Is sell-side research more valuable in bad times?

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Is sell-side research more valuable in bad times?

- Large literature on the value of sell-side research.
  - Analyst output impacts stock-prices. E.g. Womack (1996), Barber, Lehavy, McNichols, & Trueman (2001), Loh & Stulz (2011), Bradley, Clarke, Lee, & Ornthanalai (2012).
  - Analyst coverage affects firm policies and environment. E.g. Kelly & Ljungqvist (2012), Derrien & Kecskes (2012), and Fong, Hong, Kacperczyk, & Kubik (2012).
- However, literature usually ignores the issue of whether the state of the economy affects analyst performance.

This paper

- Looks at the impact of analysts on stocks prices in bad times versus good times.
- We also look at earnings forecast error, report frequency, length, etc.

Worse research in bad times?...

1. **Difficult environment hypothesis**
   - Higher uncertainty and higher difficulty in processing information in bad times makes analysts do worse.
   - Evidence that forecast errors are larger in bad times (e.g. Hope and Kang, 2005).
2. **Shirking hypothesis**
   - Banks have lower investment banking and brokerage profits in bad times—fewer rewards for analysts can lead to less motivated analysts.
   - Analysts can use the higher uncertainty/noise in bad times to hide their lack of effort (Betrand & Mullainathan, 2001)
3. **Inattention hypothesis**
   - A deluge of news in bad times may cause investors to be distracted (Hirshleifer, Lim, and Teoh, 2009). Distracted investors may not react as much to analyst signals.

Or more impactful research in bad times?

1. **Reliance on analysts hypothesis**
   - Kacperczyk and Seru (2007) find that investors with better/private information rely less on analysts.
   - In bad times, the underlying market uncertainty increases. If investors' private signals also become noisier, they might rely more on analyst signals such as recommendation changes.
2. **Career concerns hypothesis**
   - Brokers layoff more analysts in bad times—so analysts may increase effort to prevent attrition.
   - Look at forecast activity/report length/accuracy as a measure of analyst effort
3. **Conflicts of interests hypothesis**
   - Michaely and Womack (1999) show that investment banking conflicts are associated with analyst over-optimism.
   - Less investment banking business in bad times, so analysts face less pressure to produce optimistically biased research. Research quality could improve.

More impactful research in bad times? (Cont'd)

4. **Different skills hypothesis**
   - Kacperczyk, Veldkemp, and Van Niewerburgh (2015) find that fund managers do better in bad times, through better market timing.
   - Glode (2011) argues that investors want fund managers to beat the market in bad times more than in good times.
   - Analysts might hence be motivated to have "bad times skill" just like fund managers do.
5. **Overreaction hypothesis**
   - There is evidence that investors react more to earnings news in bad times (Schmalz and Zhuk, 2016)
   - Perhaps investors react more to all types of news in bad times.
   - Arbitragers are more constrained in bad times, and so cannot counteract such overreaction.

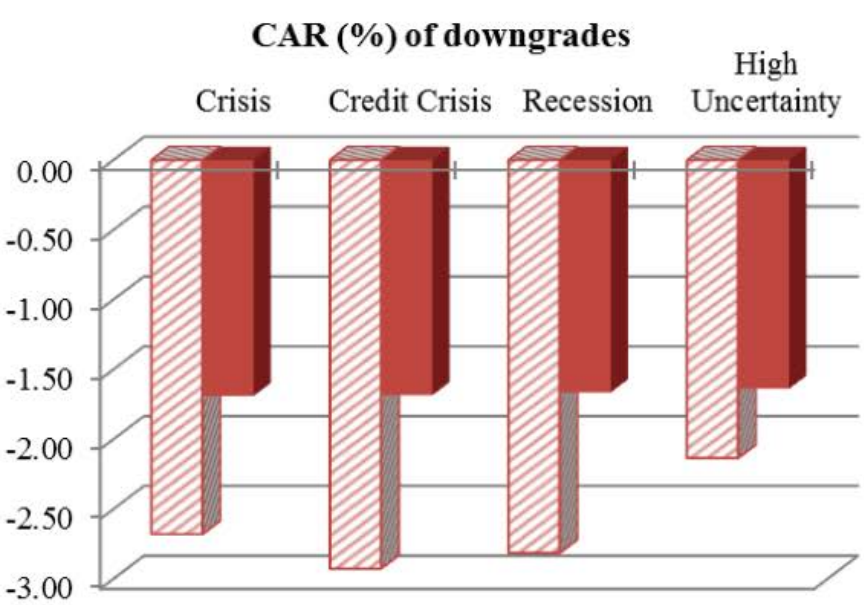
Data & bad times definitions

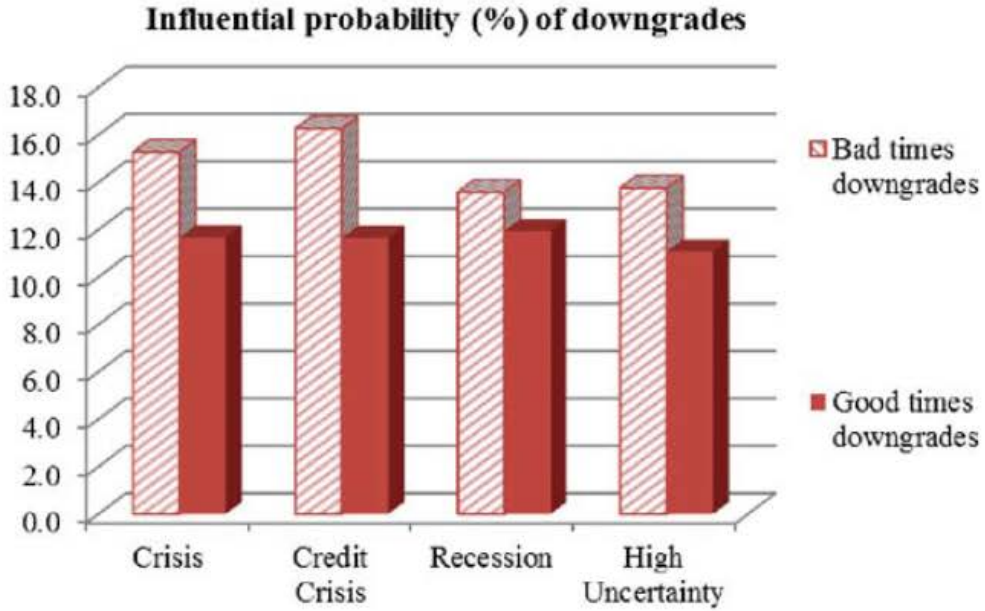
- Quarterly EPS forecasts from IBES 1983-2014 for U.S. firms. Final unrevised forecast is used to determine forecast accuracy.
- Recommendations from 1993-2014. Revisions are defined using analyst's own prior rating as in Ljungqvist et al. (2007).
- Events on firm-news days (earnings, guidance, & multiple-rec days) are deleted as in Loh and Stulz (2011).

Bad times definitions

1. **Crisis**: Sep-Nov 1987 crisis, Aug-Dec 1998 LTCM crisis, Jul 2007-Mar 2009 credit crisis. [8% of months in our sample period]
2. **Credit Crisis**: Jul 2007-Mar 2009. [6% of months]
3. **Recession**: NBER-defined recessions (Jul 1990-Mar1991, Mar-Nov 2001, Dec 2007-Jun2009. [10% of months]
4. **High Uncertainty**: Highest tercile of uncertainty in the Baker, Bloom, and Davis (2016) U.S. historical policy uncertainty index 1983-2014 [33% of months]

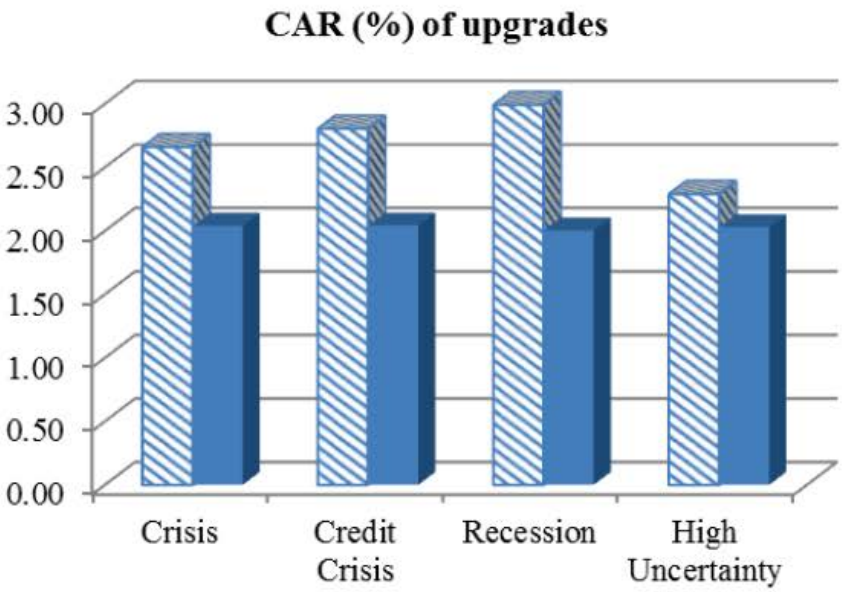
Fig 1A: Stock-price reaction to downgrades

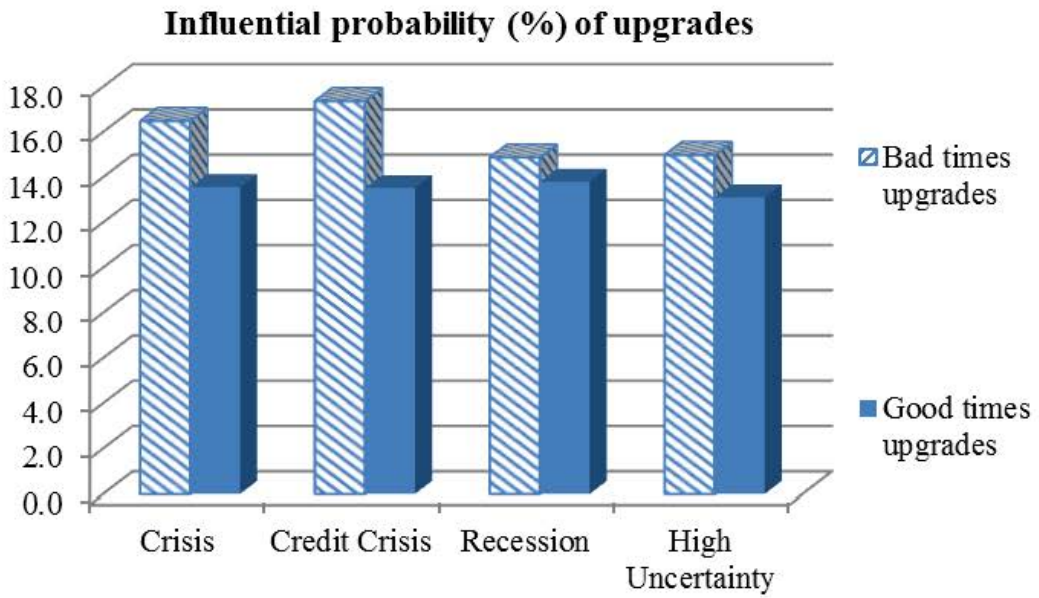




- Cumulative abnormal return (CAR) relative to a size-BM-momentum matched benchmark portfolio from day 0 to day 1 of the recommendation is –2.68% in Crisis and only –1.69% in non-Crisis.
- Also higher fraction of influential downgrades in bad times. (Influential=1 if the reaction direction is correct and 1.96 times more than expected based on the stock's own prior idiosyncratic volatility, as in Loh and Stulz, 2011).

Fig 1B: Stock-price reaction to upgrades





- CAR is 2.66% in Crisis and only 2.04% in non-Crisis.
- Also higher fraction of influential upgrades in bad times.

Main result

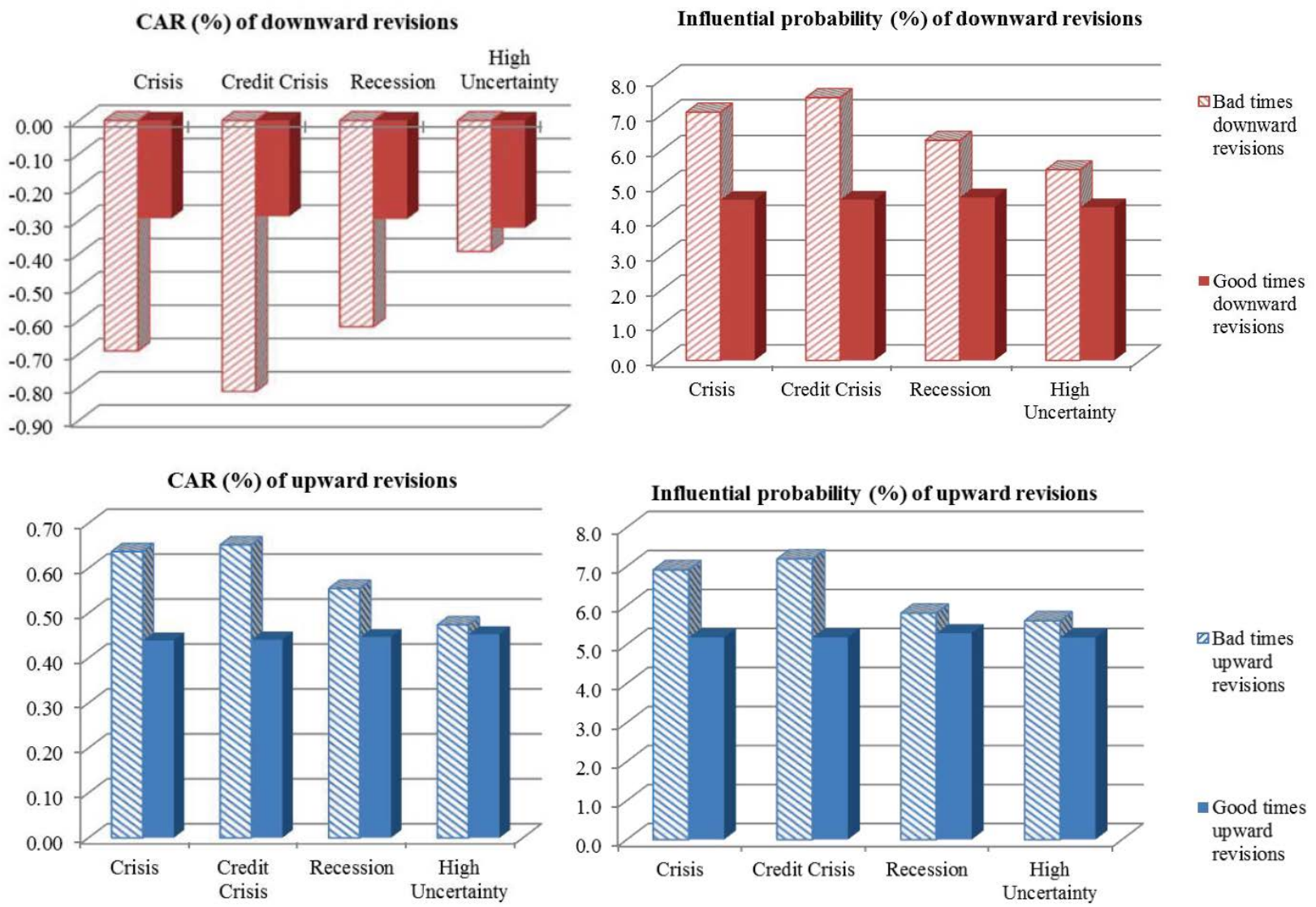
- Analysts move the market more in bad times.
- No support for hypotheses predicting that analysts are less valuable in bad times.

Table 3: Multivariate analysis for rec CAR impact (%)

- We control for industry fixed effects, Leader-follower ratio, Star Analyst, Relative Experience, Forecast Accuracy Quintile, Broker Size, # Analysts, Size, BM, Momentum, Stock Volatility. Stderrs clustered by date.
- We see robust evidence that recommendation revisions have more impact in bad times after controls.

Variables	Crisis		Credit Crisis		Recession		High Uncertainty	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				Downgrades				
Bad Times	-0.991***	-0.998***	-1.239***	-1.383***	-1.148***	-1.018***	-0.495***	-0.557***
	(9.14)	(8.01)	(11.31)	(11.78)	(11.08)	(8.61)	(7.55)	(7.68)
Good times CAR	-1.687	-1.761	-1.686	-1.745	-1.665	-1.754	-1.638	-1.693
#Obs	71070	59511	71070	59511	71070	59511	69351	58163
				Upgrades				
Bad Times	0.614***	0.639***	0.764***	0.878***	0.989***	0.838***	0.261***	0.383***
	(6.15)	(5.19)	(6.87)	(6.23)	(7.63)	(5.96)	(4.40)	(5.86)
Good times CAR	2.044	2.140	2.041	2.127	2.003	2.118	2.029	2.088
#Obs	67425	56901	67425	56901	67425	56901	65516	55395
Controls, Ind. F.E.	No	Yes	No	Yes	No	Yes	No	Yes

Fig 2: Stock-price reaction to earnings forecast revisions



Variables	(1)	(2)	(3)
Crisis Dum	0.471***	0.432***	0.411***
	(11.75)	(15.96)	(15.19)
Recchg Dum	1.656***	2.020***	2.028***
	(67.10)	(97.96)	(98.84)
Reiteration Dum		0.704***	0.672***
		(91.30)	(86.11)
Earn Annc Dum		1.221***	1.191***
		(80.29)	(76.37)
Guidance Dum		1.730***	1.753***
		(44.26)	(41.90)
Dividend Dum		-0.138***	-0.149***
		(17.09)	(18.09)
Insider Trade Dum		-0.099***	-0.101***
		(13.88)	(13.61)
Insider File Dum		0.261***	0.253***
		(43.27)	(44.46)
Crisis*Recchg Dum	0.503***	0.439***	0.370***
	(6.79)	(6.70)	(5.96)
Crisis*Reiteration Dum			0.259***
			(8.46)
Crisis*Earn Annc Dum			0.319***
			(5.43)
Crisis*Guidance Dum			-0.254**
			(2.20)
Crisis*Dividend Dum			0.113***
			(3.27)
Crisis*Insider Trade Dum			0.005
			(0.18)
Crisis*Insider File Dum			0.081***
			(2.61)
Intercept	2.381***	3.865***	3.865***
	(237.99)	(139.36)	(139.41)

- We regress in Table 7C the absolute daily return of a stock on dummy variables for multuple types of firm news.
- After controlling for all types of news, rec-changes and reiterations have the largest reactions good times, and largest increased reaction in bad times
- Not true that market reacts more to all types of firm news in bad times.

Anything special about macro bad times?

- Is there something special about macro bad times? We decompose a firm's total volatility each month into a market, industry, and residual (firm-specific) components and define High Uncertainty dummies (highest tercile in firm's full time-series). Table 7A.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependent variable: CAR of downgrades							
High Firm Uncertainty	-1.091***	0.149					-0.932***	0.061
	(11.64)	(1.08)					(9.93)	(0.44)
High Ind. Uncertainty			-0.297***	-0.004			0.001	0.012
			(5.29)	(0.07)			(0.02)	(0.18)
High Mkt Uncertainty					-0.783***	-0.501***	-0.622***	-0.497***
					(13.77)	(6.81)	(10.71)	(6.63)
Good times CAR	-1.590	-1.928	-1.703	-1.895	-1.471	-1.670	-1.345	-1.689
Observations	71067	59510	71067	59510	71067	59510	71067	59510
	Dependent variable: CAR of upgrades							
High Firm Uncertainty	1.707***	0.266*					1.618***	0.347**
	(16.32)	(1.86)					(15.28)	(2.44)
High Ind. Uncertainty			0.143***	0.020			-0.199***	0.012
			(2.69)	(0.30)			(3.90)	(0.19)
High Mkt Uncertainty					0.757***	0.379***	0.555***	0.404***
					(14.60)	(5.01)	(9.90)	(5.20)
Good times CAR	1.820	2.176	2.067	2.214	1.786	2.051	1.667	1.975
# Obs	67424	56901	67424	56901	67424	56901	67424	56901
Controls, Ind. F.E.	No	Yes	No	Yes	No	Yes	No	Yes

Do investors rely more on analysts?

- Kacperjcyk and Seru (2007) show that investors with private information rely less on analysts. So, firms where investors have less information, such as small, low coverage, and hard to arbitrage stocks might rely more on analysts.
- We find that our results that analysts have more impact in bad times are stronger for
  1. Firms will less company guidance
  2. Firms with low institutional ownership
  3. Small firms
  4. Firms with low analyst coverage
  5. Firms with high idiosyncratic volatility
  6. Firms with no options traded
  7. Industries with more analyst competition (ratio of #analysts to total industry mkt cap)

This evidence is consistent with investors relying more on analysts in bad times.

Table 9: Earnings forecast accuracy per unit uncertainty

- Absolute Forecast Error = $|Actual - Forecast|$ scaled by $|Actual|$, or scaled by prior month annualized volatility of stock returns.
- Controls: industry fixed effects, Leader-follower ratio, Star Analyst, Relative Experience, Forecast Accuracy Quintile, Days to Annc, Multiple forecast day, Broker Size, # Analysts, Size, BM, Momentum, Stock Volatility. Stderrs clustered by ind-quarter.
- Analysts are more accurate in bad times per unit of uncertainty. Makes sense why investors react more to forecasts.

Variables	Crisis		Credit Crisis		Recession		High Uncertainty	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Absolute forecast error scaled by absolute value of actual earnings							
Bad Times	2.775***	2.952***	3.341***	3.626***	2.807***	2.985***	1.128***	0.996***
	(5.11)	(6.96)	(5.49)	(7.81)	(5.11)	(7.14)	(4.01)	(4.41)
Good times error	14.835	13.905	14.829	13.884	14.759	13.826	14.700	13.838
Observations	406644	334974	406644	334974	406644	334974	388570	318887
	Absolute forecast error scaled by stock volatility							
Bad Times	-6.667***	-6.705***	-5.417***	-5.590***	-7.933***	-7.234***	0.828	-1.015*
	(6.87)	(9.21)	(5.05)	(7.15)	(8.44)	(10.02)	(1.08)	(1.82)
Good times error	26.852	26.728	26.616	26.509	27.199	26.971	25.123	25.720
# Obs	406642	334973	406642	334973	406642	334973	388568	318886
Controls, Ind. F.E.	No	Yes	No	Yes	No	Yes	No	Yes

Analyst activity and effort

- We find that the number of revisions and reiterations of recommendations go up by 10-20% in bad times at the individual analyst level.
- The number of pages in a typical report also goes up (hand-collected sample of 85K reports from a large broker 1994-2014). Report pages average 10.2 in good times but in Crisis times there are 1.6 more pages (after controlling a host of variables such as size, volatility, recent earnings announcement, etc.)

Evidence supports career concerns hypothesis

- Increased stock price impact, increased accuracy per unit of uncertainty, and increased activity and effort
- We also find that analysts are more likely to disappear from the IBES tape in bad times but being influential in the past or more accurate in forecasting earnings helps reduce attrition.
- Analysts work harder in bad times because of career concerns.

Other hypotheses we tested

- Conflicts of interest hypothesis: We do not find that analysts are less optimistic in bad times; and we also find that indepedent brokers with no investment banking business do better in bad times.
- Different skills hypothesis: We find that downgrades spillover to peer firms that did not experience a recommendation. Evidence that analysts produce information that is relevant for pricing other firms in same industry.
- Overreaction hypothesis: Using daily-rebalanced calendar-time portfolios that holds stocks for 1 month from day 2 of the recommendation, we do not find a reversal to the initial recommendation reaction.
    - Since the profits dissipate after a few days, this means to benefit from increased analyst impact in bad times we should trade immediately at the release of the report.

Conclusion: Sell-side research is more valuable in bad times

- We find strong evidence that analysts produce more impactful recommendation and earnings forecast revisions in bad times
- Even though in cents their absolute earnings forecast errors are higher in bad times, their absolute error per unit of uncertainty drops in bad times,
- Evidence shows that investors rely more on analysts in bad times, and analysts also work harder to produce better output.
- Sell side research is more valuable in bad times, when good information is more scarce.