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Diversification benefits of emerging markets subject to portfolio constraints

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Abstract

This paper examines the international diversification benefits subject to portfolio constraints—in particular, constraints on short selling. We show that the international diversification benefits remain substantial for U.S. equity investors when they are prohibited from short selling in emerging markets. This result is robust to investment restrictions on nonnative individuals. It is also unaffected by the fact that the U.S. equity index portfolio is not on the efficient frontier spanned by U.S. securities. The integration of world equity markets reduces, but does not eliminate, the diversification benefits of investing in emerging markets subject to short-sale constraints.
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1. Introduction

An important issue in international economics concerns the size of benefits from diversifying over securities in foreign countries, especially securities in emerging markets. In theory, if foreign securities do not perfectly correlate with U.S. securities, domestic investors gain from international diversification. However, the magnitude of the diversification benefits in general depends on various portfolio constraints, such as investors' ability to take short positions. Given the existence of derivative securities on stock market indices in developed countries, it is often feasible for institutional investors to take short positions on

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developed markets. Investors nonetheless face short-sale constraints in many emerging markets. In this paper, we study the impact of short-sale constraints on the existence and magnitude of international diversification benefits to U.S. equity investors. The existence of substantial diversification benefits of investing in emerging markets subject to short-sale constraints will underscore the importance of international diversification.

Short-sale constraints have gained increasing attention in recent finance literature. Sharpe (1991) conjectures that departures from the CAPM might be small even in the extreme case where negative holdings are excluded. He postulates that institutional arrangements to improve investors' abilities to take negative positions facilitate the efficient allocation of risk in the economy. Hansen et al. (1994), He and Modest (1995), and Luttmer (1996) study how short-sale constraints and transactions costs affect consumption-based asset pricing models. For portfolio efficiency subject to short-sale constraints, Wang (1998) conducts Bayesian inference, Basak et al. (in press) develop an asymptotic test, and De Roon et al. (2001) carry out regression-based tests for mean–variance spanning.

Ignoring short-sale constraints, many studies have documented low correlation across international markets and substantial diversification benefits. The early literature of Grubel (1968), Levy and Sarnat (1970), and Lessard (1973) finds low correlation among equity returns in industrial countries and concludes that the gain from international diversification is substantial. Harvey (1995) shows that securities in emerging markets promise U.S. investors both high expected returns and risk, as well as low correlation with securities in developed markets. Bekaert and Urias (1996) reject the hypothesis that equity indices in industrial countries span the mean–variance frontier of all international equity indices and thus demonstrate the existence of diversification benefits in emerging markets. Using the international CAPM, De Santis and Gerard (1997) estimate that the expected gain from international diversification to a U.S. investor is on average 2.11% annually. Errunza et al. (1999) further show that the international diversification benefits can be obtained from investment in country funds and American Depository Receipts traded in U.S.

It remains unclear whether there exist substantial benefits from diversifying over emerging equity markets after imposing short-sale constraints. In the asset management industry, where short-sale constraints are routinely imposed in optimal portfolio choice problems, practitioners believe that the diversification benefits in emerging equity markets are substantial but, to our knowledge, there has not been any formal econometric inference. Glen and Jorion (1993) empirically show the existence of the benefits in currency hedging subject to short-sale constraints. Using mean–variance spanning tests, De Roon et al. (2001) argue that the evidence of diversification benefits in emerging markets disappears after imposing short-sale constraints. However, their statistical tests show strong evidence of the diversification benefits when investing in some individual Latin American or Asian countries, but no evidence of the benefits when investing optimally in the combination of these emerging markets. It seems odd to rule out diversification benefits in emerging markets when there are clear benefits derived from particular emerging markets. De Roon et al. (2001) explain that the counterintuitive results are driven by the loss of power in the asymptotic mean–variance spanning tests when more emerging markets are included.

The issue investigated in this paper is closely related to the home bias puzzle in finance. It is observed that U.S. investors tend to hold a substantially larger portion of their invested equities in domestic stocks than what is suggested by the diversified world market

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