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Dispersion in analysts' earnings forecasts and credit rating ☆

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ABSTRACT

This paper shows that the puzzling negative cross-sectional relation between dispersion in analysts' earnings forecasts and future stock returns may be explained by financial distress, as proxied by credit rating downgrades. Focusing on a sample of firms rated by Standard & Poor's (S&P), we show that the profitability of dispersion-based trading strategies concentrates in a small number of the worst-rated firms and is significant only during periods of deteriorating credit conditions. In such periods, the negative dispersion–return relation emerges as low-rated firms experience substantial price drop along with considerable increase in forecast dispersion. Moreover, even for this small universe of worst-rated firms, the dispersion–return relation is non-existent when either the dispersion measure or return is adjusted by credit risk. The results are robust to previously proposed explanations for the dispersion effect such as short-sale constraints and leverage.

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1. Introduction

There is a puzzling negative cross-sectional relation between dispersion in analysts' earnings forecasts and future stock returns. In particular, Diether, Malloy, and Scherbina (2002) (henceforth DMS) show that the trading strategy of buying low dispersion stocks and selling high dispersion stocks yields statistically significant and economically large payoffs over a period of one to three months. Sadka and Scherbina (2007) suggest that the dispersion effect is especially prominent among illiquid stocks, which explains its persistence through time. The dispersion effect is anomalous because, while investors are expected to discount uncertainty about future profitability, they seem to pay a premium for bearing such uncertainty. The cross-sectional dispersion–return relation is unexplained by the standard asset pricing models including the capital asset pricing model (CAPM), the Fama and French (1993) model, and the Fama–French model augmented by a momentum factor.

DMS attribute the negative relation between dispersion and future return to market frictions. Specifically, higher dispersion introduces larger optimistic bias into stock prices as optimistic investors bid prices up, while short-sale constraints prevent pessimistic views from being reflected in stock prices, thus causing high dispersion stocks to become overpriced. The dispersion effect is manifested as the overpricing is corrected over time.

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However, our results show that proxies for short-sale costs (including turnover, institutional holdings, and number of shares outstanding) suggested by D'Avolio (2002) do not capture the dispersion effect. Johnson (2004), on the other hand, suggests that the dispersion effect is consistent with a rational asset pricing paradigm. In this paradigm, dispersion is a proxy for unpriced information risk and, in the presence of leverage, expected returns should decrease with idiosyncratic asset risk. Johnson's model predicts that the dispersion effect should strengthen with firm leverage. However, we find that the dispersion effect is indistinguishable across levered and unlevered firms. Liquidity proxies such as turnover, firm size, and the Amihud (2002) illiquidity measure do not capture the dispersion effect either, at least in the sample of rated firms.

This paper shows that the dispersion–return relation may be explained by financial distress as proxied by credit rating downgrades. Indeed, the information in credit risk seems to subsume the information in dispersion in capturing the uncertainty about future earnings. We now examine the theoretical and empirical motivation behind our analysis.

Theoretically, structural models of default risk (e.g., Merton, 1974) view firm equity as a call option on the firm with a strike price equal to the face value of debt. Default occurs when the underlying firm value falls below the strike. Default risk, therefore, captures the uncertainty about future earnings, growth rates, and the cost of equity capital—ingredients used in asset valuation, while the dispersion measure reflects uncertainty about next year's earnings, which is a single component in asset valuation.

Empirically, Dichev (1998) shows that investors pay a premium for bearing default risk. This puzzling finding has recently been confirmed by Griffin and Lemmon (2002), Campbell, Hilscher, and Szilagyi (2008), and Avramov, Chordia, Jostova, and Philipov (2006). Essentially, the negative relation between default risk and stock returns constitutes an anomalous pattern in the cross-section of returns as does the subsequently documented negative relation between stock returns and analysts' forecast dispersion. In the context of the momentum anomaly, Zhang (2006) associates momentum profitability with dispersion, while Avramov, Chordia, Jostova, and Philipov (2007) show that momentum profitability concentrates in high credit risk firms and, moreover, that the credit rating effect subsumes the dispersion effect in capturing momentum profitability.

Motivated by the potential link between credit rating and dispersion in analysts' earnings forecasts, we examine whether the dispersion effect is explained by firm credit conditions. Our experiments are based on a sample of 3,261 firms rated by Standard & Poor's (S&P). More specifically, we use the S&P Long-Term Domestic Issuer Credit Rating, which is available on Compustat on a quarterly basis starting from the second quarter of 1985.

We find that the dispersion effect is a facet of non-investment grade (NIG) firms and is virtually non-existent otherwise. In particular, strategies that buy low dispersion stocks and sell high dispersion stocks yield a statistically insignificant payoff of 31 basis points per month for investment grade (IG) firms (with S&P rating of BBB− or better). In contrast, dispersion strategies are significantly profitable across non-investment grade firms (with S&P rating of BB+ or worse). For such firms, the return differential between the lowest and highest dispersion stocks is a highly significant 101 basis points per month.

Refining the credit rating groups, we demonstrate that the dispersion strategy payoff is insignificant for the subsample of stocks rated AAA–BB+. Strikingly, this subsample accounts for 95.58% of the market capitalization of the rated firms and 73.86% of the total number of the rated firms. In other words, dispersion profitability is derived from a subsample of rated firms that accounts for less than 5% of the total market capitalization of all rated firms or less than 27% of all rated firms. In contrast, implementing dispersion strategies for subsamples of stocks that progressively exclude the smallest stocks leaves dispersion profitability economically and statistically significant even when 72% of the smallest firms are excluded. The impact of credit risk on the dispersion return relation is indeed unique and does not merely reflect the impact of firm size even though low-rated stocks tend to be smaller.

Further, the ability of dispersion to predict future stock returns is attributable to the predictive power of credit rating. First, removing the credit rating component from dispersion yields an adjusted dispersion measure that has no statistical or economic power to predict the cross-section of future returns. Second, implementing dispersion strategies using credit rating-adjusted returns yields investment payoffs that are economically small and statistically insignificant.

Our findings are robust to previously proposed explanations. In particular, we show that firm level leverage, turnover, idiosyncratic volatility, institutional ownership, and size, all of which have been linked to the dispersion–return relation, do not capture the impact of dispersion on returns, whereas credit ratings do capture the dispersion effect. In addition, our results are robust to adjusting returns by common risk factors, equity characteristics, as well as potential industry effects.

To understand the impact of financial distress on the relation between analyst forecast dispersion and returns, we examine credit rating downgrade events. The negative relation between forecast dispersion and future returns prevails only during periods of credit rating downgrades. In such periods, stock prices of the worst-rated firms decline substantially, while the uncertainty about their firm fundamentals rises considerably. There is no significant dispersion–return relation during periods of stable or improving credit conditions for all rated stocks, and there is no significant relation during all periods for the highly rated stocks. The dispersion variable becomes insignificant when we include a dummy variable for credit rating downgrades in Fama and MacBeth (1973) regressions of future returns on dispersion. Moreover, buying low dispersion stocks and selling high dispersion stocks and holding the long and short positions for up to three months provides payoffs that are economically small and statistically insignificant during periods that record no credit rating downgrades.

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