Earnings Uncertainty and Attention

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GW | Business

December 2019

Attention Constraints

- There are limits to investor attention

- Attention constraints explain behavior in markets

  - Underreaction to Information

  - Co-movement

  - Slow Moving Capital

How Do Investors Allocate Attention?

- Market Information vs Firm-specific Information

- More attention to market information
  - ▶ Peng and Xiong (2006)
  - ▶ Reduces portfolio uncertainty the most

- More Market Timing during Recessions
  - ▶ Kacperczyk, Van Nieuwerburgh, and Veldkamp (2016)
  - ▶ Uncertainty higher during Recessions

This Paper

- Earnings Uncertainty and Attention in the Cross-section

- Hypothesis: More attention to high uncertainty stocks
  - ► Reduces portfolio uncertainty the most

- Opposing Claim: Less attention to high uncertainty firms
  - ► Processing information about these firms can be costly

Earnings Uncertainty Measures

- % of uncertainty words in 10-K and 10-Q Filings

  ▶ Loughran and McDonald (2011) Uncertainty Word List

  ▶ Examples: Ambiguous, Arbitrarily, Cautious, Imprecise

- Motivation: % of uncertain words in S-1 IPO filing

  ▶ Loughran and McDonald (2013)

  ▶ Good proxy for ex ante value uncertainty

- Also use decile ranking of earnings volatility

Future Earnings Volatility

- % UNCERTAIN predicts future earnings volatility

Variables	Future Earnings Volatility(FEVOL)			
	(1)	(2)	(3)	(4)
EVOLRANK	0.340***		0.222***	
	(0.004)		(0.003)	
% UNCERTAIN		0.351***		0.146***
		(0.025)		(0.019)
Observations	274,316	230,226	264,768	222,007
Adjusted R-squared	0.425	0.010	0.531	0.435
Controls	No	No	Yes	Yes
Industry and Quarter FE	No	No	Yes	Yes

Return Volatility

- Return Volatility increases with uncertainty

	Stock Volatility(CSTOCKVOL)			
Variables	(1)	(2)	(3)	(4)
STOCKVOL	0.213***	0.233***	0.147***	0.146***
	(0.037)	(0.045)	(0.029)	(0.033)
EVOLRANK	0.004***		0.002***	
	(0.000)		(0.000)	
% UNCERTAIN		0.008***		0.005***
		(0.001)		(0.001)
Observations	278,842	232,536	269,095	224,241
Adjusted R-squared	0.072	0.052	0.144	0.133
Controls	No	No	Yes	Yes
Industry and Quarter FE	No	No	Yes	Yes

Attention Measures

- Google Search Activity: Retail Attention
  - ▸ Da, Engelberg, and Gao (2011)

- Bloomberg Readership: Institutional Attention
  - ▸ Ben-Rephael, Da, and Israelsen (2017)

- Abnormal Trading Volume
  - ▸ Barber and Odean (2008)
  - ▸ Hou, Xiong, and Peng (2009)

Google Search Activity

- Higher retail attention in high uncertainty firms

	Abnormal Search Volume Index (ASVI)			
Variables	(1)	(2)	(3)	(4)
EVOLRANK	0.006***		0.002	
	(0.002)		(0.002)	
% UNCERTAIN		0.075***		0.048***
		(0.015)		(0.016)
Observations	93,228	87,136	89,257	83,326
Adjusted R-squared	0.000	0.001	0.008	0.009
Controls	No	No	Yes	Yes
Industry and Quarter FE	No	No	Yes	Yes

Bloomberg Readership

- Higher institutional attention in high uncertainty firms

	Abnormal Institutional Attention (AIA)			
Variables	(1)	(2)	(3)	(4)
EVOLRANK	-0.003		0.005***	
	(0.002)		(0.002)	
% UNCERTAIN		-0.019*		0.016*
		(0.010)		(0.010)
Observations	23,012	22,177	21,466	20,667
Adjusted R-squared	0.000	0.000	0.147	0.149
Controls	No	No	Yes	Yes
Industry and Quarter FE	No	No	Yes	Yes

Trading Volume

- Higher Trading Volume in high uncertainty firms

	Volume Response (AVOL [0,1])			
Variables	(1)	(2)	(3)	(4)
EVOLRANK	0.047***		-0.000	
	(0.003)		(0.003)	
% UNCERTAIN		0.168***		0.048**
		(0.021)		(0.022)
Observations	278,755	232,468	269,015	224,178
Adjusted R-squared	0.002	0.002	0.022	0.023
Controls	No	No	Yes	Yes
Industry and Quarter FE	No	No	Yes	Yes

Do Attention Constraints Play a Role?

- Rational Bayesian Learning: No underreaction

- Attention Constraints: Underreaction in low attention firms

  - DellaVigna and Pollet (2009)

  - Hirshleifer et al. (2009)

- Test: Immediate and Delayed Price Response

Immediate Price Response

- Higher immediate price response in high uncertainty firms

	Immediate Price Response (CAR[0,1])			
Variables	(1)	(2)	(3)	(4)
SRANK × EVOLRANK	0.006**		-0.000	
	(0.003)		(0.003)	
SRANK × % UNCERTAIN		0.123***		0.103***
		(0.019)		(0.020)
Observations	278,842	232,536	269,095	224,241
Adjusted R-squared	0.079	0.082	0.086	0.091
Controls	No	No	Yes	Yes
Controls × SRANK	No	No	Yes	Yes
Industry and Quarter FE	No	No	Yes	Yes

Delayed Price Response

- Lower delayed price response in high uncertainty firms

	Delayed Price Response (CAR[2,60])			
Variables	(1)	(2)	(3)	(4)
SRANK × EVOLRANK	-0.018***		-0.028***	
	(0.006)		(0.007)	
SRANK × % UNCERTAIN		-0.245***		-0.199***
		(0.047)		(0.048)
Observations	278,842	232,536	269,095	224,241
Adjusted R-squared	0.003	0.002	0.047	0.048
Controls	No	No	Yes	Yes
Controls × SRANK	No	No	Yes	Yes
Industry and Quarter FE	No	No	Yes	Yes

Analyst Response

- Faster analyst response in high uncertainty firms

Variables	On Time Revisions (ONTIME)			
	(1)	(2)	(3)	(4)
EVOLRANK	0.007***		0.006***	
	(0.001)		(0.001)	
% UNCERTAIN		0.153***		0.037***
		(0.006)		(0.005)
Observations	144,728	123,124	140,213	119,156
Adjusted R-squared	0.002	0.020	0.217	0.208
Controls	No	No	Yes	Yes
Industry and Quarter FE	No	No	Yes	Yes

Summary

- Higher attention in High uncertainty firms

  ▶ Higher Google Search Volume

  ▶ Higher Bloomberg Readership

  ▶ Higher Trading Volume

- Underreaction in Low uncertainty firms

  ▶ Smaller immediate reaction of prices

  ▶ Larger post earnings drift

  ▶ Cannot be explained by rational Bayesian learning