

Revision of the Spanish CLI

The main features of the revision include updating turning points and reviewing the existing set of component series for Spanish CLI.

I. Reference chronology

It was required for OECD to study very carefully to determine the turning points in the Spanish economy since the share of the service sector in its economy is relatively large. Table 1 shows the comparisons between preliminary and final turning points. The final turning points are estimated by using those from Industrial production (IIP) and GDP. As they can be seen in the table, there are a few differences in the reference chronology identified by the two series. However, the main difference is the period in the middle of 1980s, i.e. January 1987 in IIP and the 1st quarter in 1986 in GDP.

After internal discussion, it has been decided that there was a trough in January 1986 (instead of January 1987) and that 1989-91 and 1998-99 cycles were minor ones.

Table1: Preliminary and final chronologies ⁽¹⁾

| | Preliminary turning points | | Final turning points |
|-------------------------|----------------------------|-------|----------------------|
| | Industrial production | GDP | |
| P ⁽²⁾ | 12/66 | Q3/66 | 12/66 |
| T ⁽³⁾ | 4/68 | Q4/67 | 4/68 |
| P | 10/69 | Q1/69 | 10/69 |
| T | 1/71 | Q1/71 | 1/71 |
| P | 8/74 | Q2/74 | 8/74 |
| T | 2/76 | Q4/75 | 2/76 |
| P | 9/78 | Q1/78 | (9/78) |
| T | 2/79 | Q2/79 | (2/79) |
| P | 3/80 | Q3/80 | 3/80 |
| T | 8/82 | Q1/81 | (8/82) |
| P | 3/83 | Q3/82 | (3/83) |
| T | 1/87 | Q1/86 | 1/86 |
| P | 3/89 | Q3/90 | (3/89) |
| T | 3/91 | Q1/91 | (3/91) |
| P | 12/91 | Q1/92 | 12/91 |
| T | 4/93 | Q4/93 | 4/93 |
| P | 12/94 | Q1/95 | 12/94 |
| T | 12/96 | Q4/96 | 12/96 |
| P | 2/98 | | (2/98) |
| T | 5/99 | | (5/99) |
| P | 2/00 | Q1/00 | 2/00 |

Note 1: Minor cycles appear in brackets

Note 2: peak.

Note 3: trough.

II Performance of the new CLI and component series

The cyclical behaviour of more than thirty Spanish short-term economic statistics has been studied in order to identify an optimal set of component series to be used for a new Spanish CLI. They cover business surveys, financial indicators, production series, foreign trade series, etc. We found that the weighted-average of the OECD CLIs for three main economic partners of Spain, i.e. France, Italy and Germany, could be very good candidate for a component series in terms of its statistical properties. However, we

have decided not to include it in the final set since the performance of the resulting Spanish CLI did not improve significantly for the cost of Spanish CLI being always dependent upon the CLIs of three countries.

On the other hand, the final set of component series includes the “nights in hotel” regardless of its performance in the earlier period, which is not satisfying. It performs much better in predicting the most recent turning points. At the same time, it represents the service sector.

Please find below table 2 for the new set of component series for the Spanish CLI and graph showing the chronological comparison between the reference series and the new CLI for Spain.

Table 2: New set of component series

| Indicator series | Extra or missing cycles (4) | MCD | Mean lead (+) at turning points (TP) | | | Median lead (+) at turning points (TP) | | | Standard deviation | Cross-correlation | |
|--------------------------------|-----------------------------|-----|--------------------------------------|--------|--------|--|--------|--------|--------------------|-------------------|-------|
| | | | Peak | Trough | All TP | Peak | Trough | All TP | | Lead (+) | Coef. |
| CLI | 2X | 1 | 9 | 9 | 9 | 12 | 8 | 9 | 5.2 | 4 | 0.73 |
| Production: future tendency | 2X | 3 | 8 | 6 | 7 | 6 | 7 | 7 | 8.2 | 4 | 0.70 |
| Order books: future tendency | 1X | 4 | 16 | 8 | 12 | 13 | 8 | 9 | 11.2 | 7 | 0.63 |
| Finished goods stock: level(5) | 1X, 1m | 3 | 6 | 6 | 6 | 5 | 7 | 7 | 4.9 | 2 | -0.67 |
| Long-term interest rate(5) | 1X | 1 | 7 | 14 | 10 | 11 | 14 | 11 | 8.9 | 11 | -0.41 |
| Nights in hotel | | 4 | -1 | 0 | -1 | 3 | -2 | -1 | 9.4 | 3 | 0.27 |

Note 4: m: missing cycle; X: extra cycle

Note 5: Inverted series

Figure 1: New CLI and reference series

