NIJMEGEN SCHOOL OF MANAGEMENT

Can Sentiment be predicted to have cross-sectional effects?

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Black (1986) „Noise“

- “Noise trading is essential to the existence of liquid markets.”
- “Noise makes financial markets possible, but also makes them imperfect.”
- “The price of a stock reflects both the information that information traders trade on and the noise that noise traders trade on.”
- “In other words, noise creates the opportunity to trade profitable, but at the same time makes it difficult to trade profitable.”

Investor Sentiment

- Common judgment errors made by a group of investors (noise traders) rather than a series of uncorrelated mistakes
- Barberis et al. (1998):
  - Particular categories of stocks will be more affected by sentiment than others.
  - Differences in response of stock prices to the bullishness or bearishness of the market lead to relative mispricing
  - Stocks of firms with specific characteristics are more exposed to noise trader sentiment

Our contribution

- When sentiment-based demands vary across stocks, to what extend is sentiment responsible for the observed cross-sectional patterns in stock returns?
- If sentiment correlates with contemporaneous returns of categories of stocks, subsequent cross-sectional variations in stock returns is assumed to represent corrections of the initial mispricing.
- Can Sentiment be predicted to have cross-sectional effects?

Empirical Tests

- Dec 1991 – Apr 2005
- All large-, medium and small-cap firms traded in the German market
- Stock prices and firm specific data from Datastream
- Sentiment proxy: German Market Indicator (G-Mind) from the Centre for European Economic Research (ZEW)
  - Monthly survey among 350 financial analysts and institutional investors
  - Indicator takes values between +10 (bullishness) and -10 (bearishness)

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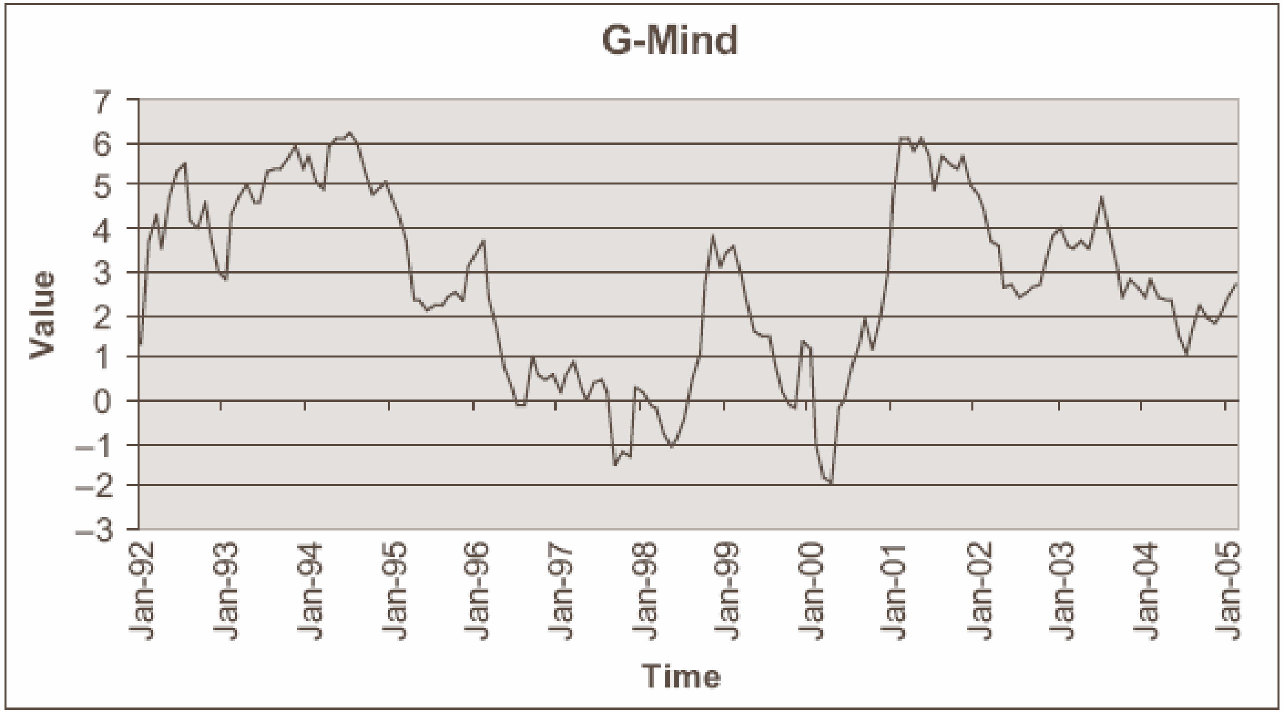
FIGURE 1 Values of the G-Mind sentiment index over the period December 1991 until April 2005.



The G-Mind provides an indication of the level of bearish- or bullishness among a selected sample of German investors. The index can take a value between −10 and +10, the latter extreme representing optimism or bullishness and the former representing pessimism or bearishness. The index is based on the results of the ZEW financial market survey and is constructed on a monthly basis.

Two-stage regression

- Cross-sectional regression (monthly, OLS):

$$R_{it} = a_t + b_t Age_{it-1} + c_t \log(MV)_{it-1} + d_t div / share_{it-1} + e_t EPS_{it-1}$$
$$+ f_t \log(BV / MV)_{it-1} + g_t EF / A_{it-1} + h_t RISK_{it-1} + e_t$$

- Time-series regression (WLS):

$$\hat{b}_t = c + d\ SENTIMENT_{t-1} + u_t$$

  - Time series of coefficients is heteroskedastic
  - Significant coefficients of the cross-sectional regressions will have higher weights in the time series regression
  - No significant autocorrelation in the time series of coefficients

Results: Cross-sectional regression

TABLE 1 Regression results of monthly returns against preceding period firm characteristics.

Variables	Mean (standard error)	Min	Max
Age	−0.0008 (0.0007)	−0.0323	0.0341
Log(*MV*)	0.0133 (0.0082)	−0.2077	0.5114
Div/share	−0.0163 (0.0060)***	−0.2084	0.1554
EPS	−0.0041 (0.0023)*	−0.1430	0.0911
Log(*BV/MV*)	0.0109 (0.0077)	−0.1885	0.4657
EF/A	0.0022 (0.0156)	−1.1842	0.9090
RISK	0.0005 (0.0008)	−0.0360	0.0452

***, ** and * show coefficient is significant at the 1%, 5% and 10% level, respectively.

Results: Time-series regression

TABLE 2 Regression results of estimated coefficients on the previous period sentiment proxy.

Variables	Mean	When investors are bullish, expected returns tend to...
Age	0.0003	
Log(*MV*)	−0.0149***	Decrease for large firms
Div/share	−0.0013	
EPS	0.0054***	Increase for profitable firms
Log(*BV/MV*)	−0.0127**	Decrease for value stocks or increase for growth stocks
EF/A	0.2797***	Increase for highly leveraged firms
RISK	−0.0031***	Decrease for risky firms

***, ** and * show coefficient is significant at the 1%, 5% and 10% level, respectively.

Conclusion

- We find evidence that investor sentiment has predictive power for the cross-section of stock returns.
- Using a two-step regression approach, we find strong evidence that the beginning of period level of sentiment can be used to predict pattern in the cross-section of stock returns.
- Specifically, when investors are bullish, growth stocks, small-cap stocks, highly leveraged stocks, non-risky stocks and profitable stocks are experiencing significantly higher subsequent returns.