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Does idiosyncratic volatility matter in emerging markets? Evidence from China

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ABSTRACT

We investigate the time series behavior of idiosyncratic volatility and its role in asset pricing in China. We find no evidence of a long-term trend in the time series behavior of idiosyncratic volatility. Idiosyncratic volatility in China is best characterized by an autoregressive process with regime shifts that coincide with structural market reforms. We also document evidence of a negative idiosyncratic volatility effect in China with anecdotal evidence suggesting that it could be driven by investor preference for high idiosyncratic volatility stocks.

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1. Introduction

Idiosyncratic volatility (IVOL) has traditionally been regarded as unimportant in asset pricing because it can be costlessly eliminated through diversification. However it has received considerable attention in the recent literature because of the suggestion that IVOL matters after all. One strand of the research literature focuses on the time-series behavior of idiosyncratic volatility while another deals with the relationship between idiosyncratic volatility and cross-sectional stock returns. Research

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findings in these areas which are mostly confined to either the U.S. or other developed markets are highly contentious and are still vigorously debated in the literature. In one of the few extant studies on emerging markets, Nartea et al. (2011) report a positive relationship between idiosyncratic volatility and cross-sectional stock returns in Singapore, Thailand, Malaysia, and Indonesia, and none in the Philippines, contrary to the negative relationship found in the U.S. and other developed markets. In light of the inherent heterogeneity of emerging markets we find it timely and important to examine the evidence from China, the world's largest emerging market. First, we describe patterns and movements in market and aggregate firm-level volatilities, then we investigate the relationship between IVOL and cross-sectional stock returns.

Trends in idiosyncratic volatility and market volatility have important implications for the benefits of diversification. An increasing IVOL over time coupled with stable market volatility implies that the correlation among stocks is decreasing, which would normally mean an increase in the benefits from diversification. In the U.S., Campbell et al. (2001) find evidence of increased idiosyncratic volatility relative to market volatility in the period 1962–1997. But they also indicate that these trends lead to an increase in the number of stocks needed to achieve a certain level of diversification which implies that investors who cannot fully diversify will experience a deteriorating investment performance. Several studies have variously ascribed the apparent rise in idiosyncratic volatility in the U.S. to increased institutional ownership (Bennett et al., 2003; Xu and Malkiel, 2003), increased volatility of firm fundamentals (Wei and Zhang, 2006), increased competition in product markets (Irvine and Pontiff, 2009), and the increase in younger (Fink et al., 2009) and riskier (Brown and Kapadia, 2007) firms listing in stock markets. However, other studies dispute the claim of a long-term trend in idiosyncratic volatility. Through a regime-switching model, Bekaert et al. (2012) show that there is no trend in IVOL in the U.S. as well as in 22 other developed markets. They propose instead that IVOL followed a stationary autoregressive process that occasionally switched to a higher variance regime. Related to this, Brandt et al. (2010) argue that the pattern of idiosyncratic volatility over time is episodic and is driven by the behavior of retail investors. They show that the positive trend in the U.S. over the period 1962–1997 eventually reversed, and that the increase and subsequent reversal was concentrated among firms with low stock prices and high retail ownership. In his study of emerging markets, Angelides (2010) also suggests that the behavior of asset-specific risk is sample and period-specific.

The relationship between idiosyncratic volatility and cross-sectional stock returns is another contentious issue with Ang et al. (2006) presenting evidence of a "puzzling" negative relationship between IVOL and cross-sectional returns for U.S. stocks when finance theory suggests either a positive relationship or none at all. The classic CAPM suggests that there should be no relationship between idiosyncratic risk and stock returns if investors can fully diversify. However, in cases where investors cannot fully diversify, Levy (1978) and Merton (1987) suggest a positive relationship as investors demand compensation for bearing idiosyncratic risk. The evidence of a negative and significant IVOL effect over 1963–2000 for U.S. stocks is puzzling because it persists even after controlling for various firm characteristics (size, value, liquidity, momentum, analyst forecast dispersion) and market conditions (bull and bear markets, recessions and expansions, high and low market volatility). Brockman and Yan (2006) also find a negative IVOL effect in the U.S. for the period from 1926 to 1962. A follow up study by Ang et al. (2009) confirm their U.S. findings for 22 other developed markets around the world as they report a statistically significant difference in risk-adjusted returns between high and low IVOL portfolios of 1.31% per month.[3] In a related study on emerging markets, Angelides (2010) found a negative relationship between idiosyncratic volatility and market returns using regression analysis, but only when considered together with market risk and only in their pooled sample of 24 countries. On its own, Angelides (2010) reports that idiosyncratic volatility is unrelated to market returns, both on an individual country basis and in the pooled sample. Examining frontier markets, Bley and Saad (2012) also report a negative idiosyncratic volatility effect in Saudi Arabia and Qatar

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[3] However, some studies suggest that Ang et al.'s findings are not robust to portfolio weighting schemes (Bali and Cakici, 2008) and controls for short-term reversals (Huang et al., 2010). Others argue that a positive relationship exists between idiosyncratic volatility and returns using alternative measures of expected idiosyncratic volatility (Malkiel and Xu, 2004; Spiegel and Wang, 2006; Divatopolous et al., 2008; Fu, 2009; Chua et al., 2010).

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