ARE INDICATORS OF BUSINESS TENDENCY SURVEY USEFUL TO MEASURE CYCLICAL DEVELOPMENT OF THE RUSSIAN ECONOMY?

The 7th Joint EC-OECD Workshop, Paris, 2015

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Content

- Background
- Motivation
- Decomposition: case study
- Tracer and real economy
- Conclusion and future development
**History**
- 1993: pilot surveys
- 1998: regular large-scale sectoral surveys
- 2009: all surveys are conducted by the Centre for Business Tendency Studies, Higher School of Economics (HSE) jointly with the Federal State Statistics Service (Rosstat)

**Advantages of the joint HSE–Rosstat BTS**
- accumulated data set over a long time period
- coverage of a wide range of regions, sectors and economic activities
- statistically significant compatibility of survey results with quantitative statistics
- compliance with international standards and classifications

**Drawbacks**
- frequency – only the Industry survey is monthly
### Russian BTS program

<table>
<thead>
<tr>
<th>Sectors</th>
<th>Starting year</th>
<th>Sample size</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry</td>
<td>1995</td>
<td>4 000</td>
<td>monthly</td>
</tr>
<tr>
<td>Construction</td>
<td>1993</td>
<td>6 500</td>
<td>quarterly</td>
</tr>
<tr>
<td>Retail trade</td>
<td>1998</td>
<td>4 000</td>
<td>quarterly</td>
</tr>
<tr>
<td>Wholesale trade</td>
<td>2000</td>
<td>3 000</td>
<td>quarterly</td>
</tr>
<tr>
<td>Services</td>
<td>2012</td>
<td>5 500</td>
<td>quarterly</td>
</tr>
<tr>
<td>Consumers</td>
<td>1998</td>
<td>5 000</td>
<td>quarterly</td>
</tr>
<tr>
<td>Investment</td>
<td>2001</td>
<td>10 000</td>
<td>yearly</td>
</tr>
<tr>
<td>Economic Sentiment Indicator</td>
<td>2011</td>
<td>25 000</td>
<td>quarterly</td>
</tr>
</tbody>
</table>
Testing sensitivity of business surveys data to cyclical development of the national economy

- building an algorithm that tests the indicators for cyclical sensitivity through decomposition of their dynamics

Constructing composite indicator that cover as far as possible all information of sectoral BTS results and allows us to track the cyclical profile in real economy ... it is for future ...

- Now – as a proxy – we have modified the Economic Sentiment Indicator (HSE ESI) and tested their dynamics according to the proposed algorithm

Evaluating retrospective turning points in GDP growth based on extracted cyclical profile in HSE ESI dynamics

Visualizing the results as a tracer of the HSE ESI short-term cyclical profile and comparing cyclical development of economic sentiment and real economy
Algorithm to test indicators for cyclical sensitivity through decomposition their dynamics

- Statistical treatment: seasonal adjustment, outliers elimination, missing values recovery, standardisation (if needed)
- Decomposition of dynamics (double use of the Hodrick-Prescott filter)
  - identification of the medium-term cycle up to 15 years going through the HP filter for the first time
  - extraction of the unsmoothed short-term cyclical component – de-trended dynamics
  - smoothing the short-term cyclical component going through the HP filter for the second time
- Assessing the cyclic correspondence of the smoothed short-term cycles in qualitative and reference indicators
- Identifying turning points in the smoothed short-term cycles using the formalised Bry-Boschan procedure
Economic Sentiment Indicator (HSE ESI)

Coverage
- about 23,000 organizations and 5,000 consumers
- total contribution to the national GVA is about 80%

15 Components

- **Industry:**
  - level of order books
  - production expectation
  - level of stocks of finished products

- **Construction:**
  - current order book
  - employment expectation

- **Retail trade:**
  - current business situation
  - expected business situation
  - level of stocks

- **Wholesale trade:**
  - current business situation
  - expected business situation
  - level of stocks

- **Services:**
  - current demand
  - expected demand
  - current business situation

- **Consumers:**
  - confidence indicator
HSE ESI and GDP dynamics: graphical comparison

Correlations
0.814 lag (0)
0.705 lag (-1)
### Decomposition: iterations

#### Iteration 1

<table>
<thead>
<tr>
<th>Years</th>
<th>$\lambda$</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>1649.327</td>
</tr>
<tr>
<td>15</td>
<td>8330.659</td>
</tr>
</tbody>
</table>

#### Correlation coefficients
- $0.912$ lag (0)
- $0.878$ lag (-1)
- $0.732$ lag (-2)

#### Iteration 2

<table>
<thead>
<tr>
<th>Months</th>
<th>$\lambda$</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>1</td>
</tr>
<tr>
<td>24</td>
<td>2.914</td>
</tr>
<tr>
<td>30</td>
<td>6.854</td>
</tr>
</tbody>
</table>
Smoothed short-term cycle in HSE ESI and GDP growth

Correlations
0.912   lag (0)
0.878   lag (-1)
0.732   lag (-2)
Indication of short-term cycles in the dynamics of GDP and HSE ESI

<table>
<thead>
<tr>
<th>Cycle</th>
<th>GDP Peak</th>
<th>GDP Trough</th>
<th>HSE ESI Peak</th>
<th>HSE ESI Trough</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycle I</td>
<td>Q2 1997</td>
<td>Q3 1998</td>
<td>Q2 1997</td>
<td>Q3 1998</td>
</tr>
<tr>
<td>Cycle II</td>
<td>Q1 2000</td>
<td>Q1-2 2002</td>
<td>Q2 2000</td>
<td>Q2 2002</td>
</tr>
<tr>
<td>Cycle III</td>
<td>Q4 2003</td>
<td>Q1-2 2005</td>
<td>Q4 2003</td>
<td>Q1 2005</td>
</tr>
<tr>
<td>Cycle IV</td>
<td>Q3 2007</td>
<td>Q2 2009</td>
<td>Q3 2007</td>
<td>Q2 2009</td>
</tr>
<tr>
<td>Cycle V</td>
<td>Q4 2011</td>
<td>Q2 2012</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Tracer of the HSE ESI short-term cyclical profile

- **II phase of downswing, growth of pessimism**
- **I phase of expansion, boom of optimism**
- **III phase of contraction, crisis sentiments**
- **IV phase of upswing, growth of optimism**

Key events:
- Q3-2007
- Q4-2012
- Q2-2009
- Q2-2015
- Q3-2008
- Q1-2010
- Q2-1998
- Q3-2007
- Q2-2009
### HSE ESI tracer and real economy

<table>
<thead>
<tr>
<th>Period</th>
<th>Cyclical phase</th>
<th>Economic sentiment</th>
<th>Real economy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2-Q3 2012</td>
<td>expansion</td>
<td>peak of optimism</td>
<td>intensive economic growth</td>
</tr>
<tr>
<td>Q4 2012</td>
<td>downswing</td>
<td>growth of pessimism</td>
<td>gradual slowdown in economic growth, protracted stagnation</td>
</tr>
<tr>
<td>Q1 2014</td>
<td>Direction to cyclical recovery phase</td>
<td>possible optimism growth</td>
<td>possible economic recovery</td>
</tr>
<tr>
<td>Q2 2014</td>
<td>turned into the contraction phase</td>
<td>intensive pessimism growth</td>
<td>geopolitical tension, economic uncertainty</td>
</tr>
<tr>
<td>Q3 2014</td>
<td>contraction</td>
<td>crisis</td>
<td>drop in oil prices, currency depreciation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>inflation, real incomes decline</td>
</tr>
<tr>
<td>Q2 2015</td>
<td>the lowest value for the last 5 years</td>
<td>crisis</td>
<td>crisis escalation</td>
</tr>
</tbody>
</table>
Conclusion and future development

Methodology

- Proposed algorithm can be used to test potential qualitative components of CI and CIs themselves for cyclic sensitivity
- Economic Sentiment Indicator (HSE ESI) shows high correlation (mainly synchronous) with GDP cyclical dynamics – it enables using the HSE ESI time series as a preliminary indicator of turning points and phases in GDP growth
- The next point – to construct composite leading indicator for Russia

Economy

- Since Q2 2014 we can see pronounced downward trend in business and consumer sentiment and real economic activity in Russia. May be, the Russian economy has reached the cyclical minimum ...
Thank you for your attention!

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