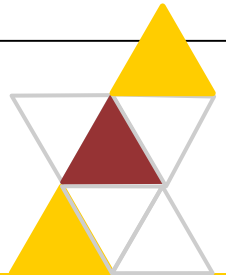




# Agnostic Fundamental

*MBA Student Investment Management Fund*

April 26, 2019



# MBA SIM Fund Members



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# Agenda



- Strategy Review
- Implementation
- Rebalancing
- Returns
- Attributions
- Lessons Learned



# Agnostic Fundamental Analysis



- Statistician's approach to Fundamental Analysis
- Uses least-squared regression to estimate the fair value of firms



# Background Research



- Predicted fair value of firms as a function of 28 widely reported accounting variables
- Back-tested over 310 months; fed data from investible universe into a cross-sectional regression
- Line of best fit represented peer-implied market values which were used to calculate mispricing signals
- Ranked firms ordinally by mispricing signal into quintiles

# Back-testing Returns



- Size tilt, smaller beta, higher B/M ratio

	OLS						
	All	Correlation	Signal Quintiles				Q5 (Undervalued)
Q1 (Overvalued)			Q2	Q3	Q4		
Panel A: Equally-weighted Portfolios							
Return in Month $t+1$	0.9224	0.0050	0.6309	0.9166	0.9713	1.0420	1.0502
Return in Month $t+1$ (1987-1999)	1.0575	0.0071	0.7122	1.1522	1.1609	1.1850	1.0763
Return in Month $t+1$ (2000-2012)	0.7889	0.0030	0.5507	0.6840	0.7841	0.9009	1.0244
Panel B: Value-weighted Portfolios							
Return in Month $t+1$	0.8669	0.0091	0.4753	0.8964	0.8971	1.0519	1.0217
Return in Month $t+1$ (1987-1999)	1.4113	0.0013	1.0979	1.4080	1.4248	1.3505	1.2417
Return in Month $t+1$ (2000-2012)	0.3294	0.0168	-0.1394	0.3914	0.3763	0.7571	0.8046

# Implementation



- Accounting information obtained from WRDS
- Market caps obtained from Bloomberg Terminals
- Regression estimated using Python
- Securities ranked by mispricing signal and sorted into deciles
- Sector neutral portfolio composition

# Monthly Rebalancing

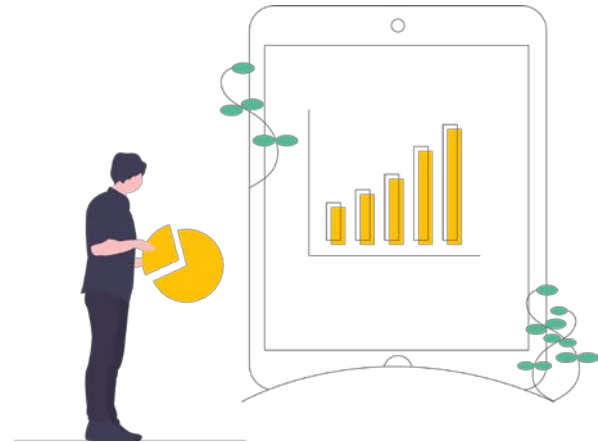


- Each month, new accounting data may have been released and market caps changed

**Buy range:** Decile 10

**Hold range:** Deciles 9 & 10

**Sell Range:** Deciles 1 to 8

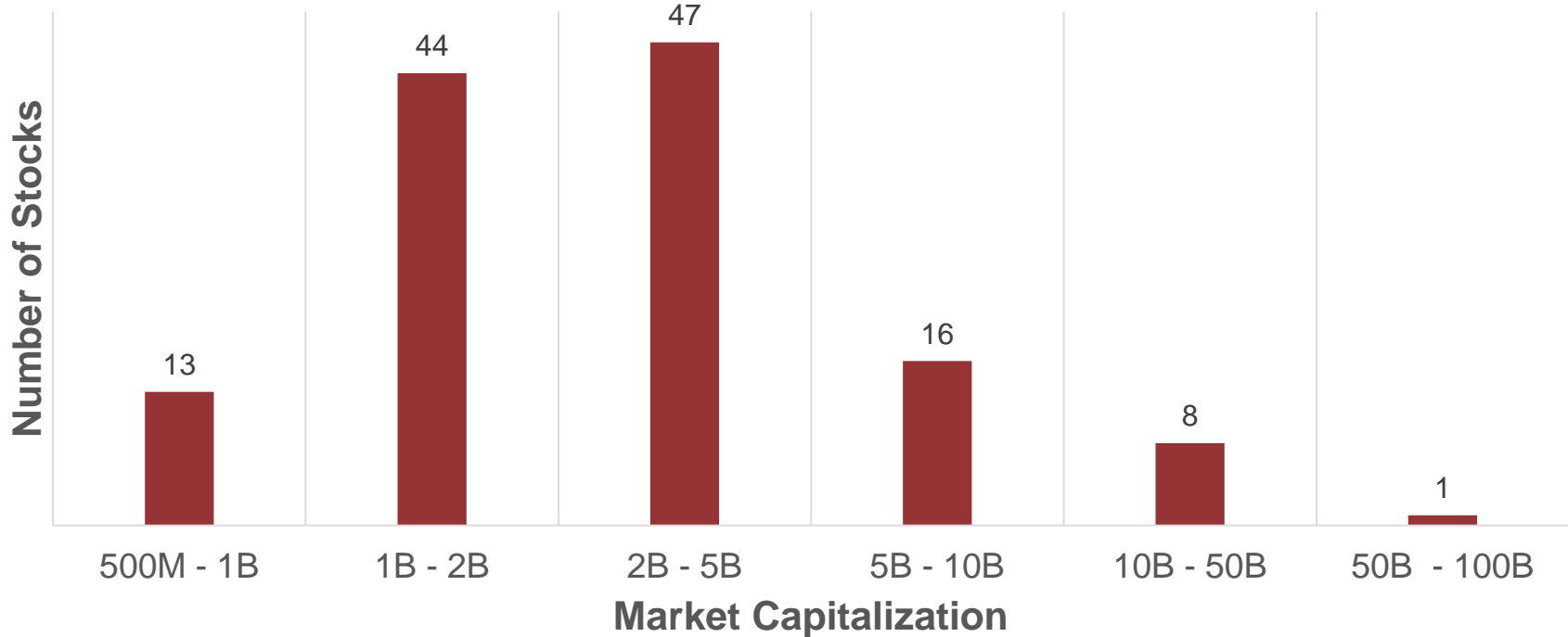




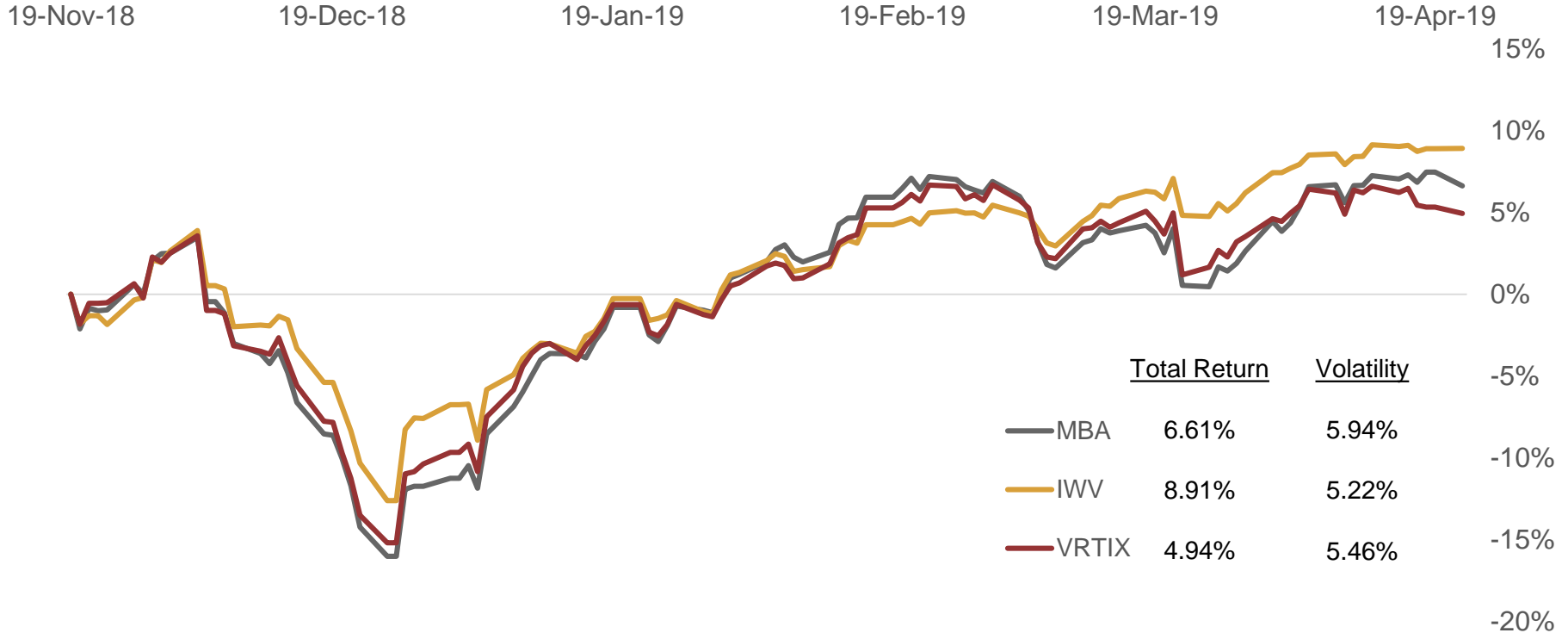
# Size Tilt



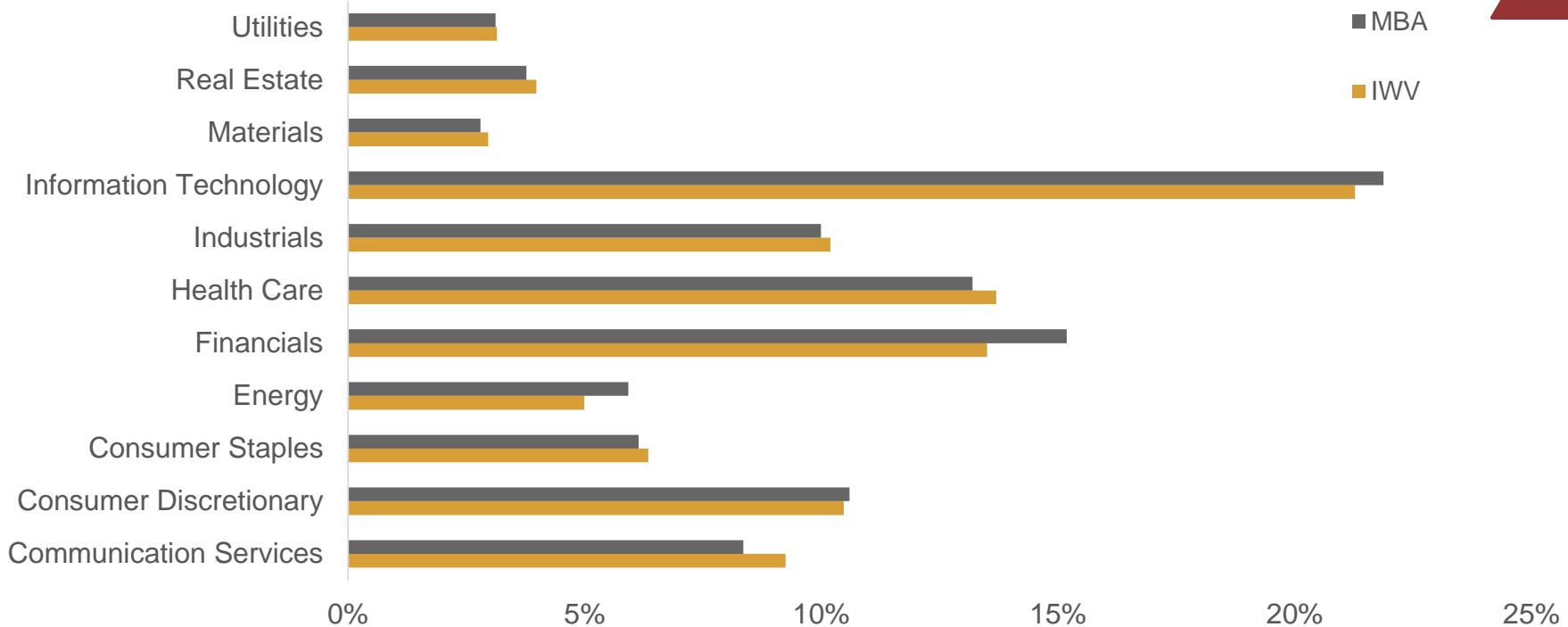
## Size Distribution of Holdings



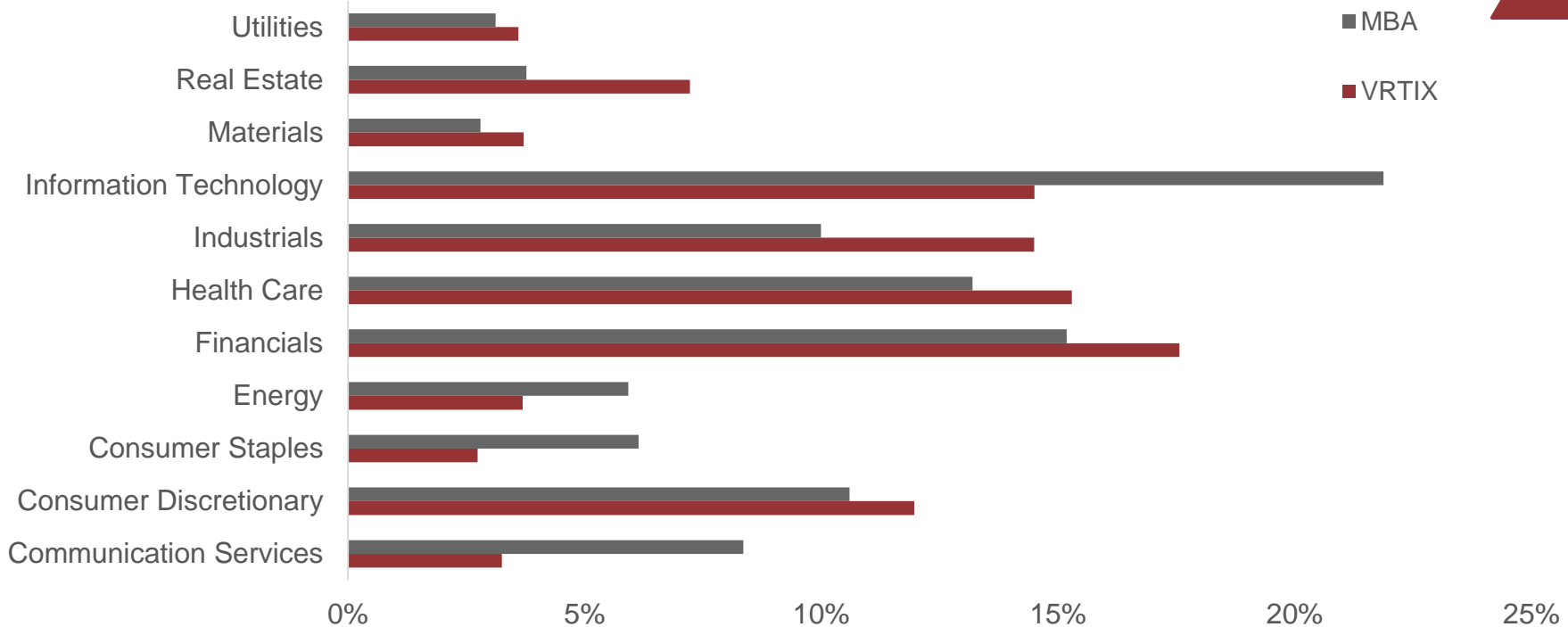
# Portfolio Returns



# Sector Weights



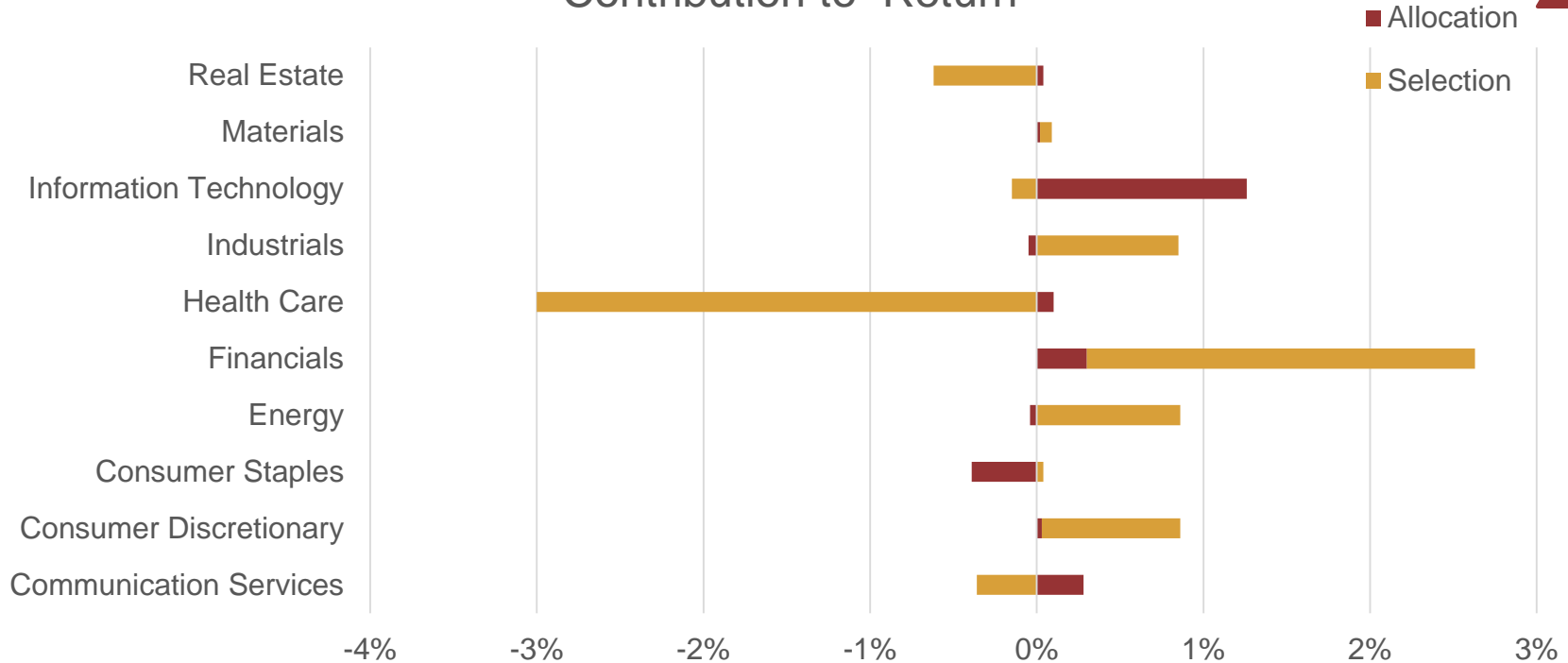
# Sector Weights



# Attributions



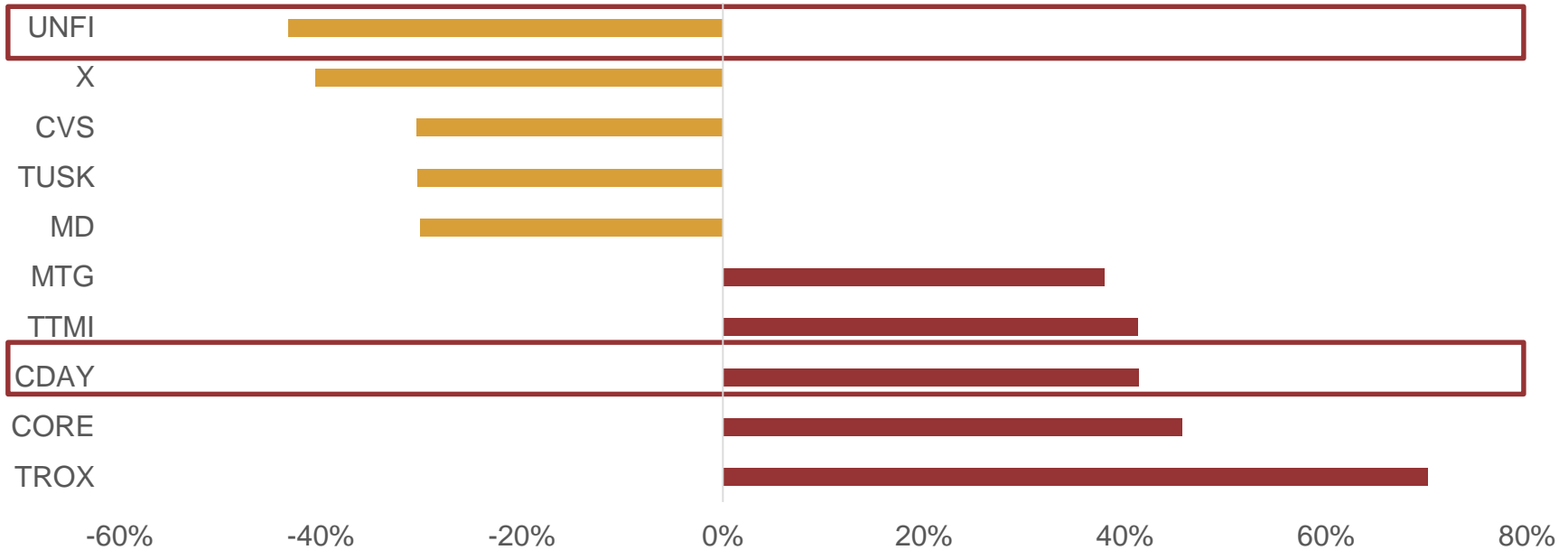
## Contribution to Return



# Attributions



## Top 5 Winners/Losers



# Attributions



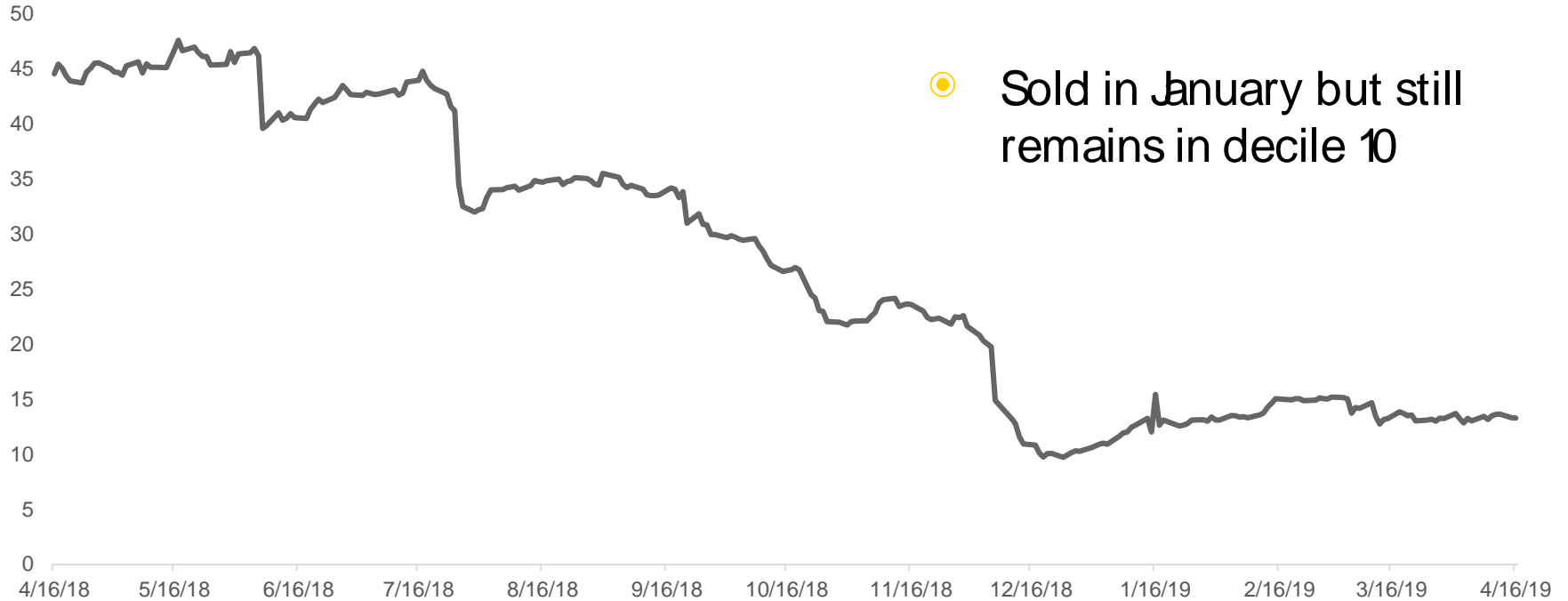
CDAY Stock Price



# Attributions



UNFI Stock Price





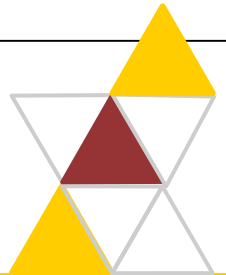
# Lessons Learned



- ⦿ Don't blindly follow the model
- ⦿ Efficient rebalancing
- ⦿ Lag time/ cash reconciliation



**Thank You!**



# Appendix - Constraints



- Long only, no shorting
- 90% of firms must have a market cap greater than \$1B
- Investment in each sector must be 25% or less
- Investment in each firm must be 4% or less

# Appendix



	<u>MBA</u>	<u>IWV</u>
<b>P/ E Ratios:</b>	<b>12.47</b>	<b>20.25</b>
Communication Services	12.85	20.33
Consumer Discretionary	9.40	23.29
Consumer Staples	21.01	20.10
Energy	39.88	17.53
Financials	7.99	13.42
Health Care	14.51	26.46
Industrials	12.21	18.20
Information Technology	14.73	24.33
Materials	7.91	14.03
Real Estate	15.02	44.92

# Appendix



<b>Variable</b>	<b>Definition</b>	<b>Source</b>
ATQH	Assets - Total - Quarterly	Compustat
DVPQH	Dividends - Preferred/Preference - Quarterly	Compustat
SALEQH	Sales/Turnover (Net) - Quarterly	Compustat
SEQQH	Stockholders Equity - Total - Quarterly	Compustat
IBQH	Income Before Extraordinary Items - Quarterly	Compustat
NIQH	Net Income (Loss) - Quarterly	Compustat
XIDOQH	Extraordinary Items and Discontinued Operations - Quarterly	Compustat
IBADJQH	Income Before Extraordinary Items - Adjusted for Common Stock Equivalents - Quarter	Compustat
IBCOMQH	Income Before Extraordinary Items - Available for Common - Quarterly	Compustat
ICAPTQH	Invested Capital - Total - Quarterly	Compustat
TEQQH	Stockholders Equity - Total - Quarterly	Compustat
PSTKRQH	Preferred/Preference Stock - Redeemable - Quarterly	Compustat
PPENTQH	Property Plant and Equipment - Total (Net) - Quarterly	Compustat
CEQQH	Common/Ordinary Equity - Total - Quarterly	Compustat
PSTKQH	Preferred/Preference Stock (Capital) - Total - Quarterly	Compustat
DLTTQH	Long-Term Debt - Total - Quarterly	Compustat
PIQH	Pretax Income - Quarterly	Compustat
TXTQH	Income Taxes - Total - Quarterly	Compustat
NOPIQH	Nonoperating Income (Expense) - Quarterly	Compustat

# Appendix



<b>Variable</b>	<b>Definition</b>	<b>Source</b>
AOQH	Assets - Other - Total - Quarterly	Compustat
LTQH	Liabilities - Total - Quarterly	Compustat
DOQH	Discontinued Operations - Quarterly	Compustat
LOQH	Liabilities - Other - Total - Quarterly	Compustat
CHEQH	Cash and Short-Term Investments - Quarterly	Compustat
ACOQH	Current Assets - Other - Total - Quarterly	Compustat
DVQH	Cash Dividends (Cash Flow) - Quarterly	Compustat
LCOQH	Current Liabilities - Other - Total - Quarterly	Compustat
APQH	Accounts Payable - Quarterly	Compustat