Common ownership and analyst forecasts

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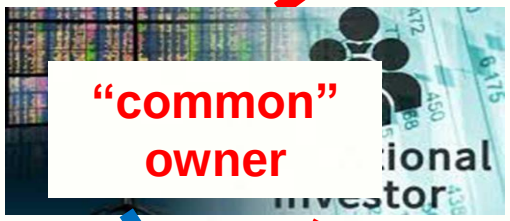

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Research questions

- Does common ownership between a brokerage house and its covered firms affect analyst forecast performance?

Motivation

- Publicly traded companies have become increasingly interconnected by having the same large shareholders
- An emerging literature examines the effect of common ownership on various corporate decisions
  - Better collaboration and information communication - among firms in the product markets
    - → Reduced competition and strategic collaboration among co-owned industry peers: Elhauge (2015), Azar et al. (2016), He and Huang (2017)
    - → Enhanced collaborations among co-own firms in **supply chain** (Freeman 2018)

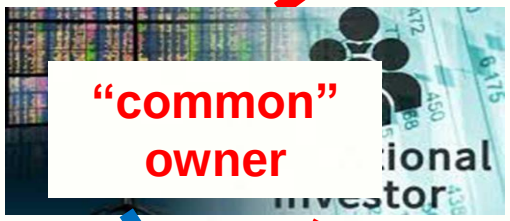
Motivation - continued

→ Improved information environment due to relaxed product competition among co-owned firms (Park et al. 2019)

→ Better information communication between **acquirers and targets** in the same common ownership network (Matvos and Ostrovsky 2008), and increase total value of the acquirer and the target

- 53% of institutional investors holding shares of firms not in the same industry

→ 25% of institutional investors holding shares of a financial firm and a non-financial firm



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Hypotheses

➢ The information hypothesis

- Common ownership helps connect analysts and management of their covered co-owned firms.
  - ✓ Allow analysts to have more interactions with firm management
    - The connected analysts likely to have preferential treatment in information gathering activities such as conference calls, investor relationship meetings, and corporate site visits, etc.
  - ✓ Obtain information about firms' operations and investments

H1 (Information hypothesis): Ceteris paribus, earnings forecasts issued by connected analysts are more accurate than those issued by non-connected analysts covering the same firm.

Hypotheses

➢ The conflicts-of-interest hypothesis

- Common owners exert ***undue influence*** on analyst research: to improve fund inflow and fund performance, and higher fund managers' compensation (Chevalier and Ellison 1997)
  → higher valuation of co-owned firms

- Common owners have the ***ability*** to influence co-owned brokerage houses and their analysts
  → Analyst research dissemination process, tone of analyst research reports
  → Communications with management, shareholder activism, threat of exit (Edmans 2014)

H2 (Conflicts-of-interest hypothesis): *Ceteris paribus, earnings forecasts issued by connected analysts are more optimistically biased than those issued by non-connected analysts covering the same firm.*

Our empirical approach

- Test the effect of common ownership between a brokerage house and its covered firms on analyst forecast performance and see which effect dominates.

- Reinforce the dominated "information hypothesis"

  - Cross-sectional analyses to reinforce the "information hypothesis"
  - Market reaction tests on forecast revisions by connected analysts
  - Conference call tests to shed light on information channels

Overview of the main findings

- "Information hypothesis" dominates the effect of common ownership between brokerage houses and their covered firms on analyst forecast performance;
  - Improved forecast accuracy for forecasts issued by connected analysts → support H1
  - But not more optimistically biased → does not support H2
- Results are robust after addressing endogeneity
  - ✓ DID design after merger of financial institutions;
  - ✓ PSM matching
  - ✓ Pseudo-tests by random pairing

Overview of the main findings

- The information effect varies cross-sectionally conditional on:
  - The level of ownership by common owners in the co-owned firms and the brokerage houses
  - Incremental information value through common ownership on analyst forecast accuracy is higher:
    - ✓ Firms' earnings are more difficult to forecast
      - earnings quality is lower
      - operations are more complex
    - ✓ Analysts have fewer alternative source of information to generate earnings forecasts for the firms
      - No management guidance on firms' earnings

Overview of the main findings

- Additional analyses
  - One of the channel through which connected analysts obtain favourable treatment in information acquisition activities (Mayew 2008)
    - ✓ Connected analysts are more likely to ask questions during co-owned firms' earnings conference calls;
      - Not driven by the greater effort exerted by connected analysts
  - Market reactions upon forecast revisions issued by connected analysts are stronger.

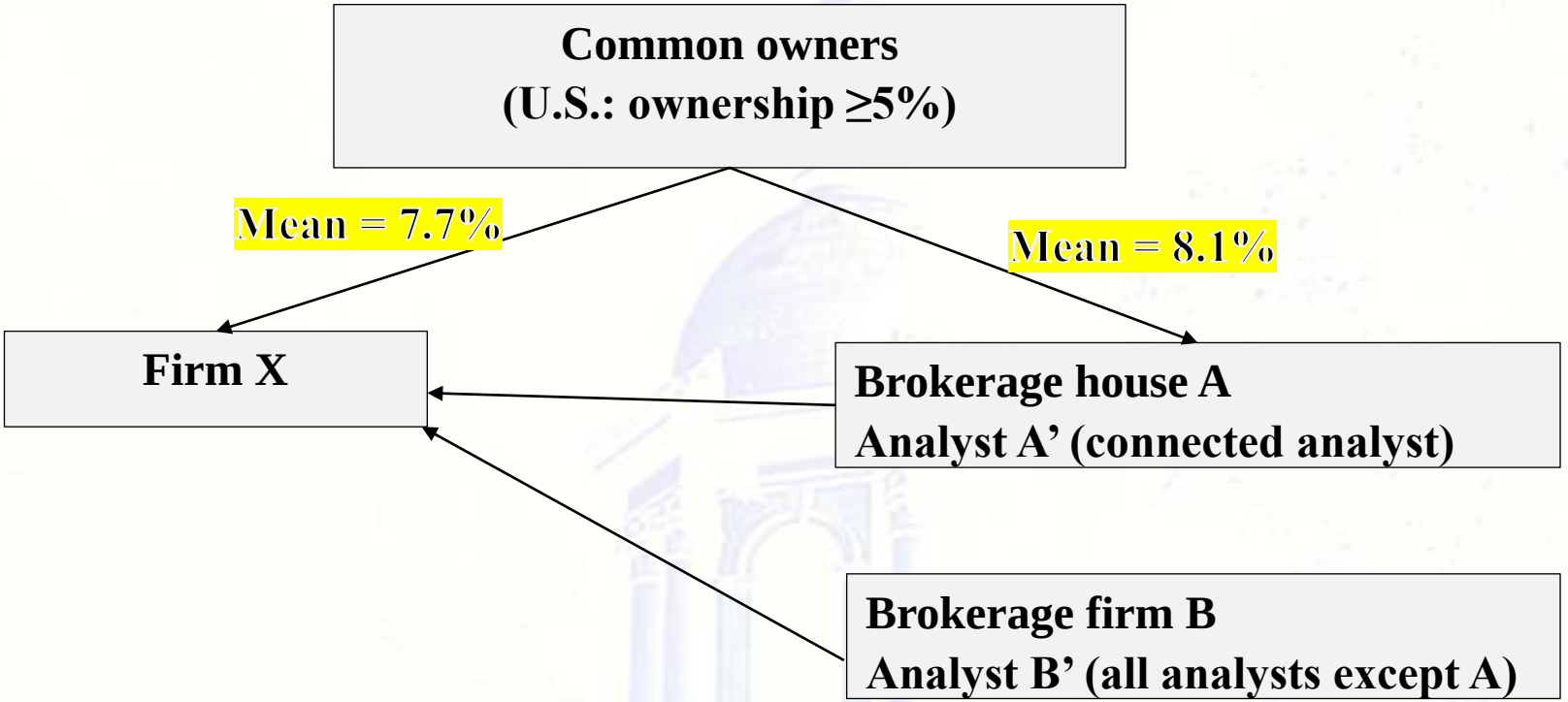
Contributions

- The paper extends the emerging literature on the economic consequences of common ownership:
  - Common ownership between brokerage houses and their covered firms
- The paper extends the literature on factors that can have differential effect on analyst research accuracy and biases

Data and Sample

- IBES
  - Annual analyst earnings forecasts from 1990 - 2019
  - Between earnings announcements for the last year and year-end
  - At least two analysts following the firm
  - Nonfinancial firms
- Ownership data from 13F
  - Ownership in both the brokerage and the firm >=5%
- Financial information and stock price information from Compustat and CRSP
- Final sample 321,905 analyst annual forecasts issued for 23,776 firm-years
  - 140,238 by connected analysts
  - 181,667 by non-connected analysts

Summary statistics



Top 3 common owners	*Freq*	%
Vanguard Group, Inc.	67,054	47.81%
Fidelity Management & Research	25,135	17.92%
Blackrock Inc.	9,727	6.94%

Research Design for H1 & H2

- Regression model

$$ACCURACY_{ijt}\ (BIAS_{ijt}) = \beta_0 + \boldsymbol{\beta_1 COMMON_{ijt}} + \gamma Controls + Firm - year\ fixed\ effects + Broker\ fixed\ effects + \varepsilon_{ijt}$$

$$\boldsymbol{ACCURACY_{ijt} = -100 \times \frac{|EPS\ Forecast_{ijt} - Actual\ EPS_{jt}|}{PRICE_{jt-1}}}$$

$$\boldsymbol{BIAS_{ijt} = -100 \times \frac{EPS\ Forecast_{ijt} - Actual\ EPS_{jt}}{PRICE_{jt-1}}}$$

Dependent variable	**forecast accuracy**	**forecast bias**
H1 (information hypothesis)	$\beta_1 > 0$	
H2 (conflicts-of-interest hypothesis)		$\beta_2 > 0$

H1 – Table 4

Variable names	$ACCURACY_{i,j,t}$	
COMMON	0.0195***	
	(2.87)	
N_COMMON		0.0110**
		(2.34)
NFIRM	0.0398***	0.0398***
	(5.36)	(5.36)
IND	-0.0129	-0.0130
	(-1.45)	(-1.46)
GEXP	-0.0039	-0.0038
	(-1.10)	(-1.09)
FEXP	-0.0227***	-0.0227***
	(-6.67)	(-6.66)
FREQ	0.3414***	0.3413***
	(26.11)	(26.11)
HORIZON	-0.3162***	-0.3162***
	(-35.30)	(-35.29)
BANALYST	0.0261***	0.0267***
	(2.77)	(2.83)
Firm-year & broker fixed effects	Yes	Yes
Clustered at the firm level	Yes	Yes
N	321,905	321,905
Adjusted R^2	0.790	0.790

H2 – Table 5

Variable names	$BIAS_{i,j,t}$	
COMMON	-0.0080 (-1.23)	
N_COMMON		0.0002 (0.06)
NFIRM	-0.0199*** (-2.90)	-0.0200*** (-2.91)
IND	0.0027 (0.33)	0.0027 (0.34)
GEXP	0.0067** (2.10)	0.0067** (2.12)
FEXP	0.0077** (2.42)	0.0077** (2.40)
FREQ	-0.1069*** (-11.23)	-0.1069*** (-11.23)
HORIZON	0.1354*** (17.59)	0.1354*** (17.59)
BANALYST	-0.0188** (-2.00)	-0.0197** (-2.10)
Firm-year & broker fixed effects	Yes	Yes
Clustered at the firm level	Yes	Yes
N	321,905	321,905
Adjusted R^2	0.638	0.638

Endogeneity

- Two layers of the endogeneity issue
  - An institution's decision to hold both a brokerage house and a firm.
  - An analyst's decision to cover a common firm
    - ✓ Empirical design in testing the **relative** forecast performance for analysts following the same firm
    - ✓ Three other approaches to address this issue

Endogeneity – DiD approach

- Exogenous shock in the two settings:
  - the mergers of financial institutions
    - →Exogenous formation of common ownership
  - 18,434 broker-firm-years that experience the formation of common ownership
  - Covered in the pre- and post-merger period
    - ✓16,051brokerage-firm-years
    - ✓ 324 co-owned firms

DiD analyses use exogenous shocks to common ownership

Variable names	$ACCURACY_{i,j,t}$	$BIAS_{i,j,t}$
TREAT	-0.0644	0.0940**
	(-1.63)	(2.28)
TREAT × POST	0.0987**	-0.0458
	(2.01)	(-0.89)
NFIRM	0.0663**	-0.0450
	(2.14)	(-1.37)
IND	-0.0395	-0.0261
	(-1.20)	(-0.74)
GEXP	-0.0060	-0.0084
	(-0.39)	(-0.65)
FEXP	-0.0362**	0.0310**
	(-2.35)	(2.13)
FREQ	0.3580***	-0.2138***
	(7.68)	(-5.75)
HORIZON	-0.3214***	0.2138***
	(-12.15)	(8.09)
BANALYST	0.0217	0.0124
	(0.46)	(0.31)
Firm-year & broker fixed effects	Yes	Yes
Clustered at the firm level	Yes	Yes
N	16,051	16,051
Adjusted R^2	0.757	0.659

Regression after PSM

Variable names	$ACCURACY_{i,j,t}$	$BIAS_{i,j,t}$
COMMON	0.0273***	-0.0230**
	(2.64)	(-2.40)
NFIRM	0.0495***	-0.0194*
	(4.14)	(-1.85)
IND	-0.0104	-0.0168
	(-0.71)	(-1.35)
GEXP	-0.0096*	0.0167***
	(-1.91)	(3.23)
FEXP	-0.0172***	-0.0023
	(-3.43)	(-0.46)
FREQ	0.3270***	-0.0886***
	(18.35)	(-6.32)
HORIZON	-0.2845***	0.1146***
	(-26.77)	(11.96)
BANALYST	0.0083	-0.0206
	(0.50)	(-1.23)
Firm-year & broker fixed effects	Yes	Yes
Clustered at the firm level	Yes	Yes
N	118,818	118,818
Adjusted R^2	0.791	0.630

Falsification tests – Panel C of Table 6

Variable names	$ACCURACY_{i,j,t}$	$BIAS_{i,j,t}$
COMMON	0.0079	-0.0040
	(1.00)	(-0.52)
NFIRM	0.0507***	-0.0194***
	(6.94)	(-2.99)
IND	-0.0177**	0.0040
	(-2.18)	(0.52)
GEXP	-0.0079**	0.0084**
	(-2.47)	(2.67)
FEXP	-0.0255***	0.0078**
	(-8.02)	(2.66)
FREQ	0.3316	-0.1217***
	(27.88)	(-12.79)
HORIZON	-0.2986***	0.1481***
	(-36.42)	(20.35)
BANALYST	0.0288***	-0.0231***
	(3.24)	(-2.73)
Firm-year & broker fixed effects	Yes	Yes
Clustered at the firm level	Yes	Yes
N	335,531	335,531
Adjusted R^2	0.791	0.640

Cross-sectional tests for H1

- The incremental value of the information obtained via common ownership is
  - When the magnitude of the influence of the common owners is greater

Conditioning Variable =	***ACCURACY*** $_{i,j,t}$	***BIAS*** $_{i,j,t}$
COMMON	0.0149**	0.0136*
	(2.12)	(1.88)
HSTAKE_F	0.0326*	
	(1.90)	
HSTAKE_B		0.0240**
		(2.03)
Control variables	Yes	yes
Firm-year & broker fixed effects		
Observations	321,905	321,905
Adjusted R2	0.790	0.790

Cross-sectional tests for H1

- The incremental value of the information obtained via common ownership is
  - higher when the quality of accounting information is lower
  - higher when earnings are more difficulty to forecast
  - lower when there are other sources (management forecasts) of information

Conditioning Variable =	***HIGH_DD*** (1)	***HIGH_COPX*** (2)	***MGT_FORECAST*** (3)
COMMON × **Conditioning Variable**	0.0184*	0.0220**	-0.0394***
	(1.86)	(2.02)	(-3.73)

Common ownership and analysts' conference

Variable names	$ASK\_QN_{i,j,t}$
COMMON	**0.0119****
	(2.14)
NFIRM	-0.2070***
	(-25.03)
IND	-0.0247***
	(-3.03)
GEXP	-0.0266***
	(-6.70)
FEXP	0.0350***
	(7.94)
FREQ	0.2508***
	(40.98)
HORIZON	-0.0155***
	(-7.73)
BANALYST	0.0224**
	(2.45)
lagACCURACY	0.0006
	(0.20)
lagASK_DUM	0.4311***
	(60.87)
CC_OTHER	0.3072***
	(73.97)
lagSBUY	0.1894***
	(10.43)
lagBUY	0.1907***
	(10.07)
lagHOLD	0.0506***
	(2.86)
lagSELL	-0.0405**
	(-2.11)
Firm-year & broker fixed effects	Yes
Clustered at the firm level	Yes
N	88,206
Pesudo-R2	0.557

Common ownership and analyst effort

Variable names	*FREQ*
COMMON	-0.0050** (-2.40)
NFIRM	0.1697*** (55.92)
IND	-0.0331*** (-10.02)
GEXP	-0.0333*** (-27.67)
FEXP	0.0940*** (62.10)
HORIZON	-0.2179*** (-137.98)
BANALYST	-0.0032 (-1.07)
Clustered at the firm level	Yes
Firm-year & broker fixed effects	Yes
Observations	321,905
Adjusted R^2	0.415

Market reaction to forecast revisions

Variable names	*CAR(-1,+1)*	*CAR(-2,+2)*
FREV	0.8428***	0.8927***
	(23.34)	(23.26)
COMMON × FREV	0.1189***	0.1139***
	(3.09)	(2.75)
COMMON	0.0002	0.0002
	(0.66)	(0.62)
Other controls	Yes	Yes
Firm-year & broker fixed effects	Yes	Yes
Clustered at the firm level	Yes	Yes
Observations	310,937	310,936
Adjusted R^2	0.390	0.391

- Corroborative evidence → consistent with the finding of more accurate forecasts of connected forecasts

Conclusions

- The common ownership between brokerage houses and firms
  - improves connected analysts' forecast performance (forecast accuracy), leading optimistically biased forecasts (incentive hypothesis).
- The effects vary cross-sectionally in the two settings
  - The level of ownership – high stake in firm and brokerage house;
  - The value of information is more important
    - Firms with lower earnings quality and whose earnings are difficult to forecast;
    - Analysts' lacking information from management guidance
  - The market reaction to forecast revisions is stronger for connected analysts than those issued by non-connected analysts).

Thank you!