

W. P. CAREY

SCHOOL of BUSINESS

ARIZONA STATE UNIVERSITY



**Undergraduate
SIM Fund**

Student Investment Management Fund

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OVERVIEW

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DATA COLLECTION

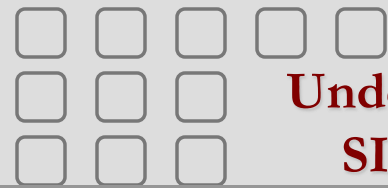
PORTFOLIO
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Undergraduate Student Investment Management Fund

Semi-Annual Presentation

Friday, December 7, 2012



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Fund Members

Fund Managers



Aaron Baker



Clayton
Jenners



Kenneth Qian



Dylan King



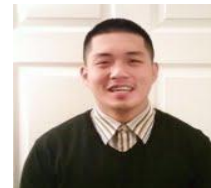
Andrew Farber



Kai Lam



Yili Yu



Jaesung Lee



Leo Panopoulos



Dakota Boyd



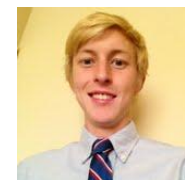
Lorne Forcum



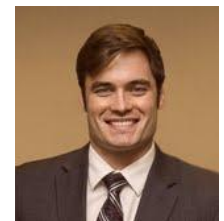
Troy Hebert



Adrian Reiter



John Happe



Brian Wright

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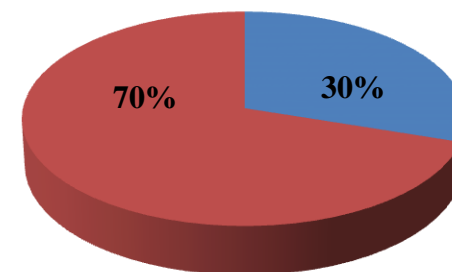
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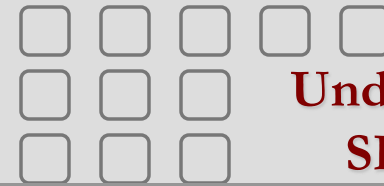
Hybrid Portfolio Strategy

- Combine a passive, market weighted portfolio with an active U.S. portfolio to capture additional value
- Passive portfolio displays mix of traditional asset classes
- Active portfolio chooses U.S. stocks based on insider trading

Hybrid Portfolio Weights



■ Active ■ Passive



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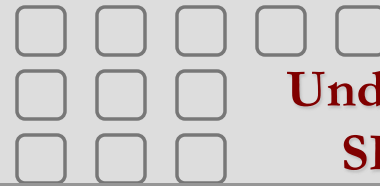
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Passive Portfolio Overview

- Represents 70% of SIMF total value, approximately \$400,000
- Purpose: to provide a liquid backbone to the active portfolio
- Goals
 - Highly diverse, global
 - Low cost
 - Easily scalable
 - International tilt to offset 100% US active portfolio



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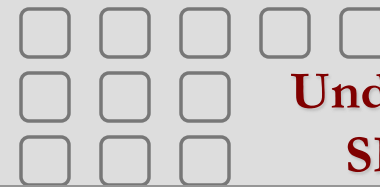
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Strategy and Asset Classes

- One US instrument and one international instrument per asset class (equity, bond, REIT)
 - Accommodates changes in active portfolio
- Equities
 - International tilt to offset US active portfolio
- Bonds
 - Lack of international investment grade bonds
- REITs
 - Diversification benefits



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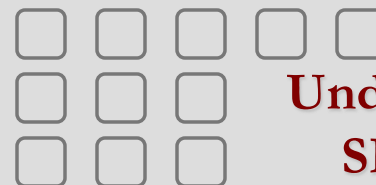
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Fund Selection - Equities

Ticker	Name	Expense Ratio	Holdings	% US	% Ex-US
VEU	iShares FTSE All World Ex-US	0.18	2319	0.00	98.98
VT	Vanguard Total World Stock Index	0.22	3787	46.32	52.63
ACWI	iShares MSCI All Country World Index	0.34	1346	46.65	52.56
IOO	iShares S&P Global 100 Index	0.40	102	50.89	48.64
VSS	Vanguard FTSE AW exUS Sm-Cp ETF	0.28	2989	13.00	97.26
SCHB	Schwab US Broad Market	0.04	1925	98.92	1.00
VWO	Vanguard MSCI Emerging Markets ETF	0.20	891	0.00	98.00



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Fund Selection - Bonds

Ticker	Name	Expense Ratio	Holdings	% US	% Ex-US	Credit Quality
BND	Vanguard Total Bond Market	0.1	4493	81.00	11.39	AA
AGG	iShares Core Total US Bond Market	0.08	1652	78.90	10.48	AAA
CIU	iShares Barclays Intermediate Credit	0.2	2623	68.69	29.45	A

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Fund Selection - REITs

Ticker	Name	Expense Ratio	Holdings	% US	% Ex-US
VNQ	Vanguard REIT Index	0.12	118	99.41	0.00
IYR	iShares Dow Jones US Real Estate	0.47	87	98.95	0.00
RWX	SPDR Dow Jones International Real Estate	0.61	127	0.00	96.78
RWR	SPDR Dow Jones US REIT	0.25	83	98.96	0.00
IFGL	iShares FTSE Mortgage REITs Index	0.48	180	0.00	96.41
REM	iShares FTSE NAREIT Mort. Plus Capp	0.48	29	97.24	0.00
ROOF	IQ US Real Estate Small Cap	0.69	41	98.83	0.00

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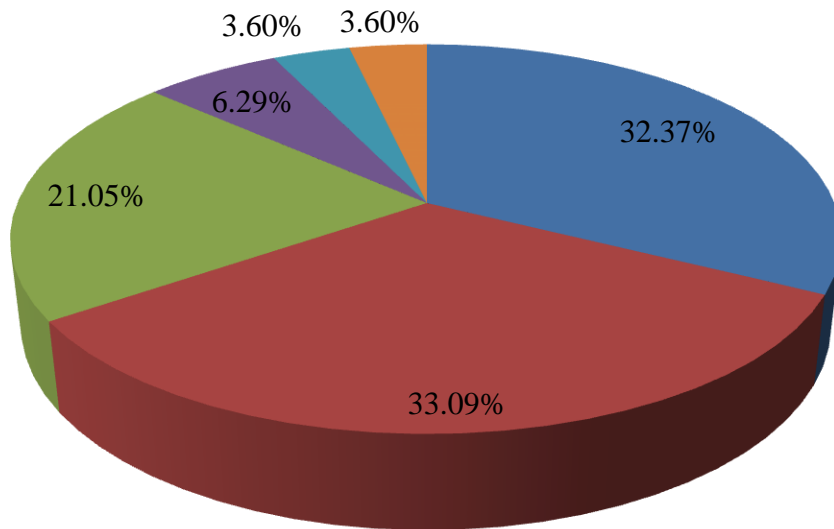
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November 2, 2012 Seeding

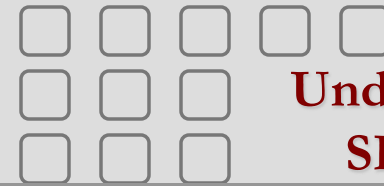
Passive Portfolio Asset Class Breakdown

- Int Equity
- US Equity
- US Bonds
- Int Bonds
- US REITs
- Int REITs



Investment Breakdown: Passive Portfolio

Ticker	Type	Amt Invested
BND	Bond	\$54,545.87
CIU	Bond	\$54,545.87
VEU	Equity	\$129,187.58
SPY (passive)	Equity	\$57,666.68
SPY (active)	Equity	\$129,750.02
SCHB	Equity	\$74,641.71
RWX	REIT	\$14,354.18
VNQ	REIT	\$14,354.18
Active	US Equity	\$43,250.01



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Active Portfolio Motivation

- Use information on insider positions to determine which stocks to purchase
- Jeng et al. (2003) find that insider purchases earn 6% annual abnormal returns
- Cohen, Malloy, and Pomorski (2010) improve on returns by distinguishing between 'Opportunistic' and 'Routine' insiders



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“Opportunistic” vs. “Routine”

- Many insiders trade based on individualistic reasons
- “Routine” traders include those who buy stocks through annual bonuses or through stock grants
- The trading patterns of “Routine” traders are predictable, while those of “Opportunistic” traders are more random

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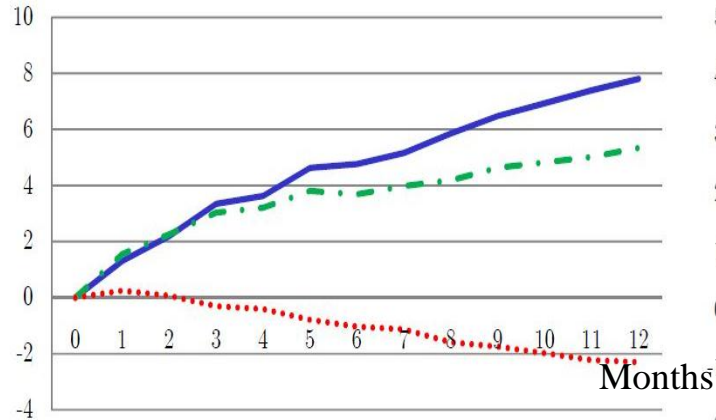
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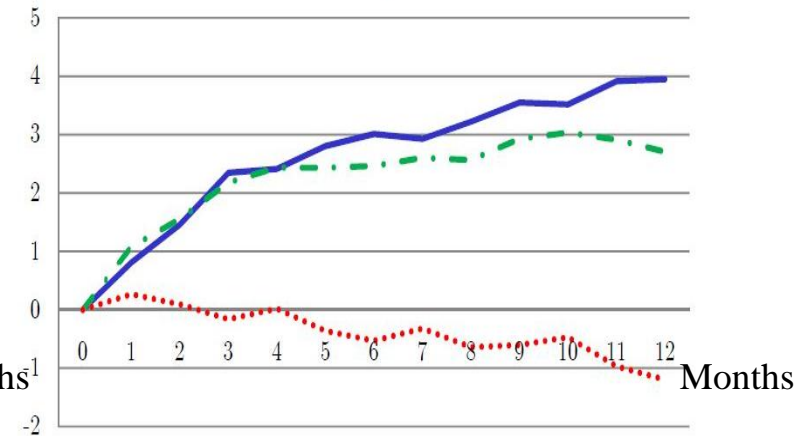
Pomorski Portfolio Performance

Returns Equal-weight portfolios

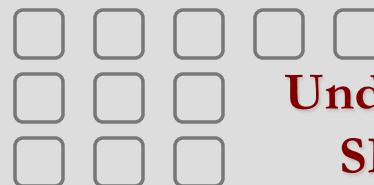


— Opportunistic minus Routine (Buys - Sells)
 - - - Opportunistic (Buys - Sells)
 Routine (Buys - Sells)

Returns Value-weight portfolios



— Opportunistic minus Routine (Buys - Sells)
 - - - Opportunistic (Buys - Sells)
 Routine (Buys - Sells)



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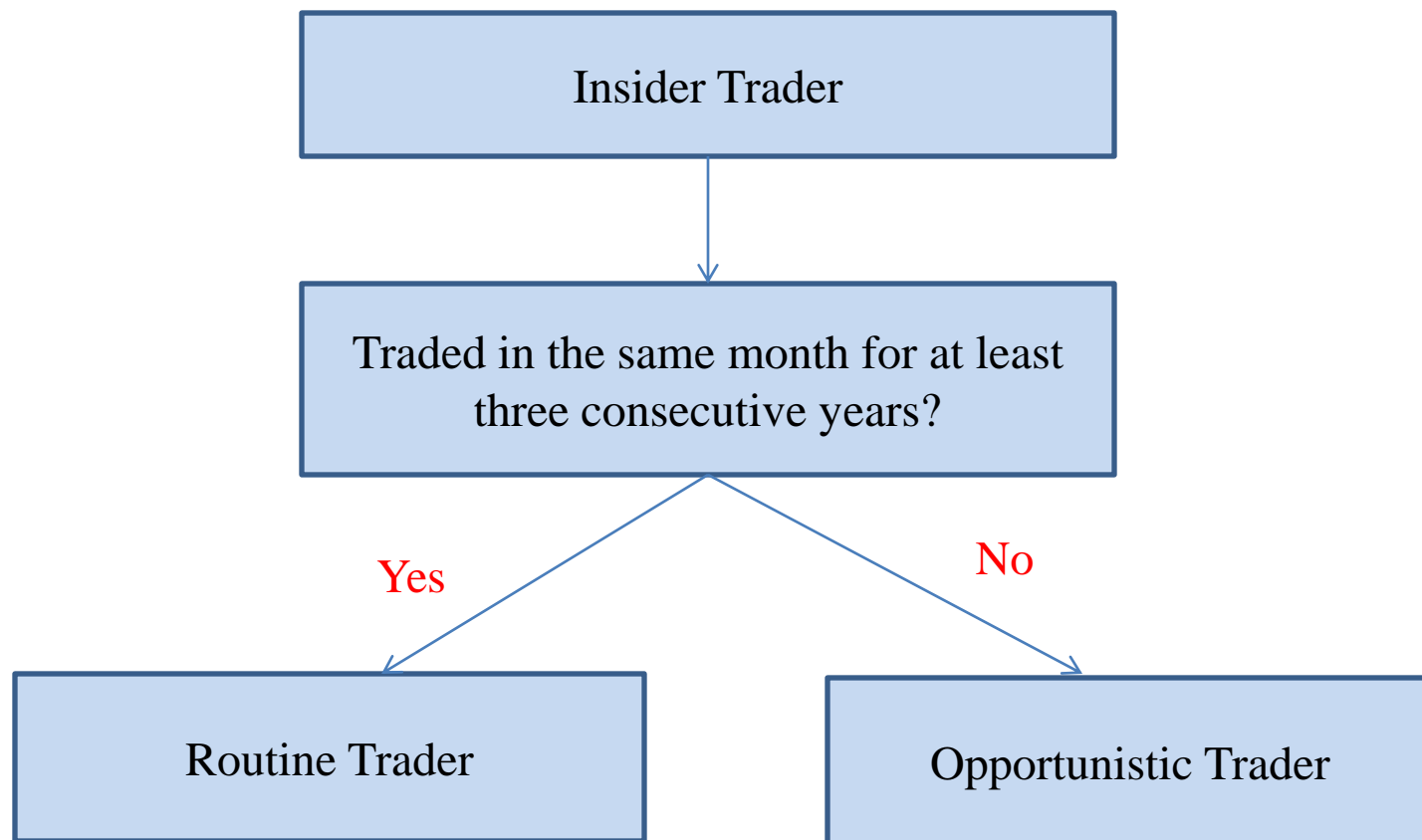
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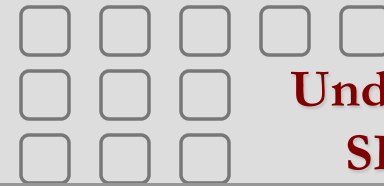
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“Opportunistic” vs. “Routine”





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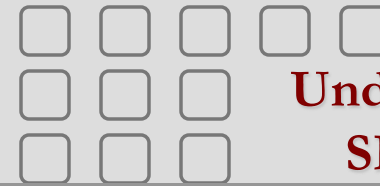
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Data Collection

- Data up to August 2012
- Web crawler to collect forms filed with the SEC EDGAR system from August to present
- EDGAR search for equities meeting charter restrictions on market capitalization
- A company search yields a list of Forms 3, 4, and 144 including the names of insiders and the dates of their transactions
- Electronically collect data from these forms and input data into database software SAS



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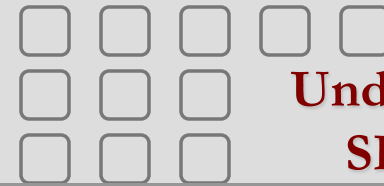
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Web Crawler

- 1570 companies with market capitalization > 1.2 billion
- From August to present between 50-100 insider filing forms
- Each form may have 1-20 transactions
- About 1 million transactions to classify traders as routine or opportunistic



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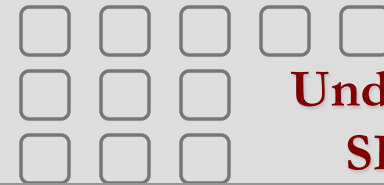
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Active Portfolio Construction

- Best case
 - Continuously collect filing data
 - Determine “Opportunistic” or “Routine” traders
 - Immediately purchase firms’ equity with new opportunistic traders
 - Hold companies for less than 6 months
 - Diversify active portfolio (>30 stocks)
 - Equal-weight portfolio



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Active Portfolio Construction

- Hold 40 securities in active portfolio
- Purchase top 10 firms ranked by net number of opportunistic buyers (# insiders buying - # insiders selling) each week
- Do not rebalance to equal weight
- Hold each stock for 4 weeks
- Use final “Week 1” value to purchase “Week 5” stocks



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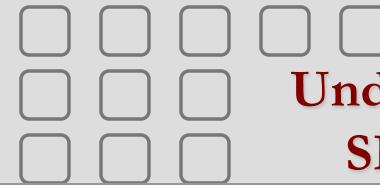
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Portfolio Rebalancing

Week 2 Buys	Week 3 Buys	Week 4 Buys	Week 4 Buys
VIASAT INC	EATTLE GENETICS INC	EFIRSTENER	FIRSTENER
CONOCOPHILLIPS	SIRONA DENTAL SYSTEMS	SSYNOVUS F	SYNOVUS F
OGE ENERGY CORP.	WPX ENERGY INC.	VAMERISOUR	AMERISOUR
BOSTON PROPERTIES	PEPCO HOLDINGS INC	PJEFFERIES	JEFFERIES
PFIZER INC	PROTECTIVE LIFE CORP	PASHLAND I	ASHLAND I
RALCORP HOLDINGS	ATMOS ENERGY CORP	AEXELON CO	EXELON CO
PPG INDUSTRIES INC	MFA FINANCIAL INC.	MMAGELLAN	MAGELLAN
AT&T INC.	CVS CAREMARK CORP	COMEGA HEA	OMEGA HEA
PHARMACYCLICS INC	FLOWSERVE CORP	F3M CO	3M CO
SOUTHERN CO	WYNN RESORTS LTD	VNUSTAR EN	NUSTAR EN



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Holding Characteristics

Portfolio	SIMF ACTIVE	Benchmark	- None
Characteristic			Port
Wgt			100.00
Equity			
Dividend Yield			3.04
Price to Earnings Ratio (P/E)			18.46
Price to Cash Flow Ratio (P/CF)			8.06
Price to Book Ratio (P/B)			1.77
Total Debt to Common Equity			122.82
Current Ratio			1.05
Market Capitalization			30.68M

Port SIMF ACTIVE vs Bmrk None Date Trend

Breakdown by Market Cap Curr USD

Name	Wgt	Div Yld	P/E	P/CF	P/B	Debt/Equity	Current Ratio	Market Cap
SIMF ACTIVE	100.00	3.04	18.46	8.06	1.77	122.82	1.05	30,677
Large Cap	51.59	3.46	15.55	8.24	2.57	121.99	1.05	55,680
Mid Cap	40.91	2.96	21.01	7.53	1.28	138.09	1.29	3,277
Small Cap	7.50	0.66	49.60	10.44	1.63	73.99	2.60	1,790

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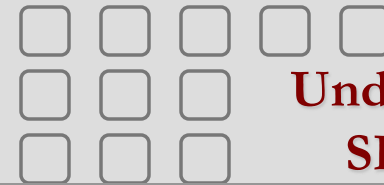
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U.S. Sector Distribution

Port		SIMF ACTIVE	vs Bmrk	None
Breakdown by		GICS Sectors		Curr USD
	Name	Avg % Wgt	CTR	Tot Rtn
	SIMF ACTIVE	100.00	2.27	2.27
	+ Consumer Discretionary	11.08	0.49	2.72
	+ Consumer Staples	9.53	0.63	8.11
	+ Energy	6.07	0.24	1.85
	+ Financials	13.01	0.11	-0.44
	+ Health Care	10.13	0.64	4.38
	+ Industrials	16.32	0.62	2.80
	+ Information Technology	12.23	-0.08	0.82
	+ Materials	3.64	0.01	1.50
	+ Telecommunication S...	7.41	-0.38	-3.42
	+ Utilities	10.59	-0.02	-1.42



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Case Study: Ralcorp Holdings Inc.

- Originally bought Ralcorp on 11/5/2012 at \$71.87
- On 11/27/2012, ConAgra Foods acquires Ralcorp at \$90 per share
- On 11/27/2012, price closed at \$88.8, a 26.4% one-day increase





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Benchmark Slide

- Benchmark for Active Portfolio
 - Mix of U.S. indices adjusted for portfolio size tilts
- Benchmark for Total Portfolio
 - Russell 3000
 - Custom benchmark to reflect portfolio constraints

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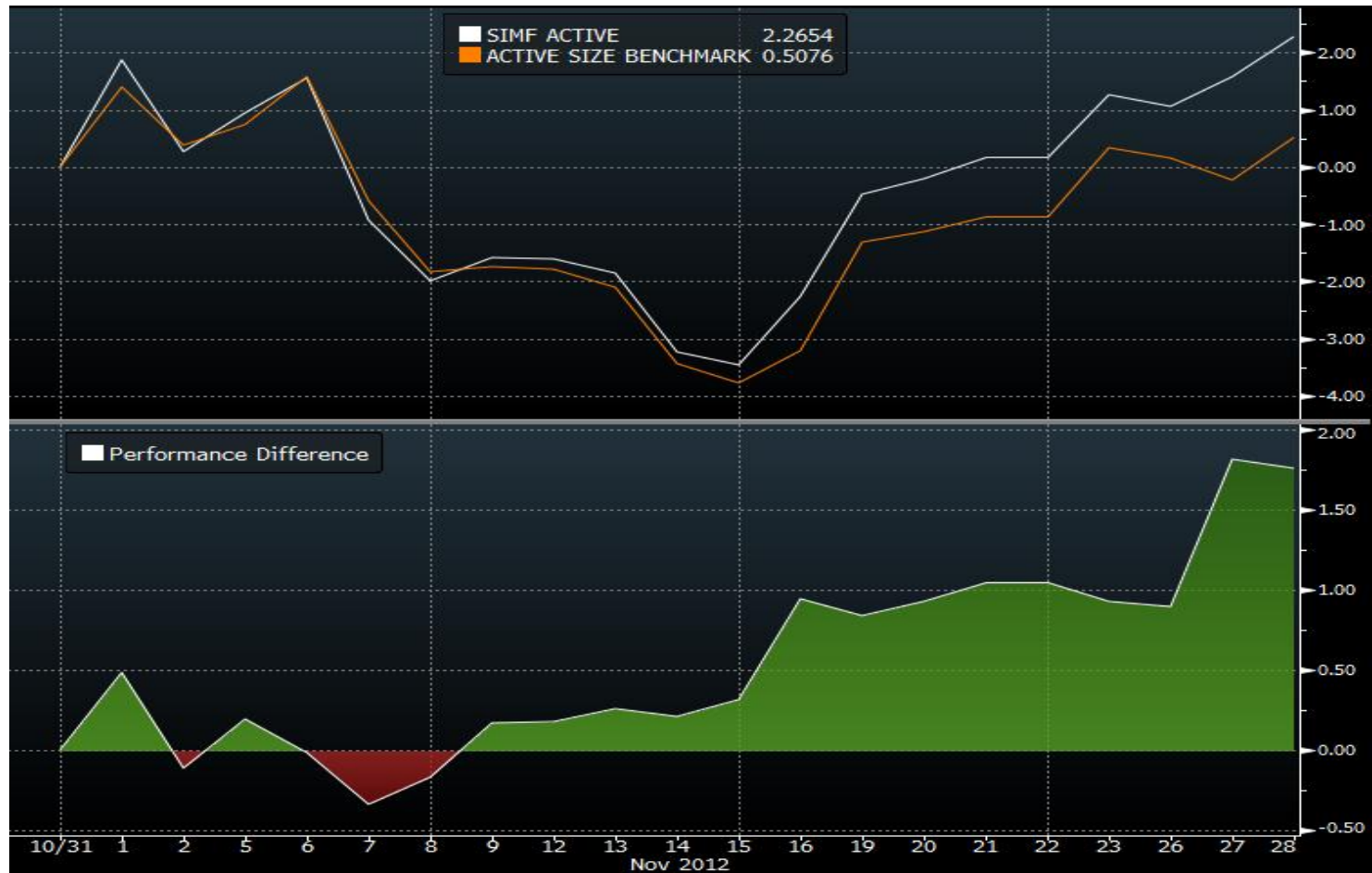
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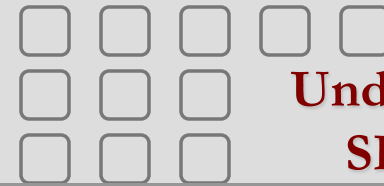
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Active Performance





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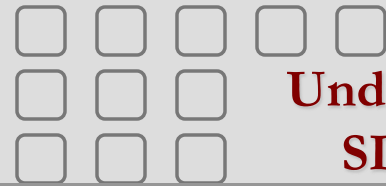
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What We Learned and Future Plans

- Implement a live portfolio from a paper portfolio
- Analyze large datasets
- Collect large amounts of data
- Combine data from different sources
- Maintain an active strategy
- Reduce turn over in an active strategy



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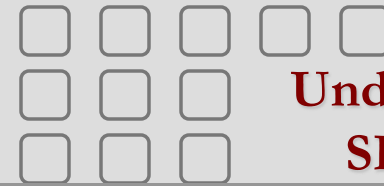
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Questions?



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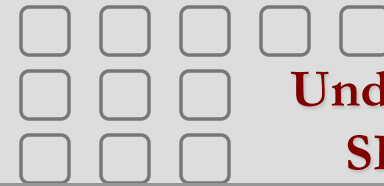
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Passive Portfolio

Strategy and Asset Classes, cont'd

- No direct investment in commodities
 - Prohibited by charter
 - Broad enough equity holdings already include commodity exposure
- Excluded TIPS
 - Currently possess negative yield curve, indicating low expectations for inflation over near term
 - Broad equity holdings already include inflation protection
- Invest in ETFs entirely
 - Broad nature of investment strategy means ETFs of



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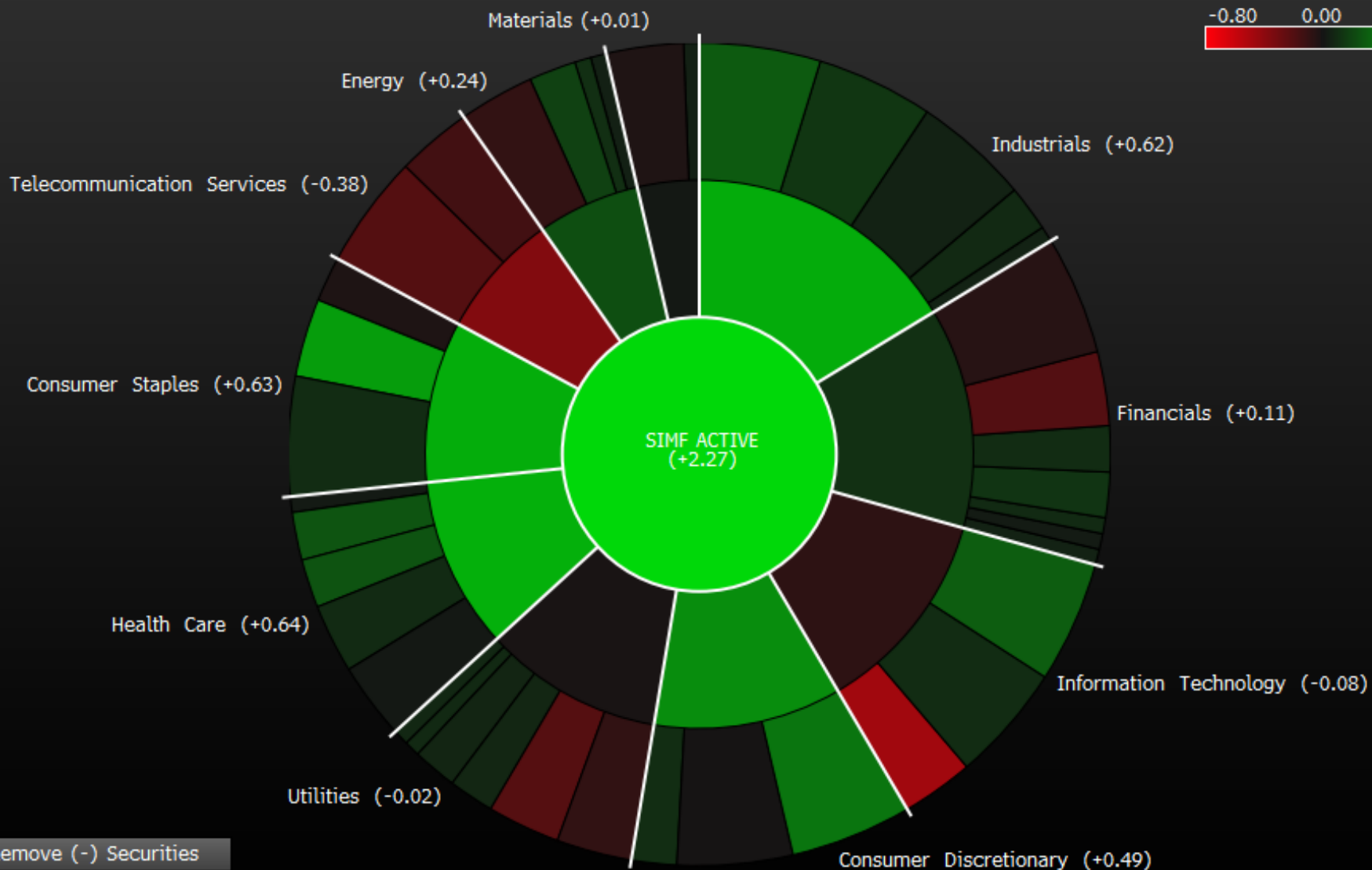
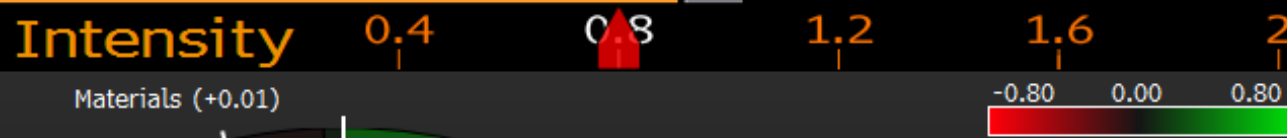
Determining Weights

- Due to charter constraints and needs of Active Portfolio, a MVO proved problematic
 - Unconstrained MVO invested solely in US bonds and stocks
 - Constrained MVO placed too much weight in REITs, due to their recent high performance
- Arbitrary weights allowed consideration of charter constraints, existence of the Active Portfolio, and misleading data



Chart
Wedge Size
Color

Heat Map
Avg % Wgt(P)
CTR(P)

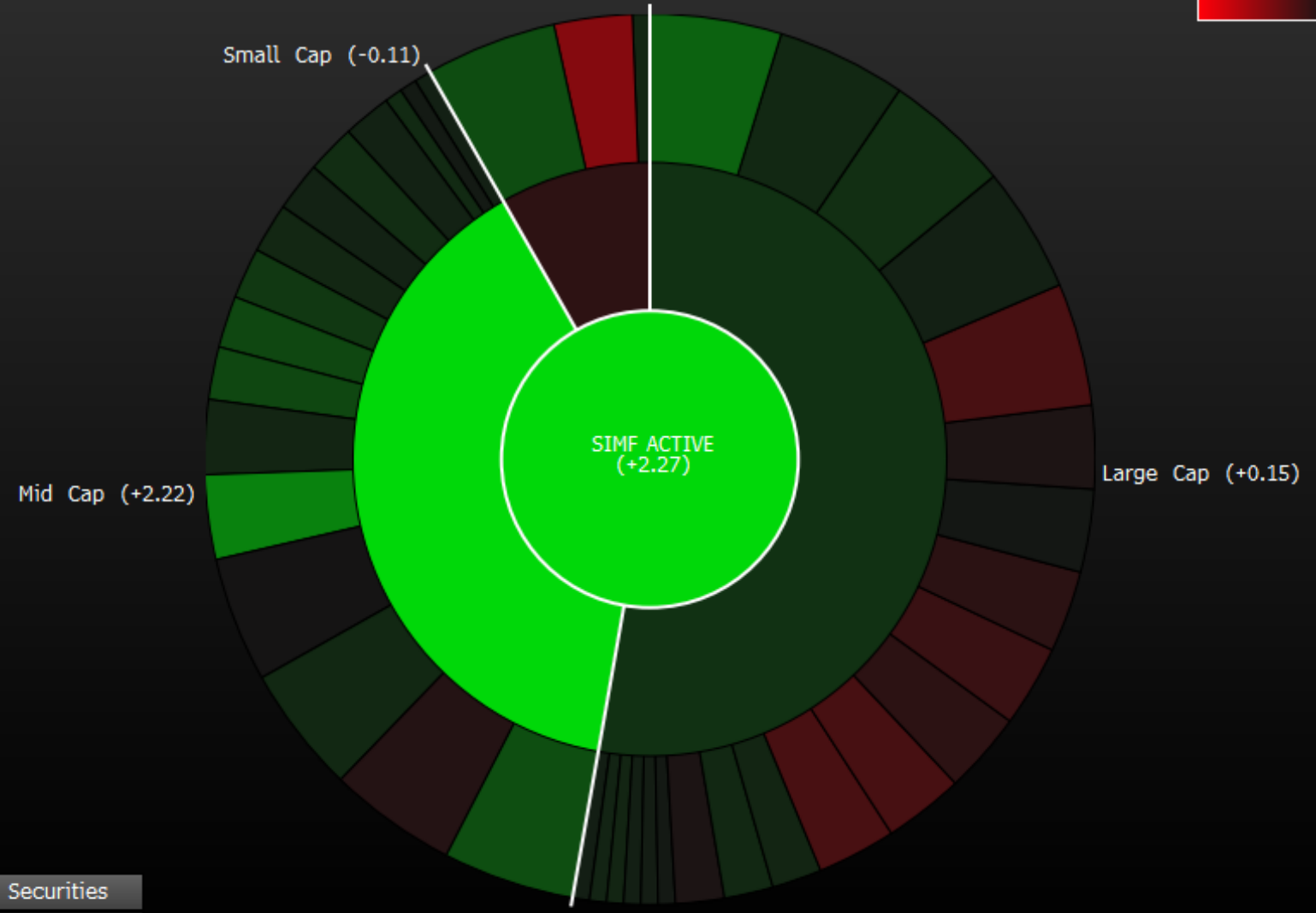
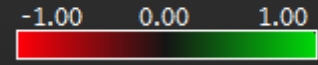


Remove (-) Securities
Add (+)



Chart
Wedge Size
Color

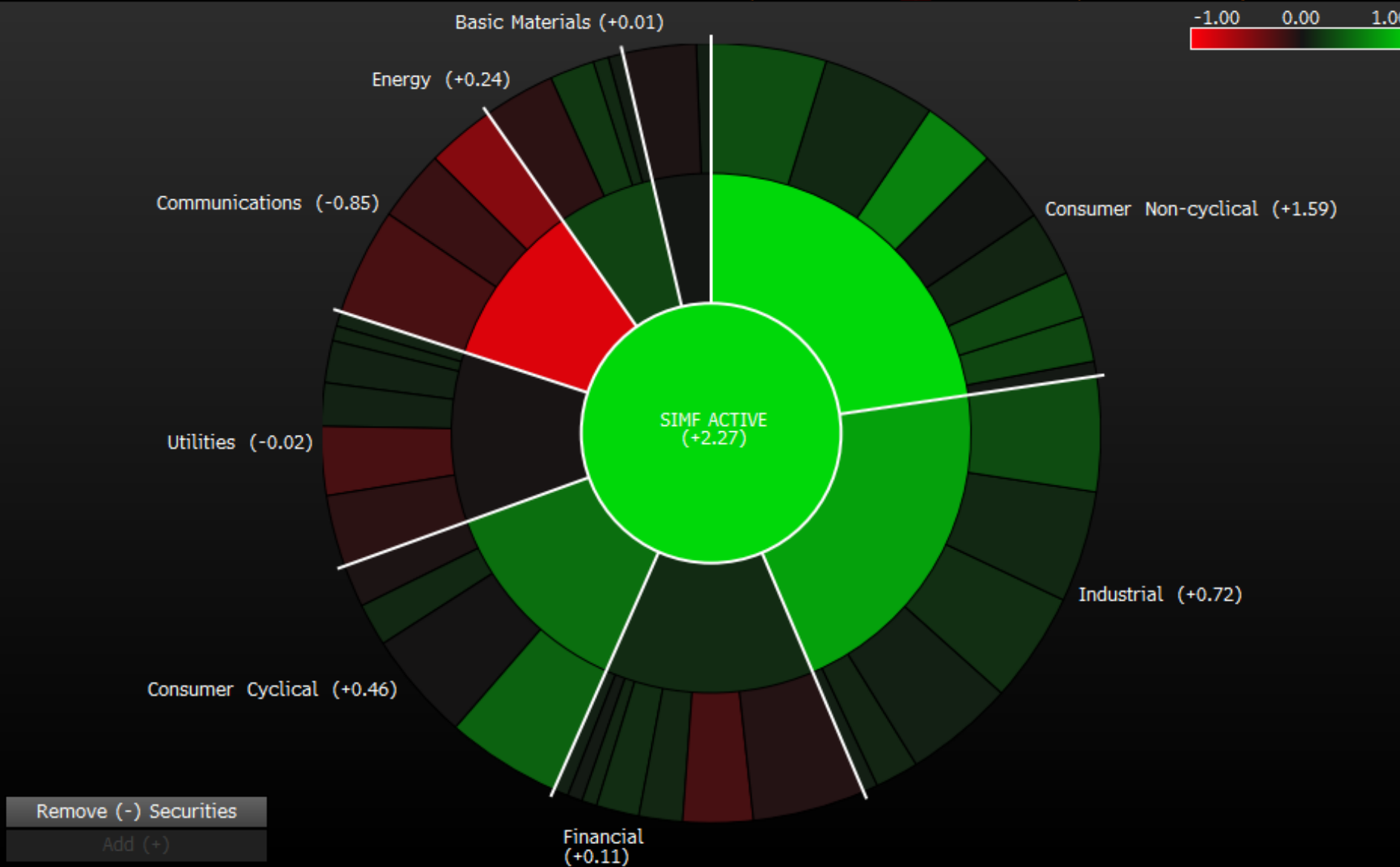
- Heat Map
- Avg % Wgt(P)
- CTR(P)



Remove (-) Securities
Add (+)

Chart
Wedge Size
Color

Heat Map	▼
Avg % Wgt(P)	▼
CTR(P)	▼



Remove (-) Securities
Add (+)



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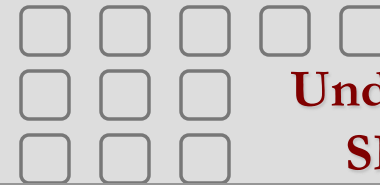
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SPY	Equity	\$187,416.70	32.50	99.00	0.00
SCHB	Equity	\$74,641.71	13.00	98.00	0.00
RWX	REIT	\$14,354.18	2.50	97.50	0.00
VNQ	REIT	\$14,354.18	2.50	0.00	99.00



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Bonds	BND	AGG	CIU	Ret. YTD
BND	1.0000	0.9423	0.7332	3.58%
AGG	0.9423	1.0000	0.7929	3.54%
CIU	0.7332	0.7929	1.0000	6.79%



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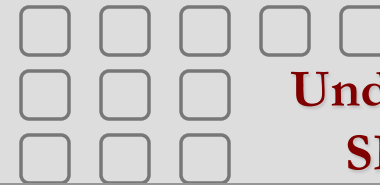
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Equity	VEU	VSS	SCHB	VWO	ACWI	VT
VEU	1.0000	0.9741	0.9239	0.9473	0.9853	0.9889
VSS	0.9741	1.0000	0.9075	0.9460	0.9665	0.9664
SCHB	0.9239	0.9075	1.0000	0.8604	0.9678	0.9658
VWO	0.9473	0.9460	0.8604	1.0000	0.9296	0.9335
ACWI	0.9853	0.9665	0.9678	0.9296	1.0000	0.9961
VT	0.9889	0.9664	0.9658	0.9335	0.9961	1.0000



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REITs	VNQ	IYR	RWX	RWR	IFGL	Mkt Cap (\$mil)	Ret. YTD(%)
VNQ	1.0000	0.9967	0.7562	0.9990	0.7358	14644.76	14.26
IYR	0.9967	1.0000	0.7686	0.9967	0.7492	4906.37	15.59
RWX	0.7562	0.7686	1.0000	0.7554	0.9687	3239.84	29.49
RWR	0.9990	0.9967	0.7554	1.0000	0.7333	1927.78	13.66
IFGL	0.7358	0.7492	0.9687	0.7333	1.0000	1340.45	28.51