Cyclical Mechanisms in the US and Russia: Why are they different?

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Initial Ideas & Hypotheses

**Ideas**

- Demand plays a crucial role in generating business cycles’ waves
- Demand for each group of products (consumer durables & nondurables; equipment & intermediate goods) has its own peculiarity

**Hypotheses (as regards output fluctuations by market groups)**

- These groups may be different in means, variances, leads & lags structure
- This is true for Russia as well for the USA
Data: industrial production indexes by market groups

*The USA: Board of Governors of FRS*

- a) materials and nonindustrial supplies, or shortly MT hereafter (sum of B53000 and B54000 time series weighted by their value added);
- b) equipment, EQ (B52000);
- c) durable consumer goods, CD (B51100)
- d) nondurable consumer goods, CN (B51200)

*Russia: own estimations based on Rosstat*

- 108 manufactured goods classified by its consumption type (→ the same four market groups as for the USA)
Demand peculiarities

Materials
- Produced in more or less ‘technological’ proportions to the gross industrial output;
- Highly sensitive to exaggerated expectations (positive as well as negative)

Equipment
- Whole investment projects as elementary unit for decision-making
- Desire to finish what was started
- Possibility to delay the start
- Decision-making lags
Demand peculiarities

**Consumer Durables**

- Consumers’ extremely good flair to the changes of economic conditions;
- During ‘bad’ times acquisition can be easily put aside;
- Near-zero decision-making lags;
- The effect of “delayed demand” is possible

**Consumer Non-Durables**

- Consumers’ extremely good flair to economic changes;
- Zero decision-making lags;
- No sharp drops during recessions, nor sharp rises during booms
## Growth Rates: Statistical Hypotheses

<table>
<thead>
<tr>
<th></th>
<th>Average</th>
<th>Std. Deviation</th>
<th>Lead/Lag (+/-)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials</td>
<td>Middle</td>
<td>High</td>
<td>0</td>
</tr>
<tr>
<td>Equipment</td>
<td>Period dependent</td>
<td>High</td>
<td>-</td>
</tr>
<tr>
<td>Consumer Durables</td>
<td>Period dependent</td>
<td>Extremely high</td>
<td>+</td>
</tr>
<tr>
<td>Consumer Non-Durables</td>
<td>Period dependent</td>
<td>Extremely low</td>
<td>+</td>
</tr>
</tbody>
</table>

![Graph showing Y-o-Y % change from 1950 to 2008 with recessions indicated]

- **Y-o-Y % change**
- **Recessions**
- **US-TOT**
The USA: Growth Rates by Market Groups, January 1948-August 2009

<table>
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<tbody>
<tr>
<td>Total industry</td>
<td>3.2</td>
<td>5.9</td>
<td>-</td>
</tr>
<tr>
<td>Materials</td>
<td>3.3</td>
<td>7.1</td>
<td>0</td>
</tr>
<tr>
<td>Equipment</td>
<td>4.6</td>
<td>9.2</td>
<td>-3</td>
</tr>
<tr>
<td>Consumer Durables</td>
<td>3.7</td>
<td>11.4</td>
<td>+1 or 2</td>
</tr>
<tr>
<td>Consumer Non-Durables</td>
<td>2.6</td>
<td>2.8</td>
<td>+1 or 2</td>
</tr>
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Correlations between total industry and market groups with various lags
Russia: Growth Rates by Market Groups, January 1982-August 2009

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<tr>
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<td>-0.8</td>
<td>8.4</td>
<td>0</td>
</tr>
<tr>
<td>Equipment</td>
<td>-3.9</td>
<td>19.1</td>
<td>0</td>
</tr>
<tr>
<td>Consumer Durables</td>
<td>0.1</td>
<td>17.0</td>
<td>0</td>
</tr>
<tr>
<td>Consumer Non-Durables</td>
<td>0.6</td>
<td>11.3</td>
<td>0</td>
</tr>
</tbody>
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Correlations between total industry and market groups with various lags.
Results:

The USA: No Surprises

- No surprises;
- The ‘delay demand’ effect does exist for consumer durables

Russia: A Lot of Surprises

- Growth rates of the main market groups of around 30-40% per year is not uncommon;
- Materials are the most stable group (not consumer non-durables);
- No leads or lags
Explanations for Russia:

*High positive/negative growth rates*
- Extremely high concentration of production (local event changes macro situation);
- Dramatic authorities decisions and actions

*Materials are the most stable group*
- External demand for Russian oil, gas & metals is more stable than internal demand for domestics goods which hardly suffer from the import competition

*No leads or lags*
- Fluctuations of domestic output are more defined by supply than by demand
- There is a possibility that fluctuations of import are defined by demand and have ‘proper’ volatilities and ‘proper’ leads & lags
Main Conclusion:

Structural peculiarity of a national economy is a very important factor in determining its business cycle fluctuations.
Synchronization or decoupling?

What we took...
- 25 largest GDP-PPP economies
- Real GDP growth rates
- Time period: 1997-2009

What we did...
- PC method to reveal hidden factors

What we see...
- All 25 countries are to the right side along first PC
- All emerging countries are on the upper side along the second PC (ex. Mexico); all developed countries are on the lower side (ex. Japan)

What we concluded...
- First PC is a global factor: not a single large country could ignore it
- Second PC is a group factor: it could effectively distinguish the emerging countries from the developed
Globalization  More Synchronization  More Decoupling

<table>
<thead>
<tr>
<th>Sample</th>
<th>Time period</th>
<th>% of the total variance</th>
<th>First PC</th>
<th>Second PC</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 largest economics</td>
<td>1971-1990</td>
<td>31.3</td>
<td>16.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1991-2009</td>
<td>35.3</td>
<td>17.8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1997-2009</td>
<td>46.9</td>
<td>21.0</td>
<td></td>
</tr>
</tbody>
</table>

What we took...
- The same but with more time-periods

What we did...
- Percent calculation of the total variance explained by the first & second PC’s

What we see...
- Both PCs’ importance is rising over time

What we concluded...
- Financial globalization causes more synchronization, more decoupling, and less countries’ idiosyncrasy