Coverage Changes and EPS Forecast Accuracy

Foong Soon Cheong, NYU Shanghai
Changhee Lee, Ramapo College
Dan Palmon, Rutgers

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Motivation

- Accounting researchers use analysts' earnings forecasts as a proxy for the capital markets' expectation of earnings.

Motivation

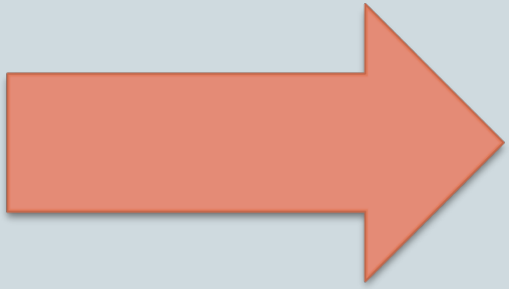
- EPS forecast: key ingredient to valuation models

$$P_0 = B_0 + \sum_{t=1}^{\infty} \frac{RI_t}{(1+r)^t}$$

$$= B_0 + \sum_{t=1}^{\infty} \frac{E_t - rB_{t-1}}{(1+r)^t}$$

Research Question

- Longstanding interest in factors that determine the accuracy of EPS forecast accuracy
- In this paper, we examine the accuracy of newly added / dropped forecast

Coverage Changes  EPS Forecast Accuracy

Hypotheses Development

- Previous literature highlight the importance of experience. E.g., Brown 2001; Clement 1999; Jacob, Lys, and Neale 1999; Clement and Tse 2005.
  - First forecast: less accuracy
  - Last forecast: more accurate

- Other studies point out the importance of selection bias. E.g., McNichols and O'Brien (1997)
  - First forecast: more accurate
  - Last forecast: less accurate

What did we find?

- Our results
  - First forecast: less accurate
  - Last forecast: less accurate
- Not driven by:
  - rookie analysts
  - retiring analysts
  - analysts followed non-primary industries

How does our research design differs from McNichols and O'Brien (1997)?

- we use a paired-sample analysis, where we compare the forecast accuracy between an analyst and their peer analysts for the same firm and at the same time.
  - Unaffected by confounding firm-effects or year-effects
- our results are robust to both univariate and multivariate regression analysis
  - McNichols and O'Brien (1997, Table 4) use only simple univariate analysis, and unpaired two-sample test
- we scale our forecast accuracy variable to range between zero and one. Clement and Tse (2005)
  - our results are less susceptible to extreme outliers

Why are our results important?

- we investigate the forecast accuracy of analysts who add or drop coverage
- we consider alternative explanations
- our results are important to investors and financial analysts
- prior research suggests that higher analyst coverage decreases information asymmetry between the investors and managers of the firm. E.g., Yu 2008; Schutte and Unlu 2009; Sun 2009

Data

- The analysis is based on I/B/E/S forecasts of quarterly earnings (specifically, one-quarter-ahead earnings forecast, FPI=6)
- From 1985 to 2012 (28 years) for the firms that had an increase (decrease) in their analyst following.
- These procedures yield a sample of 777,098 (641,247) analyst-firm-quarter observations for the analyst's adding (dropping) coverage of a firm.

- How to find analysts' adding (dropping) coverage

To examine the association between coverage change and their forecast accuracy,

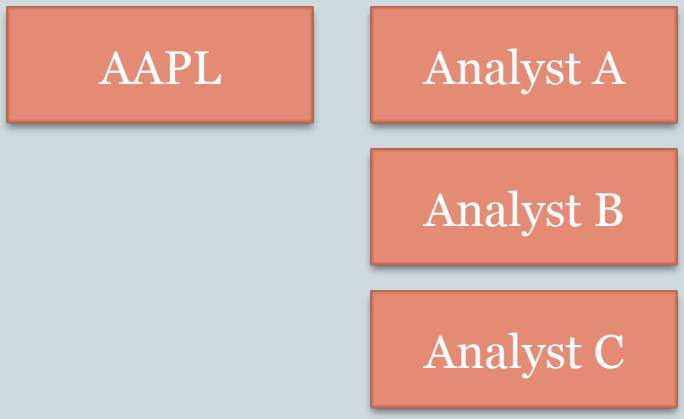
1. We first identify the quarter of an analyst's first (last) earnings forecast for a firm.

2. Then, we compare her first (last) forecast accuracy for a firm with her peers who have been following the same firm.

Coverage Change?

- How to find analysts' adding / dropping coverage

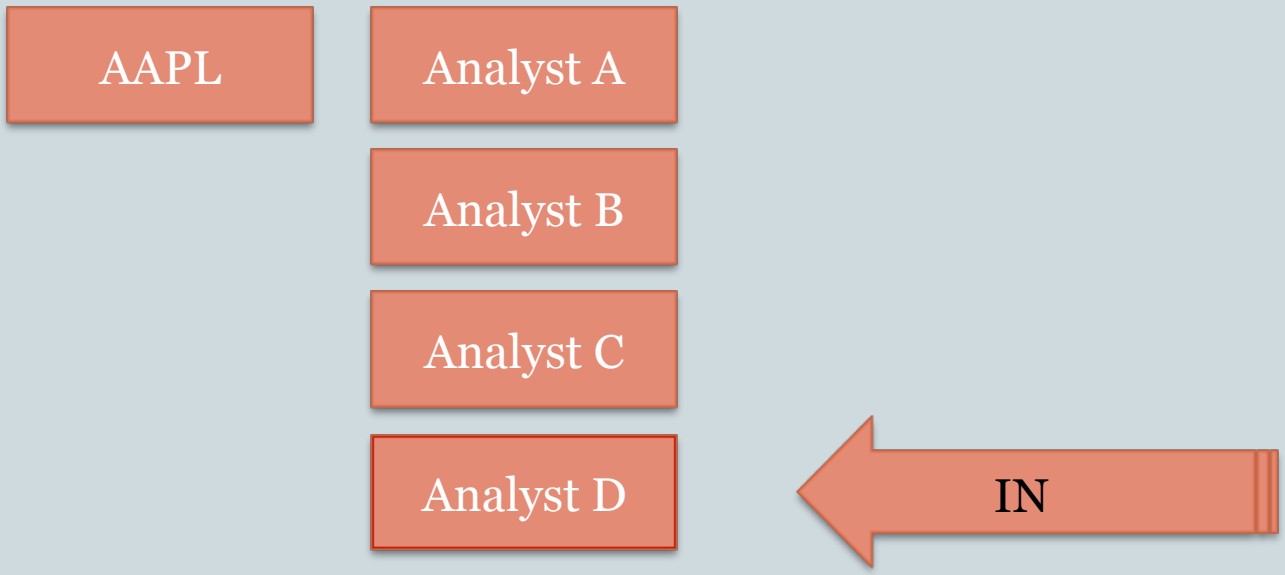
<Adding coverage>



Coverage Change?

- How to find analysts' adding / dropping coverage

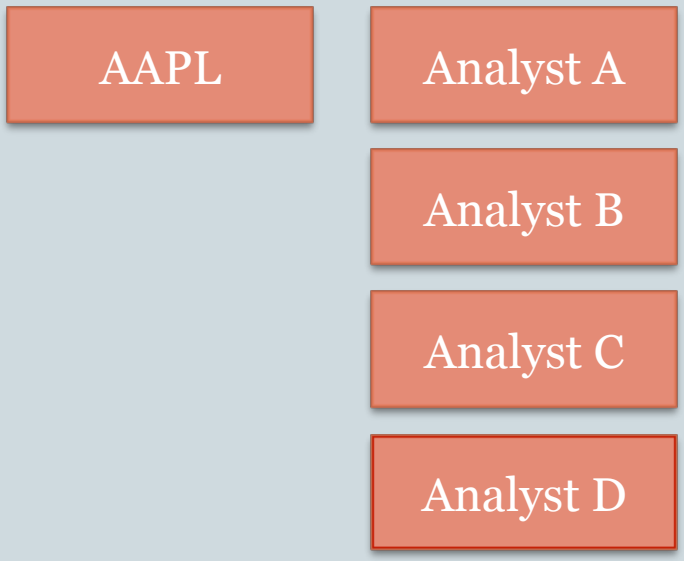
<Adding coverage: Analyst "D">



Coverage Change?

- How to find analysts' adding / dropping coverage

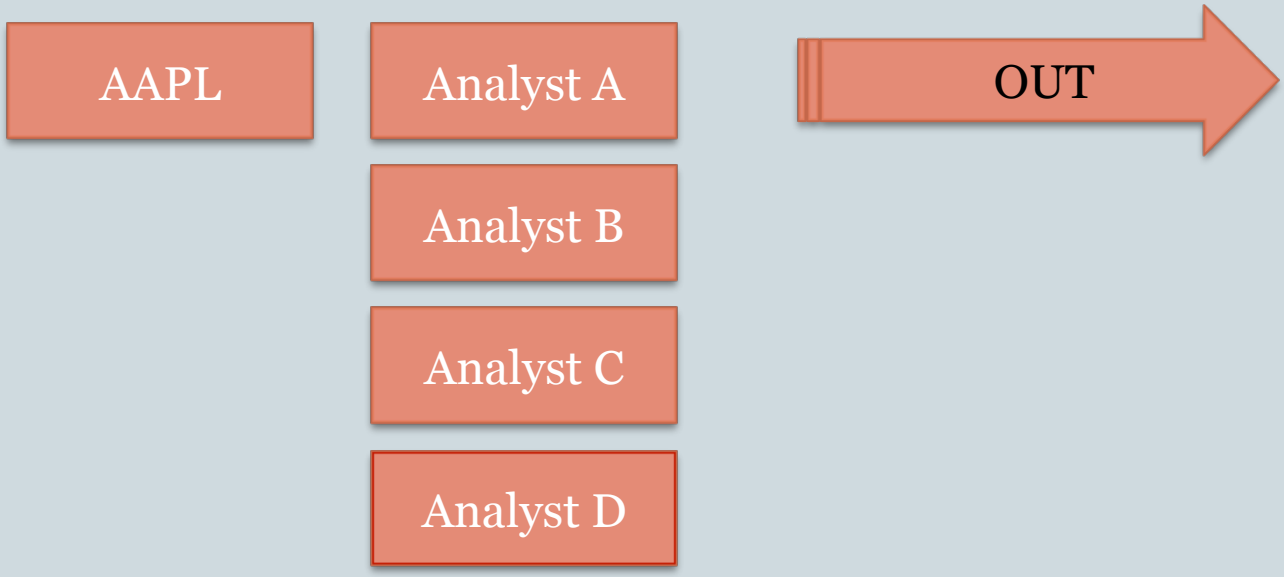
<Dropping coverage>



Coverage Change?

- How to find analysts' adding / dropping coverage

<Dropping coverage: Analyst "A">



Variables

- Dependent Variable

$$\mathrm{ACC}_{ijt} = \frac{\mathrm{AFE\ max}_{jt} - \mathrm{AFE}_{ijt}}{\mathrm{AFE\ max}_{jt} - \mathrm{AFE\ min}_{jt}}$$

Clement and Tse (2005)

- Control Variables

$$Characteristic_{ijt} = \frac{\mathrm{Raw\_Characteristic}_{ijt} - \mathrm{Raw\_Characteristic\ min}_{ijt}}{\mathrm{Raw\_Characteristic\ max}_{ijt} - \mathrm{Raw\_Chracteristic\ min}_{ijt}}$$

Clement and Tse (2005)

- Normalized variables; relative value

Variables

- How to find analysts' adding / dropping coverage

<Adding coverage: Analyst "D">

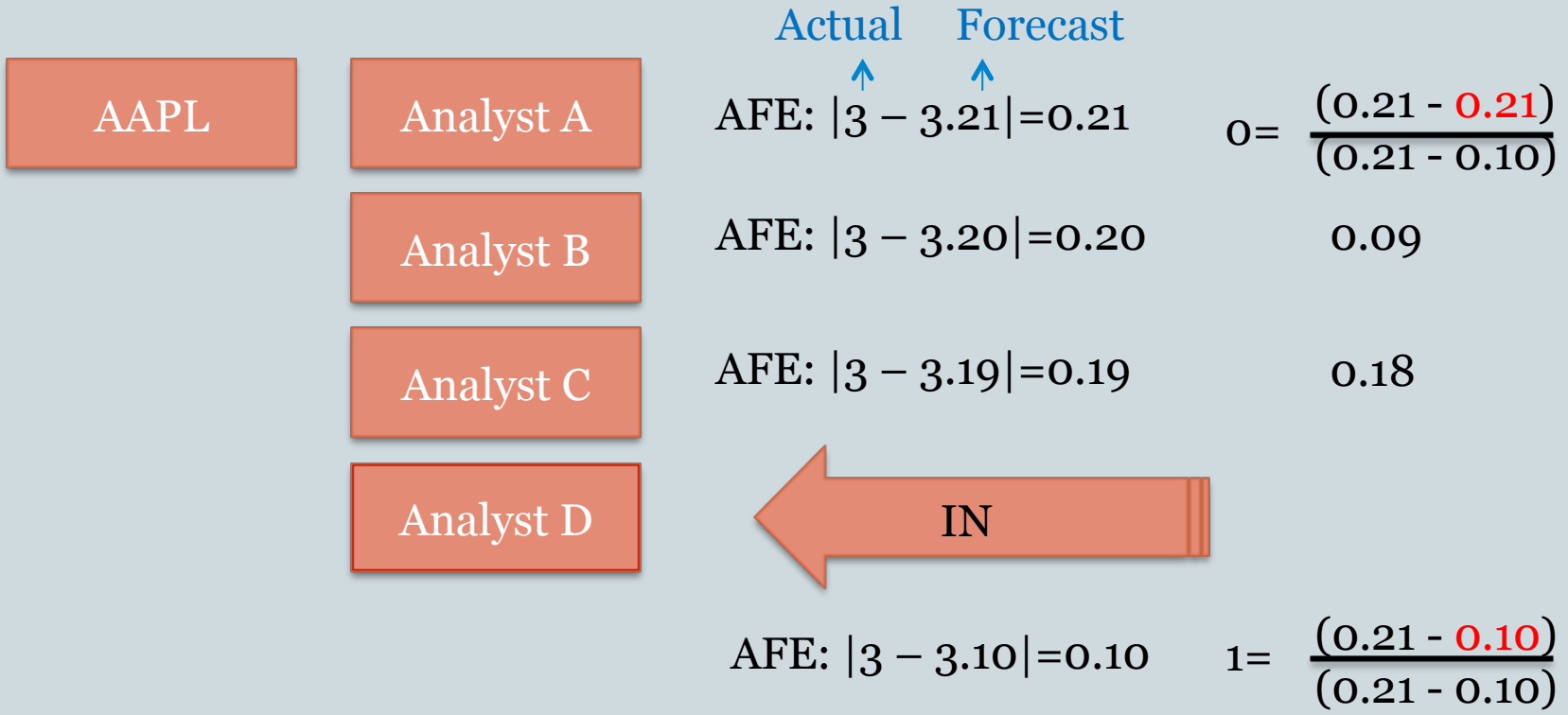


Table 1 : Sample selection and descriptive statistics

Panel A: Sample selection by year and coverage change, separately for coverage added and dropped.

Coverage	[Added]			[Dropped]		
Year	Sample	Matched	Sample + Matched	Sample	Matched	Sample + Matched
1985	219	500	719	54	342	396
1986	454	1,079	1,533	152	762	914
1987	2,663	7,883	10,546	1,253	5,945	7,198
2007	5,462	34,446	39,908	4,990	33,251	38,241
2008	5,470	35,488	40,958	5,446	34,288	39,734
2009	5,827	40,274	46,101	3,218	26,991	30,209
2010	5,340	41,906	47,246	3,596	32,308	35,904
2011	5,448	43,057	48,505	4,794	39,390	44,184
2012	5,247	41,790	47,037	4,693	39,506	44,199
Total	119,806	657,292	777,098	87,314	553,933	641,247

15% 85% 14% 86%

Table 1 : Sample selection and descriptive statistics

Panel B: Descriptive statistics

Variables (before normalizing to range between zero and one)	Mean
BROKERSIZE: Number of analysts employed in broker	58.0
FREQUENCY: Number of forecasts issued by an analyst for a firm-quarter	1.5
NFIRM: Number of firms that an analyst follows	16.9
INDUSTRY: Number of industries that an analyst follows	3.4
HORIZON: Number of Days to fiscal quarter-end	24.7
GENEXP: Years of general experience	6.4
FIRMEXP: Years of firm-specific experience	3.0

Table 2: Pearson correlation among forecasts and analyst characteristics

	ACC	*BROKERSIZE*	*FREQUENCY*	*NFIRM*	*INDUSTRY*	*HORIZON*	*GENEXP*	*FIRMEXP*
ACC	1							
BROKERSIZE	0.0181 (<.0001)	1						
FREQUENCY	0.1183 (<.0001)	0.0669 (<.0001)	1					
NFIRM	-0.0091 (<.0001)	0.0229 (<.0001)	0.0297 (<.0001)	1				
INDUSTRY	-0.0268 (<.0001)	-0.0827 (<.0001)	-0.0214 (<.0001)	0.3728 (<.0001)	1			
HORIZON	-0.1371 (<.0001)	0.0096 (<.0001)	-0.4833 (<.0001)	-0.0119 (<.0001)	0.0228 (<.0001)	1		
GENEXP	0.0060 (<.0001)	0.0824 (<.0001)	0.0459 (<.0001)	0.1971 (<.0001)	0.1209 (<.0001)	0.0273 (<.0001)	1	
FIRMEXP	0.0222 (<.0001)	0.0825 (<.0001)	0.0830 (<.0001)	0.1209 (<.0001)	0.0424 (<.0001)	0.0276 (<.0001)	0.5908 (<.0001)	1

Table 3: Mean forecast accuracy

Panel A: Comparison of forecast accuracy between analysts who add coverage of a firm and existing peer analysts who follow the same firm

Analysts who add/drop coverage of a firm attain **lower** forecast accuracy than her peers.

Variable	Mean forecast accuracy	t - value
Added *(ADD = 1)*	0.578	184.03
Existing *(ADD = 0)*	0.600	305.23
Difference	-0.022	-7.21

Panel B: Comparison of forecast accuracy between analysts who drop coverage of a firm and remaining peer analysts.

Variable	Mean forecast accuracy	t - value
Dropped (*DROP* = 1)	0.525	162.52
Remaining (*DROP* = 0)	0.612	273.27
Difference	-0.089	-22.73

Table 4: Regression of forecast accuracy of analysts who add coverage of a firm on analysts' characteristics

$$ACC_{ijt} = \beta_0 + \beta_1 ADD_{ijt} + \beta_2 FREQUENCY_{ijt} + \beta_3 BROKERSIZE_{ijt} + \beta_4 NFIRM_{ijt} + \beta_5 INDUSTRY_{ijt} + \beta_6 FIRMEXP_{ijt} + \beta_7 GENEXP_{ijt} + \beta_8 HORIZON_{ijt} + \varepsilon_{ijt}$$

VARIABLES	Model (1)	Model (2)	Model (3)
CONSTANT	0.6803***	0.6804***	0.6666***
	(523.07)	(522.74)	(42.41)
ADD	-0.0418***	-0.0410***	-0.0316***
	(-34.07)	(-33.24)	(-24.59)
Observations	777,098	777,098	777,098
R-squared	0.028	0.028	0.027
Year Fixed Effect	NO	YES	YES
Analyst Fixed Effect	NO	NO	YES

The average effect of analysts who add coverage of a firm on forecast accuracy

Table 6: Regression of forecast accuracy of analysts who drop coverage of a firm on analysts' characteristics

$$ACC_{ijt} = \beta_0 + \beta_1 DROP_{ijt} + \beta_2 LAGACC_{ijt} + \beta_3 FREQUENCY_{ijt} + \beta_4 BROKERSIZE_{ijt} + \beta_5 NFIRM_{ijt} + \beta_6 INDUSTRY_{ijt} + \beta_7 FIRMEXP_{ijt} + \beta_8 GENEXP_{ijt} + \beta_9 HORIZON_{ijt} + \varepsilon_{ijt}$$

VARIABLES	Model (1)	Model (2)	Model (3)
CONSTANT	0.6372***	0.6385***	0.5966***
	(396.71)	(396.96)	(28.84)
DROP	-0.0547***	-0.0547***	-0.0437***
	(-44.07)	(-43.91)	(-32.20)
Observations	641,247	641,247	641,247
R-squared	0.039	0.039	0.034
Year Fixed Effect	NO	YES	YES
Analyst Fixed Effect	NO	NO	YES

The average effect of analysts who drop coverage of a firm on forecast accuracy

Further analyses

- Rookie analysts & add

$$ACC_{ijt} = \beta_0 + \beta_1 ADD_{ijt} + \beta_2 ROOKIE_{it} + \beta_3 ADD_{ijt} * ROOKIE_{it} + \beta_4 FREQUENCY_{ijt} + \beta_5 BROKERSIZE_{ijt} + \beta_6 NFIRM_{ijt} + \beta_7 INDUSTRY_{ijt} + \beta_8 FIRMEXP_{ijt} + \beta_9 GENEXP_{ijt} + \beta_{10} HORIZON_{ijt} + \varepsilon_{ijt}$$

*ADD * ROOKIE*	0.0182***
ADD	-0.0430***
ROOKIE	-0.0188***

- Retiring analysts & drop

$$ACC_{ijt} = \beta_0 + \beta_1 DROP_{ijt} + \beta_2 RETIRE_{it} + \beta_3 DROP_{ijt} * RETIRE_{it} + \beta_4 LAGACC_{ijt} + \beta_5 FREQUENCY_{ijt} + \beta_6 BROKERSIZE_{ijt} + \beta_7 NFIRM_{ijt} + \beta_8 INDUSTRY_{ijt} + \beta_9 FIRMEXP_{ijt} + \beta_{10} GENEXP_{ijt} + \beta_{11} HORIZON_{ijt} + \varepsilon_{ijt}$$

*DROP * RETIRE*	0.0089***
DROP	-0.0554***
RETIRE	-0.0079***

- Non-primary industries & add

$$ACC_{ijt} = \beta_0 + \beta_1 ADD_{ijt} + \beta_2 NPRIM\_IND_{it} + \beta_3 ADD * NPRIM\_IND_{it} + \beta_4 FREQUENCY_{ijt} + \beta_5 BROKERSIZE_{ijt} + \beta_6 NFIRM_{ijt} + \beta_7 INDUSTRY_{ijt} + \beta_8 FIRMEXP_{ijt} + \beta_9 GENEXP_{ijt} + \beta_{10} HORIZON_{ijt} + \varepsilon_{ijt}$$

*ADD * NPRIM_IND*	0.0108***
ADD	-0.0458***
NPRIM_IND	-0.0202***

Conclusion

- We examine the relationship between analysts' relative EPS forecast accuracy and coverage changes.
- We find that the accuracy of analysts' *first* forecast for a firm (newly added coverage) is lower than their peers. In addition, the accuracy of their *last* forecast (just before coverage is dropped) is also lower than their peers.
- Further analysis shows that our results are not driven by the rookie or retiring analysts.

Thank you

Questions/Comments?

fscheong@nyu.edu