Spreads on Emerging-Market Debt: Fundamentals or Market Sentiment?" Working Paper 6408. Cambridge, Mass.: National Bureau of Economic Research.

- Elton, Edwin J., and others. 2001. "Explaining the Rate Spread on Corporate Bonds." *Journal of Finance* 56, no. 1: 247–77.
- Fernández-Arias, Eduardo. 1996. "The New Wave of Private Capital Inflows: Push or Pull?" *Journal of Development Economics* 48, no. 2: 389–418.
- García, Marcio, and Tatiana Didier. 2000. "Very High Interest Rates and the Cousin Risks: Brazil during the Real Plan." Discussion Paper 441. Pontifical Catholic University of Rio de Janeiro (PUC-Rio).
- García-Herrero, Alicia, and Alvaro Ortíz. 2005. "The Role of Global Risk Aversion in Explaining Latin American Sovereign Spreads." Working Paper 0505. Madrid: Bank of Spain.
- Gertler, Mark, and Cara S. Lown. 2000. "The Information in the High Yield Bond Spread for the Business Cycle: Evidence and some Implications." Working Paper 7549. Cambridge, Mass.: National Bureau of Economic Research.
- González Rozada, Martín, and Eduardo Levy Yeyati. 2006. "Global Factors and Emerging Market Spreads." Working Paper 552. Washington: Inter-American Development Bank, Research Department.
- Grandes, Martin. 2003. "Convergence and Divergence in Sovereign Bond Spreads: Theory and Facts from Latin America." Paris: École Normale Supérieure, Département et Laboratoire d'Économie Théorique et Appliquée. Mimeographed.
- Herrera, Santiago, and Guillermo Perry. 2002. "Determinants of Latin Spreads in the New Economy Era: The Role of U.S. Interest Rates and Other External Variables." Washington: World Bank. Mimeographed.
- Huang, Jing-Zhi, and Weipeng Kong. 2003. "Explaining Credit Spread Changes: Some New Evidence from Option-Adjusted Spreads of Bond Indices." Working Paper FIN-03-013. New York University, Stern School of Business.
- IMF (International Monetary Fund). 2002. "Global Financial Stability Report: Market Developments and Issues." September. Washington.
- . 2003a. "Global Financial Stability Report: Market Developments and Issues." March. Washington.
- . 2003b. "Global Financial Stability Report: Market Developments and Issues." September. Washington.
- J. P. Morgan. 1999. "Introducing Our New Liquidity and Credit Premia Update." Global Foreign Exchange and Precious Metals Research. New York, August 25.
- Kamin, Steven B., and Karsten von Kleist. 1999. "The Evolution and Determinants of Emerging Market Credit Spreads in the 1990s." Working Paper 68. Basel: Bank for International Settlements.
- King, Mervyn A., and Sushil Wadhvani. 1990. "Transmission of Volatility between Stock Markets." *Review of Financial Studies* 3, no. 1: 5–33.
- McGuire, Patrick, and Martijn A. Schrijvers. 2003. "Common Factors in Emerging Market Spreads." *BIS Quarterly Review* (December): 65–78.
- Min, Hong G. 1998. "Determinants of Emerging Market Bond Spread: Do Economic Fundamentals Matter?" Working Paper 1899. Washington: World Bank.

- Mody, Ashoka, and Mark P. Taylor. 2003. "The High-Yield Spread as a Predictor of Real Economic Activity: Evidence of a Financial Accelerator for the United States." *IMF Staff Papers* 50, no. 3: 373–402.
- Schinasi, Garry J. and R. Todd Smith. 2000. "Portfolio Diversification, Leverage, and Financial Contagion." *IMF Staff Papers* 47, no. 2: 159–76.
- Wooldridge, Phillip D., Dietrich Domanski, and Anna Cobau. 2003. "Changing Links between Mature and Emerging Financial Markets." *BIS Quarterly Review* (September): 45–54.