



EUROPEAN CENTRAL BANK

EUROSYSTEM

Vom Nachzügler zum Vorreiter? Wie Europa den Technologie-Rückstand aufholen kann

Berlin, 14. Mai 2024

Isabel Schnabel, Direktorium der Europäischen Zentralbank
“Weichenstellungen für Wettbewerbsfähigkeit & Wachstum”

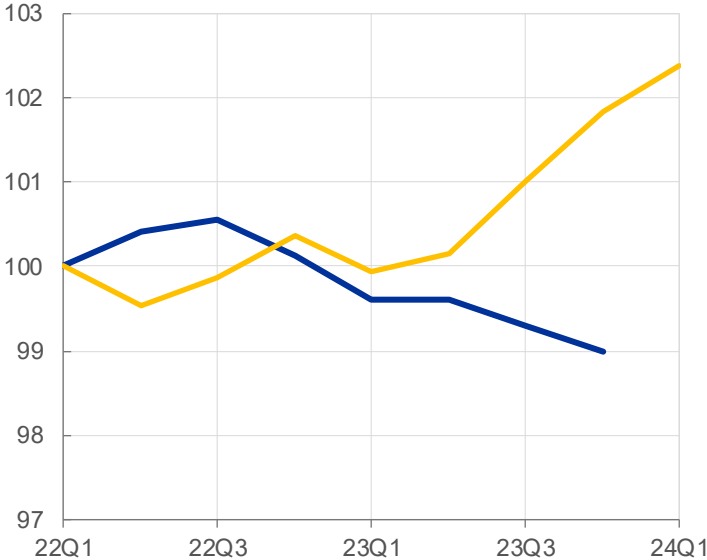


Horten von Arbeitskräften als Erklärung für Rückgang des Produktivitätswachstums

Produktivitätswachstum pro Beschäftigtem

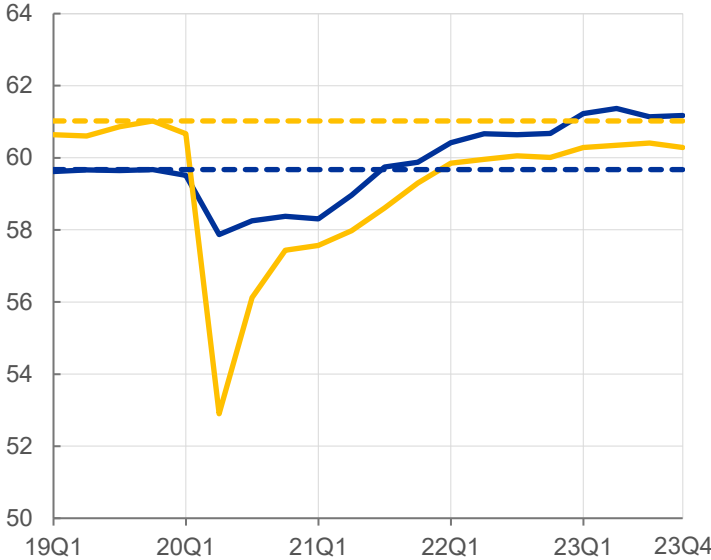
(Index: 22Q1=100)

EA US



Beschäftigungsquote (Anteil der Bevölkerung)

EA US

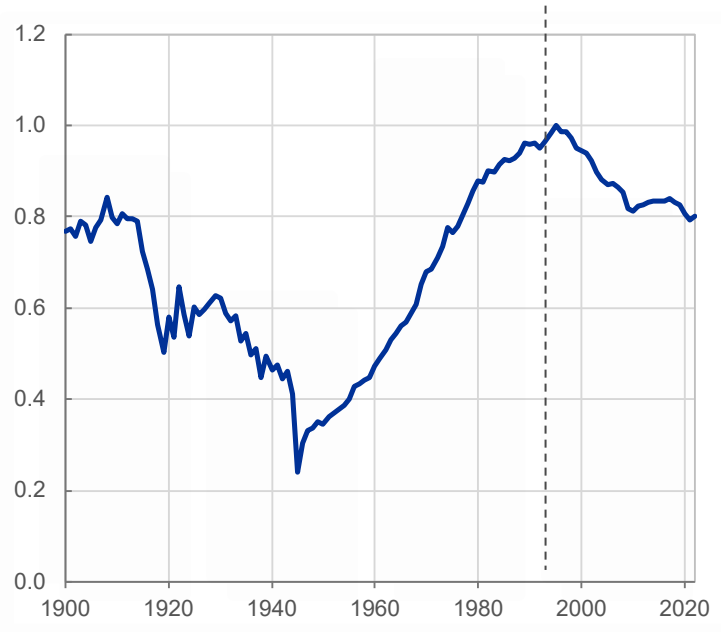


Sources: Eurostat and Haver Analytics.
Latest observations: 2023 Q4 for EA and 2024 Q1 for US.

Sources: Eurostat and Haver Analytics.
Notes: The dashed lines represent the pre-pandemic employment rate, i.e. in 2019 Q4, in the corresponding colour for EA and the US.
Latest observation: 2023 Q4.

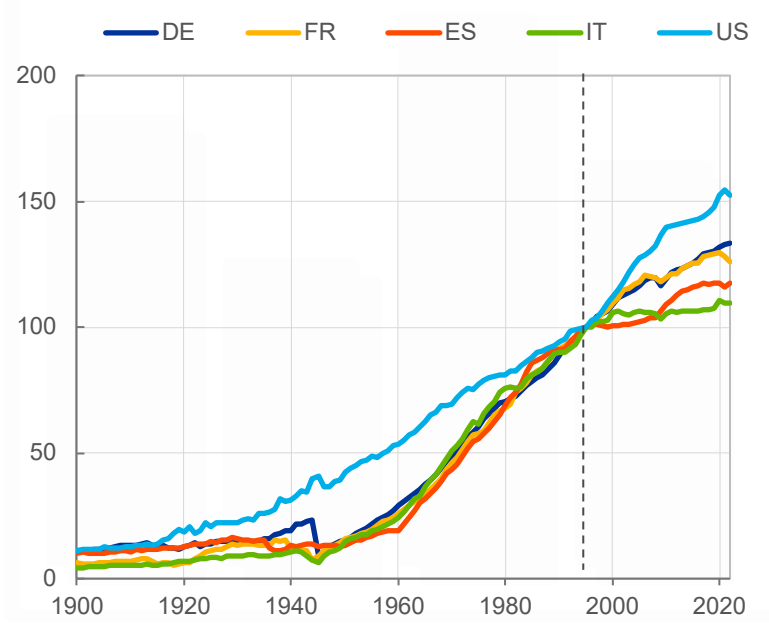
Langfristige Entwicklung der Produktivität pro Arbeitsstunde

Verhältnis EA-4 zu USA



Source: Long-Term Productivity Database and ECB calculations.
Notes: EA-4 is a weighted average of productivity developments in Germany, France, Italy and Spain.

Index: 1995 = 100

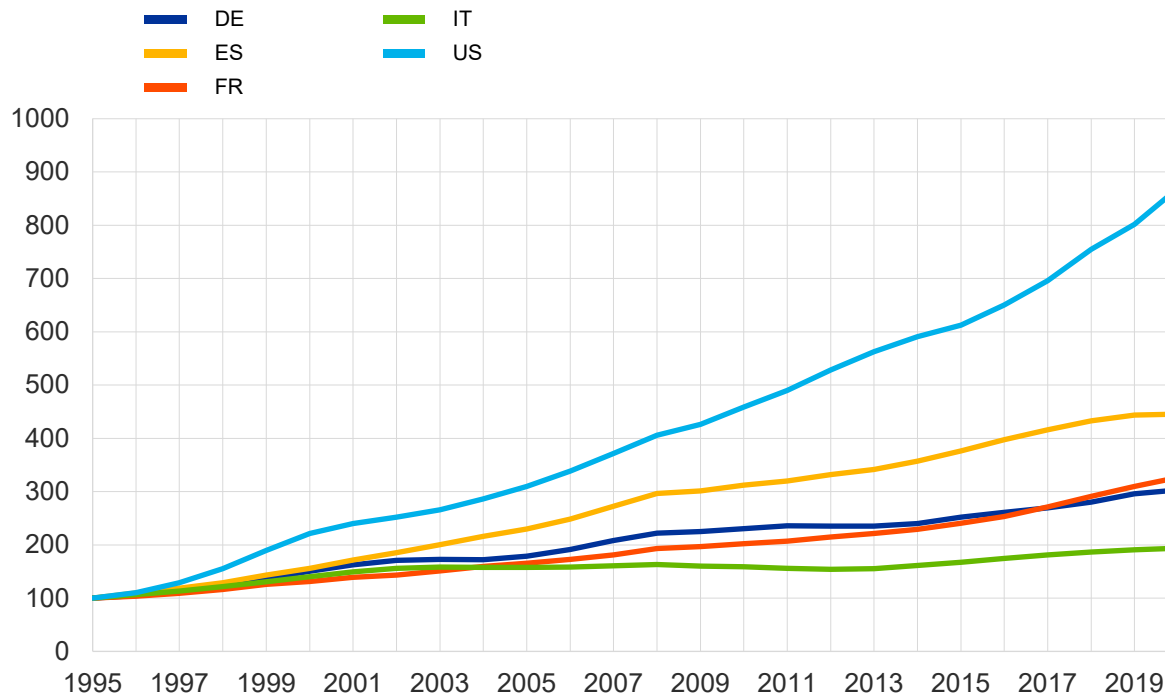


Source: Long-Term Productivity Database and ECB calculations.

Wachsende Lücke im IT-Kapitalstock zwischen Euroraum und USA

Realer IT-bezogener Kapitalstock

(Index: 1995 = 100)

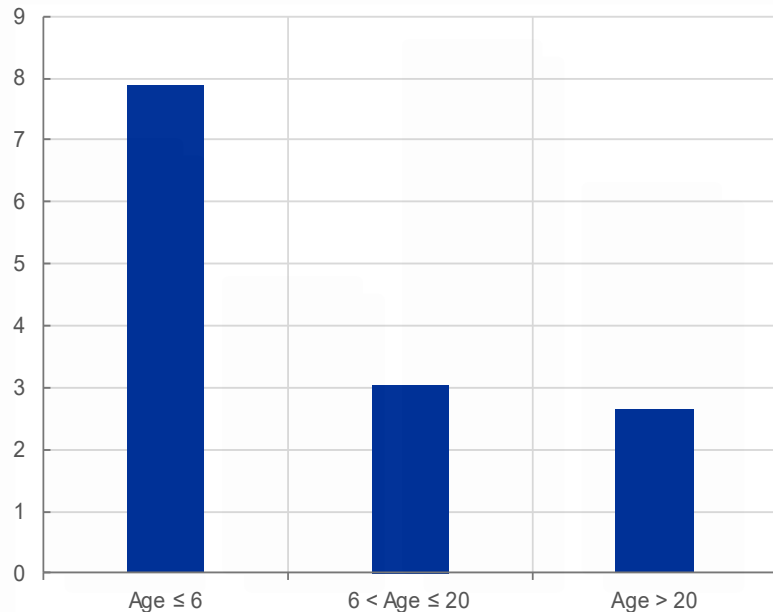


Source: EUKLEMS.

Note: IT-related capital stock is the sum of computing equipment and computer software & databases for all NACE industries. See Schivardi, F. and Schmitz, T. (2020), "The IT Revolution and Southern Europe's Two Lost Decades", Journal of the European Economic Association, Vol. 18(5), pp. 2441–2486.

Jährliches Wachstum der Arbeitsproduktivität von überlebenden Unternehmen nach Alter

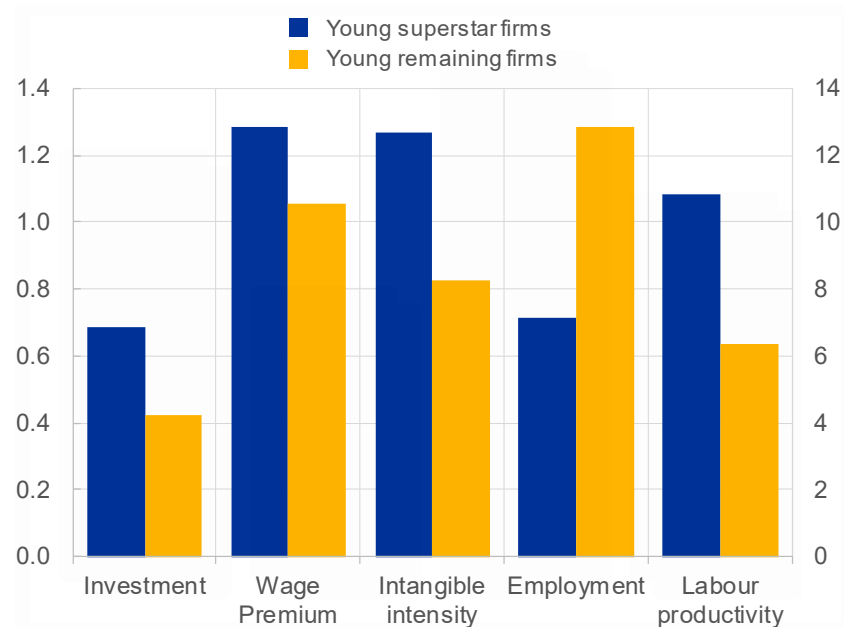
(Mittelwert, in %)



Source: ECB Economic Bulletin Issue 1(2022). Data from Bureau van Dijk Orbis, the Bank for the Accounts of Companies Harmonized (BACH) database and ECB staff calculations.

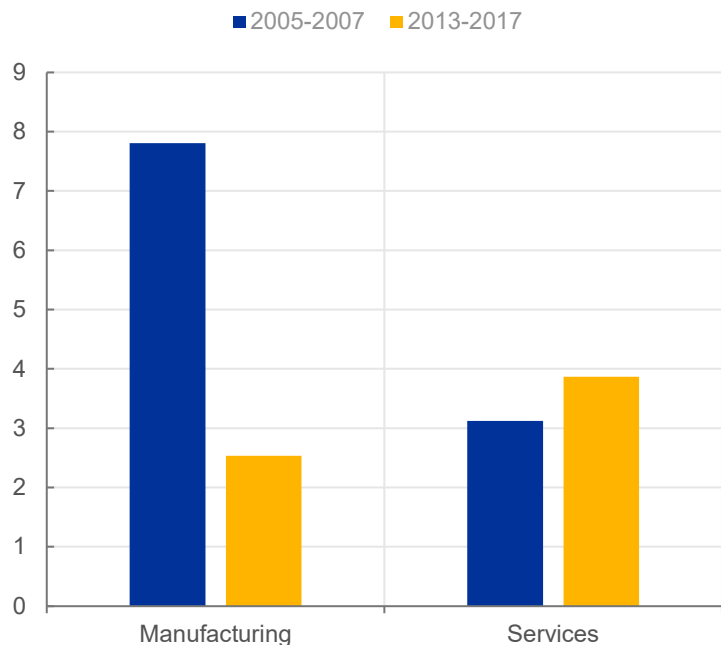
Charakteristika junger Superstar-Firmen und sonstiger junger Firmen

(links: Verhältnis; recht: Anzahl Beschäftigte, "intangible intensity" in Tausend EUR, Arbeitsproduktivität in Zehntausend EUR)

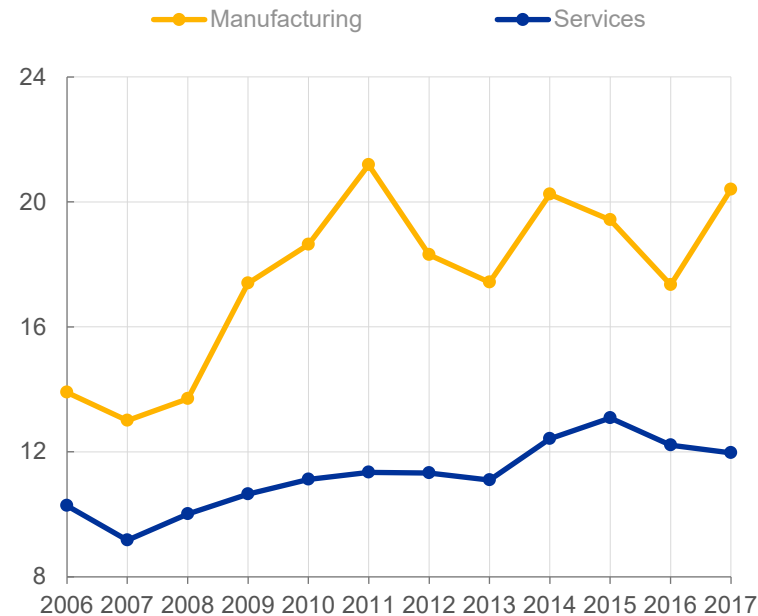


Notes: Each bar represents the coefficient from a regression of each variable listed in the x-axis on a dummy for the firm being a young superstar firm and a set of fixed effects controlling for the different countries, sectors and years. Productivity is computed as real value added per employee at the firm level. Intangible intensity is computed as the ratio of intangible capital to number of employees. Investment is computed as the change in real fixed tangible capital over the previous period's real fixed tangible capital. The period considered begins after the great financial crisis to avoid potential slumps.

TFP- Wachstum führender High-tech-Firmen



Alter führender High-tech-Firmen (Jahre der Aktivität)

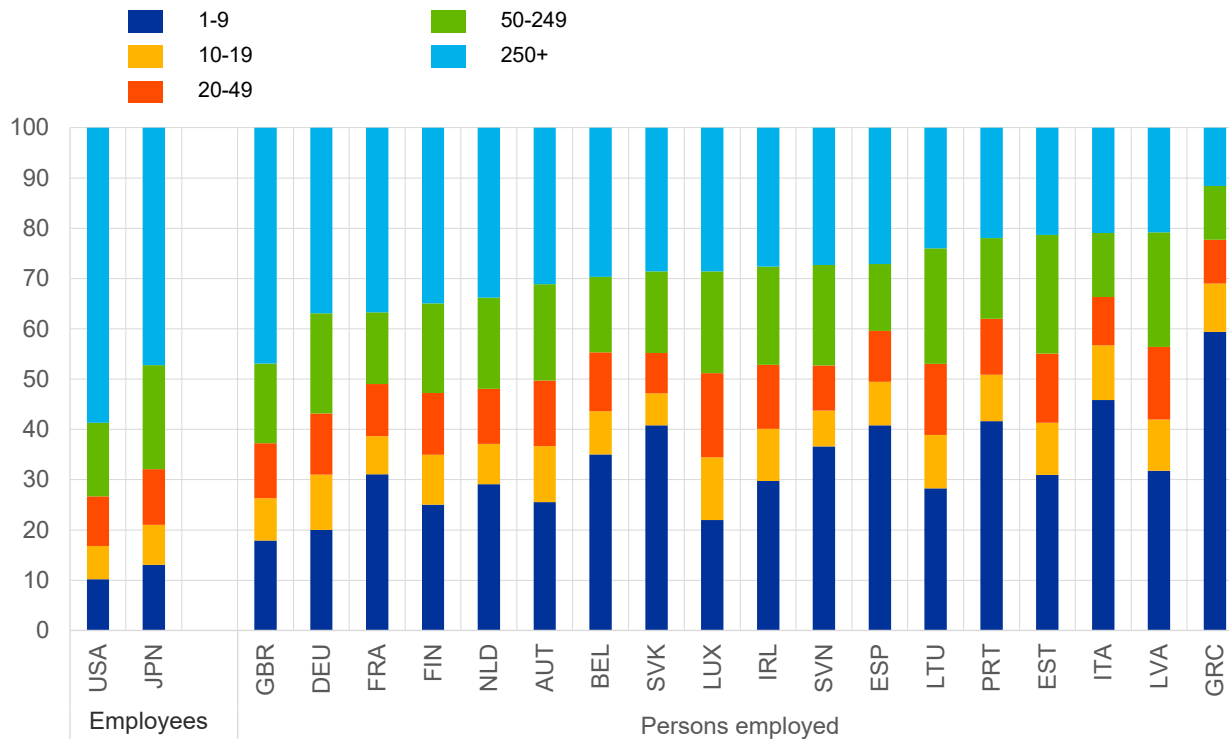


Sources: Occasional Paper Series No. 268 (ECB). Own calculations using ECB iBACH-Orbis Database.

Notes: Weighted average annual TFP growth rates of the top 5% most productive firms in a given year in a 4-digit industry. Manufacturing industries are classified according to their R&D intensity (R&D by value added of the industry) into high-technology and medium high-technology on the one hand, and medium low-technology and low-technology on the other hand following the Eurostat classification. Service industries are classified into knowledge-intensive services and less knowledge-intensive services based on the share of tertiary educated persons at NACE 2-digit level, also following Eurostat standards.

Beschäftigung nach Unternehmensgröße und Land

(Prozent der Gesamtbeschäftigung)

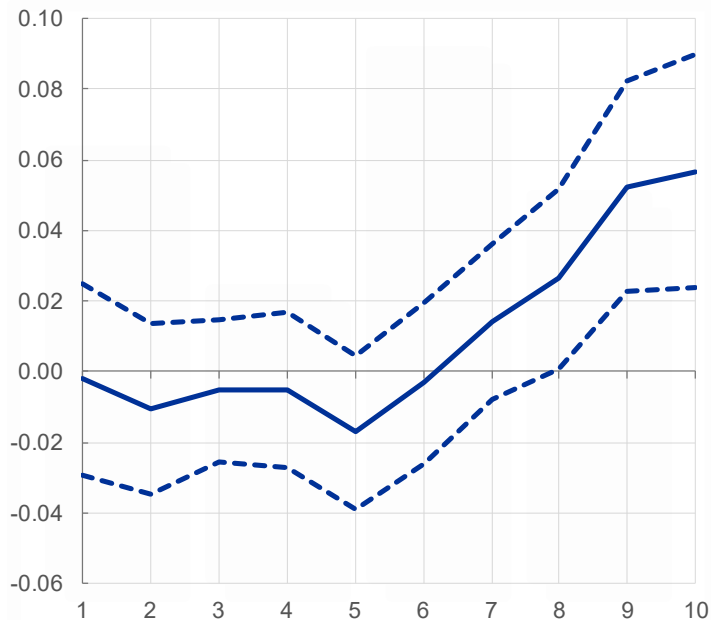


Source: OECD.

Notes: Legend refers to number of employees/ persons employed at firm level.

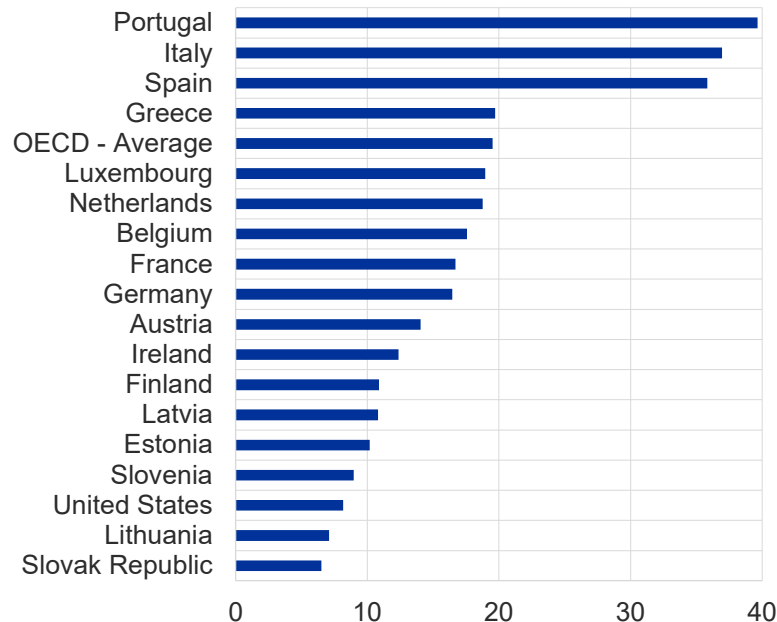
Wenige Unternehmen profitieren von der Digitalisierung und Fachkräfte fehlen

Geschätzter Einfluss der Digitalisierung auf das TFP-Wachstum von Firmen mit unterschiedlichen TFP-Ausgangsniveaus (digitale Investitionsintensität)



Source: Anderton, R., Botelho, V. and Reimers, P., "Digitalisation and productivity: gamechanger or sideshow?", Working Paper Series, No 2794, ECB, March 2023.
Note: x-axis: proximity to frontier (decile, lowest-highest). Dashed lines refer to confidence intervals.

Anteil der Erwachsenen ohne sekundären Schulabschluss (% der 25-64-Jährigen)

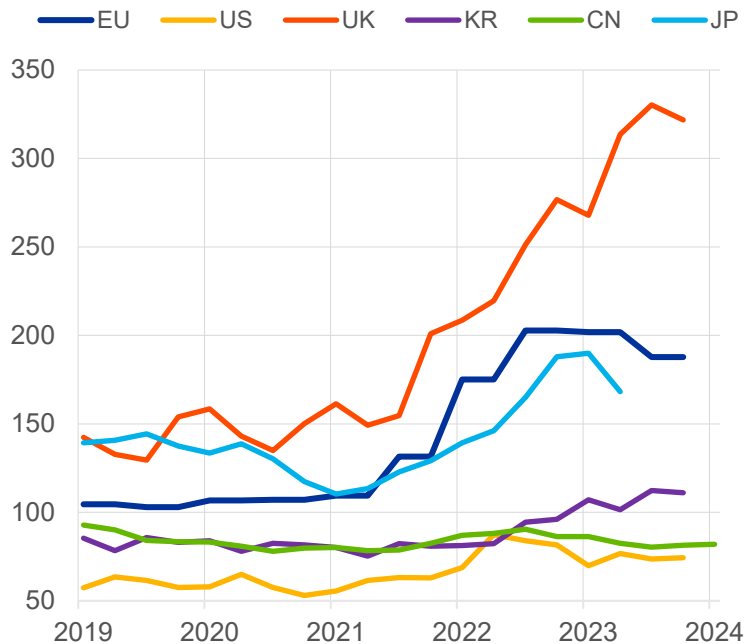


Source: OECD.
Notes: Data refer to 2022 or latest available.

Höhere Strompreise belasten Wettbewerbsfähigkeit und Industrieproduktion

Industrieller Strompreis (Retail)

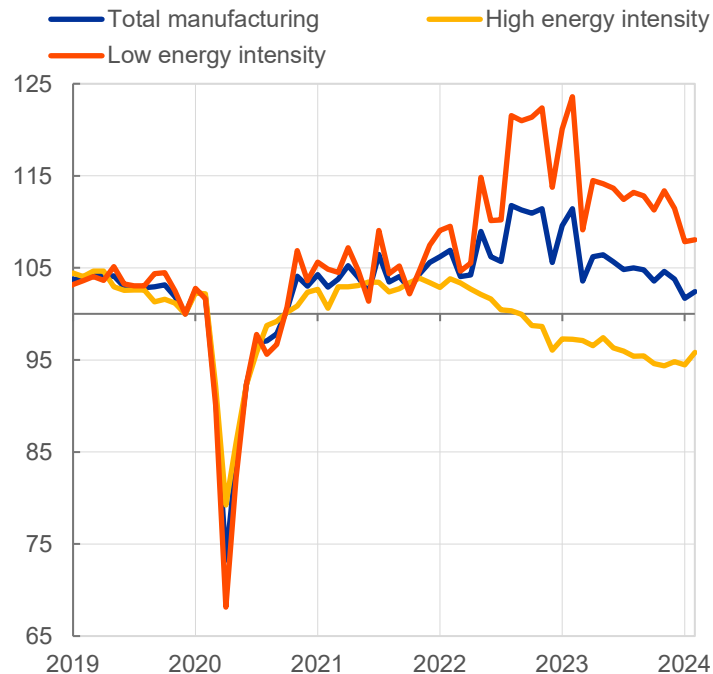
(EUR/MWh)



Sources: Eurostat, EIA, DESNZ, CEIC, METI and ECB staff calculations.
 Latest observation: Q2 2023 for JP, Q4 2023 for US, UK, KR and EU, Q1 2024 for CN.

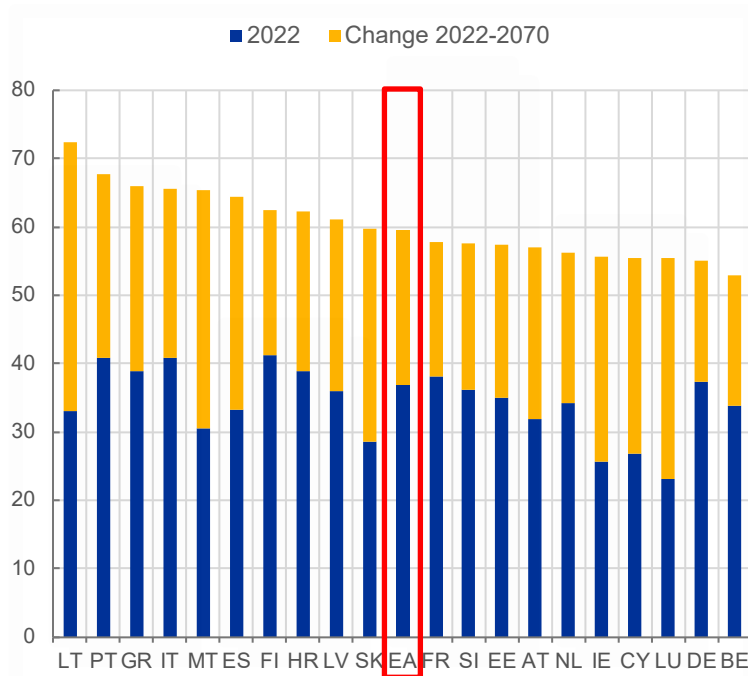
Industrieproduktion im Euroraum

(Index: Dezember 2019 = 100)



Sources: Eurostat, Trade Data Monitor and ECB staff calculations.
 Notes: Data are seasonally-adjusted. Industrial production indices for individual sectors are aggregated with value-added weights. Low (high) energy-intensity sectors are defined as those with an energy intensity lower (higher) than that of the median sector. For more details, see [Chiacchio, De Santis, Gunnella and Lebastard \(2023\)](#).
 Latest observation: February 2024.

Altenquotient im Jahr 2022 und Anstieg bis 2070

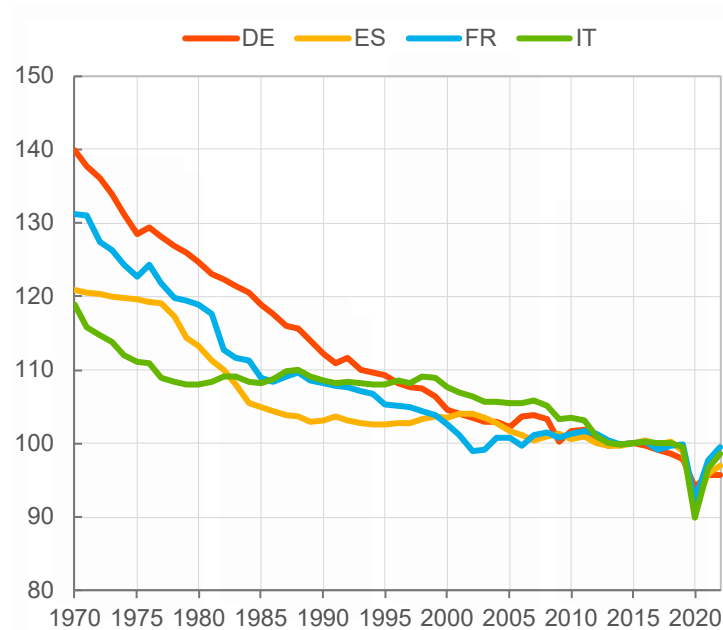


Source: European Commission Europop 2023 population projections.

Note: The old-age dependency ratio is the population aged 65 and over as a % of the population aged 20-64. Data are shown as the proportion of dependents per 100 persons of working-age.

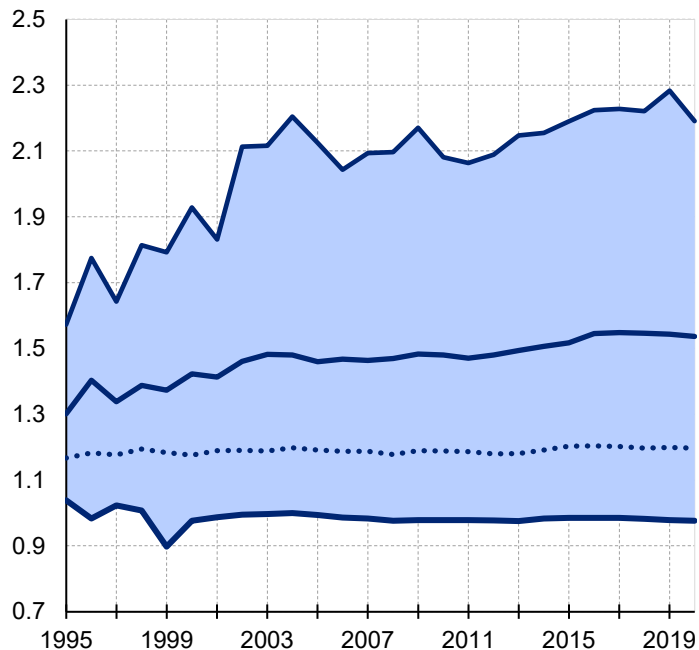
Durchschnittliche Arbeitsstunden pro Beschäftigtem

(Index: 2015=100)



Source: OECD data.

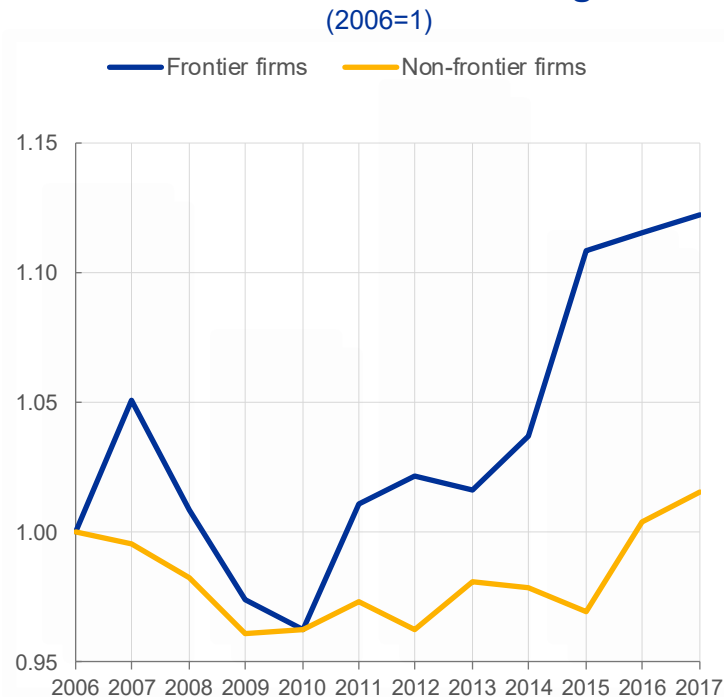
Verteilung der Mark-ups im Euroraum



Sources: Kouvavas et al. (2021), "Markups and inflation cyclicality in the euro area", ECB Working Paper No. 2671.

Notes: The dotted line shows the weighted median, the continuous line the weighted average, and the range is between the weighted 10th and 90th percentiles. See the paper for the calculation of markups using firm-level data.

TFP von führenden und nicht führenden Unternehmen im Dienstleistungssektor (2006=1)

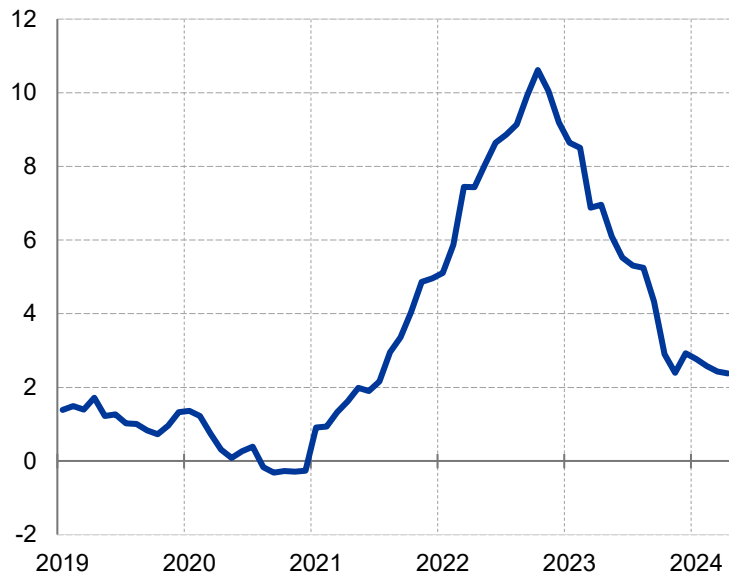


Sources: Occasional Paper Series No. 268 (ECB). Own calculations using ECB iBACH-Orbis Database.

Notes: Frontier firms are defined as those at the top 5% of the TFP distribution in a given year in a 4-digit industry. Non-frontier firms are defined as the median firm in a given year in a 4-digit industry.

Gesamtinflation im Euroraum (HICP)

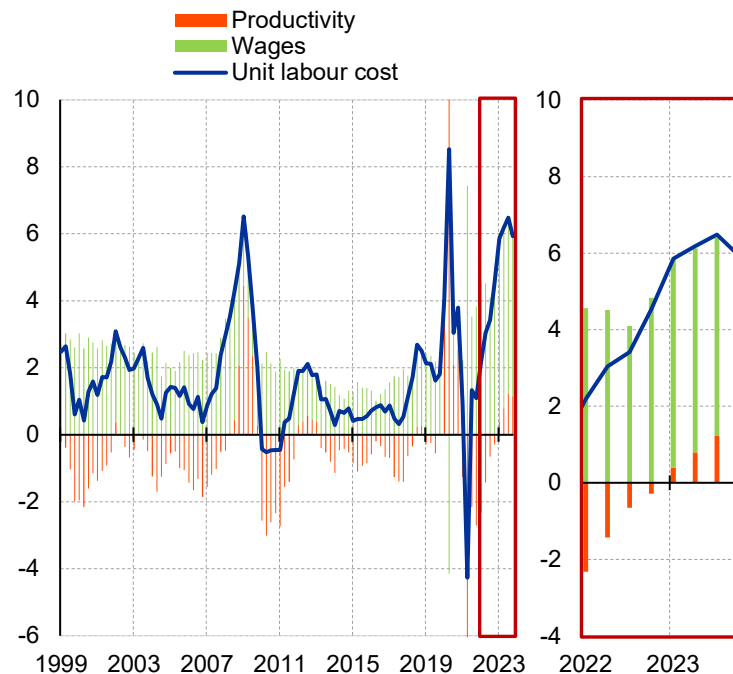
(jährliches prozentuales Wachstum)



Source: Eurostat.
Last observation: April 2024 (flash).

Lohnstückkosten

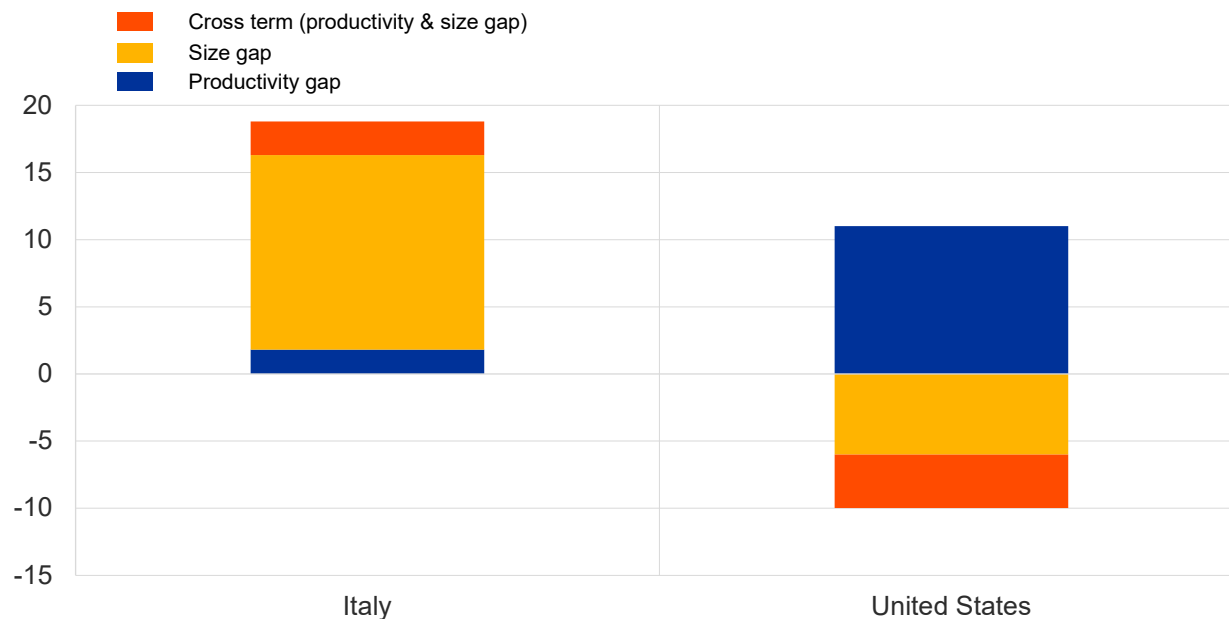
(jährliche prozentuale Veränderung)



Source: Eurostat and ECB calculations.
Note: A positive contribution of productivity to unit labour costs implies negative productivity growth.
Last observation 2023 Q4.

Um wieviel würde sich die Produktivität im verarbeitenden Gewerbe erhöhen, wenn die national führenden Unternehmen so produktiv und groß wären wie die global führenden Unternehmen?

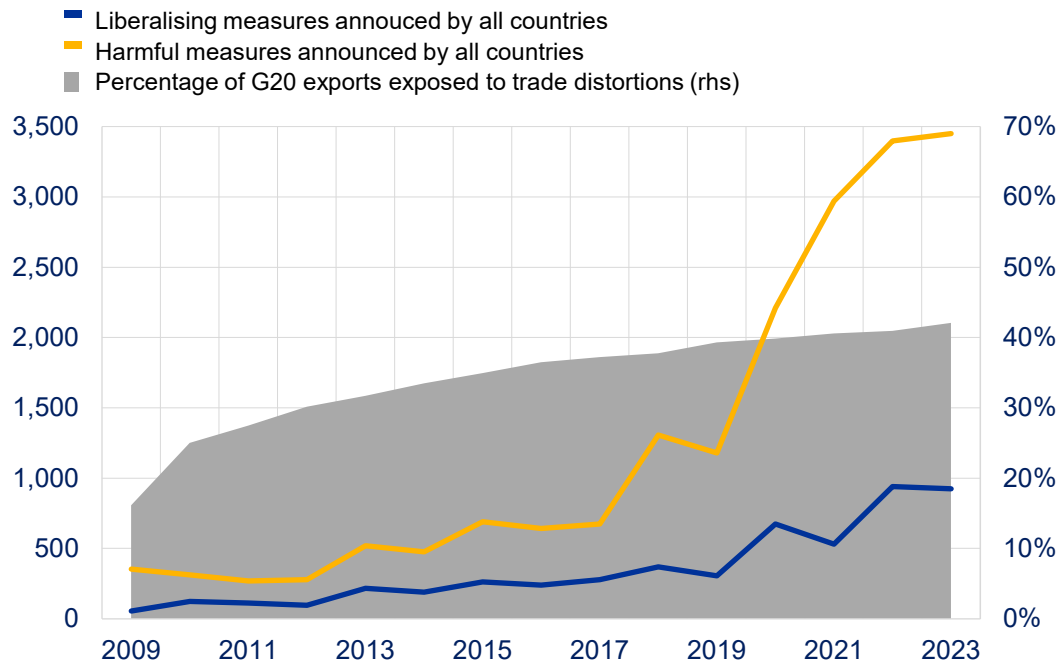
(Prozent)



Source: Andrews, D., Criscuolo, C. and Gal, P. (2015), "Frontier Firms, Technology Diffusion and Public Policy: Micro Evidence from OECD Countries," OECD Productivity Working Papers. Note: The productivity (size) gap shows how much higher manufacturing productivity would be relative to baseline if the national frontier firms (NF) were as productive (large) as the global frontier (GF) benchmark. The cross term shows the impact on aggregate productivity of simultaneously closing the productivity and size gaps. The estimates are constructed by taking the difference between counterfactual labour productivity and actual labour productivity. The counterfactual gaps are estimated by replacing the labour productivity (employment) of the top 10 NF firms with the labour productivity (employment) of the 10th most globally productive firm in each two-digit sector. The industry estimates are aggregated using US employment weights.

Globale Handelsmaßnahmen

(links: Anzahl; rechts: Prozent)



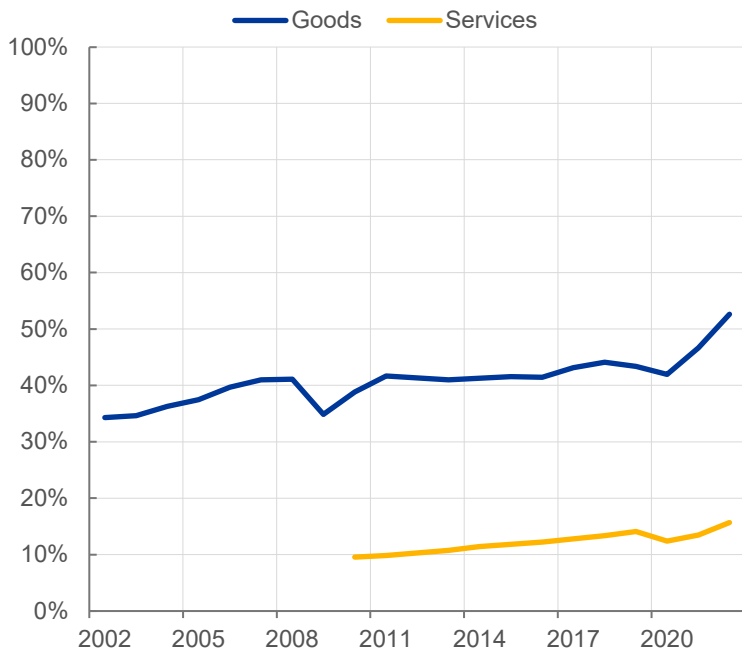
Source: Global Trade Alert (GTA) and ECB staff calculations.

Notes: Total number of liberalising and harmful measures announced globally each year (adjusted for reporter lag at 31 of December each year). For the rhs series, affected flow includes outward and outward subsidies that are evaluated as red and harmful by the GTA during the coverage period shown without an adjustment for reporting lag.

Latest observation: 2023.

Intra-EU-Handel in Gütern und Dienstleistungen

(jährlich, in Prozent des BIP)

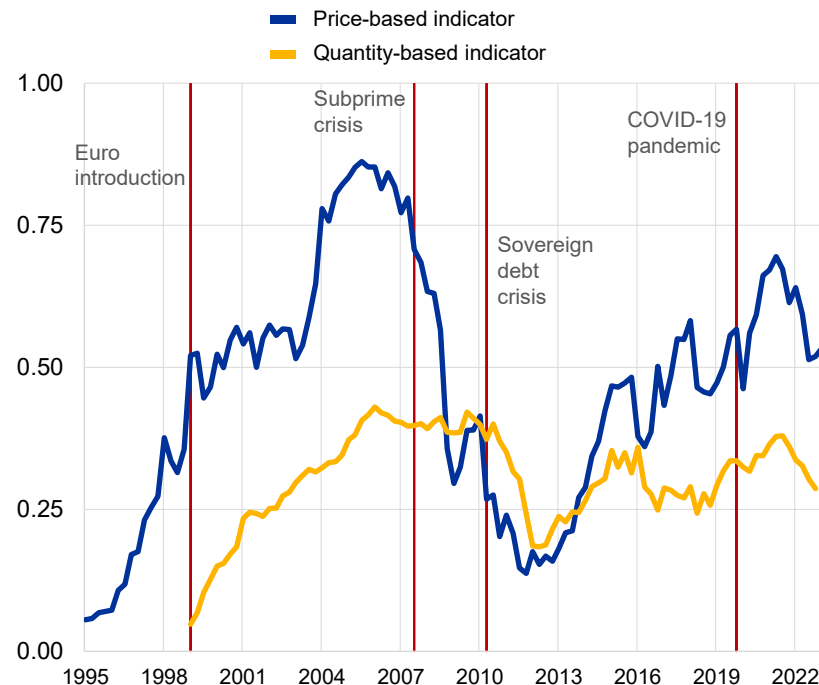


Source: Eurostat and ECB staff calculations.

Notes: Intra-EU trade is obtained by summing intra-exports and imports as a ratio of GDP, measured in euros.

Latest observation: 2022.

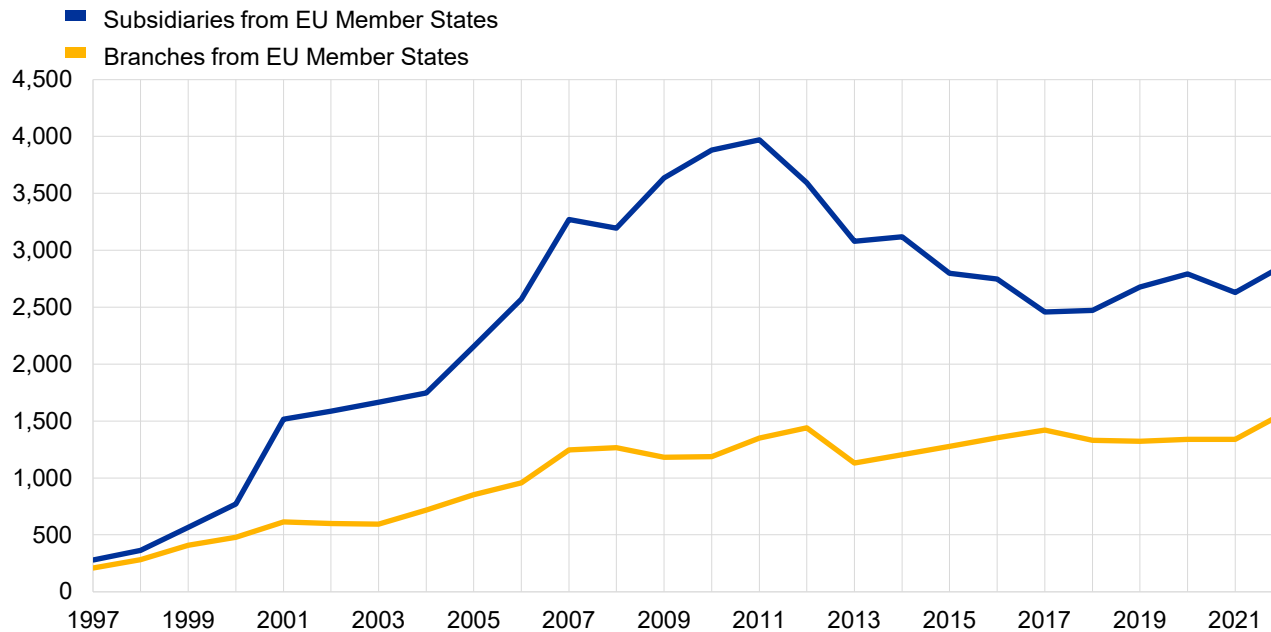
Preis- und mengenbasierte Indikatoren der Finanzmarktintegration im Euroraum



Source: ECB staff calculations.

Gesamte grenzüberschreitende Vermögenswerte im Euroraum

(Gesamtvolumen, Milliarden EUR)

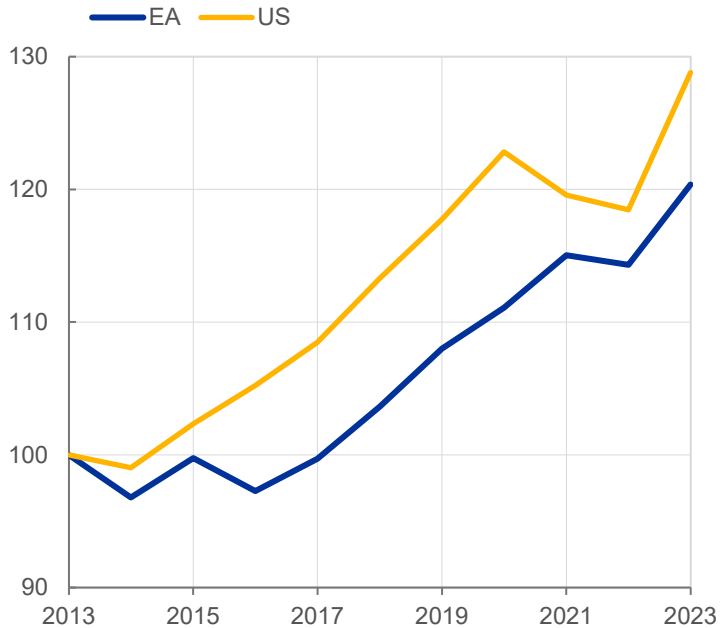


Source: ECB Structural Financial Indicators.

Öffentliche Investitionen können Produktivitätswachstum und Potenzial steigern

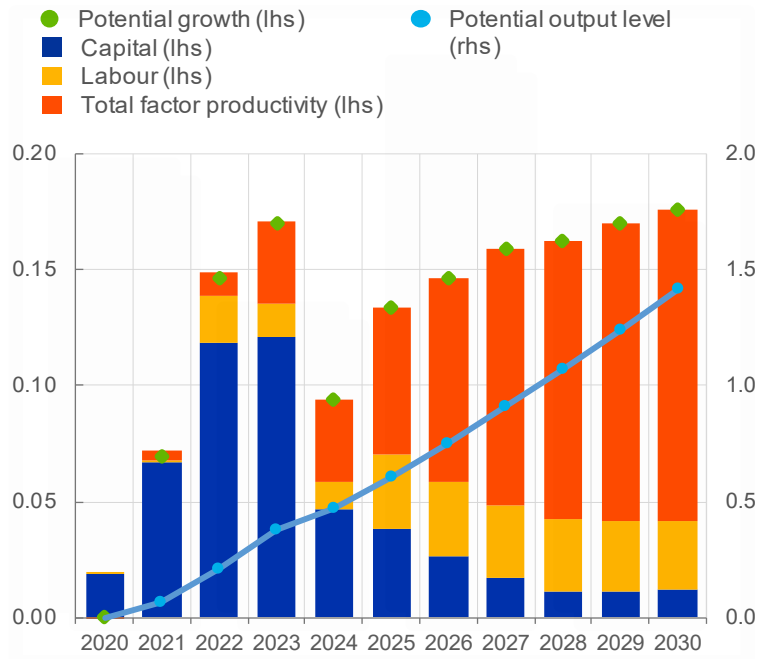
Öffentliche Investitionen

(Index: 2013 = 100)



Einfluss von NGEU auf Potenzial und Wachstum von sieben Staaten des Euroraums

(Einfluss auf Potenzial in Prozent, auf Wachstum sowie Beiträge in Prozentpunkten)

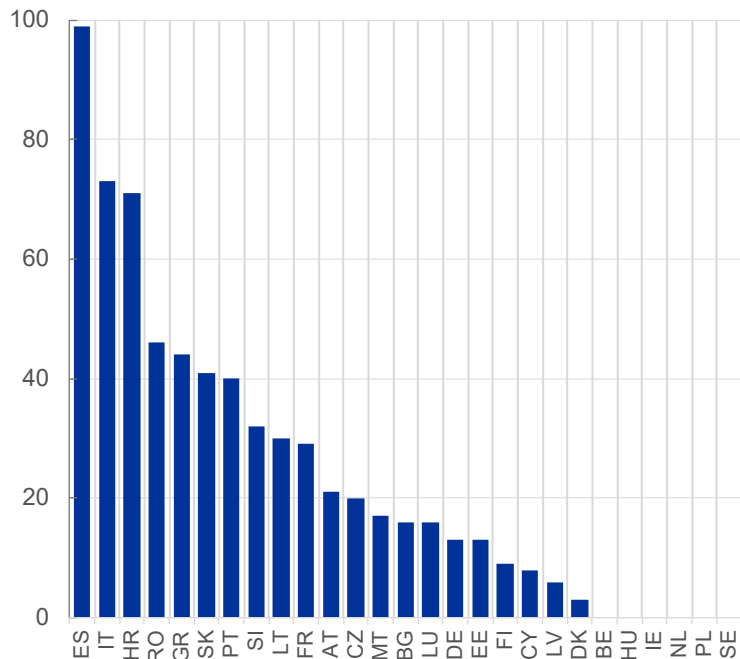


Sources: European Commission (AMECO), Bureau of Economic Analysis and ECB staff calculations.
Latest observation: 2023.

Source: ESCB staff calculations (Bańkowski et al. 2022).
Note: Countries included: DE, ES, FR, GR, IT, MT and PT.

Erfüllte reformbezogene RRF-Meilensteine und Ziele nach Ländern

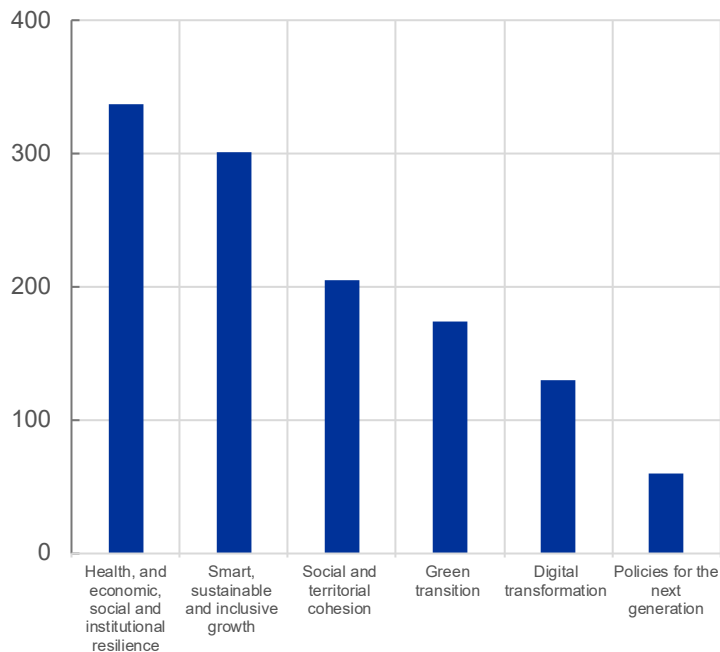
(Gesamtzahl)



Source: ECB illustration based on European Commission data.
 Note: Database accessed on 4 April 2024. All EU Member States included.

Erfüllte reformbezogene RRF-Meilensteine und Ziele nach Säulen

(Gesamtzahl)



Source: ECB illustration based on European Commission data.
 Note: Database accessed on 4 April 2024. All EU Member States included. Some milestones and targets are related to more than one policy pillar.

Vielen Dank für Ihre Aufmerksamkeit!