International equity market comovements: Economic fundamentals or contagion?

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Abstract

We investigate the return comovement in international equity markets with a focus on the distinction between economic fundamentals and contagion. We examine the potential macro news effect based on a comprehensive data set of macroeconomic news announcements made in the U.S., U.K., and Japan. Our results show that the bulk of the observed comovement in the intraday and overnight returns of the international equity markets cannot be attributed to public information about economic fundamentals. In contrast, foreign market returns exert a dominant influence on the subsequent domestic market returns. Overall, our findings suggest that future inquiry on market comovement may focus on the distinction between contagion and trading on private information, rather than public information.

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1. Introduction

In this paper, we compare the extent to which return comovement between international equity markets may be explained by economic fundamentals versus contagion. Earlier studies establish the economic significance of equity market comovement across national borders (e.g., Becker et al., 1990; Hamao et al., 1990), but finding the source of the
comovement has been difficult for academics and practitioners. Understanding the determinants of the comovement has profound implications for international diversification, market integration/efficiency, and the cost of capital for multinational firms.

The traditional view stresses the role of common fundamental factors (Solnik, 1974a,b; Stulz, 1981; Adler and Dumas, 1983), but it is difficult to account for the large comovement around the globe in extreme circumstances often without apparent new information. King and Wadhwani (1990) propose an alternative explanation for the market linkage. They argue that trading of stocks in one market per se affects stock prices in other markets, even if the source of the trading is purely noise. They call this the “market-contagion” hypothesis.

To distinguish between the two competing explanations, economic fundamentals and contagion, we separate the influence of foreign markets on the domestic markets into two components: one that is driven primarily by economic fundamentals and the other by foreign market returns. Specifically, we examine the market comovement between the domestic intraday (and overnight) returns and foreign intraday returns for the U.S., U.K., and Japan, conditional on both the macroeconomic news announcements and the most recent foreign intraday returns. In a linear return-generating model, we measure the marginal effect of the foreign market returns and the macro news effect. If the foreign returns are redundant after controlling for the macroeconomic news announcements, then evidence for the contagion hypothesis is weaker. On the other hand, if the foreign returns do have a separate and substantial influence, then the evidence favoring the contagion hypothesis is stronger.

King and Wadhwani (1990) argue that the return correlation between markets increases with the volatility in each market, and they interpret this as evidence supporting contagion hypothesis. Karolyi and Stulz (1996) also find evidence consistent with this interpretation. On the other hand, Ross (1989) argues that market volatility is related to the underlying information flow including public information. Public information flows may then be associated with higher volatility and more pronounced comovement, all in the context of a rational approach to asset pricing.

In this paper, we try to distinguish between these two views by examining the return comovement between market conditional on the volatility of foreign news in a nonlinear return-generating model. Using our approach, we gauge the extent to which return comovement changes as the volatility of the macro news varies. The contagion hypothesis implies that the return comovement should change very little after controlling for the volatility of public information. This model also captures the intuition of McQueen and Roley (1993), who stress that macroeconomic news may have nonlinear effect on stock returns.

Our sample includes stock index returns and 14 different macroeconomic news announcements from U.S., U.K., and Japan for the period from January 1, 1985 to December 31, 1996. In the study, we mitigate the “stale open quote problem” in both the U.S. (Stoll and Whaley, 1988) and Japanese markets (Hamao et al., 1990) by choosing the “opening” price as the price index quoted at 10:00 am in each market. Furthermore, we account for the stylized volatility patterns using the Glosten et al. (1993) asymmetric GARCH model and estimate both conditional mean and volatility equations simultaneously.
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