Pricing emerging market stock returns: An update

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ABSTRACT

This paper tests how effective global models are at pricing the cross section of emerging market (EM) stock returns over a recent post-liberalization period. We apply the tests of Kan et al. (2009). Our results show that conditional models and currency factors do perform better than unconditional models and single factor models and there are some differences in the models in the two subperiods of our data. The important implication of this paper for international investors is none of our results are significant when we allow for model misspecification and none of the alternative models specifically outperform the World CAPM.

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1. Introduction

Emerging market (EM) stocks are characterised in early studies by large average returns but low correlation with developed markets (Harvey, 1995a), and are promoted on their ability to improve mean-variance efficiency for investors pursuing portfolio diversification (Erb et al., 1997). However, as investment uncertainty reduces, risk and returns fall in line with those offered in developed markets (Bekaert and Harvey, 2003).[1] This paper tests how effective global models are at pricing the cross section of EM stock returns over a recent post-liberalization period and in two successive subperiods in our data. Studies on developed markets present evidence in support of a global asset pricing model (Harvey, 1991), those on EM find much weaker support for global determinants of risk, (Harvey, 1995a,b; Bilson and Brailsford, 2002).

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[1] Increasing EM integration with the world economy has two important implications on international investment (Fernandez, 2003). Firstly, it is predicted that correlations between the returns in emerging and developed markets will increase (Erb et al., 1998). Secondly, with increasing integration, global risk factors will become increasingly applicable in the pricing of EM stocks, so global asset pricing models should increase in their ability to explain the cross section of EM returns (Bekaert and Harvey, 2003).

Bekaert and Harvey (2002) find an increase in correlation between EM and developed capital markets in the post-liberalization period. They show that EM betas with the world portfolio increase on average two and a half times between the pre- and post-liberalization periods, indicating significant increased EM responsiveness to global market risk. Despite these ostensibly substantial increases, Bekaert and Harvey (2002) nevertheless conclude that EM correlations with the developed world are still low enough to provide the global investor with significant portfolio diversification. However, Fernandez (2003) suggests that EM stocks' exposure to the global market is no longer significantly different from that of developed market stocks. Several recent studies have shown a number of other important factors in EM stock market returns including time variation, local information variables and currency risk. Chaieb and Errunza (2007) and Carrieri et al. (2007) show that local information variables explain EM stock returns to a greater extent than developed market returns. Carrieri et al. (2007) examine the relevance of both time-varying global and local market risk on the expected returns and find evidence of significant time variation in the price of both local and global market risk. This suggests that specifying a global asset pricing model that holds period-by-period significantly improves the mean-variance efficiency of the world portfolio, and thus the model's ability to explain EM returns. Moreover, the results of Carrieri et al. (2007) imply that implementing unconditional models in EM will result in misspecification. In terms of currency risk Carrieri et al. (2006a) find that EM currency risk (measured in real terms) is priced separately from other EM risks and represents a significant proportion of equity returns in both developed and EM.

Taking into account the above sequence of prior findings, the expectation of this paper is that–with an even more up-to-date dataset and taking into account time variation, information variables and currency risk–asset pricing models with global determinants of risk will do an even better job at explaining the cross section of EM stock returns. We test how effective global models are at pricing the cross section of EM stock returns over the most recent post-liberalization period. We use two-stage cross-sectional regression approach of Fama and MacBeth (1973) to calculate the performance of the models. We apply the recent tests of Kan et al. (2009) which allows for possible model misspecification. We examine the performance of the models focusing monthly portfolio return data on twenty EM countries from 1995 to 2008 and examining two subperiods in our data (1995–2001 and 2002–2008) to consider if there have been changes over our sample period. Eight asset pricing models are tested in this paper. Four of them are unconditional models. These are (1) simple CAPM with developed world index, (2) simple CAPM with emerging world index, (3) currency model with developed world index and three currency factors (we use the excess $ returns on three currencies for the German DM, Japanese Yen, and U.K. £ sterling), (4) currency model with emerging world index and three currency factors. The remaining four are conditional models. We estimate the conditional models by adding a global information variable as a separate factor to each model. We considered the lagged dividend yield on the Datastream world equity index, the lagged return on the one-month U.S. Treasury Bill, and the lagged monthly growth of the OECD G7 industrial production index (excluding construction).

Our main results can be summarised as follows. There is a wide spread in the performance across the eight models in terms of the estimated R^2, but typically the conditional versions of the models do a better job than the unconditional versions of the models in terms of the cross-sectional R^2. The factor models including currency risk perform better than the single factor model. However, when we allow for model misspecification there are no significant differences in the cross-sectional R^2. Therefore there does not appear to be much difference between the global factor models and the corresponding EM factor models. We find the performance of the linear factor models does vary between the two subperiods, with better performance by the models perform in the first subperiod. The results suggests that for the overall sample period, both conditioning information and the use of the currency factors improve the models. For the overall period there are no significant factors in any of the unconditional models. For the conditional models, there is a significant impact for the lagged dividend yield. The currency factors play a greater role in the second subperiod. However, the statistical significance of these factors is not robust when we allow for potential model misspecification due to high sampling variation. The important result for international investors and asset pricing in EM is that over this recent post-liberalization period our results suggest that when we control for possible model misspecification as in Kan et al. (2009) none of the models outperform the world CAPM.

The rest of this paper is structured as follows. Section 2 outlines the models and the research method. Section 3 describes the dataset. Empirical results are presented in Section 4. Conclusions are provided at the end.