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Foreign exchange rate exposure and risk premium in international investments: Evidence from American depositary receipts

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Abstract

We examine how exchange rate changes affect the security returns and how economic and translation exposure components of exchange rate risk are priced across countries. Employing ADRs of four countries, we document four main findings. First, exchange rate changes are negatively related to underlying share returns of ADRs, but positively to ADR returns observed in the U.S. markets. Second, ADR returns are more closely related to local market returns than U.S. market returns, indicating that the local market environment plays a bigger role in determining ADR returns. Third, U.S. and local investors require different risk premiums for exchange rate risk present in ADR investments. Fourth, both the source (economic or translation exposure) and magnitude (high or low) of the exchange risk premium vary across countries. We obtain robust empirical findings for both country ADR portfolios and individual ADRs.

JEL classification: F31; G15

Keywords: Foreign exchange rate exposure; Foreign exchange risk premium; American depositary receipts

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1. Introduction

The surge in investments in American depositary receipts (ADRs) has instigated considerable research on this subject.[1] Existing literature on ADR can be classified into four broad areas: (1) arbitrage opportunities between the prices of ADRs and their underlying securities. Kato et al. (1991) and Wahab et al. (1992) find that few profitable opportunities exist after transaction costs; (2) factors affecting ADR prices. Studies by Jiang (1998) and Kim et al. (2000) suggest that the variation in ADR returns can be explained by three factors: U.S. market returns, local market returns, and exchange rate changes; (3) price transmission dynamics between ADRs and their underlying securities. While Jiang (1998) shows that ADRs and their local shares influence each other, Kim et al. (2000) observe that most responses of ADRs to the unexpected price movements of underlying shares occur on the same calendar day; and (4) diversification gains from ADRs. Alaganar and Bhar (2005) indicate that ADRs have a low correlation with the U.S. stock market and thus provide an effective tool for U.S. investors to achieve portfolio diversification.

Given the large body of literature on ADR, several important issues still need to be addressed. Although it is well known that a firm's exchange rate risk consists of three components of economic exposure, translation exposure, and transaction exposure,[2] limited evidence exists on how exchange risk exposure in general and its components in particular affect the pricing of ADRs. Furthermore, it is not clear how the U.S. investors' risk attitude toward exchange risk affects their pricing of ADRs from different countries.

In this study, we extend the existing literature on ADRs in several ways. First, unlike previous studies, we examine not only how exchange rate changes affect ADR returns in the U.S. market but also the underlying share returns of ADRs in the local markets. This analysis is important because it would provide relevant information on the exchange risk premium required by U.S. investors relative to local shareholders.

Second, we take a further step to investigate how each of the two exchange risk components, economic exposure and translation exposure, affects ADR returns. In ADR investments, the economic exposure represents the changes in the underlying share returns of ADRs to changes in exchange rates, and the translation exposure represents the exchange risk associated with translating the underlying share returns in local currency into the returns in the U.S. dollar. Disentangling the effects of the two exchange risk components would enable investors to better understand the sources of ADR returns and the related risk, which, in turn, helps ADR investors construct better investment portfolios.[3]

Third, we examine the effects of exchange rate changes and exchange risk components on the ADR returns of four countries including Australia, France, Japan, and the U.K. The cross-

[1] According to Bank of New York, the annual trading volume of ADRs and other depositary receipts listed on U.S. exchanges increased from US$ 75 billion in 1990 to US$ 1185 billion in 2000, implying an annual growth rate of 31.8% (see the Bank of New York 2000 Year End Market Review: http://adrbny.com/dr_pub_statistics.jsp).

[2] Economic exposure represents the sensitivity of a firm's competitiveness to the changes in exchange rates, translation exposure represents the uncertain gains or losses when foreign currency assets are converted to home currency, and transaction exposure represents the sensitivity of a firm's realized domestic currency value from the firm's contractual foreign cash flow.

[3] For example, a depreciated foreign currency will improve a foreign exporting firm's competitiveness in the world market and thus increase the firm's underlying value through increased cash flows. For U.S. ADR investors, however, the same depreciated foreign currency becomes less valuable. Thus, the translation loss to ADR investors could offset or overweigh the gain in the local firm's underlying value; consequently, the underlying security could be a good investment for local investors but not for U.S. investors.