



New Constructs®  
Diligence | Independence | Performance

# The Robo-Analyst Has Arrived

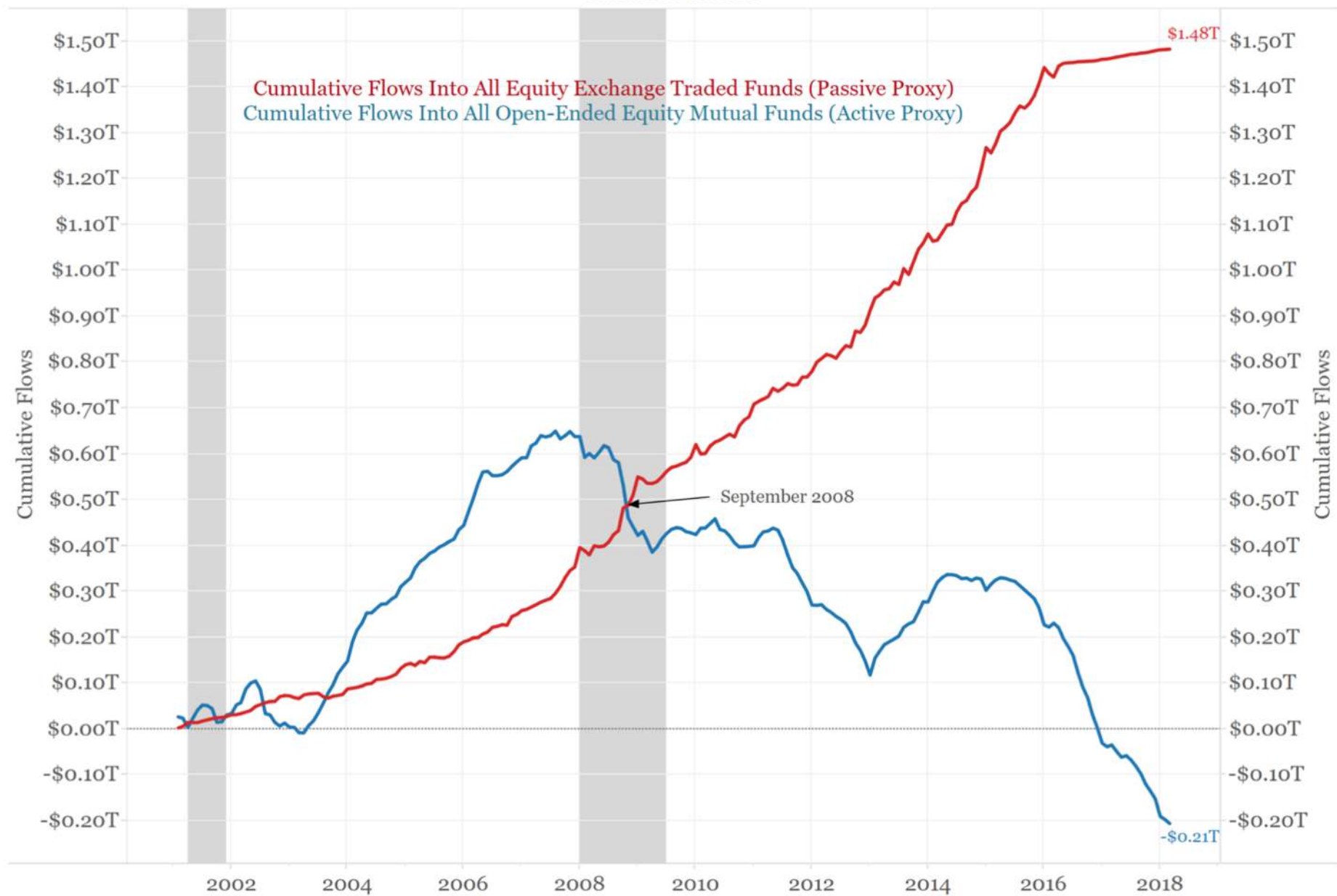
## AI-Enabled Fundamental Research

# ACTIVE MANAGERS HAVE LOST THEIR EDGE

Assets flows to passive funds are dominating

## Equity Mutual Funds & ETFs Cumulative Flows

Jan 2001 to Feb 2018



Source: Investment Company Institute

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## Why Robo-Analysts Now?

- The technology has arrived
- 40-year old active strategies have grown stale



“...with the exception of the early 2000s, the value strategy has actually been underperforming since the late 1980s.”

– Baruch Lev of NYU’s Stern School of Business and Anup Srivastava of Calgary’s Hasakayne School of Business

Active managers need:

- New sources of Alpha
- Lower costs
- More scale

AI-enabled  
Research Automation  
is the Solution

# AI-ENABLED RESEARCH AUTOMATION MAKES \$

## The Robo-Analyst



### Better

- Drives alpha
- Only way to analyze footnotes in 200+ page filings
- 100% transparency
- 1-click to audit every number



### Faster

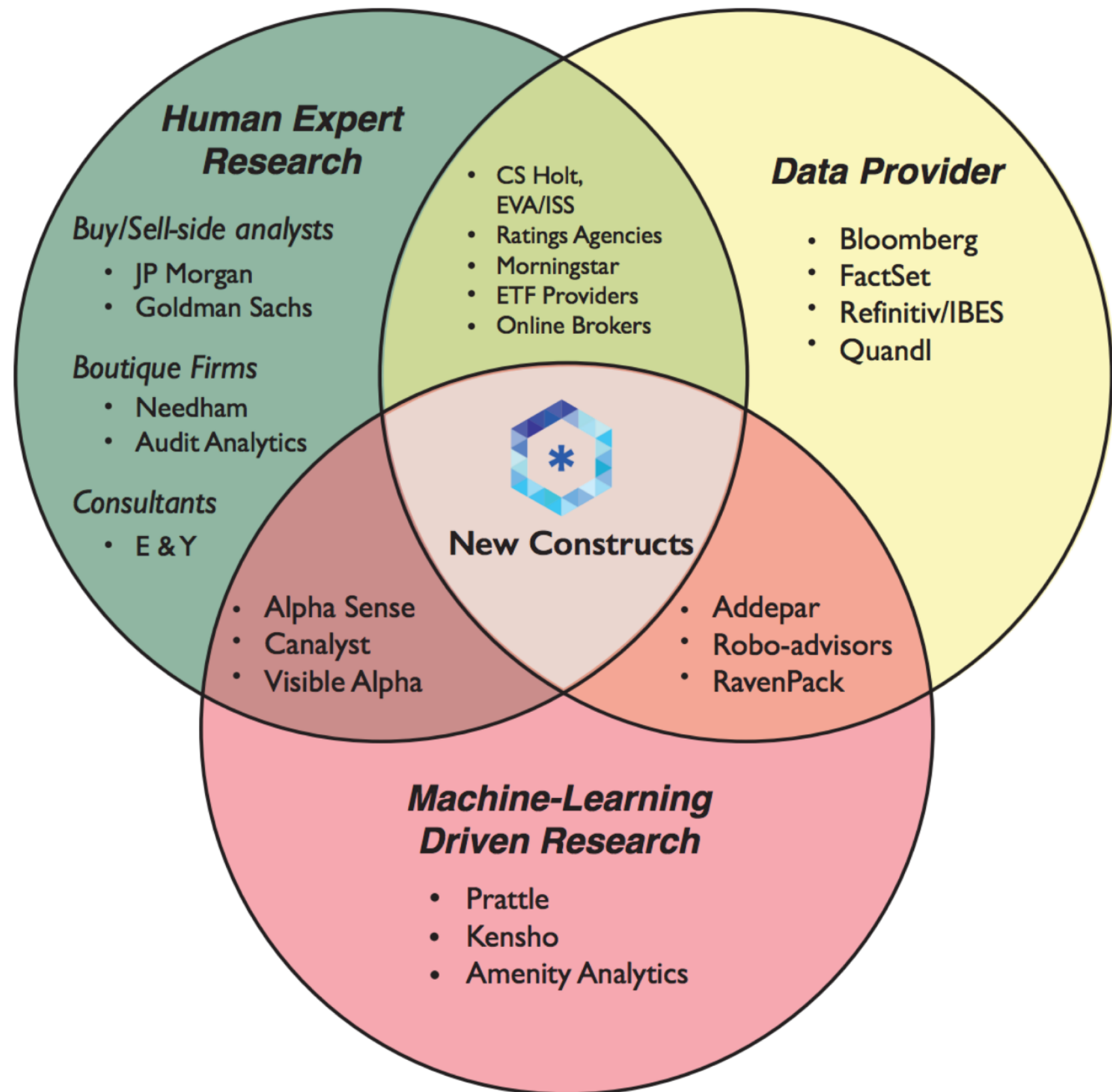
- Cover 10,000s of stocks, bonds, ETFs and mutual funds
- Entire 10-Ks & Qs analyzed in minutes
- Models & APIs updated instantly



### Cheaper

- \$billions/year saved vs. legacy data collection systems
- \$millions/year saved while covering more companies w/ fewer people
- Cost effective fulfillment of fiduciary duties

# disruption Landscape



proof that the robo-Analyst research is better

Proof that there's untapped alpha in the footnotes



HARVARD  
BUSINESS SCHOOL

MIT  
MANAGEMENT  
SLOAN SCHOOL

### Core Earnings: New Data and Evidence\*

Ethan Rouen  
Harvard Business School

Eric So  
Massachusetts Institute of Technology  
Sloan School of Management

Charles C.Y. Wang  
Harvard Business School

January 2020

#### Abstract

Using a novel dataset that comprehensively classifies the quantitative financial disclosures in firms' 10-Ks, including those hidden in the footnotes and the MD&A, we show that disclosures of non-operating and less persistent income-statement items are both frequent and economically significant, and increasingly so over time. Adjusting GAAP earnings to exclude these items creates a measure of core earnings that is highly persistent and that forecasts future performance. Street earnings for firms that meet or just beat analyst expectations are more likely to selectively exclude these items. Analysts and market participants also are slow to impound the implications of these items. Trading strategies that exploit cross-sectional differences in firms' transitory earnings produce abnormal returns of 7-to-10% per year.

**Keywords:** Core Earnings; Transitory Earnings; Non-Operating Earnings; Quantitative Disclosures; Equity Valuation; Big Data  
**JEL:** C14, G10, G18, M40, M41

\*First draft: July 2018. For helpful feedback, we thank Dirk Black, Ilija Dichev, Vivian Fang (discussant), Trevor Harris, Paul Healy, Juhani Linnainmaa (discussant), Pete Lisowsky, Stephen Penman, Edward Riedl, Doug Skinner, Joe Weber, and workshop participants at Acadian Asset Management, the ASSA/AEA Annual Meeting, Arrowstreet Capital, Boston University, Conference on Financial Economics and Accounting, Dartmouth University, and Harvard Business School. We are grateful to David Trainer, Lee Moneta-Koehler, and the New Constructs team for providing their data and offering valuable insights. All errors remain ours.

Electronic copy available at: <https://ssrn.com/abstract=3518726>



*...[New Constructs] is the most comprehensive dataset that captures what a fundamental analyst would be likely to identify as transitory or non-operating earnings items in detailed analyses of firms' 10-Ks." p. 10*



*Core Earnings [from New Constructs] is a superior measure of a company's operating earnings, and incremental to other measures when predicting future performance. p. 25*



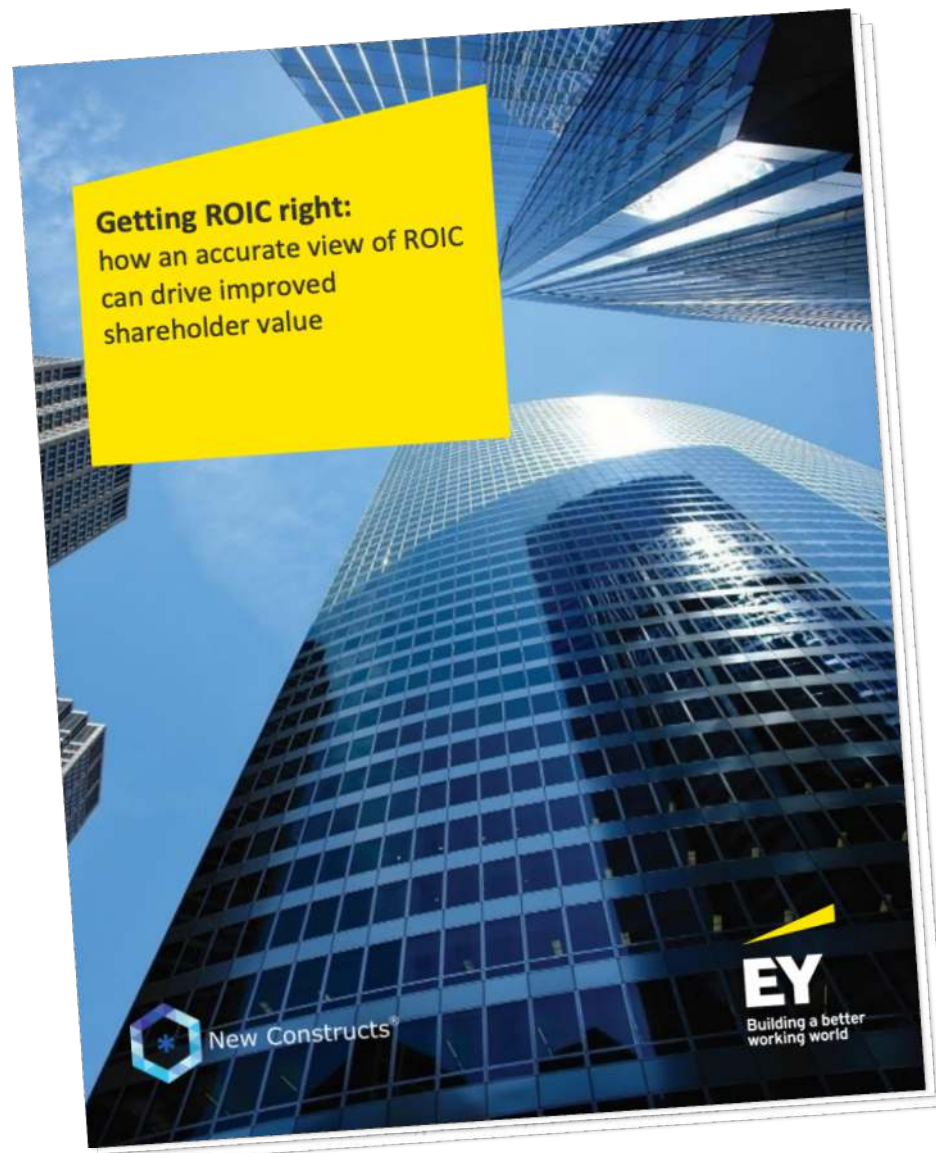
*The results suggest that the adjustments made by analysts and Compustat to better capture core earnings are incomplete. p. 26-27*

Click [here](#) for the paper. Here's a [1-page summary](#).



proof that our research automation works

## Materially Superior Analytics



“ [New Constructs] accounts for a large number of items... which are not included in the other data sets.” p. 5

“ The majority of the difference comes from [New Constructs]’s machine learning approach, which leverages technology to applying accounting adjustments that may be buried deeply in the footnotes across thousands of companies. p. 4

“ The other advantage of [New Constructs] is the transparency in disclosing calculations and all the data behind them. It is hard to determine the calculations at a granular level from the reports of many data providers. P. 4

Click [here](#) for the paper.

# Market landscape

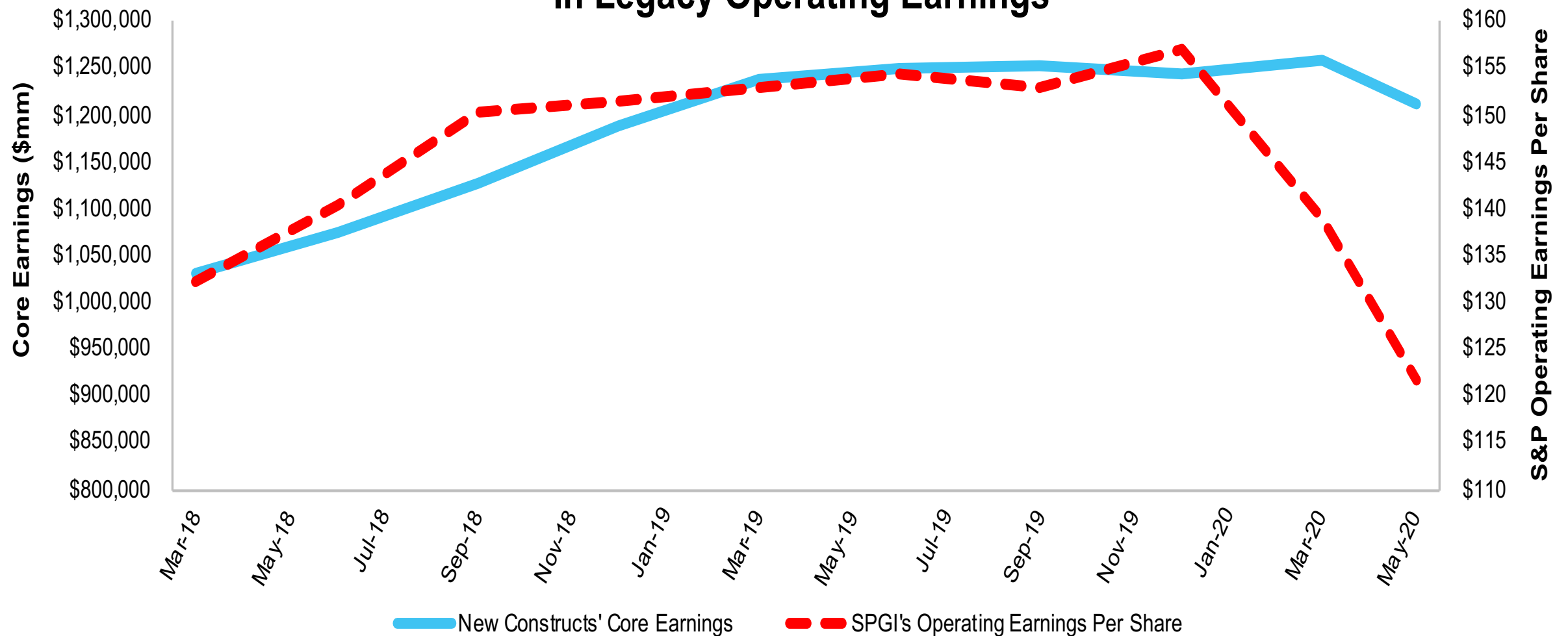
	Coverage			Cash Flow Models (Non-GAAP)		Consistent Due Diligence		100% Audit-Ability	Empirical Proof of Superior Data		Robo-Analyst Technology
	Stocks	ETFs	Mutual Funds	ROIC & Economic Earnings	Reverse DCF	Footnotes	MD&A	SEC Filings/ Source Data	HBS & MIT Sloan	Ernst & Young	AI-Enabled Research Automation & Scalability
<b>New Constructs</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Credit-Suisse HOLT	✓			✓	✓	✓					
EVA Dimensions/ISS	✓			✓							
MorningStar	✓	✓	✓	black box	✓						
CFRA	✓		✓	✓		✓					
S&P Capital IQ & Compustat	✓	✓		✓		Limited		Limited			
FactSet/WorldScope/Bloomberg	✓					Limited		Limited			
AlphaSense						✓	✓	✓			✓
Zack's	✓	✓	✓								
Calcbench	✓					✓		✓			XBRL
Visible Alpha	✓			✓							
Valuentum.com	✓	✓									
Finbox.io	✓			✓							
Canalyst	✓			✓	✓						
GuruFocus	✓			✓							



# Case Study – Macro research

See the S&P 500 through a new lens ([featured](#) by MarketWatch.com)

## Don't Fall for the Fall In Legacy Operating Earnings



### Footnotes:

1. We think SPGI's Operating Earnings provide the best available comparison for our Core Earnings. We can compare with any other metrics.
2. For 3<sup>rd</sup>-party reviews on the benefits of adjusted Core Earnings, historically and prospectively, across all stocks, click [here](#) and [here](#).
3. Our Core Earnings data is based on all 10-Q and 10-K filings for S&P 500 constituents as of 5/26/2020. Since then, an immaterial number of companies (18) companies have filed a new 10-K or 10-Q with the SEC. Contact us at [support@newconstructs.com](mailto:support@newconstructs.com) for access to the source data behind this research.



# New Constructs®

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# Appendix

# Stock Ratings: details

“Robo Analysts Best Human Analysts on Investment Picks.”

– Vildana Hajric, Bloomberg News

## Western Union Co (The) (WU)

Closing Price: \$23.90 (Mar 04, 2020)  
 Market Value: \$9.9 Billion  
 Dividend Yield: 3.3%  
 Sector: **Industrials**

**Earnings Distortion Score :** Strong Miss

**Analyst Notes :** New 10-K & Forecast 3/1/20 | Focus List (Long) Model Portfolio Nov 2019

Risk/Reward Rating <sup>?</sup>	Quality of Earnings		Valuation		
	Economic vs Reported EPS <sup>?</sup>	ROIC <sup>?</sup>	FCF Yield <sup>?</sup>	Price to EBV <sup>?</sup>	Market-Implied GAP <sup>?</sup>
Very Unattractive	Misleading Trend	Bottom Quintile	< -5%	> 3.5 or -1 < 0	> 50
Unattractive	<span style="background-color: #f4a460;">False Positive</span>	4th Quintile	-5% < -1%	2.4 < 3.5 or < -1	20 < 50
<span style="background-color: #fff9c4;">Neutral</span>	Neutral EE	3rd Quintile	-1% < 3%	1.6 < 2.4	10 < 20
Attractive	Positive EE	2nd Quintile	3% < 10%	1.1 < 1.6	3 < 10
Very Attractive	Rising EE	<span style="background-color: #81c784;">Top Quintile</span>	<span style="background-color: #81c784;">&gt; 10%</span>	<span style="background-color: #81c784;">0 &lt; 1.1</span>	<span style="background-color: #81c784;">0 &lt; 3</span>
<b>Actual Values</b>					
<b>WU</b>	<b>\$1.57 vs. \$2.46</b>	<b>25%</b>	<b>11%</b>	<b>0.7</b>	<b>&lt; 1 yr</b>
<b>Benchmarks <sup>?</sup></b>					
<span style="background-color: #c6e0b4;">Sector ETF (XLI)</span>	<span style="background-color: #c6e0b4;">Positive EE</span>	<span style="background-color: #fff9c4;">10%</span>	<span style="background-color: #c6e0b4;">4%</span>	<span style="background-color: #fff9c4;">2.0</span>	<span style="background-color: #f4a460;">33 yrs</span>
<span style="background-color: #c6e0b4;">S&amp;P 500 ETF (SPY)</span>	<span style="background-color: #c6e0b4;">Positive EE</span>	<span style="background-color: #81c784;">20%</span>	<span style="background-color: #fff9c4;">2%</span>	<span style="background-color: #f4a460;">2.7</span>	<span style="background-color: #f4a460;">33 yrs</span>
<span style="background-color: #f4a460;">Small Cap ETF (IWM)</span>	<span style="background-color: #c6e0b4;">Positive EE</span>	<span style="background-color: #f08080;">5%</span>	<span style="background-color: #fff9c4;">-1%</span>	<span style="background-color: #f08080;">3.6</span>	<span style="background-color: #f4a460;">35 yrs</span>

Add to Portfolio
Company Model
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[Investment Summary](#)  
 [Rating Breakdown](#)  
 [GAAP Reconciliation](#)  
 [Adjustments](#)  
 [Earnings Distortion](#)

# Sector research

Stocks, ETFs, & Mutual Funds [Sectors](#)

Sector:

Energy

Oil & Gas Related Equipment and Services

Market-Weighted Sector Rating Methodology

## Oil & Gas Related Equipment and Services Industry

Number of Stocks: 67  
 Number of Sector ETFs: 31; Mutual Funds: 96  
 Total Market Value: \$406 Billion (Mar 06, 2020)

Risk/Reward Rating <sup>?</sup>	Quality of Earnings		Valuation		
	Economic vs Reported EPS <sup>?</sup>	ROIC <sup>?</sup>	FCF Yield <sup>?</sup>	Price to EBV <sup>?</sup>	Market-Implied GAP <sup>?</sup>
Very Unattractive	Misleading Trend	Bottom Quintile	< -5%	> 3.5 or -1 < 0	> 50
Unattractive	False Positive	4th Quintile	-5% < -1%	2.4 < 3.5 or < -1	20 < 50
<b>Neutral</b>	Neutral EE	<b>3rd Quintile</b>	-1% < 3%	<b>1.6 &lt; 2.4</b>	10 < 20
Attractive	<b>Positive EE</b>	2nd Quintile	<b>3% &lt; 10%</b>	1.1 < 1.6	<b>3 &lt; 10</b>
Very Attractive	Rising EE	Top Quintile	> 10%	0 < 1.1	0 < 3
Actual Values					
Industry	Positive EE	6%	4%	1.9	7 yrs
Benchmarks <sup>?</sup>					
Industry ETF (XLE)	Neutral EE	4%	2%	5.5	14 yrs
S&P 500 ETF (SPY)	Positive EE	20%	2%	2.6	29 yrs
Small Cap ETF (IWM)	Positive EE	4%	-1%	3.4	33 yrs

[Add to Portfolio](#)

▼ [Analyst Commentary \(Nov 14, 2019\)](#)



# Stock, Etf & mutual fund screening

**Select criteria:**

<p><b>Fund Type</b></p> <p><input type="checkbox"/> ETF <input checked="" type="checkbox"/> Mutual Fund (MF)</p> <hr/> <p><b>Price</b> ?</p> <p>&gt; = \$ <input type="text"/></p> <hr/> <p><b>Dividend Yield</b> ?</p> <p>&gt; = <input type="text"/> %</p>	<p><b>Sector</b></p> <p><input checked="" type="checkbox"/> Basic Materials <input type="checkbox"/> Industrials</p> <p><input checked="" type="checkbox"/> Consumer Cyclical <input type="checkbox"/> Real Estate</p> <p><input type="checkbox"/> Consumer Non-cyclicals <input checked="" type="checkbox"/> Technology</p> <p><input type="checkbox"/> Energy <input type="checkbox"/> Telecom Services</p> <p><input type="checkbox"/> Financials <input type="checkbox"/> Utilities</p> <p><input type="checkbox"/> Healthcare</p>	<p><b>Style</b></p> <p><input type="checkbox"/> All Cap Blend <input type="checkbox"/> Mid Cap Blend</p> <p><input type="checkbox"/> All Cap Growth <input type="checkbox"/> Mid Cap Growth</p> <p><input type="checkbox"/> All Cap Value <input type="checkbox"/> Mid Cap Value</p> <p><input type="checkbox"/> Large Cap Blend <input type="checkbox"/> Small Cap Blend</p> <p><input type="checkbox"/> Large Cap Growth <input type="checkbox"/> Small Cap Growth</p> <p><input type="checkbox"/> Large Cap Value <input type="checkbox"/> Small Cap Value</p>
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▼ Less

<p><b>Risk/Reward Rating</b> ?</p> <p><input type="checkbox"/> Very Attractive</p> <p><input type="checkbox"/> Attractive</p> <p><input type="checkbox"/> Neutral</p> <p><input type="checkbox"/> Unattractive</p> <p><input checked="" type="checkbox"/> Very Unattractive</p>	<p><b>Assets</b> ?</p> <p>&gt; = \$ 1000.0 MM</p> <hr/> <p><b>Provider</b> ?</p> <p><input type="text"/></p>	<p><b>Initial Minimum</b> ?</p> <p>&gt; = \$ <input type="text"/></p> <hr/> <p><b>Total Annual Costs</b> ?</p> <p>&gt; = <input type="text"/> %</p>
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**Filter**

**Download CSV** ↓

Details	Ticker	Name	Type	Sector / Style	Price <sup>1</sup>	Dividend Yield	Assets (MM)	Initial Min	Risk/Reward Rating ▲	Total Annual Costs	Add to Portfolio <a href="#">+ Add All</a>
+	USSCX	USAA Mutual Funds Trust: Science & Technology Fund	MF	Technology	\$22.61	-	\$1,394	\$3,000	Very Unattractive	1.41%	+
+	USTCX	USAA Mutual Funds Trust: Science & Technology Fund	MF	Technology	\$21.68	-	\$1,394	\$3,000	Very Unattractive	1.73%	+
+	BGSAX	BlackRock Funds: BlackRock Technology Opportunities Fund	MF	Technology	\$34.24	-	\$2,455	\$1,000	Very Unattractive	3.40%	+
+	RAGTX	Allianz Funds: AllianzGI Technology Fund	MF	Technology	\$54.72	-	\$1,542	\$1,000	Very Unattractive	4.11%	+

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Analyst Notes

New 10-K & Forecast 3/1/20  
Focus List (Long) Model Portfolio Nov 2019

ROBO-ANALYST RESEARCH

Closing Price as of 03/06/2020: \$22.35

Dividend Yield: 3.6%

Period End Date: 12/31/2019

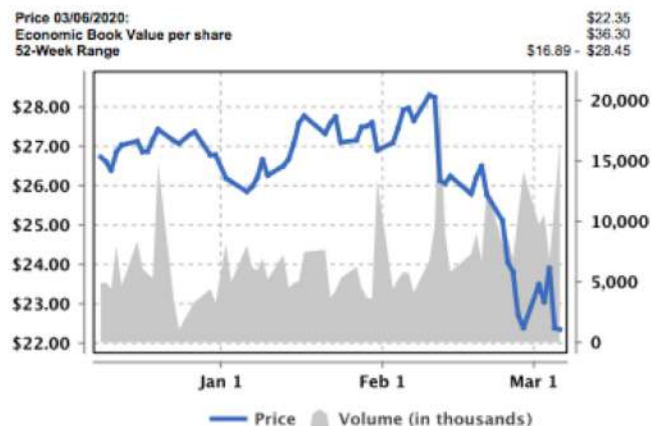
### Western Union Co (The) (WU)

Neutral

NYSE - Industrials

#### Investment Recommendation

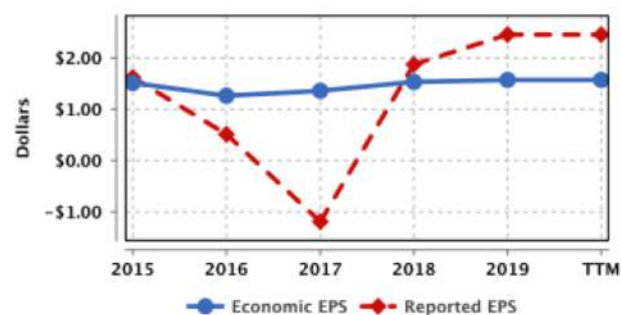
- We do not recommend investors buy WU.
- WU earns our Neutral rating. See Investment Rating Details below.
- A Neutral rating means this stock's upside potential is about equal to its downside risk.
- WU ranks in the 72nd percentile of the 2900+ stocks we cover.
- Ranks 106th out of 416 Industrials Sector stocks.



#### Investment Rating Details

Risk/Reward Rating	Quality of Earnings		Valuation		
	Economic vs Reported EPS	Return on Invested Capital (ROIC)	FCF Yield	Price-to-EBV Ratio	Growth Appreciation Period (yrs)
Very Unattractive	Misleading Trend	Bottom Quintile	<-5%	> 3.5 or <-1 < 0	> 50
Unattractive	False Positive	4th Quintile	-5%<-1%	2.4 < 3.5 or <-1	20 < 50
Neutral	Neutral EE	3rd Quintile	-1%<3%	1.6 < 2.4	10 < 20
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Very Attractive	Rising EE	Top Quintile	>10%	0 < 1.1	0 < 3
<b>Actual Values</b>	\$1.57 vs. \$2.46	25%	11%	0.6	< 1
<b>Sector ETF (XLI)</b>	Positive EE	10%	5%	1.8	26
<b>S&amp;P 500 ETF (SPY)</b>	Positive EE	20%	2%	2.6	29

#### Economic EPS vs Reported EPS



#### Earnings & Valuation Diligence Summary

- WU's accounting earnings overstate its economic earnings, which equal  $(ROIC - WACC) \times \text{Average Invested Capital}$ .
- For WU, we made a total of \$3,681 million in income statement and balance sheet adjustments to convert accounting earnings to economic earnings in FY19.
- We made \$5,220 million in adjustments in our DCF valuation of the stock.
- See Appendix 1 for details on our calculations of key metrics and Appendices 2 and 3 for details on our [adjustments](#).

Stock Performance

Key Market Statistics

Best Data in the Business

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