



New Constructs®
Diligence | Independence | Performance

How EV/EBITDA and Debt to Equity Can Mislead Investors

Learn how to analyze valuation and risk.

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

david.trainer@newconstructs.com
615-377-0443

1. Issues with EV/EBITDA
2. How Debt to Equity Can Mislead Investors
3. What Are Better Metrics?
4. How do you protect yourself?
5. Why do you need protection now more than ever?

EV/EBITDA= Enterprise Value/Earnings Before Interest, Taxes, Depreciation, and Amortization:

- Calculation:
 - Enterprise Value = Market Cap + Total Debt – Cash
 - EBITDA = Net Income + Tax Expense + Net Interest Expense + Depreciation & Amortization
- How to use:
 - Measure of valuation compared to cash profits
 - Commonly used by private equity firms evaluating potential takeovers

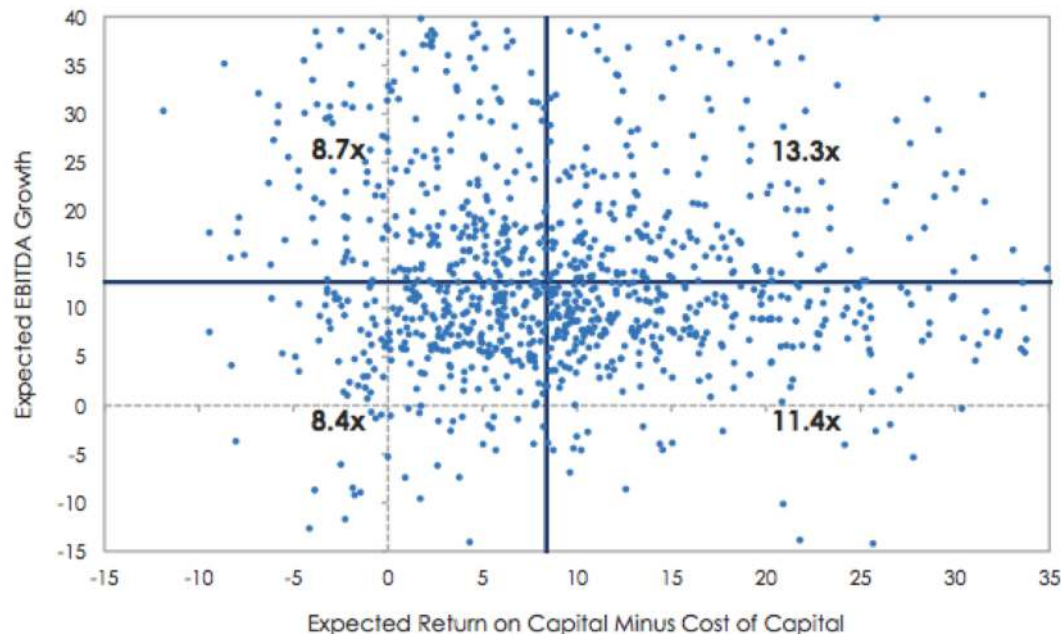
Blind Spot for EV/EBITDA: **Ignores Real Costs/Liabilities**

1. Starting point for EBITDA is flawed GAAP earnings
2. Depreciation & Amortization are real expenses that require capital expenditures to replace
 - Warren Buffett: “I’ll look at that figure when you tell me you’ll make all of the future capital expenditures for me.”
3. Common measures of enterprise value also value ignore hidden liabilities, such as:
 - Operating leases
 - Deferred tax liabilities
 - Underfunded pensions
 - Employee stock options

EV/EBITDA - PITFALLS

A Shorthand for Valuation

1. Ratios are a shorthand for valuation, not an actual valuation process
2. Companies with different tax rates, ROIC's, and growth expectations will have different EV/EBITDA's
3. Michael Mauboussin shows that ROIC matters most for valuation



Source: Based on Credit Suisse Corporate Insights, "Managing the multiple: Weighing growth against profitability," First Quarter 2016.

*Source: [BlueMountain Capital](#)

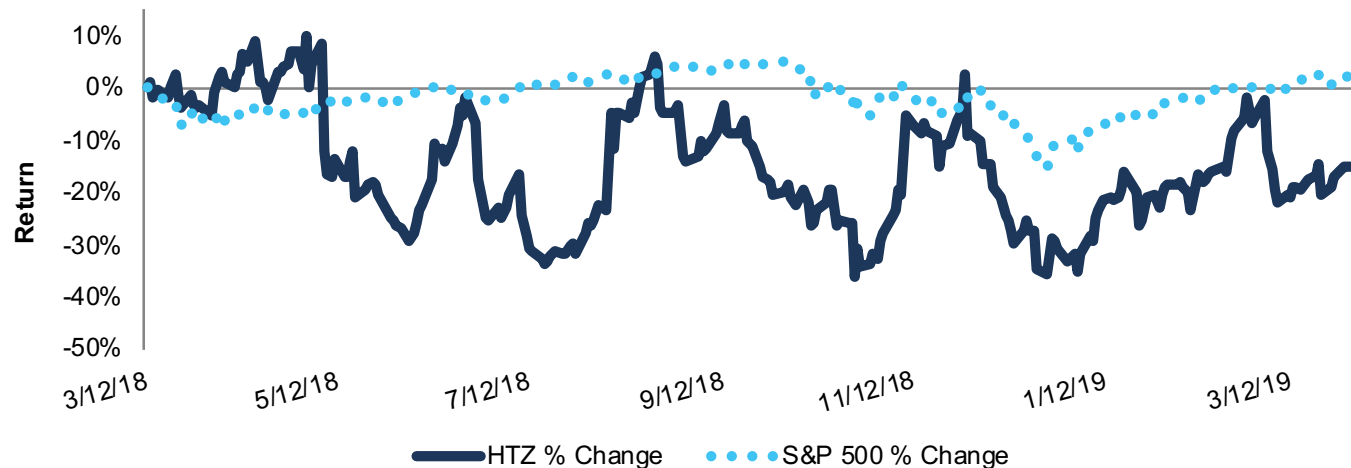
EV/EBITDA PITFALLS

Warned on [3/12/2018](#): Hertz (HTZ)

Hertz (HTZ)

1. Looked cheap with a reported EV/EBITDA of ~5.5
2. Highly capital intensive: Capex was \$3.1 billion in 2017, D&A \$3 billion.
3. Steady decline in ROIC from 5% in 2012 to 1% in 2017
4. Down 14% vs. S&P 500 up 4% since we warned investors on [3/12/18](#), still rated Unattractive

HTZ Underperformed SPY by 18%



*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.

Part II

How Debt to Equity Can Mislead Investors

Debt to Equity = Debt/Total Shareholders' Equity

- Calculation:
 - If long term debt + short term debt = \$10 billion and total shareholders' equity = \$20 billion, Debt to Equity = 0.5
- How to use:
 - Evaluates a company's leverage
 - Measures a company's ability to cover its debts in case of a business downturn

Blind Spot for Debt to Equity: **Hidden Liabilities**

1. Same issue as EV/EBITDA, reported debt ignores hidden liabilities, such as:
 - Operating leases
 - Deferred tax liabilities
 - Underfunded pensions
 - Employee stock options
2. Companies with large operating leases will soon see a big change to their reported debt to equity when they're forced to put them on the balance sheet.

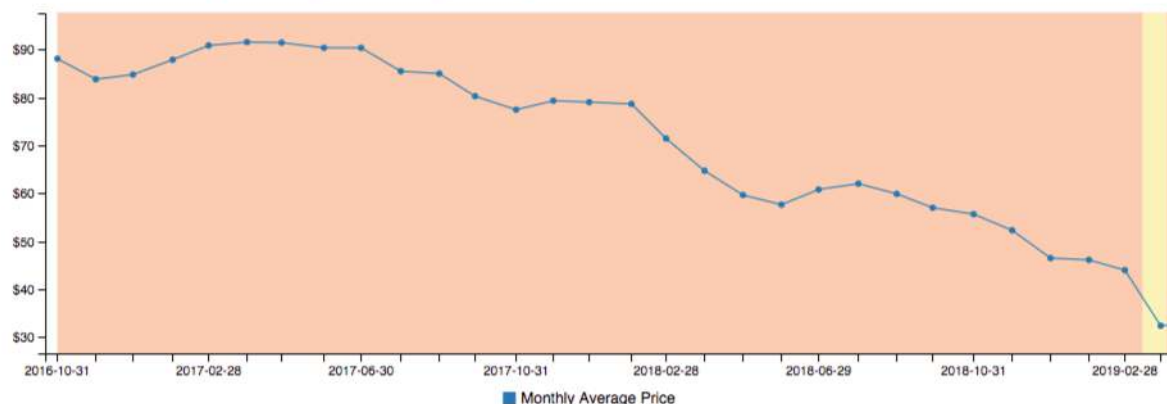
Ticker	Name	Sector	Operating Leases as a % of Shareholder's Equity
SBUX	Starbucks	Consumer Cyclical	643%
MAS	Masco Corp	Consumer Cyclical	578%
HD	Home Depot	Consumer Cyclical	419%
HRB	H&R Block	Consumer Cyclical	378%
ORLY	O'Reilly Auto	Consumer Cyclical	367%

*This table 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.

Blind Spot for Debt to Equity: **Inflated Assets**

1. For many companies, a large portion of shareholders' equity comes from Goodwill and other intangible assets.
2. These assets are often overvalued and can be written down at any moment
3. See Kraft Heinz, which wrote down over \$15 billion of Goodwill recently, ~25% of shareholders' equity
4. Stock down 63% vs. S&P 500 up 35% since we initiated coverage with an Unattractive rating in 2016.

▼ Normalized Rating History - Monthly Average*



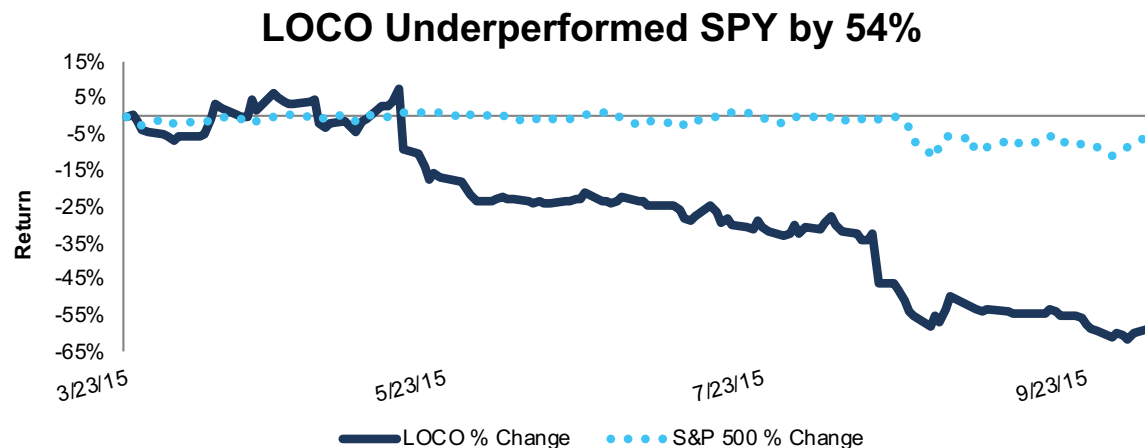
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DEBT TO EQUITY PITFALLS

Warned on [3/23/2015](#): El Pollo Loco (LOCO)

El Pollo Loco (LOCO)

1. Debt to Equity of 0.7, slightly below S&P 500 average
2. Accounting for operating leases doubled debt from \$165 million to \$321 million.
3. Goodwill and intangibles accounted for ~150% of stockholders' equity
4. Down 59% vs. S&P 500 down 5% between our article on [3/23/15](#) and when we upgraded to Neutral on 10/7/15



*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.

Part III

What Are Better Metrics?

Core Problem: GAAP is exploitable.

Only Solution: Read the Footnotes and MD&A.

Traditional P&L

Revenues

- operating expenses

= pretax earnings

- taxes

= Reported Profit

Economic P&L

Revenues

- operating expenses

- **Hidden Incomes/Charges**

= pretax earnings

- taxes

= Profit

- **capital charge/hidden liabilities and assets**

= Economic Profit

Scouring the Footnotes and MD&A of 10-Ks

- Hidden Expenses/Income
- Unrecorded Goodwill
- Impairments
- Unconsolidated Subsidiaries
- Minority Interests
- Unrealized Gains/Losses
- Changes in Accounting Rules
- Derivatives Exposure
- Customer Concentration
- FASB 159
- Employee Stock Options
- Option Valuation Assumptions
- Operating Leases
- Loan Loss/LIFO Reserves
- Pension Assumptions
- Excess Cash
- Pension Over/Under Funding
- Auditor's Opinions
- Carrying Value vs Fair Value
- Mid-year acquisitions

GETTING TO THE ECONOMICS

Measuring Key Results

- **NOPAT** ➡ core operating earnings after-tax
- **Invested Capital** ➡ all cash invested in the business
- **WACC** ➡ rent management must pay for use of capital

Return on Invested Capital = NOPAT/Avg Invested Capital

Economic Earnings = (ROIC – WACC) * Invested Capital

- Aka: “EVA”, economic profit, residual income

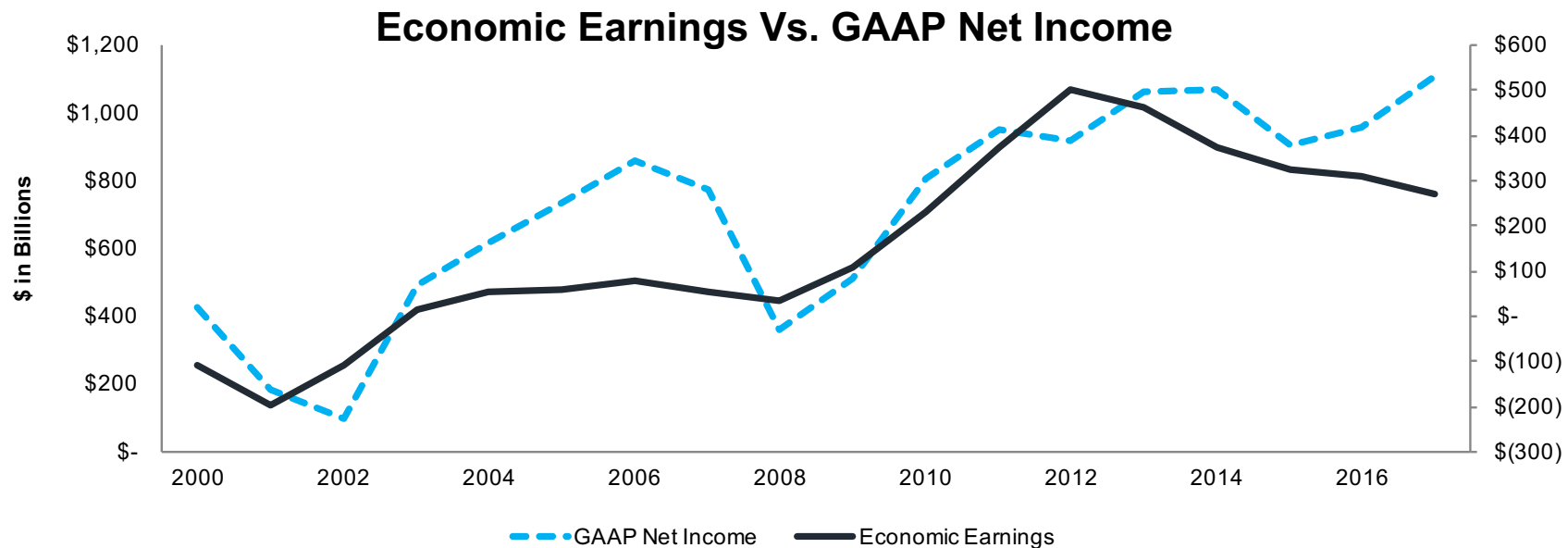
ECONOMICS DO NOT ALWAYS FOLLOW ACCOUNTING

(Unscrubbed) Earnings Trends Are Misleading

“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 [5/4/17](#) & [2/28/18](#)



EARLY INDICATOR FOR BANKRUPTCY

Report on Eastman Kodak (EKDKQ.PK) on 3/21/2011

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



*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.

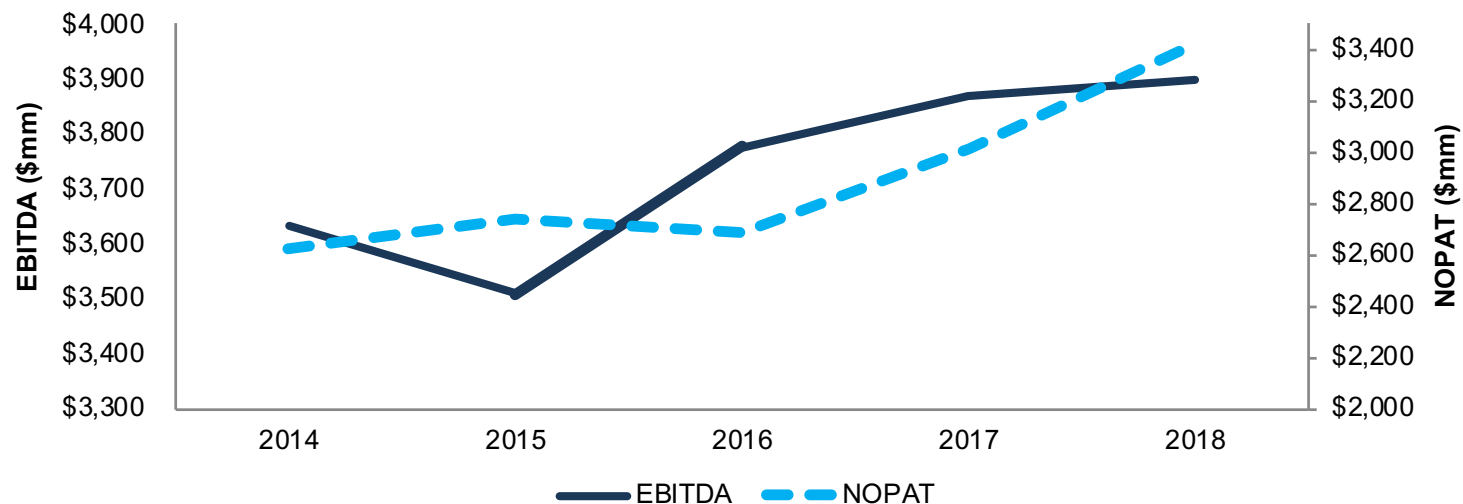
RECENT LONG IDEA

Raytheon (RTN) on 3/6/19

EBITDA Understates Growth

1. EBITDA grew by just 2% compounded annually over past 4 years
2. NOPAT grew by 7% compounded annually over same time
3. Discrepancy due to \$1.2 billion (4% of rev) in non-operating pension costs
4. EV/EBITDA of 14, above S&P 500 average of 13
5. Price to Economic Book Value of 1.1, implies just 10% growth into perpetuity

NOPAT Growing Faster than EBITDA



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RECENT DANGER ZONE WARNING

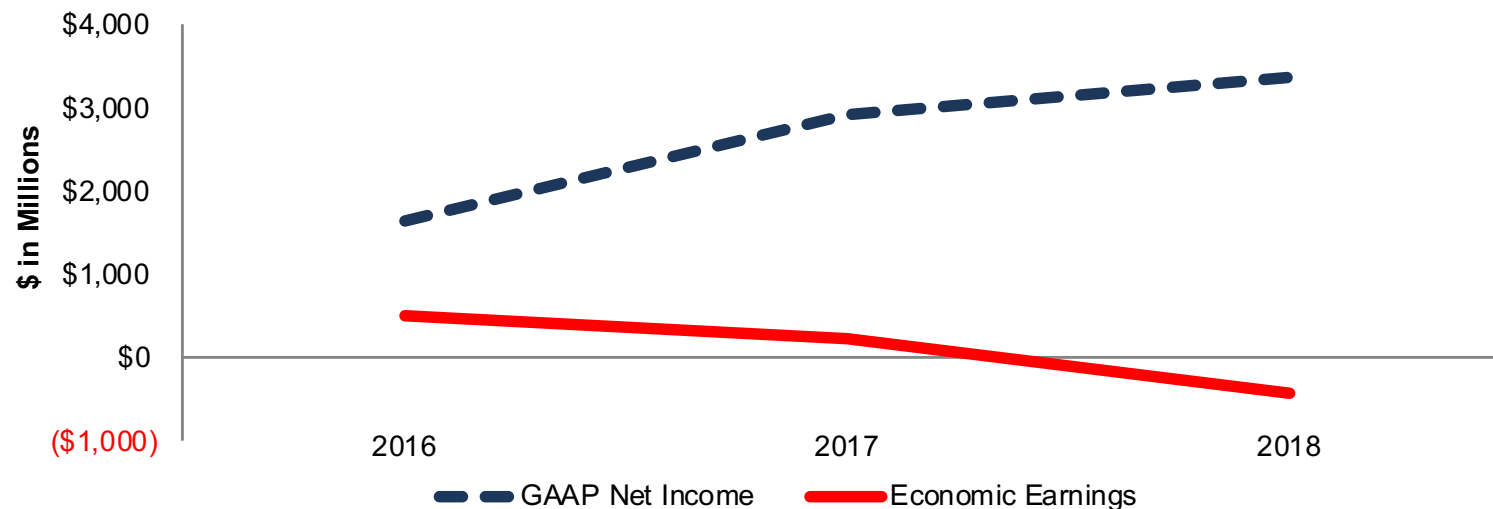
Mondelez (MDLZ) on [3/29/2019](#)



Overvalued Assets Mislead Investors

1. Debt to Equity of 0.7, below S&P 500 average of ~0.9
2. \$39 billion in Goodwill and intangibles account for 150% of shareholders' equity
3. Economic Earnings declined from \$500 million in 2016 to -\$400 million in 2018, shows decreasing competitive advantage
4. High possibility for write-downs in the near future, could be the next Kraft Heinz

GAAP Net Income Masks True Losses



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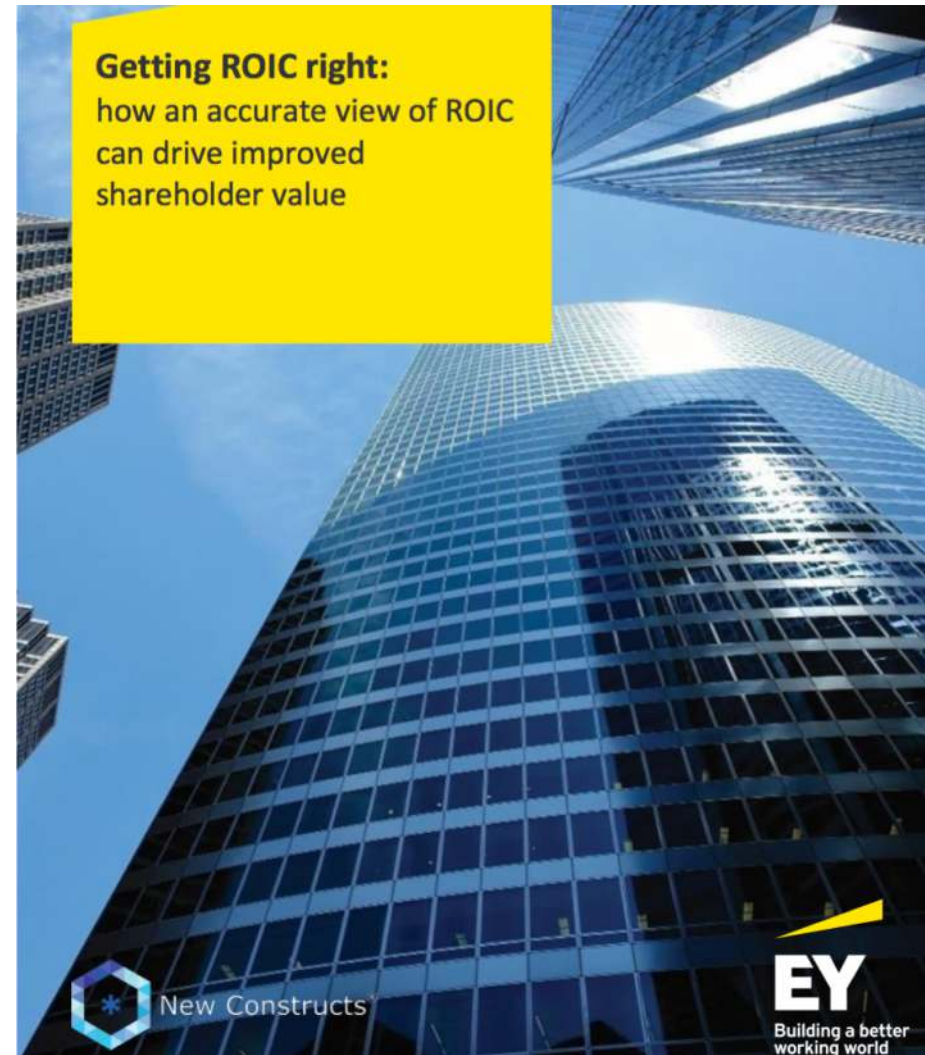
ERNST & YOUNG SHOWS OUR RIGOR MATTERS

White Paper: Investors Deserve Better Data



- 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".

Click [here](#) for a copy.



POWERFUL RESEARCH AUTOMATION HAS ARRIVED

Technology Provides Only Solution Big Data



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

Click [here](#) for a copy.



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 ineffective management.

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THE TECHNOLOGY WORKS = DILIGENCE WITH SCALE

3rd-Party Validation By Harvard Business School & MIT Sloan



The Relation between Earnings and Future Cash Flows: A New Perspective*

Ethan Rouen

Harvard Business School

Eric So

Massachusetts Institute of Technology

Sloan School of Management

Charles C.Y. Wang

Harvard Business School

July 2018

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Abstract

We provide new evidence on the usefulness of financial accounting in valuation analysis. A fundamental assumption in the use of GAAP financial statements for valuation is that accrual-based measures of firms' performance convey information about future cash flows incremental to current cash flows. However, recent evidence casts doubt on this assumption. We revisit this issue using a novel dataset that details *all* quantitative disclosures in firms' annual reports and identifies non-core revenues and expenses from net income, including those reported on the income statement and those hidden in the footnotes or the MD&A. Using these data to adjust GAAP net income, we show the resulting measure of core earnings offers forecasting power for future cash flows and earnings that are incremental to traditional measures of performance. These adjustments also better explain contemporaneous market prices and returns. Together, our results suggest that accounting information remains relevant for valuation and highlight the importance of careful accounting analysis for distilling information relevant for forecasting future performance.

Quotes from the paper:

- “this paper serves as a warning for researchers seeking to examine the value relevance of earnings.”
- “Data aggregators like Compustat do not appear to collect and provide data on many non-operating or less persistent income-related items, even when managers make these adjustments in non-GAAP disclosures.”
- “We find that, in many instances, Compustat does not report these disclosures— which can appear on the income statement as a separate line item or in the footnotes or the MD&A—in any of its fields.”
- “These shortcomings make it difficult for users to construct a complete picture of a firm’s earnings, but taking additional steps to adjust to GAAP net income can provide valuable insights.”

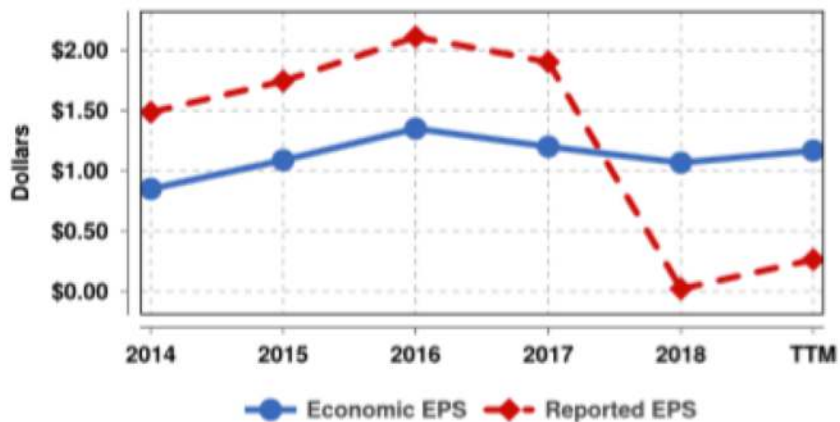
Part IV

How do you protect yourself?

GET RESEARCH ON ECONOMIC EARNINGS

Compare reported vs economic results

Accounting vs Economic Earnings



Accounting Adjustments Summary

- CSCO's accounting earnings understate its economic earnings, which equal $(\text{ROIC} - \text{WACC}) * \text{Average Invested Capital}$.
- For CSCO, we made a total of \$100,886 million in income statement and balance sheet adjustments to convert accounting earnings to economic earnings in FY18.
- We made \$74,768 million in adjustments in our DCF valuation of the stock.
- We make, in general, 10 types of [income statement adjustments](#) to derive [NOPAT](#), 12 types of [balance sheet adjustments](#) to derive [Average Invested Capital](#), & 10 types of [valuation adjustments](#) in our reverse [DCF valuation models](#).

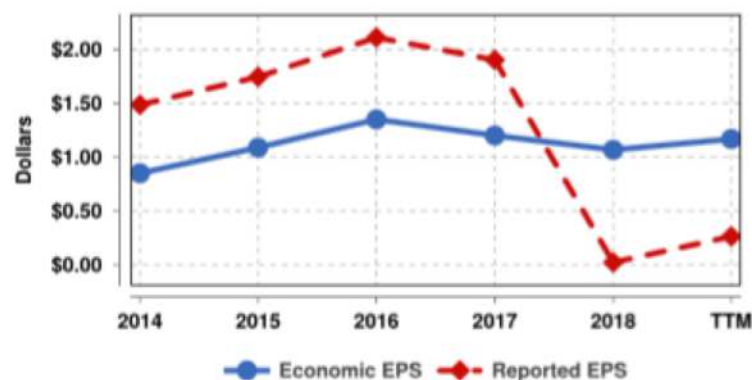
SEE HOW ECONOMIC EARNINGS AFFECT VALUATION

Get more details on drivers of value

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)
5 - Very Unattractive	Misleading Trend	Bottom Quintile	<-5%	> 3.5 or -1 < 0	> 50
4 - Unattractive	False Positive	4th Quintile	-5%<-1%	2.4 < 3.5 or < -1	20 < 50
3 - Neutral	Neutral EE	3rd Quintile	-1%<3%	1.6 < 2.4	10 < 20
2 - Attractive	Positive EE	2nd Quintile	3%<10%	1.1 < 1.6	3 < 10
1 - Very Attractive	Rising EE	Top Quintile	>10%	0 < 1.1	0 < 3

Accounting vs Economic Earnings



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MORE RIGOR FOR SMARTER DECISIONS

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New Constructs®

ROBO-ANALYST RESEARCH

Closing Price as of 01/09/2019: \$43.32
Dividend Yield: 3.0%
Period End Date: 10/27/2018

Cisco Systems, Inc. (CSCO)

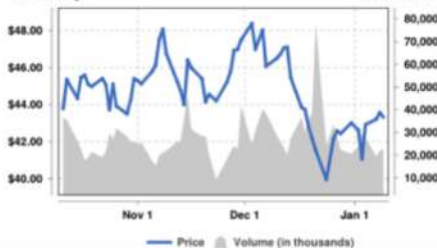
NASDAQ - Technology

Investment Recommendation

- We recommend investors buy CSCO.
- CSCO earns our Attractive rating. See Investment Rating Details below.
- An Attractive rating means this stock has strong upside potential compared to low downside risk.
- CSCO ranks in the 87th percentile of the 2750+ stocks we cover.
- Ranks 43rd out of 428 Technology Sector stocks.

2 - Attractive

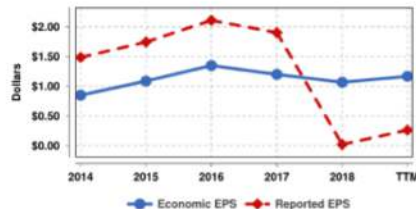
Price 01/09/2019:
Economic Book Value per share
52-Week Range



Investment Rating Details

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	Economic vs Reported EPS	Return on Invested Capital (ROIC)	FCF Yield	Price-to-EBV Ratio	Growth Appreciation Period (yrs)
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2 - Attractive	Positive EE	2nd Quintile	3% to < 10%	1.1 < 1.6	3 < 10
1 - Very Attractive	Rising EE	Top Quintile	> 10%	0 < 1.1	0 < 3

Accounting vs Economic Earnings



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Stock Price Performance

Last 30 Days	(6.8%)
Last 60 Days	(7.3%)
Last 90 Days	(1.1%)
Last Year	12.5%

Key Market Statistics

Enterprise Value (MM)	\$180,604
EV/EBITDA	13.20
P/E (TTM)	163.90

About New Constructs

- Our research aims to empower more informed investment decision by providing the most comprehensive and accurate analysis of firms' true profitability and valuation.
- This [Ernst & Young white paper](#) demonstrates the superiority of our data and models. The Appendix details exactly how we stack up against traditional firms.
- Harvard Business School's case study "[New Constructs: Disrupting Fundamental Analysis with Robo-Analysts](#)" features our unique research automation technology.

Formulas for Key Metrics

- $\text{Economic Earnings} = (ROIC - WACC) \times \text{Average Invested Capital}$
- $ROIC = \text{NOPAT} / \text{Average Invested Capital}$
- $\text{Free Cash Flow} = \text{NOPAT} - \text{change in Invested Capital}$

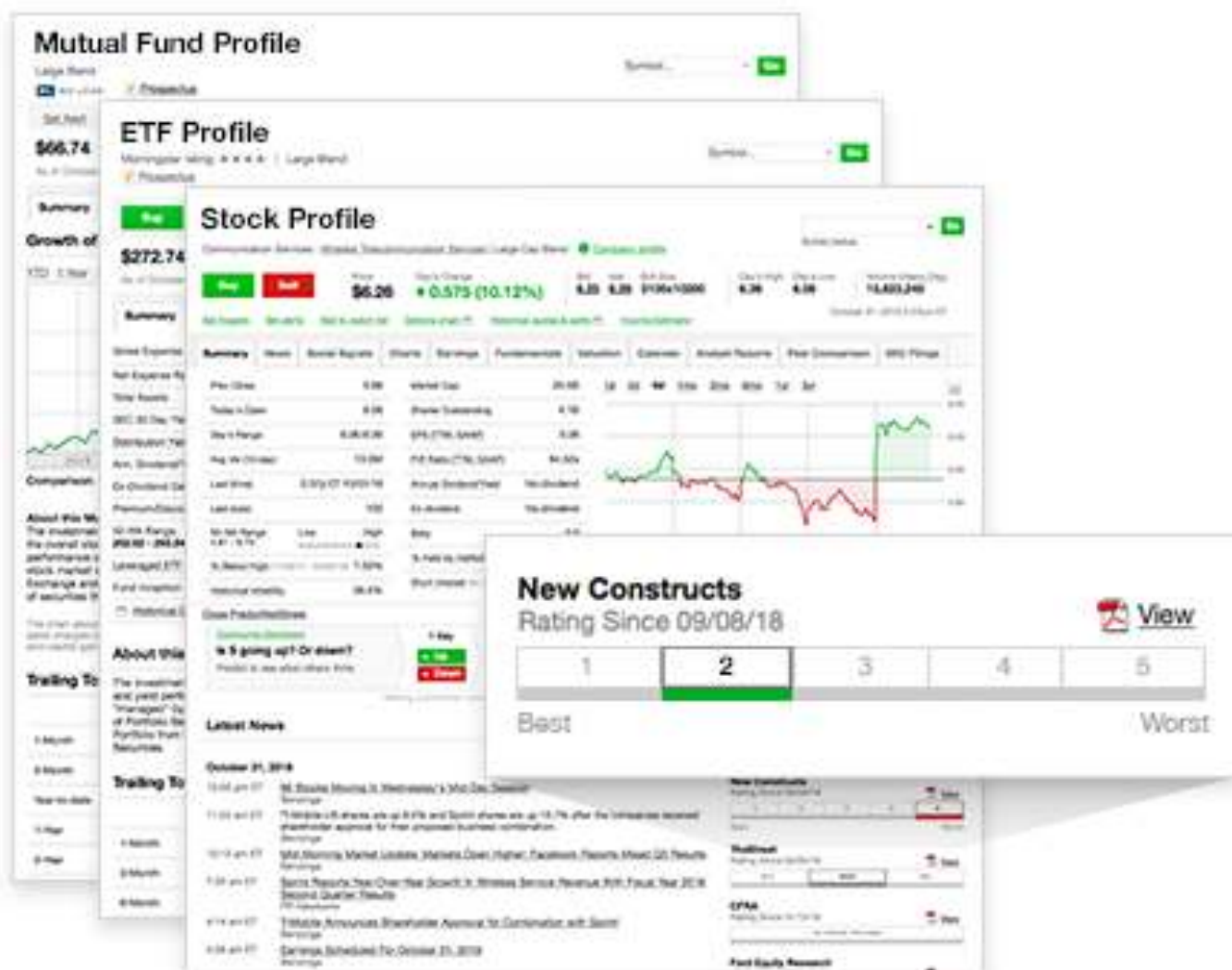
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Cisco Systems, Inc. (CSCO)

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Stock Analyst Reports

Communication Services | Wireless Telecommunication Services | Large Cap Blend | [Company Profile](#)

[Buy](#)
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Price
\$6.26

Day's Change
+0.575 (10.12%)

Vol 8.25

Ask 8.25

52-Week 2100x10200

Day's High 8.26

Day's Low 8.06

Volume (Prior Day)
13,829,245

Oct 20, 2018 2:05pm ET

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New Constructs®

1 2 3 4 **5**

Best Worst

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Commerce Volume Growth & Mexico/Canada Trade Agreements are Positive Catalysts

September 4, 2018

Macroeconomic Indicators and Machinery Industry Trends Signal Top-Down Growth

August 13, 2018

SECTORS: A SOAR DEVELOPMENT FOR SOME GROWING OIL SPONGE PRODUCE

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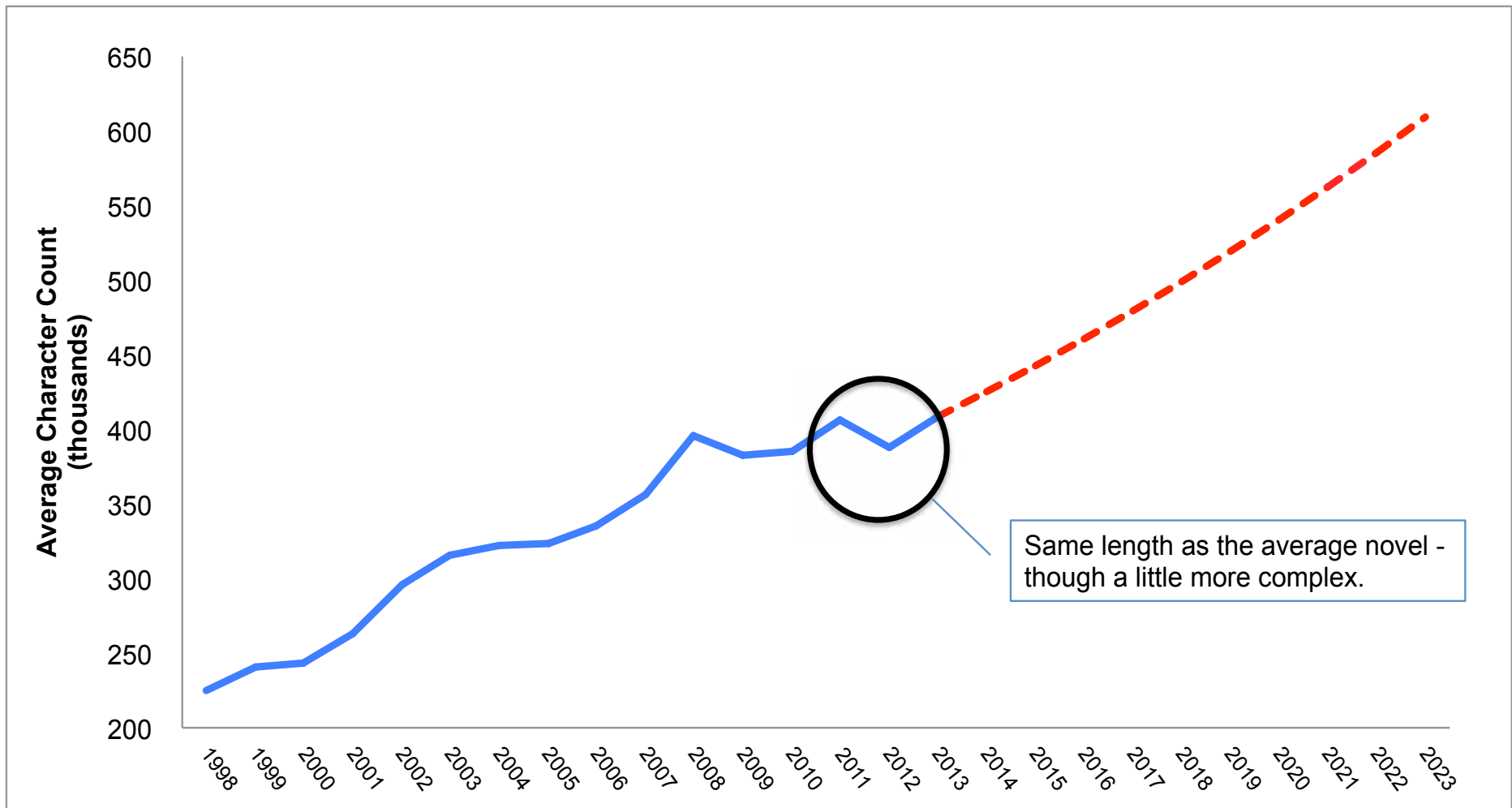
☐ Another Provider

Part V

Why you need protection now more than ever.

FILINGS GETTING LONGER & LONGER

Keeping Up With Disclosures Is Nearly Impossible



DISCLOSURE TRENDS ARE NOT YOUR FRIEND

More Data, More Noise, More Complexity

- Filings have grown to **200+ pages**
(That's longer than the average novel.)
- Increasingly complex and time-consuming work
- Accounting rules are constantly changing



RISE ABOVE RECORD LEVELS OF NOISE

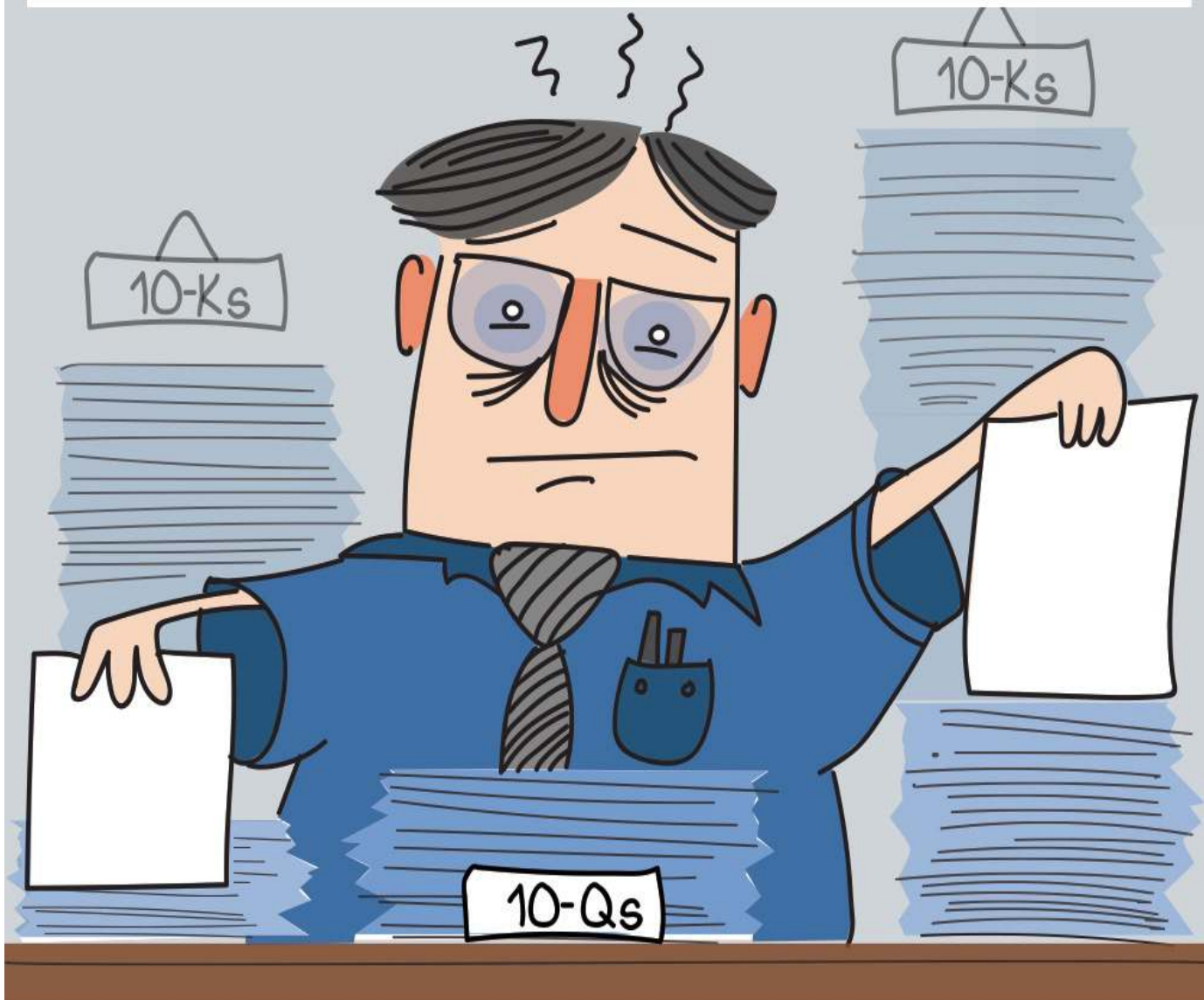
Superior Research Gives You an Edge



TECHNOLOGY TO CLOSE THE RESEARCH GAP

Machine are better than humans at some things

WHO HAS TIME TO READ 200+ PAGE FILINGS?



MACHINE LEARNING FROM EXPERTS

Human-Validated Parsing Instructions from 140,000+ Filings



GET THE DILIGENCE YOU DESERVE

LEVERAGE THE LATEST TECHNOLOGY AND GET AN EDGE
WITH OUR RESEARCH ON STOCKS, ETFS AND MUTUAL FUNDS



Appendix

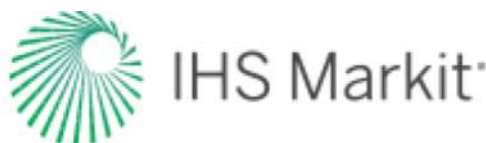
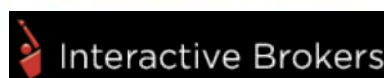
SUCCESS WITH ELITE INSTITUTIONAL CLIENTS

Self-Directed Clients Are Natural Fit for Simpler Products

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



Harvard Business School
&
MIT Sloan



HOW THE WEALTH INDUSTRY WORKS WITH US

Multiple models, Great Flexibility



- **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 website or thru partners.

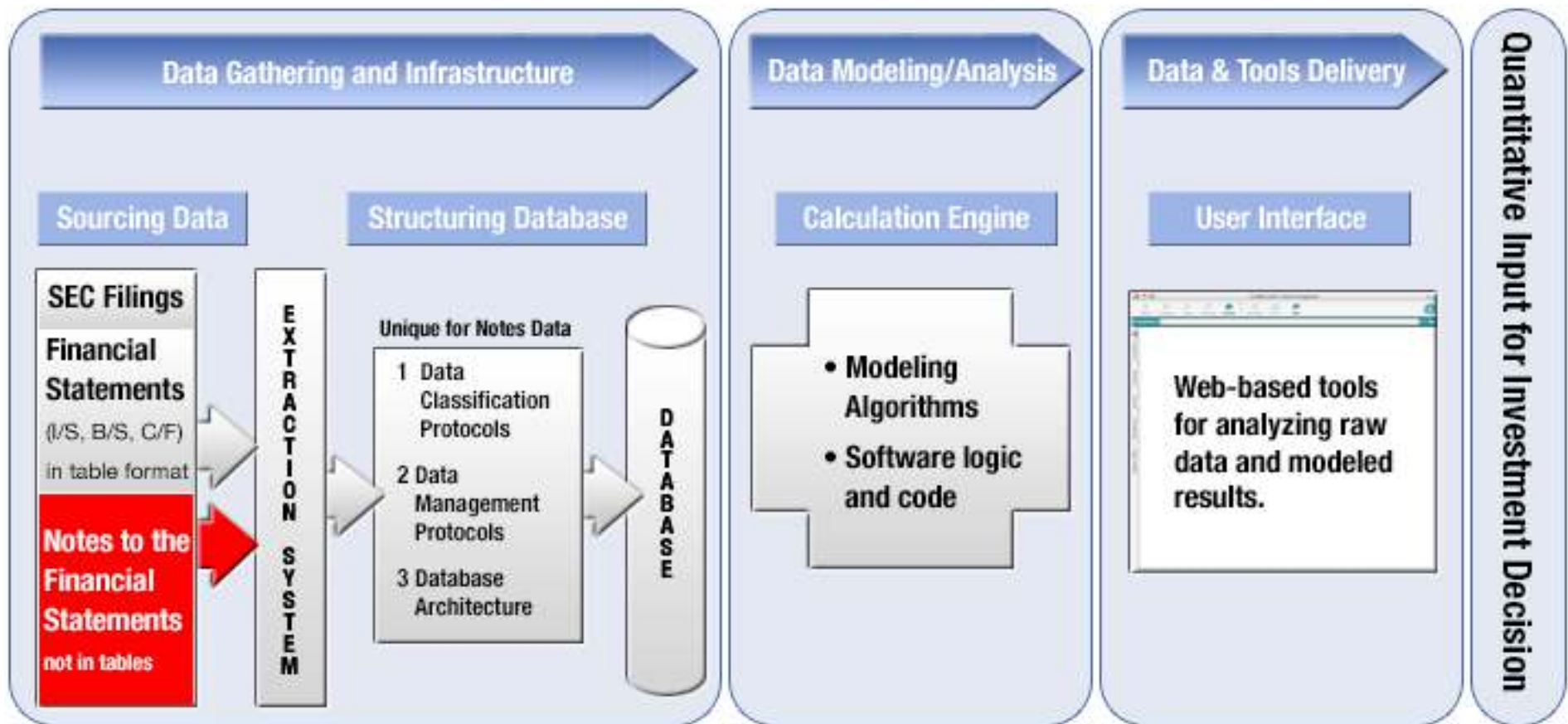


- **Consultants/Corporates:** custom engagements focused on enterprise value optimization and investor relations strategy. Direct access via our website along with custom work and consultation via partners.



RESEARCH TECHNOLOGY PLATFORM

Data Collection & Modeling Under One Roof



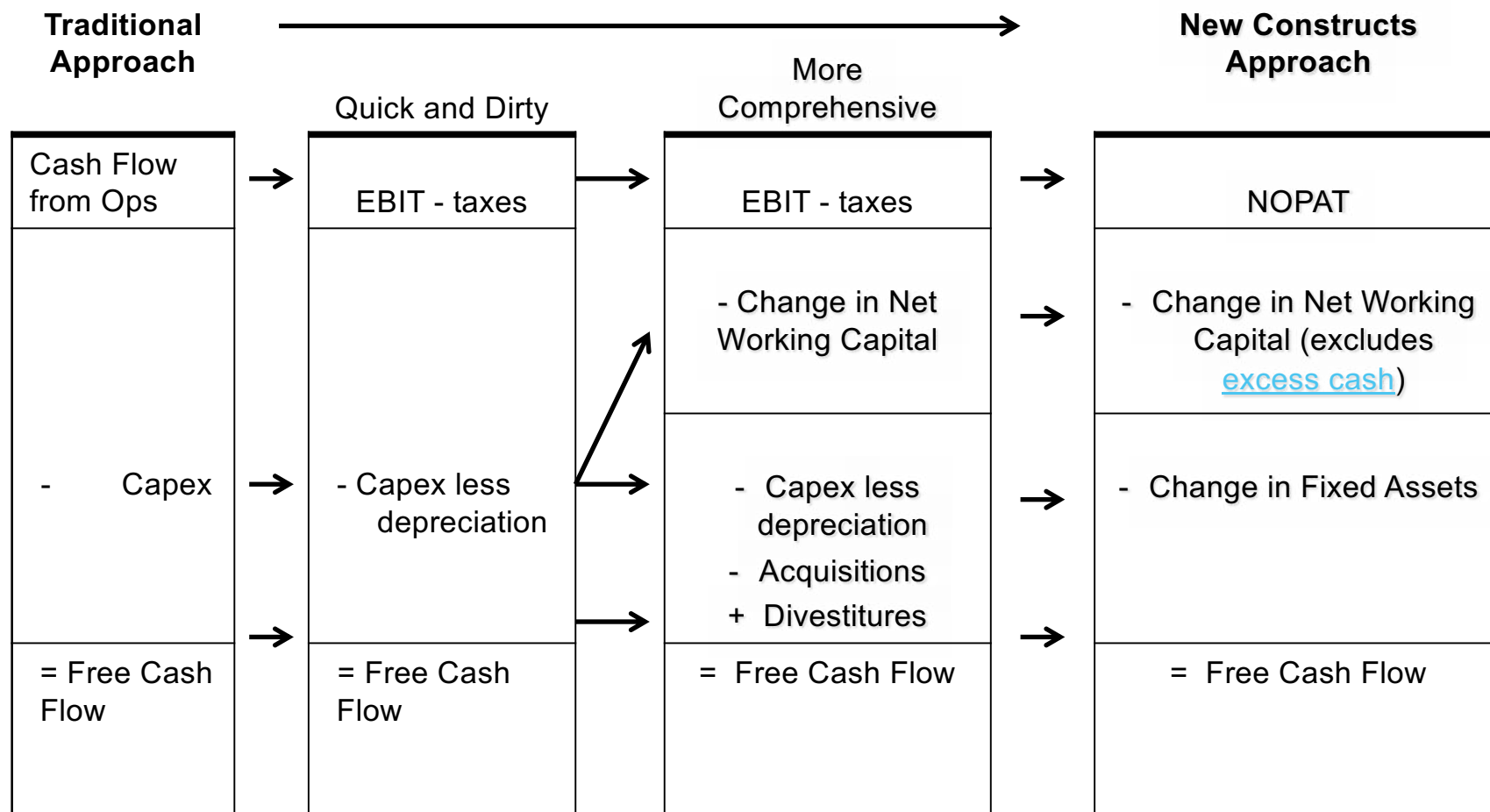
We created our own data collection technology to provide high integrity models to clients. Traditional data feeds are not trustworthy for sophisticated financial modeling.

VERSUS OTHER RESEARCH OFFERINGS

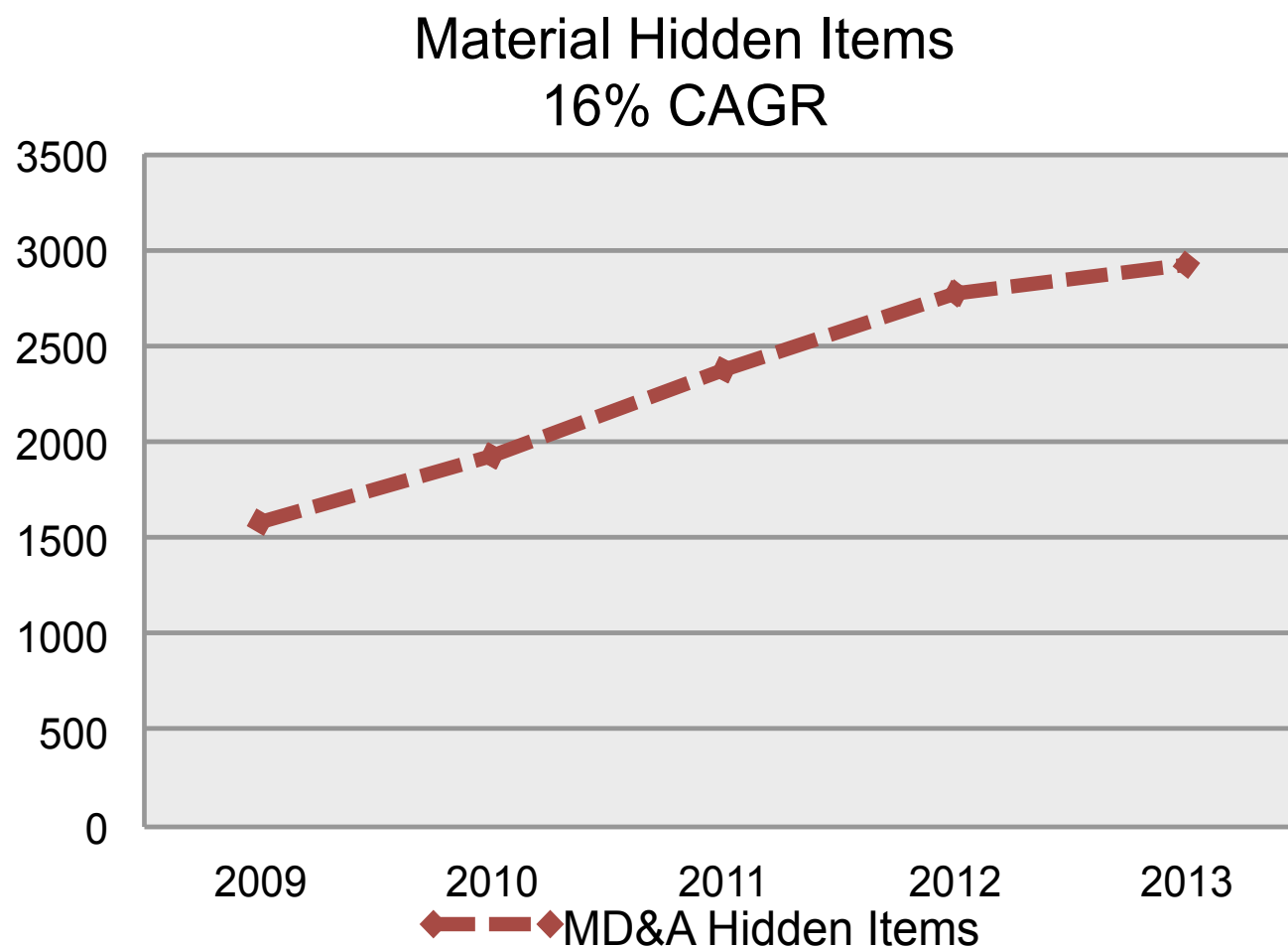
	Coverage			Cash Flow Focus (Non-GAAP)		Consistent Due Dilligence		Transparency/Links To		Independence	
	Stocks	ETFs	Mutual Funds	ROIC & Economic Earnings	Reverse DCF	Footnotes	MD&A	Calculatio ns	SEC Filings/ Source Data	Not Paid By Funds or Companies Covered	No Banking or Trading Revenues
New Constructs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

CALCULATIONS: ATTENTION TO DETAILS

Free Cash Flow: NOPAT minus Change in Invested Capital *How We Compare to traditional approaches to FCF*



BIGGER HAYSTACKS, MORE NEEDLES



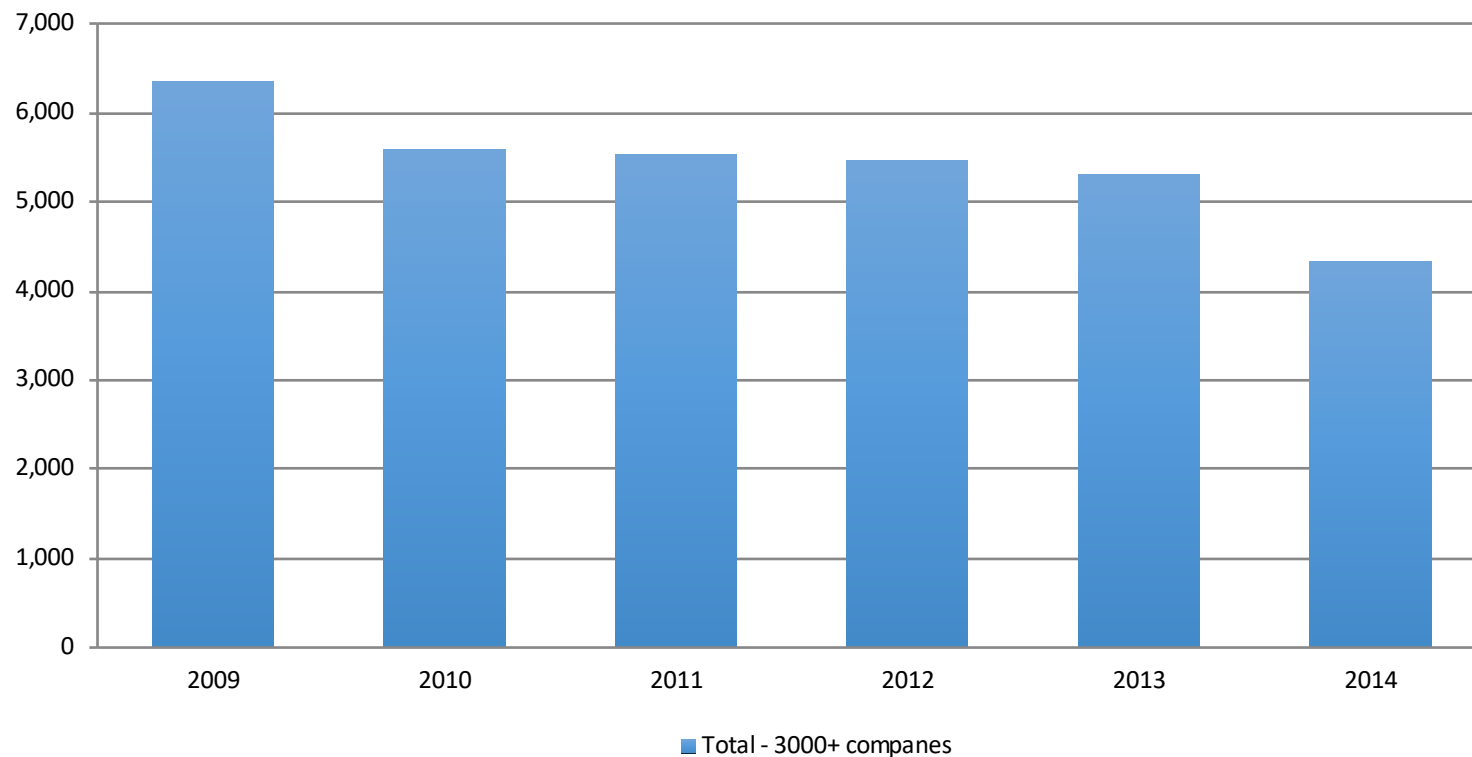
Items found only in the MD&A (e.g. gains, charges, deferred items, etc) that distort income statement results are rising rapidly.

ASSET WRITE-DOWNS ARE A RED FLAG

32,583

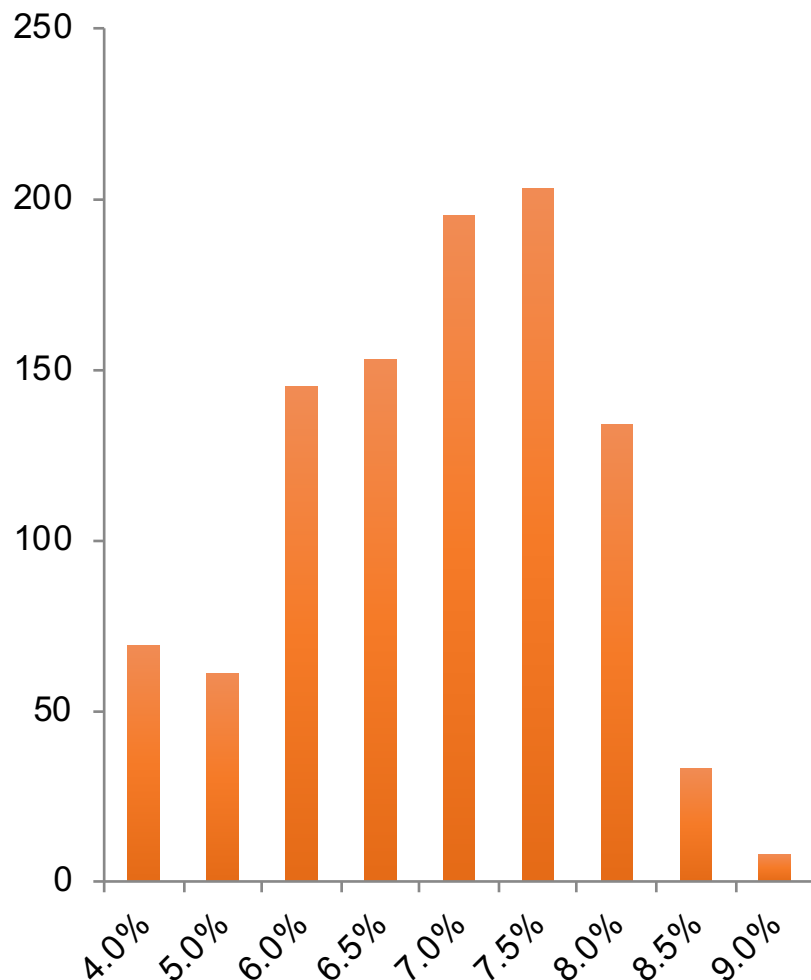
Over the last 5+ Years, we found 32,583 write-downs.

of Write-Downs



MANAGEMENT'S INFLUENCE ON PROFITS

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%.

New Constructs has no trading, corporate or banking ties – no conflicts.

- *Morningstar gets paid by fund companies. Fund companies must license ratings from Morningstar to use them in marketing materials.*

New Constructs = unadulterated expertise in accounting, finance and SEC filings.

HOW HAS INVESTING CHANGED OVER THE YEARS?

Shorter Holding Periods for Stocks

- Until mid-1960's average holding period was seven years
- Today, average holding period is less than one year and annual portfolio turnover is more than 100%¹

Major Reactions to Quarterly Earnings

- Stock prices make large moves in response to earnings surprises
- Suggests that long-term cash flows are less important

Amateur Individual Investors - Growth Market

- Schwab, TD Waterhouse, Scottrade
- Day trading

Media - Growth Market

- TV: Mad Money, CNBC Squawk Box, and Squawk on the Street
- Print: Wall Street Journal, Investors Business Daily, local newspapers
- Web: Motley Fool, TheStreet.Com, CBS MarketWatch

¹Rappaport, Alfred. "The Economics of Short-Term Performance Obsession." *Financial Analysts Journal*, vol. 61, no. 3 (May/June): 65-79.

WHICH ARE YOU: INVESTOR OR SPECULATOR?

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

ONLY 3 WAYS TO BEAT THE MARKET

Better Data - difficult and expensive to obtain

- Gathering and analyzing data from the Notes to the Financial Statements provides a competitive advantage.

Better Analysis - not just your neighbor, one must out-think the entire market

- Better data means better models.
- Better models provide better analysis.

Better Discipline - stick to your guns, don't follow the herd.

- Long and short strategy is built on specific, quantifiable thresholds derived from a model we can trust.
- Our models do all the number crunching to supply our human capital with superior information and decision-making capabilities.

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