



A Multi-Sector Portfolio Weighting Model with firm revenue growth the factor weight: An empirical analysis of portfolio returns, 2009-2022.

By: Vincent Rullo & Daniel Montgomery

Davis Center for Portfolio Management

Advisors: Dr. Bob Dean and Dr. Jon Fulkerson

Study Objective:

Hypothesis Tests:

1. Determine if revenue growth factor model outperforms an equal weight model
2. Determine if revenue growth is a priced in risk factor

Portfolio Characteristics:

1. Sector : XLY, XLK, XLI, XLV, XLRE, XLC
2. # of Stocks:60
3. State Economic Variable: Consumer Spending (PCE)
4. Loading Factor: Revenue Per Share
5. Size: Large Cap
6. Strategies: (1) Buy and Hold
(2) Adjustable Shares
7. Regression Period: 2009-2019
8. Period of Analysis
 - (1) 2009-2019
 - (2) 2009-2020
 - (3) 2009-2021
 - (4) 2009-2022

Portfolio Weighting Model (RS):

Investment Strategy: Constant Share Model

1st Iteration:

Step 1. $R_{si}(t) = A_i + B_i(PCE_t)$

Step 2. $W_{li}(t) = B_i / \sum B_i$

Step 3. $D_i(t) = W_i(t) * 1,000,000$

Step 4. $SHR_{Si}(t) = D_{li}(t) / P_i(t)$

Step 5. $MV_i(t+1) = SHR_{Si}(t) * P_i(t+1)$

Step 6. $PV(t+1) = \sum MV_i(t+1)$

2nd Iteration

Step 7. $MV_i(t+2) = SHR_{Si}(t) * P_i(t+2)$

Step 8. $PV(t+2) = \sum MV_i(t+2)$

Total Iterations: 11

Constant Share Strategy			
	Model	Equal Weight	Alpha
	Cumulative Return	Cumulative Return	
2009-2019	1070%	622%	448%
2009-2020	1432%	805%	627%
2009-2021	1609%	1035%	574%
2009-2022	1037%	741%	296%

Constant Share Strategy			
	Model	SPY	Alpha
Years	Cumulative Return	Cumulative Return	
2009-2019	1070%	258%	812%
2009-2020	1432%	315%	1117%
2009-2021	1609%	427%	1182%
2009-2022	1037%	323%	714%

Adjustable Share Strategy			
	Model	SPY	Alpha
Years	Cumulative Return	Cumulative Return	
2009-2019	3255%	258%	2997%
2009-2020	4396%	315%	4081%
2009-2021	4556%	427%	4129%
2009-2022	3164%	323%	2841%

Findings:

- 1.) Constant Share Model outperforms the Equal Weight Model
- 2.) Constant Share Model outperforms SPY
- 3.) Adjustable Share Model outperforms SPY
- 4.) Adjustable Share Model outperforms Equal Weight Model