Some Macroeconomic Puzzles: Conjectural Refutations

The Costs of Business Cycles

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Business Cycle Shocks are both newsworthy and memorable.
"When the next recession arrives you will find written on its bottom ‘Made in Washington,’ just as was the case with the last one. This is not because the Fed is a sadist or an ignoramus; nor it is because the bedrooms in the White House are occupied by politicians eager to lose elections. Rather it is like the fact that hospitals are where most people die: If the central bank and fiscal authorities did not step on the brakes of an overexuberant economy now, they might well have to overdo that later. There is never a guarantee that intelligent and feasible policies can be discovered which will lead to perpetual soft landings at high employment and a steady price level....So let me make clear that, like the below-median poor, economic instability we have always with us."


The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 1970
Business Cycles last around 5 years +/-2 years! Except when they don’t.

<table>
<thead>
<tr>
<th>Year</th>
<th>Peak to peak</th>
<th>Trough to trough</th>
</tr>
</thead>
<tbody>
<tr>
<td>1871–1997</td>
<td>61.48</td>
<td>62.81</td>
</tr>
<tr>
<td>1871–1913</td>
<td>79.71</td>
<td>78.43</td>
</tr>
<tr>
<td>1946–1997</td>
<td>60.75</td>
<td>55.63</td>
</tr>
<tr>
<td><strong>Average peacetime cycles:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1871–1913</td>
<td>79.71</td>
<td>78.43</td>
</tr>
<tr>
<td>1919–1939</td>
<td>45.4</td>
<td>46.6</td>
</tr>
<tr>
<td>1946–1997</td>
<td>60.75</td>
<td>55.63</td>
</tr>
<tr>
<td><strong>Standard error, all cycles:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1871–1997</td>
<td>28.80</td>
<td>27.80</td>
</tr>
<tr>
<td>1871–1913</td>
<td>32.93</td>
<td>33.47</td>
</tr>
<tr>
<td>1946–1997</td>
<td>26.54</td>
<td>10.68</td>
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Over the Long Run consumption moves closely with income but with around 50% less variability.
A very similar story for the US from 1930.
A Non-Unique Trend-Cycle Decomposition
UK GDP 1955Q1-2015Q2

The more recent past continues to have business cycle-like behaviour
What is permanent and what is temporary?
Mean-variance indifference curves

Cons.

Δcons

Δst dev

Risk Averse

Risk Neutral

Standard deviation
Intra-temporal Risk Sharing

Income vs. Time

Household 1

Household 2

Risk Sharing

How to share manna from heaven....
Intertemporal Risk Sharing

How to deal with uncertainty over time in manna-flows
Mapping from consumption to utility (happiness)
How to determine the risk premium
What makes the risk premium change

Consumption, Utility and Risk Premia
The Lucas Costs of Business Cycles

\[ U(\bar{c}) = \frac{\bar{c}^{1-\rho}}{1 - \rho} \]

where \( \bar{c} \) = average consumption and \( \rho \) measures risk aversion.

\[ E \left[ U(\bar{c}) \right] \approx \frac{\bar{c}^{1-\rho}}{1 - \rho} - \frac{\rho}{2} \bar{c}^{-\rho-1} \sigma_{\bar{c}}^2 \]

\[ \left[ \frac{\rho}{2} \bar{c}^{-\rho-1} \sigma_{\bar{c}}^2 / U'(\bar{c}) \right] = \frac{\rho}{2} \left( \frac{\sigma_{\bar{c}}}{\bar{c}} \right)^2 \]

\[ \frac{\rho}{2} \left( \frac{\sigma_{\bar{c}}}{\bar{c}} \right)^2 = \frac{4}{2} (0.03)^2 = 0.2\% \bar{c} \]

- If \( \bar{c} \) is $30,000 then the costs of business cycle fluctuations is only around $30 per year!
Why this calculation is Wrong...

- US and UK consumption standard deviation is 2-3%
- Is the median household the unit of account?
- How about high or low income groups?
- What if monetary and fiscal policy, and other institutions have done their jobs?
- Is the standard deviation of the average accurate? What about the average standard deviation of all households consumption?
- What if there are permanent effects on income of any one household or on the average household from business cycle shocks?
Variance (consumption of all households) =
Average variance of all households + Variance of the average
Most measures miss the first argument on the rhs.
Concluding Remarks

- William Beveridge's 1944 call for `Full Employment`
- Incidence of words like recession, boom and bust in our common language
- We do not want to pay twice for insurance because policy has already done the job..
- The risk faced by certain households may be significant and the risk premium not affordable
- Deep preferences about attitude to risk
- Perhaps we are all pretty average but think we are exceptional!