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Upside / Downside Capture Ratios and UD Flyer Fund Stock Returns 2007-2012
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Advisors: Dr. Bob Dean & Dr. John Rapp

1) Study Purpose
The purpose of this study is to determine if capture ratios can predict the future returns of Flyer Fund stocks.

2) Data Requirements
Monthly returns for 20 Flyer Fund stocks, 2007-2012
Monthly Returns for S&P 500, 2007-2010

3) Return Periods
Calculation Period 2007-2010
Forecasting Period 2011-2012

4) Model Specification
\[ UCR_{it} = \frac{R_{it}}{R_{mt}} - 1 \text{ (For } R_{it} > 0, R_{mt} > 0) \]
\[ DCR_{it} = \frac{R_{it}}{R_{mt}} - 1 \text{ (For } R_{it} < 0, R_{mt} < 0) \]
\[ UCR_i = \frac{\sum_{t=1}^{n} (UCR_{it})}{n} \]
\[ DCR_i = \frac{\sum_{t=1}^{n} (DCR_{it})}{n} \]

Where:
- \( R_{it} \) = Return to \( i \)th stock
- \( R_{mt} \) = Return to Market
- \( UCR = \) Upside Capture Ratio
- \( DCR = \) Downside Capture Ratio
- \( UCR = \) Average Upside Capture Ratio
- \( DCR = \) Average Downside Capture Ratio

5) Estimating Equations
\[ R_{it+1} = a + b \frac{UCR_i}{DCR_i} \]
\[ R_{it+1} = a + b \frac{UCR_i}{DCR_i} \]
Where:
- \( t + 1 = 12/31/10 - 04/30/11 \) (UCR)
- \( t + 1 = 04/30/11 - 09/30/12 \) (DCR)
- \( t + 1 = 09/30/11 - 02/28/12 \) (UCR)
- \( t + 1 = 12/31/10 - 02/28/12 \) (UCR/DCR)
- \( a, b = \) Regression Parameters

6) Conclusions
- UCR has predictive capability
- UCR \( b \) coefficient has right sign (+)
- DCR \( b \) coefficient has right sign (-)
- DCR \( b \) coefficient is statistically significant at 80% confidence level
- UCR/DCR \( b \) coefficient is not statistically not significant

<table>
<thead>
<tr>
<th>Return Period</th>
<th>Ind. Var.</th>
<th>R2</th>
<th>A</th>
<th>B</th>
<th>tStat</th>
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<tbody>
<tr>
<td>12/31/10 to 4/30/11</td>
<td>UCR</td>
<td>0.001</td>
<td>0.08</td>
<td>0.003</td>
<td>0.04</td>
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<tr>
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<td>DCR</td>
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<td>0.04</td>
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<td>9/30/11 to 2/28/12</td>
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<td>-0.15</td>
<td>0.230</td>
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<td>12/31/10 to 2/28/12</td>
<td>UCR/DCR</td>
<td>0.010</td>
<td>0.08</td>
<td>0.003</td>
<td>0.04</td>
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