Undergraduate Student Investment Management Fund

Fall 2017 Presentation

Fund Managers

Ernest Dela Cruz

Fund Analysts

Kevin Bergauer

Jeremy Liu

Joshua Harter

Thomas Henning

Brian Stewart

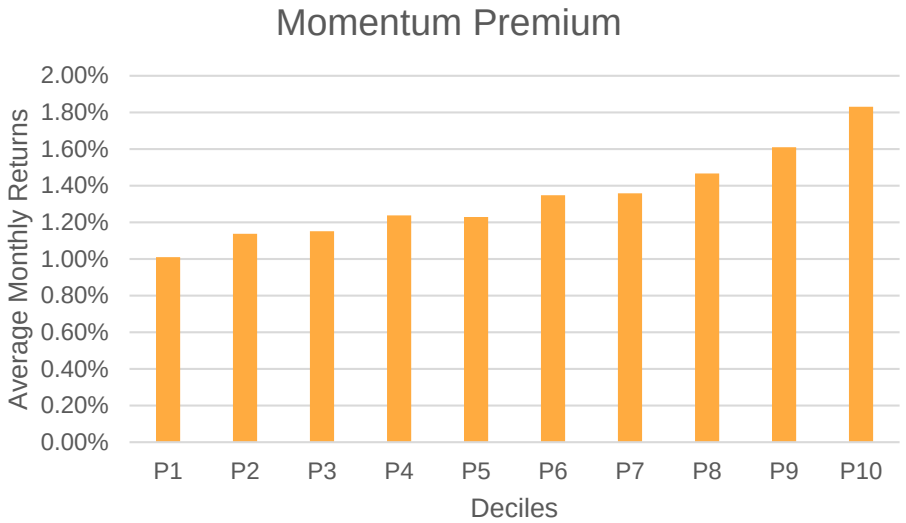
Kyle McCall

Gage Schrantz

Andrew Kudlinski

Background

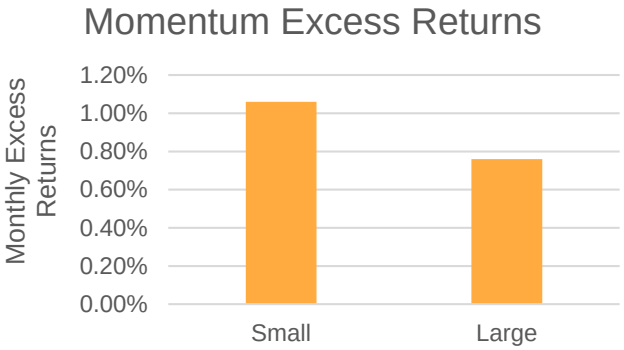
Momentum



1927 - 2014

Premia By Size

Momentum: High Returns – Low Returns
Profitability: Profitable - Unprofitable
Value: Value - Growth

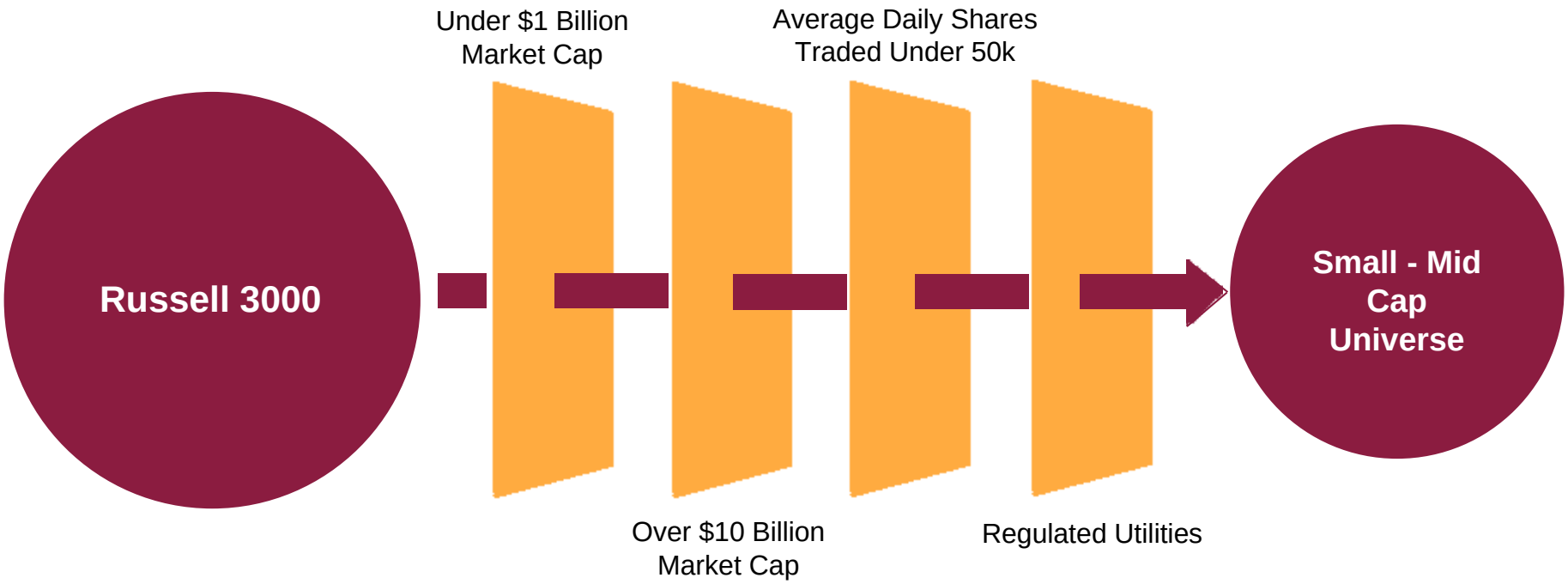


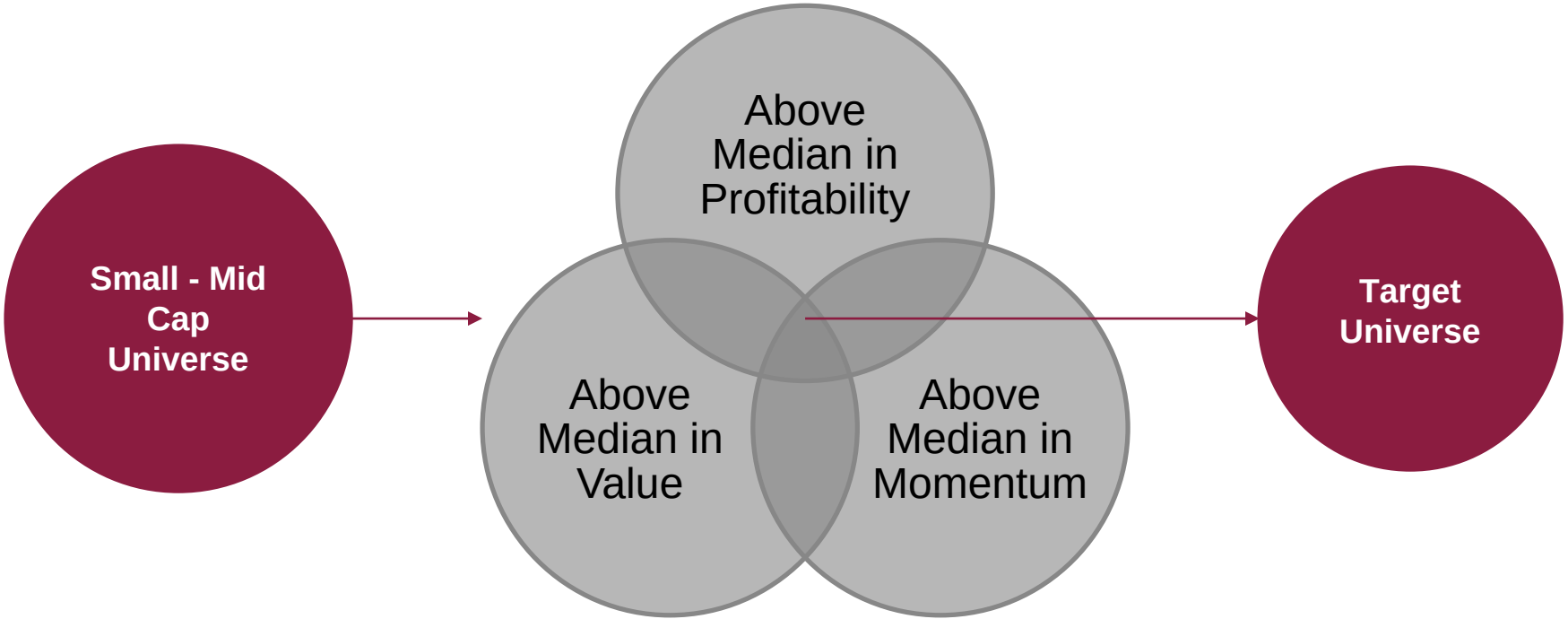
1965 - 1989

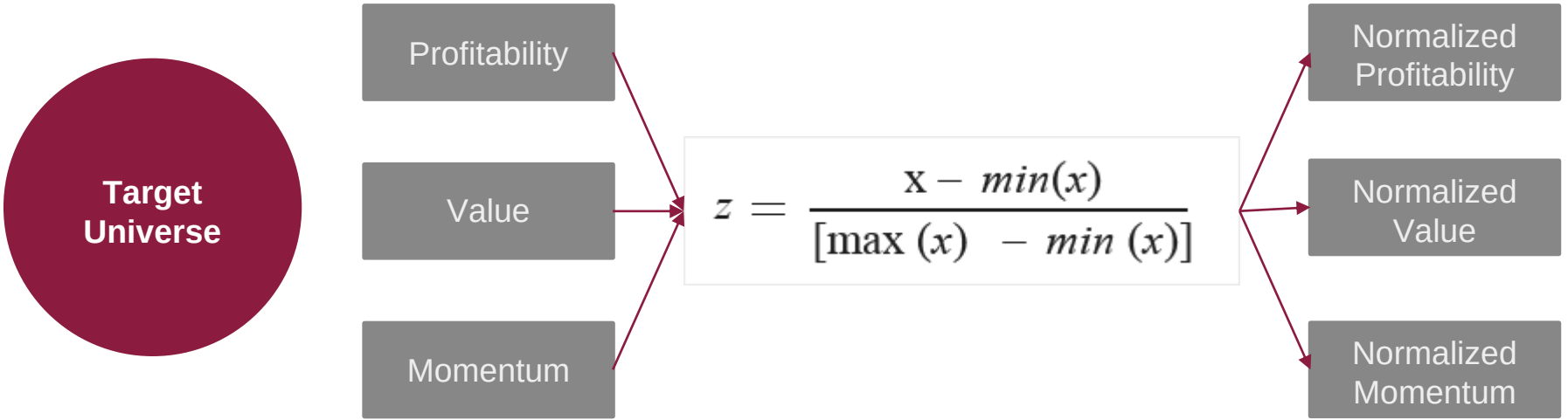
1963 - 2014

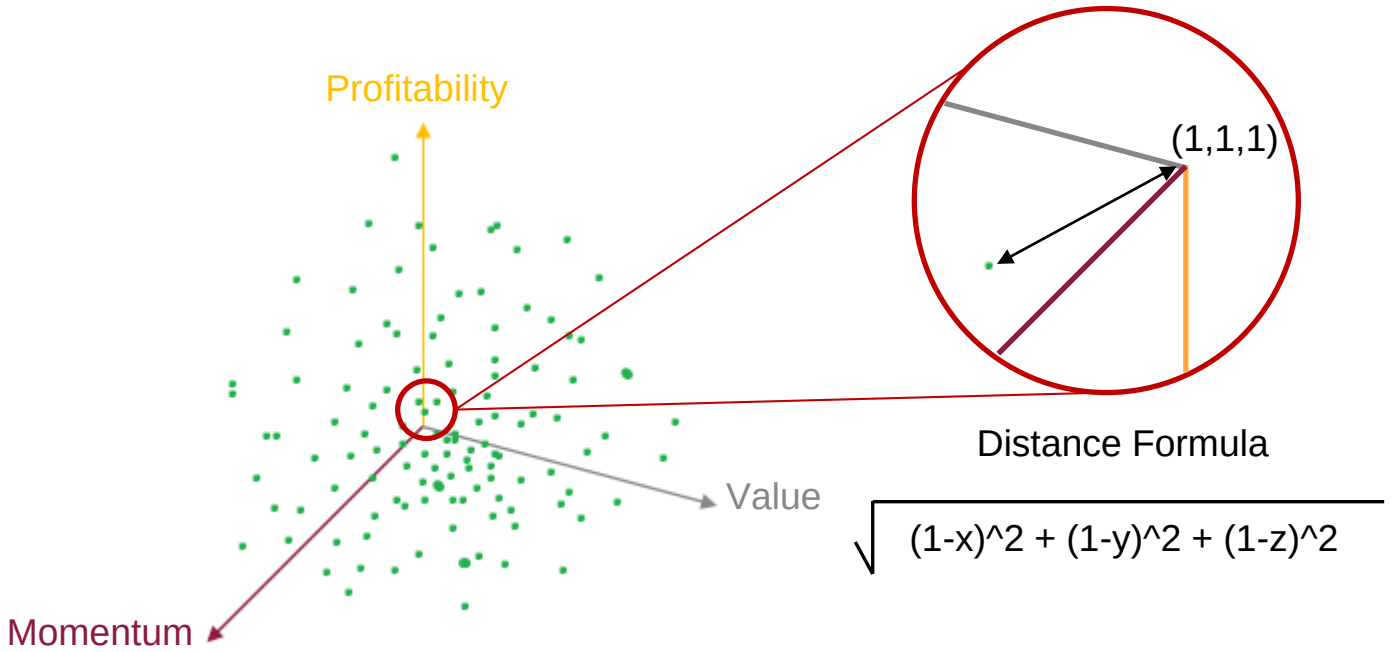
1926 - 2014

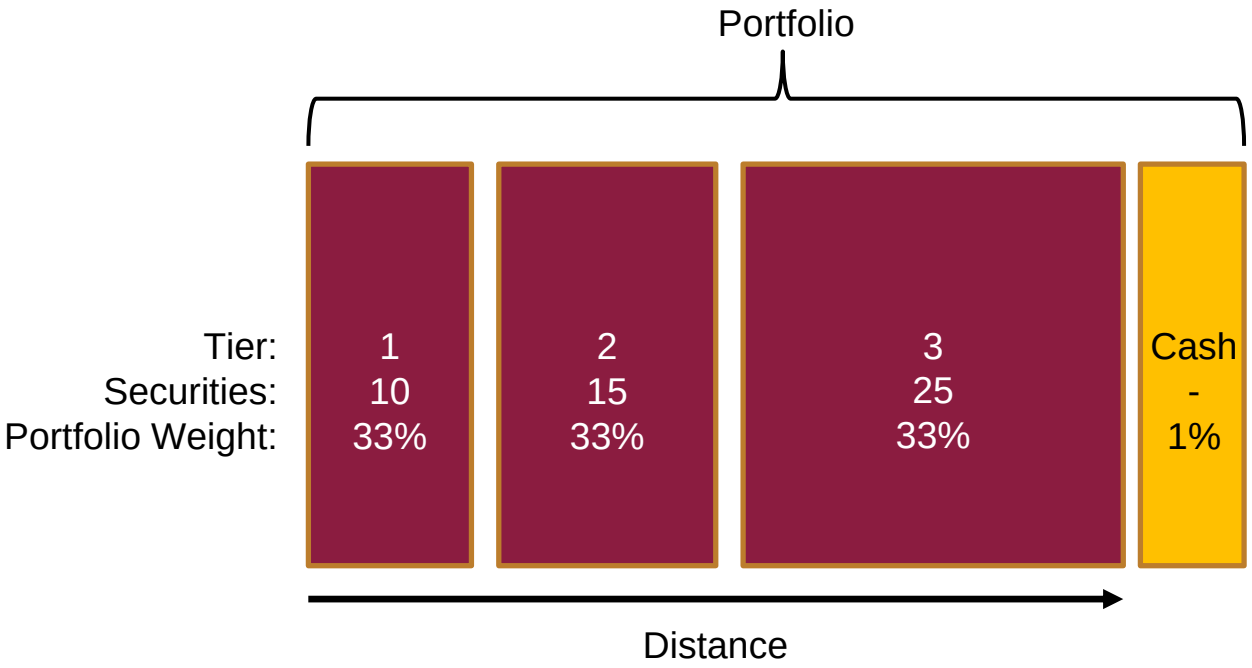
Construction


Under $1 Billion Market Cap
Average Daily Shares Traded Under 50k
Russell 3000
Small - Mid Cap Universe
Over $10 Billion Market Cap
Regulated Utilities


Small - Mid Cap Universe
Above Median in Profitability
Above Median in Value
Above Median in Momentum
Target Universe

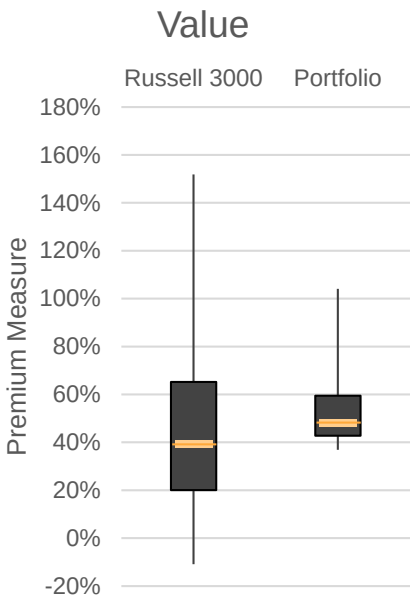

Target Universe
Profitability
Value
Momentum
$z = \frac{x - min(x)}{[\max(x) - min(x)]}$
Normalized Profitability
Normalized Value
Normalized Momentum

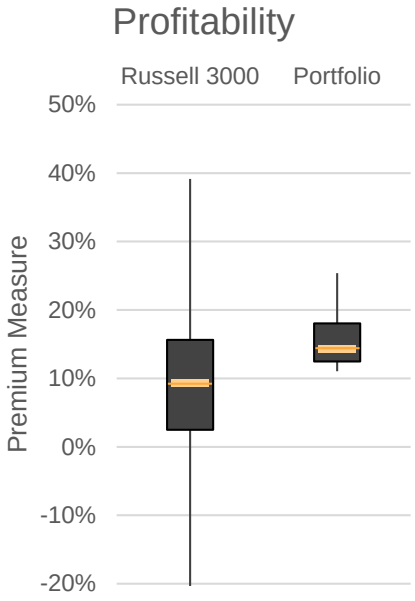

Profitability
Value
Momentum
(1,1,1)
Distance Formula
(1-x)^2 + (1-y)^2 + (1-z)^2

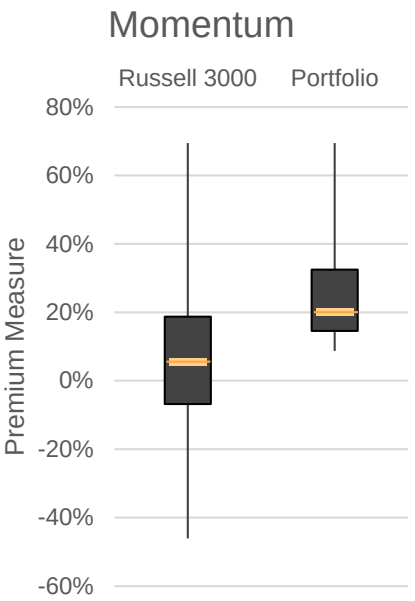

Portfolio
Tier:
Securities:
Portfolio Weight:
1
10
33%
2
15
33%
3
25
33%
Cash
-
1%
Distance

Implementation

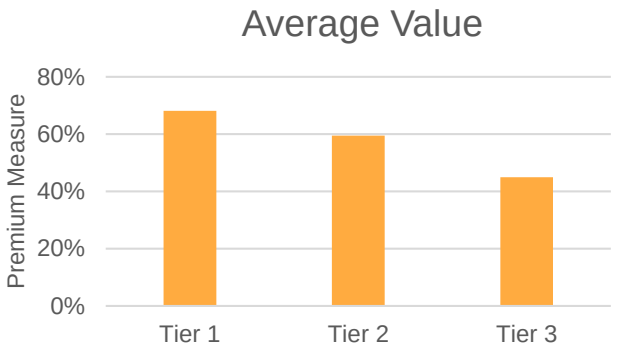
Factor Tilts

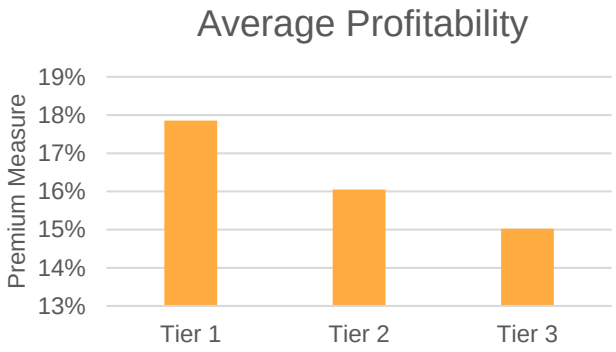


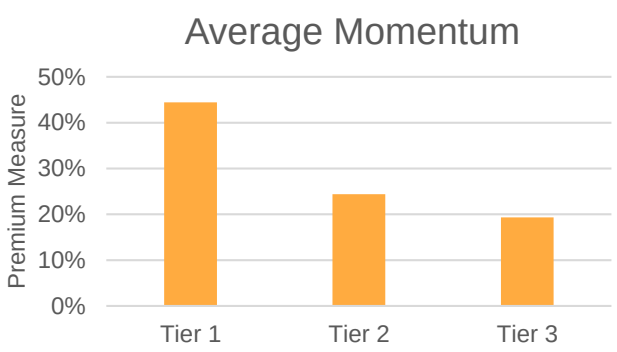




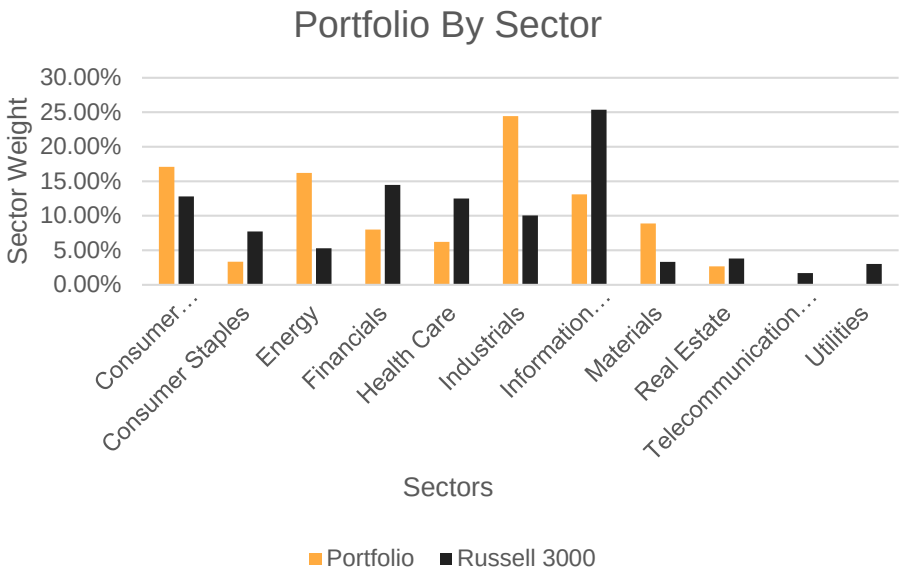
Average Exposure By Tier





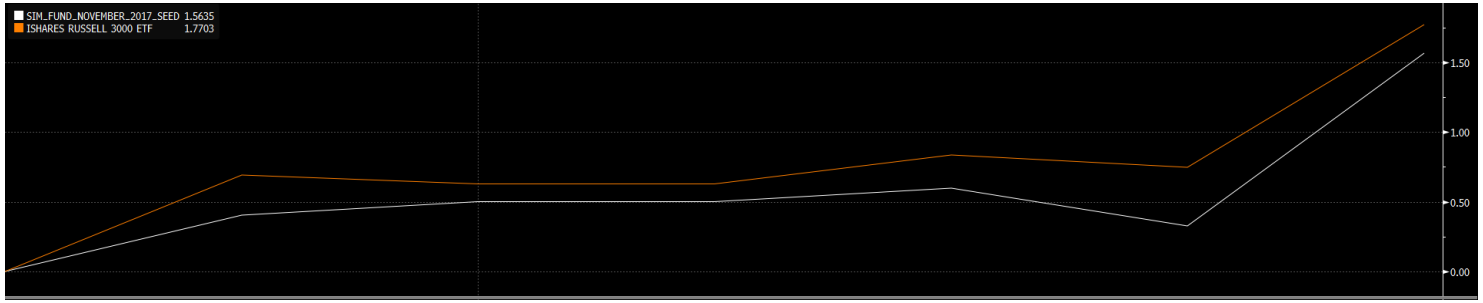


Portfolio By Sector



Returns

Our Portfolio: 1.56%
Russell 3000: 1.77%



Thank you. We will now welcome questions.

Appendix

Value

Calculation used for premium measure:

$$\frac{Book\ Equity}{Market\ Capitalization}$$

Paper used:

Fact, Fiction, and Value Investing
Asness, Frazzini, Israel and Moskowitz (2015)

Profitability

Calculation used for premium measure:

$$\frac{Cash\ Flow\ From\ Operations\ -Net\ Income + Operating\ Income}{Total\ Assets}$$

Paper used:

Accruals, Cash Flows, and Operating Profitability in the Cross Section of Stock Returns
Ball, Gerakos, Linnainmaa and Nikolaev (2015)

Momentum

Calculation used for premium measure: $\frac{Current\ Value}{Prior\ 6\ Months\ Value} - 1$

Paper used: *Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency*
Jegadeesh and Titman (1993)

Undergraduate
Student Investment Management Fund

2017 Fall Presentation
Friday, December 1st

Team Overview

Fund Manager

Paige Weisman

Fund Analysts

Michael Barger

Peter Hurtado

Chris Nuccio

Elena Pham

Drezden Plotkin

Caleb Skogen

Steven Urry

Jerry Zhang

Systematic Drivers of Expected Returns

Equities

Value
Value vs Growth Companies

Profitability
Profitable vs Less-Profitable Companies

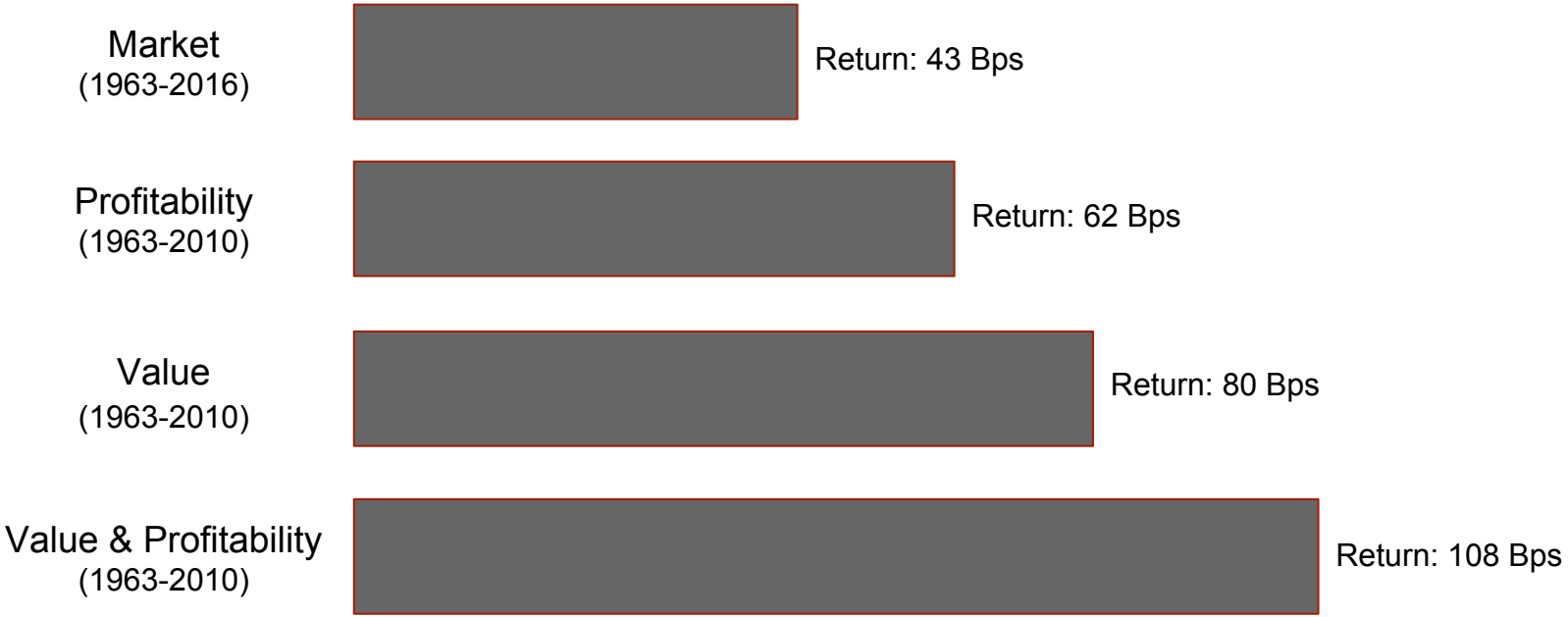
Momentum
Appreciating vs Non-Appreciating Companies

Volatility
Low Volatility vs High Volatility Companies

Size
Small vs Large Companies (by market capitalization)

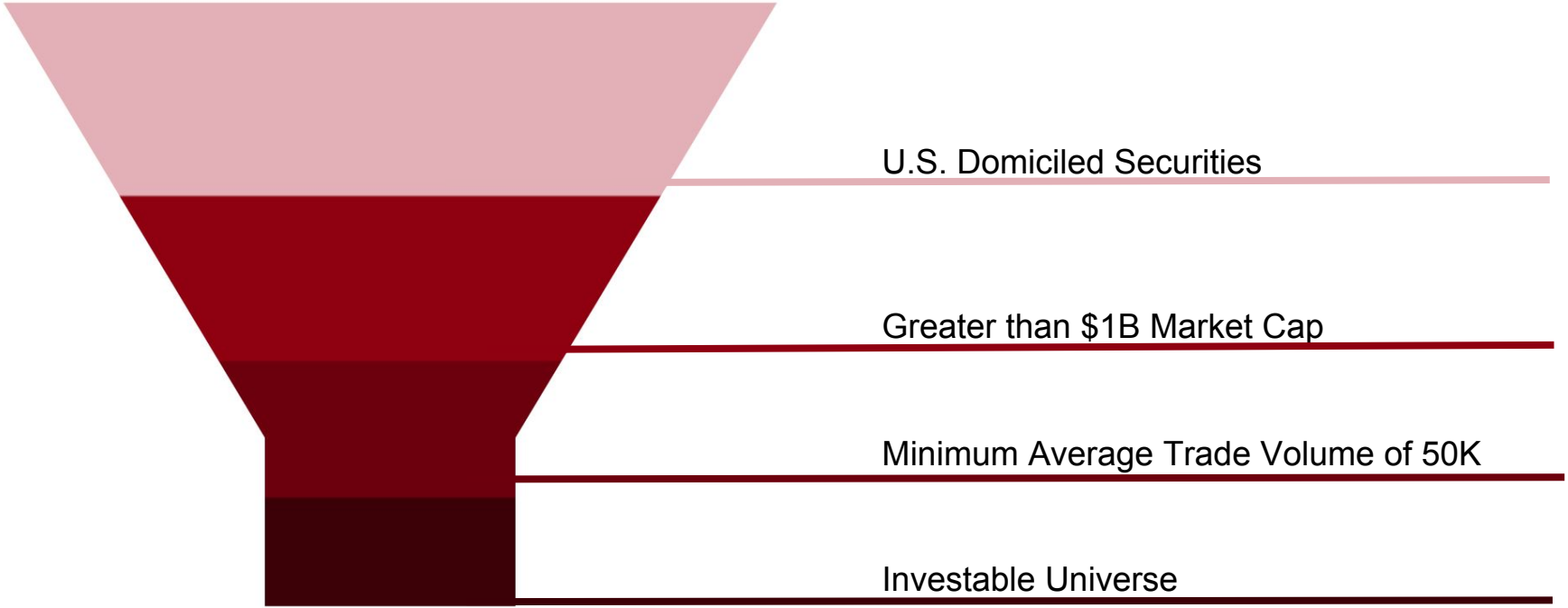
Investment
Low Investment vs High Investment Companies

Monthly Historical Returns

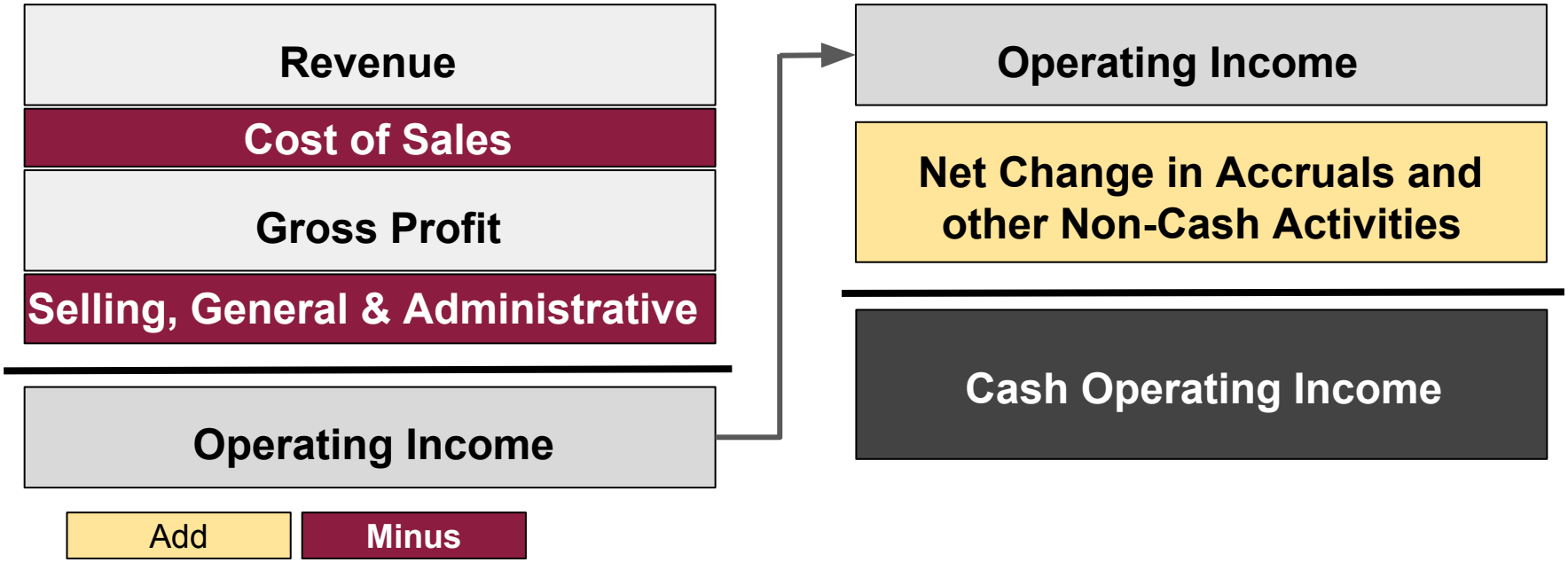


Implementation

Charter Constraints



Measuring Profitability



Monthly Returns Historical Profitability

Cash Operating Profitability
(1963-2014)

Return: 64 Bps

Operating Profitability
(1963-2014)

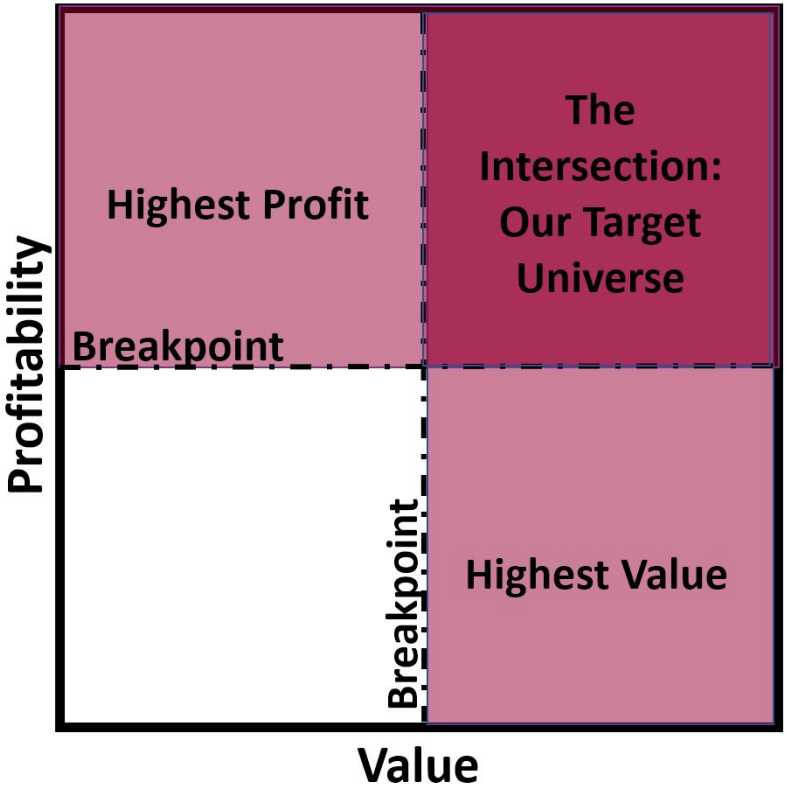
Return: 54 Bps

Composite Value Score

$$Value\ Score = \left(\frac{1}{3}\right)\left(\frac{Book\ Equity}{Market\ Cap}\right) + \left(\frac{1}{3}\right)\left(\frac{Earnings}{Price}\right) + \left(\frac{1}{3}\right)\left(\frac{Cash\ Flow}{Price}\right)$$

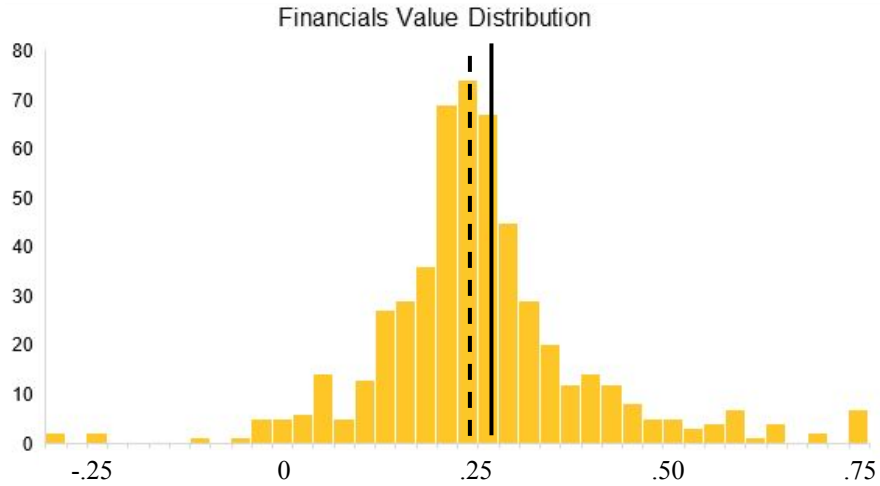
ASU W. P. Carey School of Business

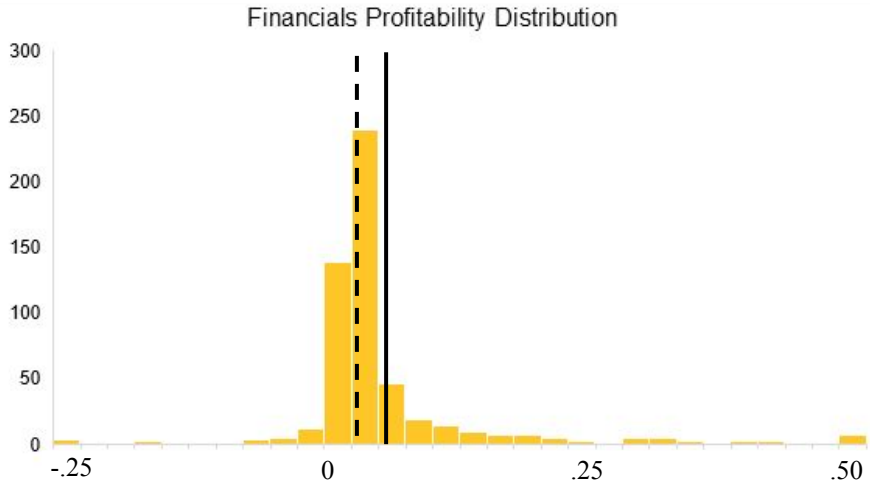
Security Selection Matrix



ASU W. P. Carey School of Business

Russell 3000 Financials Distributions





Mean

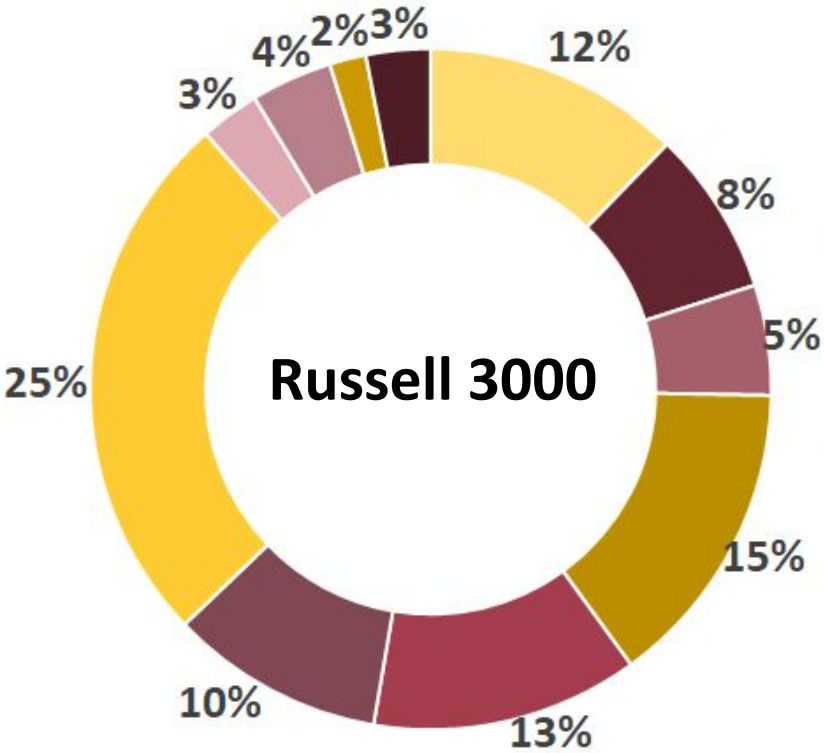
Median

ASU W. P. Carey School of Business

Portfolio Construction

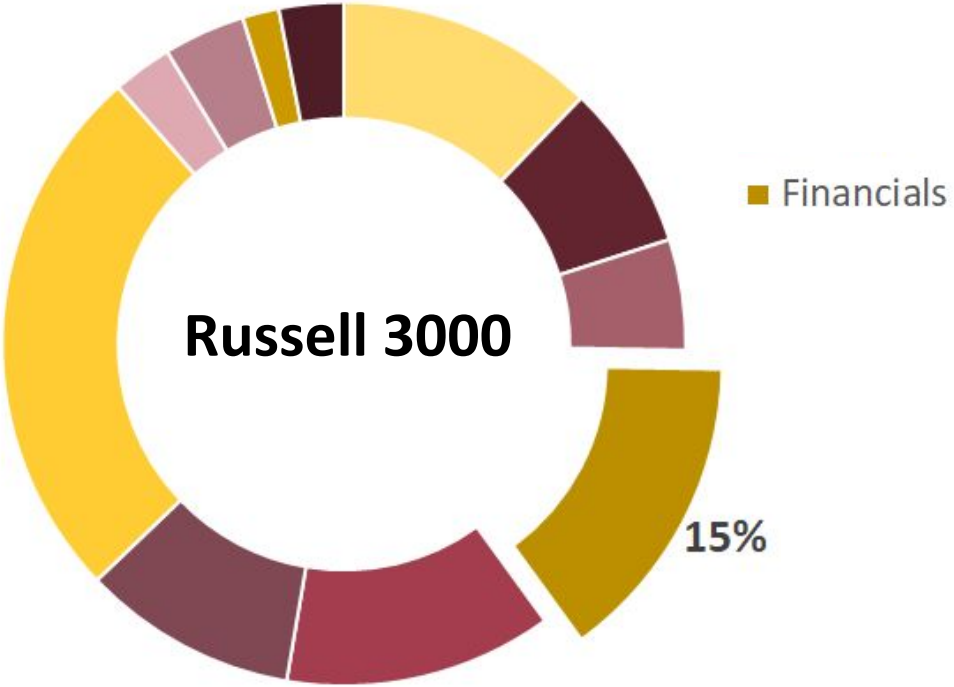
ASU Arizona State University

Sector Weighting

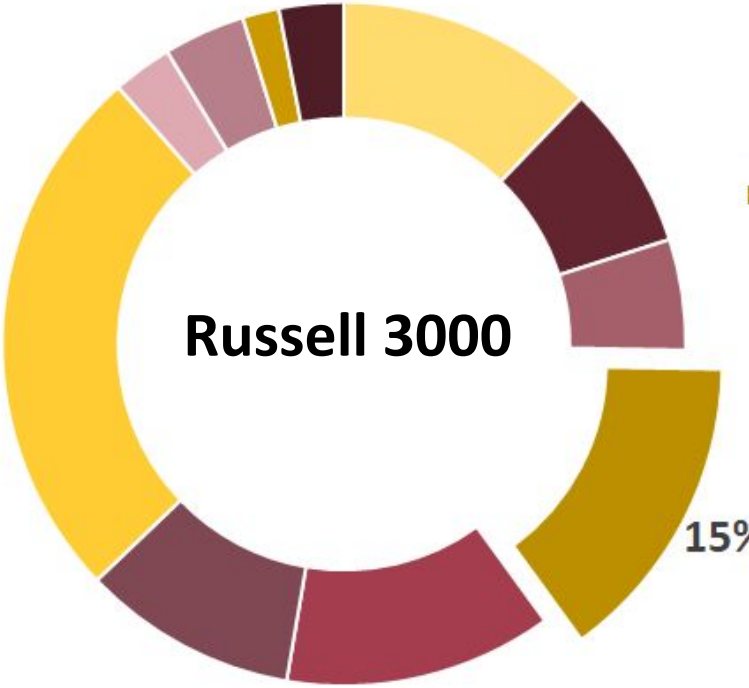


- Consumer Discretionary
- Consumer Staples
- Energy
- Financials
- Health Care
- Industrials
- Information Technology
- Materials
- Real Estate
- Telecomm Services
- Utilities

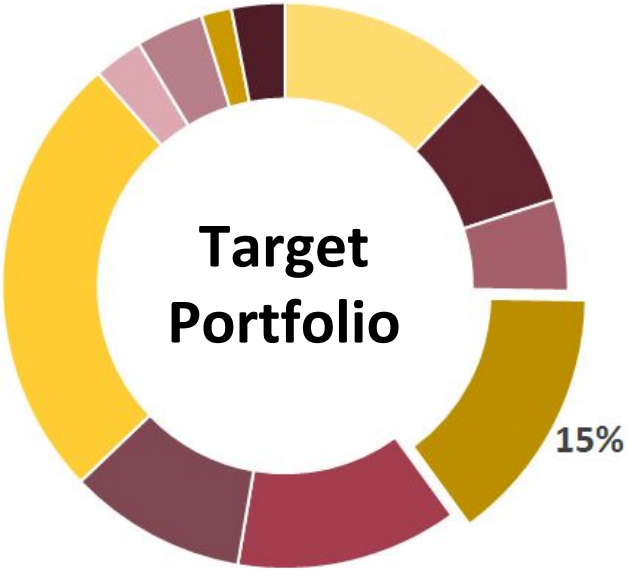
Sector Weighting



Sector Weighting



Financials



Security Selection Example: Financials

Security	Market Cap (B)	Profitability Measure	Value Measure	Value Rank
A	24.60	0.132	0.469	2
B	17.27	0.138	0.450	3
C	30.23	0.144	0.808	1
D	11.27	0.141	0.442	4

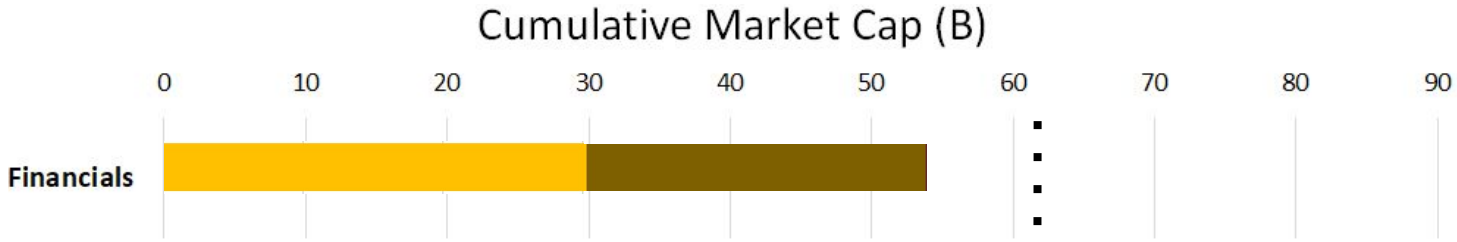
Security Selection Example: Financials

Security	Market Cap (B)	Profitability Measure	Value Measure	Value Rank
A	24.60	0.132	0.469	2
B	17.27	0.138	0.450	3
C	30.23	0.144	0.808	1
D	11.27	0.141	0.442	4

Security Selection Example: Financials

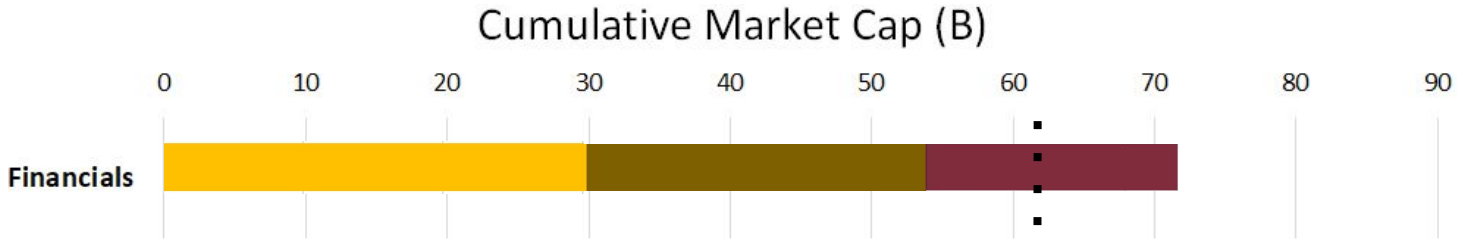
Security	Market Cap (B)	Profitability Measure	Value Measure	Value Rank
A	24.60	0.132	0.469	2
B	17.27	0.138	0.450	3
C	30.23	0.144	0.808	1
D	11.27	0.141	0.442	4

Security Selection Example: Financials



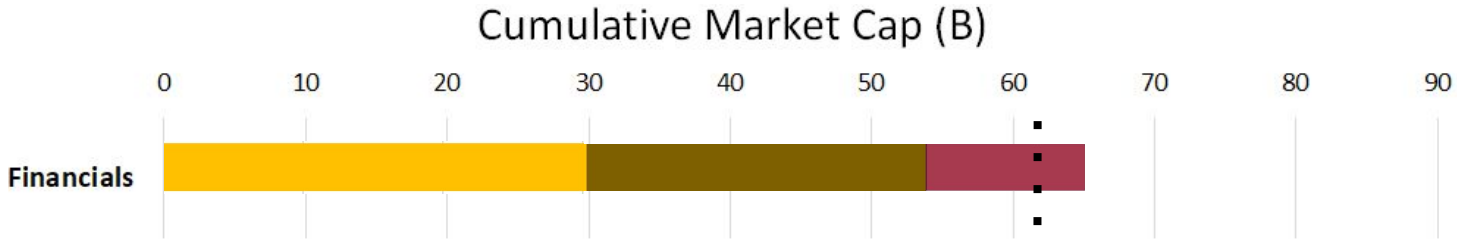
Security	Market Cap (B)	Profitability Measure	Value Measure	Value Rank
A	24.60	0.132	0.469	2
B	17.27	0.138	0.450	3
C	30.23	0.144	0.808	1
D	11.27	0.141	0.442	4

Security Selection Example: Financials



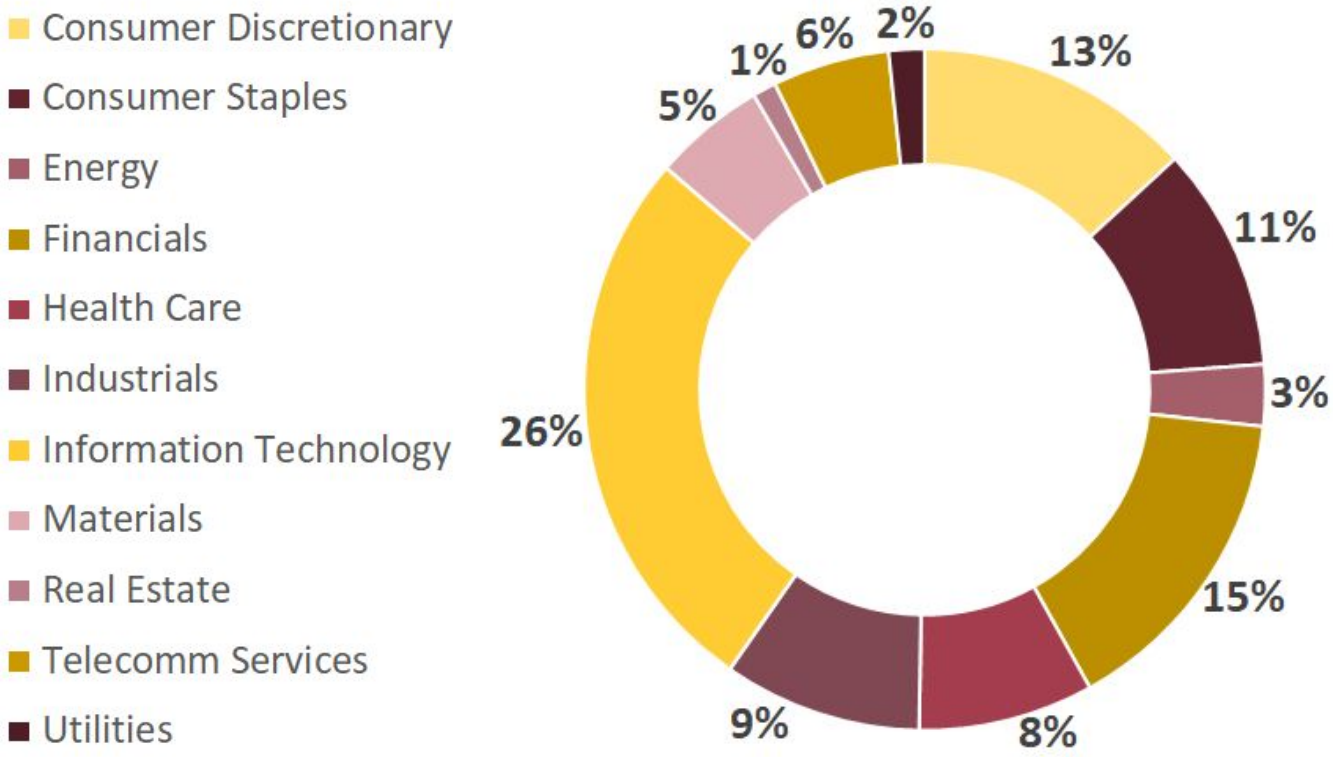
Security	Market Cap (B)	Profitability Measure	Value Measure	Value Rank
A	24.60	0.132	0.469	2
B	17.27	0.138	0.450	3
C	30.23	0.144	0.808	1
D	11.27	0.141	0.442	4

Security Selection Example: Financials



Security	Market Cap (B)	Profitability Measure	Value Measure	Value Rank
A	24.60	0.132	0.469	2
B	17.27	0.138	0.450	3
C	30.23	0.144	0.808	1
D	11.27	0.141	0.442	4

Portfolio Characteristics



54 Securities

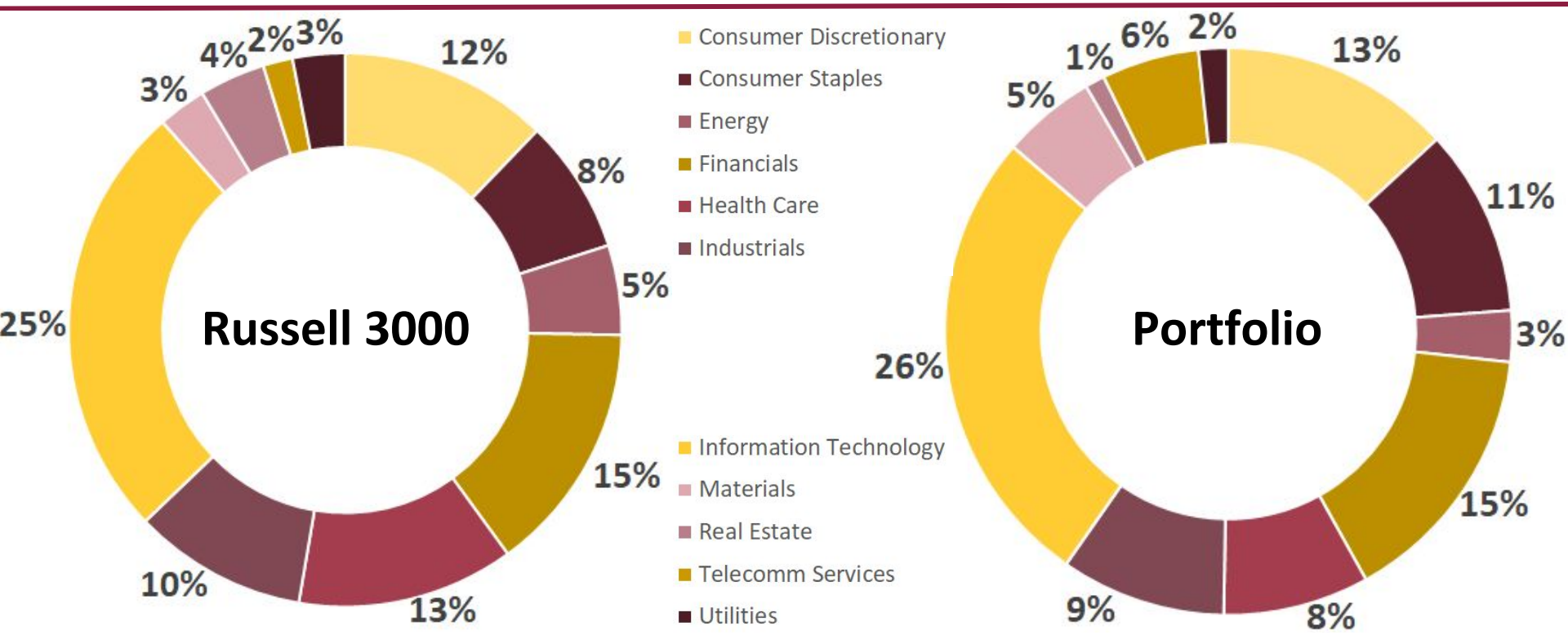
$424B Market Cap

0.99% Cash

0.5% Floor

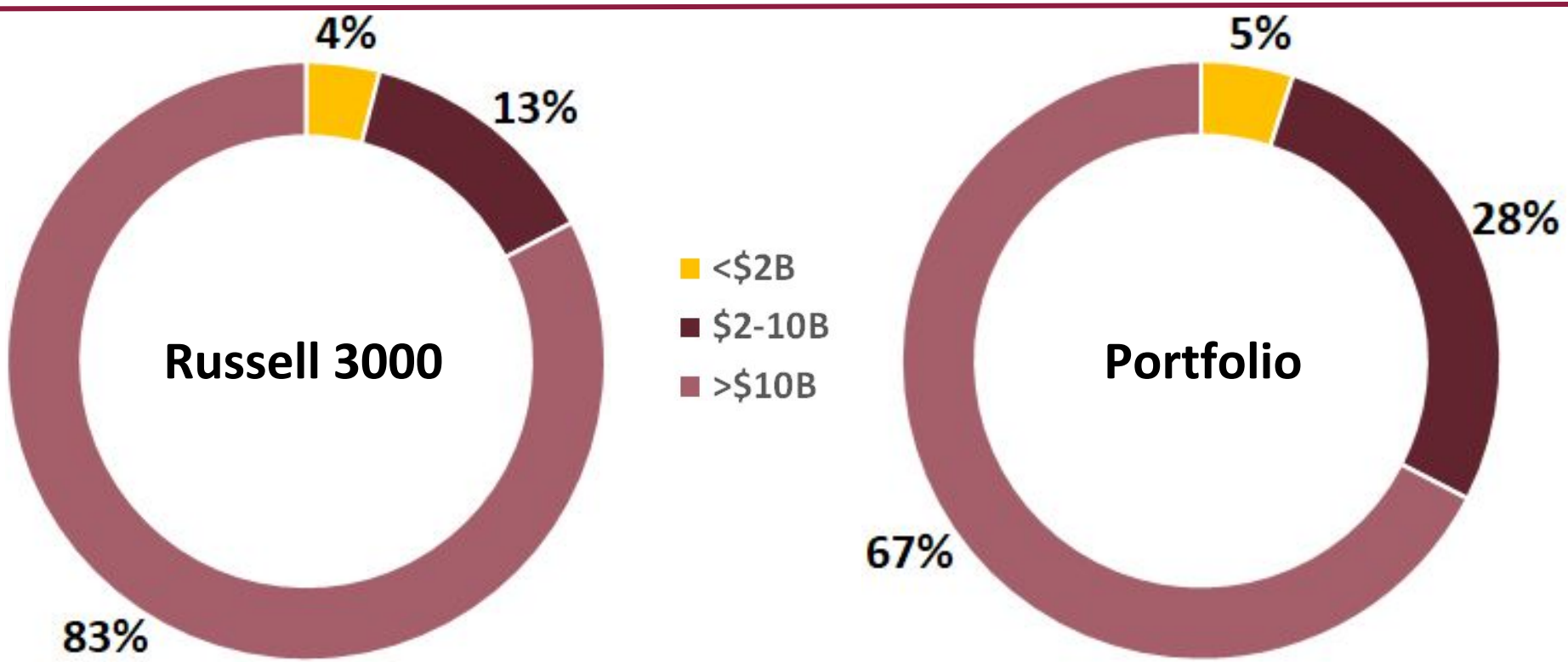
5.0% Ceiling

Sector Weight Comparison



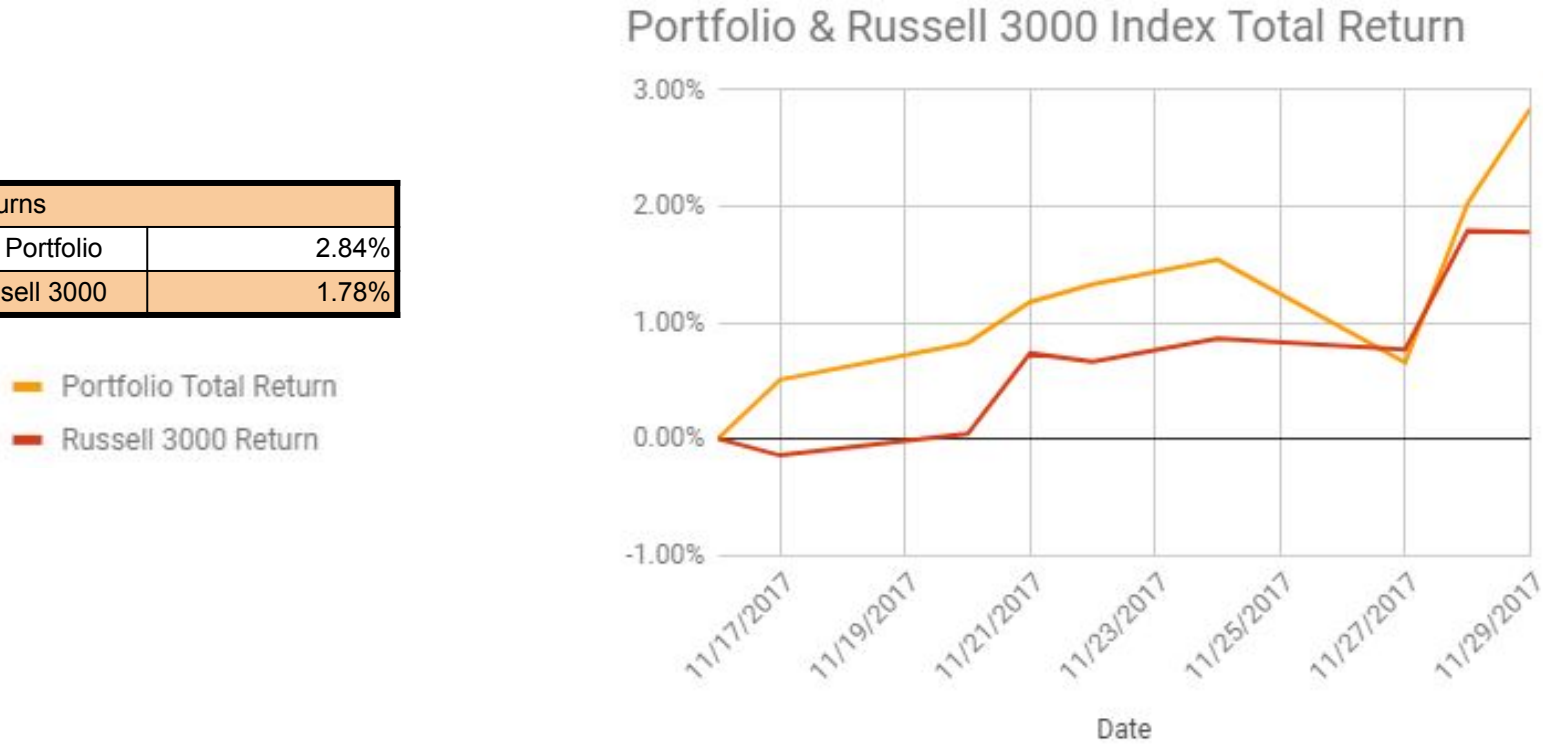
ASU W. P. Carey School of Business

Market Capitalization Comparison



Performance at Market Close 11/29/2017

Returns	
Our Portfolio	2.84%
Russell 3000	1.78%



Thank you, we now welcome questions!

APPENDIX

Alaska Air Group Inc.

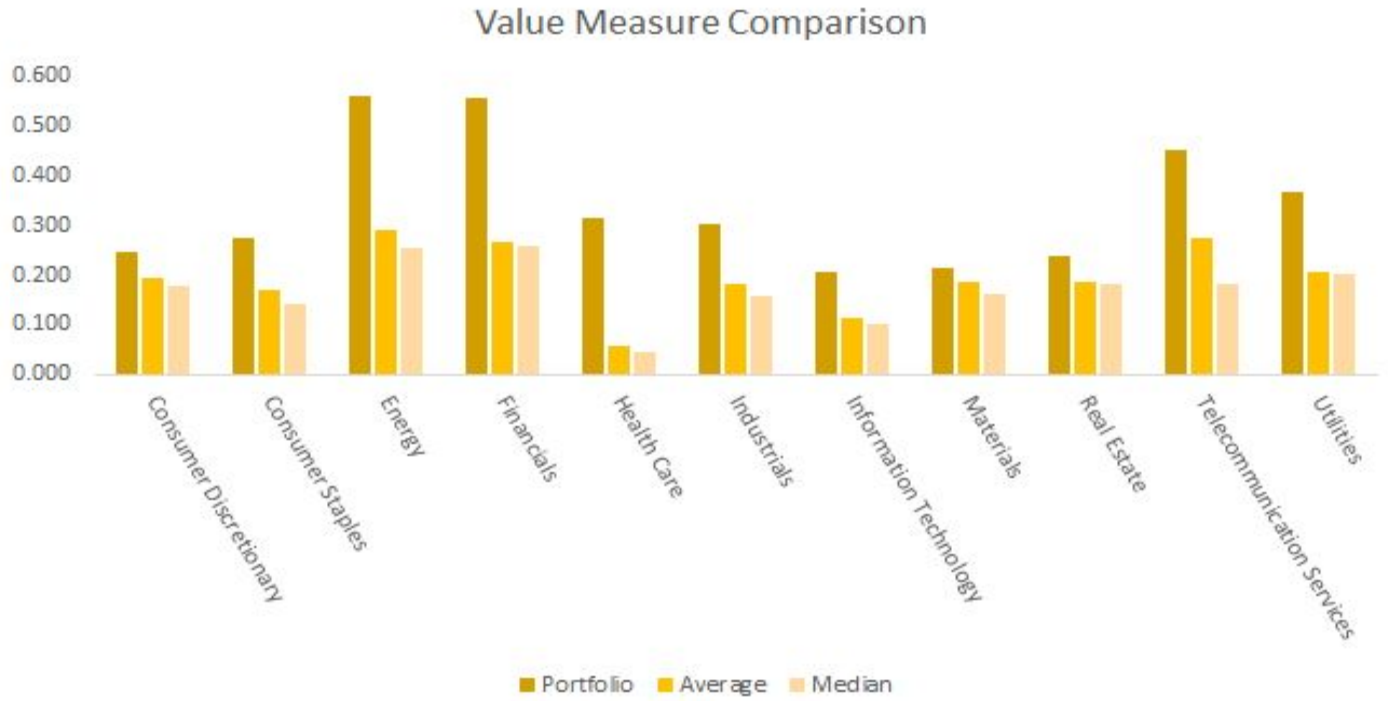
ALK Portfolio Weight	
Seeding Weight	1.70%
Portfolio Weight	1.72%

Returns	
ALK	3.96%
Our Portfolio	2.84%
Russell 3000	1.78%

Break Points

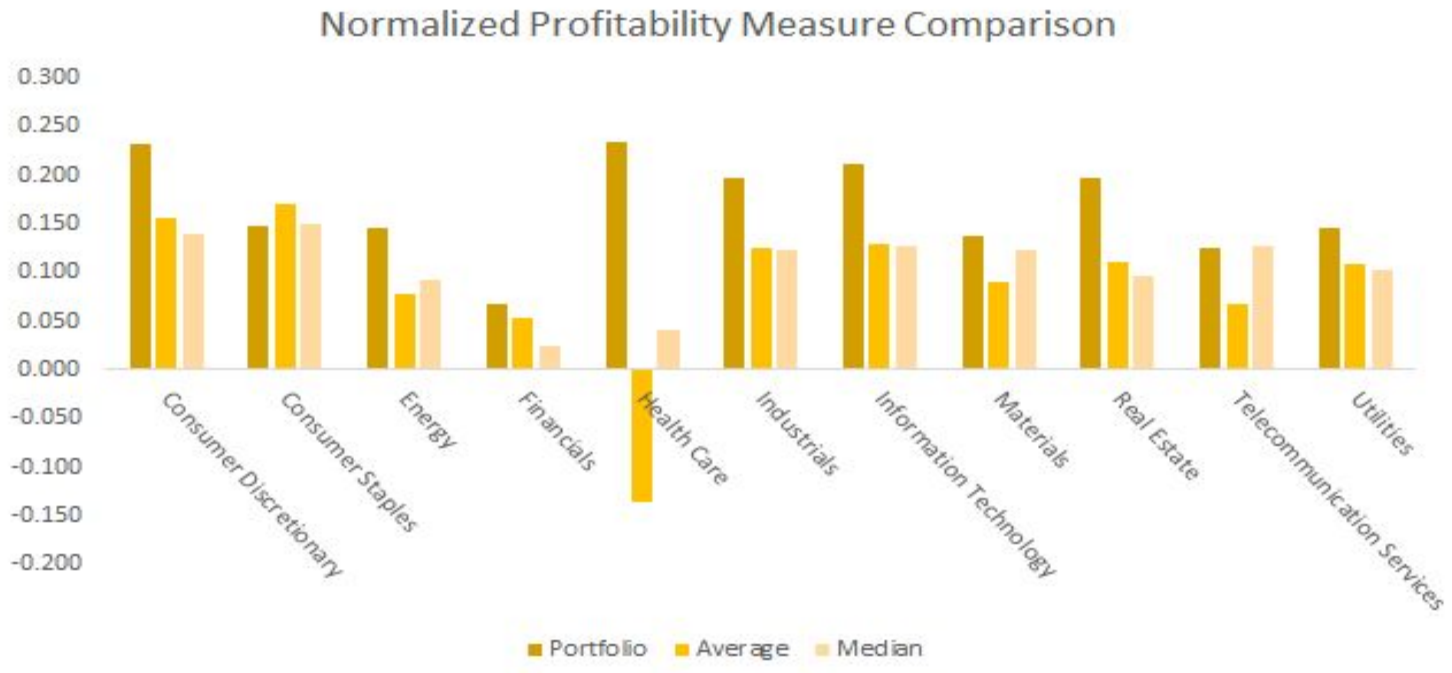
	Profitability Measure			Value Measure		
Sector	Portfolio	Average	Median	Portfolio	Average	Median
Consumer Discretionary	0.231	0.156	0.139	0.244	0.194	0.177
Consumer Staples	0.147	0.171	0.150	0.276	0.168	0.141
Energy	0.146	0.079	0.092	0.560	0.291	0.255
Financials	0.068	0.054	0.024	0.554	0.265	0.259
Health Care	0.234	-0.135	0.040	0.315	0.058	0.047
Industrials	0.196	0.125	0.124	0.304	0.183	0.159
Information Technology	0.212	0.128	0.127	0.205	0.113	0.101
Materials	0.138	0.091	0.124	0.215	0.186	0.160
Real Estate	0.196	0.110	0.096	0.237	0.187	0.181
Telecommunication Services	0.125	0.068	0.127	0.450	0.273	0.181
Utilities	0.147	0.108	0.102	0.366	0.204	0.200

Distributions - Breakpoint & Sector Averages



ASU W. P. Carey School of Business

Distributions - Breakpoint & Sector Averages



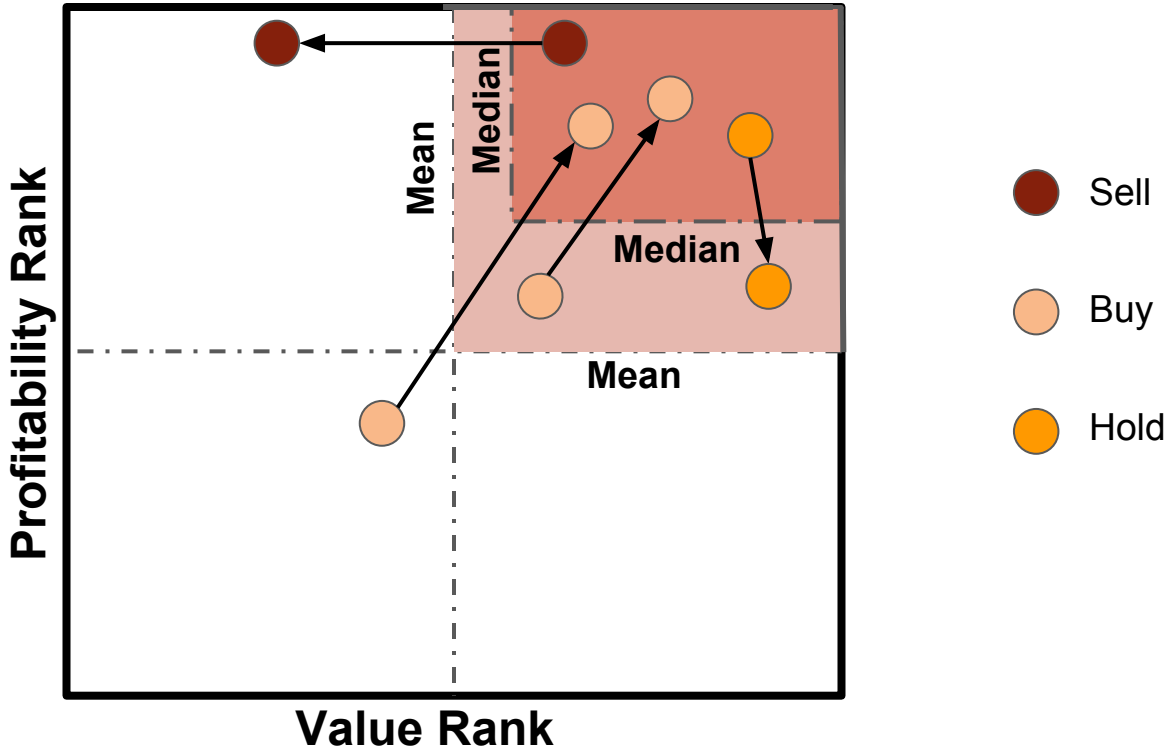
ASU W. P. Carey School of Business

Value Sharpe Ratios (1951-2014)

	B/M	E/P	CF/P	D/P	-5-year return	Composite
1951-1960	0.28	1.16	0.82	0.08	-0.83	0.51
1961-1970	0.78	1.02	0.86	0.34	0.77	0.85
1971-1980	0.51	0.33	0.54	-0.11	0.37	0.35
1981-1990	0.44	0.29	0.26	0.48	0.04	0.37
1991-2000	0.01	0.39	0.03	-0.15	0.74	0.20
2001-2014	0.28	0.39	0.45	0.30	0.29	0.45

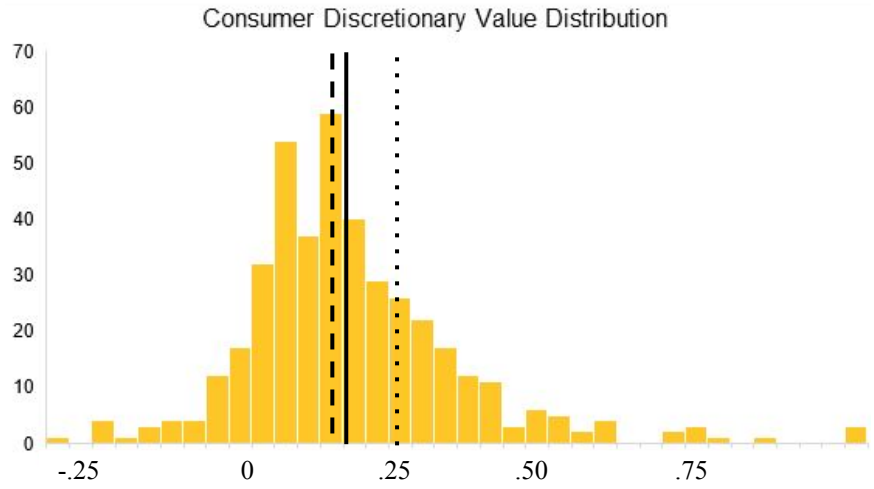
Highest Lowest

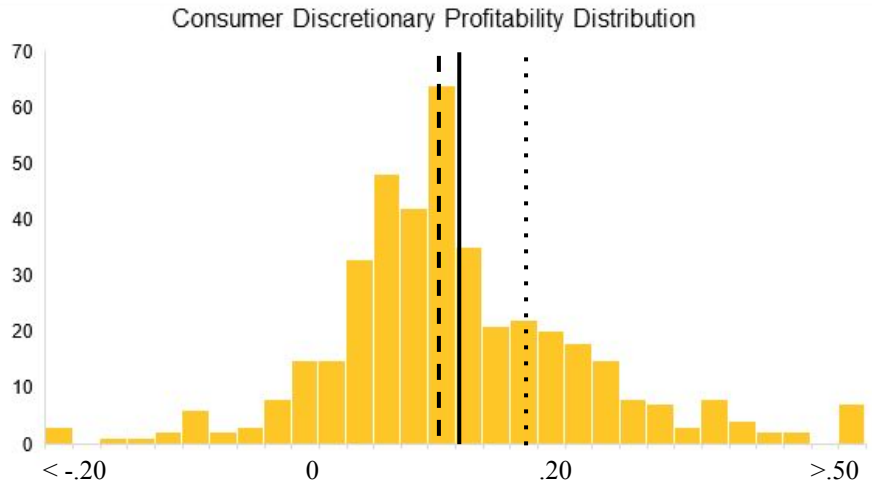
Rebalancing



ASU W. P. Carey School of Business

R3000 Consumer Discretionary Distributions



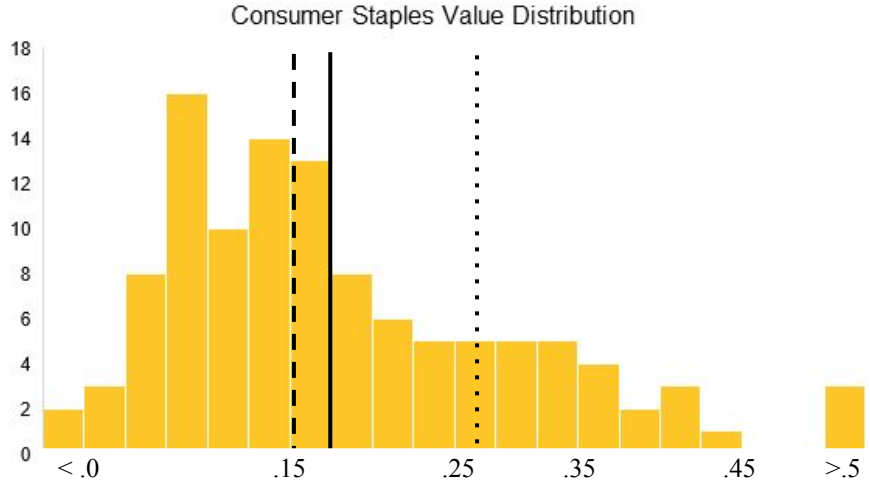


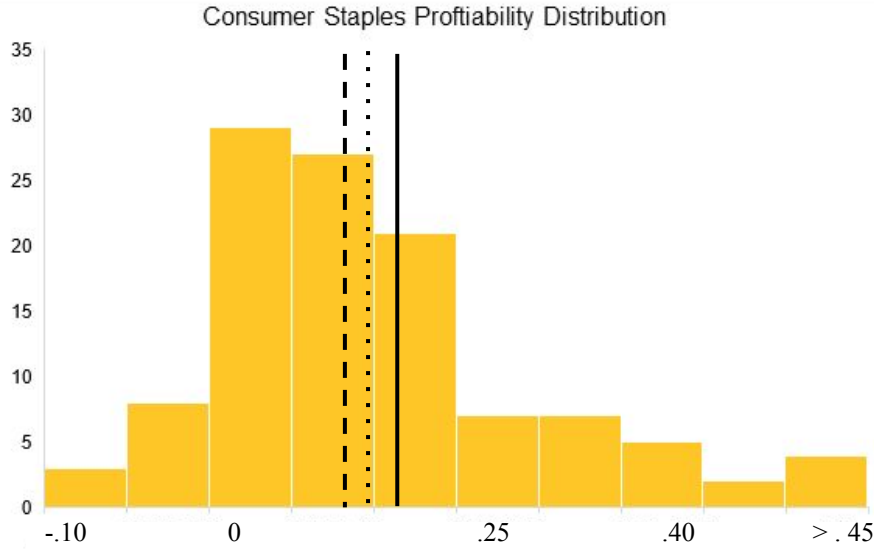
Mean

Median

Factor Captured
(Portfolio Weighting)

R3000 Consumer Staples Distributions





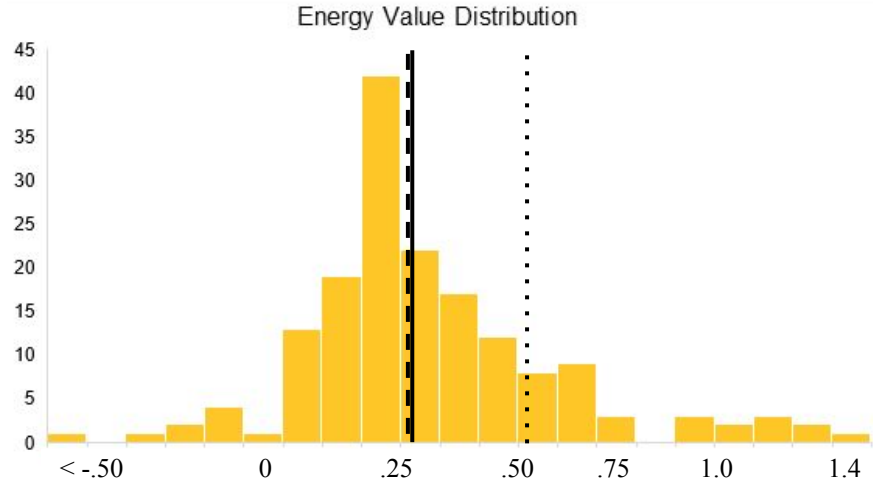
Mean

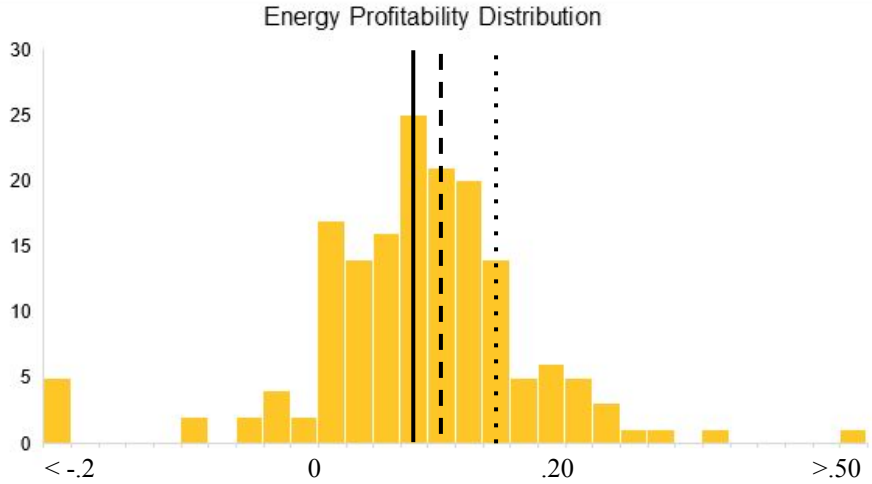
Median

Factor Captured
(Portfolio Weighting)

ASU W. P. Carey School of Business

R3000 Energy Distributions





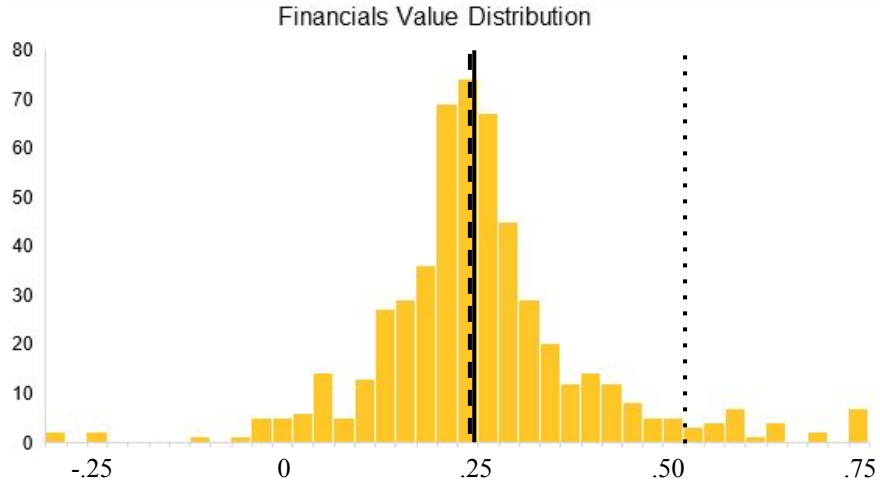
Mean

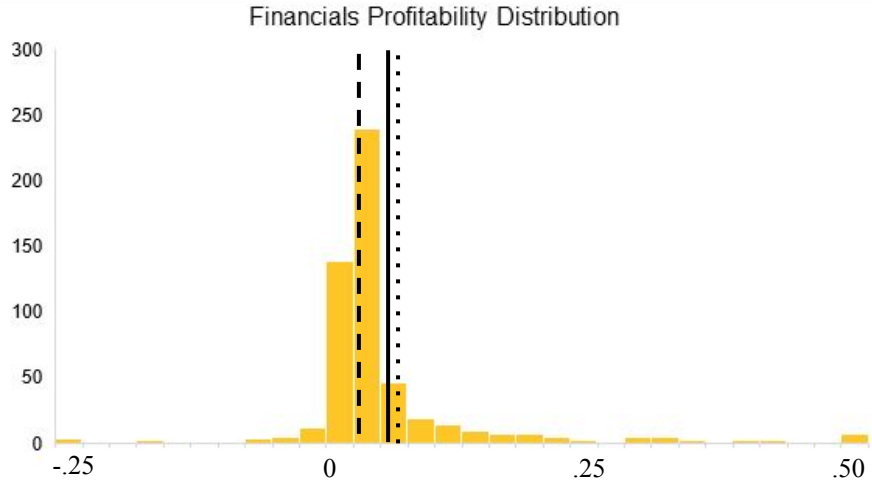
Median

Factor Captured
(Portfolio Weighting)

ASU W. P. Carey School of Business

R3000 Financials Distributions



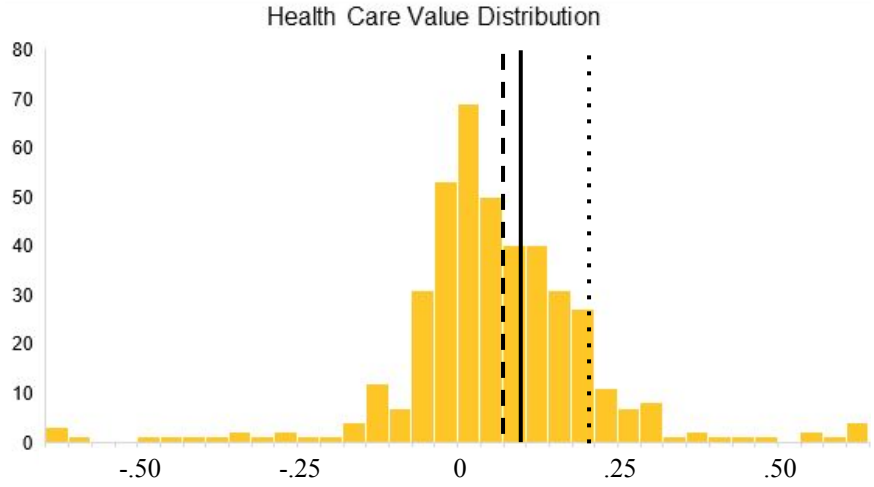


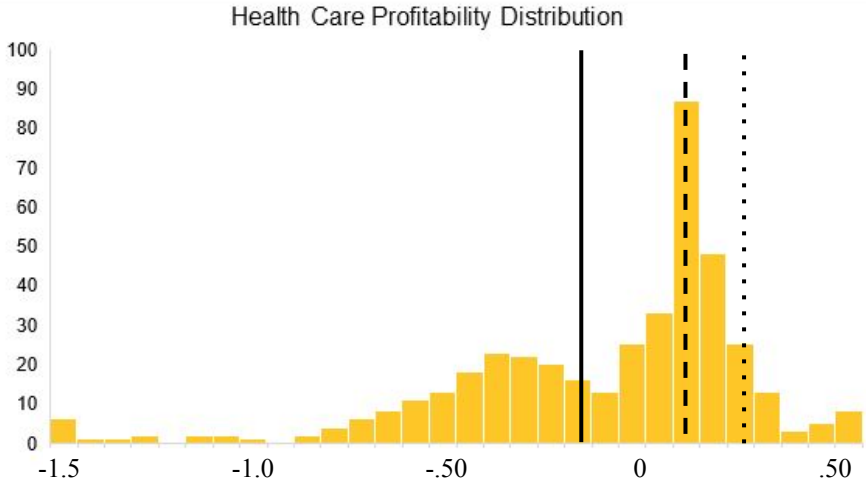
Mean

Median

Factor Captured
(Portfolio Weighting)

R3000 Health Care Distributions



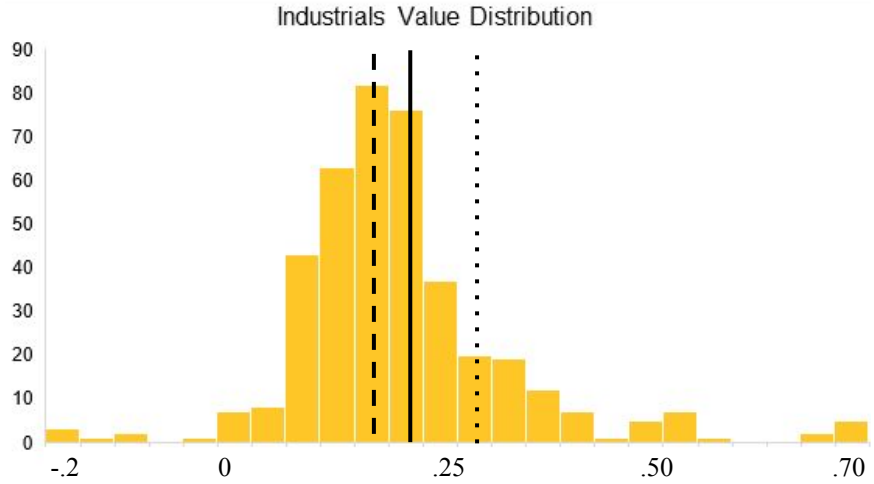


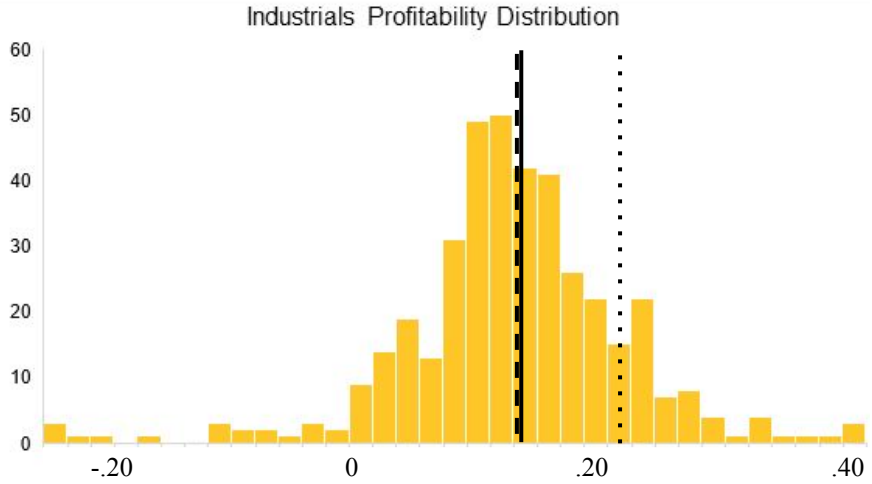
Mean

Median

Factor Captured
(Portfolio Weighting)

R3000 Industrials Distributions





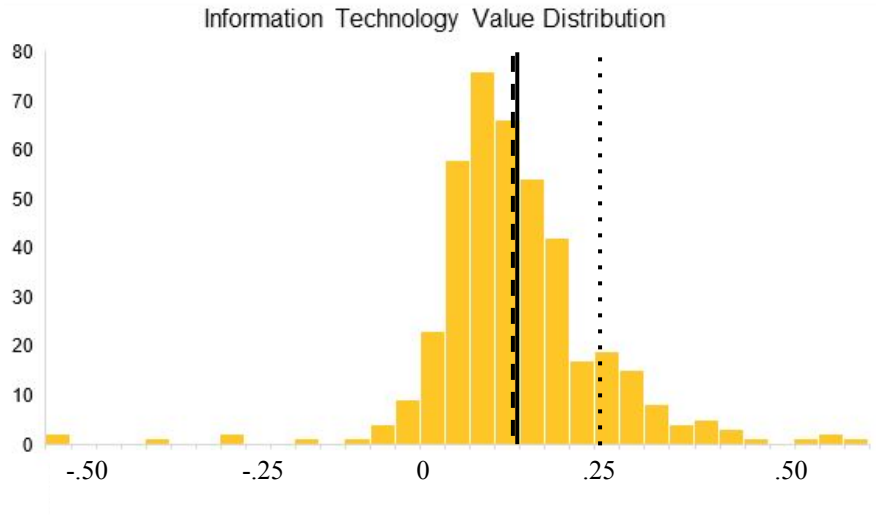
Mean

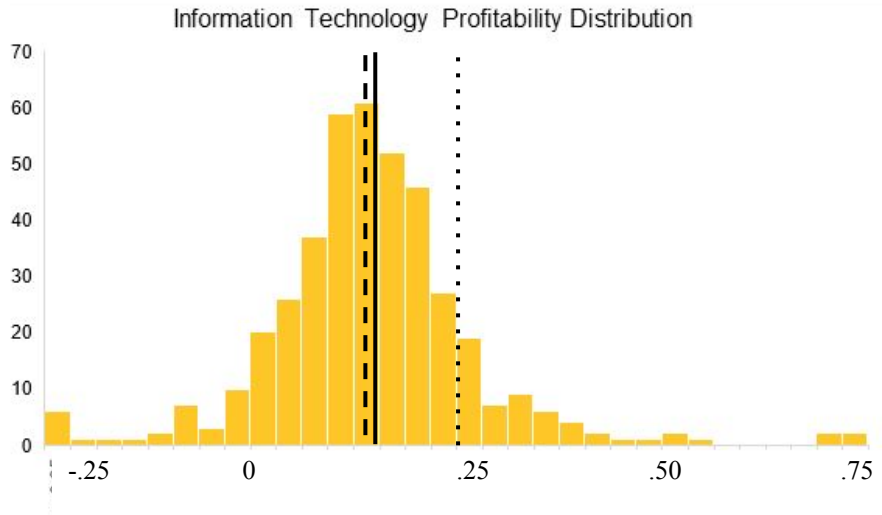
Median

Factor Captured
(Portfolio Weighting)

ASU W. P. Carey School of Business

R3000 Information Technology Distributions





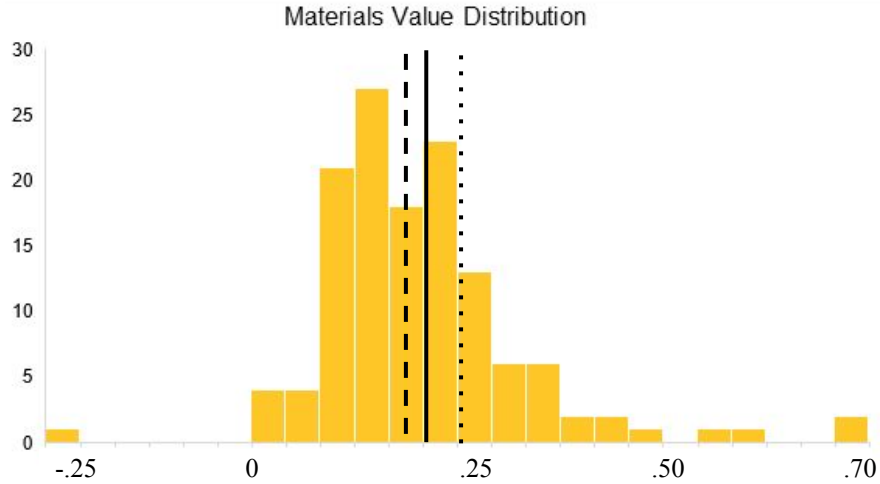
Mean

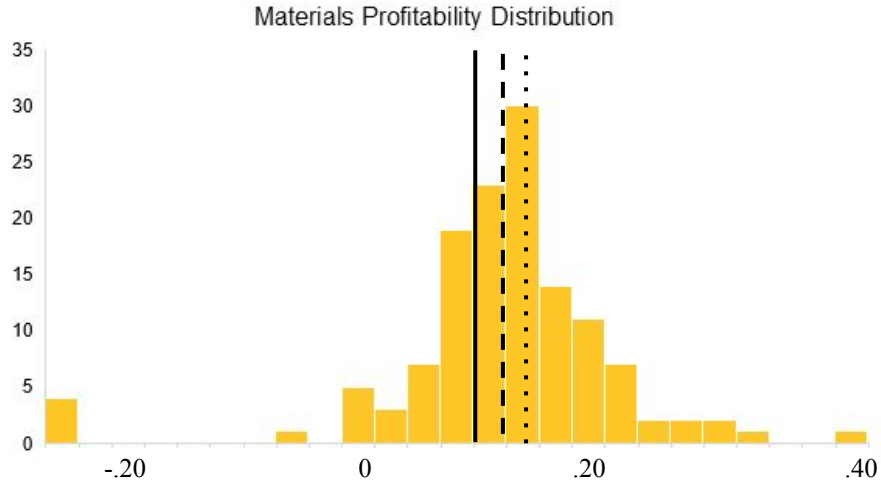
Median

Factor Captured
(Portfolio Weighting)

ASU W. P. Carey School of Business

R3000 Materials Distributions





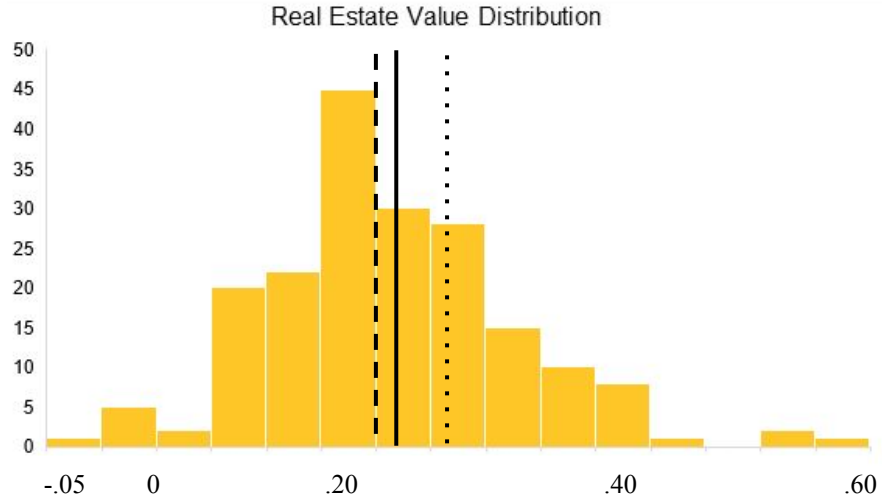
Mean

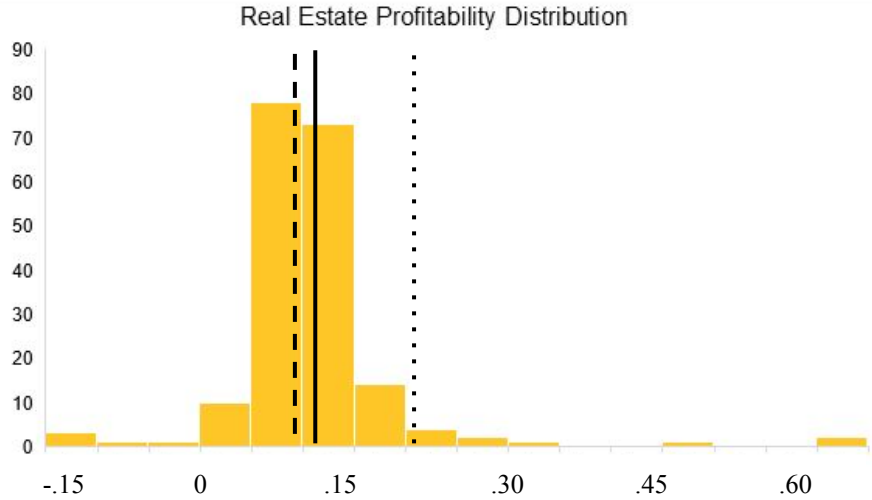
Median

Factor Captured
(Portfolio Weighting)

ASU W. P. Carey School of Business

R3000 Real Estate Distributions



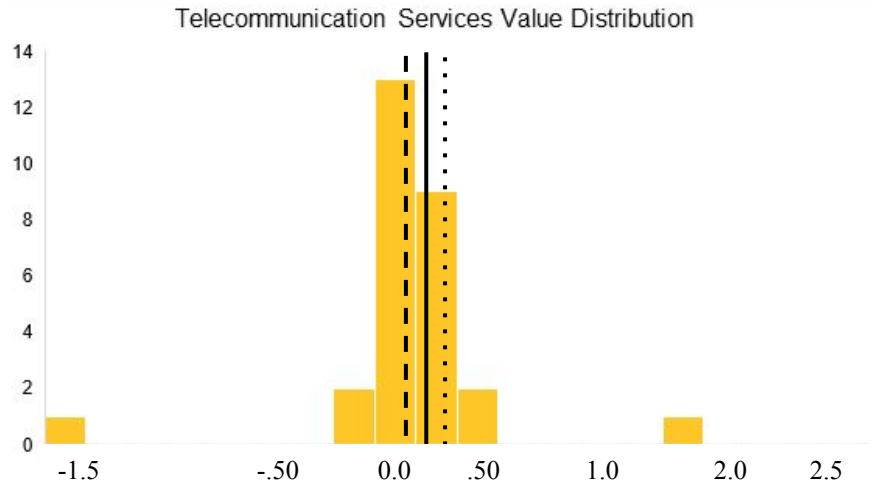


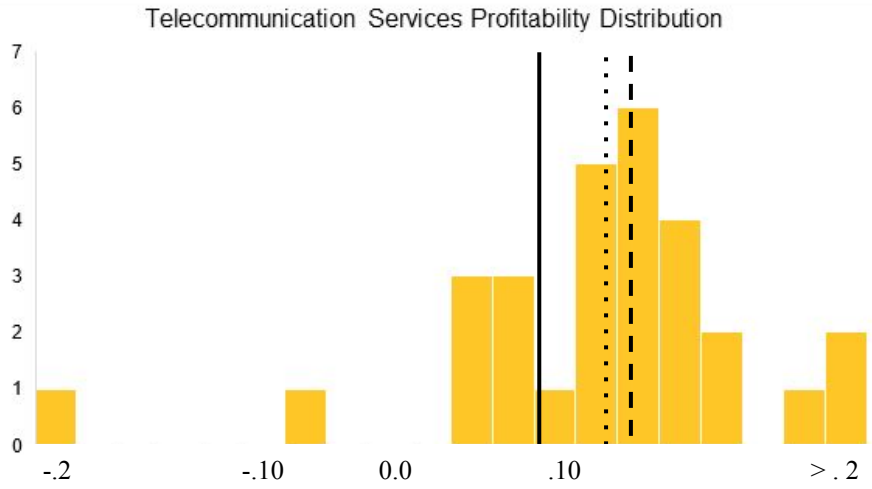
Mean

Median

Factor Captured
(Portfolio Weighting)

R3000 Telecommunication Distributions



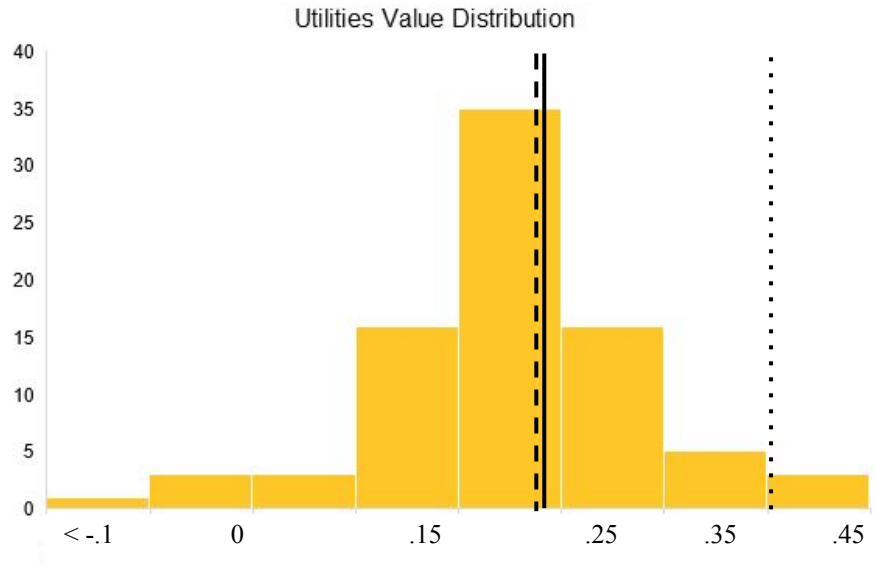


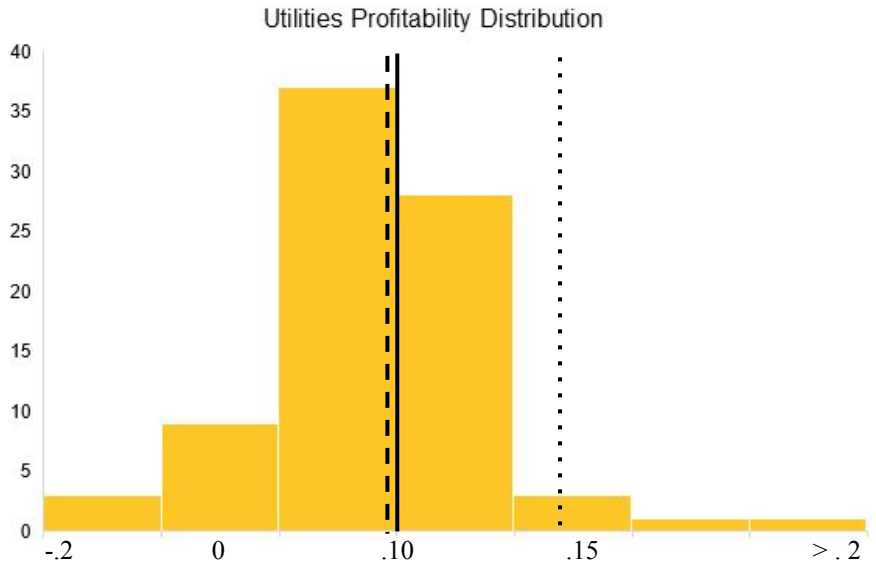
Mean

Median

Factor Captured
(Portfolio Weighting)

R3000 Utilities Distributions





Mean

Median

Factor Captured
(Portfolio Weighting)

ASU W. P. Carey School of Business