Indicator on Euro Area Industrial New Orders

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1. Introduction
2. Set-up of data transmission to ECB
3. Aggregation and seasonal adjustment
4. Estimation framework and outcome
5. Future work
• Eurostat stopped Industrial New Order series in mid-2012 ("negative priority")
  **BUT**: a number of NSIs will continue data collection at national level

• Industrial New Orders are relevant indicator for many users and uses!

→ ECB Working Group to
  (1) Explore ways for filling emerging data gap
  (2) Ensure availability of national data for E(S)CB
Target: Fill gap for euro area industrial new orders (m-o-m % changes from seasonally adjusted data)

→ Selected indicators for total, total excl. heavy transport; and MIGs; breakdown for domestic/non-domestic

→ Which NSIs continue with data collection?

→ Set-up of regular data transmission from NSI (via NCB) to ECB

→ ECB staff from DG-Economics and DG-Statistics develop estimation framework, implement and test

→ Regular production at monthly frequency
National data collection:

- **Discontinue:** DK, GR, FR, IE, CY, LU, MT, SI, LT and LV
- **Continue:**
  - *Euro area*: BE, DE, EE, ES, IT, NL, AT, PT, SK and FI
  - *Non-euro area*: BG, CZ, HU, PL, RO and SE

**However:** some NSIs decide later for 2013 and beyond

**Undecided:** UK

- **Euro area coverage rate** of 80% (2012) and of 65% - 78% (for 2013 - and later?)
- **ALL data transmissions** successfully tested & implemented!
3. Aggregation and seasonal adjustment

Aggregation:
- Euro area aggregates if > 60% country coverage
- **Weights:** Eurostat’s weights for new orders for base year 2005 = 100

Seasonal adjustment:
- **Ideally:** SA-data from NSIs
- **Otherwise:** ECB performs SA (X-12-ARIMA)
  - multiplicative model
  - additive outlier and level shifts
  - WDA based on WGGES national calendars
Priority: national “hard” data on new orders

Additional data used:

• DG ECFIN’s survey in manufacturing
  “Do you consider your overall order books to be 
  (above normal – normal - below normal)?”

• Purchasing Managers’ Survey in manufacturing
  “Level of total orders this month compared with one 
  month ago?” (higher – same - lower)

• Eurostat data on industrial turnover
  Quantitative monthly data from all Member States; 
  indices (2005=100); seasonally adjusted
4. Estimation Framework
Model new orders *m-o-m* growth rate using

3 cohorts of variables:

\[ NO_t \text{ m-o-m growth} = \beta_0 + \beta_1 (\Delta_3 ECFIN_t) + \beta_2 (\Delta_4 ECFIN_t) + \beta_3 (PMI_t \text{ residuals}) + \beta_4 (\Delta PMI_t \text{ residuals}) \]

\[ + \beta_5 (TO_t \text{ m-o-m growth}) + \beta_6 (TO_{t-1} \text{ m-o-m growth}) + \beta_7 (NO_{t-1} / TO_{t-1}) \]

\[ + \beta_8 (NO_{t-1} \text{ m-o-m growth}) + \beta_9 (NO_{t-2} \text{ m-o-m growth}) + \varepsilon_t \]

...where the variables are represented by monthly series:

- **NO** – Total manufacturing working to order
- **ECFIN** – Total order book levels
- **PMI** – Purchasing manager index surveys in manufacturing
- **TO** – Total turnover index – manufacturing
4. Estimation Framework (cont’d): Surveys

- Deploy both survey series

- **DG ECFIN’s survey in manufacturing**
  - In levels and delta
  - Headline survey indicator
  - Available for all countries

- **Purchasing Managers’ Survey (PMI) in manufacturing**
  - In *residual* levels and delta
    - $\text{PMI}_t = \beta_0 + \beta_1(\Delta_3 \text{ECFIN}_t) + \varepsilon_t \Rightarrow \text{extract residuals}$
    - $\Delta \text{PMI}_t = \beta_0 + \beta_1(\Delta\Delta_3 \text{ECFIN}_t) + \varepsilon_t \Rightarrow \text{extract residual}$
  - Auxiliary survey indicator
  - Data gap: PMI available for DE, IE, GR, ES, FR, IT, NL and AT (and CZ, PL and the UK for non-euro area)

- Model PMI survey in manufacturing in order to capitalise on any extra information available on the top on ECFIN surveys
4. Estimation Framework (cont’d): Results

- All three cohorts of variables matter for explaining m-o-m change in new order growth (hard data the most, then come surveys)
- Economically sound coefficients and healthy residual behaviour
- Tailored restriction sets stemming from free estimations
  - Insignificants at 0
  - The sum of turnover variables cannot exceed 1
- Tested by the Wald test for statistical viability
- At the EA aggregate level, about 50% of m-o-m growth explained
- Sub-categories range between 30% for MIG Capital Goods to 70% for MIG Intermediate Goods
- At index level, the portion explained is at 98%
4. Estimation Framework (cont’d): Results in index level

Sources: Eurostat and ECB calculations.
4. Estimation Framework (cont’d): Series provided to users

Notes: Last observation period June 2012.

Sources: Eurostat and ECB calculations.
5. Future work

- **Work in Progress:**
  - “pseudo real-time testing” with vintage data from revisions database
  - Comments from ECB Working Group on Forecasting
  - Involvement of US Conference Board in testing

- **ECB** to continue with monthly production, tracing revisions and testing
- **NCBs** to ensure timely sending of national data (inline with national release dates)
- Report as contribution to **ECB Occasional Paper** series
- Publication as “**ECB experimental statistics**” in 2013 Q1?
Thanks a lot for your attention!

Questions?