Discussion

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This article examines the linkages between equity markets. The authors present a detailed analysis of the correlations between roughly coincident returns in different equity markets. They also uncover an intriguing fact: The volatility of the London stock market is higher than usual around the time when the NYSE opens. This may support their contagion theory, which argues that traders in one market draw inferences about shocks to share-price fundamentals from observed price movements in other markets. Even price moves which are *not* generated by fundamentals can therefore affect many markets.

The findings raise two basic questions about the comovements in international equity markets. The first is whether there is any reason to expect the correlations across markets to be stable through time. This article emphasizes that returns on the London, New York, and Tokyo markets were more highly correlated around the market break of October 1987 than in other periods. This is difficult to interpret, however, since volatility is the result of shocks to many different factors that affect equity values. Some factors are country-specific, or nearly so, while others, such as higher world interest rates, may affect all markets together. The correlation between returns in different markets depends on which factors are the primary source of return variation. Since there is no reason to expect the relative importance of different shocks, for example, news about world resource prices versus domestic political events, to remain constant through time, one should *expect* instability in the cross-correlations of market returns. The article confirms this prediction.

Second, it is also difficult to interpret the finding that markets in one country are more volatile when markets in other countries are open. This may be evidence for the model where traders in one country attempt to extract signals about price fundamentals from the price changes in other markets. These findings could also indicate, however, that price changes in one market *directly affect* the price fundamentals in other nations. The 1987 stock market crash provides

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a clear example of this. When the New York market plummeted, it triggered uncertainty about the stability of the U.S. financial system. A financial crisis in the United States would reduce domestic output, thereby lowering the demand for British and Japanese exports. In addition, such a financial collapse would affect the demand for British and Japanese equities by U.S. investors. The market crash, even if not associated with any shock to price fundamentals, could, therefore, lead to a reduction in share values elsewhere. The central point is that traders in Tokyo and London may react to changes in New York share prices for reasons *other* than the information they convey about shocks to the unobserved market fundamental that affects all nations. They may react because changes in the value of one market directly *affect* price fundamentals. This alternative explanation warrants further exploration.

The central tenet of this article, that traders look to prices for information about the fundamental value of securities, has profound implications for the transmission of volatility across markets. When relatively few investors make their own calculations of fundamental values and the majority of traders are "informational freeloaders" who presume the accuracy of market prices, shocks to one market or one set of prices may have far-reaching consequences. The policy relevance of this possibility suggests that further work should be directed at disentangling the competing explanations for international volatility linkages.