

Modern Research Tools For Modern Markets Technology to Grow & Sustain Wealth.

Important Disclosure Information is contained on the last page of this report. The recipient of this report is directed to read these disclosures

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New Constructs®

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TECHNOLOGY FOR TRANSACTIONS Online trading, Index Funds, Robos





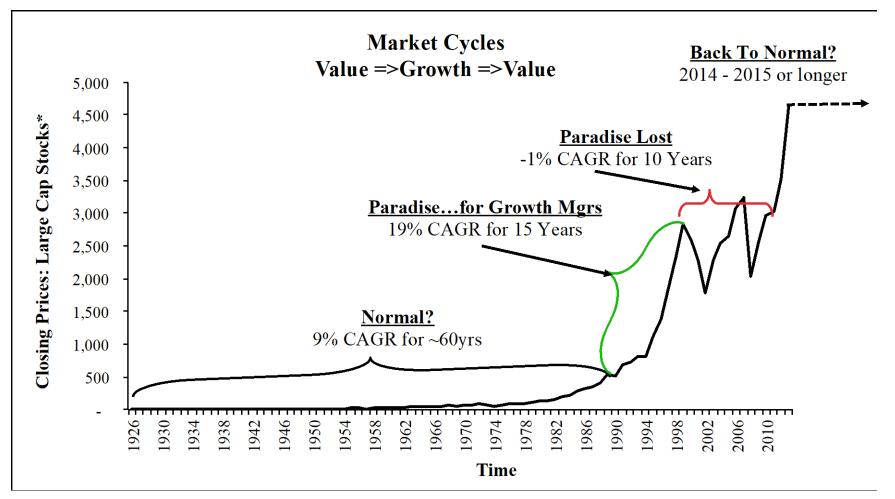
HOLDING PERIODS ARE DOWN, TURNOVER IS UP



Exhibit 1: Investors are holding stocks for shorter time periods

Average holding period (years) 8.3 months Dec 2016 Source: Ned Davis Research, December 2016.

NYSE average holding periods, 1929 – 2016



Source: Novo Capital Management, LLC and Ibbotson

Ibbotson, 2008 Ibbotson Stocks, Bonds, Bills and Inflation Valuation Yearbook, (Chicago: Morning Star, 2008), 228-229 •Large Cap Stocks" as defined by Ibbotson are the best comparison for the S&P 500, which did not exist as it does today in 1926.

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Survey of How Institutional Investors Describe Themselves

Quasi-Indexers	61%
Transients	31%
Dedicated	<u>8%</u>
Total	100%

Source: Brian Bushee, "Identifying and Attracting the 'Right' Investors: Evidence on the Behavior of Institutional Investors," Journal of Applied Corporate Finance, Vol. 16, 4, Fall 2004, 28-35 Mr. Bushee is a Finance Professor and Wharton School of Business

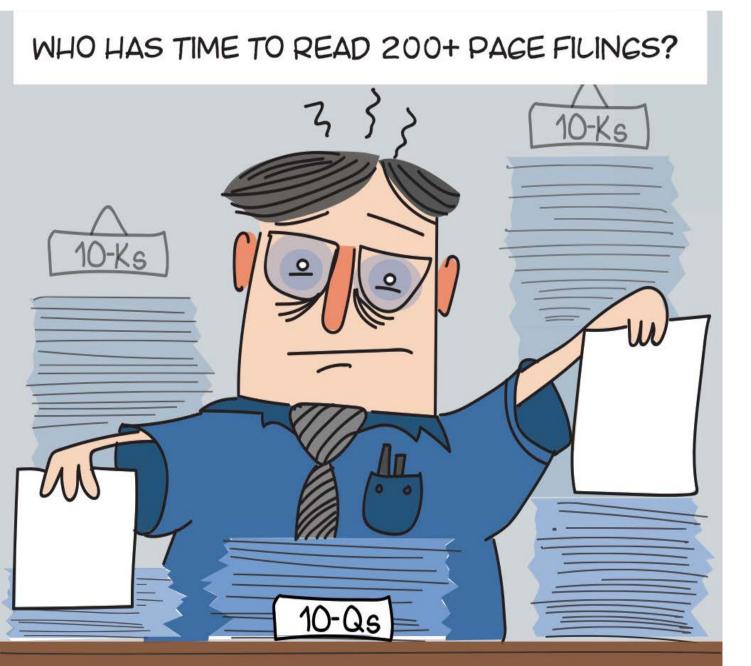
Institutional Investor Categories Definitions

- 1. Quasi-indexers low turnover and small stakes
- 2. Transients high turnover and small stakes
- 3. Dedicated low turnover and large stakes

"Raising Money Matters More Than Managing Money"

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7



(That's longer than the average novel.)

- Increasingly complex and time-consuming work
- Accounting rules are constantly changing

Regulators & Media Are Not Always Allies

- SEC, FINRA, FASB
- CNBC, Frank Quatrone

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The DOL has shined a light in the dark corner of investment research.



Technical research lacks rigor

• Recommendations based on a pattern on a chart?

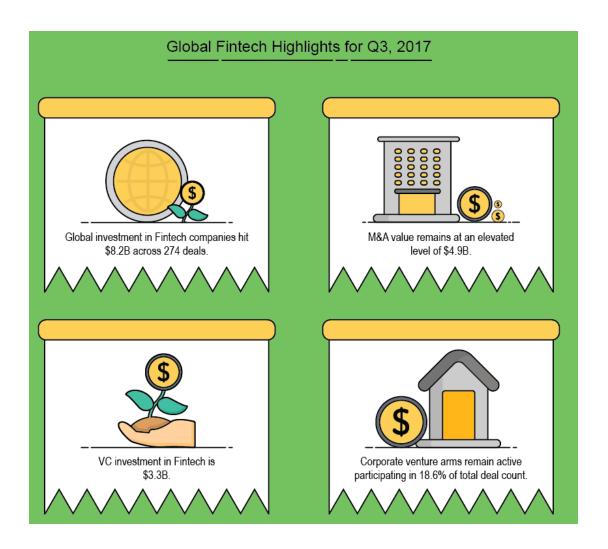
Sell-side research is less reliable

- Conflicted? some highly publicized issues
- Diminishing resources

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Key leaders recognize the inevitability of technology and automation changing the business.



"<u>At BlackRock, Machines Are</u> <u>Rising Over Managers to Pick</u> <u>Stocks</u>"

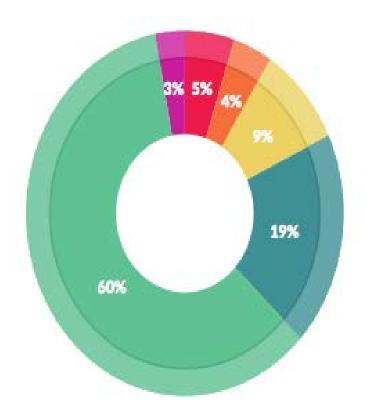
- New York Times on Larry Fink's strategy

"<u>Artificial</u> <u>Intelligence</u> <u>creates \$1 trillion</u> <u>of change in the</u> <u>front, middle and</u> <u>back office of the</u> <u>financial services</u> <u>industry</u>."

AutonomousNE XT – industry research firm 80% of capital and time goes to data cleaning and collection.

Data quality is too poor for AI to work.

We solve that problem with superior data.



What data scientists spend the most time doing

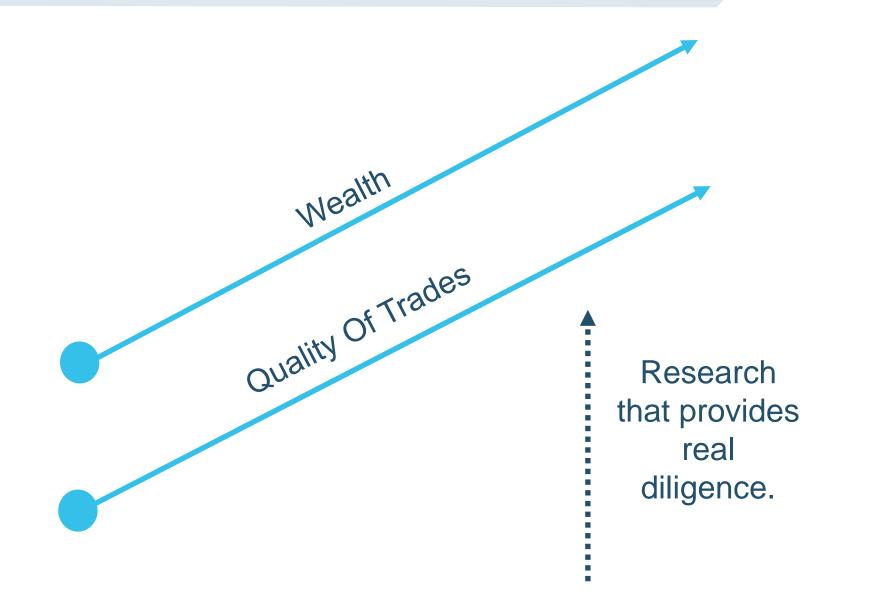
- Building training sets: 3%
- Cleaning and organizing data: 60%
- Collecting data sets; 19%
- Mining data for patterns: 9%
- Refining algorithms: 4%
- Other: 5%

Source for chart: CrowdFlower

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TECHNOLOGY THAT WORKS FOR YOU







By law:

 A fiduciary must act with "care, skill, prudence, and diligence."

Research must be:

Inarguably in best interests of clients

Research must not be:

- Conflicted
- Based on diversification
- Dependent on technicals



1. Comprehensive:

All relevant publicly-available (e.g. 10-Ks and 10-Qs) information has been diligently reviewed, including the footnotes and MD&A.

2. Un-conflicted:

Clients deserve unbiased research.

3. Transparent:

Advisers should be able to show how the analysis was performed and the data behind it.

4. Relevant:

Empirical evidence must provide <u>tangible, quantifiable correlation</u> to stock, ETF or mutual fund performance.



Key thought leaders support the importance of diligence.

- <u>Michael Kitces</u>
- MarketWatch.com
- <u>Wealthmanagement.com</u>
- BlackRock

Regulators are too:

• <u>The DoL</u>



Speculator

"If you are a speculator, your decision to buy or sell is based on what you believe about the near-term direction of price." - Ben Graham

"...speculation is the activity of forecasting the psychology of the market." -

John Maynard Keynes

Vs.

Investor

"If you are an investor, your decision to buy and sell is based on the underlying economics of the stock you own." - Ben Graham

"Investing is an activity of forecasting the yield on assets over the life of the

asset..." - John Maynard Keynes

MACHINE LEARNING FROM EXPERTS Human-Validated Parsing Instructions from 120,000+ Filings

OUR FORENSIC EXPERTS USE CUTTING-EDGE TECH TO SHINE A LIGHT IN THE DARK CORNERS OF FINANCIAL FOOTNOTES.

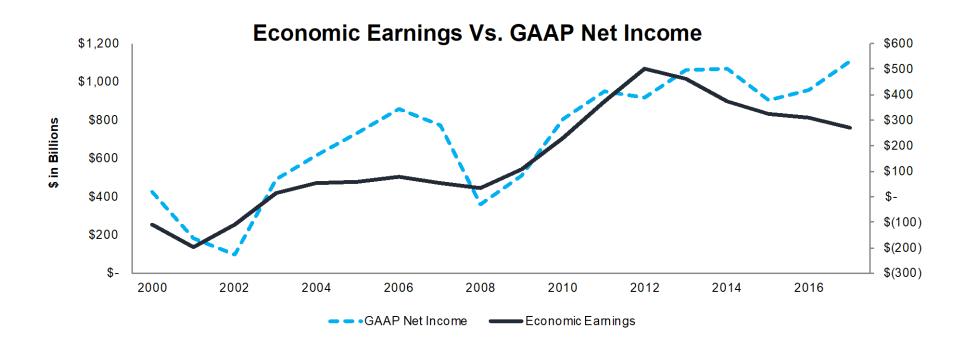


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* New Constructs[®] Dilgence | Independence | Performance

"Look at the financial footnotes in 10-K filings and the gains then disappear" "Only 1 sector has experienced real earnings gains in the past 12 months" - MarketWatch.com <u>5/4/17</u> & <u>2/28/18</u>

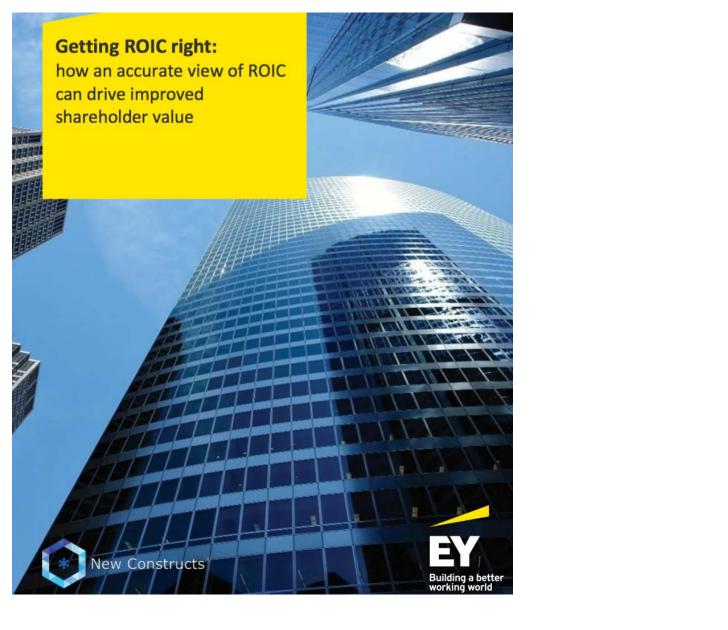




2010 10-K Revealed Abnormal Pension Assumptions

- 2.2% of revs from pension, abnormally high return on plan asset assumption 8.7%
- Underfunded by \$2.6B or 3x the market cap at the time
- Valuation implied 10% CAGR in NOPAT for 11 years
- Down 90% while S&P 500 was down ~3%, no longer under coverage



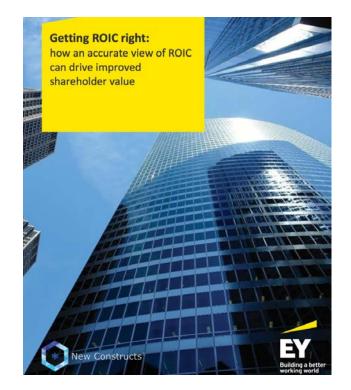


New Constructs®

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- New Constructs® Diligence | Independence | Performance
- It's not often that a big 4 accounting firm like E&Y features the material superiority of a research firm's analytics.
- Our data is materially better. The white paper proves it.

- The white paper provides specific examples for specific companies.
- Google "Revenue 48,778", "long-term debt 16,215" to see which company is "Peer 1".





Harvard Business School Case Study features our Research Automation technology. "Disrupting Fundamental Analysis with Robo-Analysts"

Click <u>here</u> for a copy.



KYLE THOMAS

New Constructs: Disrupting Fundamental Analysis with Robo-Analysts

CEO David Trainer and COO Lee Moneta-Koehler of New Constructs had just met with a potential client. Their pitch was simple: New Constructs "leverages the only parsing technology capable of reviewing every detail of every 10-K and 10-Q" to deliver quality fundamental analysis at scale. After the presentation, the client responded, "You know, you might be right. Your data probably is better. But, as long as everybody's using the same bad data, I'm OK with that." This was a familiar response to Trainer and Moneta-Koehler: they were frustrated by investors who did not see the value of New Constructs' data or technology. They were concerned about the role of quality fundamental analysis in a market increasingly focused on more technical and other short-term trading strategies.

New Constructs

Trainer began working on Wall Street at Credit Suisse First Boston (CSFB) as a stock analyst in 1996, where he honed his skills in financial modeling and fundamental analysis. At CSFB, he spearheaded an effort to develop a consistent framework for measuring, comparing, and analyzing the economic earnings and profitability across all firms and industries globally. After reading through thousands of corporate filings, he realized that "the complexities of what's going on in modern day business are so much greater than what the current accounting standards can capture in the income statement and balance sheet." To construct a more accurate economic picture of the firm and to facilitate more meaningful comparisons of performance, his financial models incorporated quantitative details hidden in footnotes and the management's discussion and analysis (MD&A) section, such as operating lease obligations or components of income or expenses that are transitory in nature.

Although these adjustments were often meaningful to his overall assessment of a firm's operating performance and valuation, integrating these details into financial models was not the norm among many sell-side analysts. Trainer believed this was due to a few reasons. For one, the increasing length and complexity of corporate filings and the differences in the application of accounting rules across firms for similar transactions made the execution of such detailed financial models impractical. Even for Trainer, this mode of analysis was difficult to scale.

Professor Charles C.Y. Wang and Research Associate Kyle Thomas prepared this case. It was reviewed and approved before publication by a company designate. Funding for the development of this case was provided by Harvard Business School and not by the company. HBS cases are developed solely as the basis for class discussion. Cases are not intended to serve as endorsements, sources of primary data, or illustrations of effective or indirective management.

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- Top hedge fund and institutional money managers
- Top wealth management firms
- **Top advisors**
- Top accounting, insurance & consulting firms



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- **Institutions:** full access to models and tool, including database feeds. Directly access thru our website
 - Advisors/RIAs: firm or group-wide access to unlimited research. Direct access via our website or thru partners.
- **Retail:** individual sign up for Gold, Platinum or Pro subscriptions. Direct access via our ۲ website or thru partners.
- **Consultants/Corporates**: custom engagements focused on enterprise value optimization and investor relations strategy. Direct access via our website along with custom work and consultation via partners.

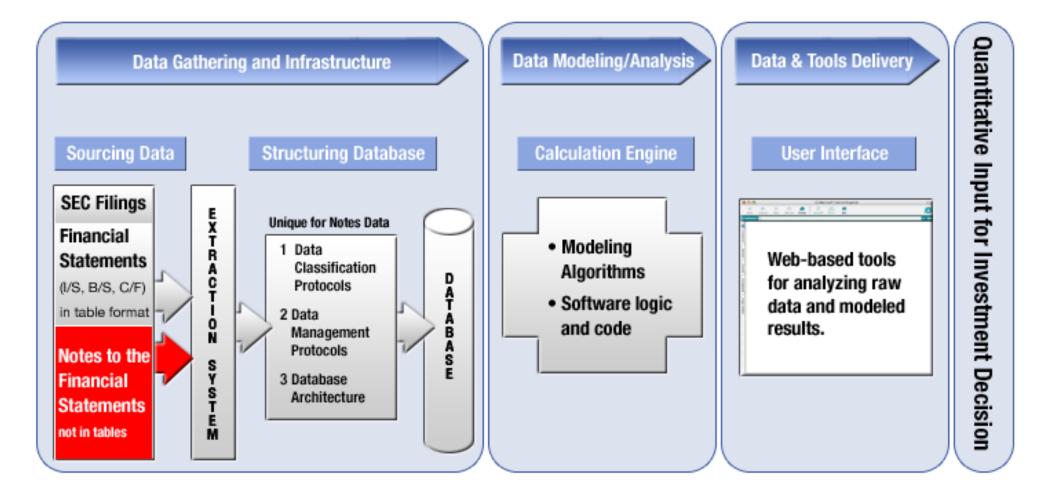




REUTERS







We created our own data collection technology to provide high integrity models to clients. Traditional data feeds are not trustworthy for sophisticated financial modeling.

VERSUS OTHER RESEARCH OFFERINGS

*	New Constructs®
	Diligence Independence Performance

	Coverage			Cash Flow Focus (Non-GAAP)		Consistent Due Dilligence		-	ency/Links To	Independence	
	Stocks	ETFs	Mutual Funds	ROIC & Economic Earnings	Reverse DCF	Footnotes	MD&A	Calculatio		Not Paid By Funds or Companies Covered	No Banking or Trading Revenues
New Constructs	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark		\checkmark	\checkmark	\checkmark
Credit-Suisse HOLT	\checkmark			\checkmark	\checkmark			1/2			
EVA Dimensions/ISS	\checkmark			\checkmark						\checkmark	\checkmark
MorningStar	\checkmark	\checkmark	\checkmark	black box							\checkmark
CFRA/S&P	limited			limited						\checkmark	\checkmark
S&P Capital IQ	\checkmark										\checkmark
Zack's	\checkmark										\checkmark
Other Sell-Side	\checkmark										
Valuentum.com	\checkmark	\checkmark						limited		\checkmark	\checkmark
Finbox.io	\checkmark							limited		\checkmark	\checkmark
GuruFocus	\checkmark			\checkmark						\checkmark	\checkmark
Other Firms	\checkmark									?	?

PORTFOLIO TRACKING & ALERTS



Portfolio: ThomsonONE demos	\$		Institu	itional	Edit/	Alert	Download		Print
Enter tickers here.			Memb		Create	Emails	CSV		All
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Add			50 Por Unlimited	tfolios d Tickers					

Details	Ticker	Name	Туре	Sector / Style	Price ¹	Mkt Val / AUM ²	Div Yield	Risk/Reward Rating	Report		FCF Yield	Price to EBV	GAP	Analyst Notes Updated ³	Remove
0	XLF	State Street Select Sector SPDR Trust: Financial Select Sector SPDR Fund	ETF	Financials	\$29.12	\$34,586	1.8%	Very Attractive	÷	8%	4%	1.6	25		×
0	AMAT	Applied Materials, Inc.	Stock	Technology	\$57.01	\$59,900	0.7%	Attractive	•	33%	6%	1.2	9	Feb 23, 2018	×
0	IVE	iShares Trust: iShares S&P 500 Value ETF	ETF	Large Cap Value	\$114.08	\$15,782	2.2%	Attractive	¥	8%	2%	1.9	26	Feb 13, 2018	×
0	AAPL	Apple Inc.	Stock	Technology	\$175.50	\$890,489	1.4%	Neutral	÷	144%	5%	1.0	< 1		×
0	DD:1	E.I. du Pont de Nemours and Co	Stock	Industrials	\$83.93	\$72,835	1.8%	Neutral Inactive	÷	7%	5%	2.0	30	Sep 01, 2017	×
0	MCD	McDonald's Corporation	Stock	Consumer Cyclicals	\$163.06	\$129,989	2.5%	Neutral Suspended	÷	17%	4%	1.2	61	Feb 24, 2018	×
0	MORN	Morningstar Inc.	Stock	Industrials	\$94.91	\$4,036	1.1%	Neutral	¥	15%	-2%	1.7	37		×
0	н	Hyatt Hotels Corp	Stock	Consumer Cyclicals	\$79.94	\$9,491	-	Unattractive	¥	6%	6%	2.1	48	Feb 16, 2018	×
0	PVSRX	Putnam Funds Trust: Putnam Capital Spectrum Fund	Mutual Fund	Large Cap Blend	\$34.19	\$2,932	-	Unattractive	¥	8%	2%	3.4	39	Feb 14, 2018	×
0	VRNT	Verint Systems, Inc.	Stock	Technology	\$39.90	\$2,545	-	Unattractive	•	2%	-1%	22.4	> 100		×
0	SFPAX	Saratoga Advantage Trust: Financial Services Portfolio	Mutual Fund	Financials	\$11.66	\$2	-	Very Unattractive	*	9%	4%	1.6	30		×
0	GSSSX	Goldman Sachs Trust: Goldman Sachs Small Cap Value Fund	Mutual Fund	Small Cap Blend	\$54.04	\$6,935	-	Very Unattractive	¥	6%	-4%	3.6	49		×

DETAILED RATINGS, MODELS & REPORTS: STOCKS



Stocks, ETFs, & Mutual Funds Sectors

Ticker: AAPL

View Ratings Ratings Methodology

		Sector	r: Technology						
	Quality of	Earnings	Valuation						
Risk/Reward Rating ⑦	Econ vs Reported EPS ⑦	ROIC ®	FCF Yield ⑦	Price to EBV ⑦	GAP ⑦				
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				
Attractive	Positive EE	2nd Quintile	3% < 10%	1.1 < 1.6	3 < 10				
Very Attractive	Rising EE	Top Quintile > 10%		0 < 1.1	0 < 3				
Actual Values									
AAPL	\$8.93 vs. \$9.70	144%	5%	1.0	< 1 yr				
Benchmarks ⑦									
Sector ETF (QQQ)	Positive EE	36%	2%	5.1	40 yrs				
S&P 500 ETF (SPY)	Positive EE	18%	2%	2.9	32 yrs				
Small Cap ETF (IWM)	Positive EE	6%	-1%	3.2	42 yrs				
		Add to Portfolio	Company Model	Download XLS	Download Repo				

Apple Inc. (AAPL) Closing Price: \$175.50 (Feb 23, 2018) Dividend Yield: 1.4% Sector: Technology

Investment Recommendation Summary

DETAILED RATINGS, MODELS & REPORTS:SECTORS

\$

* New Constructs® Diligence | Independence | Performance

Stocks, ETFs, & Mutual Funds Sectors

Sector: Technology

Electronic Equipment & Parts

Market-Weighted Sector Rating Methodology

	Quality of	Earnings	Valuation						
Risk/Reward Rating ⑦	Econ vs Reported EPS ⑦	ROIC ⑦	FCF Yield ③	Price to EBV ⑦	GAP ⑦				
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		-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	Top Quintile	> 10%	0 < 1.1	0 < 3				
Actual Values									
Industry	Positive EE	9%	1%	1.9	29 yrs				
Benchmarks ⑦									
Industry ETF (QQQ)	Positive EE	36%	2%	5.1	40 yrs				
S&P 500 ETF (SPY)	Positive EE	18%	2%	2.9	32 yrs				
Small Cap ETF (IWM)	Positive EE	6%	-1%	3.2	42 yrs				

Electronic Equipment & Parts Industry Number of Stocks: 18 Number of Sector ETFs: 41; Mutual Funds: 115 Total Market Value: \$109 Billion (Feb 23, 2018)

- Analyst Commentary (Jan 22, 2018)

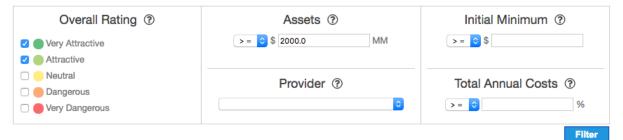
STOCK, ETF & MUTUAL FUND SCREENING



Stocks ETFs and Mutual Funds Dynamic Data 1-Click Reports Dashboards (Beta)

Select criteria:				
Fund Type	Sec	tor	St	yle
	Consumer Discretionary	Industrials	All Cap Blend	Mid Cap Blend
Mutual Fund (MF)	Consumer Staples	Information Technology	All Cap Growth	Mid Cap Growth
	Energy	Materials	All Cap Value	Mid Cap Value
	Financials / Non-REIT	Telecom Services	Large Cap Blend	Small Cap Blend
Price ⑦	Financials / REIT	Utilities	Large Cap Growth	Small Cap Growth
> = 🗘 \$	Health Care		Large Cap Value	Small Cap Value

~ Less



Download CSV ↓

Ticker	Name	Туре	Category	Price ¹	Assets (MM)	Initial Min	Overall Rating	Total Annual Costs	Add to Portfolio + Add All
VCDAX	Vanguard World Funds: Vanguard Consumer Discretionary Index Fund	MF	Consumer Discretionary	\$68.79	\$2,103	\$100,000	Attractive	0.11%	+
FDTGX	Fidelity Select Portfolios: Fidelity Advisor Consumer Staples Fund	MF	Consumer Staples	\$90.41	\$2,795	\$2,500	Attractive	2.94%	+
FDCGX	Fidelity Select Portfolios: Fidelity Advisor Consumer Staples Fund	MF	Consumer Staples	\$88.77	\$2,795	\$2,500	Attractive	2.15%	+
FDIGX	Fidelity Select Portfolios: Fidelity Advisor Consumer Staples Fund	MF	Consumer Staples	\$91.99	\$2,795	\$2,500	Attractive	1.00%	+
FDFAX	Fidelity Select Portfolios: Consumer Staples Portfolio	MF	Consumer Staples	\$92.14	\$2,795	\$2,500	Attractive	0.99%	+
VCSAX	Vanguard World Funds: Vanguard Consumer Staples Index Fund	MF	Consumer Staples	\$65.54	\$3,923	\$100,000	Very Attractive	0.12%	+



New Constructs, LLC

- Founded in July 2002; became a hedge fund from 2007-2015; re-launched research business in 2014
- Track record: model portfolios and research featured by <u>Barron's</u> and <u>CNBC</u>
- Expertise and experience: accounting, finance & technology

David Trainer (CEO):

Former auditor and executive compensation consultant with Arthur Andersen, equity analyst at Credit-Suisse and hedge fund manger.

Lee Moneta-Koehler (COO):

Former Director of Research and equity analyst at New Constructs. 10+ years of experience developing financial technology.

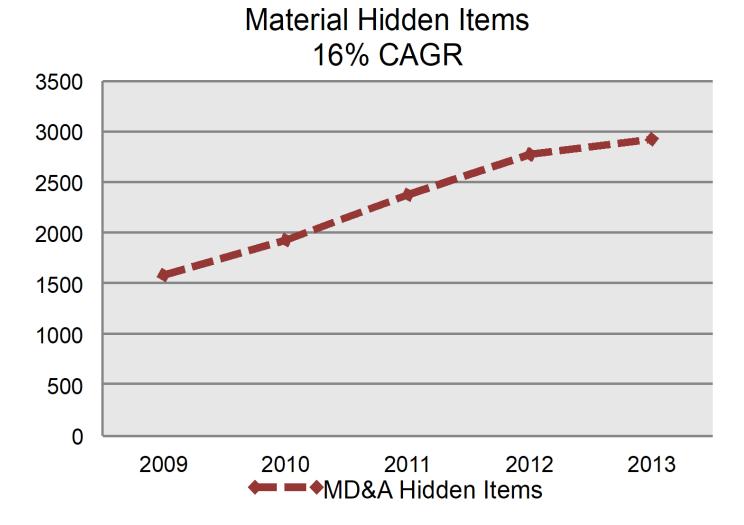
Top Minds in Machine Learning Around the World (CTO):

We attract top talent to fill dynamic needs for furthering our cutting-edge technology. Our existing technology offers unparalleled application of machine learning and natural language processing theories and techniques. "New Constructs has the answer key".



Appendix

BIGGER HAYSTACKS, MORE NEEDLES



Items found only in the MD&A (e.g. gains, charges, deferred items, etc) that distort income statement results are rising rapidly.

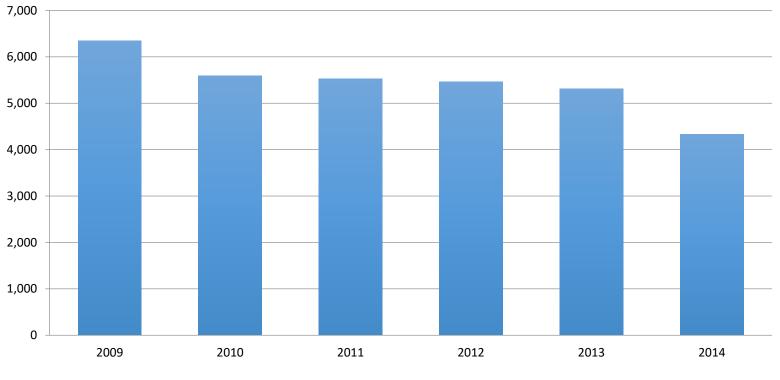
*This graph was created based on information collected and analyzed by New Constructs, LLC. New Constructs regularly gathers information from over 3,000 companies' 10Ks, including the Notes to the Financial Statements and MD&A.

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32,583

Over the last 5+ Years, we found 32,583 write-downs.

of Write-Downs

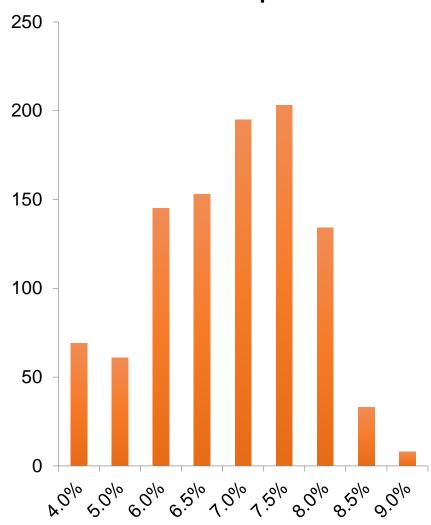


Total - 3000+ companes

New Constructs®

*This graph was created based on information collected and analyzed by New Constructs, LLC. New Constructs regularly gathers information from over 3,000 companies' 10Ks, including the Notes to the Financial Statements and MD&A.

Distribution of Return On Plan Asset Assumptions



Auditors & investors need to know this data.

- Raising the expected Return on Plan Assets (EROPA) reduces reported pension expense.
- The mean EROPA for 2014 was 6.5%. Roughly 55% of companies expect a long-term return on plan assets between 6.5% and 7.5%.
- Virtusa Corp (VRTU) has the most aggressive assumptions, with EROPA of 10.38%, followed by Exlservice Holdings (EXLS) at 9%.

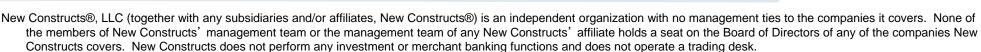
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