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Emerging market currency exposure: Taiwan

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ABSTRACT

The insignificance of currency risk in emerging markets is particularly puzzling, given a lack of hedging instruments and volatile currency movements in these markets. In this paper, we conjecture that this puzzle may be due to the comovement between exchange rates and the market factor in these markets. Our conjecture is motivated by both theory and empirical evidence. We test our conjecture with the Taiwan market data and find supporting evidence. Our findings have important theoretical as well as practical implications. In terms of theoretical implications, the extant currency risk literature generally models currency risk as a separate risk factor. The results in this paper suggest that researchers instead should focus on the linkage between currency risk and the standard asset pricing factors. In terms of practical implications, our results imply that the standard asset-pricing models without currency risk may be sufficient for practical decision making in emerging markets, since exchange rate changes may not have incremental information relative to the market factor in these markets.

1. Introduction

Previous studies find that firms in emerging markets are generally not exposed to currency movements. For instance, in a comprehensive study, Parsley and Popper (2006) find that the percentages

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of firms that have significant exposure to the US Dollar are 0% in Philippines, 2% in Indonesia, 3% in Taiwan, 4% in Korea, 10% in Thailand, and 27% in Malaysia, respectively, in their nonpegged regimes. The insignificance of currency risk in emerging markets is more puzzling than that in developed markets, because a lack of hedging instruments and volatile currency movements in emerging markets suggest the opposite.

In this paper, we conjecture that the insignificance of currency risk in emerging markets may be due to that currency fluctuations affect the emerging capital market through the comovement with the market factor. Our conjecture is motivated by both theory and empirical evidence. In theory, the economic model in Mendoza (1995) suggests that exchange rates as well as GDP are driven by fundamental macroeconomic shocks. Empirically, Mussa (1986), Huizinga (1987), Clarida and Gali (1994), and Valcarcel (2013) find that exchange rates are driven by macro demand and supply shocks. More recently, Yin and Li (2014) propose a macro-finance model and find a close connection between macroeconomic fundamentals and exchange rate dynamics. Chatrath et al. (2014) find that currency jumps are a good proxy for the arrival of macroeconomic news. Since there is evidence that the market factor captures the effects of macro shocks (e.g. Fama, 1981), the market factor may co-vary with exchange rates. A large literature has developed to document the joint response of stock and foreign exchange markets to macroeconomic shocks (e.g., Mun, 2012). If exchange rates co-move with the market factor, the market factor may subsume the impact of exchange rates on asset returns in a standard asset-pricing model setting.

The comovement between exchange rates and the market factor may be particularly strong in emerging markets for two reasons. First, emerging markets are typically small open economies. For instance, according to the data in Heston et al. (2012), in 2010, the GDP of Taiwan is about 6% of that of the US; its exports and imports as a share of GDP is 127%, while that for the US is only 29%. Second, as Chan and Hameed (2006) find, market-wide information is more important in emerging markets, suggesting a greater importance of macro shocks (which drive both exchange rates and the market factor) and therefore a stronger comovement between exchange rates and the market factor. Patro et al. (2014) recently provide supporting evidence.

To empirically test our conjecture, we focus on the Taiwan stock market for two reasons. First, as Chang (2002) points out, the Taiwan market is an important market both in Asia and in the world in terms of dollar value of transaction and its weight in the MSCI emerging market index. Second, focusing on Taiwan allows us to employ a bilateral exchange rate instead of a trade-weighted exchange rate index. Previous studies typically use trade-weighted exchange rate indexes. However, as Dominguez and Tesar (2001) point out: "The problem with using a trade-weighted basket of currencies in exposure tests is that the results lack power if the nature of firm exposure does not correspond to the exchange rates (and the relative weights) included in the basket. More generally, we should expect variation in individual firm and industry exposure to various exchange rates." (p. 397) For a large complex economy, it is inappropriate to focus on a bilateral rate. But for Taiwan, it is not the case, because the US Dollar is the major currency used in international transactions in Taiwan and previous studies (e.g. Chang, 2002) often focus on the exchange rate of the New Taiwan Dollar (NTD) again the US Dollar (USD).

Empirically, we find evidence that currency fluctuations affect the Taiwan stock market through the comovement with the market factor. First, consistent with previous studies, adding exchange rate changes to the standard asset-pricing models typically does not improve the performance of the models noticeably for the Taiwan market, implying that exchange rate changes may not have incremental information relative to the standard asset-pricing factors. Second, the asset-pricing models which replace the market factor with the exchange rate change perform reasonably well, suggesting that exchange rate changes do affect asset returns. Finally, there is a statistically significant correlation between the market factor and the exchange rate change, which reconciles the first two findings. That is, the market factor co-varies with exchange rates, and therefore subsumes their explanatory power. It is important to point out that the comovement between exchange rates and the market factor is plausible and supported by economic theory and empirical evidence (e.g. Mun, 2012; Patro et al., 2014).

Our findings not only help explain the exposure puzzle in emerging markets but also have important theoretical as well as practical implications. In terms of theoretical implications, the extant currency