

# Estimize and Forcerank

Designing, collecting and using proprietary data sets to generate uncorrelated alpha





## Leigh Drogen



L@estimize.com



@LDrogen

- 
- Portfolio Manager, running statistical arbitrage strategies at **Geller Capital**
  - Founder and CIO at **Surfview Capital**
  - Product and business development at **StockTwits**
  - Founder and CEO at **Estimize** and **Forcerank**
  - Advisor to **Slingshot Insights**, **Alta5**, and **Barclays TechStars Fintech Accelerator**
  - Forbes' *30 Under 30*, Goldman Sachs' *100 Entrepreneurs*, Forbes' *Fintech 50*, Forbes' *10 Hottest Startups*, Entrepreneur Magazine's *100 Brilliant Companies*, Fast Company's *10 Most Innovative Companies*



## Discretionary funds are in **trouble**.

The market is being **dominated by data-driven quants**.

So we know you've had a **tough year**.

We know there's **less alpha in the market**.

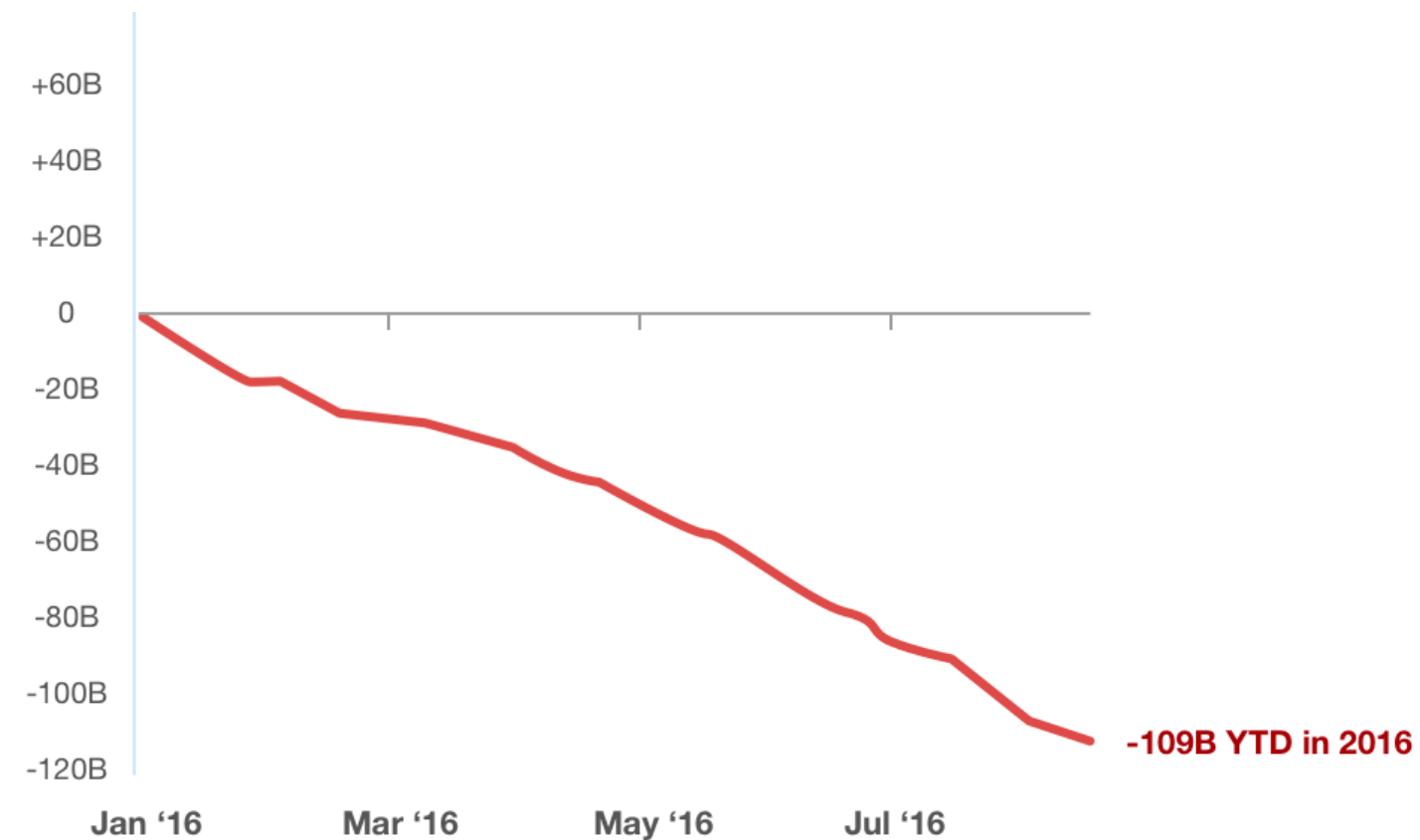
You know you need to be more data-driven  
**to compete with systematic traders.**

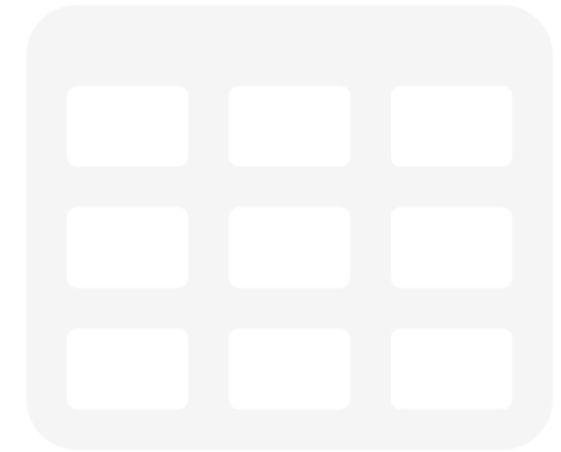
---

### Outflows from Active Discretionary Funds In 2016

---

*Source: J.P. Morgan US Equity Strategy  
& Global Quant Research, EPFR*





We know that you are exploring a more  
**data-driven investment process.**

But there is **too much data to sift through.**

Integrating new tools are a **hassle.**

And you need something that **complements  
your current process.**

# Good Crowdsourcing Requires

---

- ✓ **Diversity of opinion** - different background info
- ✓ **Decentralization** - specialize and use local knowledge
- ✓ **Sample size** - bigger is better
- ✓ **Independence** - opinions not determined by others

# Research and Strategic Design

---

- ✓ **Question** - does it matter, replacement heuristic
- ✓ **Interval** - randomness, user engagement cycle, use
- ✓ **Panel** - can you acquire them, who can answer the question
- ✓ **Differentiation** - will it produce uncorrelated signal
- ✓ **Market** - total addressable market, is it a strategic threat



**Rick Johnston, Rice University**

“Competition For Sell-Side Analysts?”

Estimize as a crowdsourcing platform represents a market solution to the shortcomings associated with sell-side analyst forecasts perhaps resulting from their incentives. **The application of technology to enhance the information environment of firms is innovative and possibly revolutionary.**





## WE BELIEVE

Our platform which crowdsources financial estimates from an open community of buy-side, independent & amateur contributors is the **natural evolution of our industry.**

The community has populated this data set over the last five years in order to individually benefit from a more robust, inclusive data set—think Wikipedia or StackOverflow.

A more accurate and representative earnings data set will allow you to **build better models and generate alpha.**

**Estimize** crowdsources the **most accurate** and **most representative** financial estimates on over 2,000 stocks from 40,000 buy-side, independent and amateur analysts.

---

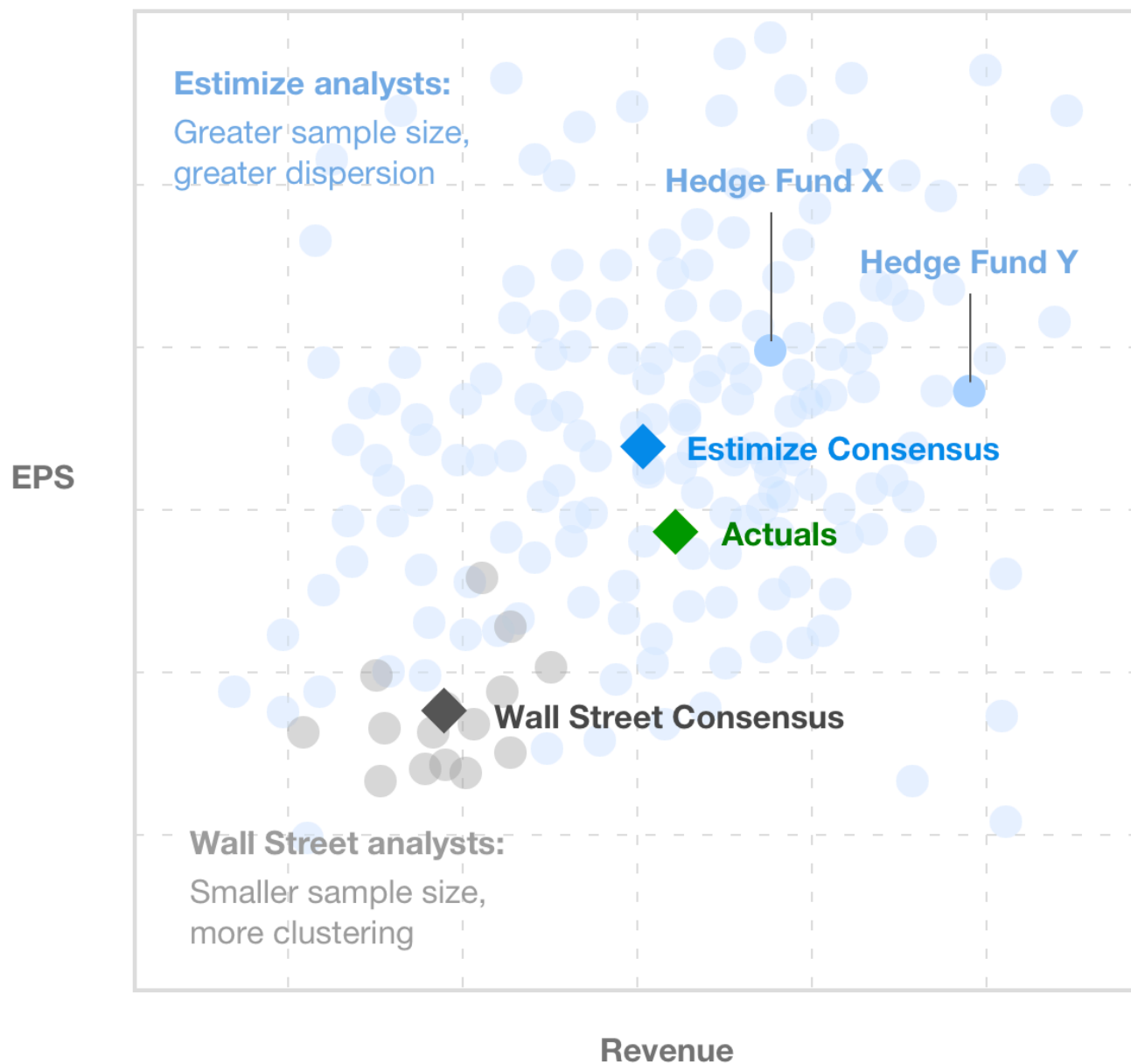
### **Estimize**

- ✓ Sell-side
- ✓ Buy-side
- ✓ Independent Experts
- ✓ Amateurs
- ✓ Students




**vs**

### **IBES/Bloomberg**

- ✓ Sell-side



Analysts are incentivized to contribute **their most accurate estimates to:**

-  Access the estimates of their peers
-  Analyze their accuracy against the market
-  Build a verifiable track record

FB - Facebook Crowdsourced

Cynthia

Estimize, Inc. [US]https://www.estimize.com/fb

estimize

CALENDAR

EQUITIES

ECONOMICS

RANKINGS

LEAGUES

SIGN UP

LOG IN

TRENDING

LULU

ORCL

BBRY

NKE

COST

MU

AA

INTC

JPM

AMD

Search company or analyst

<

FQ3 '15

FQ4 '15

FQ1 '16

FQ2 '16

FQ3 '16

FQ4 '16

153 Estimates

Estimated to report 01/25/17 AMC

FQ1 '17

FQ2 '17

FQ3 '17

FQ4 '17

FQ1 '18

FQ2 '18

FQ3 '18

>

>

Unlock superior FB earnings data by sharing your estimate for FQ4 '16 now

You can edit your estimate up until it reports

EPS:

1.32

Revenue:

8388

CREATE ESTIMATE >

No sign-up necessary

other U.S. technology firms in increasing investment despite the uncertainty sparked by the country's vote to leave the European Union.

\$20 billion of market value.

Next >

Powered by

SELERITY CONTEXT

Estimates for FQ4 '16

CURRENT SEASON

Showing 30/153 estimates

View all-time analyst rankings for FB

☐ Show only my followed analysts

Chart	☆	Analyst	EPS	Confidence	Revenue	Confidence	Last Revised	
		<div>Estimize Consensus</div> <div>156 estimates weighted</div>	<div>Estimate to view</div>		<div>Estimate to view</div>			
		<div>Estimize Mean</div> <div>153 estimates averaged</div>	<div>Estimate to view</div>		<div>Estimate to view</div>			
		Wall Street Consensus	1.32		8,388			
		<div>clayjenkins21</div> <div>J. Clayton Jenkins</div>	7.87	35,320	05/08/13			
		<div>rini</div> <div>rini</div>	7.48	37,902	05/05/13			
		<div>saju</div> <div>saju</div>	8.32	37,951	05/04/13			
		<div>joelca</div> <div>Joel Cano</div>	7.90					
		<div>Cubswin09</div> <div>David Bader</div>						
		<div>WallStreetBean</div> <div>Daniel Miller</div>						
		<div>ymhuka</div> <div>ymhuka</div>	7.40	37,81				
		<div>clayjenkins21</div> <div>J. Clayton Jenkins</div>	7.87	35,320	05/08/13			

153 analysts have estimated on FB.

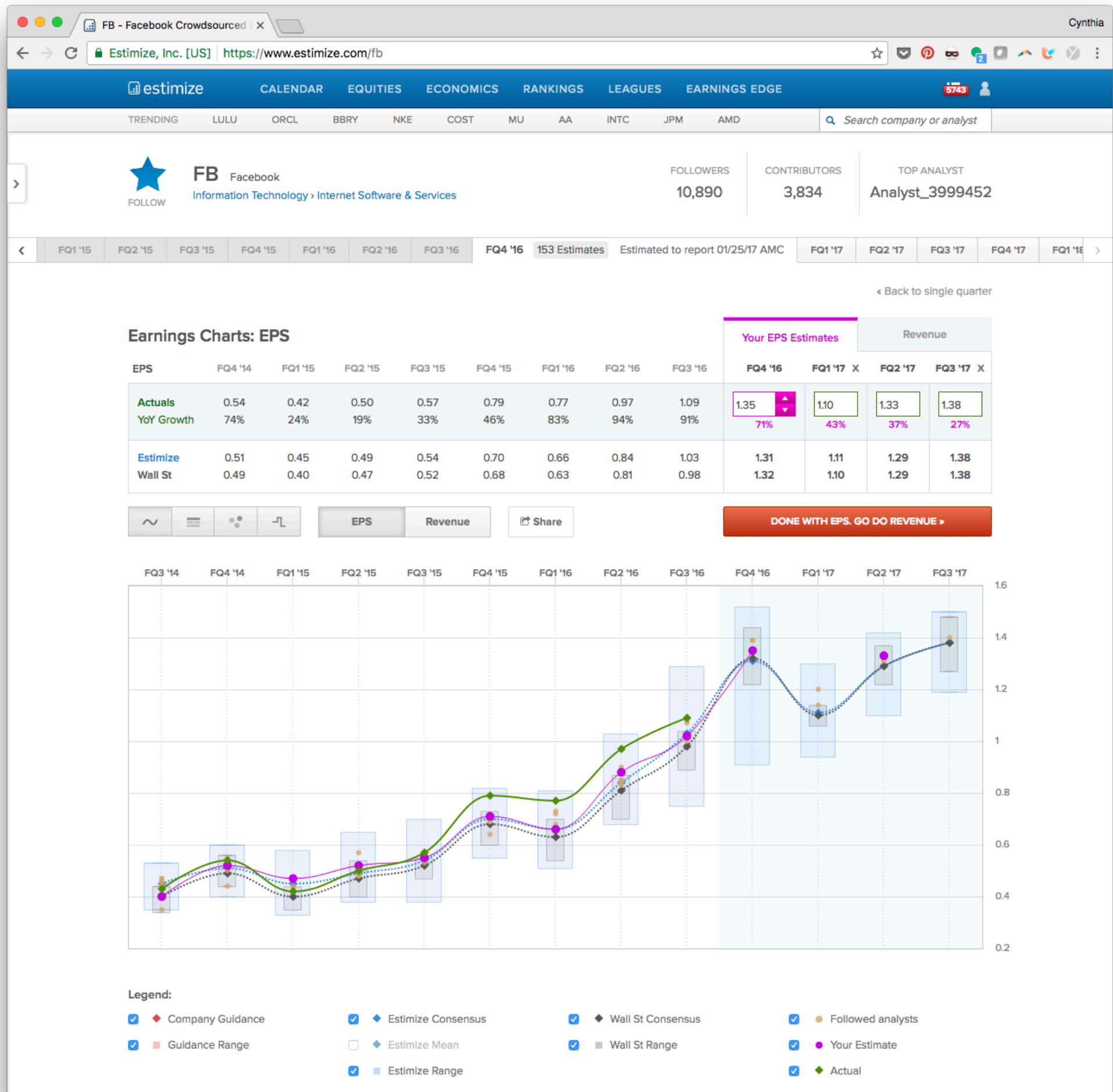
Join them by making your own estimate.

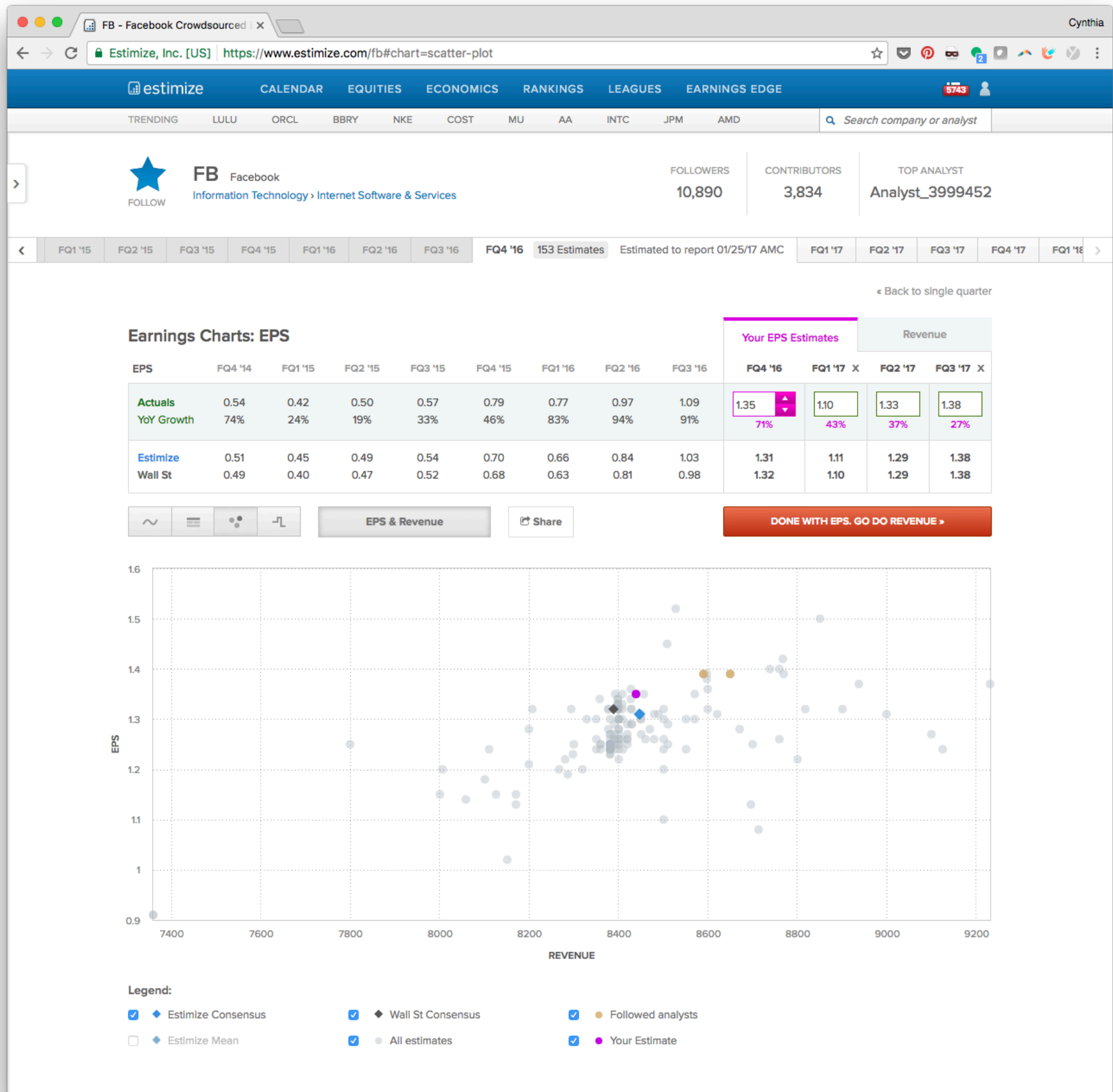
We ask that you estimate prior to viewing the Estimize consensus to preserve the independence of your estimate.

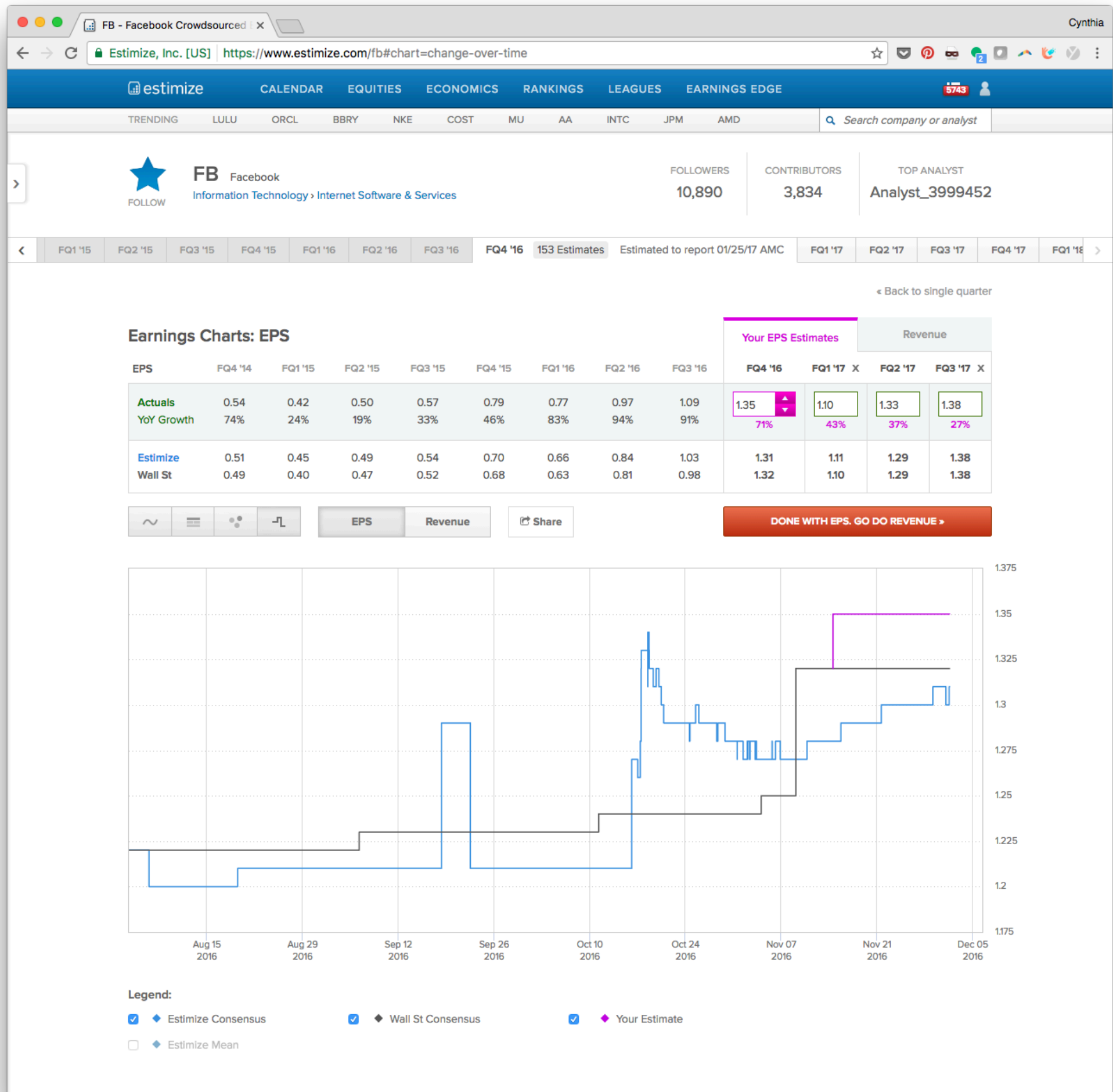
Estimates from individuals of ALL backgrounds and methods are needed to build the most accurate and representative data set possible.

By estimating, you'll be joining a community of 38,981 analysts who have built an estimates data set that is more accurate than Wall Street 74% of the time.

Learn more on our blog >







Equity Analyst Rankings - Estimize

Estimize, Inc. [US]https://www.estimize.com/rankings/equity

Cynthia

estimize

CALENDAR

EQUITIES

ECONOMICS

RANKINGS

LEAGUES

SIGN UP

LOG IN

TRENDING

LULU

ORCL

BBRY

NKE

COST

MU

AA

INTC

JPM

AMD

Search company or analyst

EQUITY RANKINGS

Equities

Economic Indicators

Choose A Sector

Choose An Industry

Symbol or company name

All Time

This Season

Previous Season

EPS & Revenue

EPS only

Revenue only

Analysts with minimum estimates















1

UPDATE

Showing 7,945 analysts with at least 1 scored estimate during the Fall 2016 season

See how the Estimize community is performing

View all estimates

☆	Analyst	Rank	Points	Points/Estimate	Error Rate	Accuracy Percentile	Estimates	Coverage	TTR
☆	 <b>Kalos</b> Giuseppe Call'	1	23,147	13.67	7.3%	60%	1,693	1,693	0.9
☆	 <b>QuantTrader007</b> Frederick Tremblay	2	18,269	11.41	8.2%	55%	1,601	1,601	5.2
☆	 <b>Johnalex</b> Alex Johnson	3	14,913	12.32	7.7%	57%	1,210	1,210	1.1
☆	 <b>bsirirat</b> Bob S.	4	10,271	6.10	9.2%	46%	1,683	1,683	25.6
☆	 <b>tjkyner</b> T.J. Kyner	5	10,102	13.60	6.6%	61%	743	743	0.4
☆	 <b>PCLA</b> PCLA	6	6,718	14.29	7.6%	58%	470	470	3.7
☆	 <b>PM</b> PM	7	4,868	12.32	7.5%	58%	395	395	2.5
☆	 <b>DerekDedman</b> Derek Dedman	8	4,763	12.80	8.0%	55%	372	372	0.8
☆	 <b>Raven</b> Roman Novacek	9	4,539	12.04	8.4%	56%	377	377	3.2
☆	 <b>scooter186</b> Scott Hendricks	10	3,791	13.03	8.4%	60%	291	291	2.4
☆	 <b>Analyst_7579453</b> Eric	11	3,427	11.31	8.6%	57%	303	303	2.0
☆	 <b>mkaiser</b> Michael Kaiser	12	3,384	10.85	8.8%	54%	312	312	9.5
☆	 <b>R_C12R</b> R_C12R	13	3,353	13.36	9.1%	54%	251	251	4.5
☆	 <b>lazbird37</b>	14	3,281	13.71	9.3%	55%	228	228	7.8



# TRUSTED BY INDUSTRY LEADERS

OUR CLIENTS INCLUDE



WORLDQUANT™

CONSENSUS REGULARLY CITED ON LEADING MEDIA PLATFORMS



Ameritrade

Bloomberg

THE  
WALL STREET  
JOURNAL.

The  
Economist

BARRON'S

Top Websites To Help  
Investors Survive  
Earnings Season

July 2016

FAST COMPANY

10 Most Innovative  
Companies

February 2014

Entrepreneur  
MAGAZINE

100 Brilliant Companies

May 2014

Not only is it **more accurate**...  
... it's **more representative**

"We found multiple benefits to using the Estimate dataset; **especially in the case of short term applications in which accuracy is essential.** The diversity of contributors provides a greater spectrum of information which can improve investment strategies."



**Deutsche Bank**  
Quant Research Team

## ACADEMIC VALIDATION



**Rick Johnston, Rice University**

“Competition For Sell-Side Analysts?”

Estimize as a crowdsourcing platform represents a market solution to the shortcomings associated with sell-side analyst forecasts perhaps resulting from their incentives. The application of technology to enhance the information environment of firms is **innovative and possibly revolutionary.**



**Biljana Abebambo & Barbara Bliss,  
University of San Diego**

“The Value of Crowdsourcing: Evidence from Earnings Forecasts”

The Estimize consensus produces errors that are more strongly associated with abnormal returns, suggesting that it is a **superior measure of the market’s true earnings expectations.**

**Forbes**

Fintech 50

2015



10 Best Investing  
Apps & Websites

June 2016



Best in Class For  
Creating Proprietary Data

2015

**BUSINESS INSIDER**

20 startups out to  
create a new world  
order on Wall Street

2015

# Quant Research Steps

---

1. **Whachagotthere:** What are we working with, basically everything we discussed in research design and the outcome of the experiment.
2. **Hypothesis:** Must start with an ex-ante hypothesis regarding some causal relationship between the data and a market outcome.
3. **Event Study:** For each event in our time series, what is the absolute return, market neutral return, and residual return, how does it perform out of sample?
4. **Portfolio Construction:** If we were to trade this as a single factor, how would we construct a portfolio?
5. **Residual Alpha:** If we use this factor to weight our multi factor model, does it produce residual uncorrelated alpha to our current model?

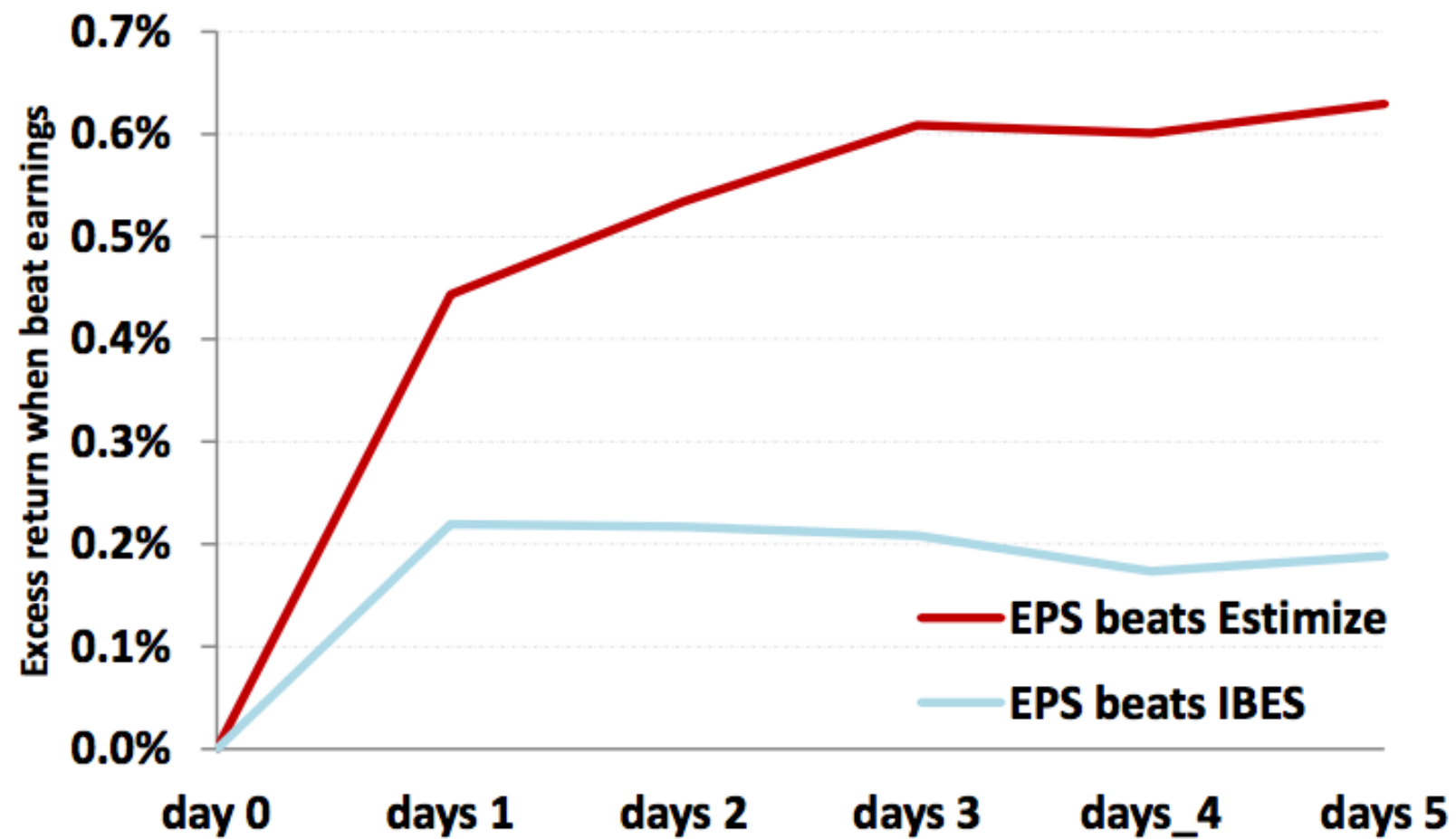
# 1

## **Post-Earnings Drift Strategy**

The more representative Estimate Consensus can greatly improve the classic post earnings drift strategy that has been used by systematic quants over the past 25 years.

## Cumulative excess return when estimates **Beat earnings by more than 10%**

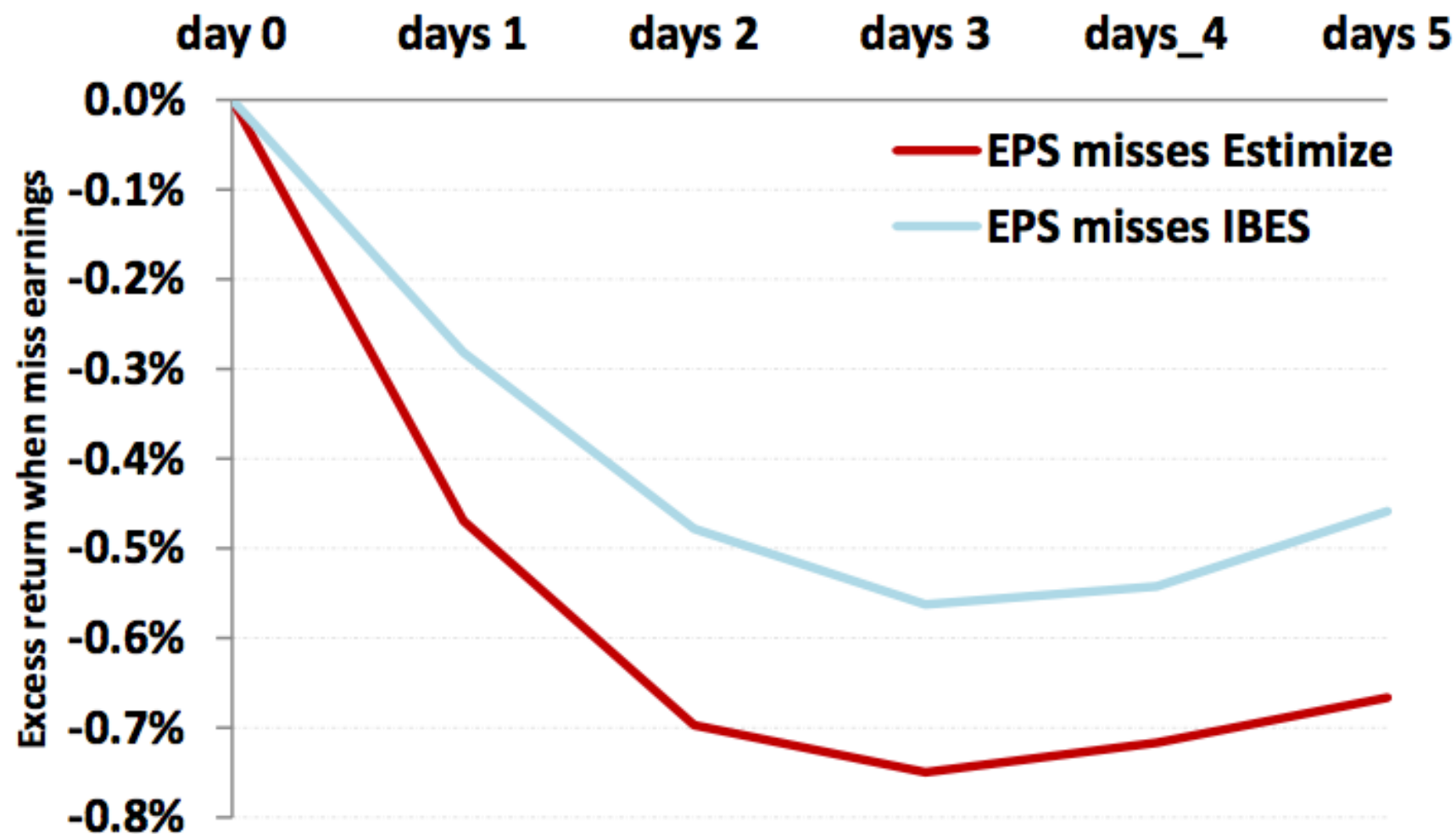
---



Source: Estimize, Compustat, IBES, Russell, S&P, Thomson Reuters, Deutsche Bank

Cumulative excess return when estimates

## Miss earnings by more than 10%



Source: Estimize, Compustat, IBES, Russell, S&P, Thomson Reuters, Deutsche Bank

# BUY - Smith & Wesson Holding Corporation (SWHC) - FQ2 '16

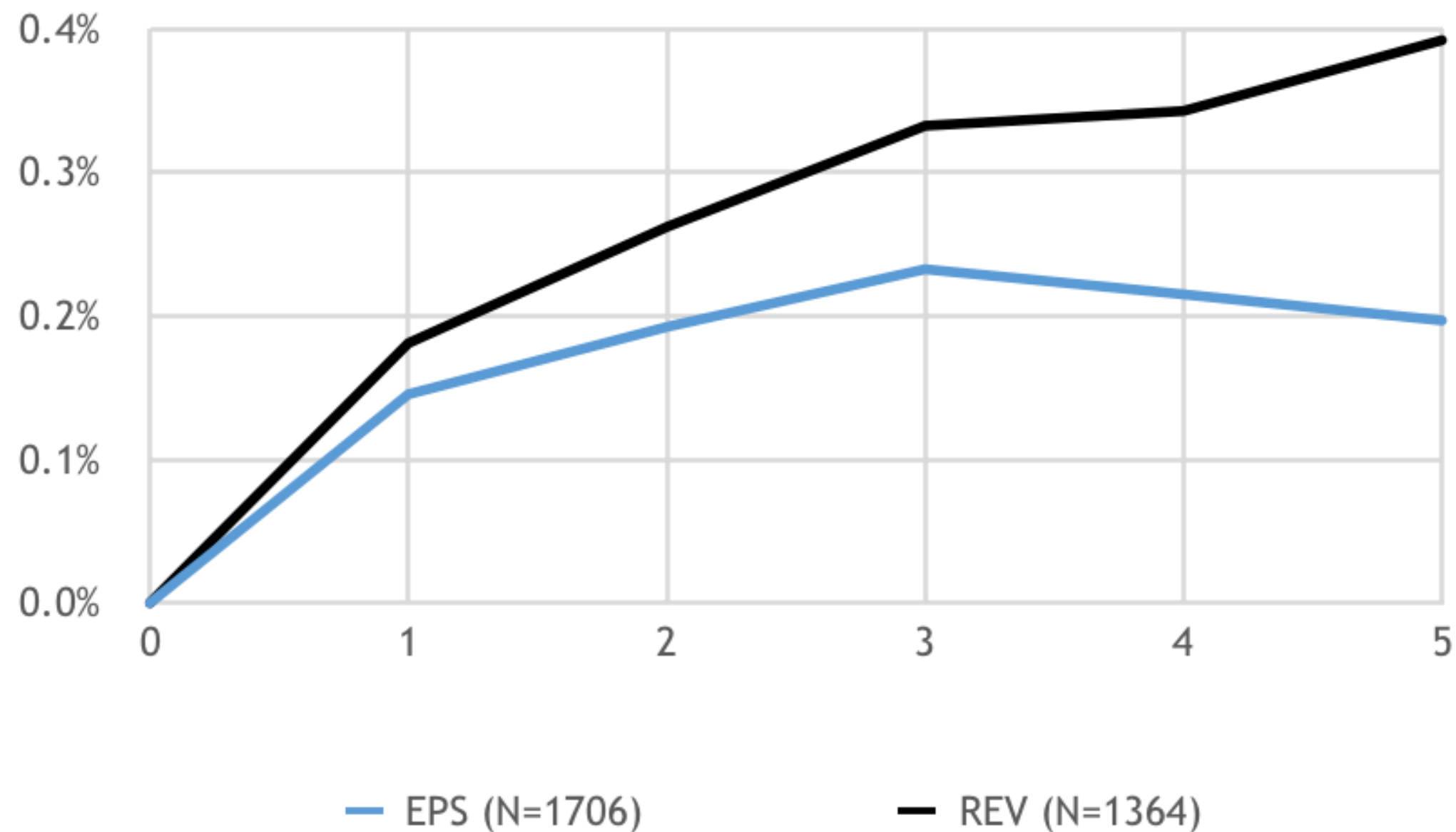
Post earnings when \$SWHC beat both Estimote and Wall Street Consensus





## Signed cumulative residual returns when **Estimize & Wall St surprises in opposite directions**

---



# SELL - Facebook (FB) - FQ1 '15

Post earnings when \$FB missed Estimote but beat Wall Street



# Post-Earnings Drift with Mean-Ratio Normalization

## EPS

---

First we calculate the average of absolute surprise for the previous 12 quarters for each stock (or as many quarters as we have for recent IPOs). We then get the ratio of current surprise to the historical mean to represent the magnitude of the beat/miss.

**Mean Ratio = (Absolute value of current surprise) / (Mean of absolute value of surprise for the past 12 quarters)**

At the open of trading the day after (if report is PM) or the day of (if report is AM) we take trades where (current surprise \* Mean Ratio) is more than 10%.

Trade	Number of Trades	1 DAY				5 DAY				20 DAY			
		Absolute Return	SP500	Relative Return	Std Deviation of Abs Return	Absolute Return	SP500	Relative Return	Std Deviation of Abs Return	Absolute Return	SP500	Relative Return	Std Deviation of Abs Return
Long	4878	2.169	0.062	2.107	7.599	2.625	0.219	2.406	9.670	4.096	1.000	3.096	12.953
Short	3132	-2.458	0.071	-2.529	7.721	-1.916	0.278	-2.194	10.900	-0.532	1.055	-1.587	15.246

# Post-Earnings Drift with Mean-Ratio Normalization

## Revenue

---

First we calculate the average of absolute surprise for the previous 12 quarters for each stock (or as many quarters as we have for recent IPOs). We then get the ratio of current surprise to the historical mean to represent the magnitude of the beat/miss.

**Mean Ratio = (Absolute value of current surprise) / (Mean of absolute value of surprise for the past 12 quarters)**

At the open of trading the day after (if report is PM) or the day of (if report is AM) we take trades where (current surprise \* Mean Ratio) is more than 5%.

Trade	Number of Trades	1 DAY				5 DAY				20 DAY			
		Absolute Return	SP500	Relative Return	Std Deviation of Abs Return	Absolute Return	SP500	Relative Return	Std Deviation of Abs Return	Absolute Return	SP500	Relative Return	Std Deviation of Abs Return
Long	2687	2.110	0.071	2.039	7.137	2.392	0.251	2.142	9.294	3.656	1.028	2.627	13.126
Short	3065	-1.662	0.069	-1.731	7.622	-1.167	0.257	-1.424	10.953	0.286	0.989	-0.703	15.588

You can easily leverage our research.

We've put our drift strategies into a **factor model**.

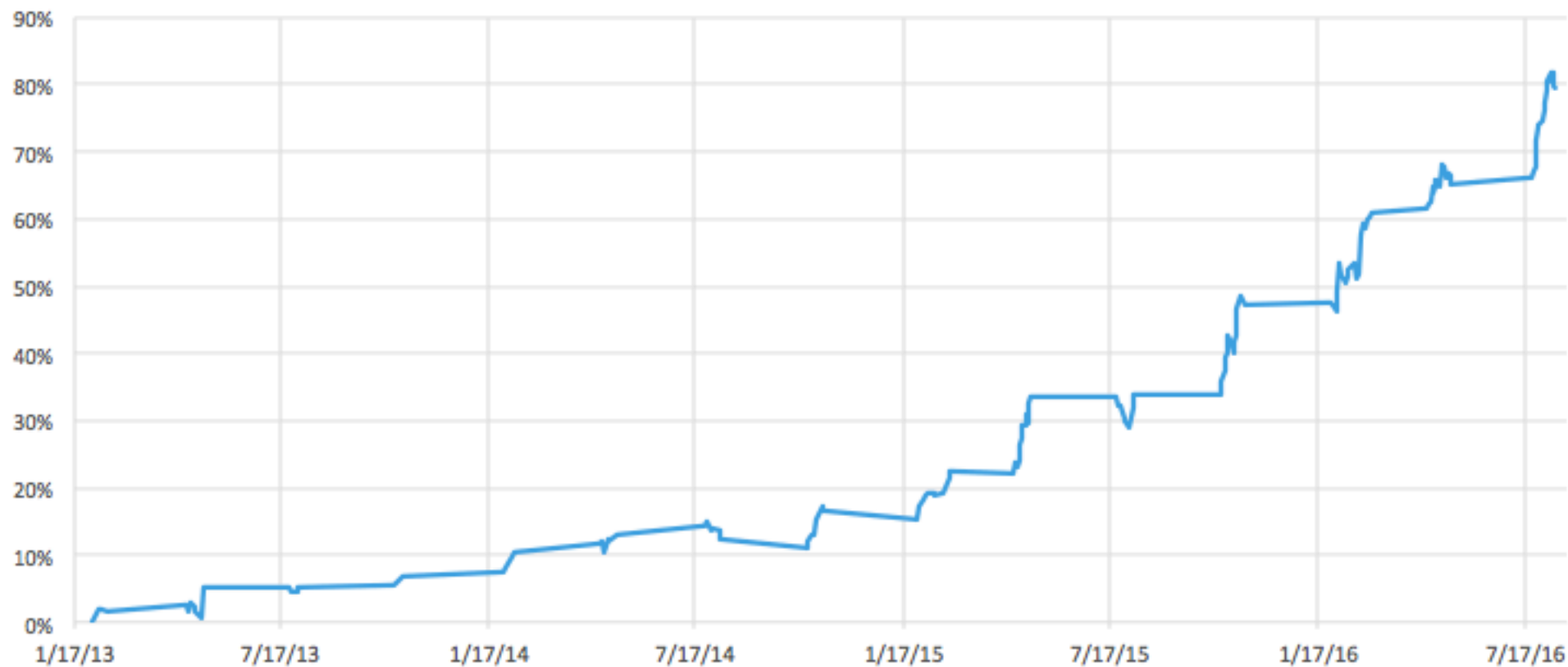
We create a **-100 to +100 score** for each stock each day based on our pre and post earnings drift factors.

---

The Estimote Post Earnings Drift Factor Model has delivered consistently strong alpha at a **2.0 Sharpe**, with

**over 80%**

**market neutral returns** since January 2013





## **After the crash in 2000**

financial authorities wrote Reg FD in an attempt to get analysts to be honest

---



In 2013, the SEC forced 16 major  
quantitative hedge funds to stop collecting  
**the #1 alpha-producing data set they ever had.**

---

Hi John. You've told us you're an **Enterprise Tech** analyst from **Goldman**. Please rank these stocks in your coverage universe by the order in which you believe they'll perform over the coming month (by percent change).

Company	Ticker	Your Rank (1-10)
Salesforce.com Inc	CRM	?
VMware Inc	VMW	?
Adobe Systems Inc	ADBE	?
Microsoft Corp	MSFT	?
Citrix Systems Inc	CTXS	?
Oracle Corp	ORCL	?
Symantec Corp	SYMC	?
Check Point Software Technologies Ltd	CHKP	?
Red Hat Inc	RHT	?
Intuit Inc	INTU	?



# Buy/Sell/Hold Ratings

---

- ✗ 80% of stocks rated buy/overweight (not statistically possible)
- ✗ Biased by corporate access & investment banking motivations
- ✗ Prescribes no time frame
- ✗ No specific strategy
- ✗ Subjective, demanding a replacement heuristic
- ✗ No persistence of accuracy across analysts

Wed Feb 26, 2014 | 1:45am EST

# Eighteen brokerages agree with NY AG to stop answering analyst surveys

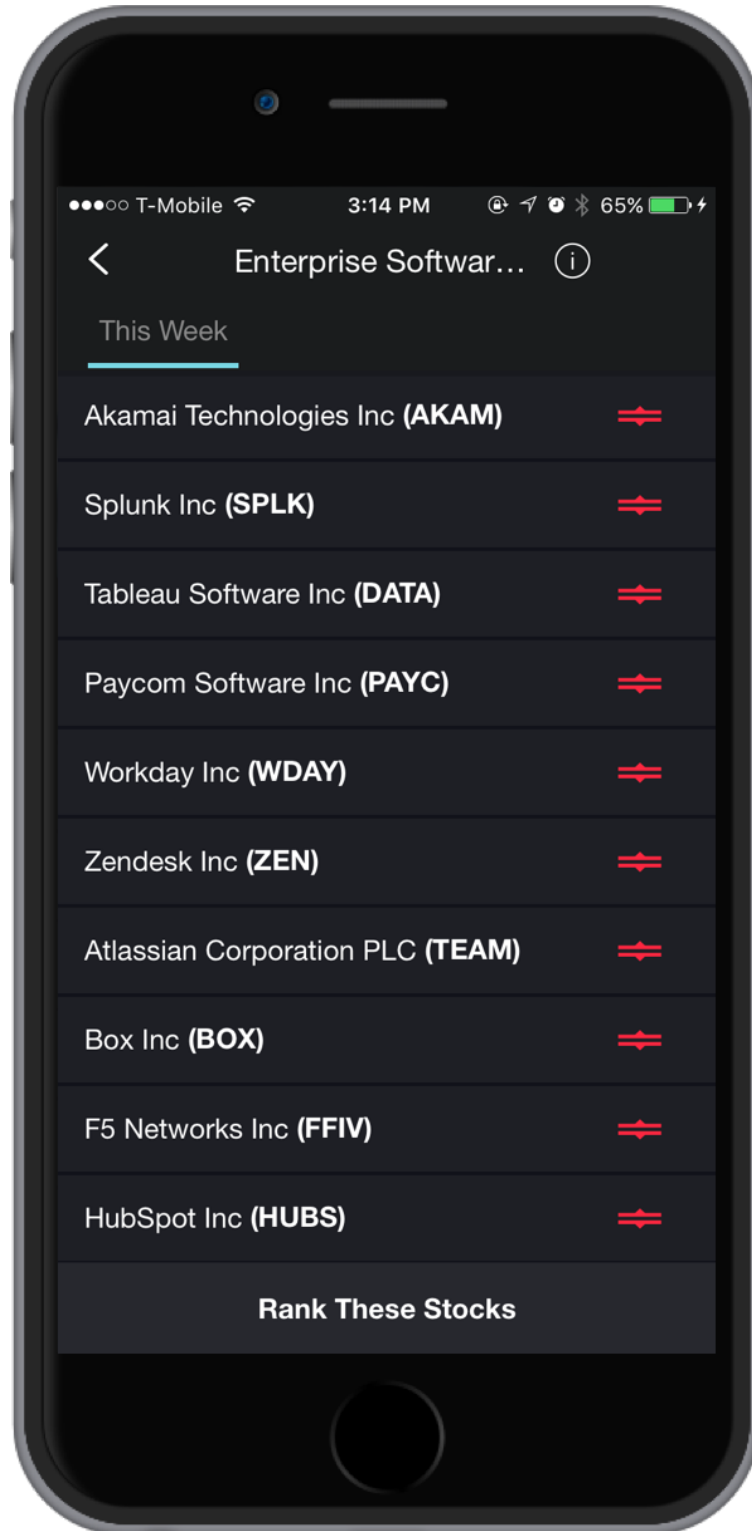
By Karen Freifeld and Chris Peters

Feb 26 Eighteen brokerages, including Goldman Sachs, JPMorgan Chase, and Citigroup, agreed to end their participation in analyst survey programs as a result of the New York Attorney General's investigation into the early release of Wall Street analyst sentiment.

The agreement with the New York Attorney General Eric Schneiderman's office comes less than two months after BlackRock Inc, the world's largest asset manager, agreed to end its analyst survey program worldwide.

At that time, the attorney general said that his investigation would continue into the firms that answered surveys.

Schneiderman had expressed concerns over brokerage firm analysts who provide answers to surveys that give traders a sneak peek into forthcoming analyst reports, a practice he referred to as "Insider Trading 2.0."



## Stock Industry Group Contests

**E-commerce**

**Enterprise Software**

**Airlines**

**Investment Banks**

## ETF Contests

**US Sectors**

**Global Index**

**Commodities**

**Forex**

## Catalyst Contests

**Most Heavily  
Shorted**

**Earnings**

**Activist**

... AND MANY MORE

## Buy/Sell/Hold Ratings

---

vs

## Forcerank

---

- ✗ 80% of stocks rated buy/overweight (not statistically possible)
- ✗ Biased by corporate access & investment banking motivations
- ✗ Prescribes no time frame
- ✗ No specific strategy
- ✗ Subjective, demanding a replacement heuristic
- ✗ No persistence of accuracy across analysts

- ✓ Relative rank establishes clear recommendations
- ✓ Relative rank removes biases
- ✓ Prescribes a time frame
- ✓ Suggests specific strategies
- ✓ Direct question gets direct answer
- ✓ Persistence of accuracy across analysts across time

Because of the relative nature of the rankings and the specific timeframe on which competitors are predicting, **creating market neutral trading strategies which rebalance weekly is relatively simple.**

---



Consensus Ranking  
Long/Short

Enterprise Software (Small/Mid)  
11/21 - 11/25

Rank	Ticker	Company	Consensus Rank Average of 180 User Rankings
1	SPLK	Splunk Inc	4.76
2	AKAM	Akamai Technologies Inc	5.00
3	PAYC	Paycom Software Inc	5.00
4	HUBS	HubSpot Inc	5.12
5	WDAY	Workday Inc	5.41
6	FFIV	F5 Networks Inc	5.53
7	ZEN	Zendesk Inc	5.59
8	BOX	Box Inc	6.00
9	TEAM	Atlassian Corporation PLC	6.24
10	DATA	Tableau Software Inc	6.35

Consensus Ranking  
Movement

Enterprise Software (Small/Mid)  
11/21 - 11/25

Ticker	Company	Rank (11/14-18)	Rank (11/21-25)	Rank Movement
SPLK	Splunk Inc	5	1	+4
AKAM	Akamai Technologies Inc	3	2	+1
PAYC	Paycom Software Inc	9	3	+6
HUBS	HubSpot Inc	1	4	-3
WDAY	Workday Inc	8	5	+3
FFIV	F5 Networks Inc	10	6	+4
ZEN	Zendesk Inc	2	7	-5
BOX	Box Inc	4	8	-4
TEAM	Atlassian Corporation PLC	6	9	-3
DATA	Tableau Software Inc	7	10	-3

**Creating A  
Select Consensus  
using the Kendal Rank  
Coefficient**

**3,000+ Analysts**

**Weighting the Top 10% and Bottom 10%**

User Rank	Analyst	Kendall Accuracy Score
1	Prasanna	0.76
2	Player_2418	0.73
3	ranko	0.72
4	Aaron	0.71
5	AZCroat	0.68
.	Monster	0.19
.	Player_1414	0.19
.	j_holliman	0.19
.	TheWeekendWar	0.19
.	turnips	0.17
.	StockDuel	0.15
.	Player_2014	0.13
.	Jabronnni	0.11
.	C8roddy	0.10
3496	Player_1656	-0.60
3497	NuggetZy	-0.60
3498	Player_1299	-0.60
3499	gorover18	-0.61
3500	nydavis_24	-0.62

Forcerank User Rankings Report 2016-10-31 GAME ID.xlsx

150%

Home Layout Tables Charts SmartArt Formulas Data Review

Edit Font Alignment Number Format Cells Themes

Calibri (Body) 11 A A

Normal 2 Normal Bad

Good Neutral Calculation

Insert Delete Format Themes

F6 11/4/2016 4:00:00 PM

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Record ID	User ID	Contest ID	Game ID	Contest Start	Contest End	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6	Rank 7	Rank 8	Rank 9	Rank 10	Time Stamp of	Submit Type
2	10615	2352	756	37	10/31/16 9:30	11/4/16 16:00	DPZ	SBUX	CMG	DNKN	WEN	YUM	DRI	BWLD	PNRA	MCD	10/31/16 9:28	Created
3	10614	2352	755	32	10/31/16 9:30	11/4/16 16:00	BX	EVR	GS	MS	LAZ	WFC	JPM	BK	BAC	C	10/31/16 9:25	Created
4	10613	2352	743	1	10/31/16 9:30	11/4/16 16:00	HBI	RL	DECK	LULU	SKX	NKE	COH	VFC	PVH	UA	10/31/16 9:22	Created
5	10612	9	758	38	10/31/16 9:30	11/4/16 16:00	SWKS	LRCX	NVDA	MU	QCOM	TXN	NXPI	ADI	INTC	AMAT	10/31/16 9:10	List Edit
6	10611	9	754	35	10/31/16 9:30	11/4/16 16:00	HUBS	PAYC	ZEN	WDAY	AKAM	FFIV	SPLK	TEAM	DATA	BOX	10/31/16 9:09	List Edit
7	10610	3143	749	10	10/31/16 9:30	11/4/16 16:00	UUP	BZF	FXC	FXE	FXY	FXA	CYB	FXF	FXB	FXS	10/31/16 9:06	Created
8	10609	3143	744	20	10/31/16 9:30	11/4/16 16:00	XLP	XLF	XLK	SPY	XLU	XLY	XLV	XLI	XLB	XLE	10/31/16 9:05	Created
9	10608	2323	761	44	10/31/16 9:30	11/4/16 16:00	SQ	EA	YELP	FB	QCOM	DATA	CHKP	ATVI	DDD	FIT	10/31/16 9:04	Created
10	10607	3143	755	32	10/31/16 9:30	11/4/16 16:00	BAC	JPM	MS	GS	C	WFC	BX	EVR	LAZ	BK	10/31/16 9:04	Created
11	10606	9	746	5	10/31/16 9:30	11/4/16 16:00	JO	JJC	SGG	PALL	UNG	UGA	USO	JJG	GLD	SLV	10/31/16 9:02	List Edit
12	10605	6	764	3	10/31/16 9:30	11/4/16 16:00	ALXN	BIIB	ILMN	AMGN	INCY	GILD	CELG	VRTX	REGN	BMRN	10/31/16 9:01	Created
13	10604	3306	741	8	10/31/16 9:30	11/4/16 16:00	AMZN	BABA	PCLN	EBAY	NFLX	CTRP	MELI	EXPE	JD	GRPN	10/31/16 9:01	Created
14	10603	3306	749	10	10/31/16 9:30	11/4/16 16:00	UUP	FXA	FXC	FXF	BZF	FXY	FXS	CYB	FXE	FXB	10/31/16 9:01	Created
15	10602	9	745	11	10/31/16 9:30	11/4/16 16:00	EWJ	EZU	SPY	EWU	RSX	EPP	FXI	EPI	ILF	EWZ	10/31/16 9:01	List Edit
16	10601	9	744	20	10/31/16 9:30	11/4/16 16:00	XLK	XLF	XLE	XLI	XLY	SPY	XLV	XLU	XLP	XLB	10/31/16 8:59	List Edit
17	10600	9	741	8	10/31/16 9:30	11/4/16 16:00	PCLN	EXPE	CTRP	JD	NFLX	AMZN	EBAY	BABA	MELI	GRPN	10/31/16 8:56	List Edit
18	10599	9	761	44	10/31/16 9:30	11/4/16 16:00	SQ	ATVI	FB	CHKP	QCOM	YELP	EA	DATA	DDD	FIT	10/31/16 8:54	Created
19	10598	22	744	20	10/31/16 9:30	11/4/16 16:00	XLK	XLY	XLV	XLI	XLF	XLP	XLE	XLU	SPY	XLB	10/31/16 8:20	Created
20	10597	22	754	35	10/31/16 9:30	11/4/16 16:00	SPLK	AKAM	WDAY	BOX	HUBS	DATA	FFIV	PAYC	TEAM	ZEN	10/31/16 8:20	Created
21	10596	22	751	34	10/31/16 9:30	11/4/16 16:00	ORCL	MSFT	CRM	INTU	VMW	RHT	ADBE	CHKP	CTXS	SYMC	10/31/16 8:20	Created
22	10595	22	750	18	10/31/16 9:30	11/4/16 16:00	MSFT	FB	GOOGL	WB	NTES	YY	YELP	MTCH	YNDX	TWTR	10/31/16 8:19	Created

Sheet1 Contest ID Game ID

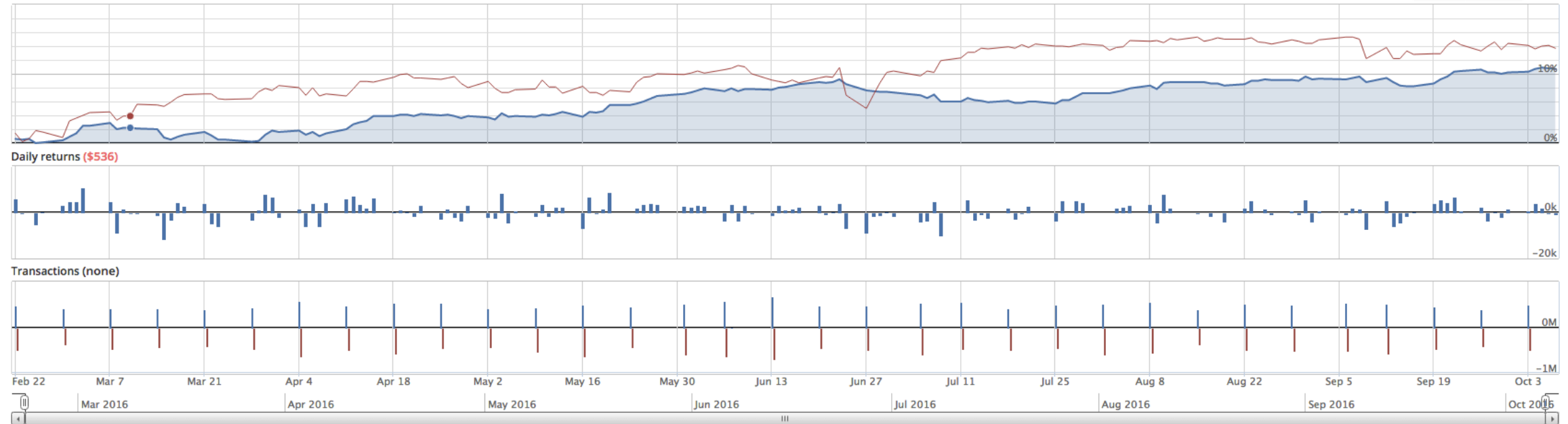
Data is delivered at **9:30AM every Monday** via **FTP or API**

Total Returns 10.7%    Benchmark Returns 13.7%    Alpha 0.13    Beta 0.14    Sharpe 2.75    Sortino 4.26    Information Ratio -0.03    Volatility 0.06    Max Drawdown -3.2%

Cumulative performance: ■ Algorithm 2.2% ■ Benchmark (SPY) 3.9%

Mar 9, 2016

Week    Month    All



---

**19%** annualized returns  
**2.75** sharpe

# Lessons for Building a FinTech Startup

---

- ✓ Go work in the industry before you start something
- ✓ Your idea is worthless, focus on validating it
- ✓ Have the right mix of co-founders, I didn't
- ✓ Surround yourself with DNA you don't have
- ✓ Be frugal, survive long enough to see it work
- ✓ Execution is everything, great ideas die easily
- ✓ FinTech sucks, it's hard, but it's intellectually rewarding

**Books...** they are good for you, read many of them

---

- ✓ **Thinking Fast and Slow**, Daniel Kahneman
- ✓ **Misbehaving**, Richard Thaler
- ✓ **Reminiscences of a Stock Operator**, Edwin Lefevre
- ✓ **Way of the Turtle**, Curtis Faith
- ✓ **The Hard Thing About Hard Things**, Ben Horowitz
- ✓ **The Lean Startup**, Eric Ries
- ✓ **How to Win Friends and Influence People**, Dale Carnegie