New Constructs®
Diligence | Independence | Performance

Disrupting Fundamental Analysis

How Robo-Analyst Technology Identified Verizon (VZ)

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AGENDA

1. Problem: Accounting vs Economic earnings
2. Technology that Solves the Problem with Scale
3. How the Robo-Analyst Identified Verizon (VZ)

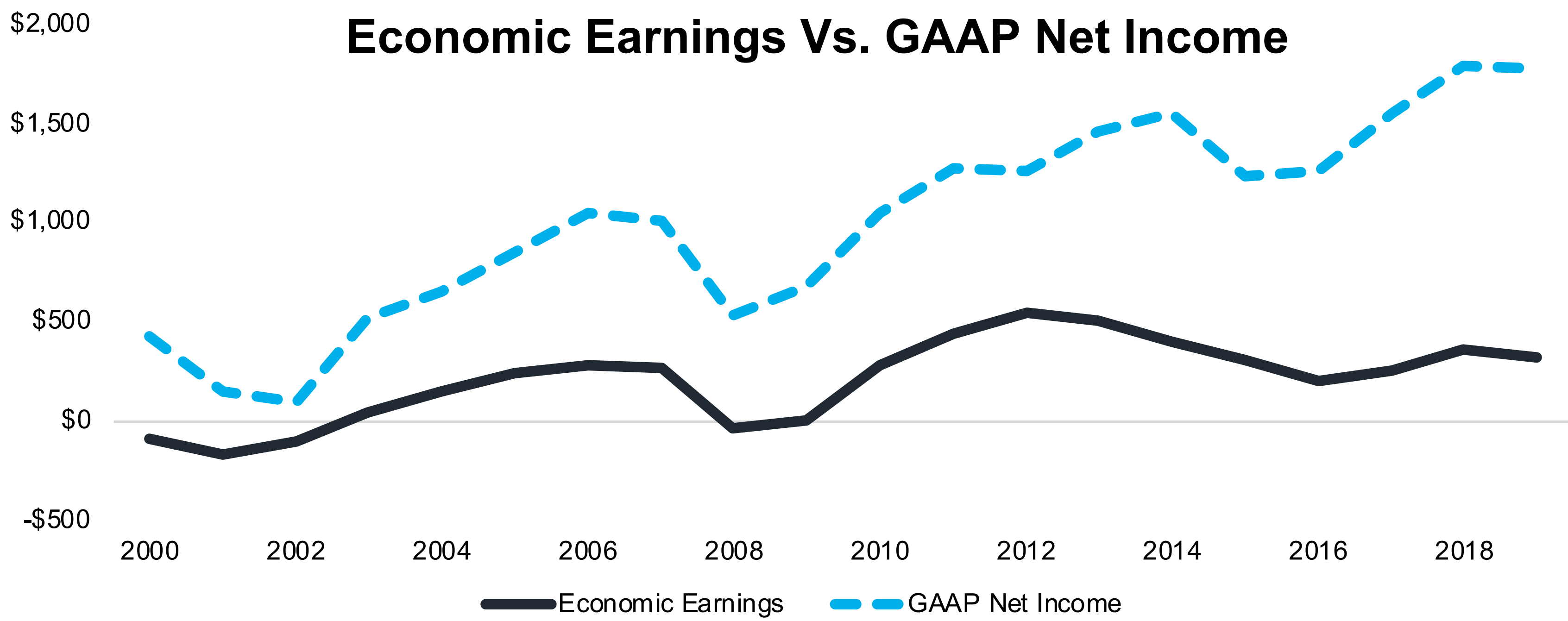
ECONOMICS DO NOT ALWAYS FOLLOW ACCOUNTING

(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



*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.

WHY DILIGENCE IS NEEDED

Core Problem: GAAP is exploitable.

Only Solution: Read the Footnotes and MD&A.

Traditional P&L	Economic P&L
Revenues	Revenues
- operating expenses	- operating expenses
	- **Hidden Incomes/Charges**
= pretax earnings	= pretax earnings
- taxes	- taxes
= Reported Profit	= Profit
	- **capital charge/hidden liabilities and assets**
	= Economic Profit

WHAT IS DILIGENCE?

Going Beyond the "Truth Detector"

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/Invested Capital

Economic Profit = (ROIC – WACC) * Invested Capital

Free Cash Flow = NOPAT – change in Invested Capital

Economic Profit Margin = ROIC - WACC

Part II
How Technology Solves the Problem

DISCLOSURE TRENDS ARE NOT YOUR FRIEND
More Data, More Noise, More Complexity

- Filings have grown to **200+ pages**

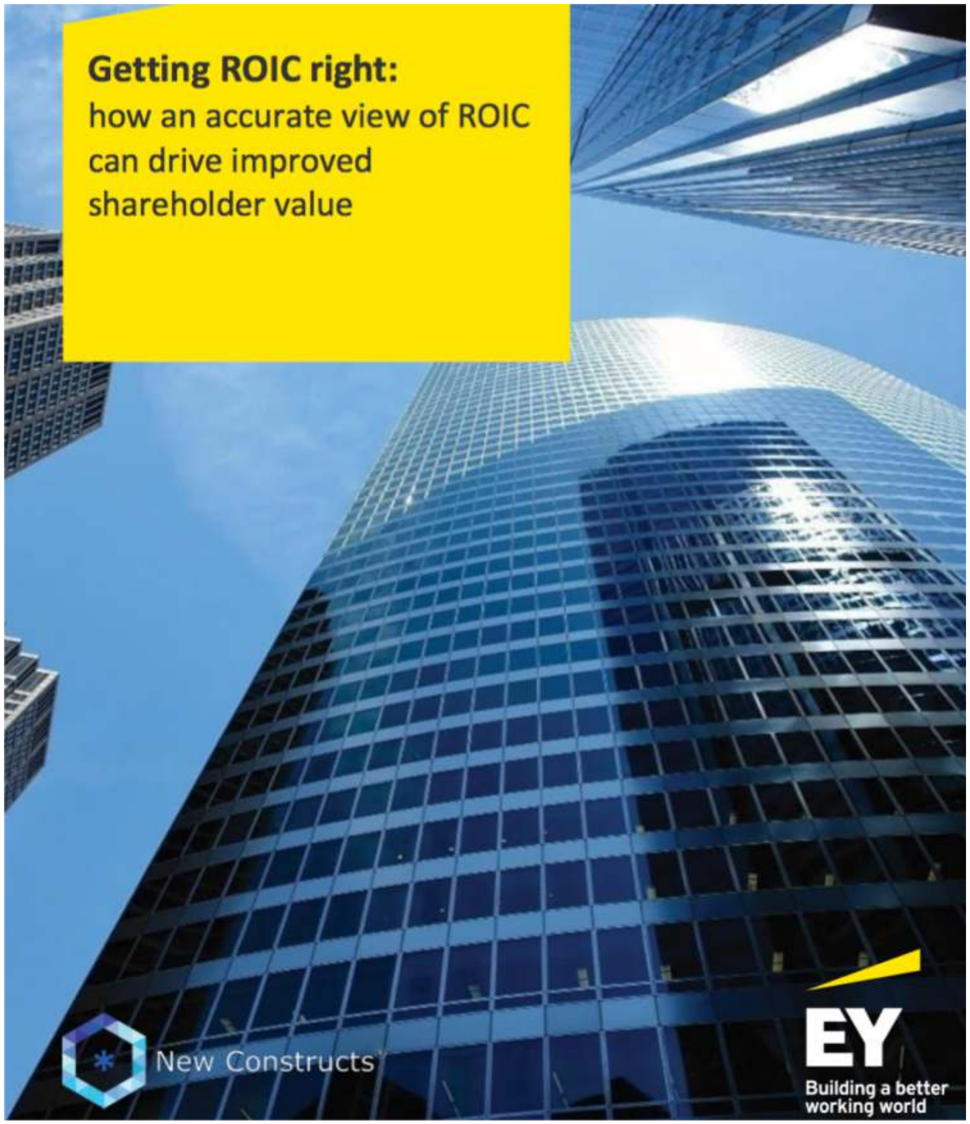
  (That's longer than the average novel.)
- Increasingly complex and time-consuming work
- Accounting rules are constantly changing

TECHNLOGY TO CLOSE THE RESEARCH GAP

Machine are better than humans at some things

ERNST & YOUNG CO-AUTHERS REPORT

Footnotes Matter



Click here for a copy.

See Appendix for links to critical footnote data.

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.

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Harvard Business Publishing

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CHARLES C.Y. WANG
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 ineffective management.

COMPUSTAT & STREET EARNINGS ARE MISLEADING

New Constructs

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.”

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Part III
How the Robo-Analyst Identified Verizon

ECONOMIC EARNINGS BETTER THAN GAAP

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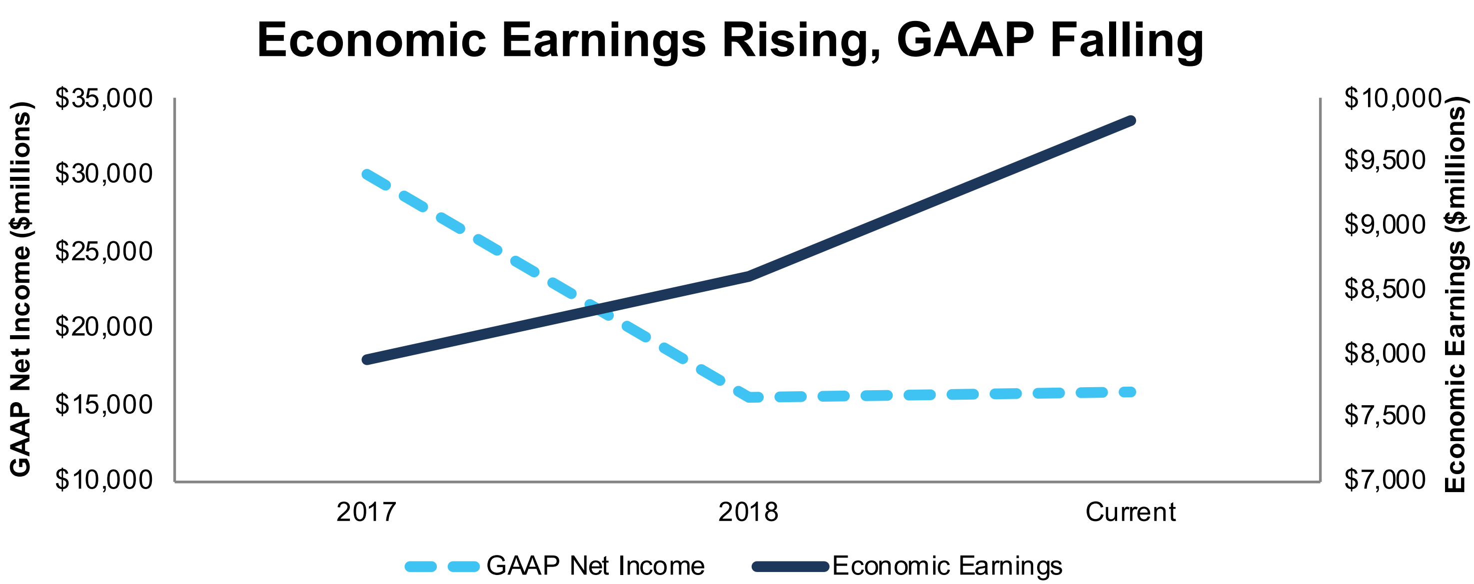
“GAAP Earnings Mislead Investors”

1. 2018 GAAP earnings understated by $3.4 billion in restructuring, $4.6 billion in write-downs (combined 7% of revenue).
2. 2017 GAAP earnings overstated by $16.8 billion (13% of revenue) benefit from tax reform.
3. Economic earnings per share up 22% while GAAP EPS down 62% TTM.



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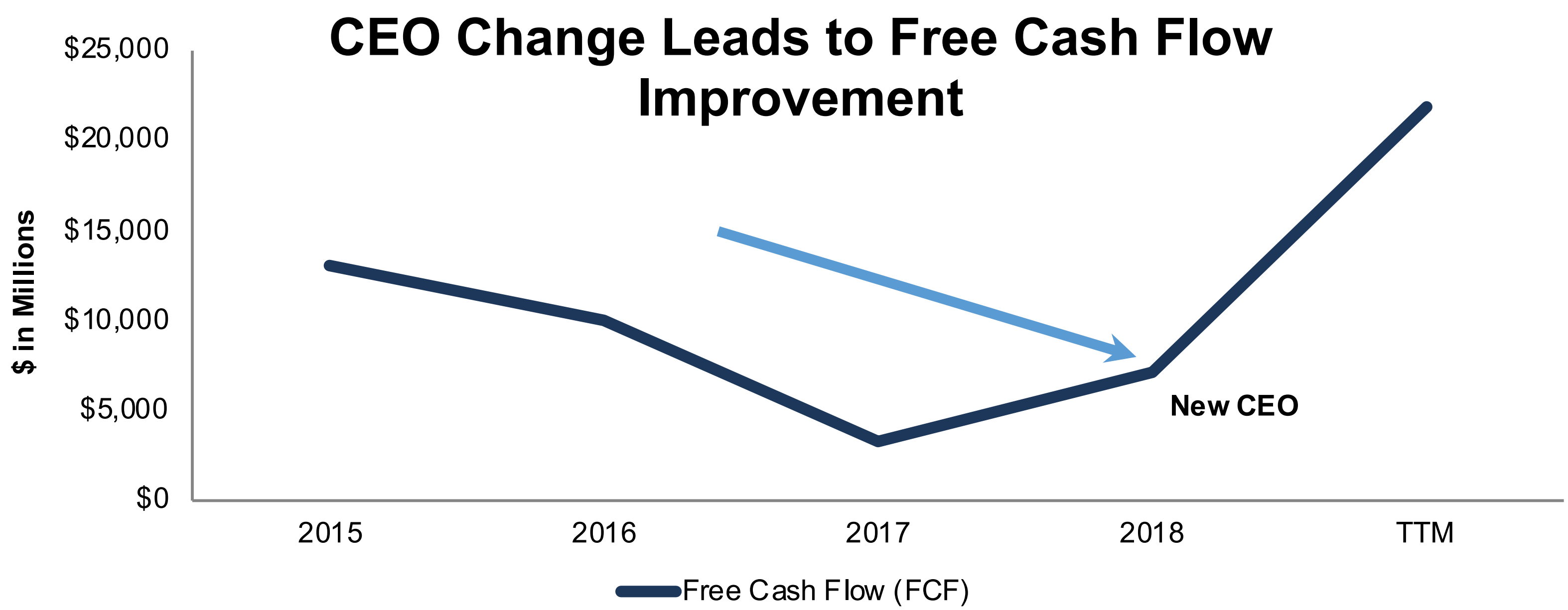
NEW CEO DRIVES IMPROVEMENT

"Focus on Core Business"

1. Previous management wasted capital on poor acquisitions (AOL, Yahoo)
2. New CEO Hans Vestberg appointed in 2018, halted acquisitions, cut costs, refocused company around core competitive advantage, the network.
3. Free Cash Flow improved from $3 billion in 2017 to $20 billion TTM.



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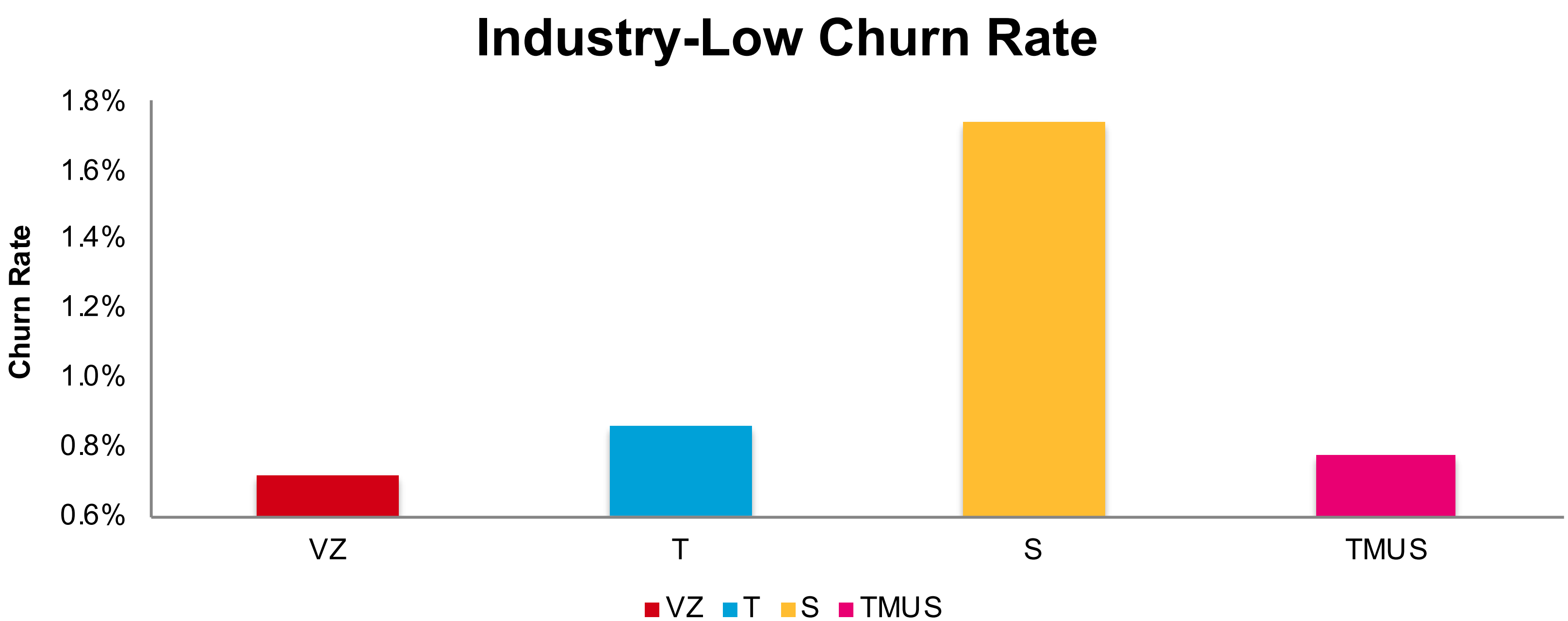
KEY COMPETITIVE ADVANTAGE

Superior Monetization Platform

“Nation’s Best Network”

1. Verizon’s network is widely recognized as the best in the nation
2. Superior network drives industry-low churn rate while raising prices
3. 7.5% ROIC is the best in the industry (next closest peer is T-Mobile at 6%)



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GREAT DIVIDEND OPPORTUNITY

1. Greatest spread between VZ dividend yield and 30-year treasury rate since November 2017.
2. Last time spread was this wide, VZ gained 30% over the following 12 months.

CHEAP VALUATION LEADS TO UPSIDE POTENTIAL

More details in our report from 9/4/19

“Market Expects 30% Profit Decline”

1. VZ has a price to economic book value (PEBV) of 0.7, which means the market expects profits to permanently decline by 30%.
2. Valuation ignores profit opportunities from 5G, edge computing, and cost-cutting initiatives.
3. Our valuation accounts for $192 billion in liabilities (see our DCF model):
4. If VZ can maintain TTM NOPAT margins of 18% and grow NOPAT by just 2% compounded annually for the next decade, the stock is worth $109/share today.

82% Upside

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Results Financials & Metrics Marked-up Filings

Decision Forecast Overrides DCF Review WACC Review

Verizon Communications, Inc. (VZ)

Analyst Notes : Safest Dividend Yield Model Portfolio Aug 2019 | Dividend Growth Model Portfolio Aug 2019

Overrides are currently inactive. To review overrides click on the Overrides edit page .
● = marks items on this page that can be overridden
● = marks items on this page that have active overrides in effect

Download CSV

Select Forecast To View: Default (Updated 8/9/2019)

Values in Millions except per share amounts	2020	EY 3: 2021	EY 4: 2022	EY 5: 2023	EY 6: 2024	EY 7: 2025	EY 8: 2026	EY 9: 2027	EY 10: 2028
Net Assets from Discontinued Operations	.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Net Deferred Tax Liability	56.00)	($34,156.00)	($34,156.00)	($34,156.00)	($34,156.00)	($34,156.00)	($34,156.00)	($34,156.00)	($34,156.00)
Net Deferred Compensation Assets	5.00)	($165.00)	($165.00)	($165.00)	($165.00)	($165.00)	($165.00)	($165.00)	($165.00)
Fair Value of Unconsolidated Subsidiary Assets (non-operating)	.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Fair Value of Total Debt	961.11)	($140,961.11)	($140,961.11)	($140,961.11)	($140,961.11)	($140,961.11)	($140,961.11)	($140,961.11)	($140,961.11)
Fair Value of Preferred Capital	.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)
Fair Value of Minority Interests	65.00)	($1,365.00)	($1,365.00)	($1,365.00)	($1,365.00)	($1,365.00)	($1,365.00)	($1,365.00)	($1,365.00)
Value of Outstanding ESO After-Tax	.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)	($0.00)
Pensions Net Funded Status	40.00)	($16,940.00)	($16,940.00)	($16,940.00)	($16,940.00)	($16,940.00)	($16,940.00)	($16,940.00)	($16,940.00)
Shareholder Value	555.73	$369,840.76	$374,054.87	$387,773.10	$400,991.50	$414,047.09	$426,941.88	$439,677.85	$452,256.96
Shares Outstanding	35.8	4,135.8	4,135.8	4,135.8	4,135.8	4,135.8	4,135.8	4,135.8	4,135.8
Shareholder Value per Share	.87	$89.42	$90.44	$93.76	$96.96	$100.11	$103.23	$106.31	$109.35
GAP (Growth Appreciation Period)	2	3	4	5	6	7	8	9	10
Maximum Loss Exposure from Special Purpose Entities	.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Decision Page pulls Performance Hurdles values from below for the relevant GAPs									
Total Operating Revenue CAGR	3%	0.9%	0.8%	0.8%	1.2%	1.4%	1.6%	1.8%	1.9%
Average Economic Earnings Margin	1%	3.1%	3.2%	3.2%	3.2%	3.3%	3.4%	3.5%	3.6%
Average ROIC	4%	7.5%	7.5%	7.5%	7.6%	7.7%	7.7%	7.8%	7.9%
ROIC (Return On Invested Capital)	5%	7.6%	7.6%	7.7%	7.9%	8.1%	8.3%	8.6%	8.8%
WACC (Weighted Average Cost of Capital)	3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%
Incremental Return on Invested Capital	.1%	120.8%	54.9%	216.1%	401.8%	123.0%	123.0%	123.0%	123.0%
Average NOPAT Margin	9%	17.9%	17.9%	17.9%	17.9%	17.9%	17.9%	17.9%	17.9%
Average Avg Invested Capital Turns	42	0.42	0.42	0.42	0.42	0.43	0.43	0.44	0.44
NOPAT CAGR	5%	2.1%	1.7%	1.5%	1.8%	1.9%	2.1%	2.2%	2.3%
Invested Capital CAGR	0%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
FCF CAGR	9%	50.1%	36.0%	28.0%	23.1%	20.0%	17.7%	16.0%	14.6%
Economic Earnings CAGR	3%	6.7%	5.2%	4.6%	4.9%	5.1%	5.2%	5.3%	5.4%

100% UNCONFLICTED

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

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