

Statistics Department

## Methodology of the competitiveness indices

- The competitiveness indices for Spain prepared by the Banco de España are calculated as weighted geometrical means of the bilateral exchange rates multiplied by relative prices indices. A reduction in the value of the indices denotes an improvement in competitiveness and vice versa<sup>1</sup>. The **weights** for each country in each counterpart area are based on Spain's manufacturing and services trade with those countries in the case of indices based on consumer prices (CPI) and total unit labour cost (ULCT), and on manufacturing trade in the case of indices based on producer prices, export unit values and manufacturing unit labour cost. Each country's shares in Spanish trade (imports and exports) with the area as a whole are taken into account for its calculation. However, in the case of exports, their weight, for country X, also takes into account X's trade with third countries in order to reflect, along with the competition entailed by X's producers in their local markets, the competition exerted by these same producers in third markets to which X exports. For further details, see the methodological section of the **ECB competitiveness indices**.
- Published **nominal components** are calculated as weighted geometrical means of bilateral exchange rates with weights based on manufacturing and services trade in the case of indices based on CPI and ULCT, and with weights based on manufacturing trade for the rest of indices
- The **prices/costs** series for the different countries are as homogeneous as possible given the different sources available. The main source of the data is Eurostat, although BIS, IMF, OECD and national source data are also used. The unit labour costs (total and manufacturing) series are obtained from the Spanish National Accounts (INE), with series adjusted of seasonal and calendar effects, and employment series defined in terms of number of persons.

The countries making up the **economic areas** vis-à-vis which the competitiveness indices are calculated are those specified below:

- **Member countries of the European Union (EU 27):** Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, the Netherlands, Luxembourg, Malta, Poland, Portugal, Romania, Slovakia, Slovenia, and Sweden.
- **Euro area members:** Austria, Belgium, Cyprus, Croatia, Estonia, Finland, France, Germany, Greece, Italy, Ireland, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Portugal, Slovakia and Slovenia.
- **Developed countries:** Austria, Australia, Belgium, Canada, Croatia, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Japan, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, New Zealand, Norway, Portugal,

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<sup>1</sup> The methodology used for its compilation is broadly consistent with that used by the ECB for the calculation of its indices, although there are some differences, as shown in Table 1 in the Annex to this note.

Slovakia, Slovenia, Sweden, Switzerland, United Kingdom and United States.

- **Industrialised countries:** those making up the grouping of developed countries, plus China, Hong Kong, India, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan and Thailand.
- **Newly industrialised Asian countries:** China, Hong Kong, India, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan and Thailand.

### Annex. Differences between the competitiveness indices compiled by the Banco de España (BE) and by the European Central Bank (ECB) for Spain

Table 1. Differences between BE and ECB indices for Spain

Feature	BE	ECB
Deflators	Consumer price indices (CPI) Producer price indices (PPI) Total unit labour costs (ULCT) Manufacturing unit labour costs (ULCM) Export Unit Value Indices (EUVI)	CPI PPI ULCT GDP deflator
Economic areas	Euro area EU-27 Developed countries Industrialised countries Newly industrialised Asian countries	Euro area Euro area +group of 12 trading partners <sup>2</sup> Previous aggregation + group of 7 trading partners <sup>3</sup> Previous aggregation + group of 23 trading partners <sup>4</sup> (only for CPI and GDP deflator indices)
Index formula	Weighted geometric mean, non-chained indices <sup>5</sup>	Weighted geometric mean, chain-linked indices

<sup>2</sup>These are Australia, Canada, Denmark, Hong Kong, Japan, Norway, Singapore, South Korea, Sweden, the United Kingdom, Switzerland and the United States.

<sup>3</sup>These are Bulgaria, China, Czech Republic, Hungary, Poland and Romania.

<sup>4</sup>Algeria, Argentina, Brazil, Chile, Colombia, Iceland, India, Indonesia, Israel, Malaysia, Mexico, Morocco, New Zealand, Peru, the Philippines, Russia, Saudi Arabia, South Africa, Taiwan, Thailand, Turkey, Ukraine and the United Arab Emirates.

<sup>5</sup>The effect of this difference in terms of the annual rate of the indices is small. In particular, for the euro area indices with CPI and CLUT published by BE and ECB in the period 1999-2020, the maximum differences in absolute value for the annual rates are 0.2%.