



Small Cap - Value - Profitability Portfolio

MBA Student Investment Management Fund

April 2018



MBA SIM Fund Members



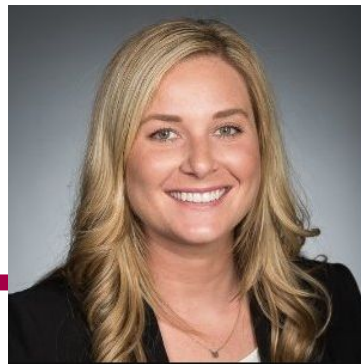
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Agenda

- Strategy Review
- Implementation
- Tilts
- Returns
- Attributions
- Lessons Learned

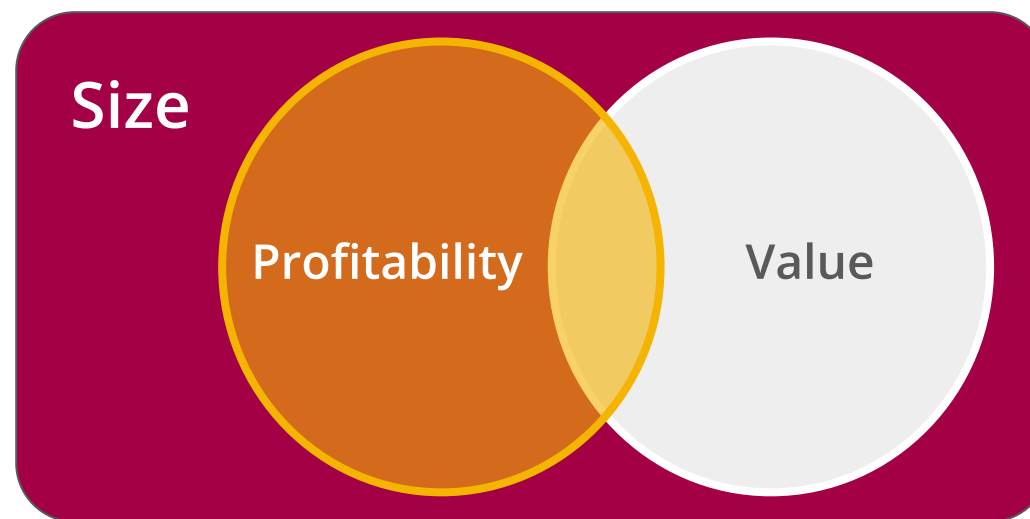
Strategy Review

Portfolio Construction

Defining Small Cap: $\$1B < x \leq \$2B$

Value Premium: Price to Cashflow

Profitability Premium: CBOP (Deflated by Total Assets)



Strategy Review

Portfolio Construction

Financials ETF

diversified, low expense ratio,
value but no profitability,
mainly large cap

Exclusions

IPOs, negative CFs, dual class
shares

Weighting

market cap

Sector Exposure

portfolio composition
mirrored benchmark

Implementation

Monthly Rebalancing

Entering / Exiting Securities

5% tolerance band on breakpoints

>\$2B market cap permitted

Ongoing Positions

reweight if entry/exit is large

Automation



Implementation

Monitoring Securities

News Alerts

M&A, Lawsuits, etc.

Implications of Tax Reform

Earnings season

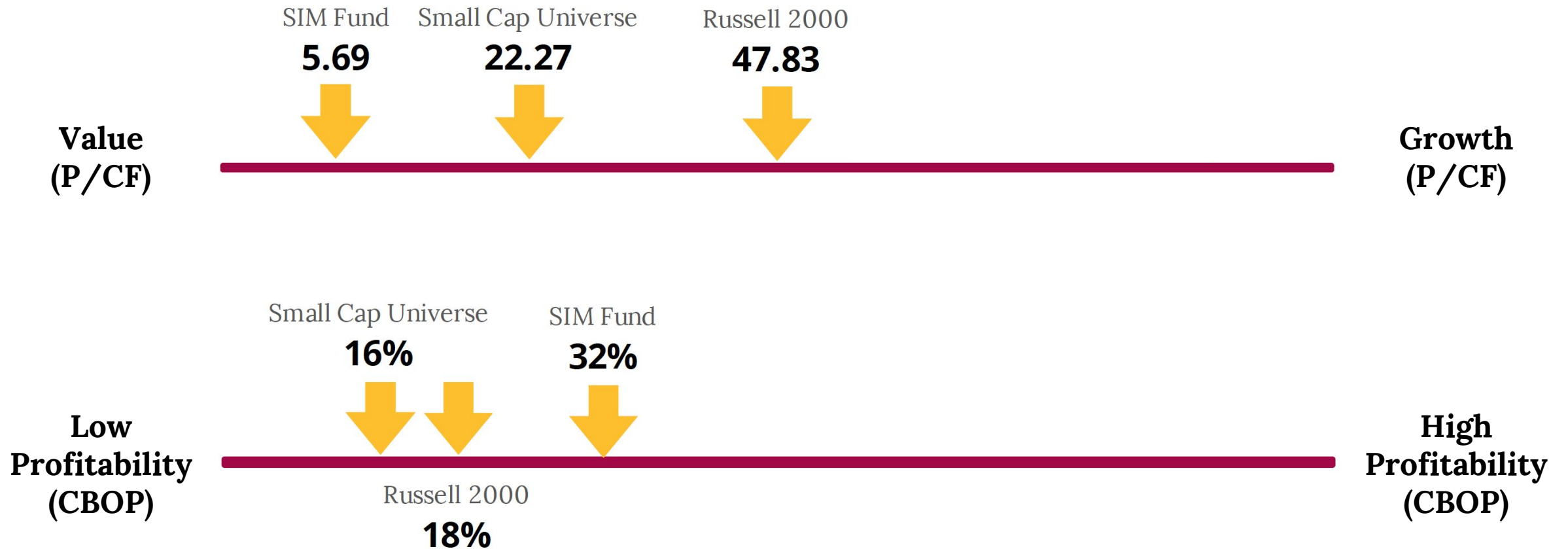
Deferred Assets & Deferred Liabilities

Financials most impacted



Tilts

Value & Profitability



Returns

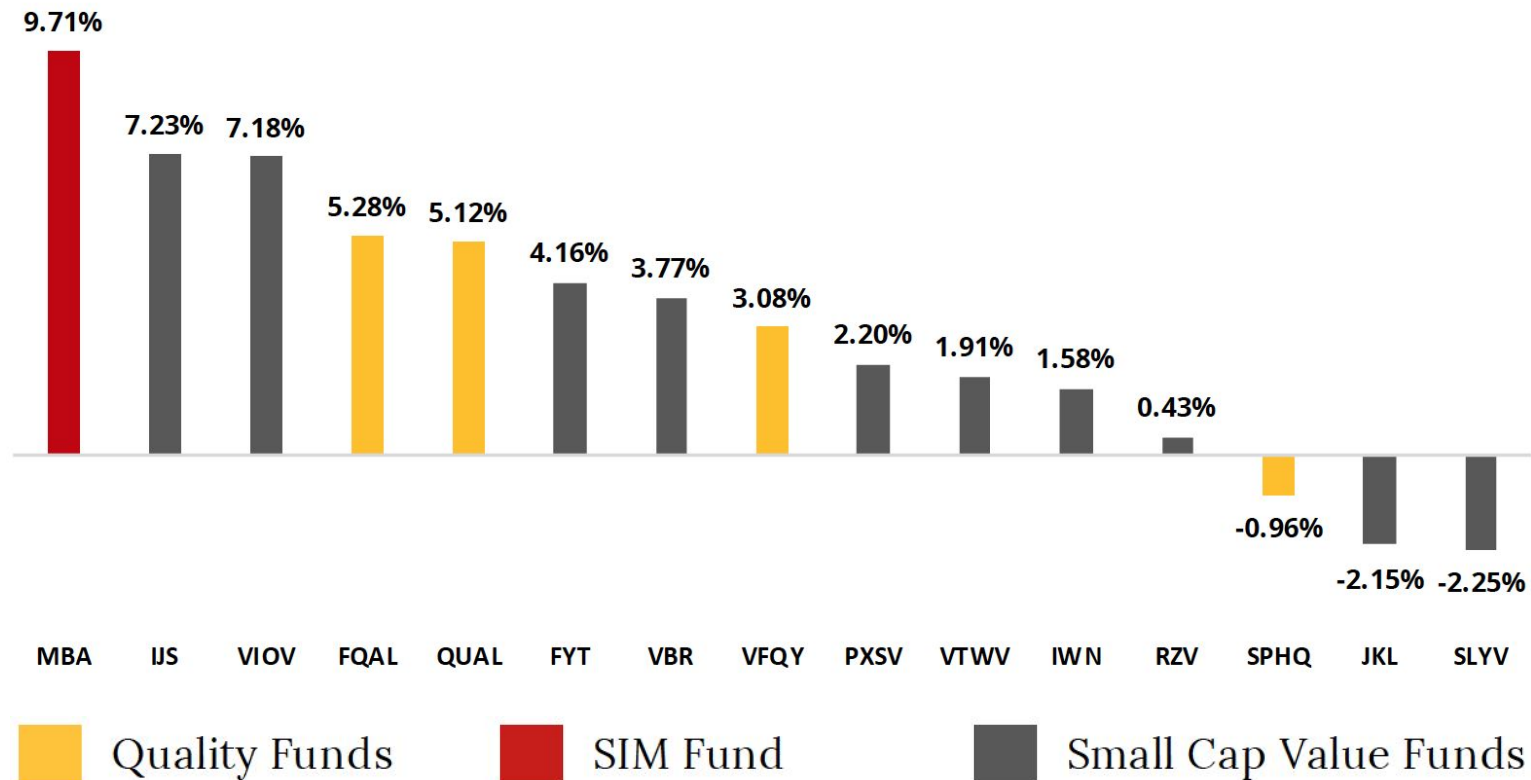
Portfolio Performance relative to Benchmark



Performance

Relative to the Similar Funds

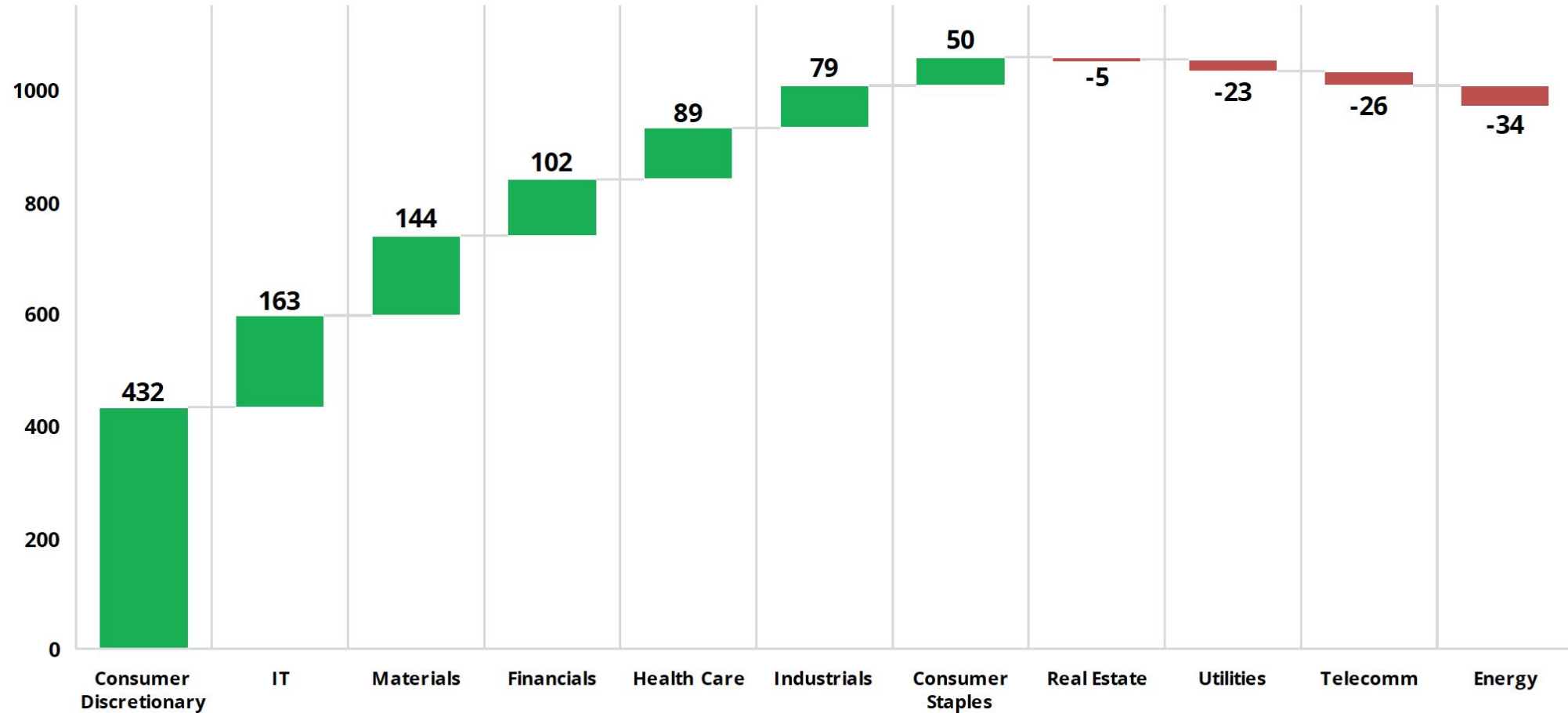
5 month returns of SIM Fund vs Quality and Value Funds



Attributions

Sources of Return

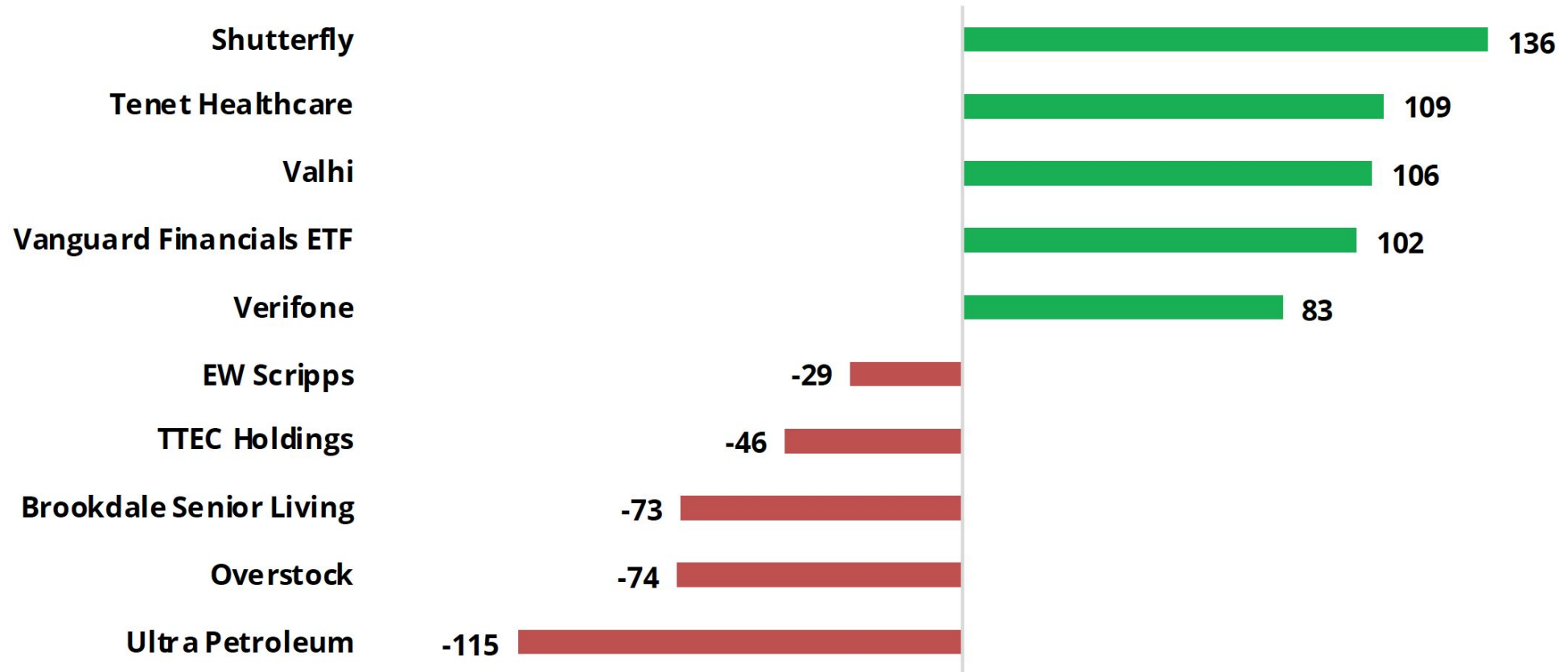
Contributions to Return by Sector (in bps)



Attributions

Sources of Return

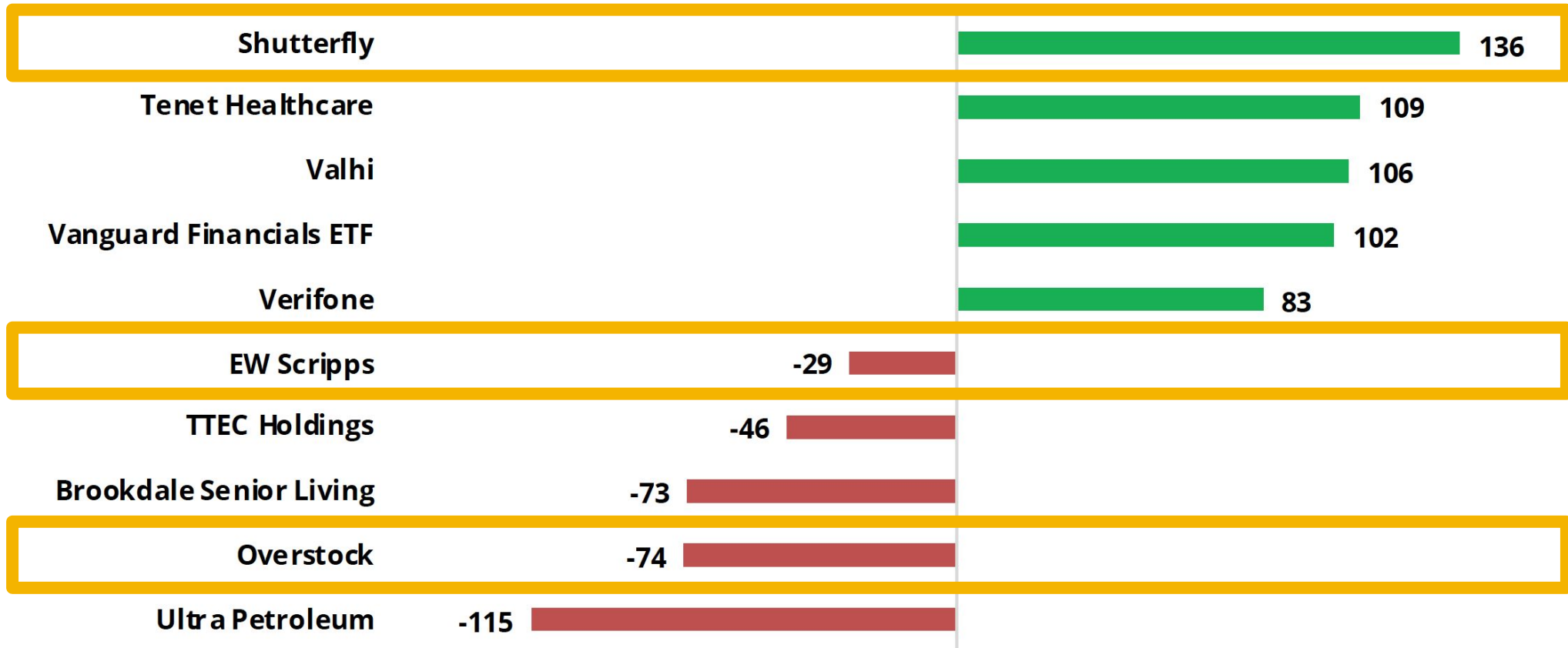
Top 5 Winners/Losers (in bps)



Attributions

Sources of Return

Top 5 Winners/Losers (in bps)



Lessons Learned

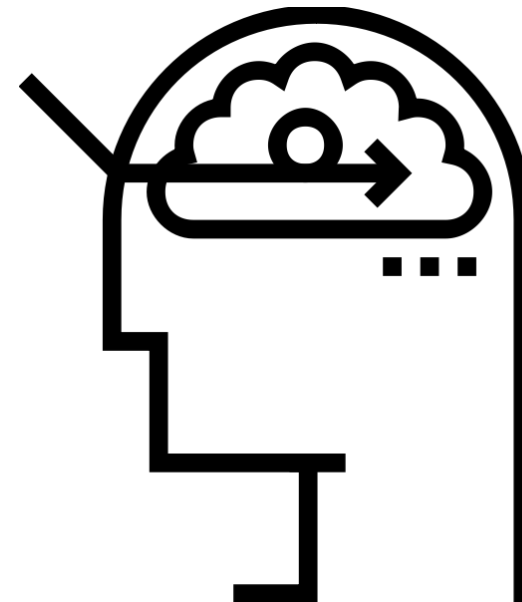
Our Takeaways

Understanding Portfolio Engineering Process

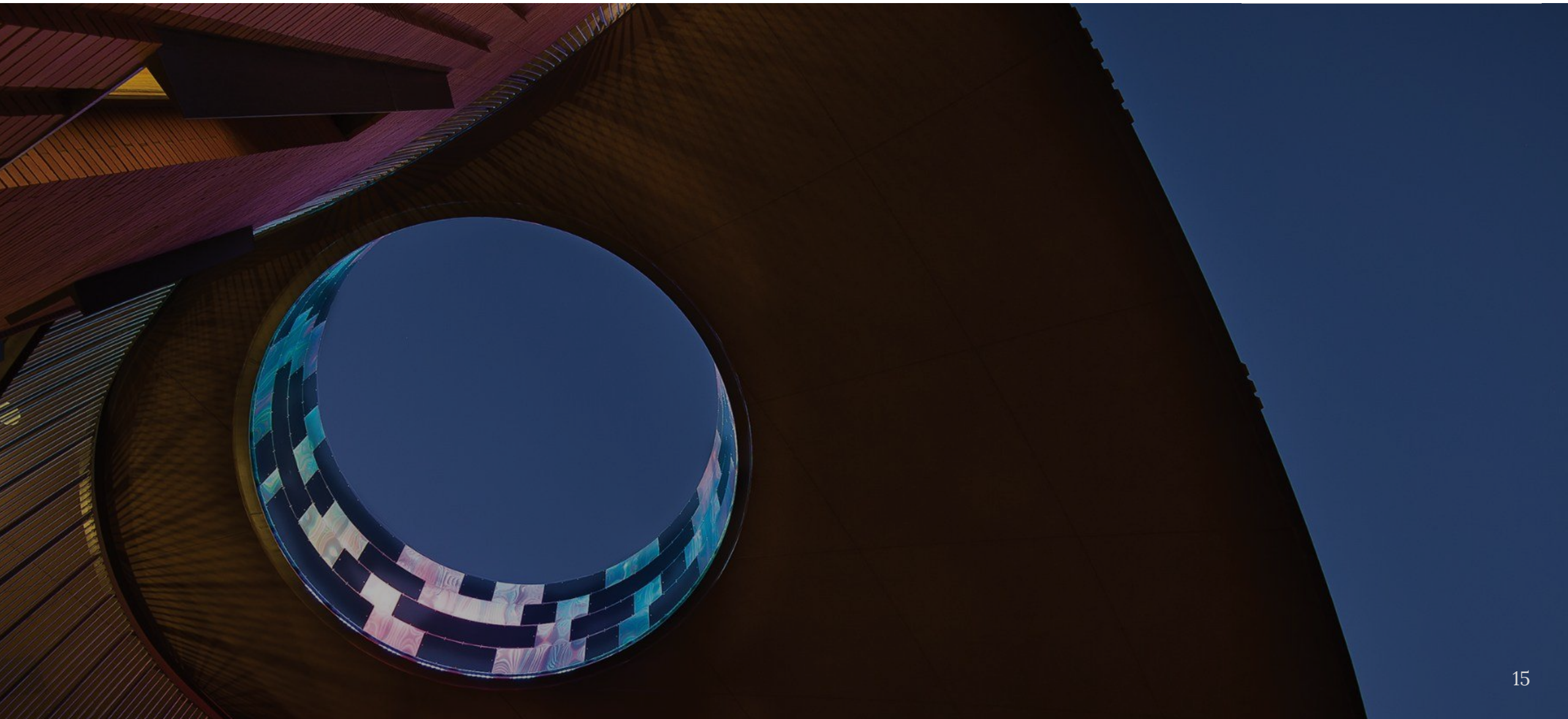
Bloomberg Terminal Best Practices

Rebalancing Manually to Automated Rebalancing

Impact of Cryptocurrencies on Price (Overstock)



Thank you!



Appendix

Factor Formulas

$$\frac{P}{CF} = \frac{\text{Last Price}}{\text{Operational Cash Flow per Share}}$$

$$\begin{aligned} \text{CBOP} = & \text{Revenue} - \text{COGS} - \text{SG\&A} + \text{R\&D Exp.} \\ & - (\Delta \text{AR} - \Delta \text{Inv} - \Delta \text{PP Exp}) \\ & + (\Delta \text{AP} + \Delta \text{DR} + \Delta \text{Acc Exp}) \end{aligned}$$

$$\text{Deflated CBOP} = \frac{\text{CBOP}}{\text{Total Assets}}$$

Appendix

Averages

Name	Average Beta	1M Tot Ret	6M Tot Ret	P/CF	CBOP
Consumer Discretionary	0.88	4.60%	17.60%	7.85	0.35
Consumer Staples	0.59	28.70%	55.50%	20.97	1.15
Energy	1.17	-3.80%	-6.00%	9.63	0.14
Health Care	0.85	-3.90%	6.10%	7.56	0.52
Industrials	0.95	2.10%	7.70%	18.43	0.31
Information Technology	0.99	2.80%	-1.60%	14.64	0.27
Materials	1.08	11.00%	26.30%	10.6	0.65
Real Estate	0.97	12.60%	43.70%	8.35	0.73
Telecommunication Services	0.94	8.20%	-1.70%	8.56	0.17
Utilities	0.63	4.90%	-4.10%	10.45	0.2

Appendix

Firms by Sector - Consumer Discretionary

Consumer Discretionary	Avg Weight	Total Return	Return Cont.
Total	24.59	18.22	4.32
ABERCROMBIE & FITCH CO-CL A	1.2	52.9	0.66
AMC ENTERTAINMENT HLDS-CL A	1.81	39.12	0.66
ASBURY AUTOMOTIVE GROUP	0.23	8.88	0.14
BIG LOTS INC	0.23	-1.97	-0.03
BLOOMIN' BRANDS INC	1.97	14.11	0.27
BRINKER INTERNATIONAL INC	1.63	26.75	0.41
CHILDREN'S PLACE INC/THE	2.52	-0.36	0.02
DAVE & BUSTER'S ENTERTAINMEN	0.67	-5.96	-0.12
DSW INC-CLASS A	1.68	12.14	0.21
EW SCRIPPS CO/THE-A	1.03	-23.43	-0.29
MSG NETWORKS INC- A	1.63	31.81	0.42
OVERSTOCK.COM INC	1.4	-45.66	-0.74
PARTY CITY HOLDCO INC	1.71	28.11	0.43
PINNACLE ENTERTAINMENT INC	1.8	5.73	0.11
SALLY BEAUTY HOLDINGS INC	1.46	8.72	0.21
SEAWORLD ENTERTAINMENT INC	0.19	20.56	0.21
SHUTTERFLY INC	2.11	94.9	1.36
TROPICANA ENTERTAINMENT INC	1.32	30.41	0.4

Appendix

Firms by Sector - Consumer Staples & Energy

Consumer Staples	Avg Weight	Total Return	Return Cont.
Total	1.54	30	0.5
USANA HEALTH SCIENCES INC	1.54	30	0.5

Energy	Avg Weight	Total Return	Return Cont.
Total	3.25	-13.4	-0.34
ARCH COAL INC - A	2.01	22.98	0.44
MCDERMOTT INTL INC	0.23	24.26	0.38
ULTRA PETROLEUM CORP	1.02	-60.06	-1.15

Appendix

Firms by Sector - Healthcare

Health Care	Avg Weight	Total Return	Return Cont.
Total	8.89	8.28	0.89
ANALOGIC CORP	0.48	5.05	0.09
BROOKDALE SENIOR LIVING INC	1.6	-36.14	-0.73
CAMBREX CORP	0.75	2.41	0.05
CYTOMX THERAPEUTICS INC	0.46	-6.02	-0.13
INNOVIVA INC	1.63	17.75	0.28
LIFEPOINT HEALTH INC	1.84	13.11	0.23
TENET HEALTHCARE CORP	1.87	79.31	1.09
TIVITY HEALTH INC	0.25	0.43	0.01

Appendix

Firms by Sector - Industrials

Industrials	Avg Weight	Total Return	Return Cont.
Total	18.49	3.92	0.79
ADVANCED DISPOSAL SERVICES I	0.23	1.81	0.03
AIR TRANSPORT SERVICES GROUP	1.4	-12.68	-0.18
ATKORE INTERNATIONAL GROUP I	0.24	7.71	0.11
ATLAS AIR WORLDWIDE HOLDINGS	1.17	8.68	0.13
AXON ENTERPRISE INC	0.24	13.21	0.18
BRADY CORPORATION - CL A	1.91	-3.02	-0.06
CONTINENTAL BUILDING PRODUCT	0.96	-1.78	-0.02
COVANTA HOLDING CORP	0.23	7.32	0.12
HAWAIIAN HOLDINGS INC	2.01	2.93	0.07
HERC HOLDINGS INC	1.8	3.64	0.07
HERMAN MILLER INC	2.17	-8.38	-0.17
HUB GROUP INC-CL A	0.23	6.53	0.11
MARTEN TRANSPORT LTD	1.17	5.65	0.06
QUAD GRAPHICS INC	1.21	19.67	0.23
SAIA INC	1.85	12.01	0.21
STEELCASE INC-CL A	1.67	-4.03	-0.08

Appendix

Firms by Sector - Information Technology

Information Technology	Avg Weight	Total Return	Return Cont.
Total	14.3	12.26	1.63
ACACIA COMMUNICATIONS INC	0.55	3.38	0.04
CSG SYSTEMS INTL INC	1.52	-1.51	-0.02
DIODES INC	0.76	-0.73	-0.02
ELECTRONICS FOR IMAGING	0.87	-5.22	-0.07
EPLUS INC	0.7	-6.65	-0.08
INFINERA CORP	1.29	62.9	0.71
NETGEAR INC	1.19	10.18	0.17
OCLARO INC	1.28	19.24	0.23
PLANTRONICS INC	1.81	26.51	0.46
SYNAPTICS INC	1.46	9	0.13
TTEC HOLDINGS INC	1.72	-22.71	-0.46
VERIFONE SYSTEMS INC	0.3	50.33	0.83
WEB.COM GROUP INC	0.87	-23.33	-0.28

Appendix

Firms by Sector - Materials

Materials	Avg Weight	Total Return	Return Cont.
Total	7.48	25.12	1.44
BOISE CASCADE CO	1.12	5.57	0.07
CLEVELAND-CLIFFS INC	2.12	15.56	0.34
KAISER ALUMINUM CORP	1.51	1.95	0.04
STEPAN CO	0.59	-6.97	-0.07
VALHI INC	2.13	53.42	1.06

Appendix

Firms by Sector - Other

Real Estate	Avg Weight	Total Return	Return Cont.
Total	0.22	-4.85	-0.05
RMR GROUP INC/THE - A	0.22	-4.85	-0.05

Telecommunication Services	Avg Weight	Total Return	Return Cont.
Total	0.69	-13.2	-0.26
SHENANDOAH TELECOMMUN	0.69	-13.2	-0.26

Utilities	Avg Weight	Total Return	Return Cont.
Total	2.88	-6.52	-0.23
CHESAPEAKE UTILITIES CORP	1.2	-8.78	-0.13
OTTER TAIL CORP	1.68	-4.87	-0.1

Appendix

Sector Exposure - Financials

Financials	Avg Weight	Total Return	Return Cont.
Total	17.68	5.69	1.02
VANGUARD FINANCIALS ETF	17.68	5.69	1.02