Year – End Presentation

Undergraduate Student Investment Management Fund – Team A

Friday April 23rd, 2021

Team Introduction

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Arizona State University

Fund Manager

Jacob Robinson

Fund Analysts

Mike Miles

Daniel Johnson

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Investment Thesis

Investment Thesis

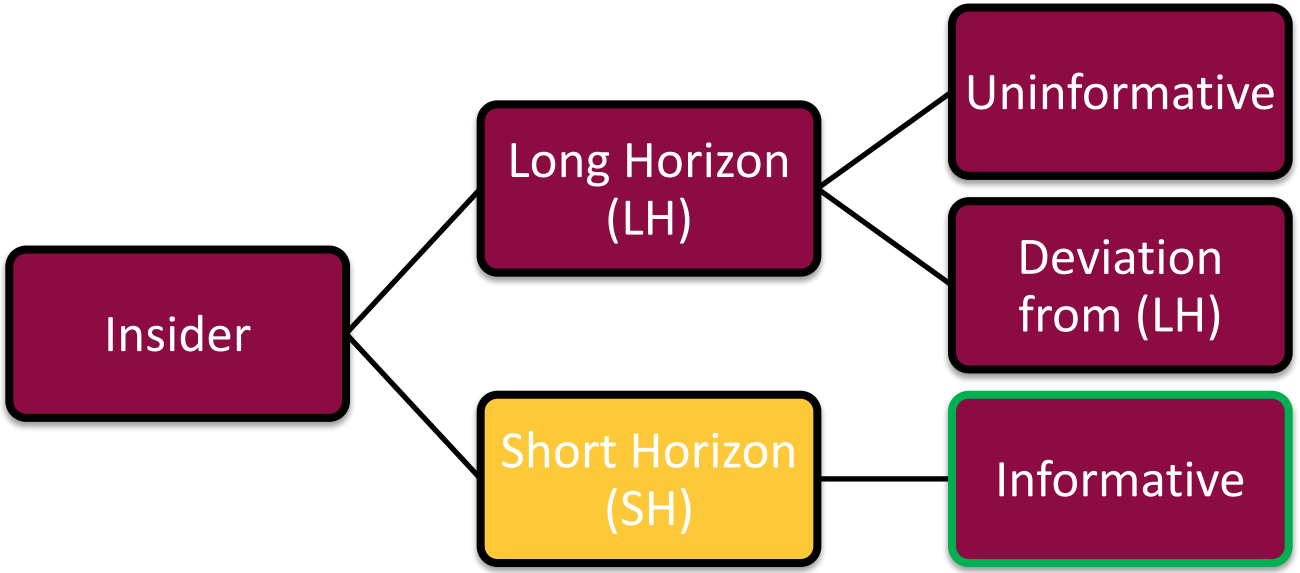
Akbas, Jiang, and Koch hypothesize that investment horizon of an insider establishes a pattern for expected trading behavior, thus helping them to identify unexpected trades.

Bill Gates from 1996 - 2013

Vs.

Targeting Short Horizon Insiders

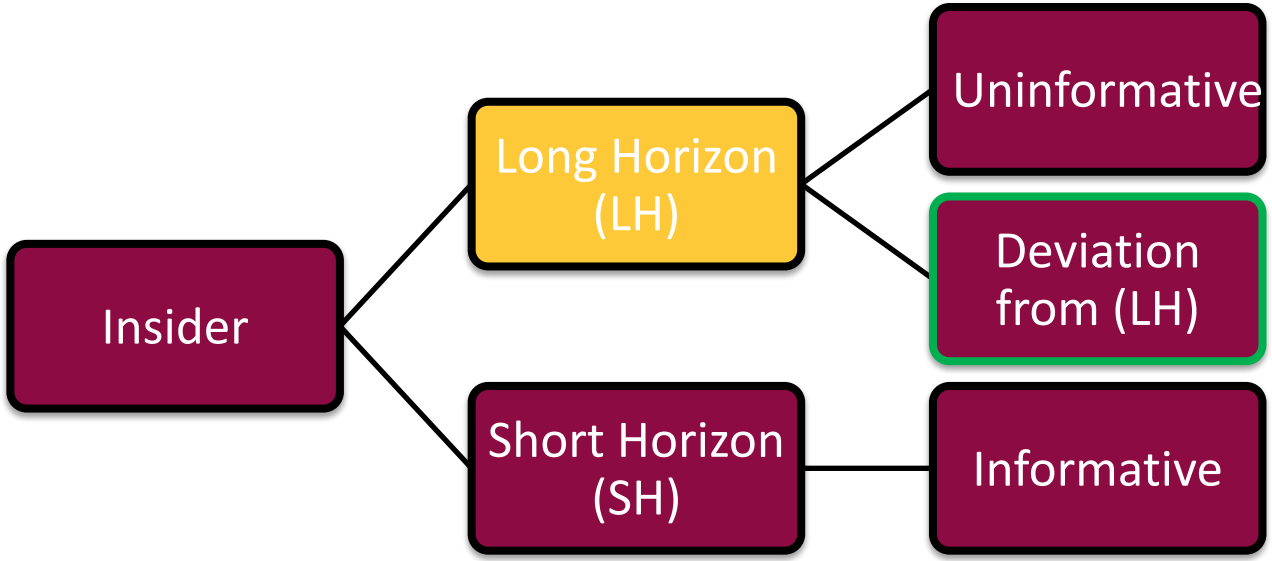
Trades from short horizon insiders are informative.



Akbas, Jiang, and Paul D. Koch, 2020, "Insider Investment Horizon" *The Journal of Finance 75*, 1579-1627.

Long Horizon Insider Deviation

When long horizon insiders <u>deviate from their expected patterns</u> of buying/selling, these trades are even more informative than the typical short horizon insider's trade.



Akbas, Jiang, and Paul D. Koch, 2020, "Insider Investment Horizon" *The Journal of Finance 75*, 1579-1627.

Measuring Insider Horizon and Strength

Akbas, Jiang, and Koch use Horizon (HOR) and Strength (STR), these two variables help them measure insider trading.

Annual net insider order flow $= \frac{P_{i,j,y} - S_{i,j,y}}{P_{i,j,y} + S_{i,j,y}}$

$$HOR_{i,j,t} = \left| \frac{\sum_{y=T-10}^{\text{year}(t-1)} IOF_{i,j,y}}{N} \right| \times (-1)$$

$$STR_{i,j,t} = \frac{P_{i,j,t} - S_{i,j,t}}{VOL_{j,t}}$$

-1	-0.5	0
Long Horizon	Mid Horizon	Short Horizon

Lower STR	Higher STR
Weaker Purchase	Stronger Purchase

Akbas, Jiang, and Paul D. Koch, 2020, "Insider Investment Horizon" *The Journal of Finance 75*, 1579-1627.

Unexpectedness in Long Horizon Insiders

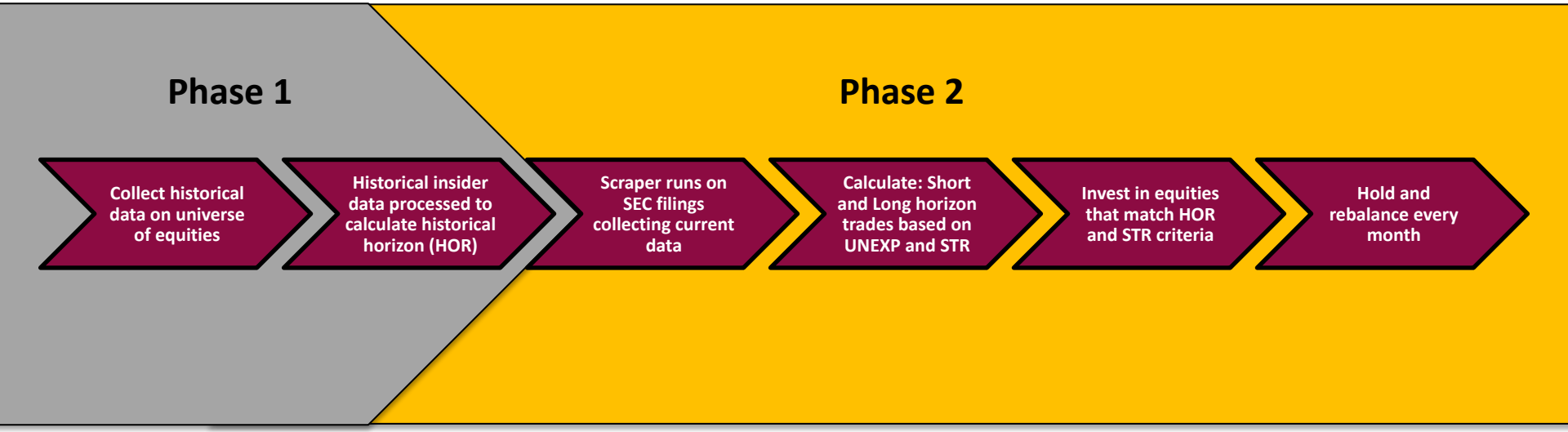
Unexpectedness determines how far a given purchase of a long horizon insider deviates from the benchmark expectation associated with the insider's investment horizon.

$$UNEXP_{i,j,t} = CURRENT_{i,j,t} - \quad HOR_{i,j,t}$$

-2	-1	0	1	2
Unexpected Sales from LH	Unexpected Sales from SH	Expected Purchase from LH	Unexpected Purchases from SH	Unexpected Purchases from LH

Strategy Implementation

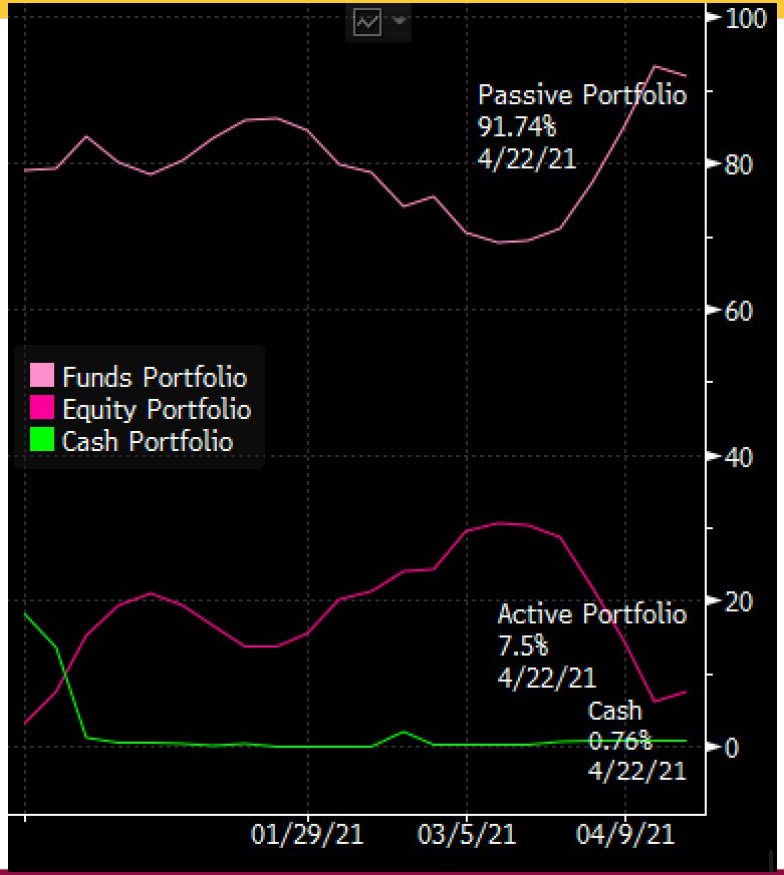
Portfolio Construction Overview



Portfolio Weighting

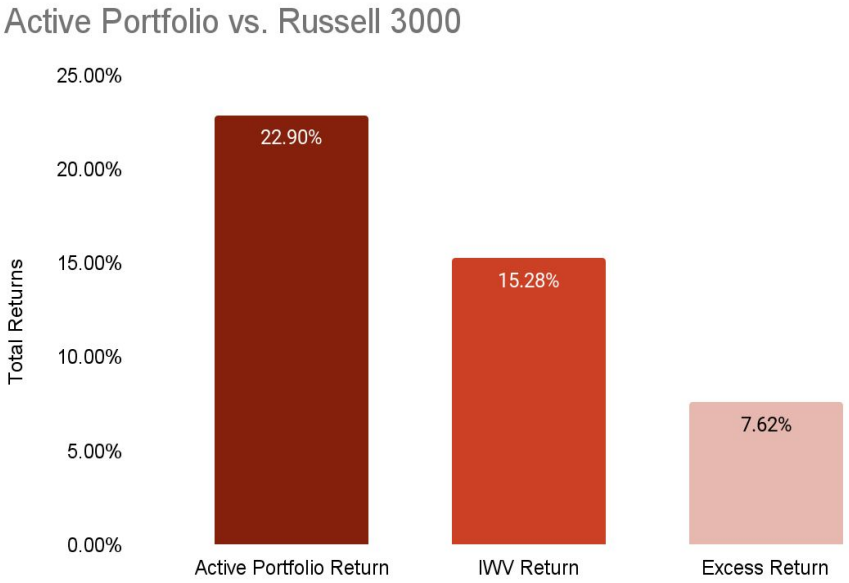
Horizon	*Factor*	*Assigned Weight*
Short Horizon	**Strength (STR)**	**1.5% allocation**
Long Horizon	**Unexpectedness (UNEXP)** **Strength (STR)**	**2% allocation**

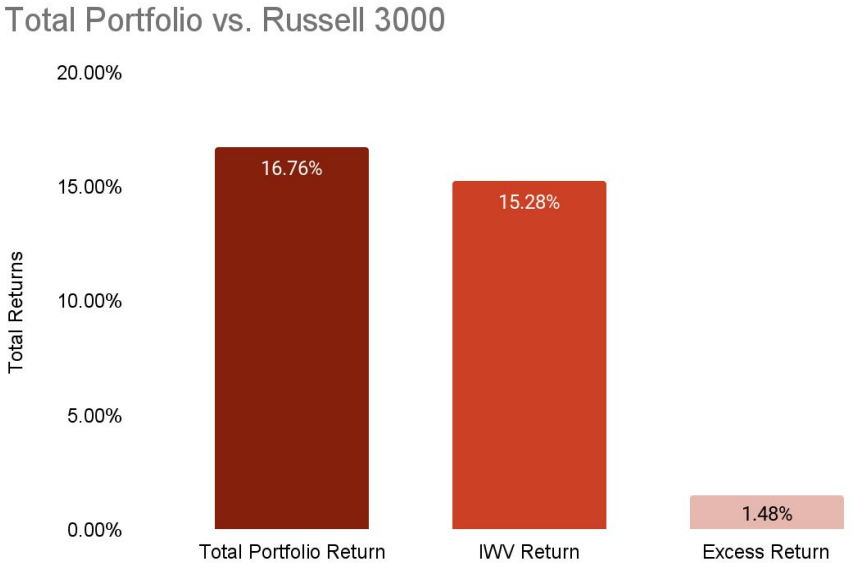
Portfolio Allocation



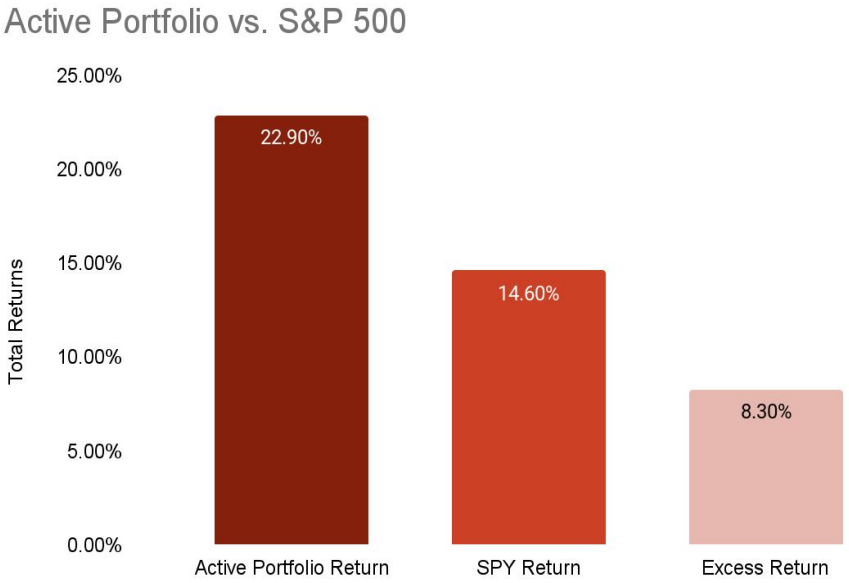
Performance

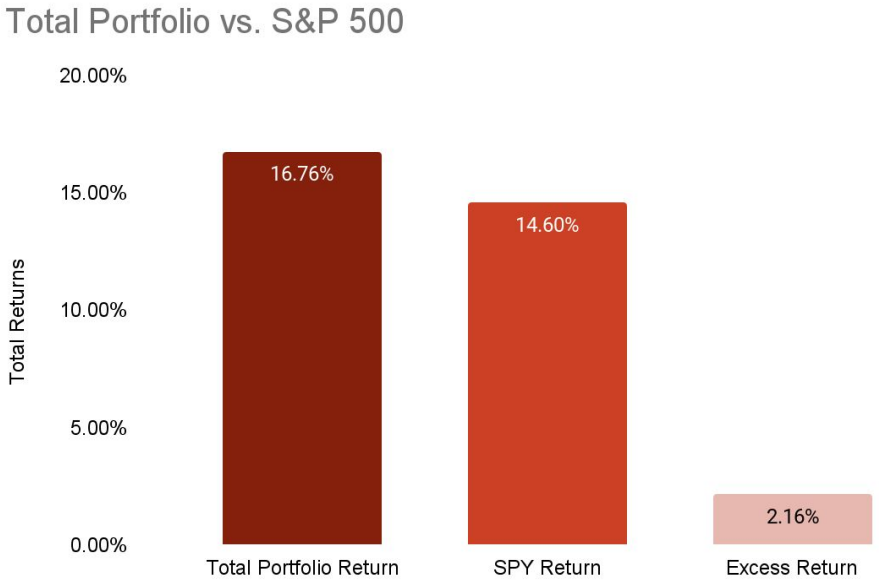
Performance



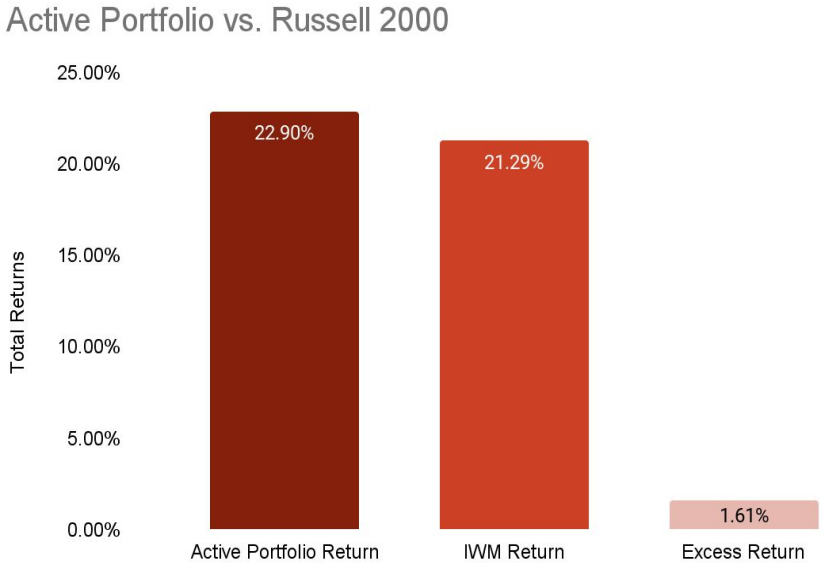


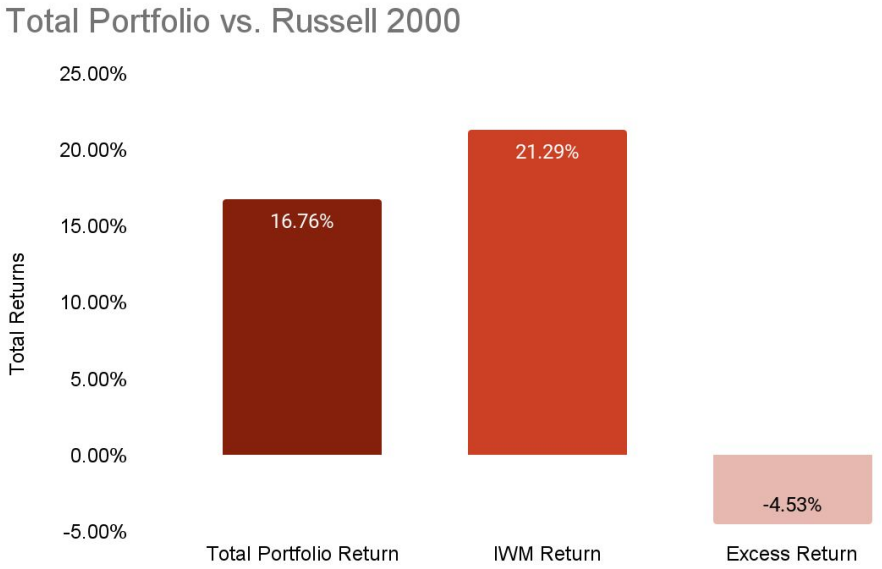
Performance





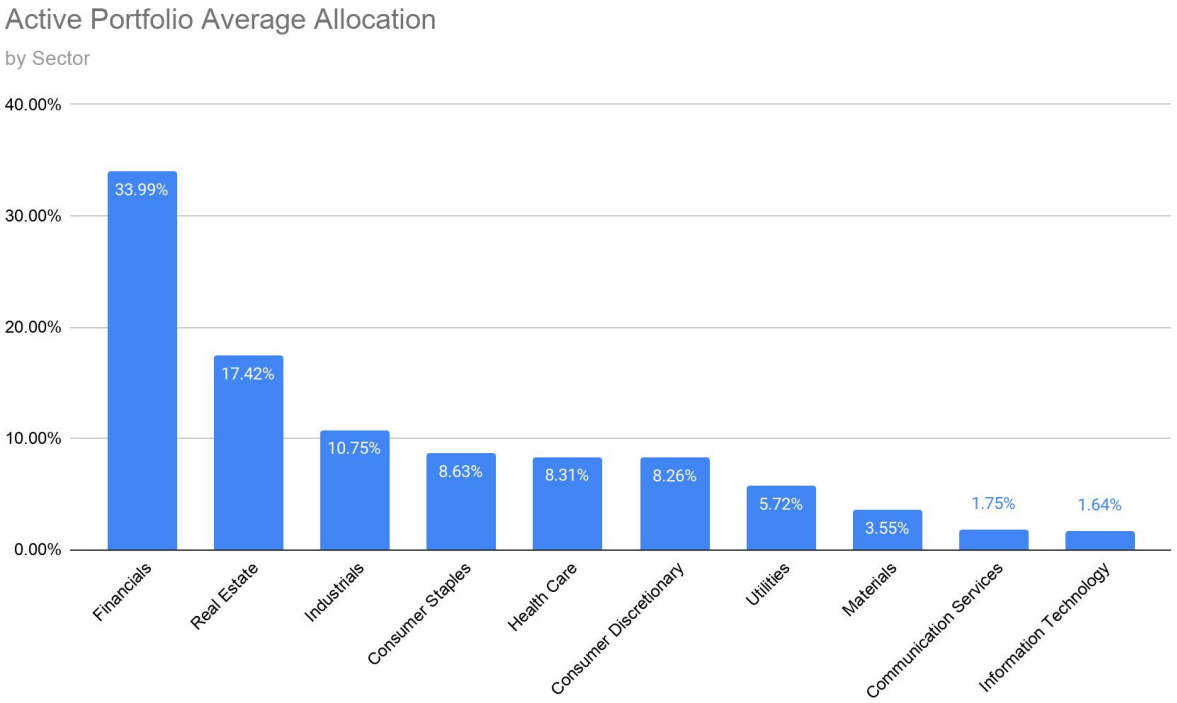
Performance



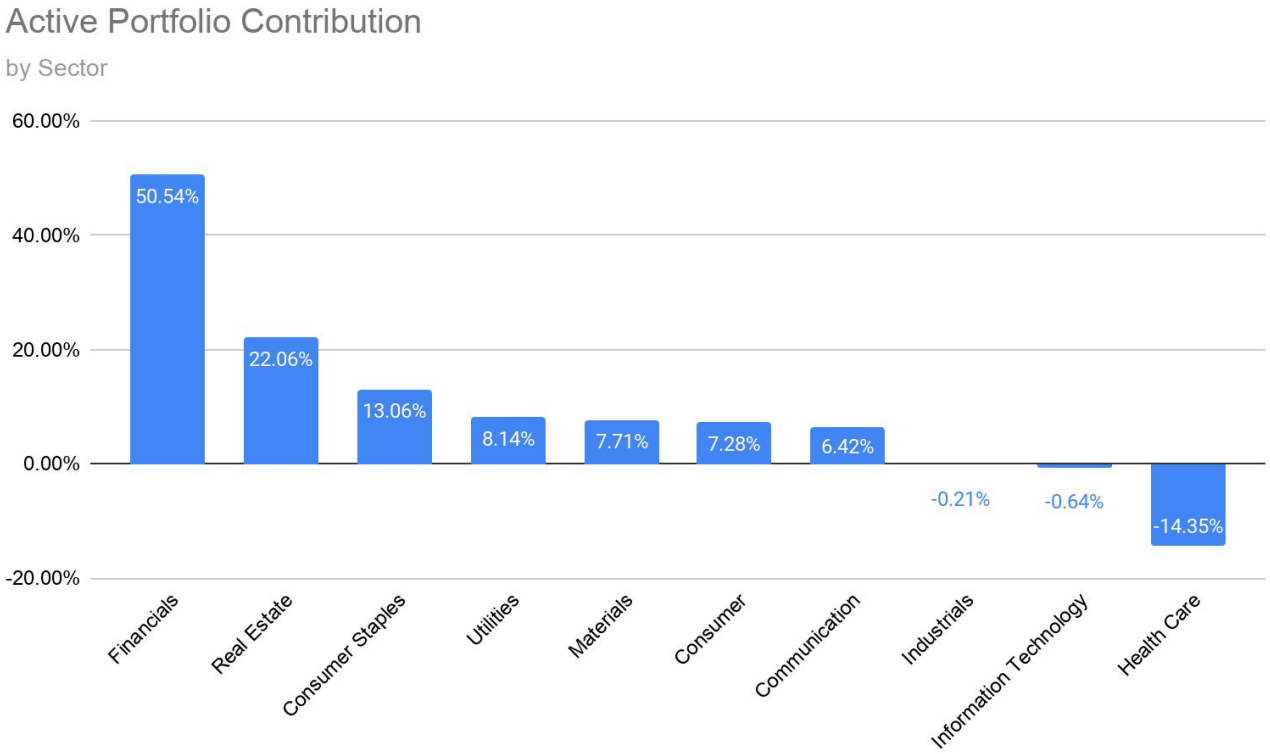


Attribution

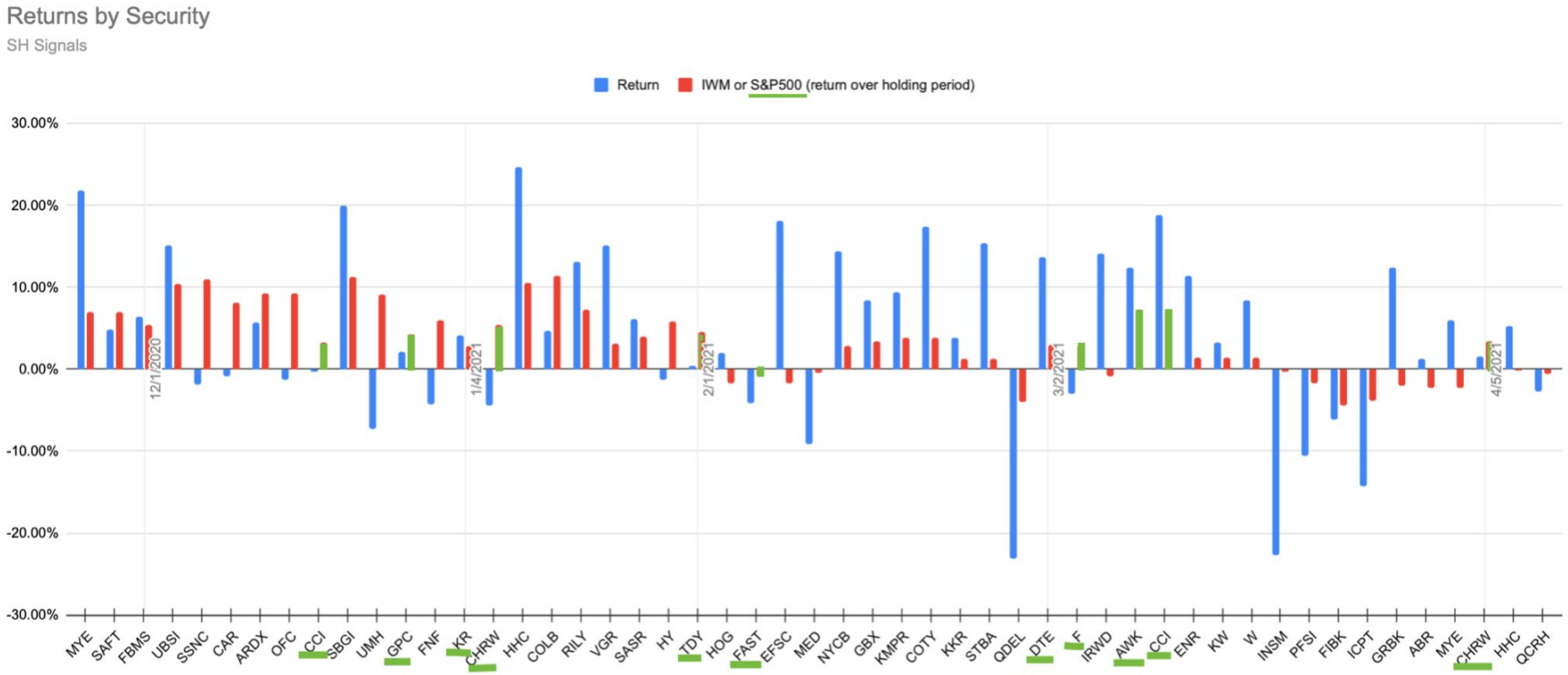
Average Weights (Active Portfolio)



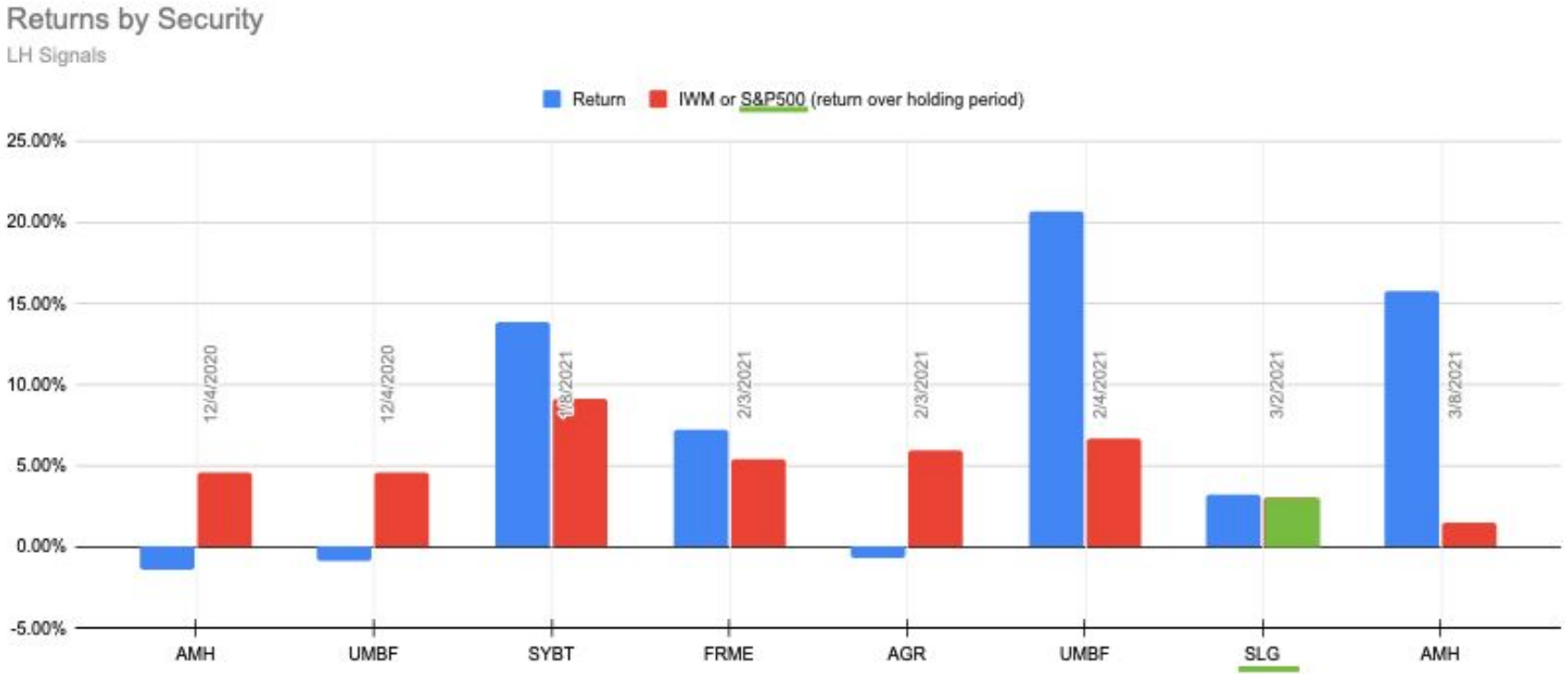
Contribution (Active Portfolio)



Attribution (Short Horizon Signals)



Attribution (Long Horizon Signals)



Exceptions

Exceptions (Top 3)

HHC 24.64% (HPR); 10.50% (IWM)

Purchased: 1/11/21 Sold: 2/11/21

News: Accelerated plans for future buildings throughout the United States.

Signals: **STR**: 1.51 **HOR**: -0.15 **UNEXP**: 0.78

Signals: **STR**: 0.0004, **HOR**: -0.33, **UNEXP**: 0.67

MYE 21.79% (HPR); 7.04% (IWM)

Purchased: 11/25/20 Sold: 12/30/20

News: Over the last year has paid out more than three quarters of its free cash flow generated. Upgraded to overweight by Keybanc on 12/18.

Signals: **STR**: 0.002, **HOR**: -0.33, **UNEXP**: 0.67

UMBF 21.73% (HPR); 6.67% (IWM)

Purchased: 2/4/21 Sold: 3/8/21

News: Benefitted from rising interest rates and a strong financial sector

Signals: **STR**: 0.0011, **HOR**: -0.88, **UNEXP**: 0.12

Exceptions (Bottom 3)

QDEL -23.07% (HPR); 1.93% (IWM)

Purchased: 2/23/21 Sold: 3/22/21

News: CEO announced worst-case estimates for revenue that marked a 49% drop from the previous quarter; decline in COVID cases/tests; analysts dropped EPS estimates by an average of 17%

Signals: **STR**: 0.0008 **HOR**: -0.055 **UNEXP**: 0.95

INSM -22.74% (HPR); -0.31% (IWM)

Purchased: 3/9/21 Sold 4/12/21

News: Japan approved special treatment ARIKAYCE for nontuberculous mycobacterial (NTM) lung disease; already approved in Europe/US.

Signals: **STR**: 0.0008 **HOR**: -0.14 **UNEXP**: 0.86

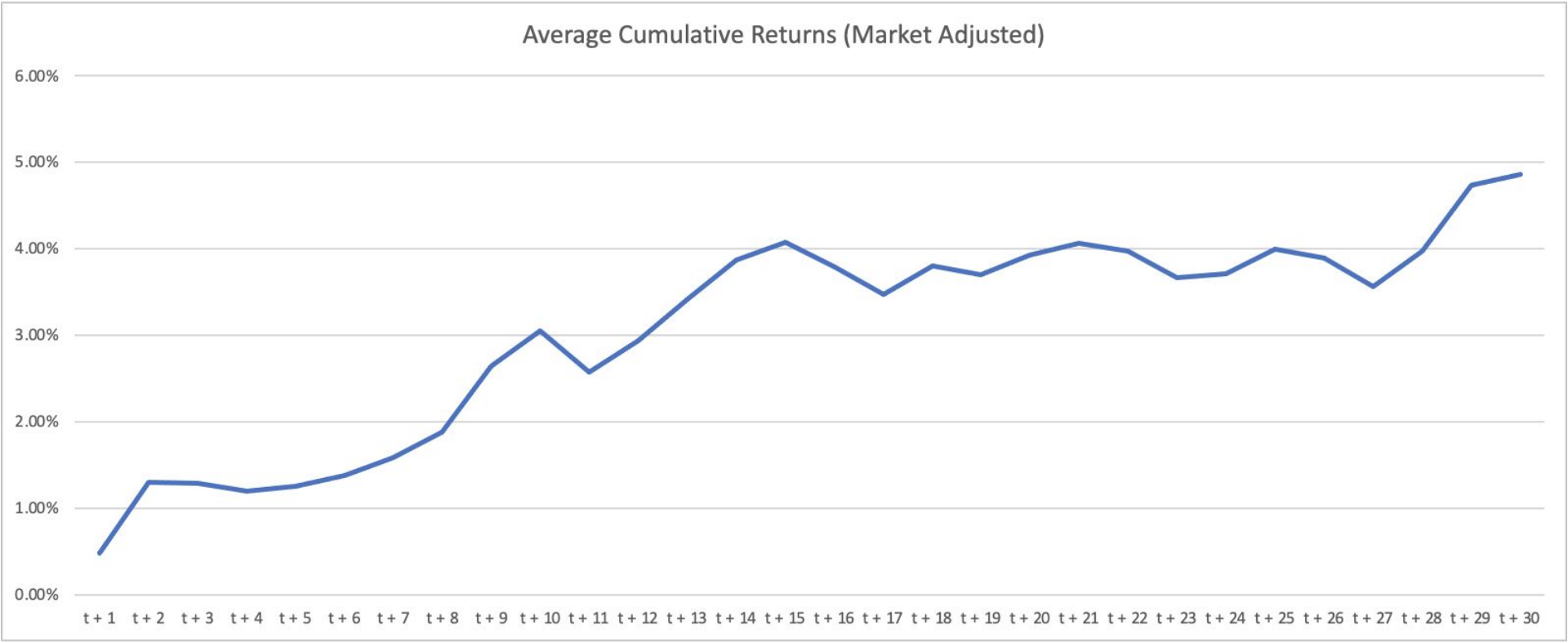
PFSI -10.64 (HPR); -1.72% (IWM)

Purchased: 3/10/21 Sold: 4/12/21

News: Stock positions dropped by 6% from institutional holdings

Signals: **STR**: 0.06 **HOR**: -0.15 **UNEXP**: 0.85

Signal Decay



Thank You. Questions?

ASU W. P. Carey School of Business
Arizona State University

Student Investment Management Fund

Spring 2021 Presentation

SIM Fund Team B

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Albert Zatonskiy

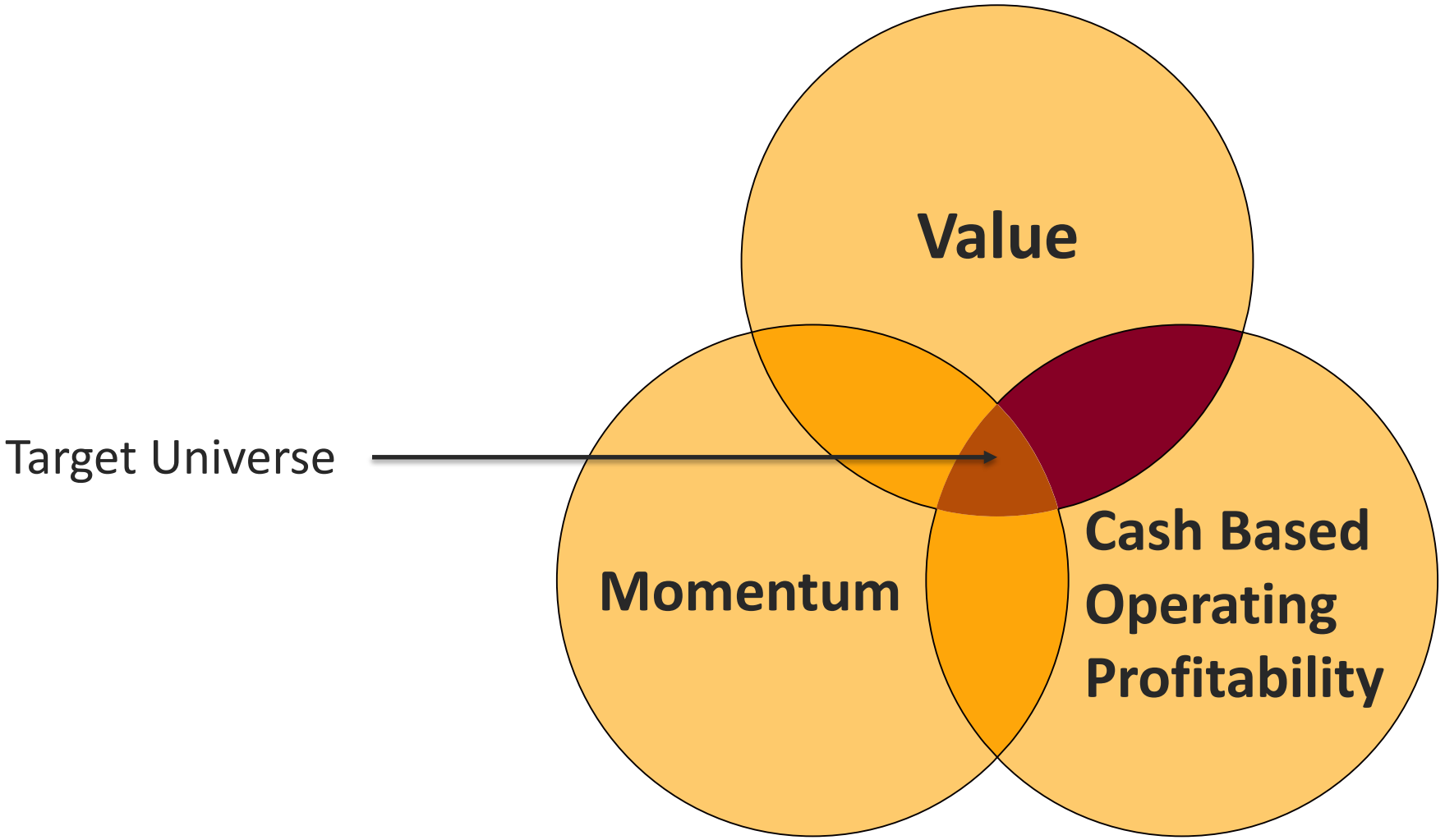
Logan Saker

Mina Girgis

Rishab Kohli

Strategy

Portfolio Strategy



Selecting the Investable Universe

Building & Rebalancing the portfolio requires an initial screening in Bloomberg to reduce the universe of securities to a manageable level, removing any that fall outside of ASU Charter Requirements.

Cash Based Operating Profitability Ratio

Operating Income (Losses): Current Quarter

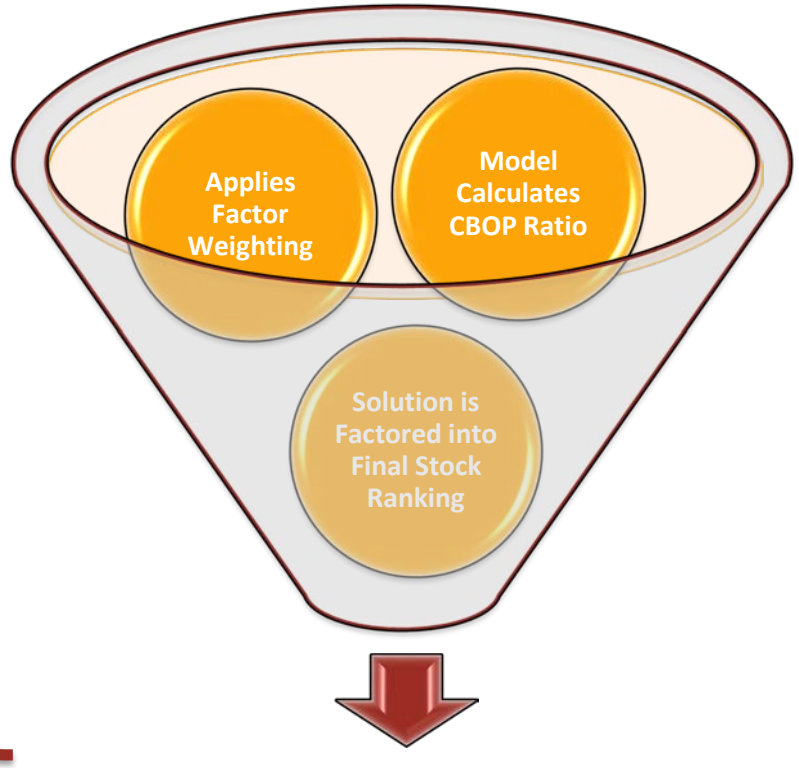
Accounts & Notes Receivable: Q & Q-1

Inventories: Q & Q-1

Accounts Payable: Q & Q-1

Accrued Liabilities & Expenses: Q & Q-1

Total Equity



Cash-based operating profitability
= Operating profitability
+ Decrease in accounts receivable (RECCH)
+ Decrease in inventory (INVCH)
+ Increase in accounts payable and accrued liabilities (APALCH).

Accruals, cash flows, and operating profitability in the cross section of stock returns☆

Ray Ball[a,*], Joseph Gerakos[a], Juhani T. Linnainmaa[b,c], Valeri Nikolaev[a]

Equity

The resulting numerical figure will be added to the Value and Momentum factors, producing the final ranking used to select the highest 65 stocks for the portfolio.

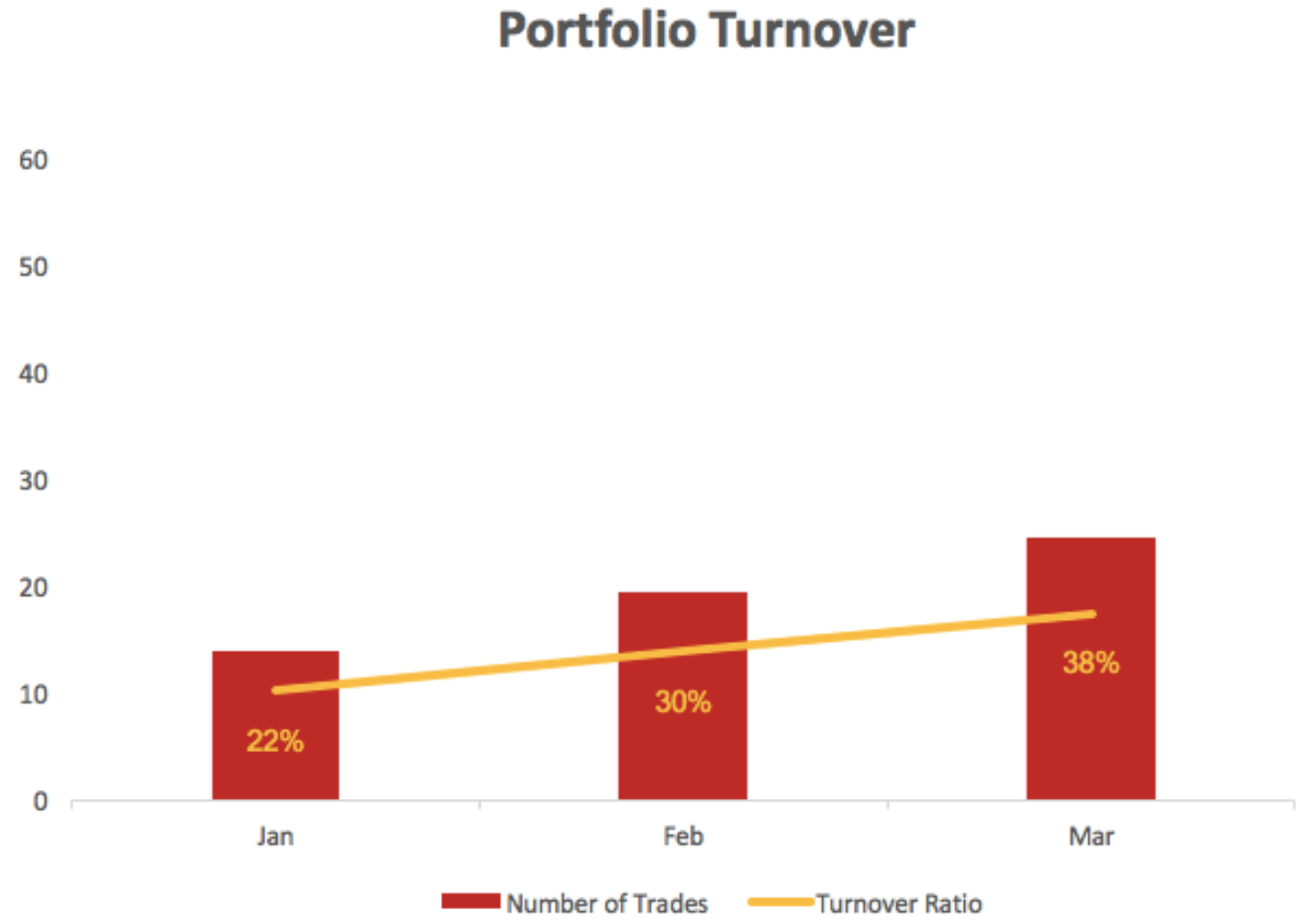
Scoring and Ranking

All stocks are scored & sorted by Sector

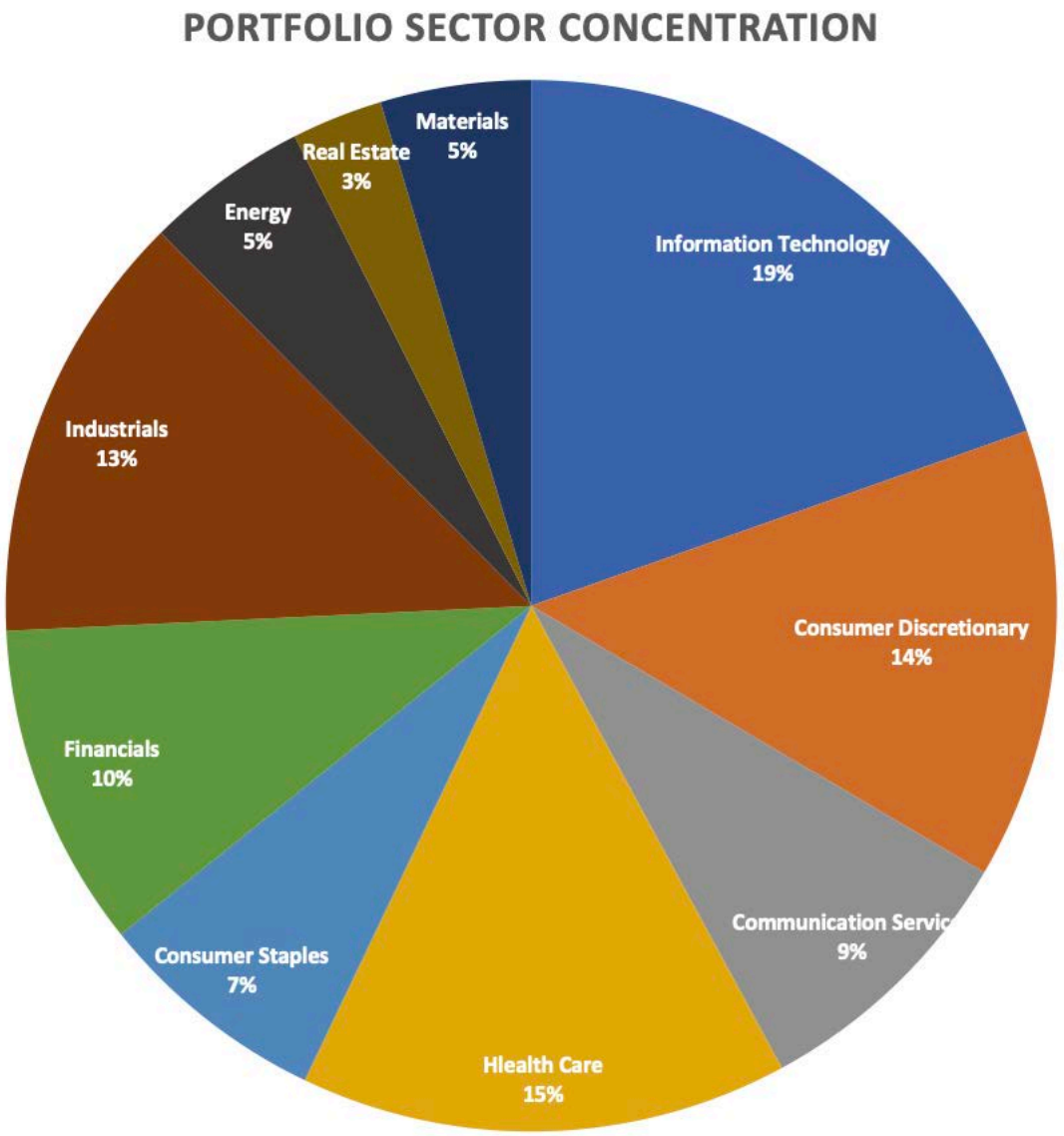
Top 65 ranked are selected

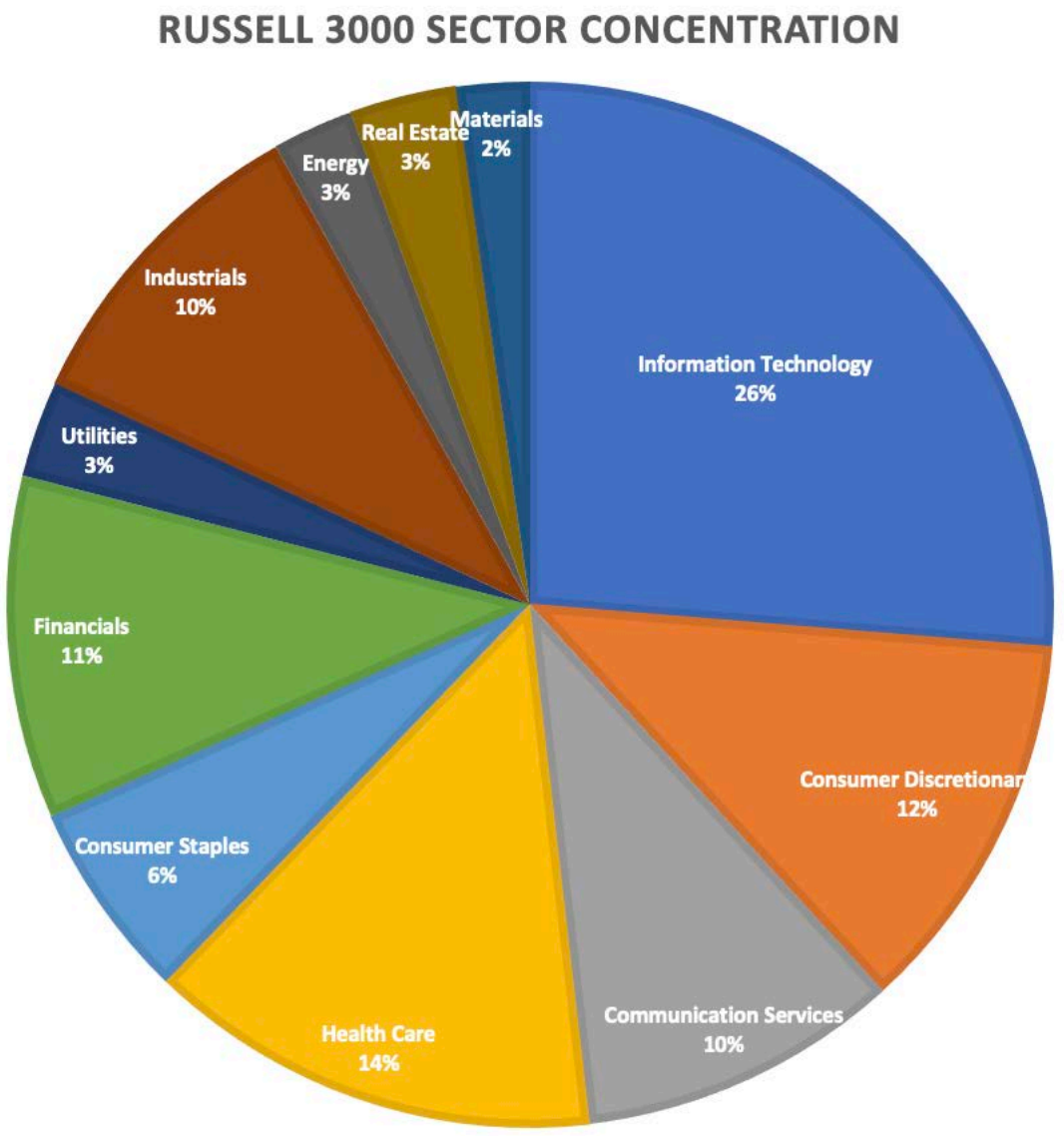
Portfolio Turnover and Sector Concentration

Turnover by Month

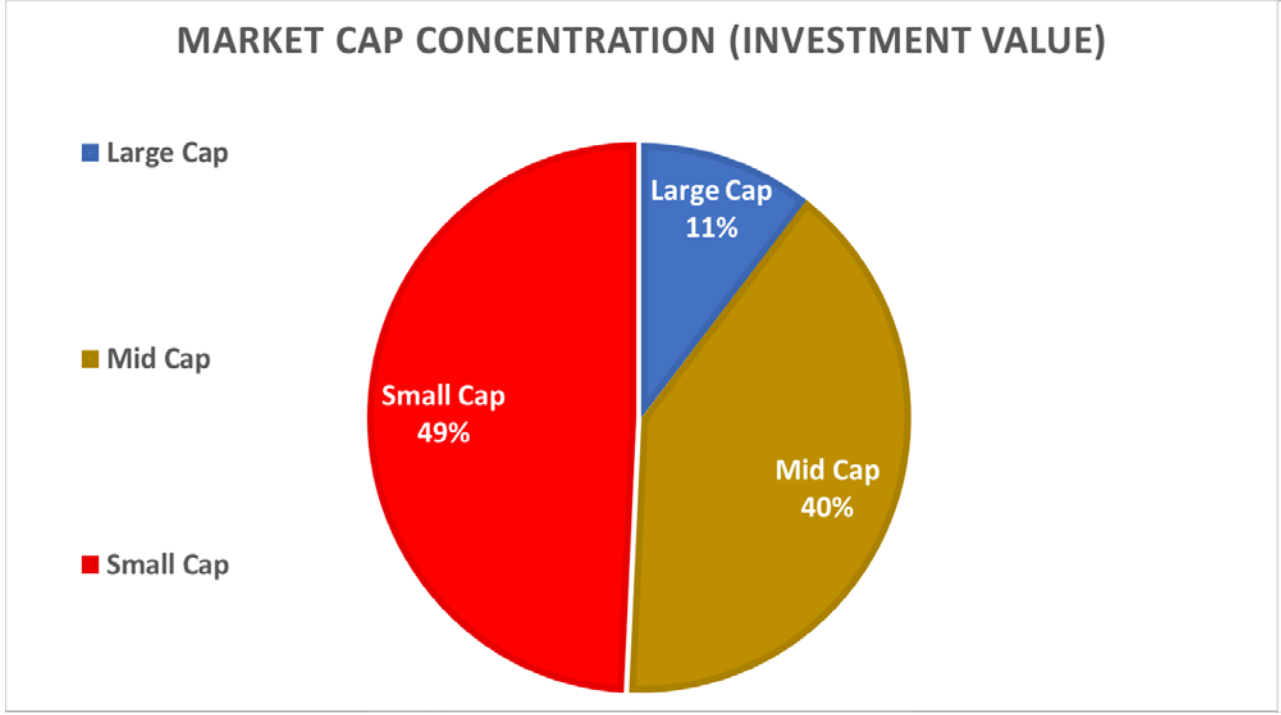


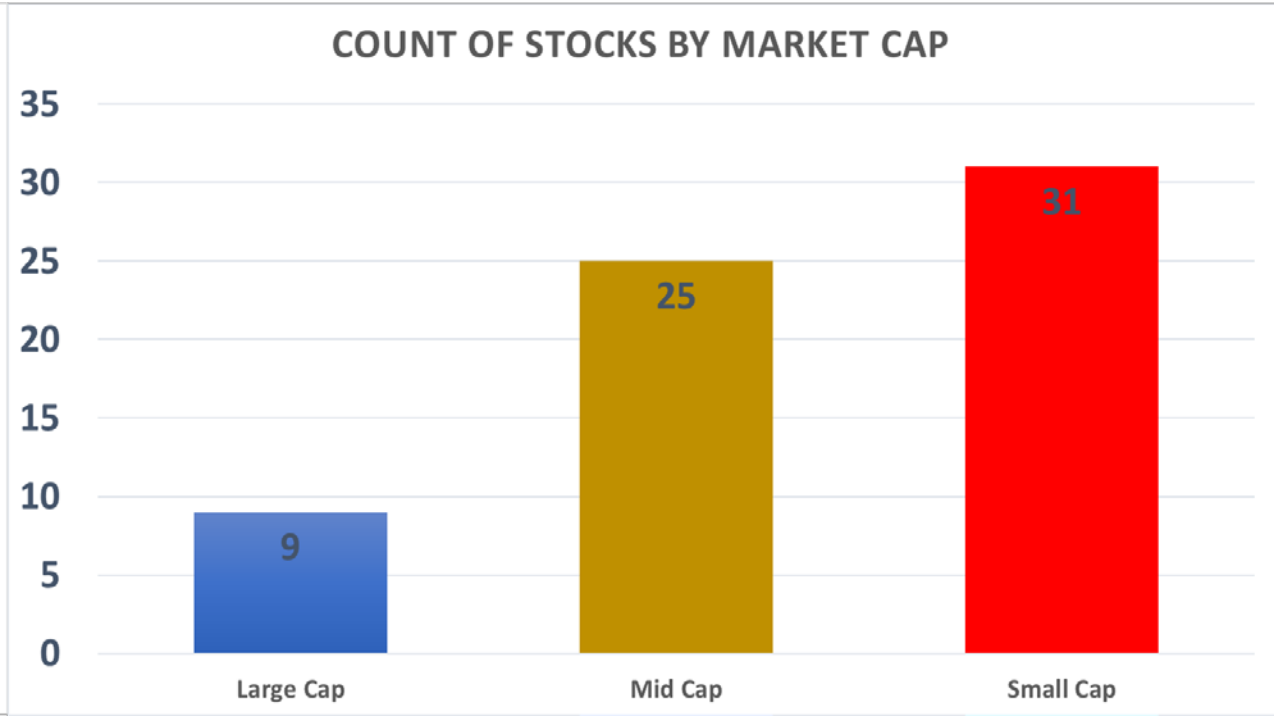
Sector Concentration





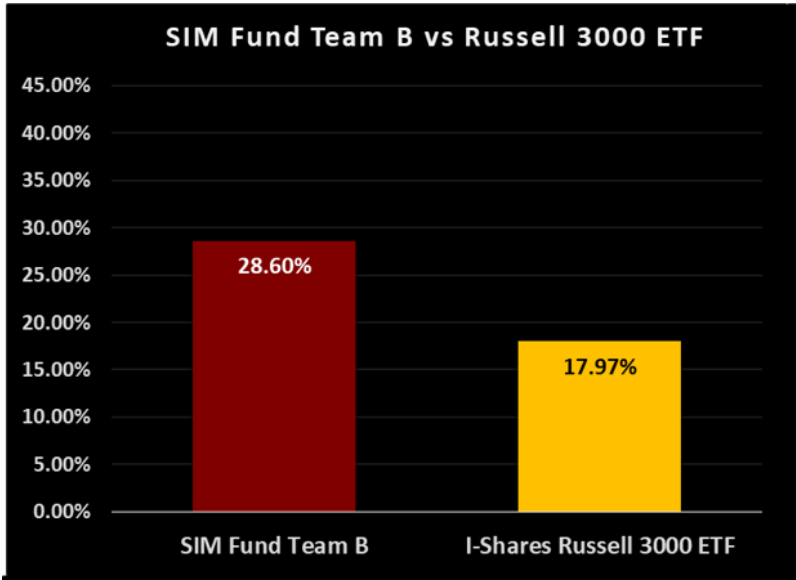
Current Size Concentration

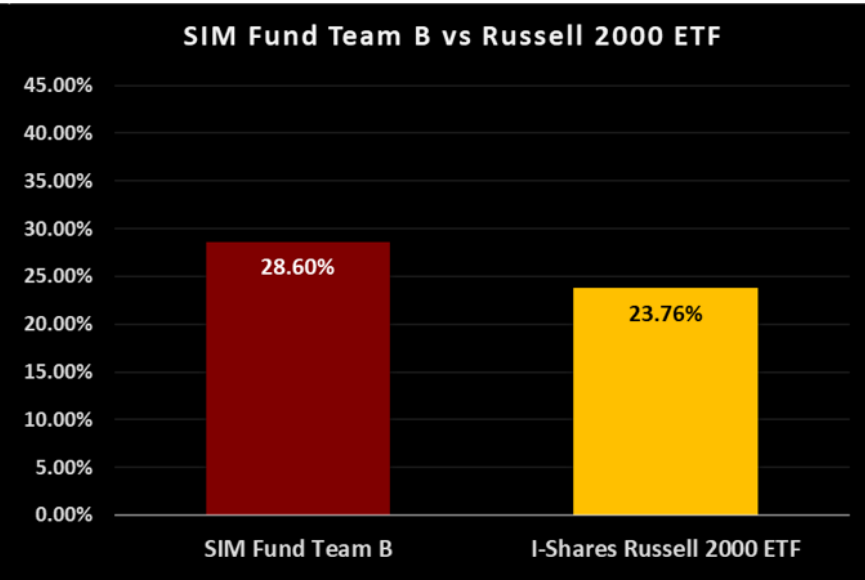


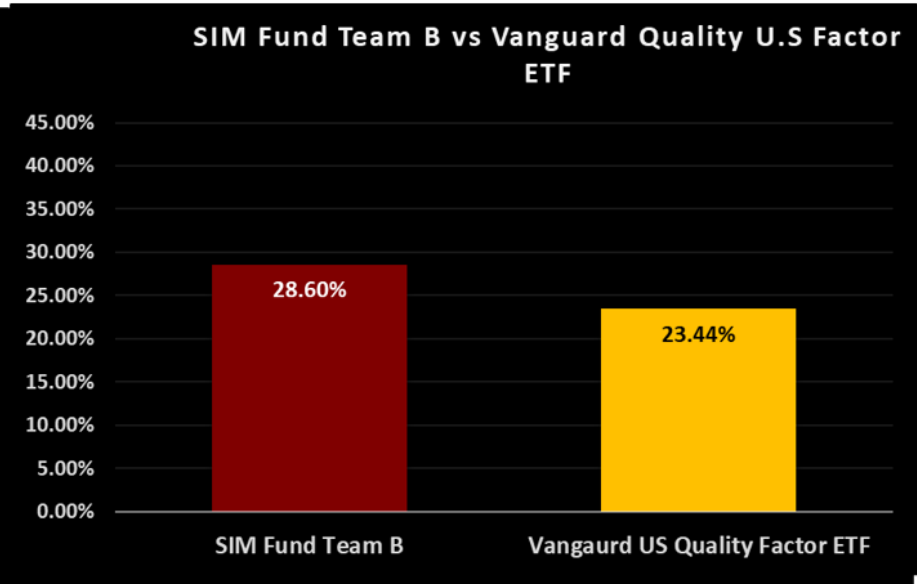


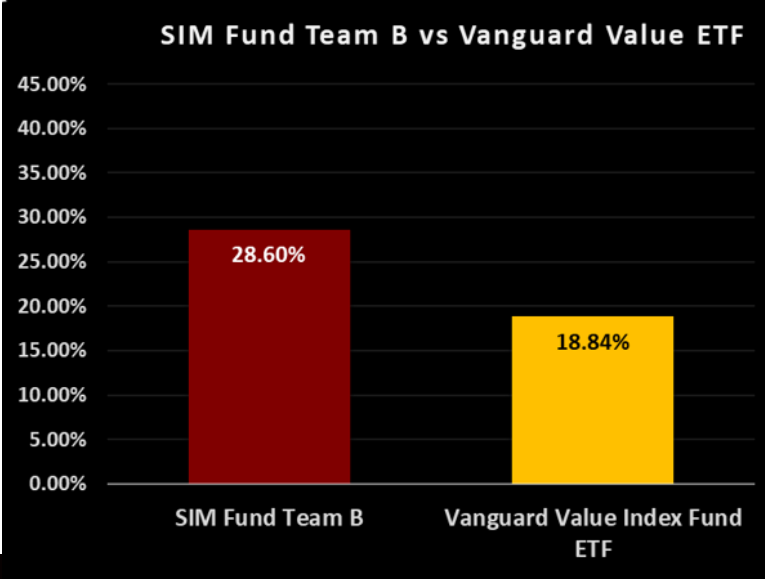
Performance

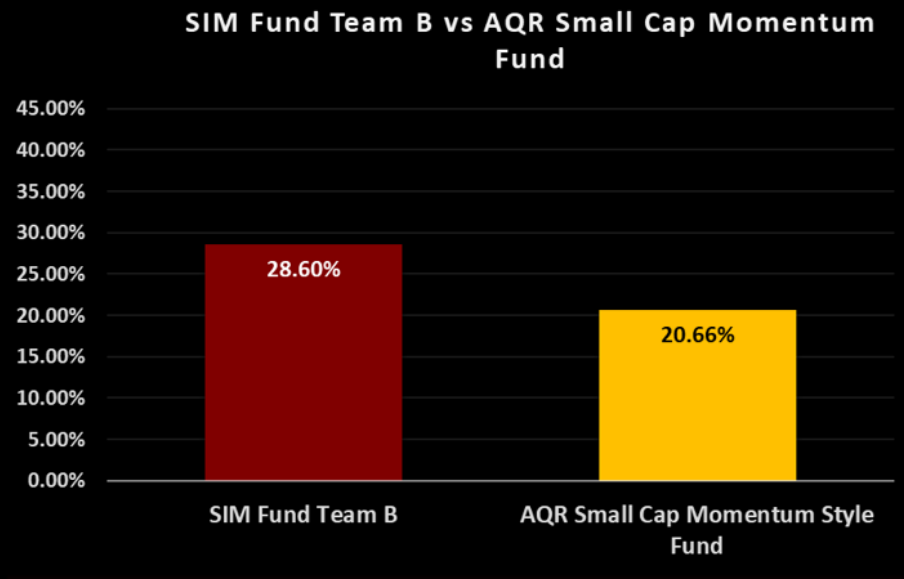
Cumulative Performance

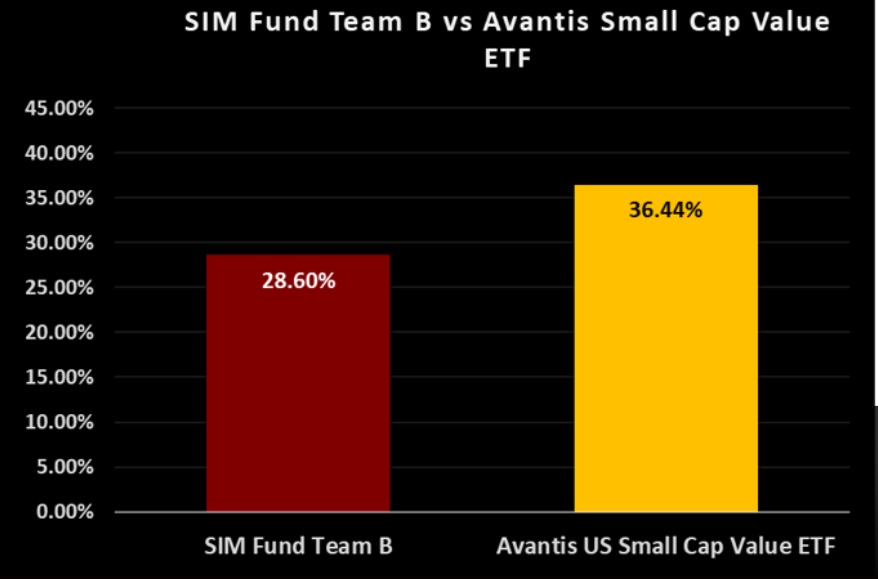




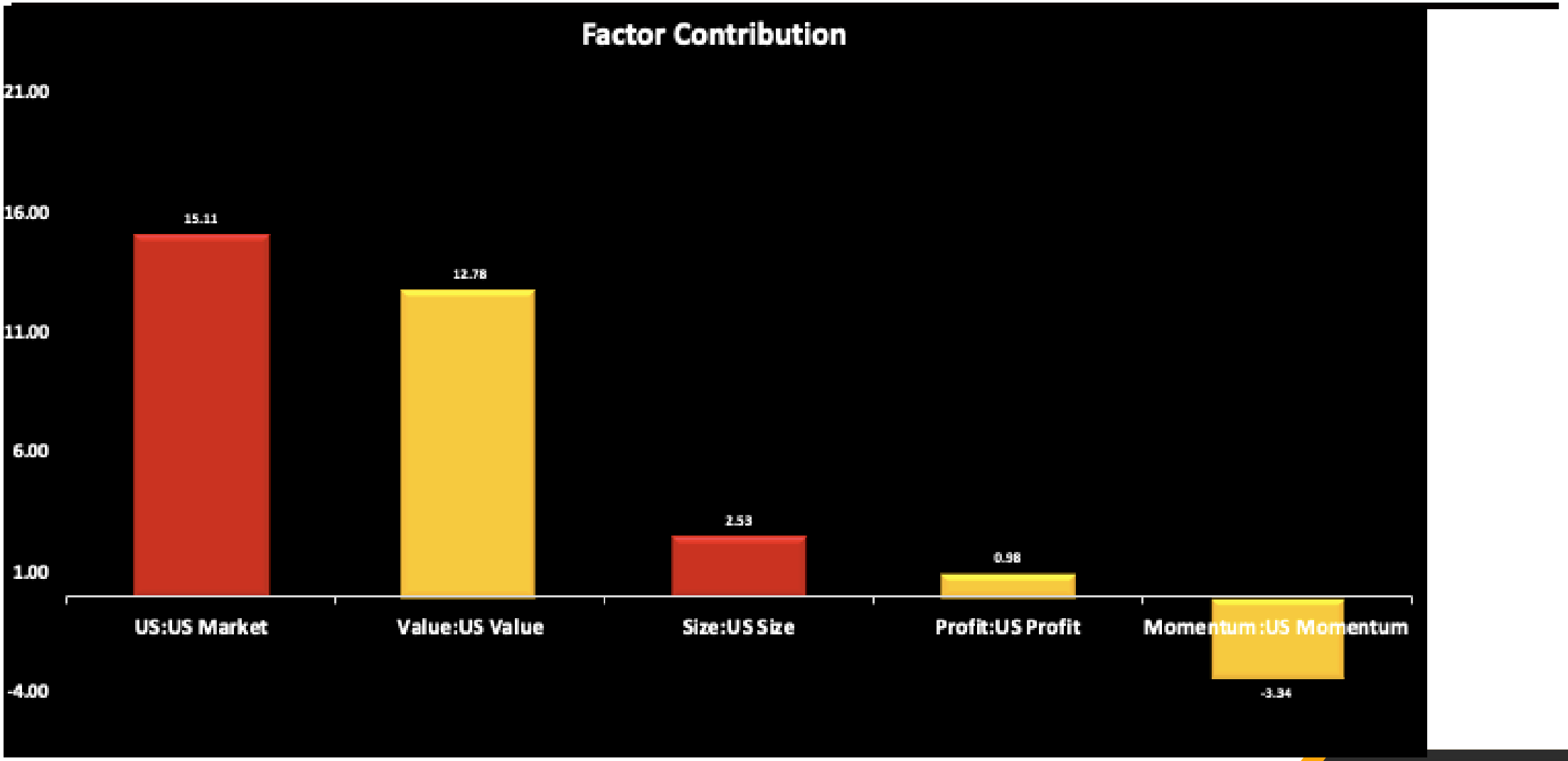


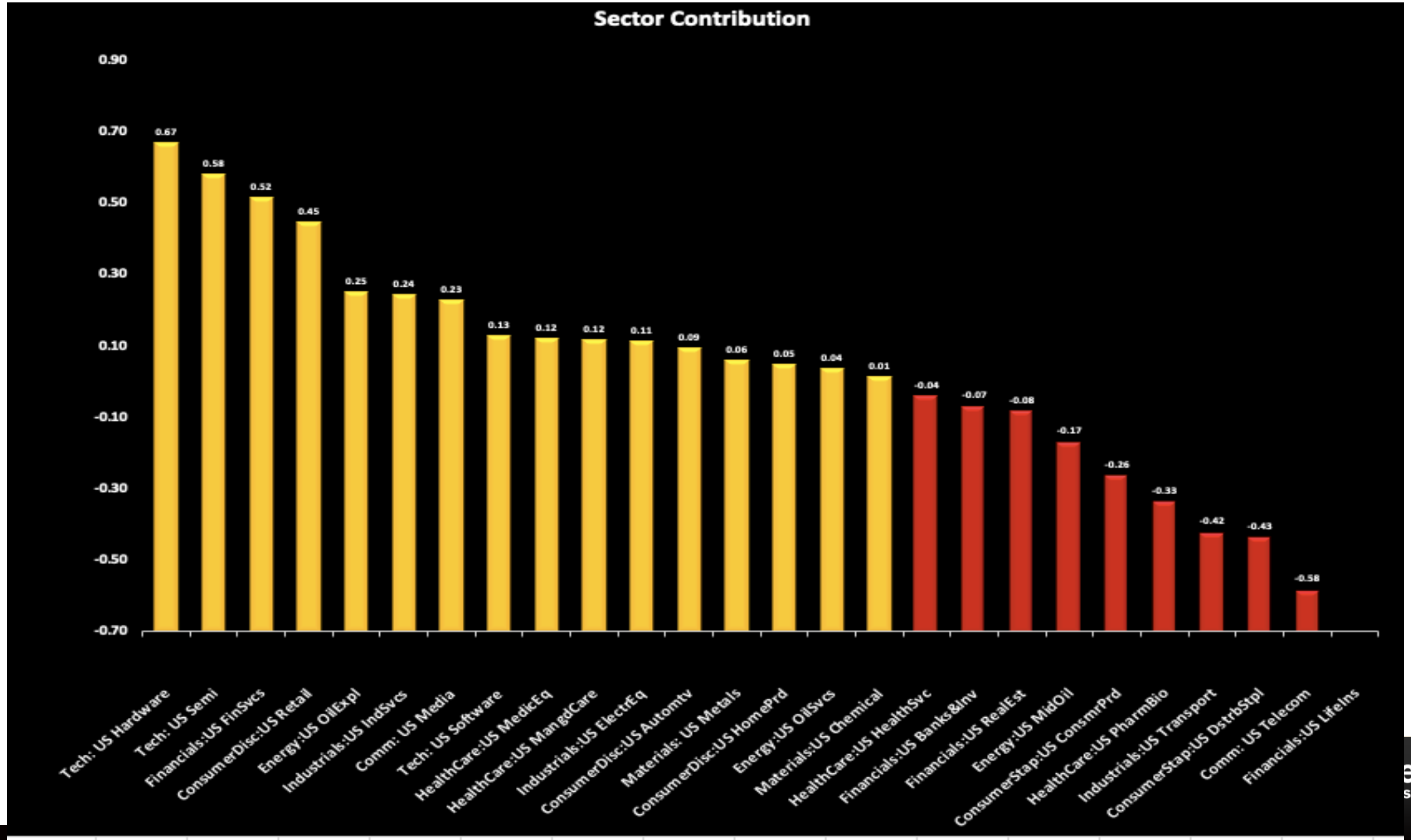




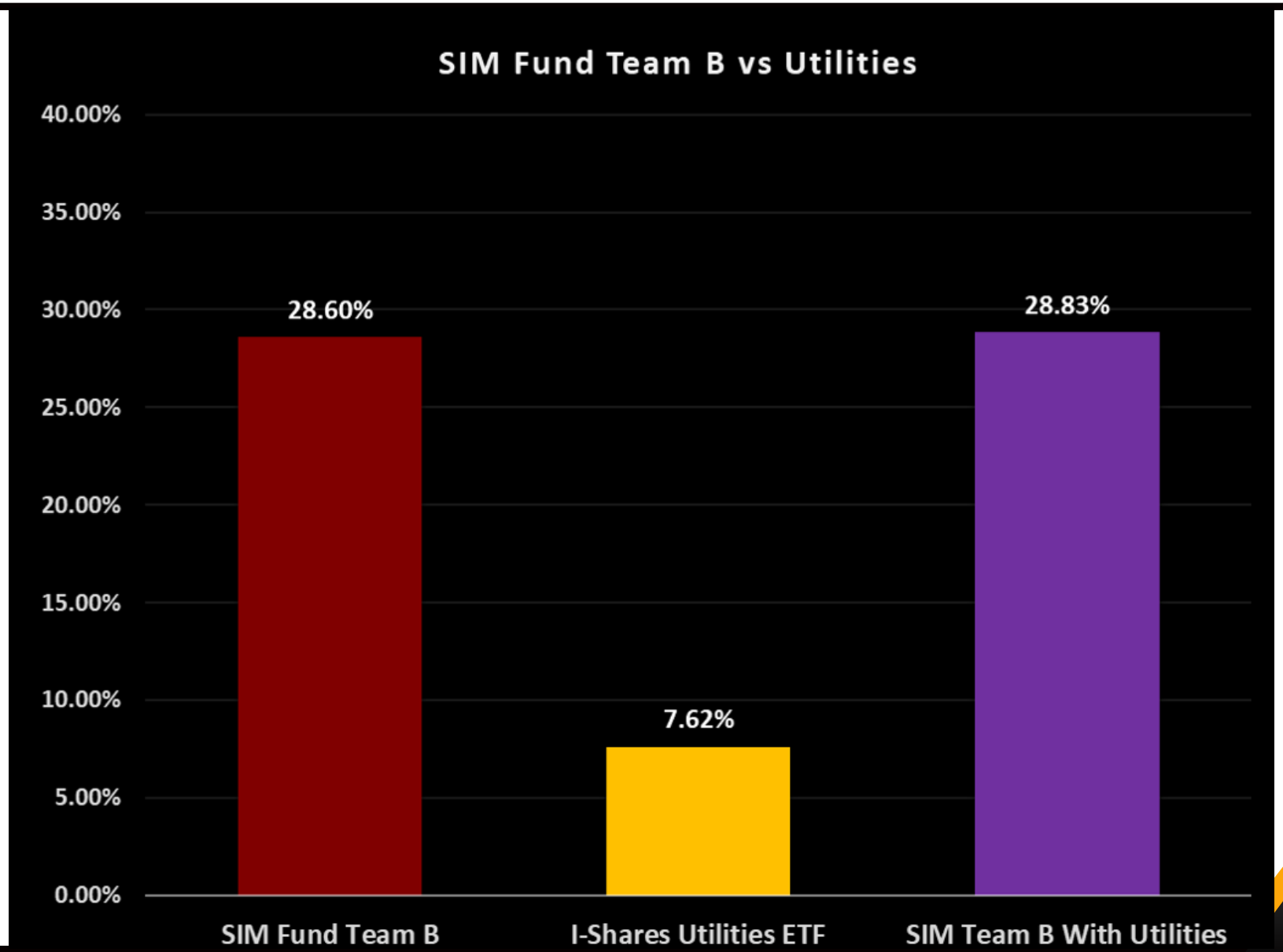


Factor Contribution




Sector Contribution
0.90
0.70
0.50
0.30
0.10
-0.10
-0.30
-0.50
-0.70
0.67
0.58
0.52
0.45
0.25
0.24
0.23
0.13
0.12
0.12
0.11
0.09
0.06
0.05
0.04
0.01
-0.04
-0.07
-0.08
-0.17
-0.26
-0.33
-0.42
-0.43
-0.58
Tech: US Hardware
Tech: US Semi
Financials:US FinSvcs
ConsumerDisc:US Retail
Energy:US OilExpl
Industrials:US IndSvcs
Comm: US Media
Tech: US Software
HealthCare:US MedicEq
HealthCare:US MangdCare
Industrials:US ElectrEq
ConsumerDisc:US Automtv
Materials: US Metals
ConsumerDisc:US HomePrd
Energy:US OilSvcs
Materials:US Chemical
HealthCare:US HealthSvc
Financials:US Banks&Inv
Financials:US RealEst
Energy:US MidOil
ConsumerStap:US ConsmrPrd
HealthCare:US PharmBio
Industrials:US Transport
ConsumerStap:US DstrbStpl
Comm: US Telecom
Financials:US LifeIns

Utilities Comparison



Challenges Faced

QEP –
QEP Resources

CXP-
Columbia Property Trust

Rebalance issues

Cash Management

Thank You

APPENDIX

Example

- Stock - Netgear Inc. (NTGR)
- CBOP Ratio = 0.03
- P/B Ratio = 1.45
- YTD Return = 26.40%

$$Score = CBOP(Profitability\ Weight) + \frac{P}{B}(-Value\ Weight) + YTD\ Return\ (Momentum\ Weight)$$

$$-0.37 = 0.03(0.5) + 1.45\ (-0.3) + 0.264(0.2)$$

Score CBOP Value Momentum

The highest 65 stocks according to score are ranked and selected after controlling for sector exposure.

Exclusions

Exclude if any of the following are true for a particular stock:

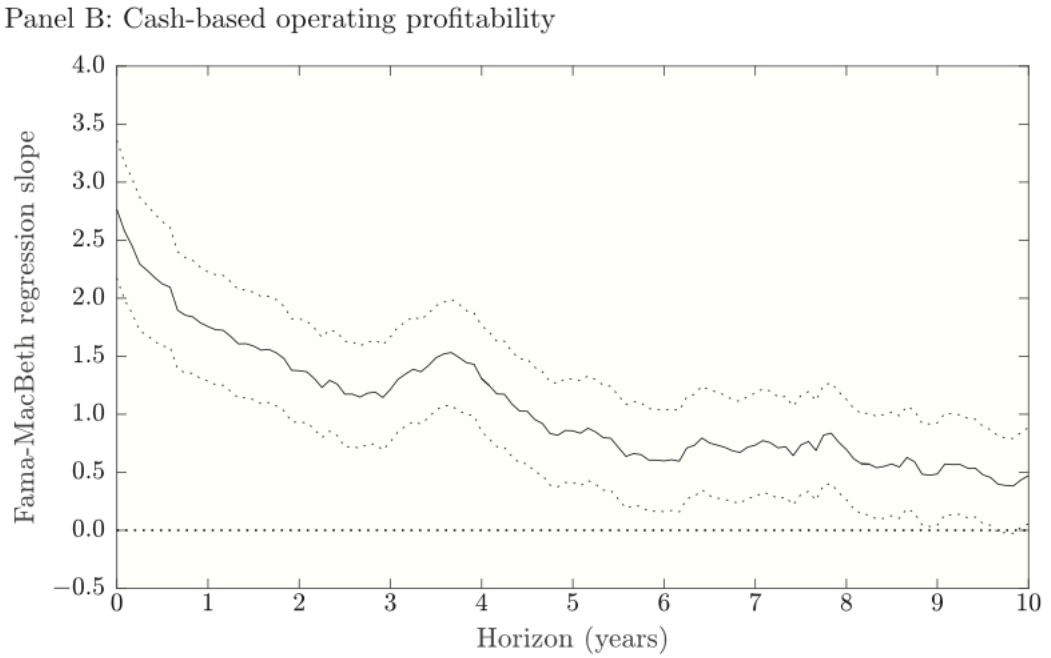
- Cash Based Operating Profitability Ratio or Free Cash Flow to Equity Ratio cannot be calculated.
- Return on Equity ≤ 0%
- Exchange Traded Funds (ETFs)
- Free Cash Flow to Equity Ratio < 0
- Price to Book Ratio = 0
- YTD Return < -20% or = 0%

Investment Thesis

Value + Profitability + Momentum

Cash-Based Operating Profitability

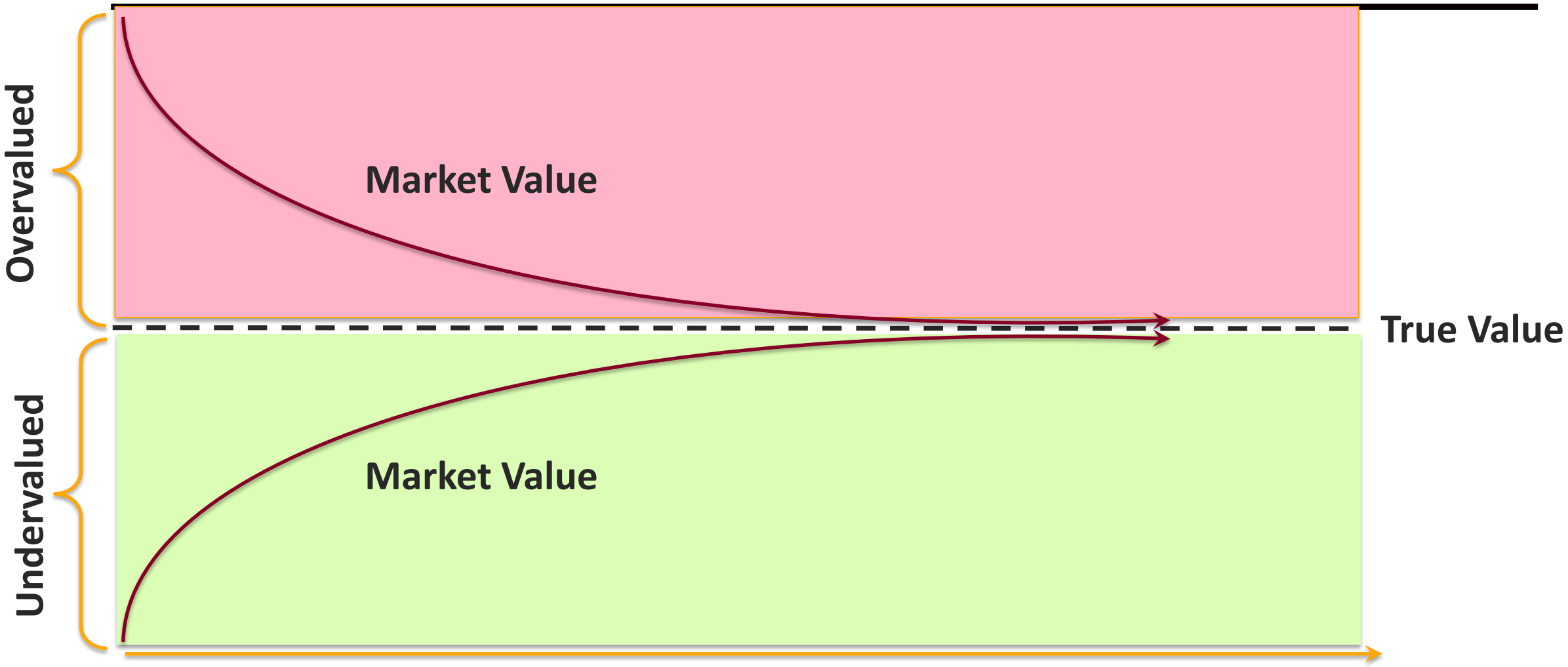
- CBOP is a stronger predicter of future returns than profitability alone.
- Hedge against unprofitable value stocks.
- CBOP is expected to result in higher Sharpe ratios.



Source: Ball Et all., Journal of Financial Economics

$$y = \alpha + \beta_{MKT}MKT + \beta_{RMW}RMW_{cbOP} + \beta_{HML}HML + \beta_{UMD}UMD + \in$$

Value



$$y = \alpha + \beta_{MKT}MKT + \beta_{HML}HML + \beta_{RMW}RMW_{cbOP} + \beta_{UMD}UMD + \in$$

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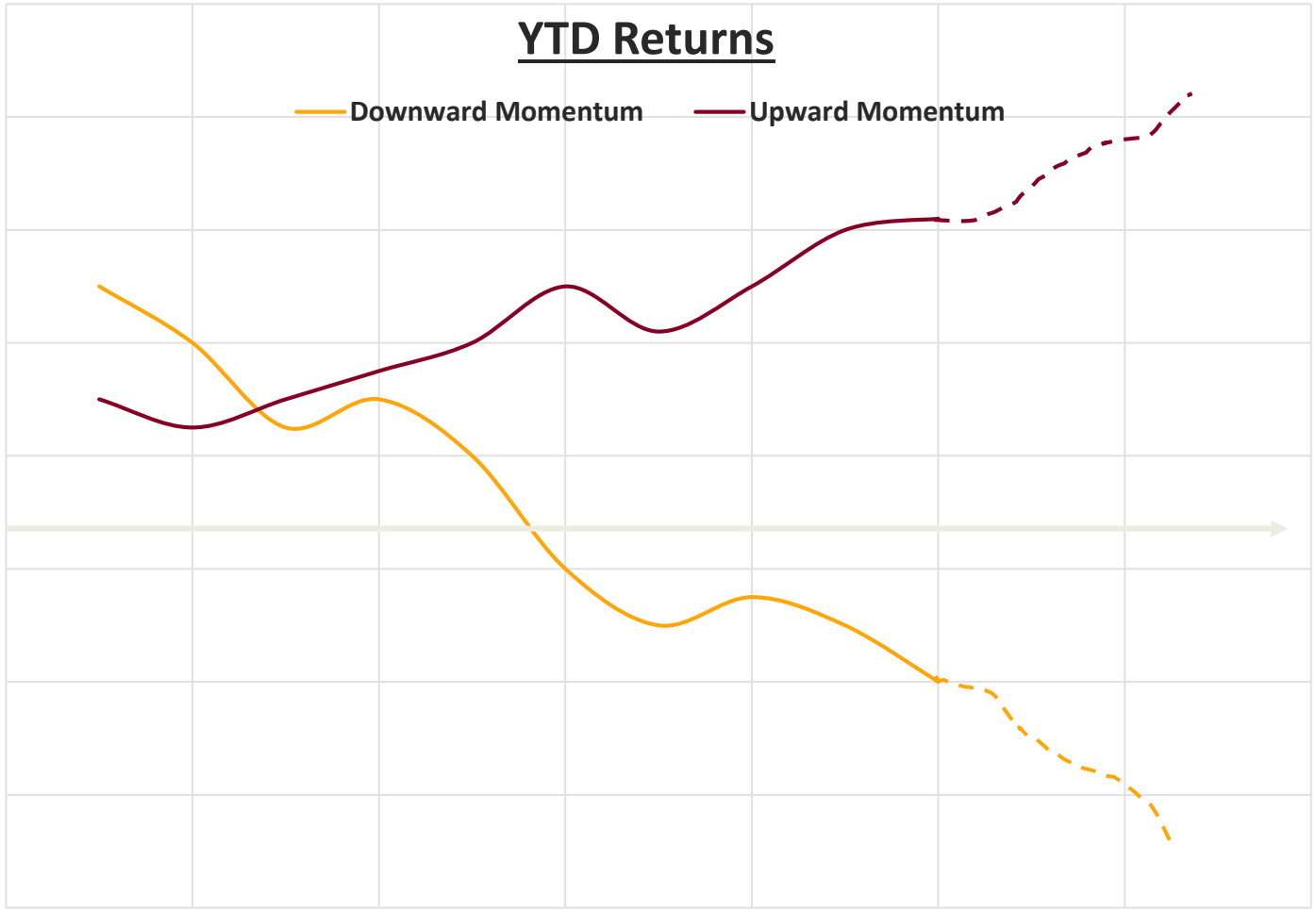
Momentum



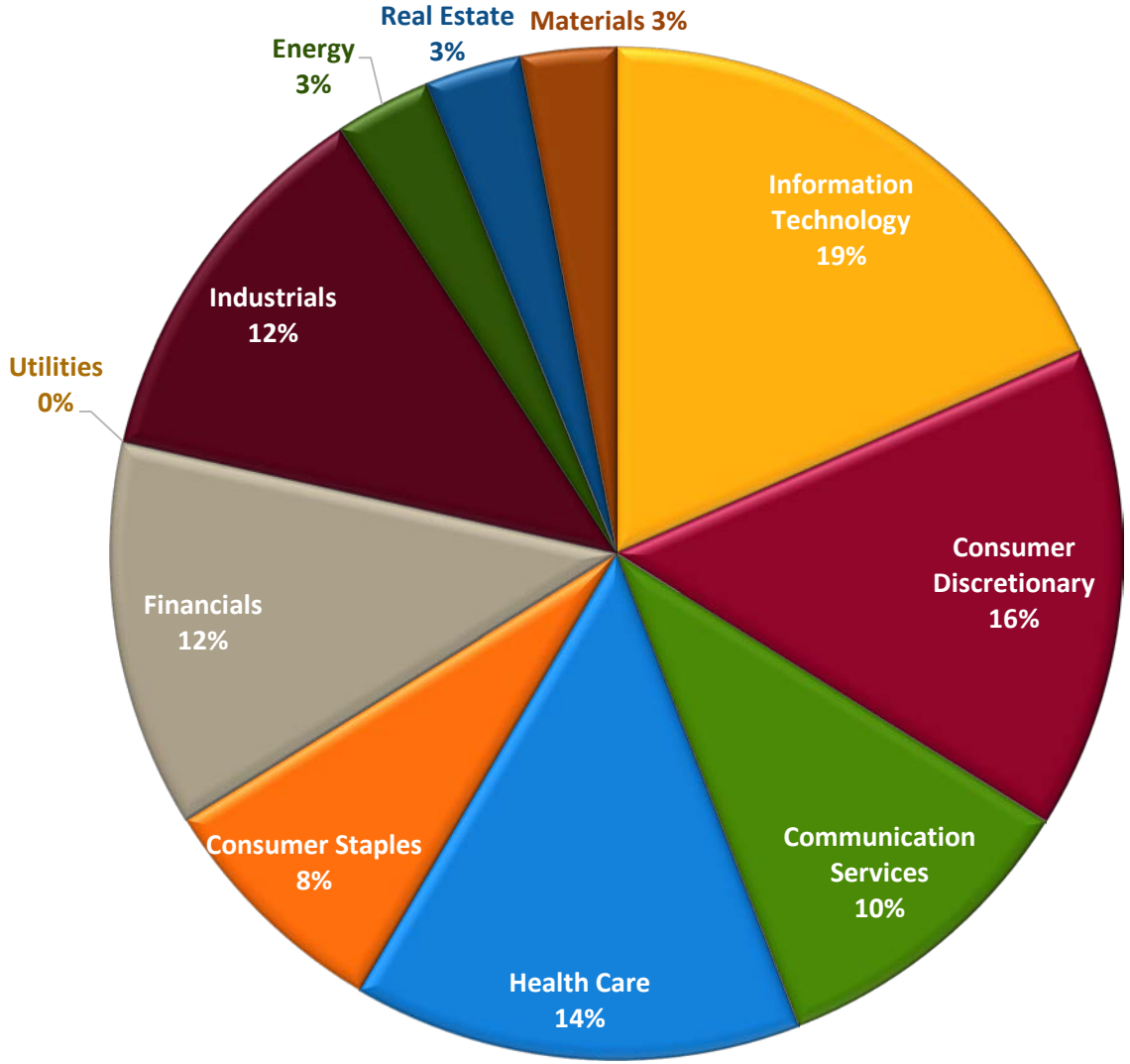
Exclude

Include

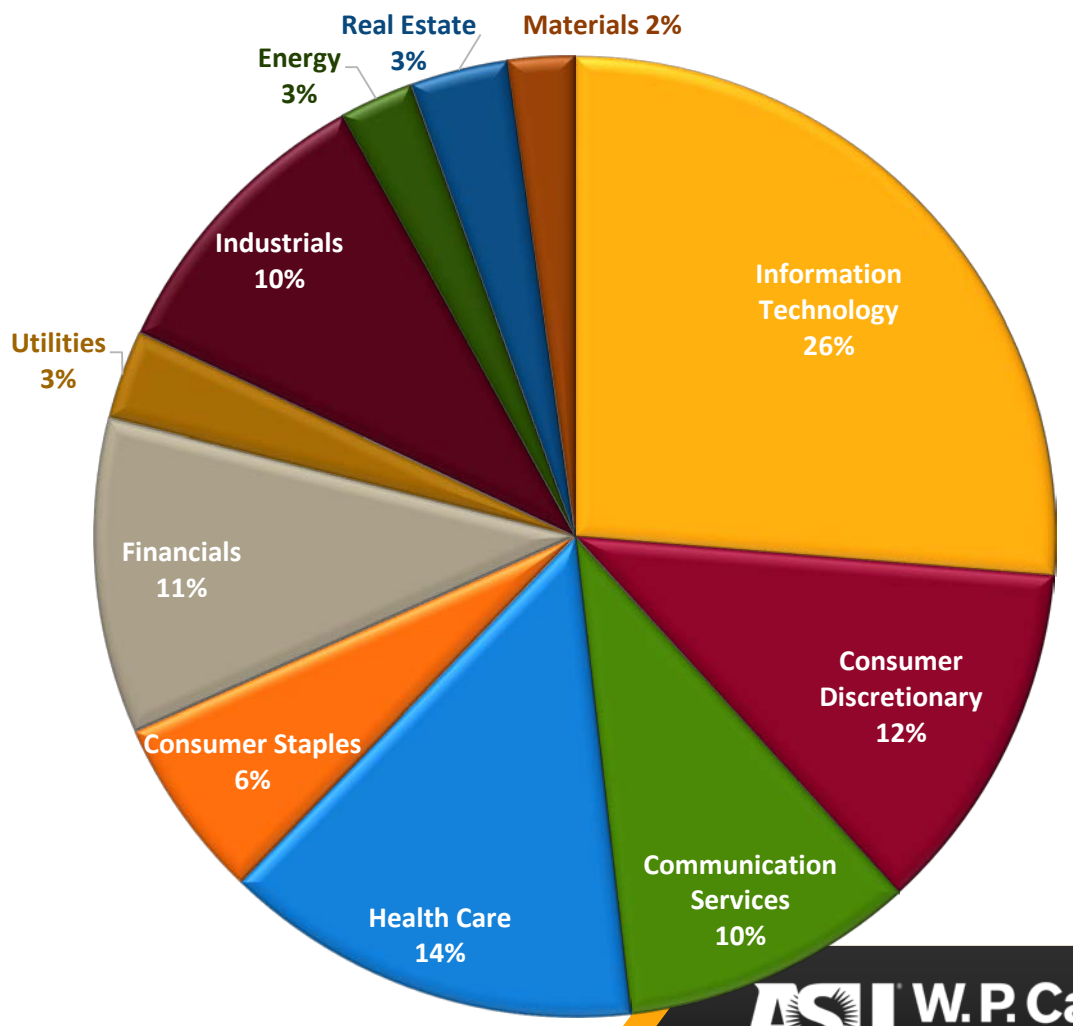
$$y = \alpha + \beta_{MKT}MKT + \beta_{RMW}RMW_{cbOP} + \beta_{HML}HML + \beta_{UMD}UMD + \in$$

Sector Weights

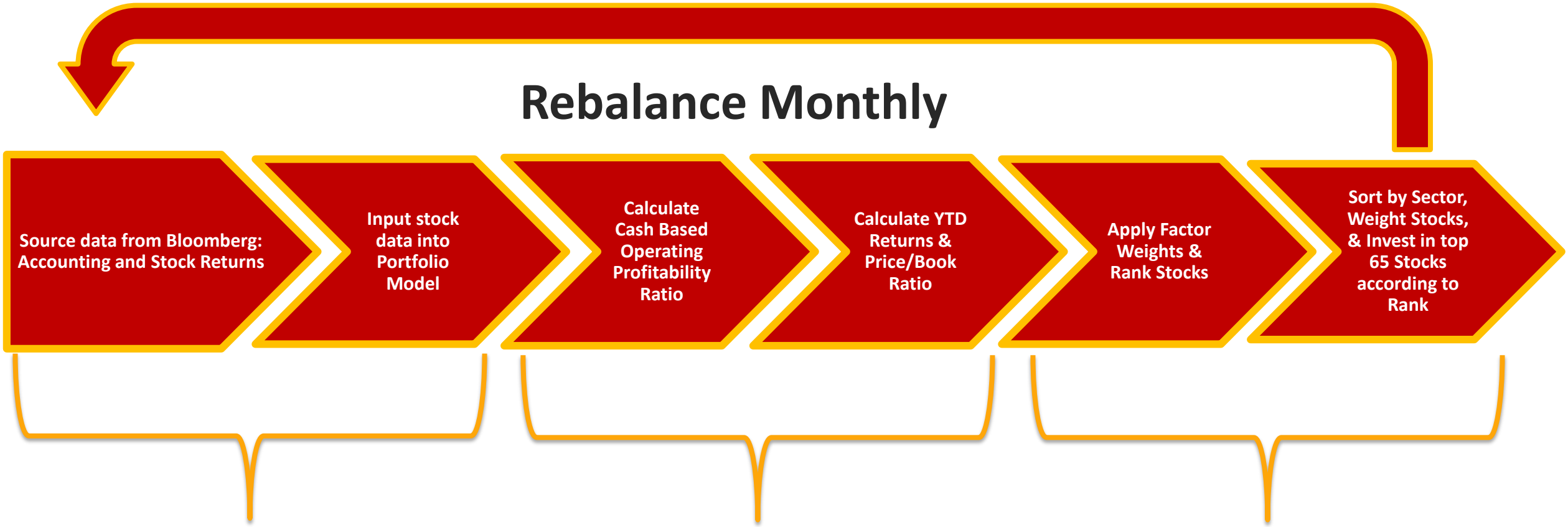
PORTFOLIO SECTOR CONCENTRATION



RUSSELL 3000 SECTOR CONCENTRATION

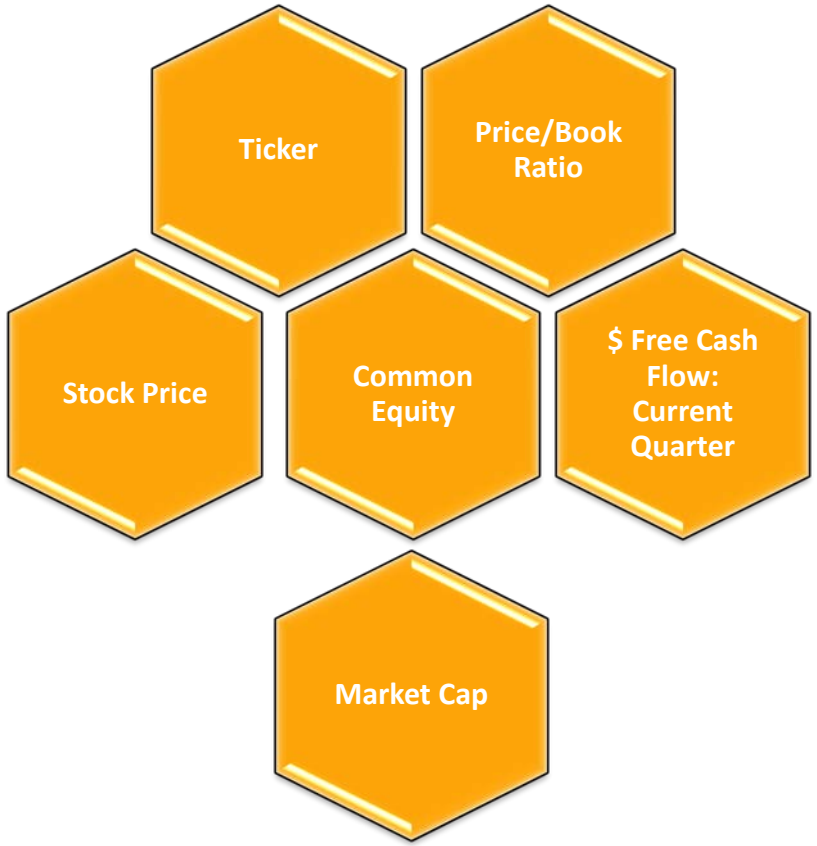


Portfolio Development & Implementation Process

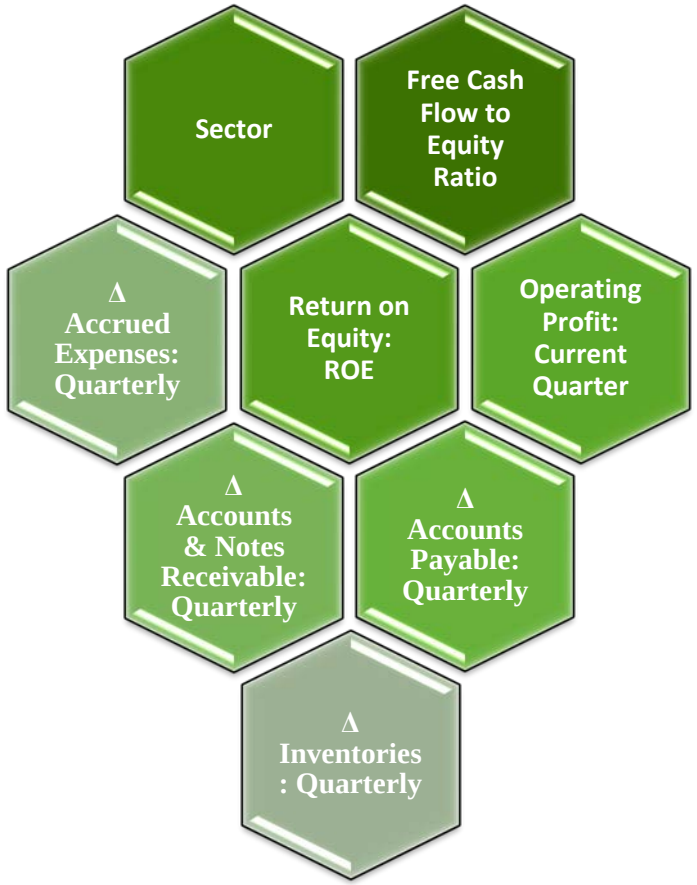


Required Stock Data: Bloomberg

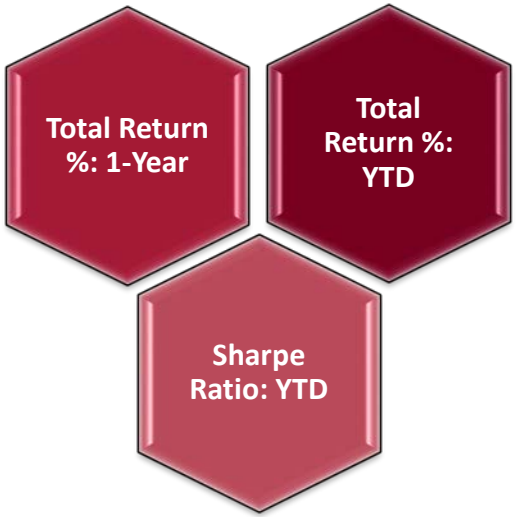
Value



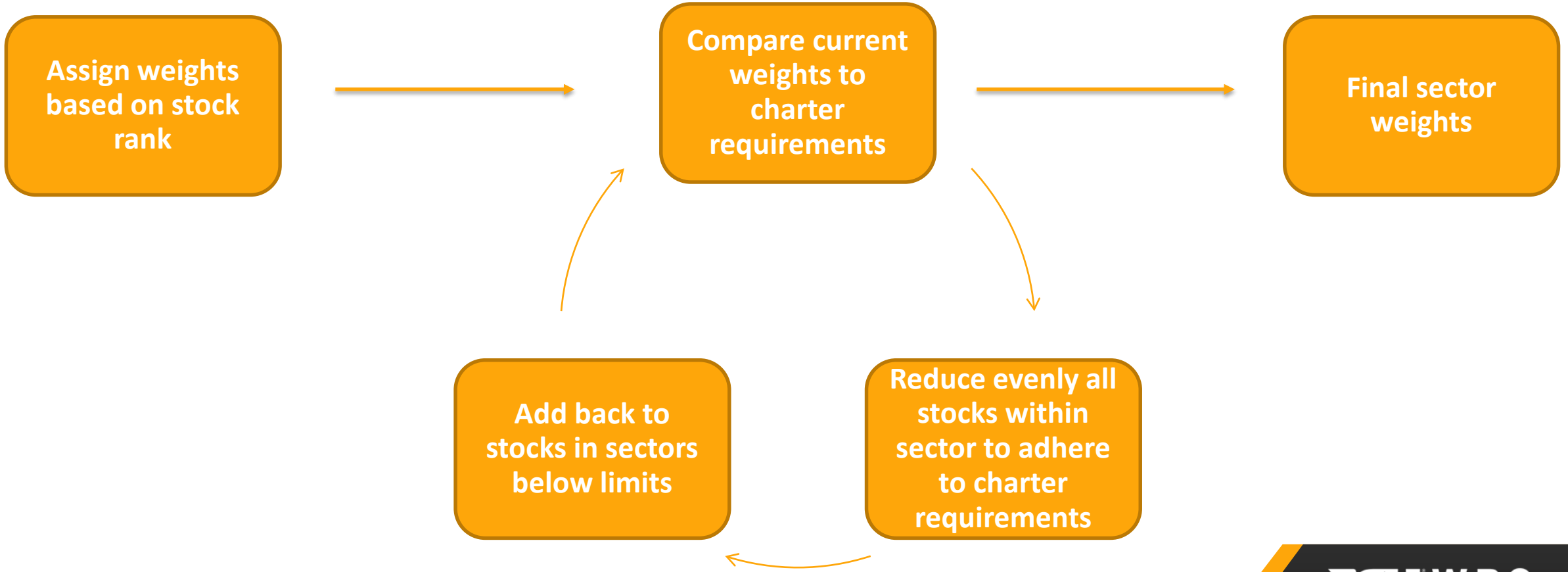
Cash-Based Operating Profitability



Momentum



Sector Weights



Individual Stock Weights

#1-10	~3%
#11-37	~ 1.5%
#38-65	~ 1%