Discussion of ‘Long Run Asset Allocation’ by Ravi Bansal and Dana Kiku

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Estimate a co-integration restriction on the joint dynamics of dividends and consumption
Use co-integration residuals to forecast returns of value and growth stocks
Results
- higher average $R^2$ in predictive regressions
- allocation tilted toward value-stocks at longer maturities
Assumptions

1. CRRA preferences
2. Log-normally distributed returns at any horizon

... a mean variance setup!
Assumptions

1. CRRA preferences
2. Log-normally distributed returns at any horizon

... a mean variance setup!

Agents care about

1. Sharpe ratios
2. Correlations
In a nutshell

Sharpe ratios

Plain Vanilla Forecasts

EC Forecasts
Correlations

Horizon (yr) vs Correlation

- **EC-VAR**
- **VAR**

Riccardo Colacito  Long Run Asset Allocation
Some thoughts

- Statistical significance?
- Looser Priors?
- Can we quantify the benefits?
- Time varying volatility?
A test a la Diebold and Mariano would help shed light about significance of results

Let $\hat{e}_t^{ec-var}$ and $\hat{e}_t^{var}$ be regressions residuals

Regress $(\hat{e}_t^{ec-var})^2 - (\hat{e}_t^{var})^2$ on a constant and use HAC residuals

Check whether the intercept is statistically smaller than zero

Encompassing tests
Statistical significance: a preview

$R^2$ for value stocks with confidence intervals
How stable is the co-integrating relationship?

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<thead>
<tr>
<th></th>
<th>54-03</th>
<th>54-06</th>
<th>29-06</th>
<th>29-53</th>
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</thead>
<tbody>
<tr>
<td>Growth</td>
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<td>-2.71</td>
<td>-1.03</td>
</tr>
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<td>(0.86)</td>
<td>(0.84)</td>
<td>(0.57)</td>
<td>(0.67)</td>
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<tr>
<td>Value</td>
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<td>3.11</td>
<td>14.17</td>
<td>21.21</td>
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**Co-integration vector**

How stable is the co-integrating relationship?

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1. Which co-integrating vector should we use?
2. How loose should the priors be?
Looser Priors...

...are likely to matter for the whole distribution of allocations

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<td>RA = 5, Tight Prior</td>
<td>RA = 5, Loose Prior</td>
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<td></td>
<td></td>
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<tr>
<td>1</td>
<td>-0.23</td>
<td>0.47</td>
<td>0.75</td>
<td>-0.14</td>
<td>0.46</td>
<td>0.68</td>
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<tr>
<td>2</td>
<td>-0.21</td>
<td>0.50</td>
<td>0.71</td>
<td>-0.11</td>
<td>0.47</td>
<td>0.64</td>
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<tr>
<td>5</td>
<td>-0.19</td>
<td>0.57</td>
<td>0.62</td>
<td>-0.05</td>
<td>0.49</td>
<td>0.56</td>
</tr>
<tr>
<td>10</td>
<td>-0.14</td>
<td>0.64</td>
<td>0.50</td>
<td>0.04</td>
<td>0.49</td>
<td>0.47</td>
</tr>
<tr>
<td>15</td>
<td>-0.10</td>
<td>0.69</td>
<td>0.41</td>
<td>0.11</td>
<td>0.50</td>
<td>0.39</td>
</tr>
</tbody>
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|         | RA = 10, Tight Prior | RA = 10, Loose Prior |
| 1       | -0.11  | 0.22  | 0.88 | -0.08  | 0.23  | 0.86 |
| 2       | -0.10  | 0.25  | 0.85 | -0.07  | 0.24  | 0.83 |
| 5       | -0.09  | 0.32  | 0.77 | -0.05  | 0.25  | 0.79 |
| 10      | -0.06  | 0.37  | 0.69 | 0.00   | 0.25  | 0.75 |
| 15      | -0.01  | 0.37  | 0.64 | 0.03   | 0.24  | 0.73 |
Benefits of ‘long-run asset allocation’?

- A summary statistic to quantify the benefits of the procedure
- Some suggestions
  - Certainty equivalent
  - Sharpe Ratios
  - Jensen’s $\alpha$
- Is this strategy significantly profitable?
Time varying uncertainty

- Is likely to be very important
- In the presence of time varying variances and correlations, multi-period returns are likely not be normally distributed
- An agent with CRRA preferences would care about moments higher than second
  - Aversion to negative skewness
  - Aversion to kurtosis
- Term structure of risk literature
  - Guidolin and Timmermann (2004)
  - Diebold, Gunther and Tay (1998)
  - Christoffersen, Diebold and Schuerman (1998)
  - Colacito and Engle (2007)
Skewness and Kurtosis

Growth stock
Skewness: \(-0.62\)
Kurtosis: 2.82

Value stock
Skewness: \(-0.90\)
Kurtosis: 4.86
Concluding remarks

- Exploiting long run relationship between consumption and dividends for asset allocation purposes may be important
- Significance of results may be an issue
- Benefits must be assessed