

MBA Student Investment Management Fund

Final Presentation

April 28, 2017

Team



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Agenda

1. Strategy Review
2. Implementation
 - Process
 - Stats
3. Portfolio Returns
4. Investing Environment
5. Challenges
6. Possible Refinements
7. Lessons Learned

Strategy

Strategy Overview

Journal of Finance 2010, “Decoding Inside Information” - Cohen, Malloy & Pomorski

- Predicative power of opportunistic trades
 - Routine: buying and selling in the same calendar month for past 3 years
 - Opportunistic: buying and selling in no discernable pattern



Historical Data

- 1,114 stocks
- SEC Form4 from past 3 years



Weekly Data

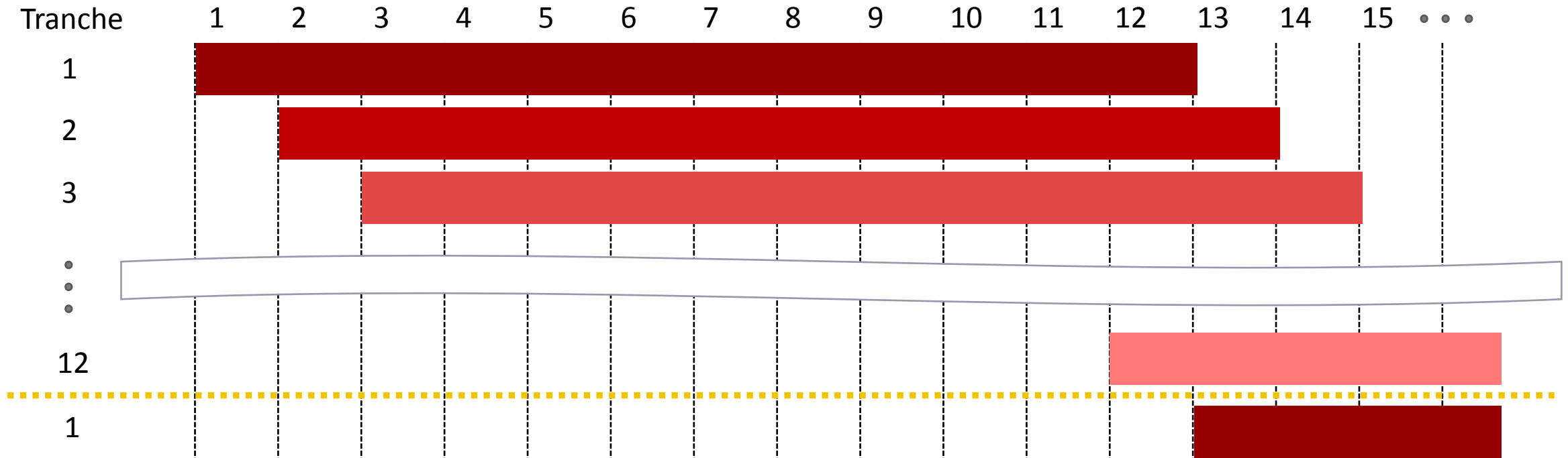
- SEC Form4 from each week



Opportunistic Trades

Implementation: Process

- Role Changes
 - Scrapping - Identifying trades - Trade form - Checking form - Bloomberg
 - Due diligence on each stocks
- Portfolio Construction
 - 2.5% weight on each stock
 - Multiple **tranches**



Implementation: Stats

Securities Bought:

85

Securities Sold:

44

Repeat signals:

24

Avg Holding period:

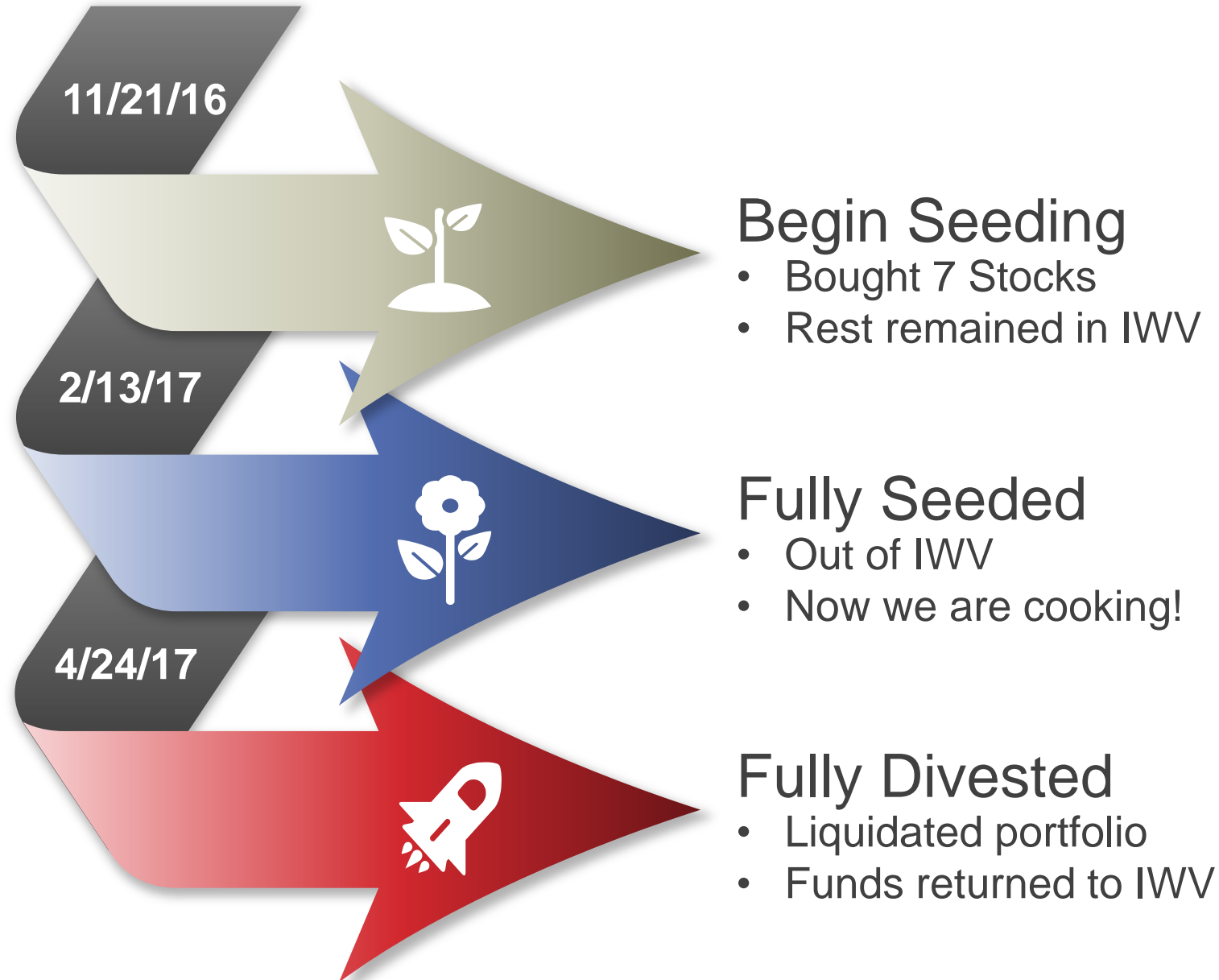
9.8 weeks

Holding Period

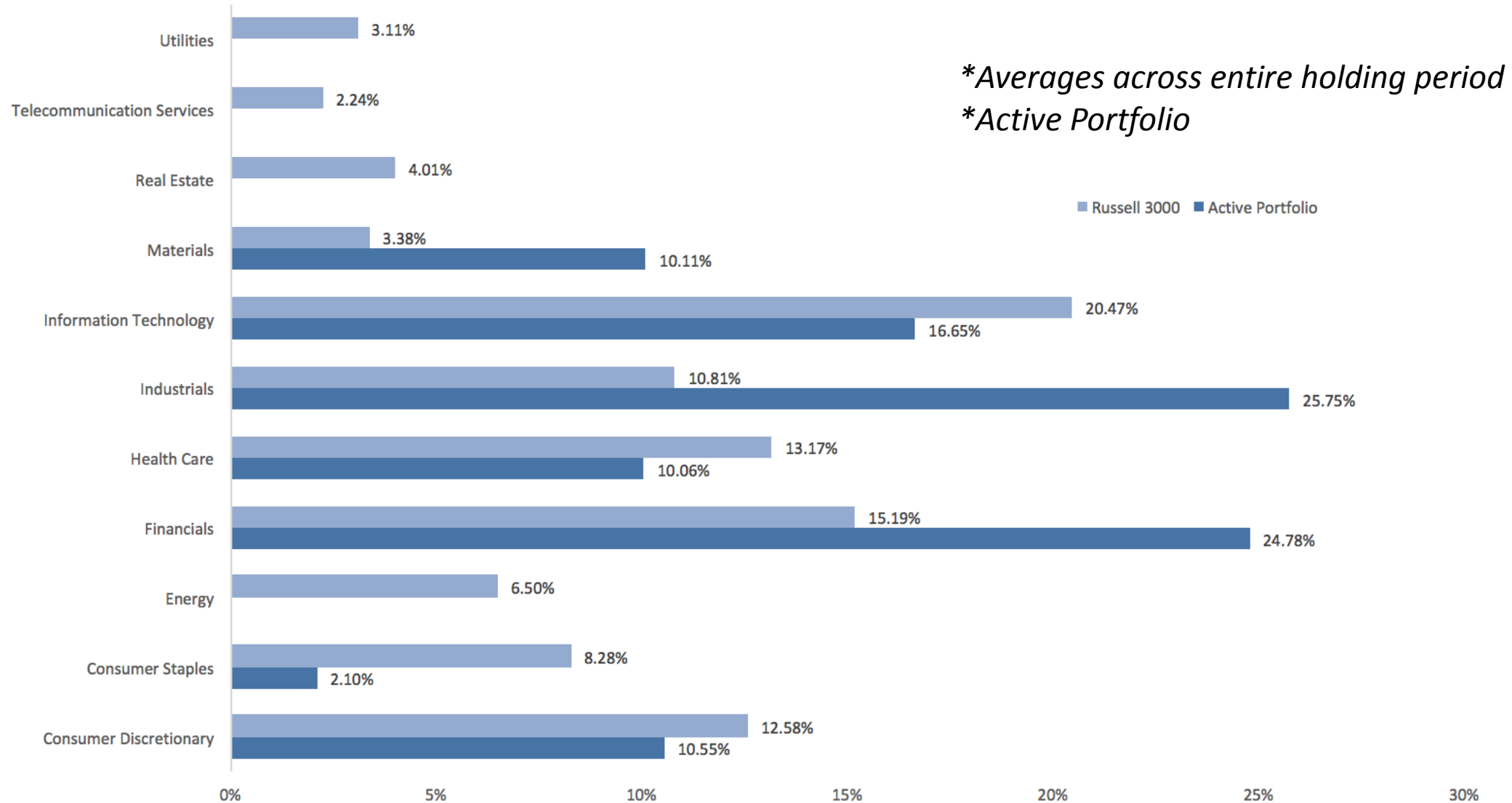
- Total number of stocks in portfolio
- Repeated signals
- Recent news on the company

Returns

Milestones



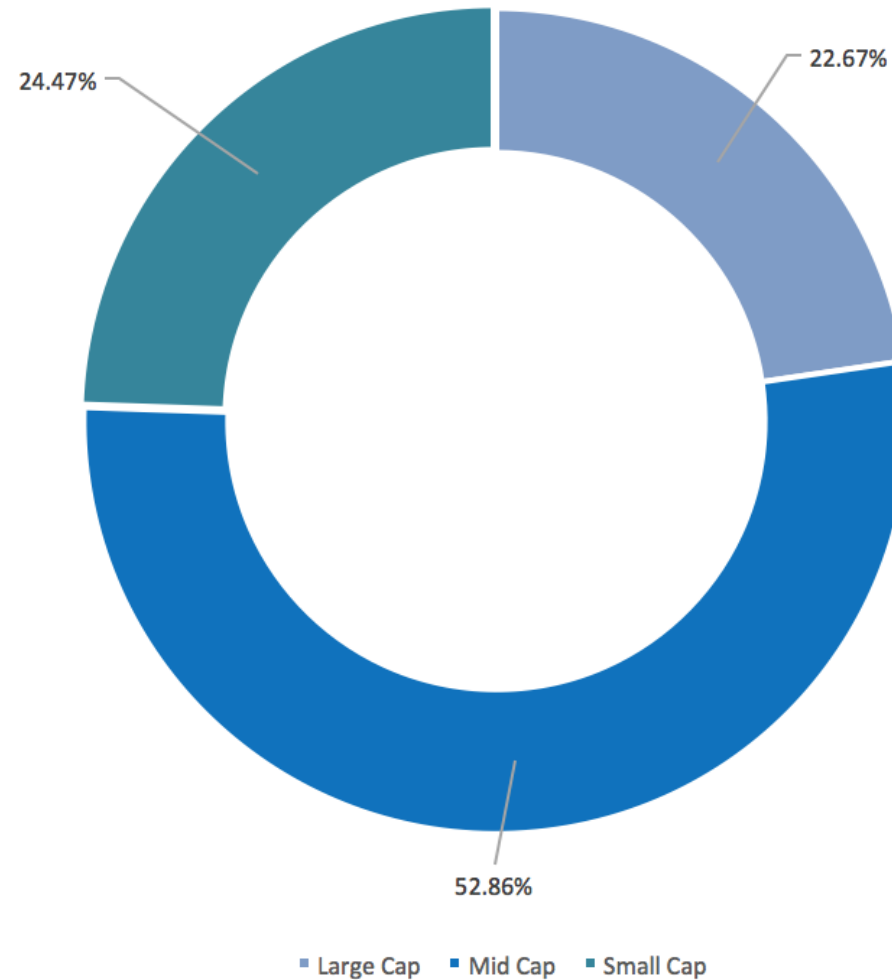
GIC Industry Avg Weight Comp



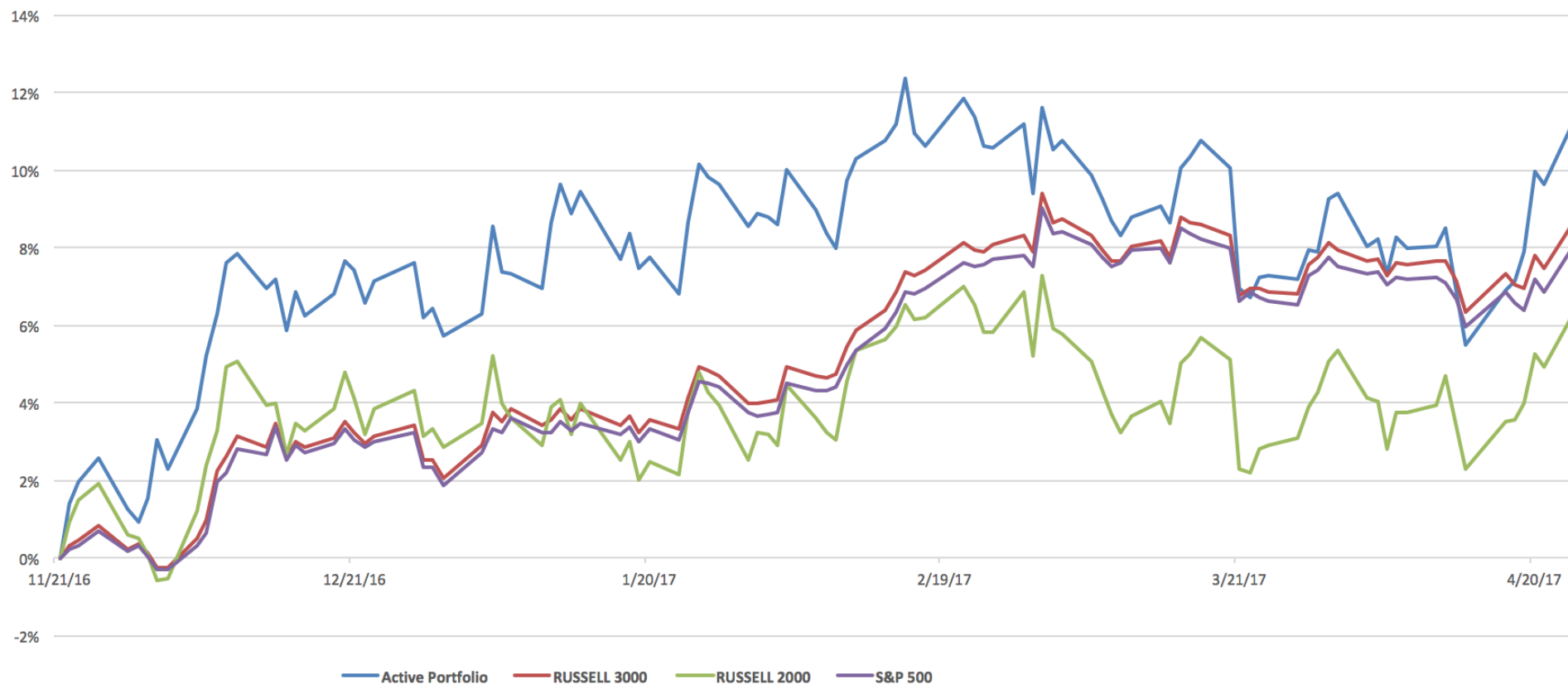
Active Portfolio Market Cap Holding

**Active Portfolio*

**Averages across entire holding period*

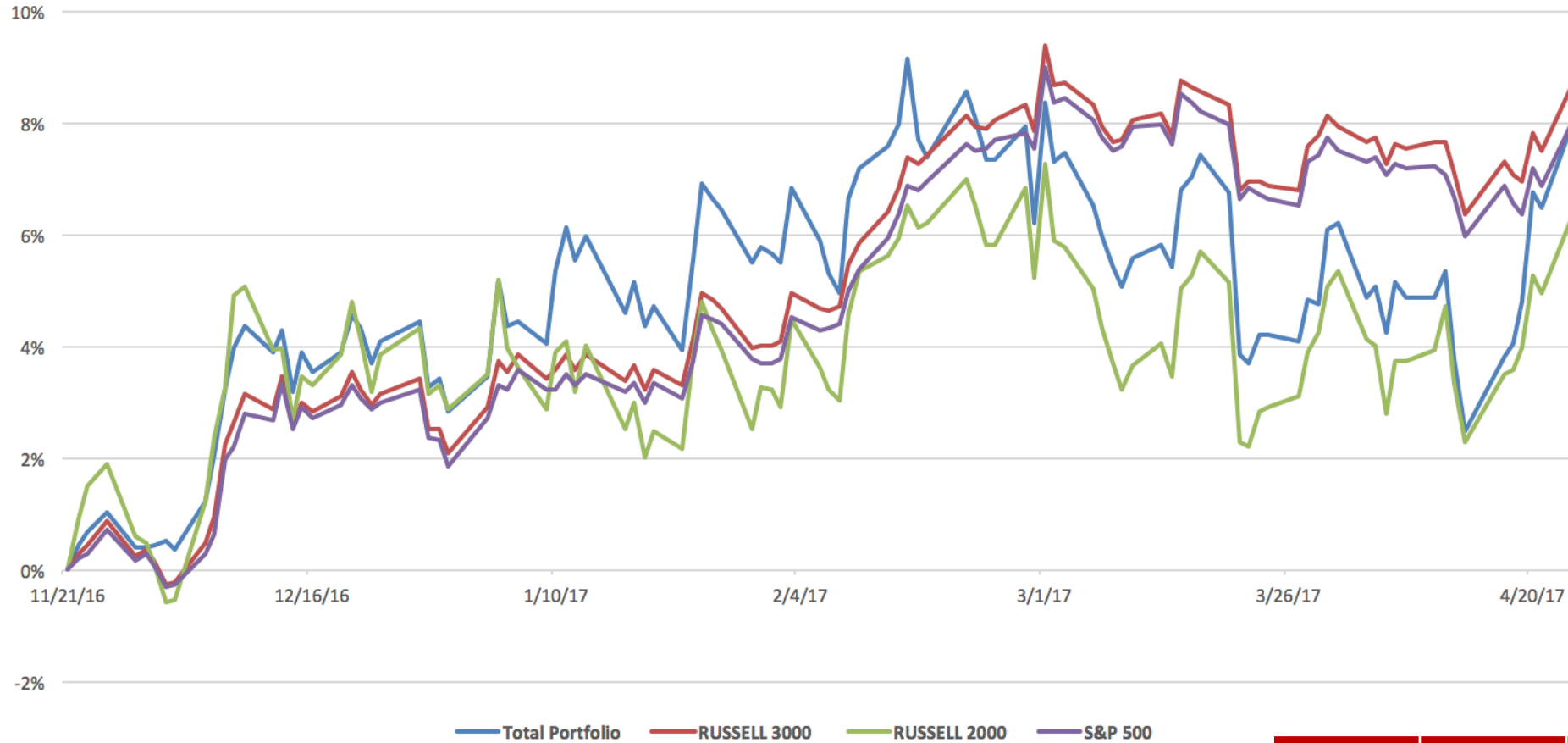


Return: Active Portfolio



Return	Active Port	Russell 3000	Russell 2000	S&P 500
Total Return	11.21%	8.65%	6.30%	8.01%
Std Dev	2.51%	2.66%	1.59%	2.58%

Return: Total Portfolio

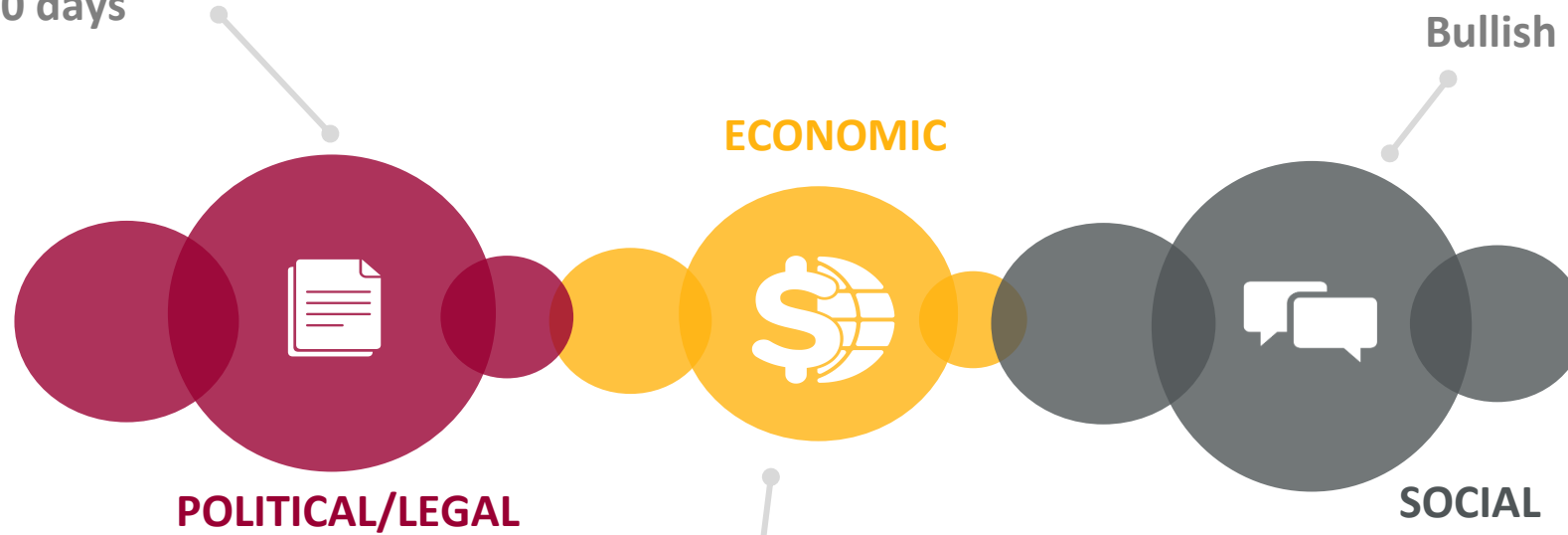


Return	Total Port	Russell 3000	Russell 2000	S&P 500
Total Return	7.96%	8.65%	6.30%	8.01%
Std Dev	2.03%	2.66%	1.59%	2.58%

Challenges

Investing Environment

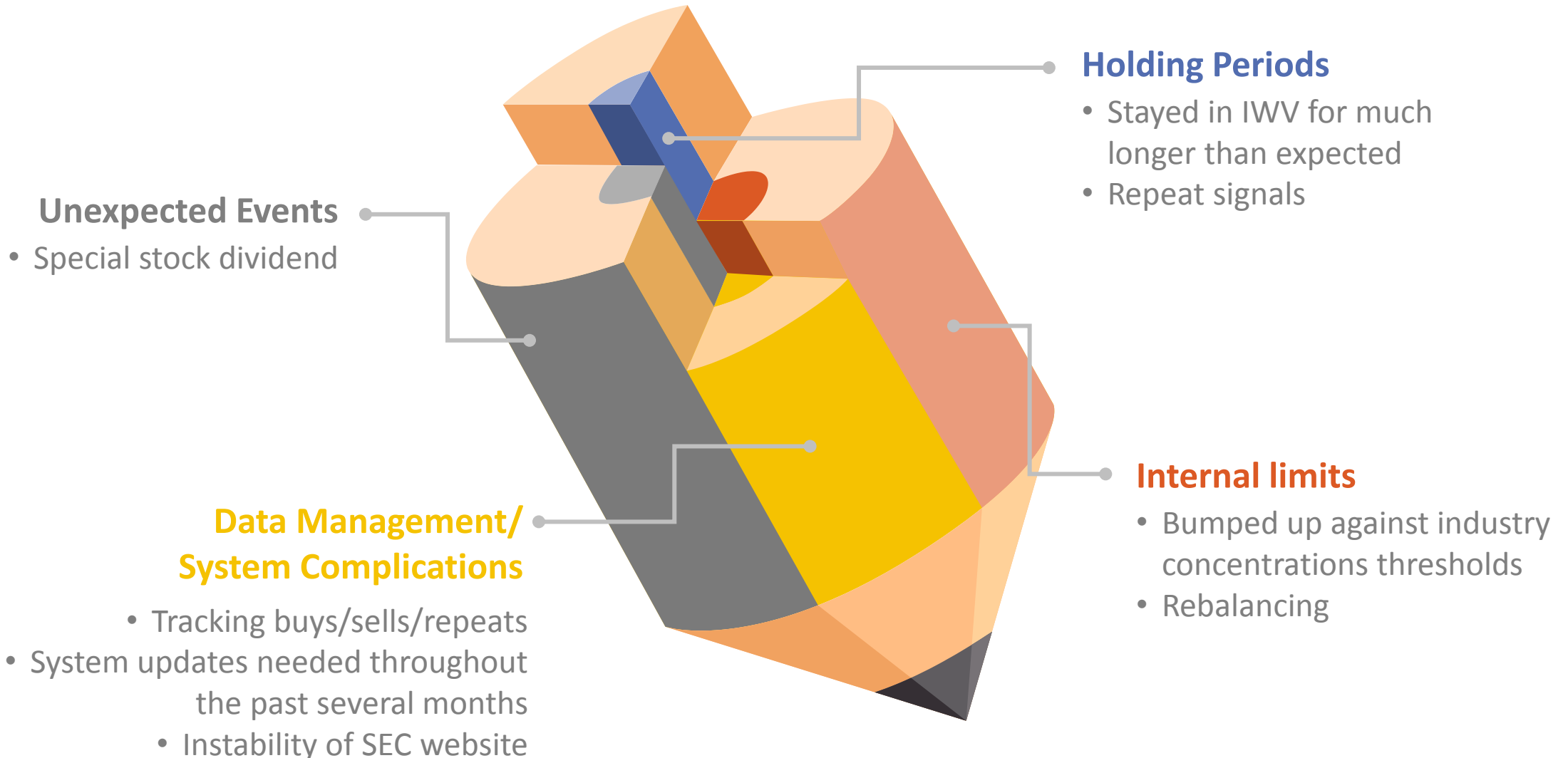
- New president elected 2 weeks prior
- Multiple bills passed in first 30-60 days



- Fewer trades being made by insiders
- Going on year 9 of Bullish market

- Record highs for DJIA
- Russel 2000 performance below S&P500
- Interest Rate hike

Implementation: Challenges



Data Management

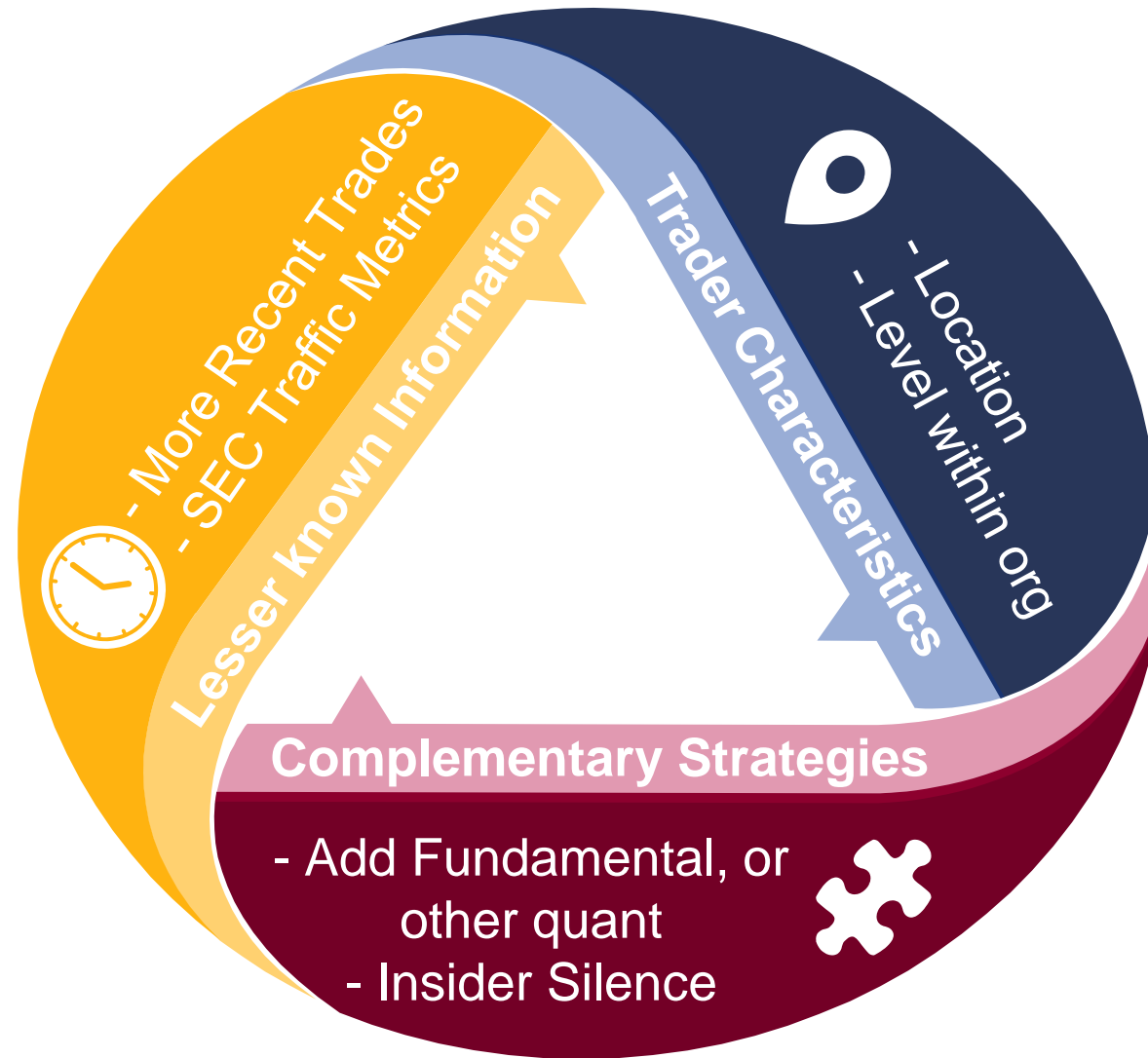
Tranche Tracking ☆ 🗑️
 File Edit View Insert Format Data Tools Add-ons Help
 \$ % .0 .00 123 Calibri 11 B I U A [Color] [Fill] [Border] [Align] [List] [Print] [Filter] [Sum] [More]

No - Due Diligence															
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Sell Criteria				Sector					#ERROR!				12,261.34	
2	Tranche		1	#N/A	Industrials	19.87%									
3	Trade Date	Industrials			Financials	15.99%									
4	Return	>3%			Materials	10.76%									
5	Repeat				Consumer Discretionar	15.41%									
6	Sector				Information Technolog	15.58%									
7					Consumer Staples	0.00%									
8	Repeat				Health Care	4.66%									
9	Sold				Manufacturing	0.00%									
10	Sell Candidate				Telecommunications	0.00%									
11	Ticker	Name	Trade Date	Tranche	Sector	Buy Price	Return	SoldDate	SellPrice	EstRet	RepeatTranch	Notes	Shares	Market Cap	SectorAll
80	AVX	AVX Corp		12	Information Technolog	\$0.00						Repeat			
81	AVX	AVX Corp		12	Information Technolog	\$0.00						Repeat			
82	BABY	NATUS MEDICAL INC		12	Health Care	\$0.00						No on Market Cap			
83	CAKE	CHEESECAKE FACTORY INC	2/12/2017	12	Consumer Discretionar	\$61.11						Sold	397	\$24,260.67	
84	MUSA	Murphy USA Inc.		12	Consumer Discretionar	\$0.00						No on Due Diligence			
85	NGHC	National General Holdings Corp.	2/12/2017	12	Financials	\$22.89	-4.33%				19		1,000	\$22,890.00	Financials
86	STMP	STAMPS.COM INC	2/12/2017	12	Information Technolog	\$117.00	-8.68%						194	\$22,698.00	Information Technology
87	UFPI	UNIVERSAL FOREST PRODUCTS INC	2/12/2017	12	Industrials	\$96.97	1.25%				13		235	\$22,787.95	Industrials
88	WSTC	WEST CORP	2/12/2017	12	Industrials	\$23.95	0.92%						997	\$23,878.15	Industrials
89	AIT	APPLIED INDUSTRIAL TECHNOLOGIES INC		13	Industrials	\$0.00						Repeat			
90	AMKR	AMKOR TECHNOLOGY INC.	2/21/2017	13	Information Technolog	\$10.95	2.47%						2,425	\$26,553.75	Information Technology
91	BHE	BENCHMARK ELECTRONICS INC		13	Information Technolog	\$0.00						Repeat			
92	CORE	Core-Mark Holding Company Inc.		13	Consumer Discretionar	\$0.00						No on Due Diligence			

Excluded Informational Trades



Refining the Strategy



Complementary Strategy

“The Information Content of Sudden Insider Silence” - Hong and Li, 2016

- Insider Sudden Silence
 - Insider who traded stocks in same calendar month for past two years and suddenly stops trading
- Predicative power of sudden silence of routine trader
 - Average monthly returns from a portfolio of opportunistic buys:
 - Sell-Sell-NoSell: 43.7bp
 - Purchase-Purchase-NoPurchase: -33.8bp

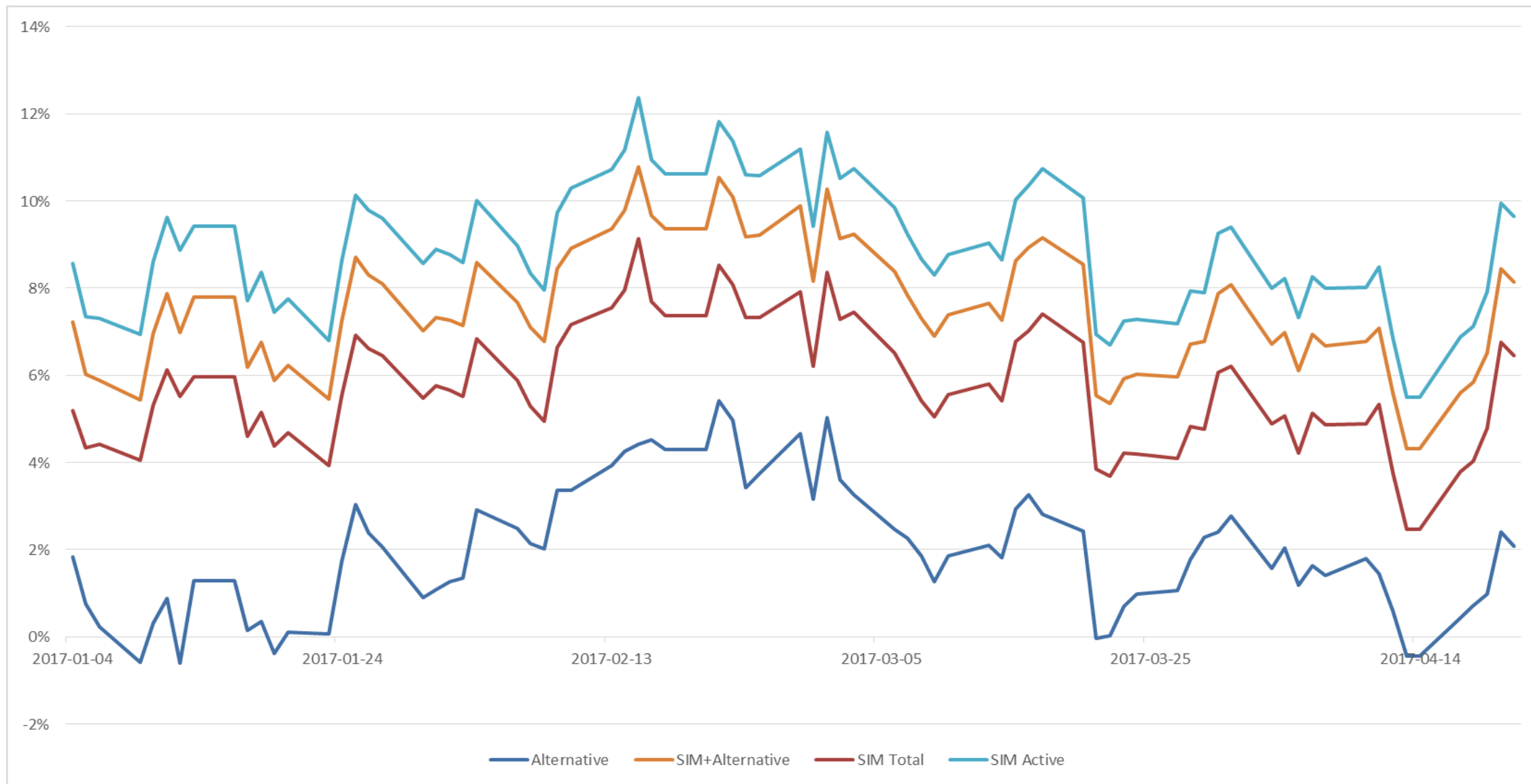
Complementary Strategy

- Period : Monthly analysis from Dec 2016 to Mar 2017

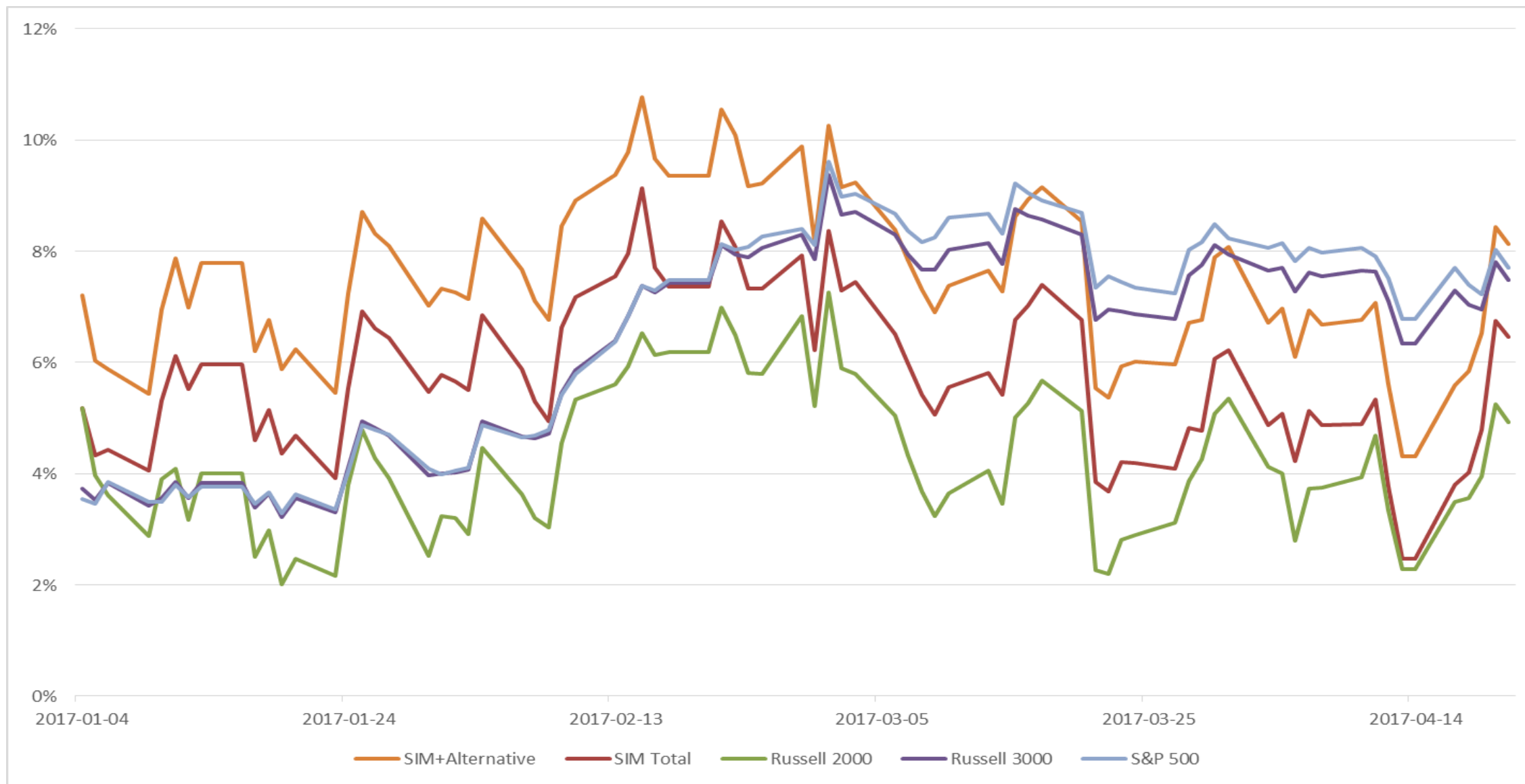
	DEC 2016	JAN 2017	FEB 2017	MAR 2017
Total # of Stocks	21	23	28	28
Repeated Signal	-	5	6	4

- Complementary Strategy
 - 80% Active Portfolio + 20% Alternative Portfolio
 - Diversification: increases the total number of stocks in the portfolio

Complementary Strategy



Complementary Strategy



Lessons Learned

Management:

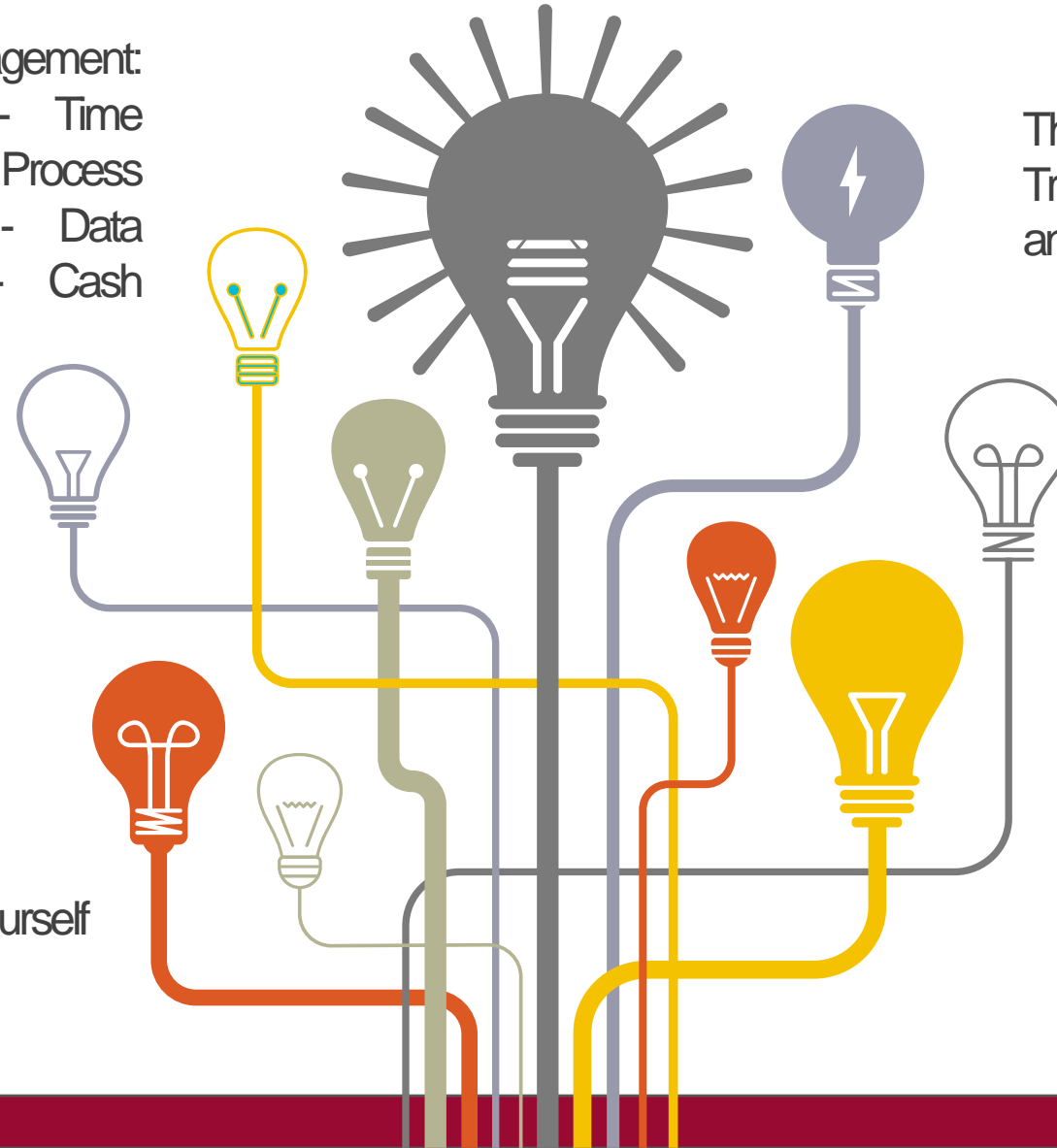
- Time
- Process
- Data
- Cash

Things with break:
Troubleshooting is both an art
and a science

Python & SQL

Do the calculations yourself

Everyone on the team
needs to be up to speed on
the entire process



Questions?

Appendix: Time-Weighted Average Return Calculation for Total Portfolio

From	To	Return
2016.11.21	2016.12.23	4.01%
2016.12.23	2017.01.23	-0.17%
2017.01.23	2017.02.23	3.58%
2017.02.23	2017.03.23	-3.35%
2017.03.23	2017.04.24	3.86%
Time weighted return		7.96%

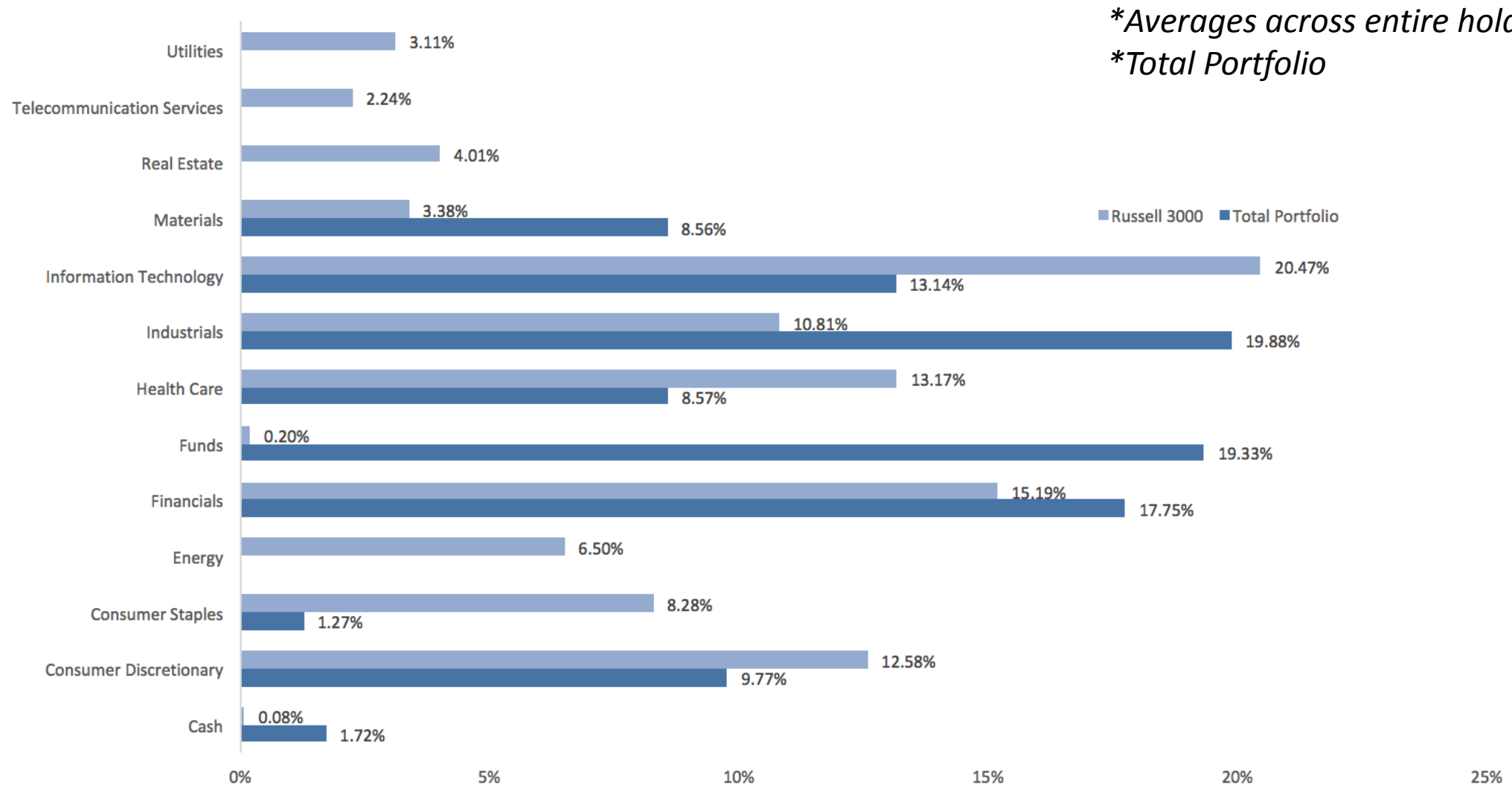
$$\text{One period return} = ((MV_1 - MV_0 + D_1 - CF_1)/MV_0)$$

Where: MV_0 = beginning market value, MV_1 = ending market value,

D_1 = dividend/interest inflows, CF_1 = cash flow received at period end (deposits subtracted, withdrawals added back)

$$(1 + 4.01\%) * (1 - 0.17\%) * (1 + 3.58\%) * (1 - 3.35\%) * (1 + 3.86\%) - 1 = 7.96\%$$

Appendix: GIC Industry Average Weight Comparison



Appendix: Attribution by each stock

Portfolio	SIM FUND ACTIVE
Benchmark	ISHARES RUSSELL 3000 ETF (IWM US)
Start Date(Earliest Available)	11/21/2016
End Date	4/24/2017
Currency	USD
Method	Total Return

Attribution Detail (All Securities, Including Buckets)

		% Average Weight			Contribution to Return (%)			Total Return (%)		
		Port	Bench	+/-	Port	Bench	+/-	Port	Bench	+/-
SIM FUND ACTIVE		100.00	100.00	0.00	11.21	8.65	2.56	11.21	8.65	2.56
Industrials		25.75	10.81	14.94	2.76	0.87	1.89	7.88	7.97	-0.09
	APPLIED INDUSTRIAL TECH INC	4.02	0.01	4.01	0.66	0.00	0.66	8.56	8.56	0.00
	DONALDSON CO INC	3.97	0.02	3.95	1.04	0.00	1.03	16.67	16.67	0.00
	CANADIAN PACIFIC RAILWAY LTD	2.40		2.40	0.24		0.24	6.00		6.00
	HEALTHCARE SERVICES GROUP	2.09	0.01	2.08	0.19	0.00	0.19	5.50	21.12	-15.63
	MSA SAFETY INC	1.83	0.01	1.82	0.55	0.00	0.55	8.60	15.28	-6.68
	WERNER ENTERPRISES INC	1.78	0.00	1.77	-0.06	0.00	-0.06	-1.22	3.04	-4.26
	KIRBY CORP	1.44	0.01	1.42	0.28	0.00	0.27	10.41	11.70	-1.28
	WEST CORP	1.12	0.00	1.12	0.07	0.00	0.07	2.73	1.09	1.64
	UNIVERSAL FOREST PRODUCTS	1.06	0.01	1.05	-0.19	0.00	-0.19	-7.37	-3.24	-4.13
	NAVISTAR INTERNATIONAL CORP	1.06	0.01	1.05	-0.57	0.00	-0.57	-16.90	-13.06	-3.83
	HILLENBRAND INC	0.98	0.01	0.98	0.00	0.00	0.00	0.15	6.15	-6.00
	ACCO BRANDS CORP	0.70	0.01	0.70	0.23	0.00	0.23	8.88	13.71	-4.83
	BWX TECHNOLOGIES INC	0.70	0.02	0.68	0.18	0.00	0.17	6.72	25.06	-18.34
	SMITH (A.O.) CORP	0.69	0.03	0.66	0.08	0.00	0.07	2.99	9.47	-6.48
	MACQUARIE INFRASTRUCTURE COR	0.68	0.02	0.66	0.06	0.00	0.06	2.47	0.33	2.15
	GATX CORP	0.67	0.01	0.66	0.01	0.00	0.01	0.65	19.75	-19.09
	AAON INC	0.56	0.01	0.55	0.00	0.00	0.00	0.14	12.14	-12.01
Financials		24.78	15.19	9.59	2.07	1.16	0.91	4.98	7.54	-2.57
	MERCURY GENERAL CORP	2.76	0.01	2.75	0.14	0.00	0.14	-1.87	4.98	-6.85
	COMMUNITY BANK SYSTEM INC	2.73	0.01	2.72	0.70	0.00	0.70	6.12	1.35	4.78
	RENASANT CORP	2.47	0.01	2.47	0.48	0.00	0.48	-0.74	8.63	-9.37
	FIRST FINL BANKSHARES INC	2.28	0.01	2.27	-0.24	0.00	-0.24	-8.79	-9.30	0.51
	FIRST HAWAIIAN INC	2.16	0.00	2.16	0.56	0.00	0.56	3.73	0.79	2.93
	OLD NATIONAL BANCORP	1.53	0.01	1.53	0.02	0.00	0.02	0.70	2.35	-1.65
	BANK OF THE OZARKS	1.52	0.02	1.50	-0.12	0.00	-0.12	-4.97	5.87	-10.85
	UNION BANKSHARES CORP	1.50	0.01	1.49	0.24	0.00	0.24	7.71	5.68	2.02
	AMERICAN EQUITY INVT LIFE HL	1.11	0.01	1.10	0.54	0.00	0.54	20.70	12.35	8.35
	NATIONAL GENERAL HLDGS	1.09	0.00	1.09	-0.23	0.00	-0.23	-8.78	0.29	-9.07

Appendix: Attribution by each stock cont

	SOUTH STATE CORP	0.97	0.01	0.96	0.00	0.00	0.00	-0.05	7.14	-7.20
	HANCOCK HOLDING CO	0.97	0.01	0.96	0.03	0.00	0.03	1.15	16.85	-15.69
	TRUSTMARK CORP	0.83	0.01	0.82	-0.02	0.00	-0.02	-0.64	-0.66	0.02
	AMERIS BANCORP	0.81	0.01	0.80	-0.09	0.00	-0.09	-3.25	10.85	-14.10
	WESBANCO INC	0.70	0.01	0.69	0.08	0.00	0.08	3.14	4.48	-1.34
	COLUMBIA BANKING SYSTEM INC	0.60	0.01	0.59	-0.06	0.00	-0.06	-1.76	3.82	-5.57
	STERLING BANCORP/DE	0.42	0.01	0.41	0.03	0.00	0.03	1.28	5.41	-4.13
	COMMERCE BANCSHARES INC	0.32	0.02	0.30	0.00	0.00	0.00	0.05	2.73	-2.68
	Information Technology	16.65	20.47	-3.81	3.09	2.69	0.39	21.13	13.47	7.65
	BENCHMARK ELECTRONICS INC	3.05	0.01	3.05	0.39	0.00	0.39	8.95	14.05	-5.10
	SQUARE INC - A	3.03	0.00	3.02	1.50	0.00	1.50	18.66	46.07	-27.41
	CADENCE DESIGN SYS INC	2.70	0.03	2.66	0.75	0.01	0.74	29.52	24.65	4.87
	AVX CORP	2.50	0.00	2.49	0.27	0.00	0.27	10.38	15.97	-5.59
	SYNTEL INC	1.87	0.00	1.86	0.00	0.00	0.00	-4.55	-14.96	10.40
	STAMPS.COM INC	1.08	0.01	1.08	-0.30	0.00	-0.30	-11.05	0.00	-11.05
	AMKOR TECHNOLOGY INC	0.99	0.00	0.99	0.37	0.00	0.37	14.89	-3.57	18.47
	ARROW ELECTRONICS INC	0.73	0.03	0.70	-0.03	0.00	-0.03	-1.11	9.07	-10.18
	CIMPRESS NV	0.70	0.01	0.69	0.12	0.00	0.12	4.64	1.28	3.35
	Consumer Discretionary	10.55	12.58	-2.03	0.65	1.22	-0.57	6.39	9.72	-3.33
	AMERICAN AXLE & MFG HOLDINGS	1.55	0.01	1.54	0.30	0.00	0.30	6.96	9.19	-2.23
	NEXSTAR MEDIA GROUP INC	1.35	0.01	1.34	0.29	0.00	0.29	12.97	18.93	-5.95
	CHICO'S FAS INC	1.04	0.01	1.04	-0.09	0.00	-0.09	-1.99	0.12	-2.11
	HYATT HOTELS CORP - CL A	1.04	0.01	1.03	-0.14	0.00	-0.14	-5.55	2.20	-7.75
	REGAL ENTERTAINMENT GROUP-A	0.81	0.01	0.80	0.02	0.00	0.02	0.61	-4.31	4.92
	BRUNSWICK CORP	0.79	0.02	0.77	0.03	0.00	0.03	1.22	26.34	-25.12
	BURLINGTON STORES INC	0.68	0.03	0.65	0.11	0.01	0.11	4.36	31.92	-27.56
	CHEESECAKE FACTORY INC/THE	0.67	0.01	0.66	-0.04	0.00	-0.04	-1.58	10.50	-12.08
	SOTHEBY'S	0.67	0.01	0.66	-0.01	0.00	-0.01	-0.23	20.42	-20.65
	DOMINO'S PIZZA INC	0.66	0.04	0.62	-0.09	0.00	-0.09	-3.32	9.01	-12.33
	SINCLAIR BROADCAST GROUP -A	0.44	0.01	0.43	-0.05	0.00	-0.05	-1.99	27.11	-29.10
	CORE-MARK HOLDING CO INC	0.44	0.01	0.43	0.26	0.00	0.26	10.65	-4.33	14.98
	COOPER-STANDARD HOLDING	0.41	0.01	0.41	0.04	0.00	0.04	1.70	19.67	-17.97
	Materials	10.11	3.38	6.73	0.77	0.30	0.46	7.53	8.97	-1.44
	INNOSPEC INC	3.65	0.01	3.64	0.39	0.00	0.39	-3.73	-3.20	-0.53
	QUAKER CHEMICAL CORP	1.47	0.01	1.46	0.22	0.00	0.21	7.64	18.15	-10.51
	SOUTHERN COPPER CORP	1.20	0.01	1.19	-0.16	0.00	-0.16	-6.01	11.27	-17.28
	POLYONE CORPORATION	1.08	0.01	1.07	0.11	0.00	0.11	3.88	14.11	-10.23
	LOUISIANA-PACIFIC CORP	0.99	0.01	0.98	0.16	0.00	0.15	5.88	31.24	-25.37
	PACKAGING CORP OF AMERICA	0.96	0.03	0.93	-0.03	0.00	-0.03	-1.13	10.57	-11.71
	APTARGROUP INC	0.76	0.02	0.74	0.08	0.00	0.08	3.11	5.93	-2.83

Appendix: Attribution by each stock cont

	Health Care	10.06	13.17	-3.11	2.55	0.96	1.59	17.65	7.38	10.27
	CHARLES RIVER LABORATORIES	2.67	0.02	2.65	0.57	0.00	0.56	18.59	22.87	-4.29
	EXACT SCIENCES CORP	1.71	0.01	1.70	1.83	0.00	1.83	61.46	62.72	-1.27
	BROOKDALE SENIOR LIVING INC	1.42	0.01	1.41	0.02	0.00	0.02	-4.81	5.22	-10.03
	MEDNAX INC	1.32	0.03	1.29	0.11	0.00	0.11	3.66	-5.51	9.17
	INTREXON CORP	1.19	0.01	1.18	-0.35	0.00	-0.35	-9.96	-34.00	24.04
	ACADIA HEALTHCARE CO INC	0.99	0.01	0.98	0.42	0.00	0.41	15.89	12.53	3.37
	ATHENAHEALTH INC	0.65	0.02	0.63	-0.08	0.00	-0.08	-3.05	16.70	-19.76
	OPKO HEALTH INC	0.12	0.01	0.11	0.04	0.00	0.05	1.61	-27.39	29.00
	Consumer Staples	2.10	8.28	-6.18	-0.67	0.85	-1.52	-15.98	10.42	-26.39
	AVON PRODUCTS INC	2.10	0.01	2.09	-0.67	0.00	-0.67	-15.98	-17.77	1.79