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Systemic Risk and International Portfolio Choice

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ABSTRACT

Returns on international equities are characterized by jumps; moreover, these jumps tend to occur at the same time across countries leading to *systemic risk*. We capture these stylized facts using a multivariate system of jump-diffusion processes where the arrival of jumps is simultaneous across assets. We then determine an investor's optimal portfolio for this model of returns. Systemic risk has two effects: One, it reduces the gains from diversification and two, it penalizes investors for holding levered positions. We find that the loss resulting from diminished diversification is small, while that from holding very highly levered positions is large.

RETURNS ON INTERNATIONAL EQUITIES are characterized by jumps;[1] moreover, these jumps tend to occur at the same time across countries, implying that conditional correlations between international equity returns tend to be higher in periods of high market volatility or following large downside moves.[2] Our objective in

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[1] Evidence on jumps in international equity returns is provided by Jorion (1988), Akgiray and Booth (1988), Bates (1996), and Bekaert et al. (1998).

[2] For example, on July 19, 2002, the Dow fell by 4.6%, the Dax by 5.0%, the Cac by 5.4%, the FTSE by 4.6%, and the Nikkei by 2.8%. Similarly, world equity markets fell in lockstep on October 27, 1997, when the drop from the 12-month peak was 9.2% in Britain, 35.4% in Hong Kong, 21.3% in Japan, 2.1% in Australia, 10.7% in Mexico, 27.9% in Brazil, and 9.1% in the United States. Other events with large correlated price drops include the Debt crisis of 1982, the Mexican crisis in December 1994, and the Russian crisis in August 1998; see Rigobon (2003) for a complete list of dates with large market moves. For evidence on changing conditional correlations see, for instance, Speidell and Sappenfield (1992), Odier and Solnik (1993), Erb, Harvey, and Viskanta (1994), Longin and Solnik (1995), Karolyi and Stulz (1996), Chakrabarti and Roll (2000), and Ang and Chen (2002).