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Idiosyncratic volatility and stock returns: Evidence from the MILA



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1. Introduction

Since the pioneering work of Fama and MacBeth (1973), which showed that idiosyncratic volatility (IVOL) is not a priced factor in the U.S. (in line with predictions of the CAPM model of Sharpe (1964) and the three-factor model of Fama and French (1993)), several studies have attempted to understand the role of IVOL (if any) in explaining one-period ahead returns. To date, findings are mixed, pointing to a negative, positive, or a non-existent association between IVOL and future returns.

Ang et al. (2009) show evidence of a negative (perhaps puzzling) relationship between lagged IVOL and future excess returns using monthly data for a sample of stocks from developed countries. This finding is similar to one reported by the same authors for the U.S. (see Ang et al. (2006)). Peterson and Smedema (2011) also find a negative relationship between lagged (or realized) IVOL and returns (for all months except January) in the U.S. Furthermore, Chen et al. (2012) document that the negative (and significant) alpha for a value-weighted portfolio, long on high past IVOL and short on low IVOL common stocks, tends to be quite ubiquitous. The negative spread is present for a subsample of both large and small stocks as well as

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ABSTRACT

This paper examines the association between idiosyncratic volatility and stock returns in the MILA from 2001 to 2014. Based on portfolio strategies that rely on one- or two-way sorts, we find that idiosyncratic risk is not a predictor of returns in the whole period or during high or low volatility months in the integrated market. We confirm the lack of an idiosyncratic volatility effect in a multivariate setting conducting errors-in-variables-free panel regressions. Overall, unsystematic risk is not a priced factor in the MILA, in line with predictions of several pricing models and recent literature in the U.S. market.

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for subgroups of stocks determined by prices ranges (e.g., the negative alpha is shown to be highly significant for portfolios of stocks with prices that range from \$5 to \$10 USD). In addition, the authors find that the indirect relationship between IVOL and returns is significant even after controlling for the effect of past (monthly) returns into current month returns. In the same vein, Guo and Savickas (2010) find that, controlling for size (usually small stocks show higher IVOL than large stocks), portfolios of high IVOL stocks underperform in risk-adjusted terms portfolios of low IVOL stocks. Furthermore, the authors show that in pricing regressions, a factor related to idiosyncratic risk (returns of a portfolio long in low IVOL stocks and short in high IVOL stocks) appears, in the cross section, positively related to stock returns.

Two recent papers provide possible explanations for the negative association (or IVOL anomaly) between IVOL and returns. Han and Kumar (2013) show that retail investors tend to hold high IVOL stocks (usually overpriced) due to the speculative features (e.g., high idiosyncratic skewness and low price) of these assets. High retail trading proportion stocks, in turn, tend to significantly underperform stocks that are predominantly traded by institutional investors. Overall, the proportion of retail investing appears to be related to the puzzling negative association between IVOL and return. Furthermore, Avramov et al. (2013) document that several pricing anomalies (in particular, the IVOL anomaly) are more salient in the worst creditrated stocks. In essence, the short side of the IVOL strategy tends to profit around price decreases following credit rating downgrades. When Avramov et al. (2013) exclude low-rated stocks or periods around downgrades, the profitability of the IVOL long-short portfolio vanishes. Thus, financial distress appears to be an important driver of the IVOL anomaly.

For emerging markets, the issue of the pricing ability of IVOL has unfortunately attracted less attention. Two studies that also find a negative association between past IVOL and returns are those of Lee and Wei (2012) and Nartea et al. (2013). Lee and Wei (2012) document a negative relationship between lagged IVOL and expected short-run returns for stocks listed in the Hong Kong Exchange. They claim (based on Shleifer and Vishny (1997)) that low idiosyncratic risk stocks are more profitable because arbitrageurs, being risk-averse in the short run, usually tilt their portfolios to low volatility shares, causing an upswing in trading volume and prices for this particular type of stock. Nartea et al. (2013) report a negative relationship between risk-adjusted returns and IVOL (measured as in Ang et al. (2006, 2009)) in China. This negative association might be related to a behavioral tendency of Chinese investors (many of them retail investors) who are prone to overpay for high volatility or speculative stocks that ultimately underperform.

A different set of studies reports a direct, perhaps more intuitive, relation between IVOL and one-step ahead returns. Malkiel and Xu (2004) document a positive association between stock returns and past IVOL using the portfolio formation methodology of Fama and MacBeth (1973). Interestingly, the authors show that this association is stronger than the one between returns and beta (or size). In addition, Fu (2009) shows evidence of a positive relationship between expected IVOL (proxied by a one-step forecast from an EGARCH model) and expected (monthly) returns. Also in the U.S. market, Huang et al. (2010) find a positive relation between monthly returns and IVOL (estimated with a rolling window of thirty months of returns and using an exponential GARCH model). The positive relationship between expected returns and idiosyncratic volatility can be understood based on Merton's (1987) model, which shows that undiversified investors will ask for a premium to hold high IVOL stocks. As a consequence, these high IVOL stocks will bring about higher expected returns. Moreover, Vozlyublennaia (2012) documents an overall positive and significant relationship between returns and lagged IVOL (see Table 3 of her paper). She is able to determine which characteristics are more conducive of a positive correlation between returns and IVOL. In particular, large companies with low leverage and high share turnover and cash are more likely to show a positive association between IVOL and returns.

In a recent study, Eiling (2013) presents evidence of a positive risk-adjusted spread between high and low IVOL stocks and argues that the premium is related to human capital. She claims that conventional pricing models by omitting factors (that end up in the residual) associated with industry-specific human capital (proxied by the growth rate in wages of several representative industries) distort the role of IVOL in explaining returns. Overall, a significant portion (e.g., up to 36%) of the IVOL premium appears to be related to a compensation for bearing nontradable human capital risk instead of company-specific risk (in fact, high IVOL portfolios showed a positive and significant exposure to human capital factors and vice versa).

On the other hand, some of the literature supports the idea that IVOL is not significantly associated with future stock returns. For example, Bali and Cakici (2008) are not able to find a significant (and consistent) relationship between IVOL and average returns (or Fama and French (1993) three factor alphas). Even though the authors report a negative and significant relationship between IVOL and average returns under certain portfolio configurations, the association disappears when they omit the smallest, lowest priced, and least liquid stocks. Fink et al. (2012) show that IVOL (out-of-sample) forecasts using returns' information up to time t - 1 (i.e., using the information that in practice is available to a portfolio manager) are not informative of future (one-month ahead) returns. Controlling for liquidity effects, Han and Lesmond (2011) find that a hedge portfolio long on high IVOL (or residual IVOL calculated after purging the effect on IVOL of both the bid-ask spread and the percentage of zero returns) stocks and short on low IVOL (or residual IVOL) stocks delivers a zero alpha after controlling for market, size, distress, and momentum effects. Furthermore, Jiang et al. (2009) show that controlling for future earning shocks the association between returns and IVOL disappears. Overall, the authors' evidence points to the fact that IVOL predicts returns through information on future earnings.

In addition, Chen and Petkova (2012) argue that the negative relationship documented by Ang et al. (2006, 2009) between IVOL and returns is a byproduct of an omitted risk factor (because the residual captures the effect on an omitted variable). As a first step to identifying this omitted factor, Chen and Petkova (2012) decompose total market variance into average (value-weighted) stock variance and average correlation. Empirically, they show that the omitted factor relates only to the

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