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The volatility effect in emerging markets ☆

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ABSTRACT

We examine the empirical relation between risk and return in emerging equity markets and find that this relation is flat, or even negative. This is inconsistent with theoretical models such as the CAPM, which predict a positive relation, but consistent with the results of studies for developed equity markets. The volatility effect appears to be growing stronger over time, which we argue might be related to the increased delegated portfolio management in emerging markets. Finally, we find that the volatility effect in emerging markets is only weakly related to that in developed equity markets, which argues against a common-factor explanation.

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1. Introduction

In this paper we examine the empirical relation between risk and return in emerging equity markets. The Nobel-prize winning Sharpe–Lintner Capital Asset Pricing Model (CAPM) postulates that the expected return on a stock is linearly proportional to its market beta. However, the initial empirical tests of the CAPM for the U.S. equity market already indicated that low-beta stocks have higher returns than predicted by the CAPM; see, e.g., Black et al. (1972), Fama and MacBeth (1973) and Haugen and Heins (1975).

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Whereas some anomalies tend to weaken or even disappear following their public dissemination, the beta effect only seems to have been growing stronger over time. For instance, the seminal Fama and French (1992) paper documents that the relation between beta and U.S. stock returns is essentially flat over the 1963–1990 period, especially after correcting for size effects. More evidence for a flat, or even negative, relation between risk and return is given by Black (1993), Haugen and Baker (1991, 1996) and Falkenstein (1994), who look at similar or longer sample periods.

More recently, Blitz and van Vliet (2007) provide international evidence, showing that the relation between risk and return is not only negative in the U.S., but also in the European and Japanese equity markets over the 1986 to 2006 period. In addition, they find that the effect is even stronger when risk is measured using simply volatility instead of beta. For the U.S. stock market, Baker et al. (2011) confirm that the volatility effect presents an even bigger anomaly than the related beta effect over the 1968 to 2008 period. In addition, Clarke et al. (2010) report that the relation between volatility and expected stock returns is flat over the extended 1931 to 2008 period. Ang et al. (2006, 2009) show that also very short-term (past 1 month daily) idiosyncratic volatility is negatively related to subsequent stock returns in the U.S. and other G7 stock markets, providing further evidence of the robustness of the anomalous empirical relation between risk and return.

In this paper we extend the existing literature by analyzing the empirical relation between risk and return in emerging equity markets. Emerging markets have become increasingly important to investors due to their fast growing economies. This is clearly reflected in the composition of the MSCI All Countries Index, in which the weight of emerging markets has grown from roughly 1% in 1988 to around 15% nowadays. This increase has mostly come from issuance of new shares, and to a smaller extent from higher realized returns. However, emerging markets have also been characterized by a high volatility and multiple crises, such as Mexico 1994, Asia 1997 and Russia 1998. Several studies have examined the cross-section of stock returns in emerging markets, and conclude that the classic size, value and momentum effects are also present in these markets; see, e.g., Fama and French (1998), Patel (1998), Rouwenhorst (1999) and van der Hart et al. (2003). The empirical relation between risk, in terms of either volatility or beta, and return in emerging markets has not received much attention though. One of the few exceptions is Rouwenhorst (1999), who observes that beta is not related to return in emerging markets over the 1982 to 1997 period.

Our analysis of the empirical relation between risk and return in emerging markets is relevant for at least three reasons. First, by considering a fresh dataset with data through 2010 we can test whether conclusions on the empirical relation between risk and return in developed equity markets carry over to emerging equity markets. If the results of our out-of-sample test on emerging markets are similar to previous findings for the U.S. and other developed equity markets, this reduces the probability of a spurious result that might be attributable to data mining. Moreover, by relating the volatility effect in emerging markets to the volatility effect in developed markets, we can assess if the effects in different markets are driven by a common component. High correlations between the alphas in different markets suggest that the volatility effect may represent a global risk factor, while low correlations are indicative of mispricing occurring independently in different markets.

Second, our new sample enables us to address the main criticisms that existing studies have received. For example, Bali and Cakici (2008) argue that the negative empirical relation between risk and return is driven by small-caps, especially the strong negative returns of high (idiosyncratic) volatility stocks. We address this concern by including only constituents of the S&P/IFC Investable Emerging Markets Index in our sample, and additionally by conducting a robustness test on the 50% largest stocks within this already liquid universe. Others, such as Scherer (2010), have argued that some of the effects may be due to exposure to the classic value premium. We therefore also adjust for such implicit factor loadings, using both parametric and non-parametric techniques. Yet another critique, by Amenc et al. (2011), is that the relation between risk and return turns positive over longer holding periods. We therefore also analyze the performance characteristics of portfolios sorted on past risk over holding periods up to 5 years.

Third, emerging markets can shed new light on the different hypotheses which have been proposed in the literature to rationalize the apparently anomalous empirical relation between risk and return. Some, such as Black (1993), Frazzini and Pedersen (2010), Hong and Sraer (2012), and de Giorgi and Post (2011) attribute the effect to leverage and short-selling constraints, while other explanations relate to agency issues involved with delegated portfolio management; see, for example, Brennan (1993), Karceski (2002), Falkenstein (2009), Blitz (2012) and Baker and Haugen (2012). Emerging markets are an interesting test

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