Economics 435
The Financial System
(9/25/12)

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UW Madison
Fall 2012
Debt and Interest Rates

- Ten year Treasury, % [right scale]
- 3 month Treasury, % [right scale]
- Federal debt held by public to GDP [left scale]
Debt and Real Interest Rates

Federal debt held by public to GDP [left scale]

Ten year Treasury adjusted by expected infl., % [right scale]

Ten year TIPS, % [right scale]
Crowding Out?

- Ten year-3 mo Treasury spread, % (right scale)
- Federal government budget deficit to GDP (left scale)
Econometric Analysis

\[
\text{SPREAD}_t = \beta_0 + \beta_1 \text{UNGAP}_t + \beta_2 \text{INFL}_t \\
+ \beta_3 \text{STRSURP}_t + \beta_4 \text{FOROFFICIAL}_t + \beta_5 \text{FEDLT} + e_t
\]

- SPREAD: 10 yr-3 mo Treasury
- UNGAP: unemployment gap
- INFL: inflation gap, PCE inflation – 1.8%
- STRSURP: structurally adjusted budget balance
- FOROFFICIAL: Official purchases of Treasurys
- FEDLT: Fed purchases of long term Treasurys
Estimates

Table 1

Regression Results for the Treasury Interest Rate Term Spread, 10-Year - 3 Month
Ordinary Least Squares, Sample 1979-2010

<table>
<thead>
<tr>
<th></th>
<th>C</th>
<th>UNGAP</th>
<th>INFL</th>
<th>STRSURP</th>
<th>FOROFFICIAL</th>
<th>FEDLT</th>
<th>DISCMPOL</th>
<th>Adj. R²</th>
<th>DW</th>
<th>SE</th>
<th>AIC</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.373** (0.278)</td>
<td>0.416** (0.143)</td>
<td>-0.276** (0.072)</td>
<td>-0.190* (0.106)</td>
<td>0.553</td>
<td>1.29</td>
<td>0.823</td>
<td>2.56</td>
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<tr>
<td>2</td>
<td>1.435** (0.269)</td>
<td>0.481** (0.142)</td>
<td>-0.383** (0.090)</td>
<td>-0.291** (0.116)</td>
<td>-0.445* (0.243)</td>
<td>0.588</td>
<td>1.66</td>
<td>0.790</td>
<td>2.51</td>
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<tr>
<td>3</td>
<td>1.358** (0.238)</td>
<td>0.648** (0.137)</td>
<td>-0.407** (0.080)</td>
<td>-0.293** (0.102)</td>
<td>-0.147 (0.237)</td>
<td>-0.561** (0.189)</td>
<td>0.680</td>
<td>1.89</td>
<td>0.680</td>
<td>2.28</td>
<td>0.80</td>
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<tr>
<td>4</td>
<td>1.331** (0.191)</td>
<td>0.565** (0.091)</td>
<td>-0.420** (0.070)</td>
<td>-0.349** (0.086)</td>
<td>0.685</td>
<td>1.91</td>
<td>0.691</td>
<td>2.22</td>
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<tr>
<td>5</td>
<td>1.265** (0.238)</td>
<td>0.608** (0.135)</td>
<td>-0.385** (0.079)</td>
<td>-0.306** (0.099)</td>
<td>-0.254 (0.239)</td>
<td>-0.442** (0.198)</td>
<td>0.748</td>
<td>1.94</td>
<td>0.675</td>
<td>2.24</td>
<td>0.18</td>
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<tr>
<td>6</td>
<td>1.223** (0.188)</td>
<td>0.557** (0.086)</td>
<td>-0.382** (0.069)</td>
<td>-0.335** (0.082)</td>
<td>0.847** (0.413)</td>
<td>0.717</td>
<td>1.96</td>
<td>0.655</td>
<td>2.13</td>
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</tr>
</tbody>
</table>

Standard errors in parentheses; ** denotes significant at the 0.05 level; * denotes significant at the 0.10 level.

Output Gap and Inflation

- Output gap, lagged one year
- PCE inflation, y/y
Okun’s Law

Unemployment gap

Output gap

Years: 70, 75, 80, 85, 90, 95, 00, 05, 10
Oil Shocks