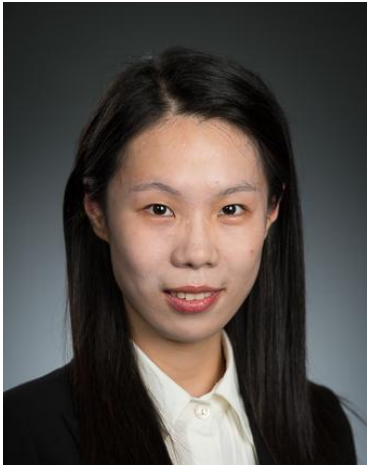


MBA SIMFUND 2015-16

April 29th 2016

INTRODUCTION



Charlize Zhou



James Kohlbeck



Mridul Reddy



Donald Bricker



Venkata Ghanta



Camden Forgia



Rhett Dayton

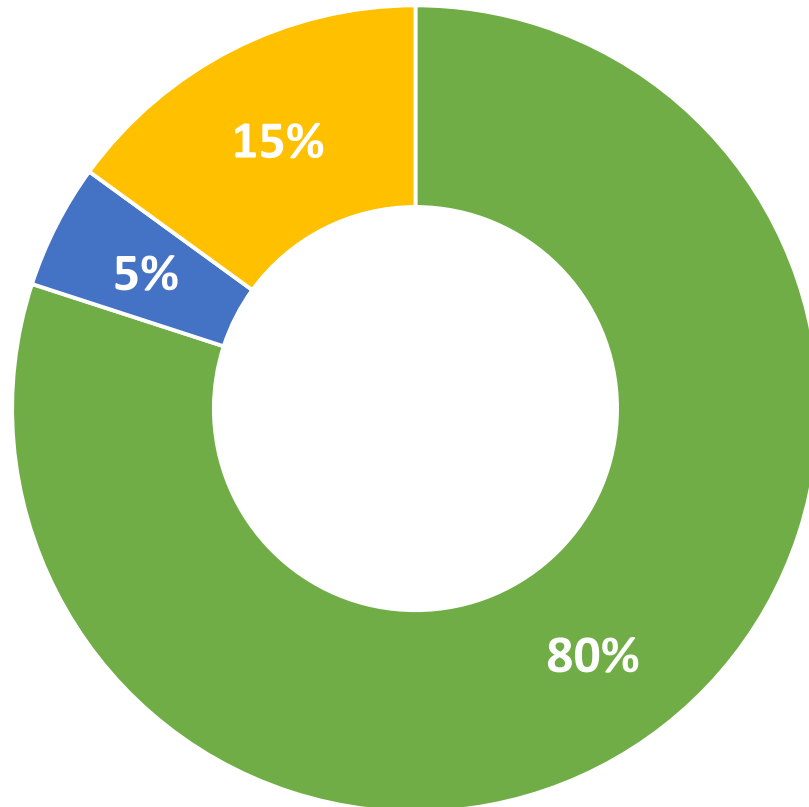
AGENDA

- Recap Strategy and Implementation
- Attributions
 - Sector
 - Size
 - Security
- Equity Rebalances
- REITS
 - Valuations Vs. Outcomes

ASSET ALLOCATION

The team decided to invest in Equity, Fixed income and REITs after evaluating other asset classes

■ Equity ■ Fixed Income ■ REITs



Equity

- Quantitative Strategy
 - Profitability & Momentum

REITs

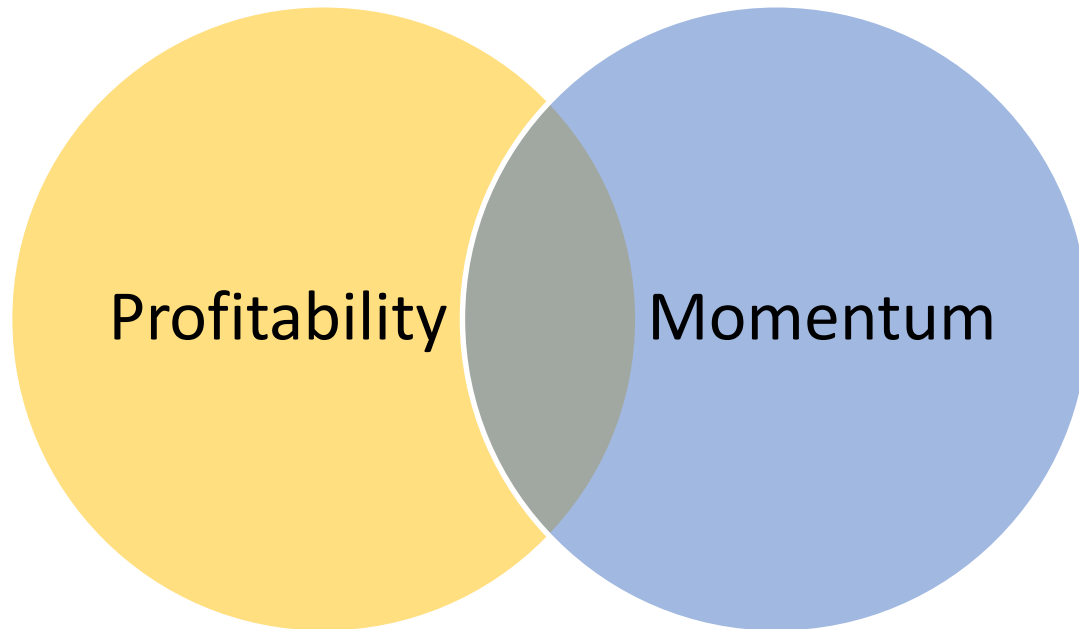
- Fundamental Analysis

Fixed Income

- Passive

EQUITY STRATEGY

A growth investment strategy focusing on profitability and momentum



- Profitability of stocks was measured for each of the past four quarters:

$$\textit{Profitability} = \frac{[\textit{Revenue}] - [\textit{COGS}]}{\textit{Assets}}$$

- Crude revenue and cost figures helped eliminate noise from stocks
- Momentum was calculated based on prior 6 months performance of stocks
- The intersection of the two defined the stock universe from which stocks were selected

EQUITY STRATEGY

Stocks were screened based on the following screening criteria

- Market cap restriction
 - Maximum of \$40 Bn.
 - Minimum of \$3 Bn.
- Profitability ranking was calculated by assigning higher weights to the profitability figure of the latest quarter

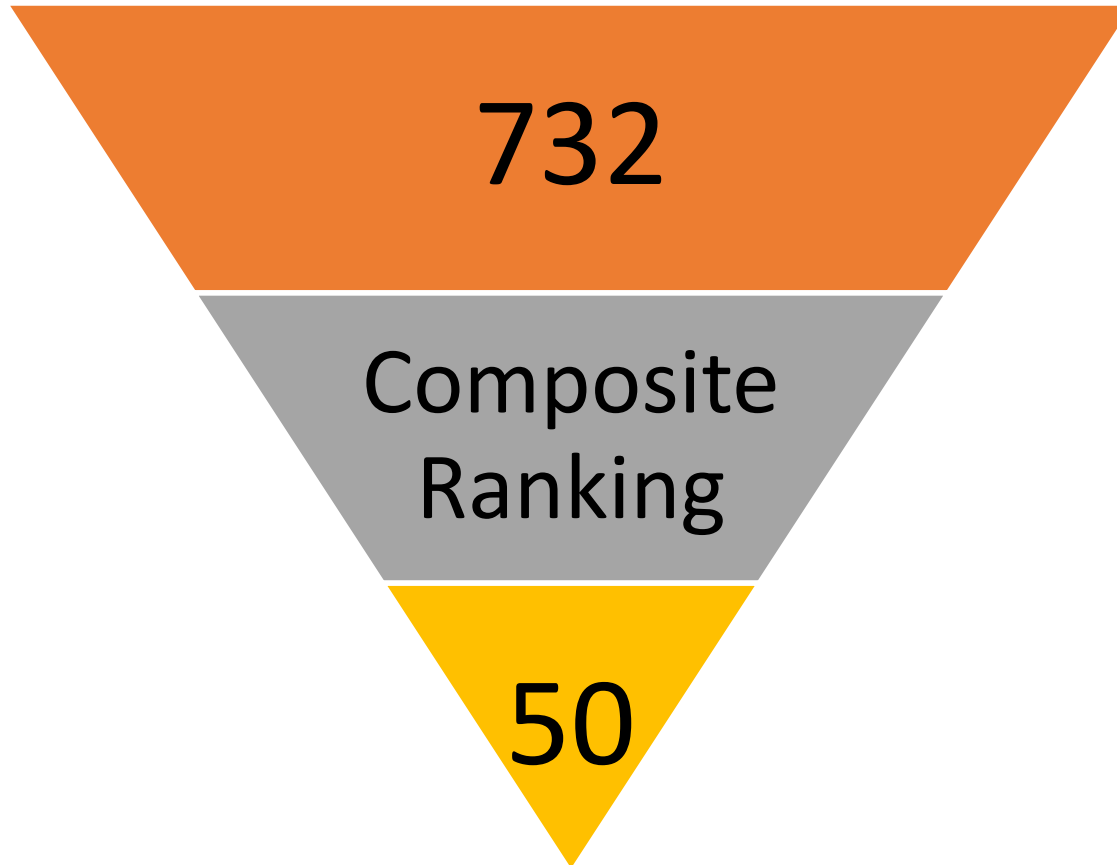
$$\textit{Profitability ranking} = 0.4xP_t + 0.2x[P_{t-1} + P_{t-2} + P_{t-3}]$$

- Momentum ranking was calculated by measuring return over a six month period
- A composite rank of profitability and momentum was assigned to each stock

$$\textit{Composite Rank} = \frac{[\textit{Profitability Rank}] + [\textit{Momentum Rank}]}{2}$$

- The stocks were listed based on the composite rank
- The top 50 stocks were selected from the composite ranking index

EQUITY STRATEGY



Screening criteria

- Market Cap. \$40B - \$3B
- Excluded Financial companies
- Avg. daily volume = 100K

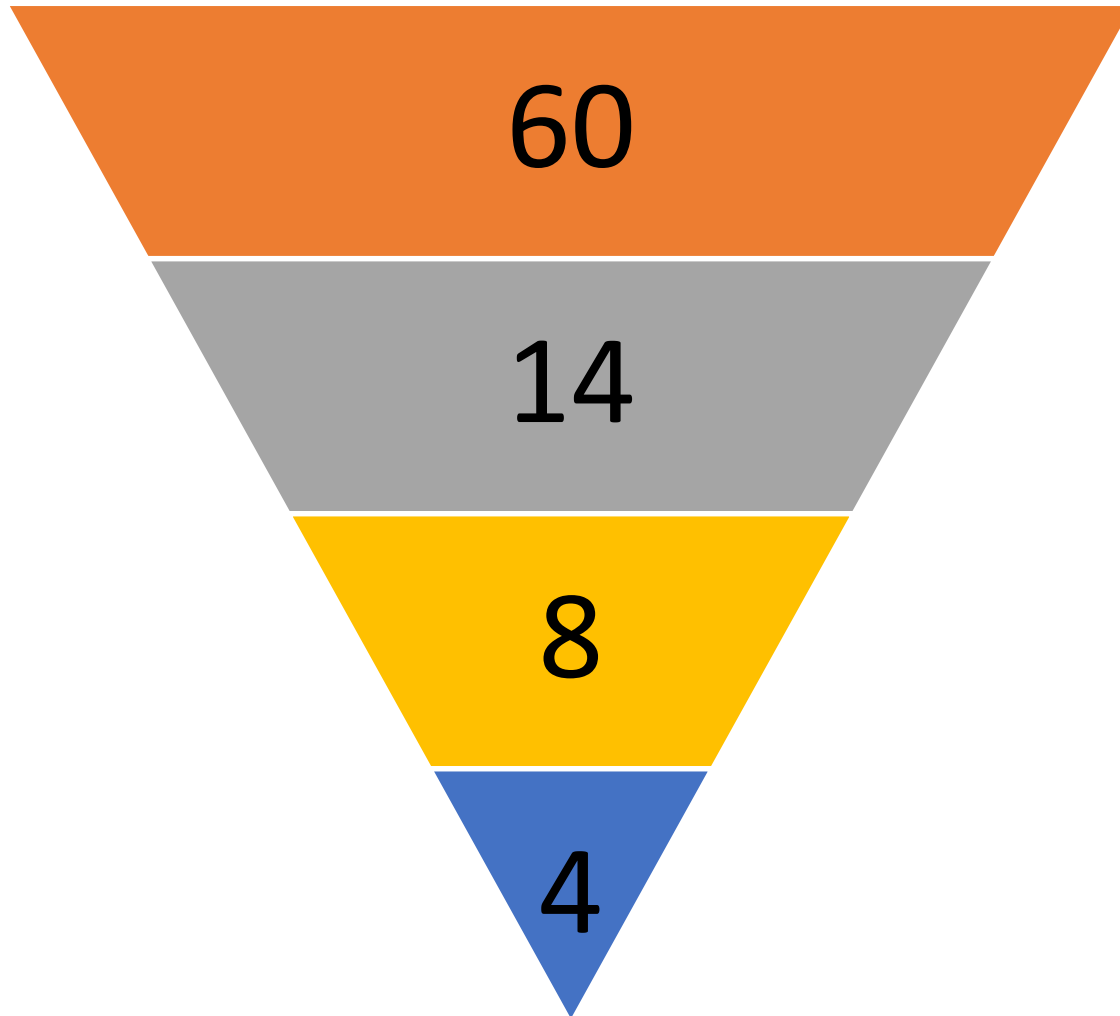
Ranking on Profitability & Momentum

- Stocks ranked individually
- Composite ranking calculated for all the stocks

Selected top 50

- Met minimum requirement of 40 stocks
- Market cap weighted portfolio

REIT STRATEGY



Screening criteria

- Market Cap. Restriction > \$1 Bn.
- Avg. daily volume = 100K
- Price > \$10

Fundamental Analysis

- 2 REITs selected per analyst
- One each from high P/E and low P/E ranking to ensure value and growth
- Diverse sectors selected for analysis

Cross validation

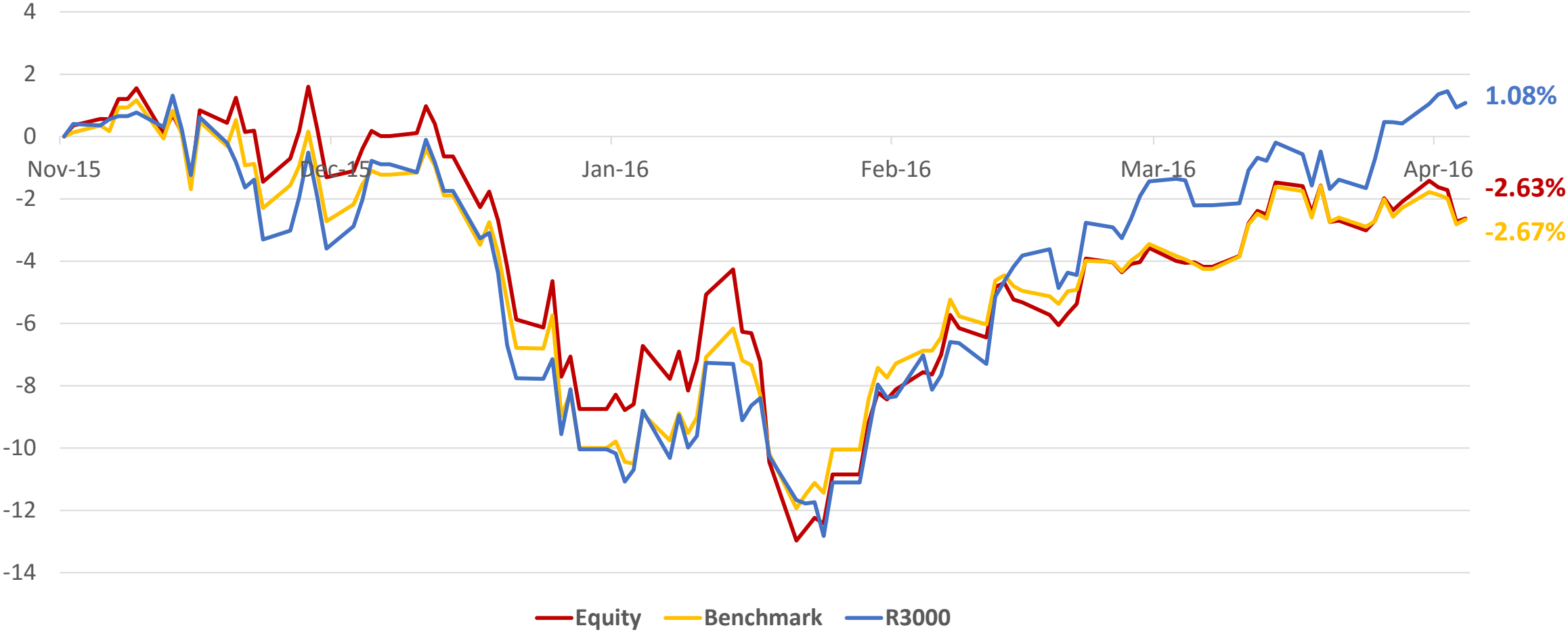
- Second round of screening was done to eliminate analysis bias

Selected 4 REITS

- Analysis indicated opportunities for short term returns

EQUITY PERFORMANCE

Performance (%)

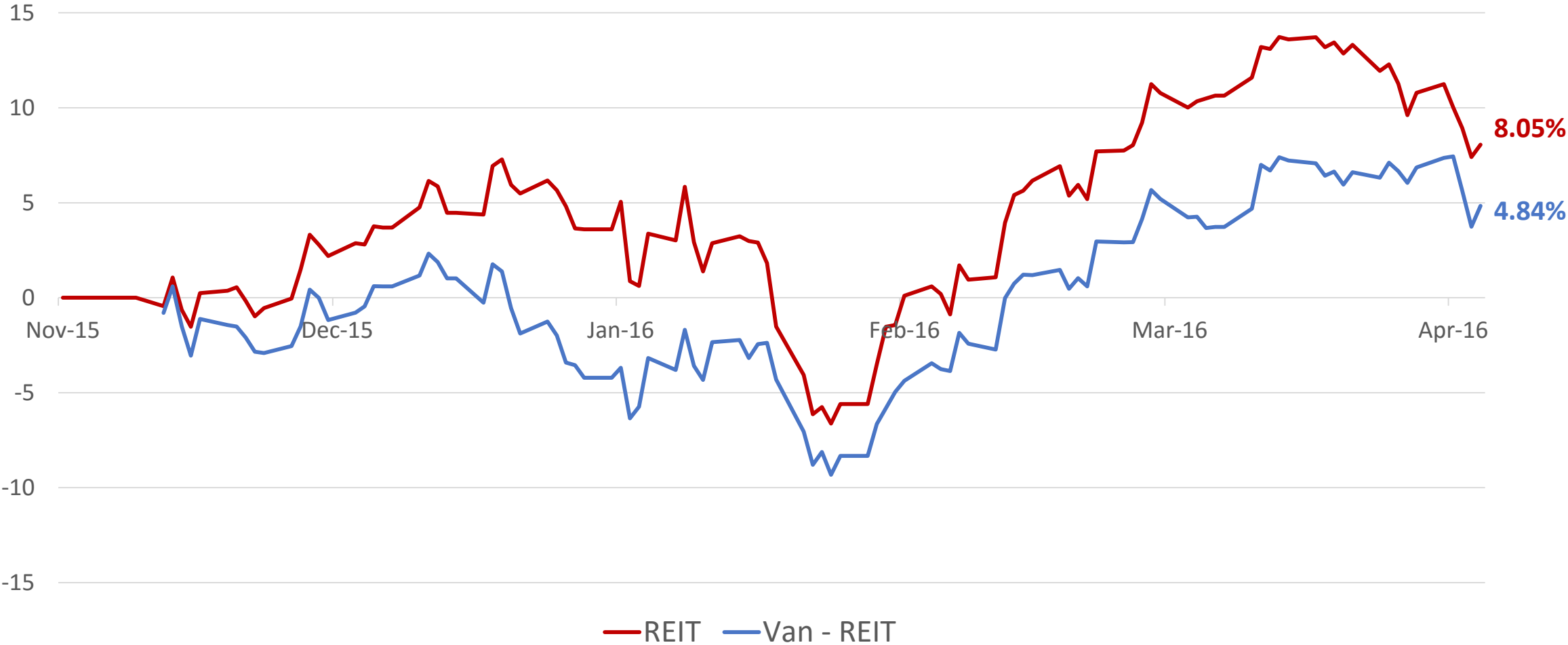


EQUITY ATTRIBUTIONS



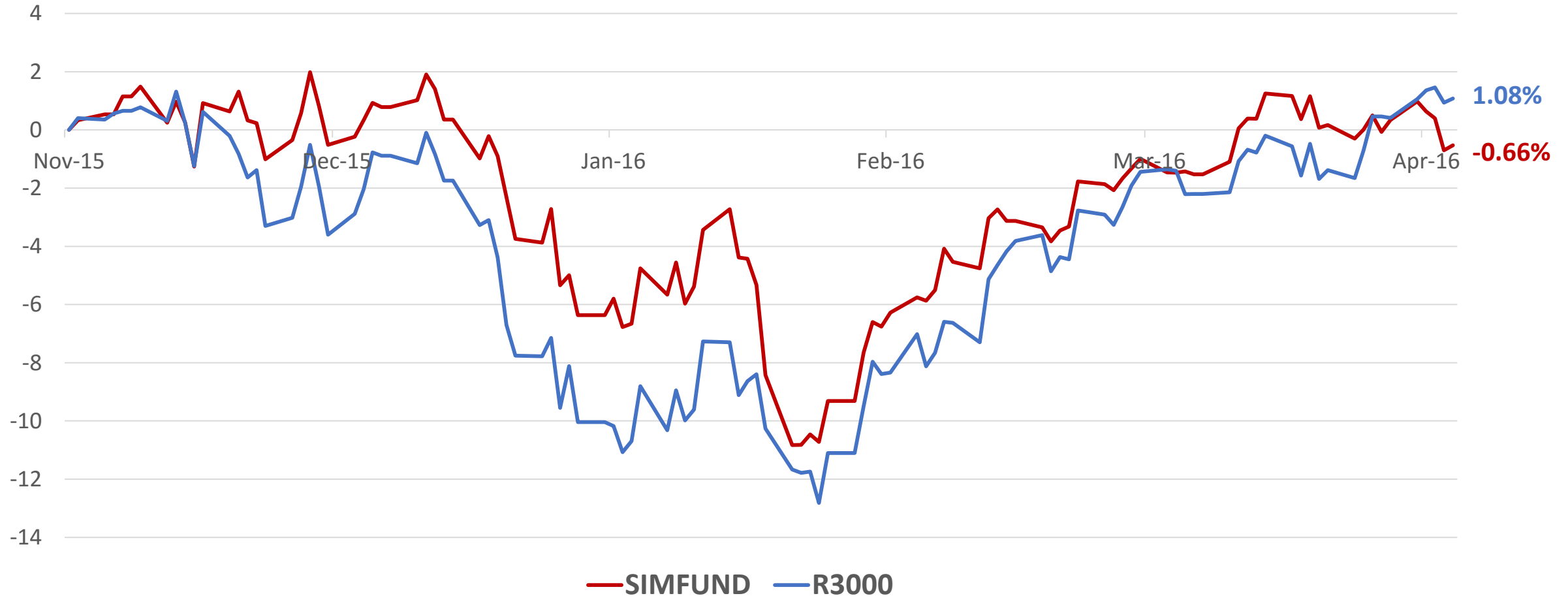
REIT PERFORMANCE

Performance (%)



OVERALL PERFORMANCE

Performance (%)



PORTFOLIO ATTRIBUTIONS



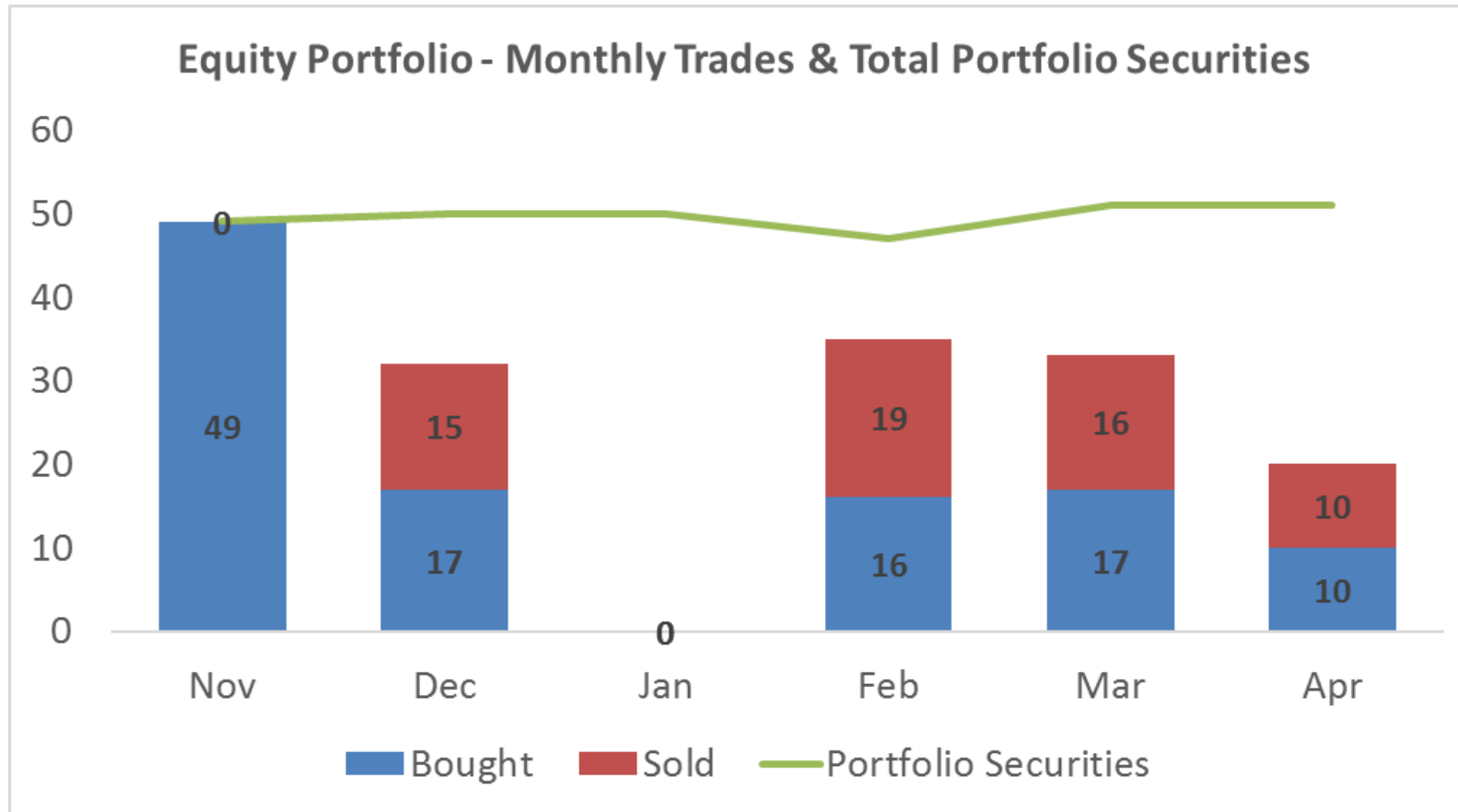
EQUITY PORTFOLIO

GOALS

- Adhere to initial quantitative investment strategies and policies
- Avoid individual security selection



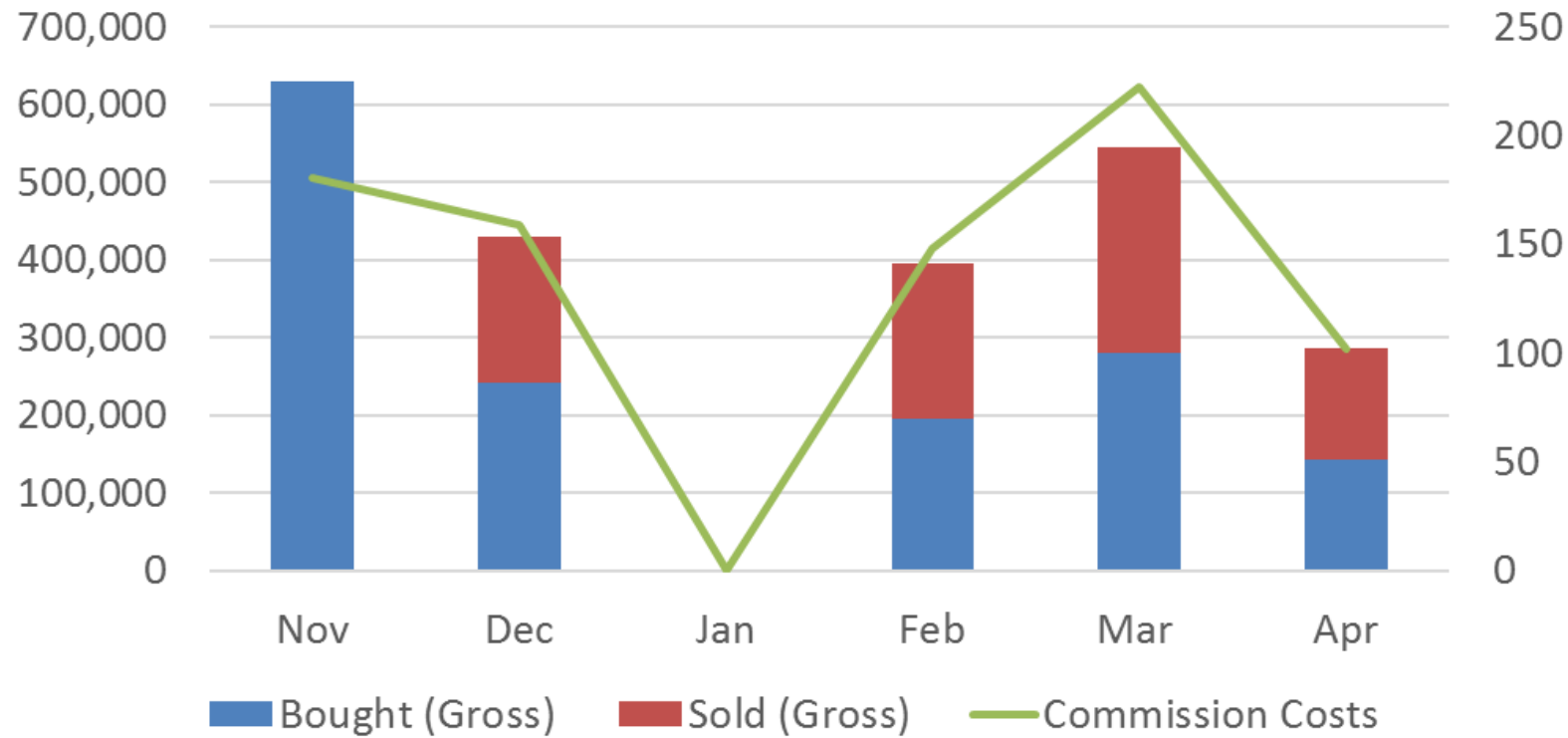
EQUITY PORTFOLIO



~50 Securities in portfolio throughout management period

EQUITY PORTFOLIO

Gross Trades & Commission Costs



Portfolio Turnover

- Average: 60.1%
- High (March): 78.3%
- Low (April): 41.2%

Commission Costs (Monthly)

- 15 – 20 bps
- Average: \$158
- High (March): \$223
- Low (April): \$102

REBALANCING & IMPLEMENTATION

JANUARY 20, 2016

– R 3000 hits 52-Week Low

DECEMBER 21, 2015 – JANUARY 21, 2016

R 3000

~8.2%



EQUITY

~7.3%



REBALANCING & IMPLEMENTATION

DECISION

- Postpone rebalance for 2 to 4 weeks
 - Gain more information

REBALANCE - FEBRUARY 8, 2016

SELL

19 Securities
~\$199K

BUY

16 Securities
~\$196K

FEBRUARY 11, 2016

R 3000 Hits New 52-Week Low

REIT PORTFOLIO

GOALS

- Perform Fundamental analysis and security selection
- Reevaluate performance and strategy
- Different asset class experience
- Make lots of Money



EXTRA SPACE STORAGE (EXR)

COMPANY DESCRIPTION

- **STORAGE REIT** – Owns more than 828 facilities in 35 states, concentrated in west coast and metros
- **Strong Revenue Streams** 92% occupancy, Dividend yield of 2.65%
- **Improving Operating Margin** – Economies of scale
- **Room For Consolidation** EXR has a market share of ~4% with 85% of market being controlled by small local property owners

Purchase Price
\$83.93

Target Price
\$95.83

Total Return
6.09%



CUBE SMART (CUBE)

COMPANY DESCRIPTION

- **STORAGE REIT** – Owns more than 420 facilities in 22 states, Manages 174 facilities for third parties, focus in east coast
- **Strong Revenue Streams** 89% occupancy, Dividend yield of 2.5%
- **Improving Operating Margin** – Economies of scale
- **Room For Consolidation** CUBE has a market share of ~2% with 85% of market being controlled by small local property owners

Purchase Price
\$29.34

Target Price
\$33.95

Total Return
4.33%



ESSEX PROPERTY TRUST (ESS)

COMPANY DESCRIPTION

- **Apartment REIT** – Owns apartments and commercial buildings in west metropolitan areas including Los Angeles, San Francisco and Seattle.
- **Population Density** moving towards metropolitan areas
- **Positive Demographic** increases in youth wealth, strict lending, preference to rent over own for millennials
- **Pricing Power** unless supply reacts and high sector growth rates.

Purchase Price
\$233.86

Target Price
\$291.62

Total Return
-3.49%



SENIOR HOUSING TRUST (SNH)

COMPANY DESCRIPTION

- **Senior Housing & medical facility REIT** – 423 properties in 43 states
- **Favorable Demographics** and life expectancy lead to expected strong future demand
- **Sustained High Payout Ratio** – Several years over 10% payout
- **Three Years** consistent growth annually and quarterly

Purchase Price
\$14.39

Target Price
\$17.93

Total Return
24.06%

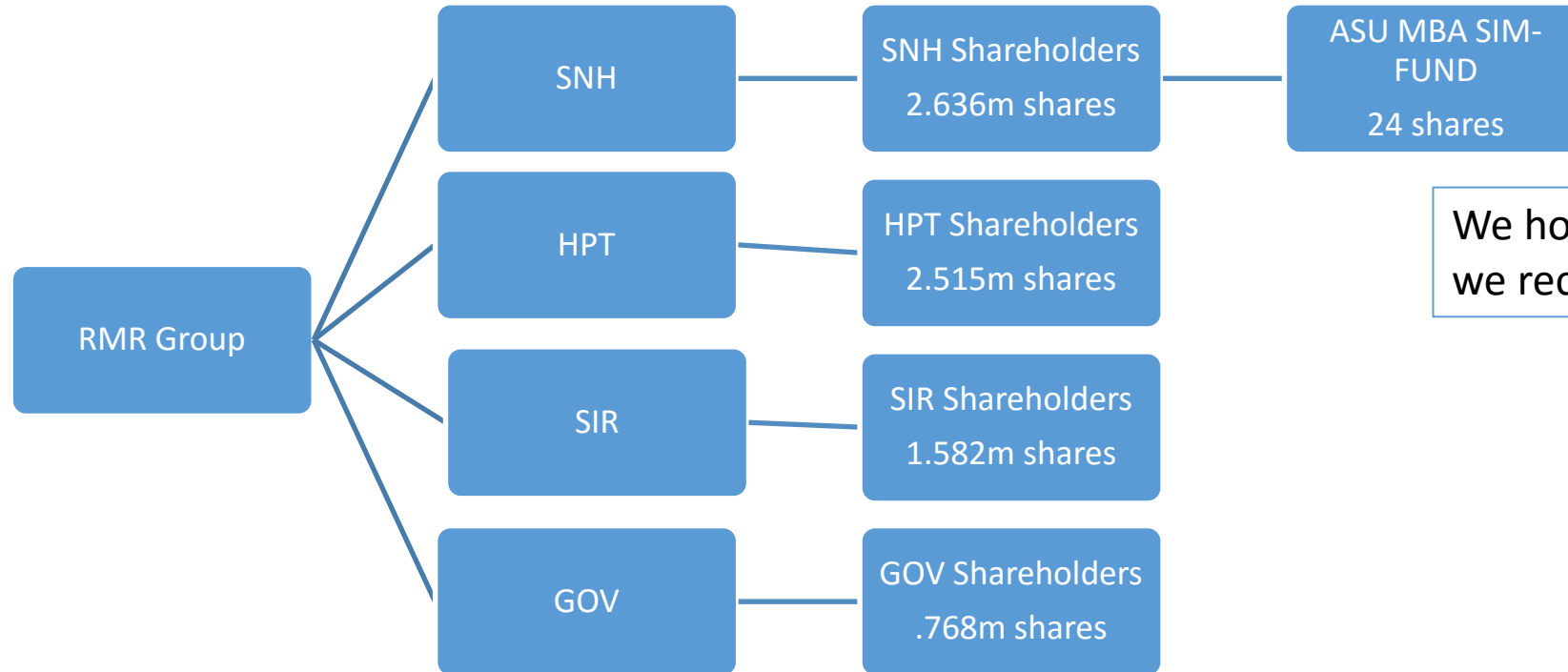


RMR -> SNH SHARE DISTRIBUTION

- SNH day-to-day operations managed by RMR Group
- To better “align incentives” RMR Group distributed 15 million shares of stock

RMR GROUP

- Operates and manages REITs
- 52% of ownership privately held (two partners)
- Not previously publicly traded
- RMR Group planned for high dividend yield
 - \$0.25 per share, per quarter. = 4.6% Dividend yield
- Provides exposure to 3 other REITs



We hold 2240 SNH shares, so we received 24 RMR shares

*48% of ownership passed on

*15m aggregate shares passed to the 4 REITs

*7.5m shares passed along to REIT shareholders. Other 7.5m will be held by REITs

SNH passed-on 2.636m RMR shares to SNH shareholders Distributed at a rate of .0111 RMR shares per SNH share

LESSONS LEARNED

- Timing Rebalances is challenging because Earnings are spread out
- Active management of quantitative portfolio
- Appropriate time to cash out? – Lock gains vs face volatility
- Don't time the market – It is impossible (January Dilemma)

Thank You

REIT PERFORMANCE

| | # of Shares | Purchase Price | Target Price | Sell Price | Closing Price | Dividend | Gain or Loss | Total Return |
|----------------------------|-------------|----------------|--------------|------------|---------------|----------|--------------|--------------|
| Senior Housing Trust (SNH) | 2240 | \$14.39 | \$18.84 | \$17.21 | | \$0.39 | \$7,190.40 | 24.06% |
| RMR | 24 | | | \$23.56 | | | \$565.44 | |
| Cube Smart (CUBE) | 968 | \$29.34 | \$33.95 | | \$30.19 | \$0.42 | \$1,229.36 | 4.33% |
| Extra Space Storage (EXR) | 336 | \$83.93 | \$95.83 | | \$86.00 | \$3.04 | \$1,716.96 | 6.09% |
| Essex Property Trust (ESS) | 139 | \$233.86 | \$291.62 | | \$224.51 | \$1.18 | (\$1,135.63) | -3.49% |
| Aggregate | | | | | | | \$9,566.53 | 7.88% |

FIXED INCOME – BOND ETFS

| Security | Maturity | Yield | Fees | NAV(\$Bn) | Weight |
|---------------------------------------|----------|-------|-------|-----------|--------|
| Intermediate Term Bond (BIV) | 7.2 | 3.85% | 0.10% | 21.6 | 49.90% |
| Total International Bond Index (BNDX) | 8.9 | 3.08% | 0.19% | 48.3 | 50.01% |
| Average | 8.05 | 3.47% | 0.15% | | |

| Security | # of Shares | Purchase Price | Closing Price | Gain or Loss | Total Return |
|---------------------------------------|-------------|----------------|---------------|--------------|--------------|
| Intermediate Term Bond (BIV) | 238 | \$83.83 | \$85.94 | \$502.18 | 2.52% |
| Total International Bond Index (BNDX) | 377 | \$53.06 | \$54.33 | \$478.79 | 2.39% |
| Average | | | | | 2.46% |

Investment Charter: Weighted Average greater than AA, Maturity less than 10 years

PERFORMANCE

Performance (%)

