Economic and Finance statistics

Real effective exchange rates and harmonised competitiveness indicators

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Spring semester 2021

Jointly organised by

European Statistical System (ESS)

European System of Central Bank (ESCB)

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Outline

□ Introduction

□ Components of EERs and HCIs

□ Overview of the indicators

Introduction

- **Nominal effective exchange rate** (NEER): summary measure of the external value of a country's (or economic area's) currency vis-à-vis the currencies of its most important trading partners

  - Captures in a single measure global foreign exchange market developments

- **Real effective exchange rate** (REER): obtained by deflating the nominal EER by price or cost measurements

  - Indicator of international price/cost competitiveness

  - Key component of external balance assessment

- **Harmonised competitiveness indicators** (HCIs): equivalent indicators computed for individual euro area Member States

<u>Nominal</u> effective exchange rate

$$NEER^t = \prod_{i=1}^{N} \left(e_{i,euro}^t\right)^{w_i}$$

- where $e_{i,euro}^t$ is the exchange rate of the currency of partner country i vis-à-vis the euro in period t (expressed in terms of foreign currency per euro)

- N stands for the number of countries in the reference group of trading partners

- w_i is the **trade weight** assigned to the trading partner i.

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Real effective exchange rate

$$REER^t = \prod_{i=1}^{N} \left(\frac{d_{euro}^t e_{i,euro}^t}{d_i^t} \right)^{w_i}$$

- where d_{euro}^t and d_i^t are the deflators for the euro area and partner country *i*

- ECB methodology based on the BIS (Turner and Van't dack 1993), adapted to the euro area (see Buldorini et al. (2002), Schmitz et al. (2012), Fidora and Schmitz (2020))

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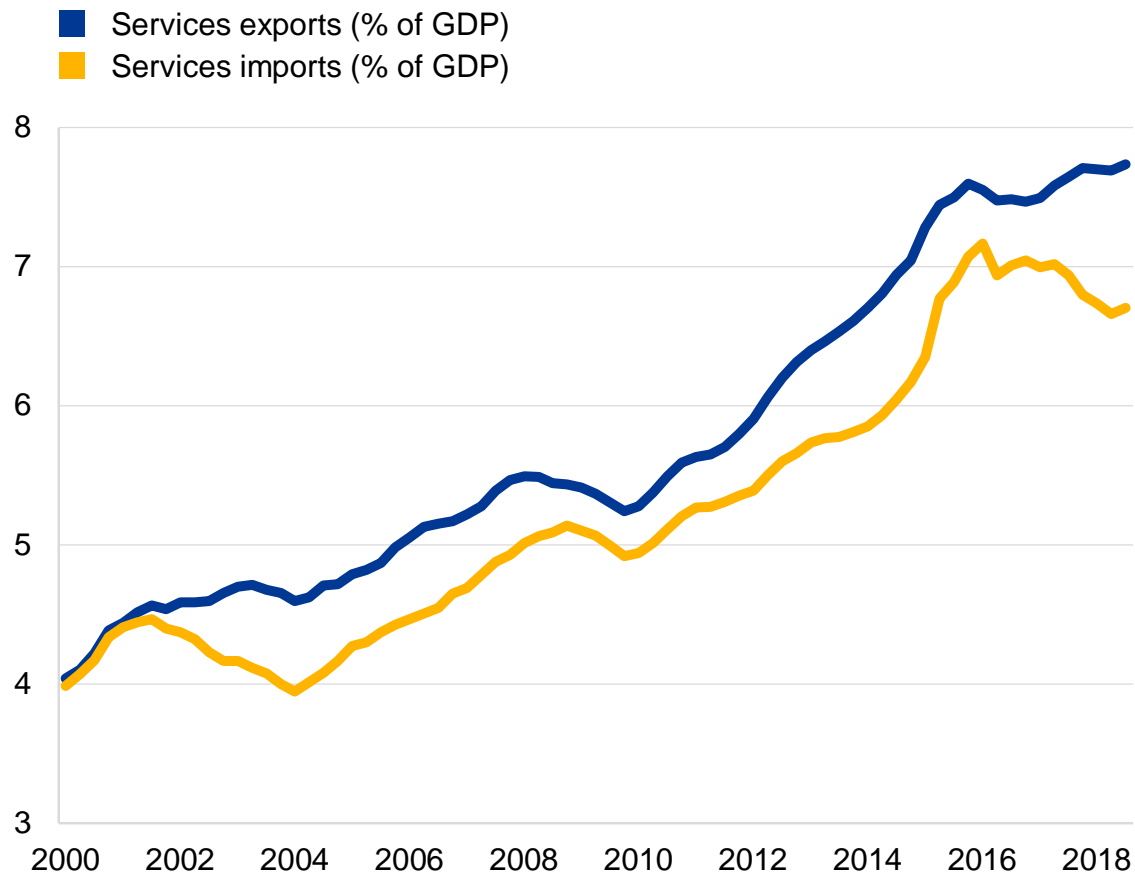STATISTICS
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Components of EERs/HCIs

1. Bilateral nominal exchange rates

2. Trade basis

3. Trade weights

4. Trading partners

5. Price and cost deflators

Trade basis

- Based on **manufacturing trade** …

    – sections 5 to 8 of the Standard International Trade Classification

- and – since update of 2020 – **services trade**

- **Commodities and energy products** excluded

    – homogeneous goods

    – prices set globally, not reflective of competitiveness developments in individual countries.

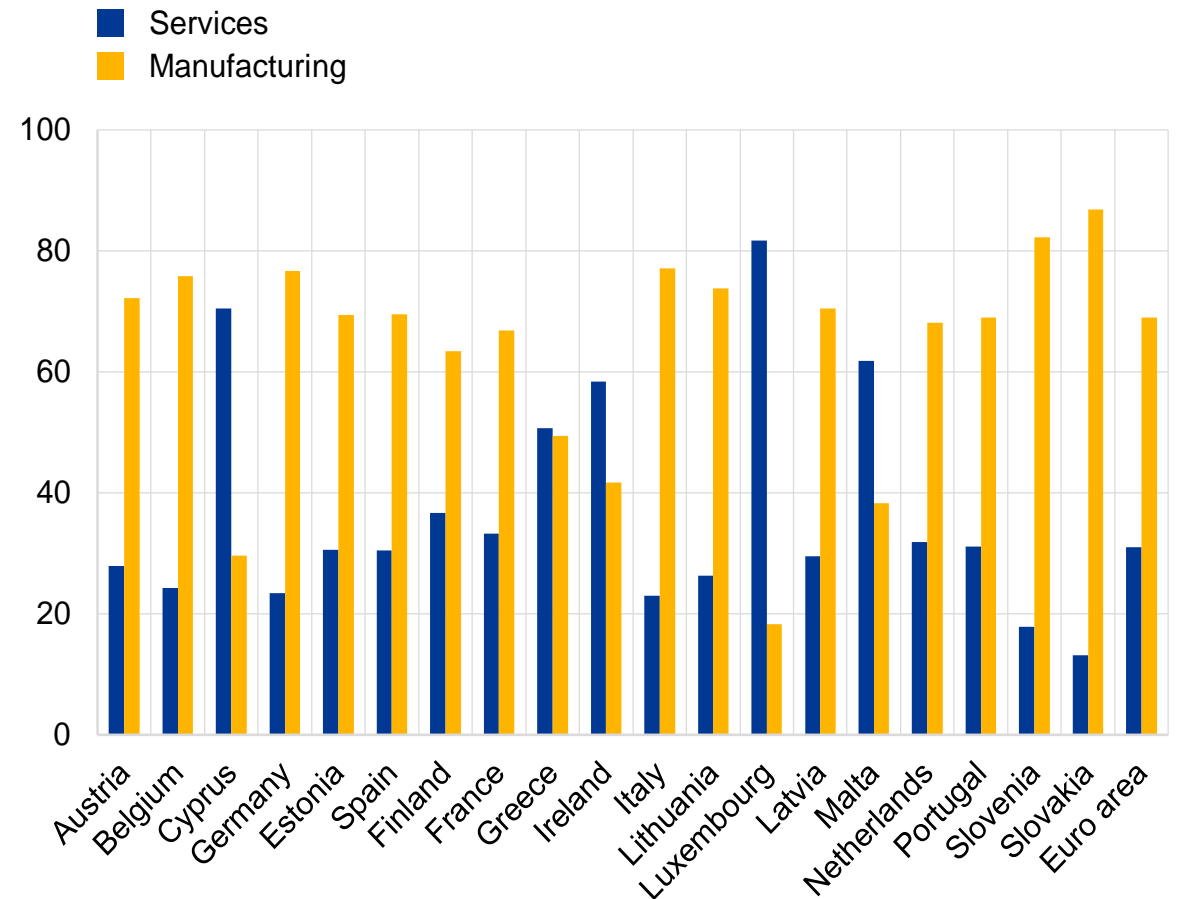   – Distortions due to subsidies and regulation

Increasing importance of euro area services trade

Legend (left chart):
- Services exports (% of GDP)
- Services imports (% of GDP)

Legend (right chart):
- Services
- Manufacturing

Note: Services trade as a percentage of GDP. Four quarter moving sums.

Notes: Shares as percentage of sum of manufacturing and services trade (exports and imports). 2016-2018.

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Inclusion of services trade

- Services trade has **gained in importance** over past decades
- Role of services in international trade **even larger in value added terms**
  - (Francois and Manchin, 2011; Johnson and Noguera, 2012)
- **Wide range** of services are traded internationally
- Euro area services exports are **affected by competitiveness developments** (Christodoulopoulou and Tkacevs, 2016)
- ECB developed method to overcome remaining **data availability issues**

Trade weights

- Calculated separately for **manufacturing** and **services**

$$w_i{}^{Ser} = \left(\frac{m^{Ser}}{x^{Ser} + m^{Ser}} \right) w_i^m + \left(\frac{x^{Ser}}{x^{Ser} + m^{Ser}} \right) w(double)_i^x$$

- where w_i^m and $w(double)_i^x$ are partner country i's **import** and **export** weights, respectively, and m^{Ser} and x^{Ser} are total imports and total exports by the euro area

- **import weights:** each trading partner's simple share in euro area imports

- **export weights:** double-weighted to account for competition in "third markets"

- time-varying, calculated over **non-overlapping three-year periods**

- **chain-linked** indices (at the end of each three-year period)

- manufacturing and services weights **combined** according to shares in total trade

Trading partners

EER-12	EER-19 (EER-12 + …)	EER-42 (EER-19 + …)	
Australia	Bulgaria	Algeria	Morocco
Canada	Czech Republic	Argentina	New Zealand
Denmark	China	Brazil	Philippines
Hong Kong	Croatia	Chile	Peru
Japan	Hungary	Colombia	Russia
Norway	Poland	Iceland	South Africa
Singapore	Romania	India	Taiwan
South Korea		Indonesia	Thailand
Sweden		Israel	Turkey
Switzerland		Malaysia	Saudi Arabia
United Kingdom		Mexico	Ukraine
United States			United Arab Emirates

HCIs also available with other euro area Member States as trading partners!

Trade weights in the euro EER-42: manufacturing, services and combined

(percentage)
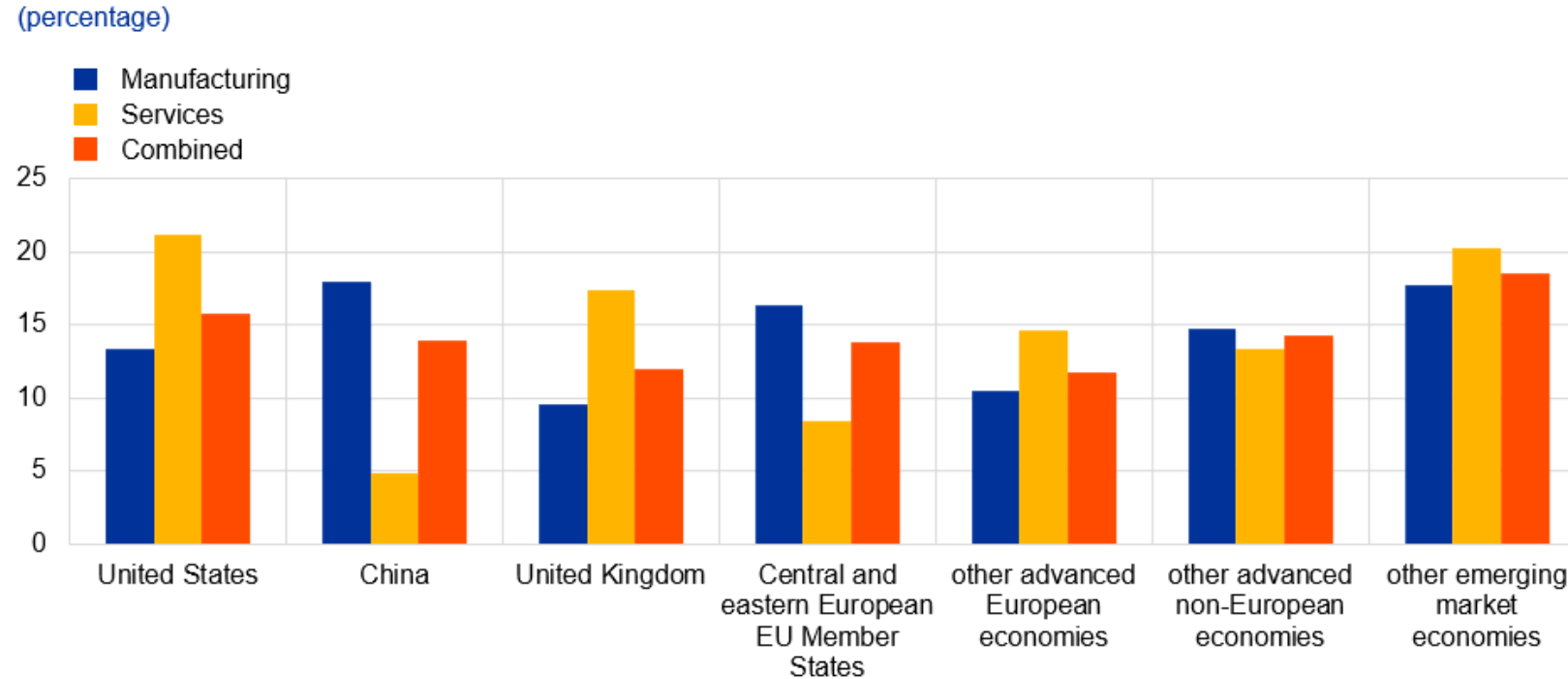
Source: ECB
Note: Trade weights are averages over the period 2016 to 2018. "Central and eastern European EU Member States" comprises Bulgaria, the Czech Republic, Croatia, Hungary, Poland and Romania; "other advanced European economies" comprises Denmark, Iceland, Norway, Sweden and Switzerland; "other advanced non-European economies" comprises Australia, Canada, Hong Kong SAR, Israel, Japan, New Zealand, Singapore, South Korea and Taiwan; and "other emerging market economies" comprises Algeria, Argentina, Brazil, Chile, Colombia, India, Indonesia, Malaysia, Mexico, Morocco, Philippines, Peru, Russia, Saudi Arabia, South Africa, Thailand, Turkey, Ukraine and the United Arab Emirates.

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Deflators

- **Consumer prices (CPI):** broad coverage, easily available, timely, comparable across countries, distorted by taxes and subsidies

- **Producer prices (PPI):** includes industrial products and intermediate goods, timely, no information on services, less influenced by taxes and subsidies

- **GDP deflators:** "price of value added", influenced by taxes and subsidies, subject to revisions, less timely

- **Unit labour costs for the total economy (ULCT)/ manufacturing sector (ULCM):** less influenced by taxes and subsidies, but ignore other input cost and profit margins, volatile subject to revisions, less timely

- In conclusion: need to consider a **broad range** of different deflators!

Overview of indicators

- **REERs/HCIs** using <u>combined</u> trade weights

  - Nominal

  - Consumer price index

  - GDP deflator

  - Unit labour cost in the total economy (ULCT)

- **Manufacturing-oriented REERs/HCIs** are based on <u>manufacturing</u> weights

  - Producer price index (PPI)

  - Unit labour cost in the manufacturing sector (ULCM)

Overview of indicators

| Deflator	Trading partners (max)	Frequency
Nominal (bilateral and effective)	EER-42/HCI-61	Daily
Consumer price index (**CPI**)	EER-42/HCI-61	Monthly
Producer price index (**PPI**)	EER-19/HCI-38	Monthly
GDP deflator	EER-42/HCI-61	Quarterly
Unit labour cost in the total economy (**ULCT**)	EER-19/HCI-38	Quarterly
Unit labour cost in the manufacturing sector (**ULCM**)	EER-19/HCI-38	Quarterly

Overview of indicators

Euro effective exchange rates

Legend:
- Nominal
- CPI
- PPI
- GDP deflator
- ULCT
- ULCM
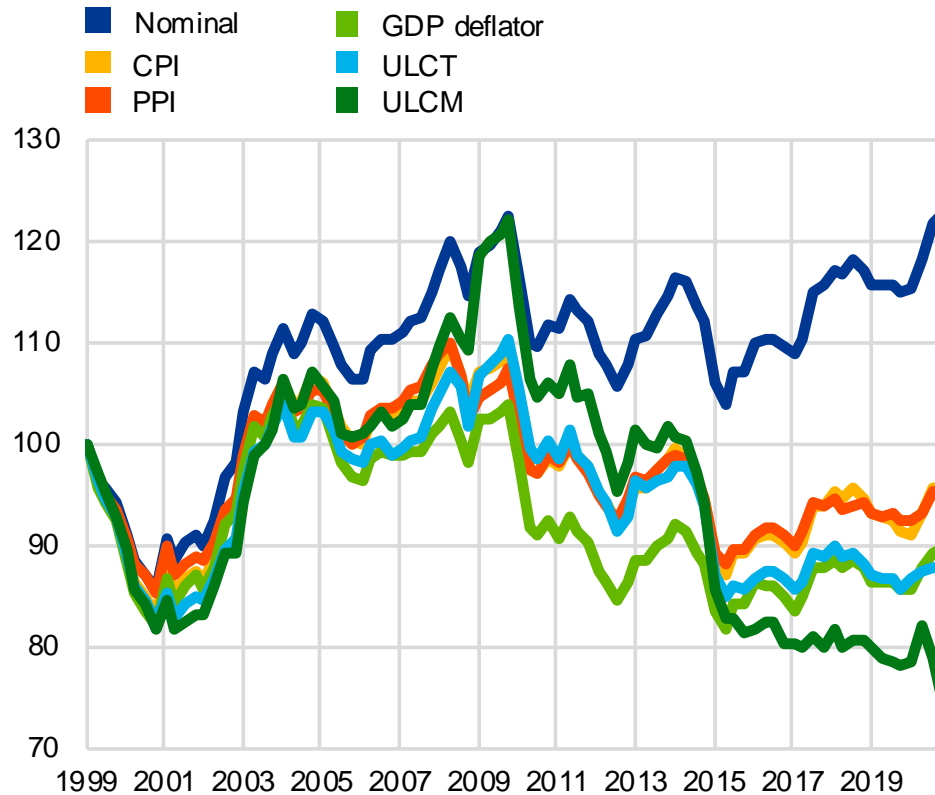
Harmonised Competitiveness Indicators
(selected countries, deflated by total unit labour cost)

Legend:
- DE
- GR
- ES
- FR
- IT
- PT
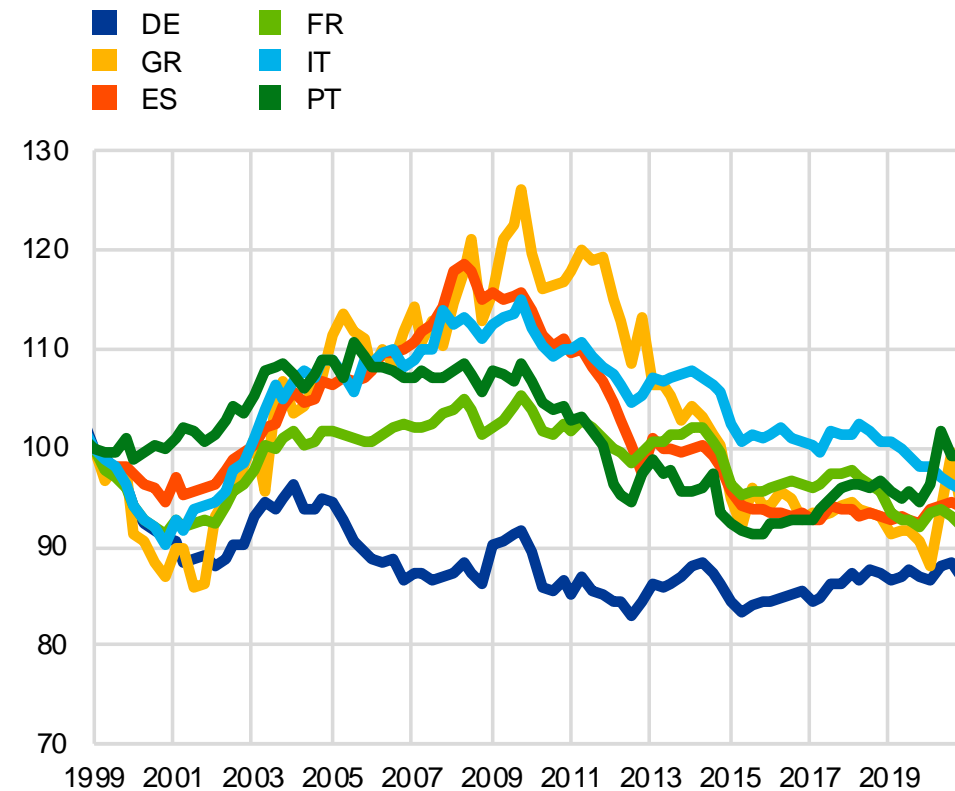
Note: A downward movement reflects a depreciation of the effective exchange rate, while an upward movement indicates an appreciation of the effective exchange rate. Nominal, CPI-deflated and GDP-deflated EERs vis-à-vis 42 trading partners, PPI, ULCT and ULCM vis-à-vis 19 trading partners, HCIs vis-à-vis 19 extra-euro area trading partners and 18 intra-euro area trading partners.

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