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Risk and return in the Chinese stock market: Does equity return dispersion proxy risk?☆

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ABSTRACT

We examine whether equity return dispersion, measured by the cross-sectional standard deviation of stock returns, is systematically priced in the cross-section of stock returns in China. We find that return dispersion carries a positive price of risk even after controlling for market, size, book-to-market, and idiosyncratic volatility effects. We observe that stocks with greater sensitivities to equity return dispersion yield higher average returns. The finding of a significant return dispersion effect is robust to alternative portfolio sorts based on the well-established risk factors as well as industry portfolios. We argue that equity return dispersion captures the fundamental uncertainty associated with economic transitions and the flexibility of adaptability to fundamental economic restructuring that cannot be captured by market and firm level factors. To that end, return dispersion serves as a more meaningful proxy for risk in this emerging market that has experienced a significant economic transition during much of the sample period.

1. Introduction

As one of the main drivers of global economic output and demand, China and its stock markets have attracted much attention in the literature. Due to its unique institutional and investor characteristics, researchers have examined the Chinese stock market from many different angles.[1] However, the strand of the literature focusing on asset pricing models for this market is still evolving. Previous studies on the Chinese

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[1] Chan et al. (2007) provide a comprehensive review of the published works on China.

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stock market document mixed findings on the systematic risk factors that drive the variation in the cross-section of returns.[2] Overall, the evidence reported so far is generally against the Capital Asset Pricing Model (CAPM) and suggests that the market factor does not explain the cross-sectional variation in returns in this emerging market (e.g. Drew et al., 2004; Wang and Xu, 2004; Wong et al., 2006; Eun and Huang, 2007). The evidence related to the alternative determinants of stock returns is mixed at best. Nevertheless, as one of the key drivers of global economic activity, understanding the systematic drivers of stock market returns in this country is of interest to not only market regulators and domestic investors, but also to international investors who play an increasingly active role in this market.

An increasing number of studies on U.S. stock returns focus on equity return dispersion measured by the cross-sectional standard deviation of stock returns in the market in a given period. In the literature on U.S. stock returns, equity return dispersion has been associated with business cycles (Christie and Huang, 1994; Duffee, 2001), aggregate market volatility (Stivers, 2003), idiosyncratic volatility (Stivers, 2003; Connolly and Stivers, 2006), and the value and momentum premium in stock returns (Stivers and Sun, 2010; Bhootra, 2011).

In an extension to asset pricing models, recent studies document that return dispersion also carries a significant positive price of risk even after controlling for alternative systematic risk factors. The findings reported by Jiang (2010) and, more recently, by Demirer and Jategaonkar (2013) suggest that return dispersion captures the uncertainty related to fundamental economic restructuring that cannot be explained by the alternative well-established market and firm level risk factors. These studies also suggest that the inclusion of return dispersion in asset pricing models leads to lower pricing errors and improves the goodness of fit over the CAPM and Fama and French (1993) three factor alternatives.

Given these findings, a natural question to ask is whether return dispersion is significantly priced in the cross-section of stock returns in China that has experienced a significant economic transformation over the past several decades. Therefore, this study contributes to the literature on asset pricing in the Chinese stock market by enlarging our understanding of the dimension of uncertainty in market fundamentals captured by equity return dispersion. To the best of our knowledge, this study is the first to examine return dispersion as a systematic factor in asset pricing models for Chinese stock returns.

This study has several contributions to the literature. First, using recent data, we re-examine the validity of the CAPM and the Fama and French (1993) factors on the cross-section of stock returns in China. Second, we use alternative portfolio sorts to examine the prevalence of the idiosyncratic volatility (IV) effect on returns in this market.[3] Finally, we extend the asset pricing literature for China by examining whether equity return dispersion carries a significant price of risk even after controlling for alternative risk factors. By examining the dimension of uncertainty captured by return dispersion in an emerging market, this study contributes to not only the asset pricing literature on China, but also to the emerging literature on equity return dispersion.

Consistent with the evidence on U.S. stock returns (Jiang, 2010; Demirer and Jategaonkar, 2013), we find that equity return dispersion cross-sectionally drives stock returns, even after controlling for market, size, book-to-market, and idiosyncratic volatility effects. We observe that stocks with greater sensitivities to equity return dispersion indeed yield higher average returns and that the return dispersion effect is robust to alternative portfolio sorts. Following the suggestion by Chen and Petkova (2012) that idiosyncratic volatility may be associated with real option opportunities with a firm, the finding of a robust return dispersion effect in the presence of an insignificant idiosyncratic volatility effect suggests that return dispersion indeed captures what Berk et al. (1999) term the real growth options and the flexibility of adaptability to fundamental economic restructuring associated with a firm. This is also in line with the hypothesis by Pastor and Veronesi (2009) that the risk that is idiosyncratic to particular firms during the initial phase of technological shifts transforms into a market wide systematic risk as the adoption probability of the new technology across the market increases over time.

It is possible that equity return dispersion is what Kogan and Papanikolaou (2013) term as the common systematic risk factor associated with firms' sensitivities to technology shocks which also drive the difference in the returns among firms sorted on various firm level characteristics including idiosyncratic volatility.

[2] See, for example, Drew et al. (2004), Wang and Xu (2004), Wong et al. (2006), Eun and Huang (2007), Chen et al. (2010), Narayan and Zheng (2010), Opie and Zhang (2013), and Choi et al. (2013). The findings of these studies are discussed in detail in the literature review section.

[3] Drew et al. (2004) argue that size and idiosyncratic volatility may serve as proxies for systematic risk in China whereas Eun and Huang (2007) document a significantly negative relationship between firm-specific risk and expected returns.