4-9-2014


Anthony Caruso
University of Dayton, stander@udayton.edu

Follow this and additional works at: http://ecommons.udayton.edu/stander_posters

Part of the Arts and Humanities Commons, Business Commons, Education Commons, Engineering Commons, Life Sciences Commons, Medicine and Health Sciences Commons, Physical Sciences and Mathematics Commons, and the Social and Behavioral Sciences Commons

Recommended Citation
http://ecommons.udayton.edu/stander_posters/401

This Book is brought to you for free and open access by the Stander Symposium at eCommons. It has been accepted for inclusion in Stander Symposium Posters by an authorized administrator of eCommons. For more information, please contact frice1@udayton.edu, mschlangen1@udayton.edu.

Anthony Caruso
Advisors
Dr. Bob Dean
Dr. Trevor Collier

Study Objective
Examine the risk/return relationship
For 6 style/size ETF’s Vs. S&P 500, 2008-2012

Risk Measure: Beta

ETF’s Analyzed
1. Large Cap Growth (LCG)
2. Large Cap Value (LCV)
3. Mid Cap Growth (MCG)
4. Mid Cap Value (MCV)
5. Small Cap Growth (SCG)
6. Small Cap Value (SCV)

Model Specification
\[ \text{Rit} = a + b \times \text{Rmt} \]
Where Rit = Returns for ith ETF
A = Intercept
B = Beta
Rmt = Return to market (S&P 500)

Portfolio Weighting Model
IBit = (1/B) = Inverse of beta
Wit = (Ibit/Sum(Ibit)) = Portfolio Weight
Dvit = Wit x 6,000,000 = Dollar investment in ith ETF
Sit = (Dvit/Pit) = Shares in ith ETF
DVit+1 = Sit x Pit+1 = Dollar investment in t+1

Hypothesis:
An inverse beta strategy generates alpha in volatile markets

Conclusions:
08-12: IB portfolio outperforms S&P by 14.70%
- All IB weighted ETF’s outperform S&P except LCV
09-12: IB portfolio outperforms S&P by 41.77%
- All IB weighted ETF’s outperform S&P

Summary: Portfolio results indicate IB weighted portfolio of 6 style/size ETF’s outperform S&P when market conditions are highly volatile

Portfolio Performance

<table>
<thead>
<tr>
<th>ETF</th>
<th>Returns</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCG</td>
<td>8.46%</td>
<td>11.06%</td>
</tr>
<tr>
<td>MCG</td>
<td>28.38%</td>
<td>30.98%</td>
</tr>
<tr>
<td>SCG</td>
<td>24.63%</td>
<td>27.23%</td>
</tr>
<tr>
<td>LCV</td>
<td>-13.06%</td>
<td>-10.46%</td>
</tr>
<tr>
<td>MCV</td>
<td>10.78%</td>
<td>13.38%</td>
</tr>
<tr>
<td>SLV</td>
<td>15.59%</td>
<td>18.19%</td>
</tr>
<tr>
<td>Port</td>
<td>12.10%</td>
<td>14.70%</td>
</tr>
<tr>
<td>SPY</td>
<td>-2.60%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ETF</th>
<th>Returns</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCG</td>
<td>80.94%</td>
<td>23.49%</td>
</tr>
<tr>
<td>MCG</td>
<td>117.68%</td>
<td>60.23%</td>
</tr>
<tr>
<td>SCG</td>
<td>128.33%</td>
<td>70.88%</td>
</tr>
<tr>
<td>LCV</td>
<td>78.47%</td>
<td>21.02%</td>
</tr>
<tr>
<td>MCV</td>
<td>100.05%</td>
<td>42.60%</td>
</tr>
<tr>
<td>SLV</td>
<td>107.94%</td>
<td>50.49%</td>
</tr>
<tr>
<td>Port</td>
<td>99.22%</td>
<td>41.77%</td>
</tr>
<tr>
<td>SPY</td>
<td>57.45%</td>
<td></td>
</tr>
</tbody>
</table>