

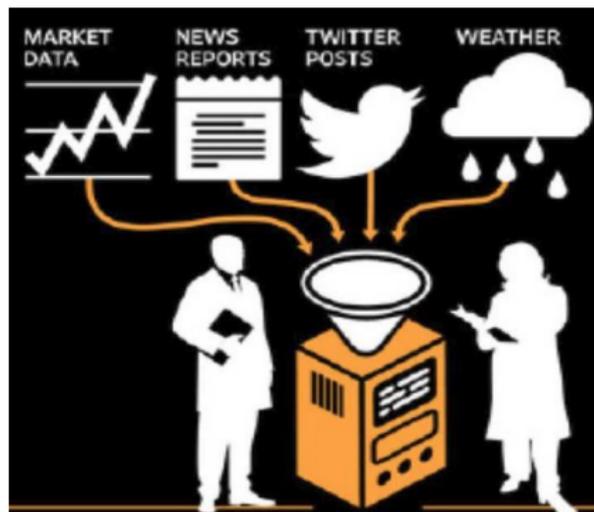
FinTechs and the Market for Financial Analysis

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How Are FinTechs Changing Financial Analysis?



“With 80% of the data in the world created in the last two years, judgment matters more than ever. Technology is a complement to sound judgment and knowledge, not a substitute.”

– Joyce Chang, Global Head of Research, J.P. Morgan

Research Question

Ideal: Prices that fully reflect available analysis, providing accurate signals for investors to allocate capital.

- Yet gains to informational efficiency since 1960 have been modest (Bai, Philippon, and Savov (2016)).
- FinTechs have the potential to significantly disrupt this status quo.

RQ: Do FinTechs affect the production of financial analysis? If so, how?

- FinTechs don't provide original research rather they aggregate and streamline others research.
- "Aggregation" implies FinTechs could serve as substitutes or complements to analysts. This economic tension, in turn, could impact analyst's research quality.

Literature Review

Analysts Role in Capital Markets: Extensive, mature literature.

- Kothari, So, and Verdi (2016), Bradshaw (2011), Hong and Kacperczyk (2010), Cohen, Frazzini, and Malloy(2010), Ljungqvist, Marston, and Wilhelm (2006), Michaely and Womack (1999).

Big Data and Information Aggregators: A few published pieces and recent working papers.

- Dasgupt and Foucault (2017), Chiou and Tucker (2015), Calzada and Gil (2016), D'Souza, Ramesh, and Shen (2010).

Broader Economics Literature: Papers on media and bias.

- Mullainathan and Shleifer (2005), Gentzkow and Shapiro (2006), Gentzkow and Shapiro (2008), Tetlock (2015), Niessner and Cookson (2017).

FinTechs as a Complement

- Without FinTechs, investors need to search for financial analysis.
- With FinTechs, investors learn the best analysts and click-through to their research.



Filters	Analyst	Firm	Ranking	Position	Price Target	Action	Date	Follow	Article
	Jun Zhang	Rosenblatt Securities	☆☆☆☆☆	Hold	\$150.00	Reiterated	2 days ago	+	
Position:	Tavis McCourt	Raymond James	☆☆☆☆☆	Buy	\$180.00	Reiterated	2 days ago	+	
<input checked="" type="checkbox"/> Buy	Brian White	Drexel Hamilton	☆☆☆☆☆	Buy	\$208.00	Assigned	3 days ago	+	
<input checked="" type="checkbox"/> Hold	Wamsi Mohan	Merrill Lynch	☆☆☆☆☆	Buy	\$180.00	Reiterated	3 days ago	+	
<input checked="" type="checkbox"/> Sell									

FinTechs as a Substitute

- With FinTechs, investors learn the best analysis is from bloggers so skip analysts' research.

Filter Opinions	Blogger Name	Blog	Sentiment	Date	Follow	Article
Blogger Opinions: <input checked="" type="checkbox"/> Bullish <input checked="" type="checkbox"/> Bearish <input checked="" type="checkbox"/> Neutral Ranking: <input type="checkbox"/> ★ <input checked="" type="checkbox"/> ★★ <input checked="" type="checkbox"/> ★★★ <input type="checkbox"/> ★★★★ <input checked="" type="checkbox"/> ★★★★★	 D.M. Martins Research ★★★★★	Seeking Alpha	 Bullish	2 days ago		
	 DoctoRx ★★★★★	Seeking Alpha	 Bullish	2 days ago		
	 Jeremy Bowman ★★★★☆	Motley Fool	 Bearish	5 days ago		
	 SVI ★★★★★	Seeking Alpha	 Bullish	8 days ago		
	 Investing.com ★★★★★	Investing.com	 Bullish	8 days ago		

- With FinTechs, investors rely only on the signal and forgo reading original-content financial analysis.

Buy Recommendations Sep 27, 2017			Hold Recommendations Sep 27, 2017			Sell Recommendations Sep 27, 2017		
Company	Rating	Analyst	Company	Rating	Analyst	Company	Rating	Analyst
CBS CBS Corp	BUY Price Target: \$81 ★★★★★	Daniel Kurnos, Benchmark	FHN First Horizon	HOLD Price Target: \$20 ★★★★☆	Ken Zerbe, Morgan Stanley	INTU Intuit	SELL ★★★★★	Wayne Johnson, Raymon...
MU Micron	BUY Price Target: \$39 ★★★★★	Joseph Moore, Morgan St...	AXON Axovant Sciences	HOLD Price Target: \$6 ★★★★★	Brian Skorney, Robert W. ...	INT World Fuel Servi...	SELL Price Target: \$36 ★★★★★	Ken Hoexter, Merrill Lynch
CHSP Chesapeake Lod...	BUY ★★★★★	Tyler Batory, Janney Mont...	TWLO Twilio Inc	HOLD ★★★★★	Brent Bracelin, KeyBanc	ED Con Edison	SELL Price Target: \$74 ★★★★★	Greg Gordon, Evercore ISI

What We Do

- 1 **Data:** Gather novel data on FinTechs, financial analysis online, and how investors discover such analysis.
 - Business plans for 290 FinTechs, 1.3 million pieces of financial analysis, and click data for over 1 million investors.
- 2 **Descriptive statistics:** Show how noisy online analysis is and how FinTechs streamline such analysis.
- 3 **Regression evidence:** Explore how the market for financial analysis changes when FinTechs enter. We find support for two responses:
 - Investor Response – Analyze internet click data to determine if FinTechs are substitutes or complements for original content.
 - Analyst Response – Analyze quality of research reports where FinTechs concentrate in an instrumental variable framework.

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- 3 **Investors mostly skim.** Investors views 16 pages of financial analysis on blogs in 6.6 minutes per month.
- 4 **The analysis they read is probably bad.** 90% of the time, the market-adjusted returns to blog recs were negative at an investment horizon of 6 or 12 months.

FinTechs Aggregate and Synthesize Existing Analysis

- We observe 290 FinTechs with a mean founding year of 2008.
- 72% of the FinTechs target retail investors and 60% target professional investors with some targeting both.
- Capabilities include: aggregating financial news (83%), datamining for investment signals (57%), evaluating and ranking existing financial advice (27%), crowdsourcing financial advice (16%), and aggregating financial bloggers and analyst (11%).
- These are legitimate businesses. On average, they have 5 investors, raised \$10 million in funding, and have 70 employees.

A Key Role of FinTechs is to “Aggregate”

- Aggregating info from analysts.

Wall Street Analysts Ride The Micron Earnings Train

2017 Sep 27, 12:17pm

Analyst Color, Baird, Betsy Van Hees, Earnings, Joseph Moore, Kevin Cassidy, Long Ideas, Loop Capital



Micron Technology, Inc. (NASDAQ: MU) shares jumped 8 percent Wednesday after the company topped market expectations for fiscal fourth-quarter revenue and EPS and issued forward guidance above Wall Street's expectations. A number of Wall

Street analysts weighed in on Micron following the... [Read More >>](#)

Queso Performance For Chipotle Said To Be 'Underwhelming'

2017 Sep 27, 12:12pm

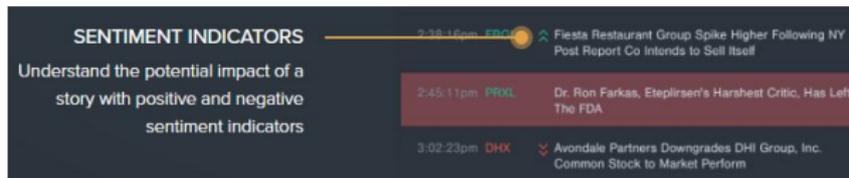
Analyst Color, Andrew Strelzik, BMO Capital Markets, Chipotle, CMG, Queso, restaurants, Price Target



Investors hoping Chipotle Mexican Grill, Inc. (NYSE: CMG) would see a notable boost from its new queso offering may want to reconsider their thesis, at least according to analysts at BMO Capital Markets. The firm's Andrew Strelzik maintains a Market

Perform rating on Chipotle's stock with a price... [Read More >>](#)

- Aggregating and evaluating the info.



New Data Shows How Investors Find Analysis Online

- ComScore data measures how consumers use the Internet.
- Rotating sample of 50,000 internet users per month (designed to be nationally representative of U.S. households).
- Collect detailed browsing behavior at the website level on personal computers and mobile devices.



Do FinTechs Serve as Substitutes or Complements?

- FinTechs divert attention from original analysis.
- Users visit 57% fewer original-content websites, view 55% fewer pages, and spend 34% less time there when they visit a FinTech website.

	Reads original- content financial analysis	Dep. var. = Page views of original-content financial analysis	Time spent on original-content financial analysis
User visits a FinTech website	-57.4*** (0.10)	-55.0*** (0.36)	-33.7*** (0.38)
Additional Control Variables	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes
Adjusted R-squared	55.3%	6.5%	6.7%
Observations	1,090,746	1,090,746	1,090,746

- **Conclusion:** FinTechs are substitutes.

Do Analysts Respond to FinTech Competition?

- ① **Traditional View:** FinTechs make it more difficult for financial analysts to suppress unfavorable information. This incentivizes analysts to produce **less biased, more accurate** financial reports.

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- 3 **Intensive Margin:** FinTechs change likelihood that reputation would be damaged from catering to conflicts of interest.
- 4 **Extensive Margin:** FinTechs change an analyst's outside job options. This leads to compositional changes in analysts.

Test Linking Analysts' Research Quality to FinTechs

- $ReportQuality_{it} = \alpha + \beta FinTechs_{it} + \Gamma X_{it} + f_i + \delta_t + \epsilon_{it}$

Obs. at the level of stock i in quarter t .

$ReportQuality_{it}$ is consensus analyst optimism bias or accuracy.

$FinTechs_{it}$ measures the competition from non-traditional sources for equity i in quarter t .

X_{ijt} is a vector of observables (analyst coverage, firm size, market-to-book, volatility, etc.)

f_i is an equity fixed-effect; δ_t is a quarter fixed-effect.

- **Instrument** for $FinTechs_{it}$ using newspaper titles that heighten psychological biases to induce interest.
 - **Relevance:** Those that supply non-traditional analysis aren't limited in their coverage, so write about what is on their mind.
 - **Exclusion restriction:** Titles are random since they are at the editor of WSJ, Financial Times, etc... discretion.

FinTechs Increase Analysts' Optimism Bias

- FinTech concentration is associated with a 0.5 standard deviation increase in optimism bias (cross-section); 0.2 increase (within).
- In aggregate, this represents a 22% increase in optimism.

Dep. Var. = Analyst Bias (As % of EPS)		
FinTech Concentration	0.53*** (0.09)	0.24*** (0.06)
Time Fixed Effects	Yes	Yes
Firm Fixed Effects	No	Yes
Additional Controls	Yes	Yes
First Stage F-Stat	152.0	212.4
T-Stat on Instrument	12.33	12.33
Adjusted R ²	33.9%	69.6%
Observations	79,675	79,675

FinTechs Decrease Analysts' Forecast Accuracy

- FinTech concentration is associated with a 0.7 standard deviation decrease in accuracy (cross-section); 0.2 decrease (within).
- In aggregate, this represents a 17% decrease in accuracy.

Dep. Var. = Analyst Accuracy (As % of EPS)		
FinTech Concentration	-0.66***	-0.22***
	(0.10)	(0.08)
Time Fixed Effects	Yes	Yes
Firm Fixed Effects	No	Yes
Additional Controls	Yes	Yes
First Stage F-Stat	152.0	212.4
T-Stat on Instrument	12.33	12.33
Adjusted R ²	14.2%	48.0%
Observations	79,675	79,675

What Drives the Analysts' Responses?

- Data supports both intensive and extensive margin responses.
- **Intensive margin:** The change in reporting quality is greatest for stocks where analysts' conflicts of interest are strongest. The same analyst is more biased for affiliated stocks (e.g., brokerage has underwriting or advising relationship). Similar results when compare independent vs. non-independent analysts.
- **Extensive margin:** The changing pool of analysts explains part of the change in reporting quality. Less experienced analysts contribute more to the bias.

Statistical Tests Suggest Robust Finding

1. Definition of accuracy and bias.
 - Mean vs. median measures of accuracy and bias.
 - Accounting vs. finance literature definitions of accuracy and bias.
2. Level of analysis.
 - Equity vs. analyst-level of analysis. Analyst level allows for many more controls.
3. Construction of instrument.
 - Limiting set of newspapers. Limiting to those with highest coverage.
4. Construction of FinTech concentration.
 - Limit to only high-quality online analysis.

Conclusion

- 1 **Original data:** Gather novel data on FinTechs, financial analysis online, and how investors discover such analysis.
- 2 **FinTechs are substitutes:** FinTechs divert attention from deep information producers such as sell-side analysts. We show that investors who visit a FinTech are 57 percentage points less likely to view original-content research.
- 3 **Information production changes in response:** Analysts respond to FinTech entry by producing less accurate, more biased research. Hence, FinTechs should not be viewed as traditional competition.
- 4 **Next Steps:** Evaluate the asset pricing consequences of FinTechs entry into the market for financial analysis.