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ON THE STRUCTURE OF FINANCIAL CONTAGION: ECONOMETRIC TESTS AND MERCOSUR EVIDENCE

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We introduce a flexible copula-based semi-parametric test of financial contagion that is capable of capturing structural shifts in the transmission channel of shocks across a network of financial markets beyond the increase in the intensity of time-varying dependence. We illustrate the capabilities of the proposed test using returns of stock, money, sovereign debt, and foreign exchange markets of seven Latin-American countries, and test for the presence of pure contagion effects for each major financial crisis that affected the Mercosur region between 1994 and 2001. Besides strong evidence in favor of time-varying market interdependence, we cannot rule out the presence of pure contagion effects in the stock market transmission channel associated with the Mexican, Asian, and Russian financial crises.

JEL classification codes: C14, C32, C51, G15
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I. Introduction

In the aftermath of the financial crises that plagued the emerging markets in the 1990s and early 2000s, financial contagion has often been cited as the main cause of sharp co-movements in asset prices of countries and regions with no apparent economic fundamental linkage. Some researchers questioned this interpretation of the empirical evidence. After correcting for the heteroskedasticity bias present in the co-movement of asset prices, interdependence alone might explain the observed co-movement during bad economic times (Forbes and Rigobon 2001, 2002). A problem with this argument is that the magnitude of the cross-country specific shock e.g., using a multi-factor asset pricing model of asset returns, is too large to be fully explained by the interdependence hypothesis alone (Corsetti, Pericoli and Sbracia 2005; Bekaert, Harvey and Ng 2005; and Chiang, Jeon and Li 2007).[1]

The empirical evidence appears to be consistent with two hypotheses with very different theoretical and policy formulation implications. The only interdependence hypothesis suggests that excessive correlation and volatility spillovers during financial crises reflect the efficient market incorporation of all available information given a set of known common global time-varying economic fundamentals. Conversely, the financial contagion hypothesis contends that excessive correlation is the result of the transmission of unanticipated country-specific shocks to other markets, countries, and/or regions (Dungey, Fry, González-Hermosillo and Martin 2005). From the practitioner's point of view, the later hypothesis suggests that asset portfolio diversification across countries and/or geographical regions will be less effective during a major financial crisis. Moreover, after the recent financial crisis of 2008 and the recent events in the Euro zone, the identification of the

[1] Baig and Goldfajn (1998) show that during the Asian crisis of 1998 there was evidence of financial contagion between stock and foreign exchange markets. Baig and Goldfajn (2000) provide evidence of financial contagion in Brazil after the Russian sovereign default transmitted across the sovereign debt markets. Forbes and Rigobon (2001, 2002) contend that during the Wall Street crash of 1987, Mexican crisis of 1994, and Asian crisis of 1998, most of the evidence is in favor of market interdependence and against financial contagion. Corsetti, Pericoli, and Sbracia (2005) study the Asian crisis and show that in at least 5 out of the 17 countries in the region there was evidence of contagion (alongside with market interdependence). Chiang, Jeon, and Li (2007), using also the Asian crisis as empirical setup, show that there was evidence of financial contagion.