Looking under the hood: Quantitative vs. qualitative inputs to analyst forecasts of fundamental risk

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Big Picture

- Analysts are a critical information intermediary in financial markets

- Understanding how they process information and produce outputs is important

- Analysts outputs are a function of quantitative and qualitative factors

- Specifically, this paper examines whether earnings surprises and tone of conference calls are related to the analysts projected stock price scenarios (Spread between Bull and Bear scenarios)

- Interesting topic given the importance of analysts to the effective functioning of financial markets

Big Picture

- Where does this paper fit into the analysts literature
    - We know a lot about analyst characteristics, their outputs and their usefulness to financial markets (e.g., Bradshaw, 2011)
    - But we know less about how they generate their outputs (primarily due to lack of data)
        - Brown et al., 2015 is an interesting exception using survey data
    - This paper contributes by helping us gain a better understanding of how analysts think about probability distributions and map them into outcomes

Table 3

- Key finding

Panel A. Averages of Spread, UE, and Tone - Sort by Unexpected Earnings				
	Low UE	Med UE	High UE	Low-High UE
Spread	0.726	0.602	0.743	-0.017 (-0.66)
Observations	[1,497]	[1,411]	[1,428]	

Panel B. Averages of Spread, UE, and Tone - Sort by Tone				
	Low Tone	Med Tone	High Tone	Low-High Tone
Spread	0.760	0.678	0.623	0.137*** (6.83)
Observations	[1,473]	[1,436]	[1,427]	

Panel C. Averages of Spread - Two-way Sort by Unexpected Earnings and Tone				
	Low Tone	Med Tone	High Tone	Low-High Tone
Low UE	0.794 [651]	0.717 [498]	0.611 [348]	0.183*** (6.56)
Med UE	0.639 [365]	0.612 [440]	0.572 [606]	0.067*** (3.20)
High UE	0.808 [457]	0.727 [498]	0.696 [473]	0.112*** (4.05)
Low-High UE	-0.014 (-0.58)	-0.010 (-0.47)	-0.085*** (-3.82)	

Table 5

- Key finding

Panel A: Full Sample		
Outcome Variable: *AbsValErr* Mediating Variable: *Spread*	Standardized Coefficient	Z-statistic
Direct Effects		
AbsUE	0.057**	2.10
Tone	−0.010	−0.53
Spread	0.153***	5.61
Mediating Path		
AbsUE, Spread	0.111***	5.94
Tone, Spread	−0.058***	−3.81
Indirect Effects		
AbsUE	0.017***	3.84
Tone	−0.009***	−3.17
Total Effects (Direct + Indirect)		
AbsUE	0.074***	2.67
Tone	−0.019	−0.98
Spread	0.153***	5.61
% Effect Mediated		
AbsUE, Spread	23.0%	
Tone, Spread	47.4%	
Controls	Yes	
Analyst, Industry, Year-Quarter FE	Yes	
Observations	4,286	
R^2	0.75	

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Some Concerns

- However, I find aspects of the development and analysis puzzling
  - Use of Tone
    - Not sure of the mechanism that is being contemplated in the link between Tone and Spread.
    - Determined as positive words-negative words scaled by total words
    - Why exactly is more positive tone expected to yield tighter spreads
    - Isn't it more likely to be related to Tilt
  - Use of AbsUE
    - Not sure of the mechanism that is being contemplated in the link between AbsUE and Spread.
    - Why are level of Spreads expected to be larger for large AbsUE as compared with small AbsUE
    - Why not volatity of earnings? Return volatility?

Some Concerns

- However, I find aspects of the analysis puzzling

  – Spread or change in Spread

  – It seems like innovations in the information set should affect the innovation in Spread rather than the level of Spread.

  – Opens doors to other possibilities

    • Prior work linked earnings forecast to analysts revisions (i.e., Base case revisions)

    • Are Spread revisions and Base case revisions related

    • Allows the paper to be approached from the perspective of how new information affects analysts' perception of risk - return tradeoffs

- Minor issues

  – Include lagged Spread in the regressions

  – Include past momentum in the regressions

Some Concerns

- However, I find aspects of the analysis puzzling
  - Eliminates issues with scaling variable
    - Spread is (Bull-Bear)/(average of Bull and Bear)
    - Denominator likely lower in periods of High VIX and Crises

Panel A. Averages of Spread, UE, Tone, VIX, and Crisis - Low and High VIX Periods

	Low VIX			High VIX			Difference
	Mean	Med	STD	Mean	Med	STD	High-Low
Spread	0.638	0.576	0.276	0.745	0.666	0.327	0.106***
UE	0.0008	0.0006	0.007	-0.0003	0.0006	0.011	-0.001***
AbsUE	0.003	0.001	0.007	0.005	0.002	0.010	0.002***
Tone	0.618	0.619	0.575	0.393	0.428	0.632	-0.225***
VIX	18.29	18.16	1.954	33.12	27.59	12.78	14.83***
Crisis	0.125	0	0.331	0.506	1	0.500	0.381***
Observations	2,172			2,164			

Panel B. Averages of Spread, UE, Tone, VIX, and Crisis - Crisis and No-Crisis Periods

	NoCrisis			Crisis			Difference
	Mean	Med	STD	Mean	Med	STD	Crisis-NoCrisis
Spread	0.655	0.590	0.282	0.768	0.697	0.343	0.113***
UE	0.001	0.0007	0.007	-0.002	0.0004	0.013	-0.003***
AbsUE	0.003	0.001	0.006	0.006	0.001	0.012	0.003***
Tone	0.619	0.617	0.562	0.260	0.309	0.649	-0.359***
VIX	21.01	19.51	4.832	35.83	29.13	15.41	14.82***
Observations	2,967			1,369			

$^*\ p < 0.10,\ ^{**}\ p < 0.05,\ ^{***}\ p < 0.01$

Some Additional Thoughts

- Are all Spreads the same (as assumed in this study)

- Risk in this paper is approached from the perspective of volatility

- But what about risk viewed from the buy-side perspective of downside risk (i.e., Location of Spread)

Some Additional Thoughts

- Changes in Spread

- Interaction between location, size and tilt

- How does spread relate to prior spread

- Do analyst characteristics influence spread

- What about other analysts target prices

- Use of spread to balance incentive to be optimistic while hedging on the downside

Thank You