Real Time Detection of Turning Points

The OECD Experience

Roberto ASTOLFI (OECD)
Overview

1. CLI Methodology
2. CLI Performance
3. Can information on business cycle be of use in nowcasting macroeconomic variables?
4. Conclusions
Methodology
Two goals for one qualitative indicator

1) anticipate turning points (event)

2) inform on future direction of cyclical fluctuations
Reference series (economic activity)

- Quarterly GPD (except China: value added of industry)

  33 OECD countries
  
  +BRIICS + zones (OECD, euro area, G7, major 5 Asia)

Main categories of CLI components

1. Real indicators and Prices
2. Financial monetary and indicators
4. Trade Statistics
5. Employment
Criteria for the selection of the components

- **Economic significance**
- **Practical consideration** (e.g. timeliness, length, revisions)
- **Performance**

  Classical NBER approach (*full sample*)
  - Lead at TP: average, median and standard deviation
  - Number missed/extra turning points
  - Cross-correlation

  Evolution of the performance (*rolling analysis*)
  - Rolling Cross-correlation
  - Rolling Harding-Pagan leading Index
  - Rolling Granger causality
Univariate double Hodrick-Prescott filter
De-trending/smoothing

Graph showing the original data, trend, and trend/cycle over time from January 1973 to January 2017.
Main points

• The CLI is a qualitative indicator
  – Optimised to detect turning points (event forecast)
  – Provides a broad indication of the future evolution of the economic activity (directional forecast)
  – No information on future GDP levels or growth rate (point forecast)

• Monthly disseminated
Performance
OECD as a whole: CLI leads GDP at the time of the Great Recession

Ex-post

- 6 months
- 3 months
CLIs headlines

- OECD News Release, October 2007
  OECD CLIs signal a weakening outlook for most major global economies

- OECD News Release, November 2008
  OECD CLIs signal a deepening slowdown in OECD area

- OECD News Release, June 2009
  … OECD CLIs point to a reduced pace of deterioration in most of the OECD economies …
CLIs for G7 countries at the time of the Great Recession

- Lead (in months) with respect to the peak in GDP
- Lead (in months) with respect to the trough in GDP
Stability of turning points
CLI for the U.S.: peak and trough
... and after the crisis
CLI for the OECD as a whole
Can information on business cycle be of use when nowcasting macroeconomic variables?
Are revisions influenced by the business cycle? Sparse evidence

1) Phases Growth rates downwards revisions in contractions

2a) Signs of growth rates GDP growth rates revised upwards when GDP increases
2b) Signs of growth rates Growth rates revised downwards when GDP decreases

4) Volatility Higher volatility of growth rate in contractions

5) Turning Points Larger revisions around through than around peaks
Caution: further investigation is required

• Studies are not fully comparable
  – Methodology, sample, definitions of the business cycle
• Studies tend to focus on headlines indicators
  – GDP rather than its components or STS
  – No investigation of the causes
    • (s.a., temporal disaggregation, forecasting)
• Possible use of CLIs to be investigated
Conclusions
Conclusions

• The CLI is a qualitative indicator (regularly disseminated)
  – event & directional forecast, no point forecast

• CLIs anticipated both the peak and the through of the Great Recession
  – Current performance is quite good

• Nowcasting GDP/IIP
  – Non-conclusive evidence of links between revisions business cycle
  – Possible use of CLIs? More investigation is required.
Thank you for your attention

For more information please contact: Roberto.Astolfi@oecd.org