

# The Austrian economy

An introduction

---

Michael Peneder

**Update 2024-10-01**  
WIFO, Wien



# Introduction

## Outline

- **Introduction**
  - Basic facts
  - What is „the economy“?
- Performance in **international comparison**
  - Productivity and resources
  - Structure
  - System level
- The **WIFO-radar**

## Triple objective

- To learn about the
  - **Austrian** economy
  - Choice of **indicators**
  - Interpretation of **data**

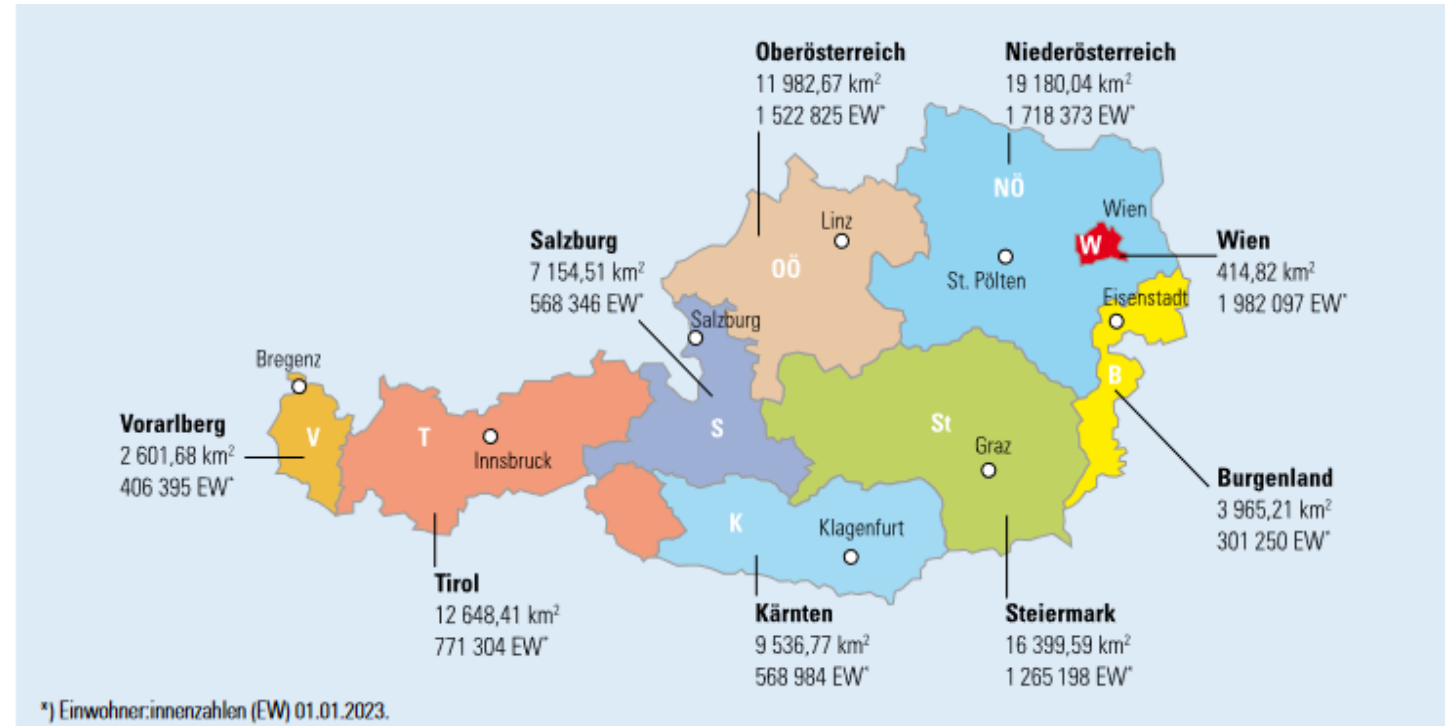
# Austria, at first glance

## 2023

- **Population:** 9,1 million
- **GDP:** 473 billion €
- **GDP per capita:** 51.800 €
- **Unemployment:** 6.4% (5.1%)
- **Fiscal quota:** 43.1 % of GDP
- **Debt ratio:** 78.6% of GDP
- **Export ratio:** 59.4 % of GDP
  - Problem: total sales (exports) versus value added (in GDP)
  - Export **accounts for roughly 30% of GDP** (I/O-Tables, 2020)

Anyway, no closed economy ...

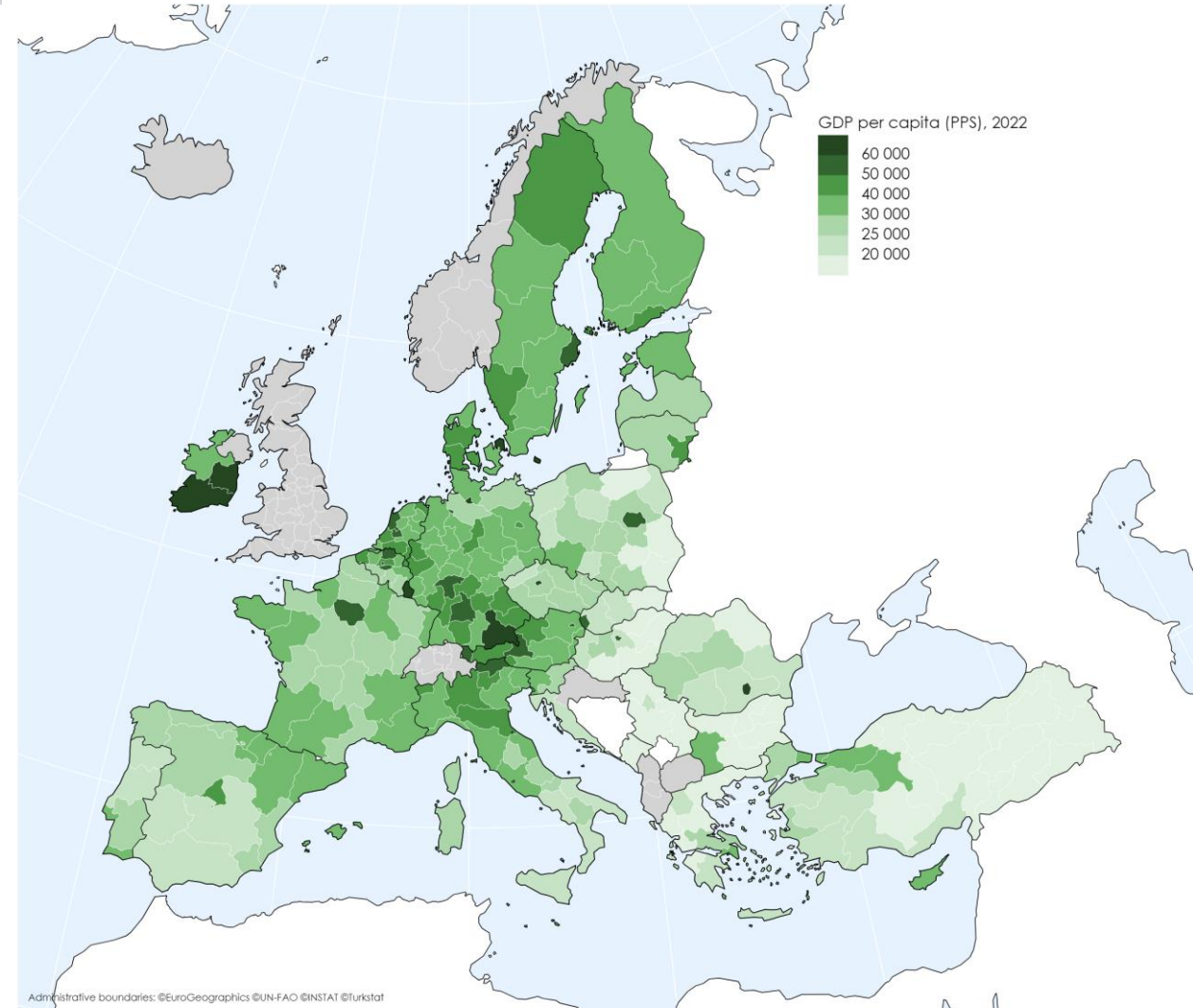
### Austria as a federal state



Sources: ST.AT, Austria: Zahlen.Daten.Fakten 2023/24; WIFO.

# Austria within Europe

GDP per capita 2022, PPS



## ■ Geography

- Transitional **climate** (oceanic / continental)
- Diverse landscape; large alpine areas
  - Infrastructure (e.g., transport)
  - Tourism

## ■ Integration

- 1976: Pegging Austrian currency to German D-Mark
- 1995: joining European Union
- 1999: Monetary Union (Eurozone)

## ■ Proximity to high-income regions (esp. South Germany, Switzerland, Northern Italy)

- High demand
- Sophisticated supply chains
- Knowledge spillovers

... but historically, a „**dead border**“ to the east.

# GDP per capita growth

2012-2022 in %

## CEE economic transition

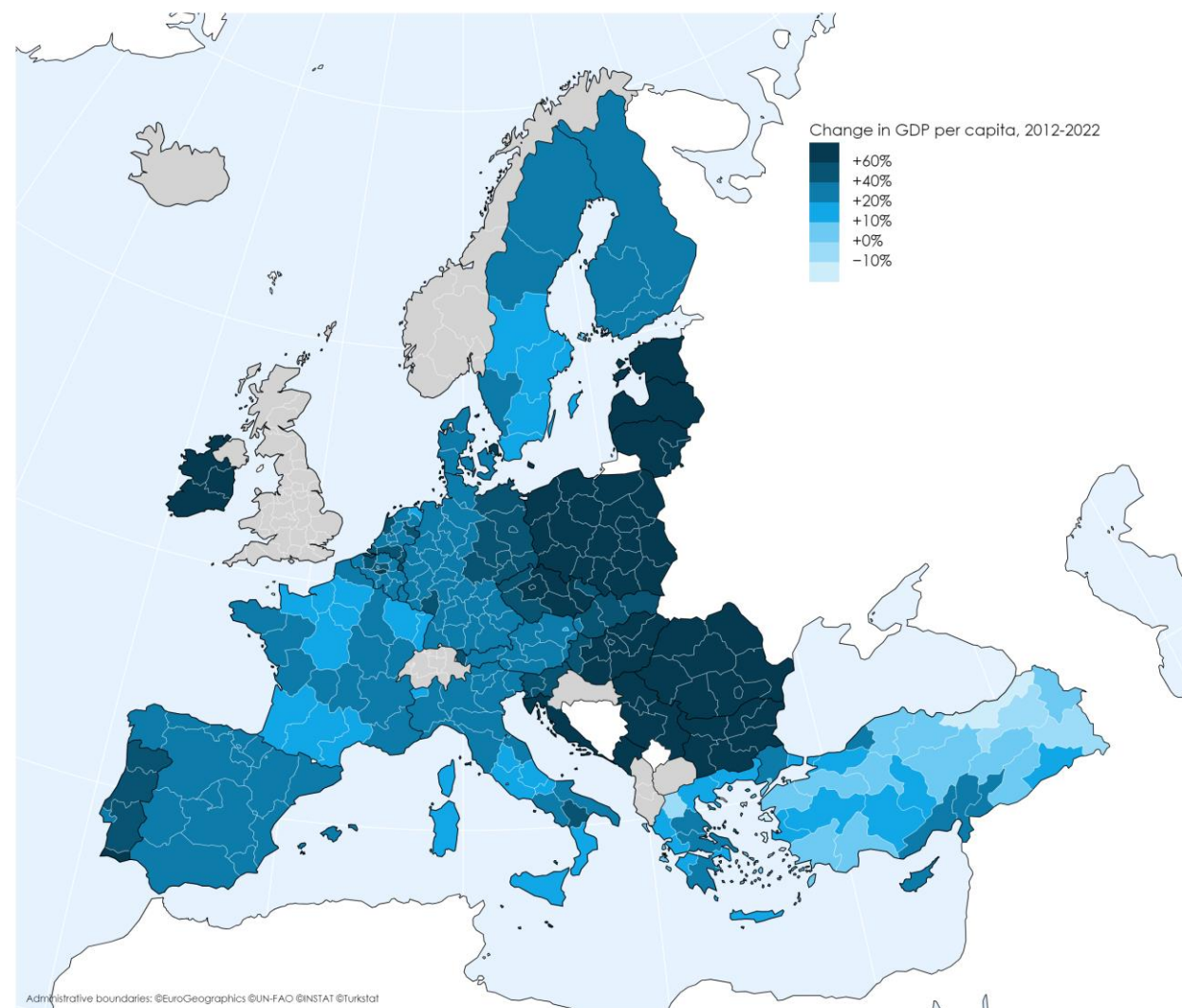
- In 1989 the „iron curtain“ fell apart
- System change from centrally planned to market economies
- Institutional reforms
- EU enlargement

➤ **Catching-up!**

Austria benefitted from **proximity to high-growth regions** along former „dead border“

- New markets (demand)
- New (initially low-cost) competition
- Opportunities for division of labour
- Migration (labour market)

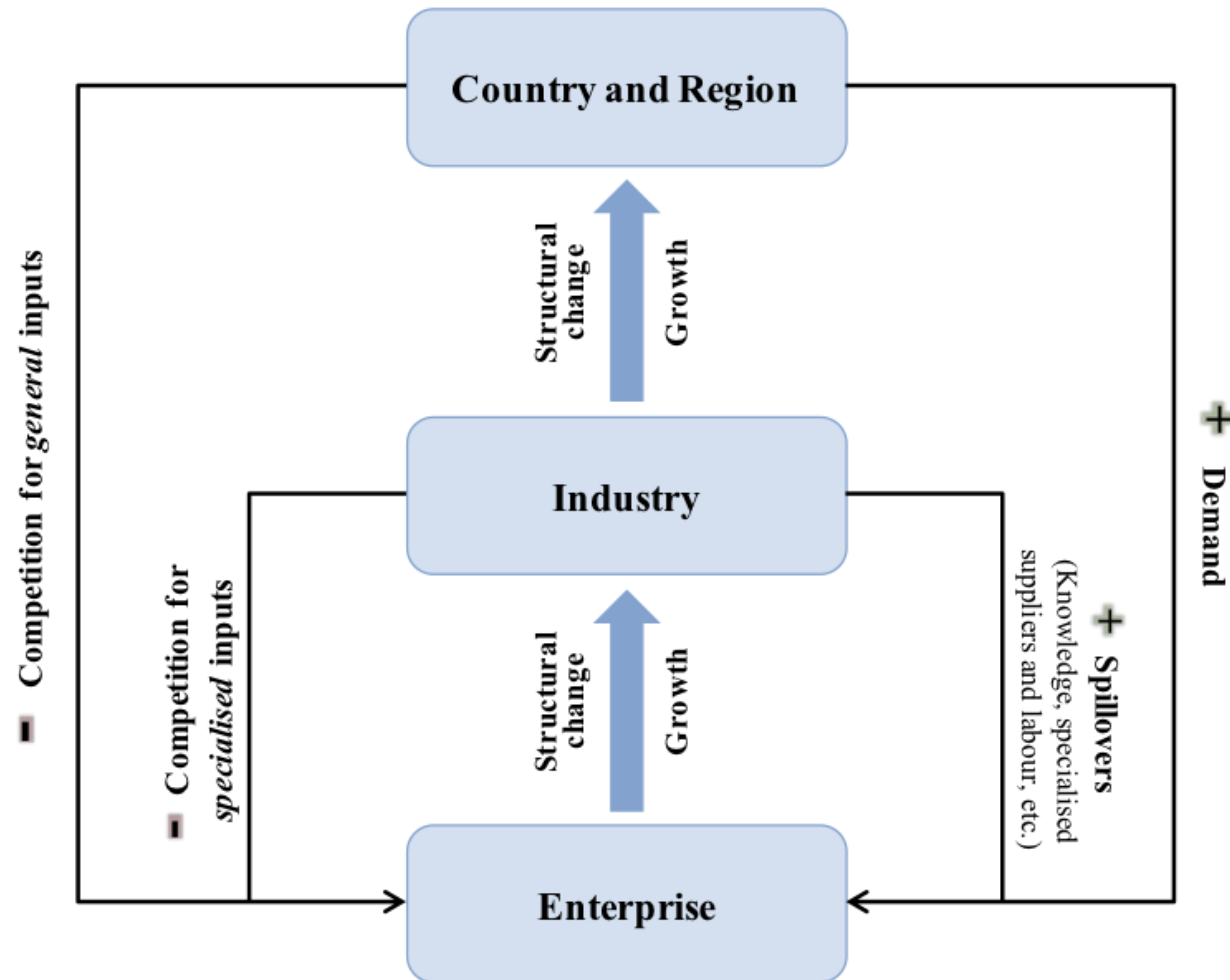
➤ **Growth and structural change!**



Source: EuroGeographics, WIFO.

■ But what is “**the economy**”?

# Micro-, meso- and macro levels of activity, e.g. ...



Other **micro-actors**, e.g.

- Consumers
- Labour
- Entrepreneurs
- Investors

Other **meso-level structures**, e.g.

- Regions
- Technologies
- Goods & services (consumption, trade, GVCs)

# A few examples ...

## ■ **Micro**

- People and labour
- Productivity, firm dynamics and employment

## ■ **Meso**

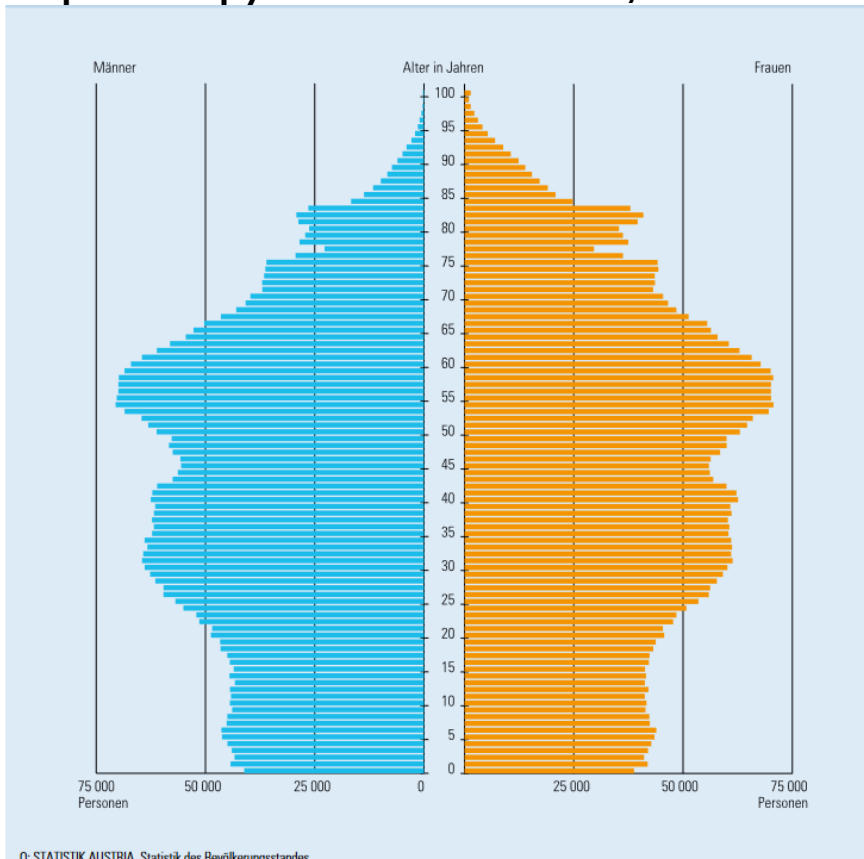
- Labour force by regions
- Sector shares

## ■ **Macro**

- GDP growth
- Supply and use components

# People

Population pyramid Austria 1 January 2023



## Total population

- ca 1900: 6 million
- 2000: 8 million
- 2022: 9 million mark reached
- 10 million expected in 2060

## Age pyramid

- 0-14 years: 14.4%
- 15-64 years: 66.2%
- 65+ years: 19.4%

➤ **Baby boomers** approach retirement age!

Source: Statistics Austria.

# Labour

## Expected change of working age population (EPWG)

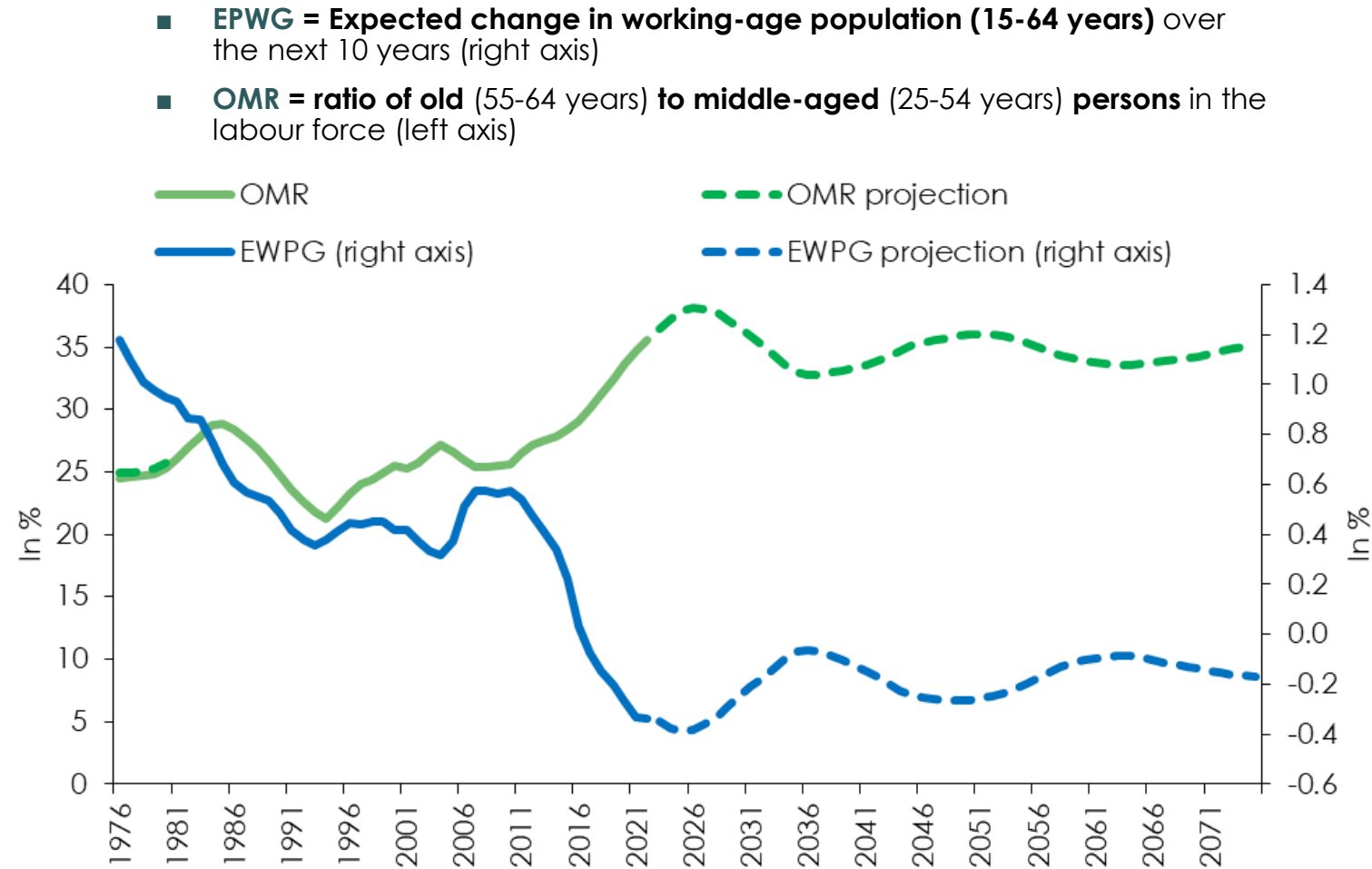
- Long term decline since 1970s
- Turned negative in 2018
- Tends to stabilise at negative rates

## Ratio of old to middle-aged persons (OMR) in labour force

- Increases since the 1990s
- Expected to **peak** ca. **2030**
- ... then stabilise

## Likely **impacts** on

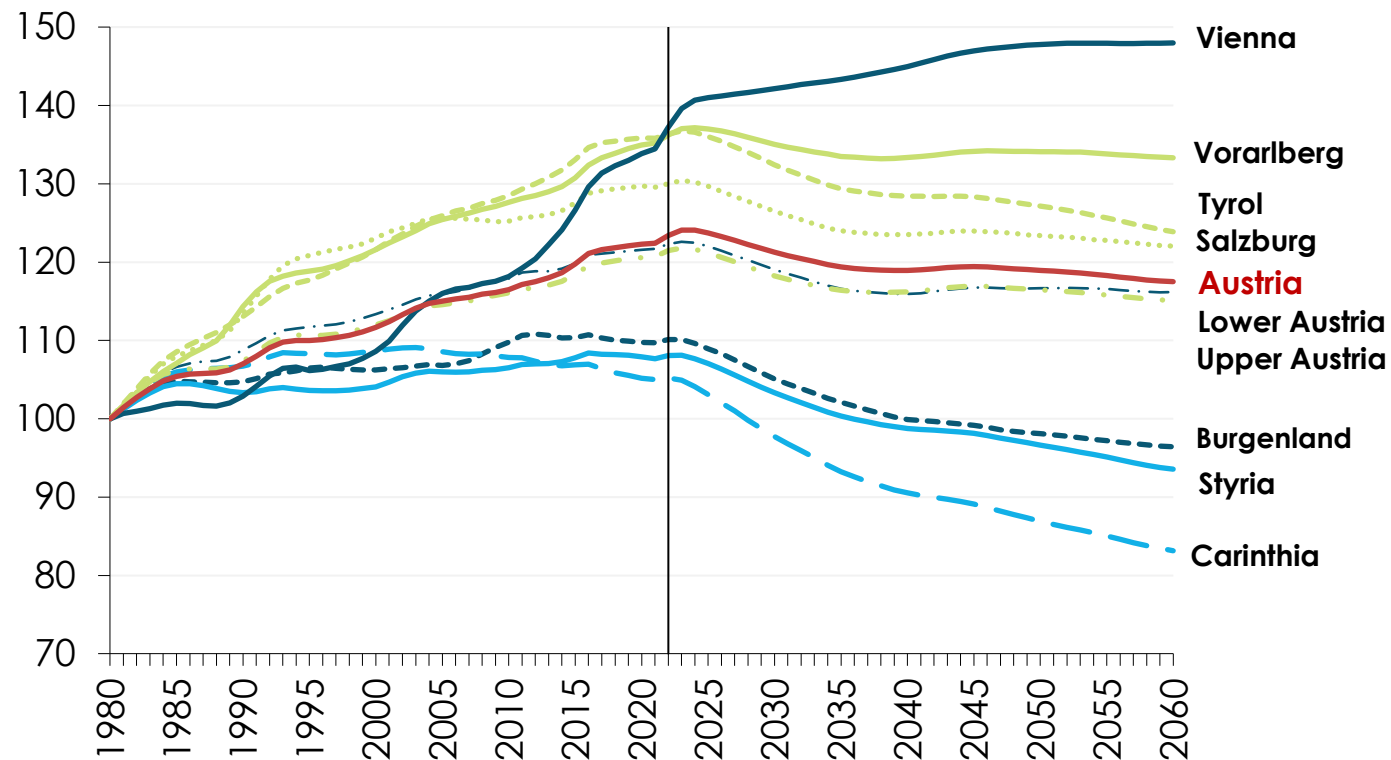
- Productivity growth
- Migration
- etc.



Source: Statistics Austria (Bevölkerungsstatistik und -prognose), WIFO (Kaniowski – Url).

# Labour force by regions

Population 15-64 years old; 1980 = 100



**Regional disparities** expected to increase

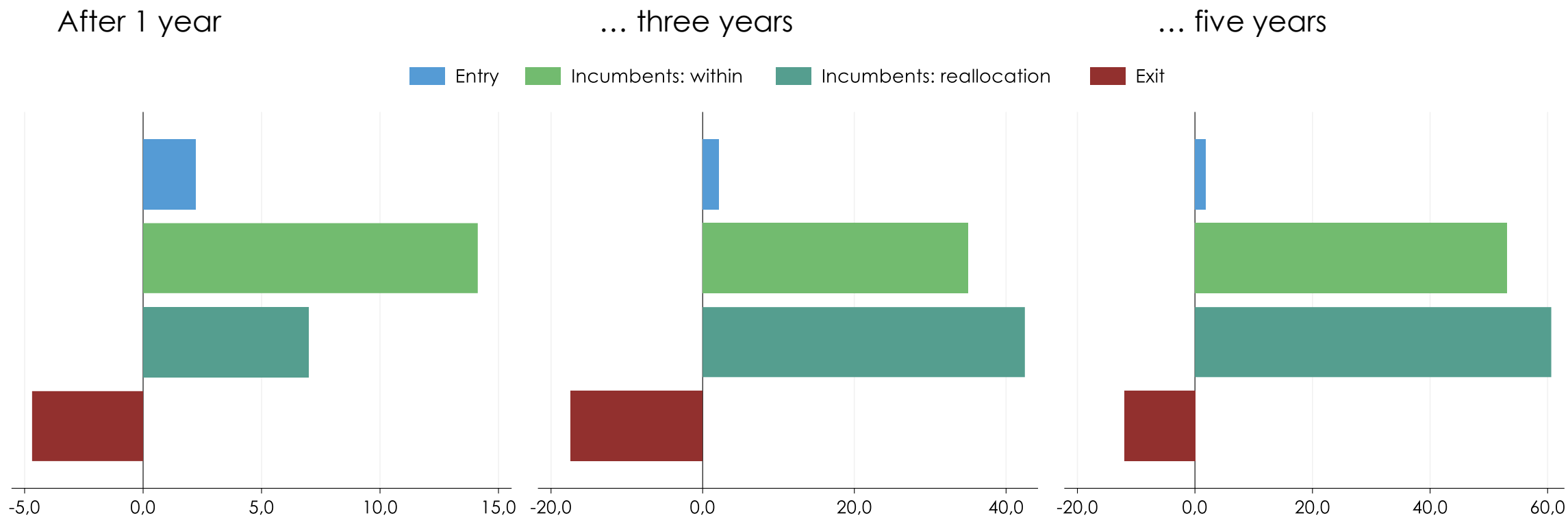
- **Fertility** in rural areas tends to converge to lower values in the cities
- Cities, especially Vienna, attract most of **migration**

Source: Statistics Austria (Bevölkerungstatistik und -prognose), WIFO-calculations.

# Firm dynamics and MFP growth

Mean contribution in Log differences, 2014-2020

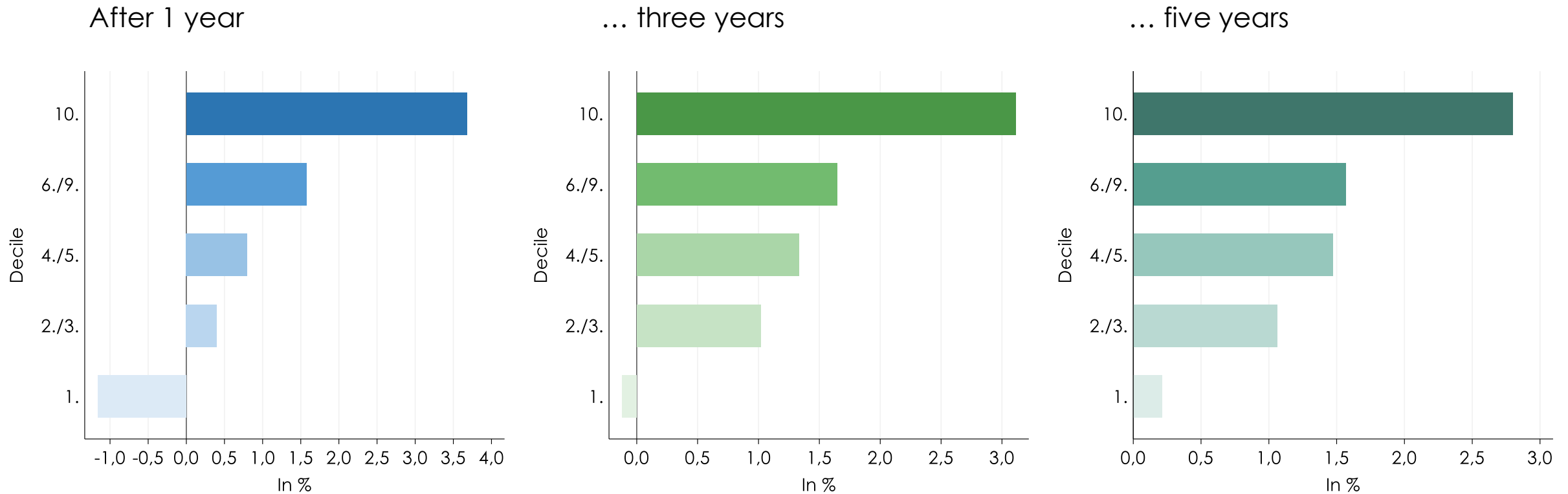
## Non-financial services



Source: OECD (Multiprod), WIFO, Statistics Austria.

# Employment growth by decile of firms' labour productivity

Mean change 2014-2020 in %



Source: OECD (Multiprod), WIFO, Statistics Austria.

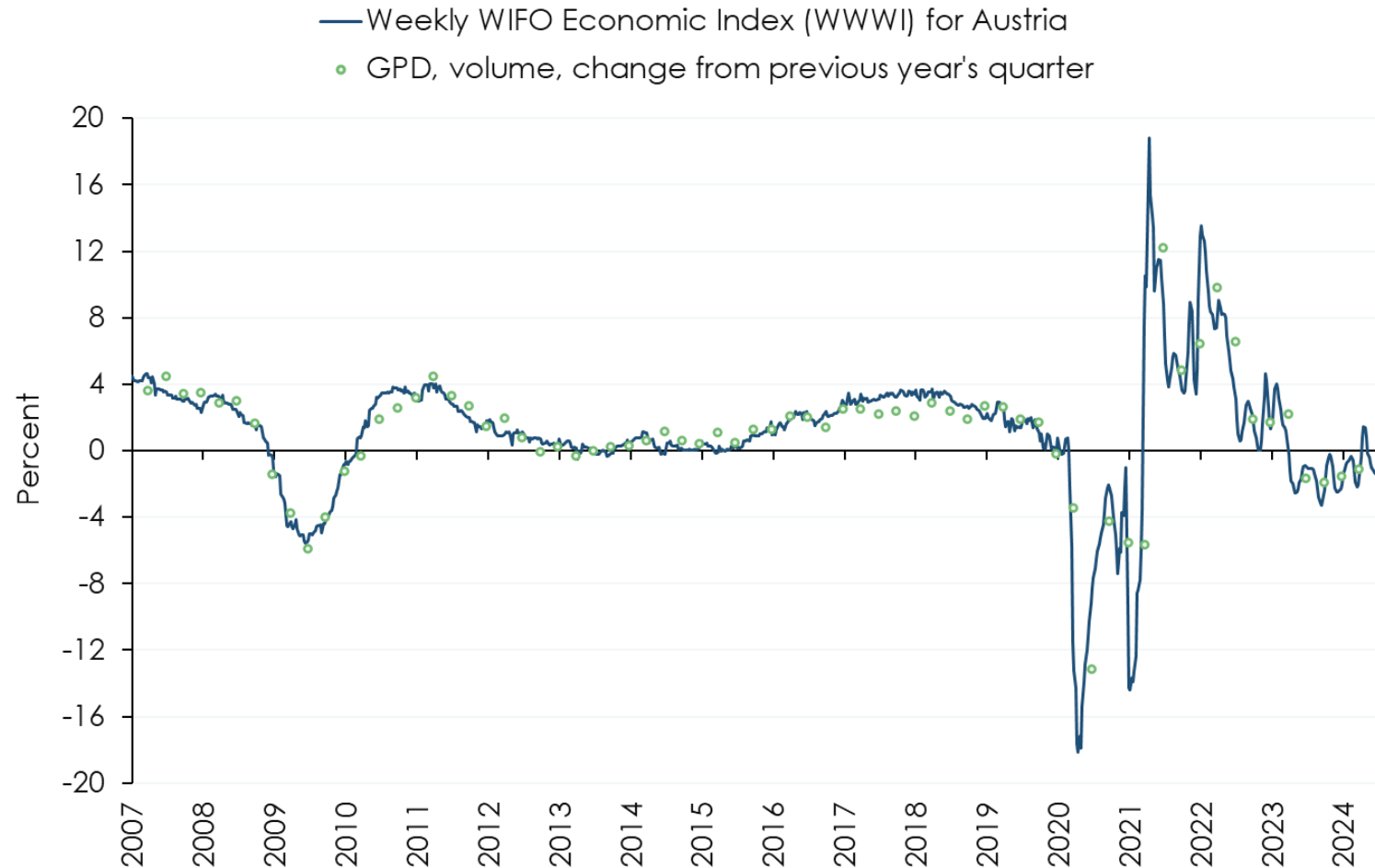
# Sectors

NACE section	Value added	2011			2021	
		Employees	Labour productivity	Value added	Employees	Labour productivity
			in % of total			
<b>Manufacturing</b> (C)	18.6	16.4	96.2	<b>18.9</b>	16.1	138.3
<b>Construction</b> (F)	6.3	7.1	75.2	<b>7.1</b>	7.6	110.0
<b>Wholesale and retail trade</b> (G)	13.1	15.6	71.1	<b>12.1</b>	15.3	93.1
<b>Transportation and storage</b> (H)	5.5	5.5	86.1	<b>4.9</b>	4.7	121.3
<b>Accommodation and food service</b> (I)	4.8	6.2	66.2	<b>3.2</b>	5.5	68.4
<b>Professional &amp; other services (incl. ICT)</b> (J, M)	8.2	6.7	103.9	<b>9.6</b>	7.8	143.9
<b>Finance and insurance</b> (K)	4.7	3.3	119.5	<b>4.3</b>	2.8	180.1
<b>Administrative and support services</b> (N)	4.2	5.4	65.9	<b>4.3</b>	6.0	85.2
<b>Others</b> (B, D, E, L, S)	14.2	2.4	-	<b>14.6</b>	3.5	-

Source: STAT (SBS), WIFO.

# Growth

## GDP volume index (WWWI)



Source: WIFO, Statistics Austria.

### Turbulent times

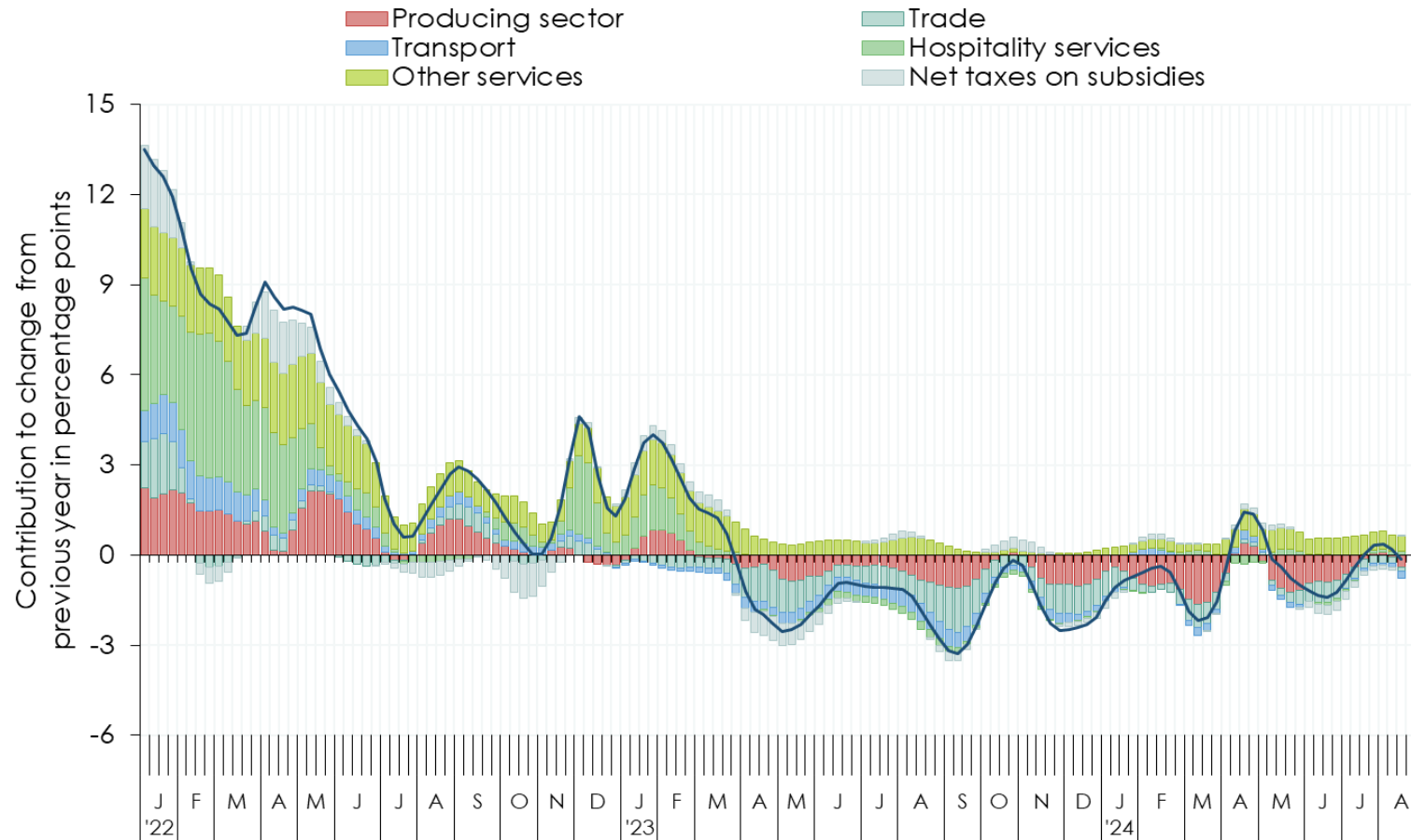
- “Great **financial** and economic crisis” of 2009
- **COVID-19** in 2020
- Russian invasion of the **Ukraine** in 2022

Contact (Josef Baumgartner), further details and **monthly updates** at

<https://www.wifo.ac.at/en/research/thematic-platforms/business-cycles-and-forecasting/weekly-wifo-economic-index/>

# Supply

## Components of GDP growth



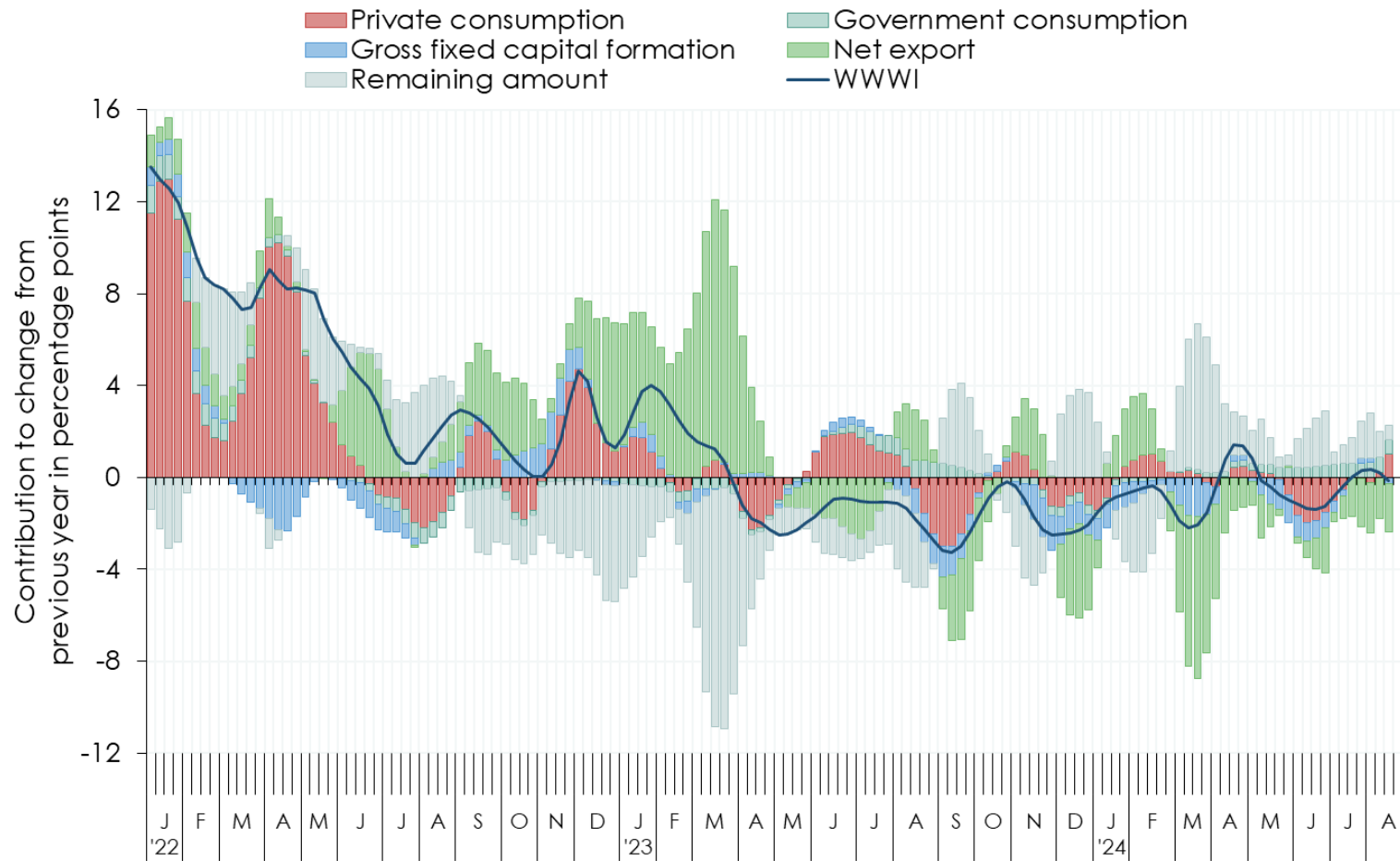
Source: WIFO, Statistics Austria. – Producing sector NACE A to F, Trade NACE G, Transport NACE H, Hospitality services NACE I, Other services NACE J to T. – The sum of the growth contributions of the subcomponents may differ from the estimated GDP growth (residual).

Contact (Josef Baumgartner),  
further details and **monthly  
updates** at

<https://www.wifo.ac.at/en/research/thematic-platforms/business-cycles-and-forecasting/weekly-wifo-economic-index/>

# Use

## Components of GDP growth



Source: WIFO, Statistics Austria.

Contact (Josef Baumgartner),  
further details and **monthly  
updates** at

<https://www.wifo.ac.at/en/research/the-matic-platforms/business-cycles-and-forecasting/weekly-wifo-economic-index/>

## II. Austria in international comparison

### ■ Iceberg model

### ■ Selected indicators

- Productivity
- Resources and cost
- Industrial structure
- Systems

### ■ Sources

- Peneder M., Bittschi B., Köppl A., Mayerhofer P., Url T. (2023), The WIFO Radar of Competitiveness for the Austrian Economy 2022, *Reports on Austria 2/2023*, WIFO, Vienna.  
[https://www.wifo.ac.at/en/research\\_priorities/competitiveness/competitiveness\\_radar?detail-view=yes&publikation\\_id=70623](https://www.wifo.ac.at/en/research_priorities/competitiveness/competitiveness_radar?detail-view=yes&publikation_id=70623)
- Peneder M., Bittschi B., Köppl A., Mayerhofer P., Url T., Bärenthaler-Sieber S., Böheim M. (2023), Wettbewerbsfähigkeit und nachhaltige Entwicklung der österreichischen Wirtschaft, WIFO, Wien.  
[https://www.wifo.ac.at/en/pubma\\_entries?detail-view=yes&publikation\\_id=69778](https://www.wifo.ac.at/en/pubma_entries?detail-view=yes&publikation_id=69778)

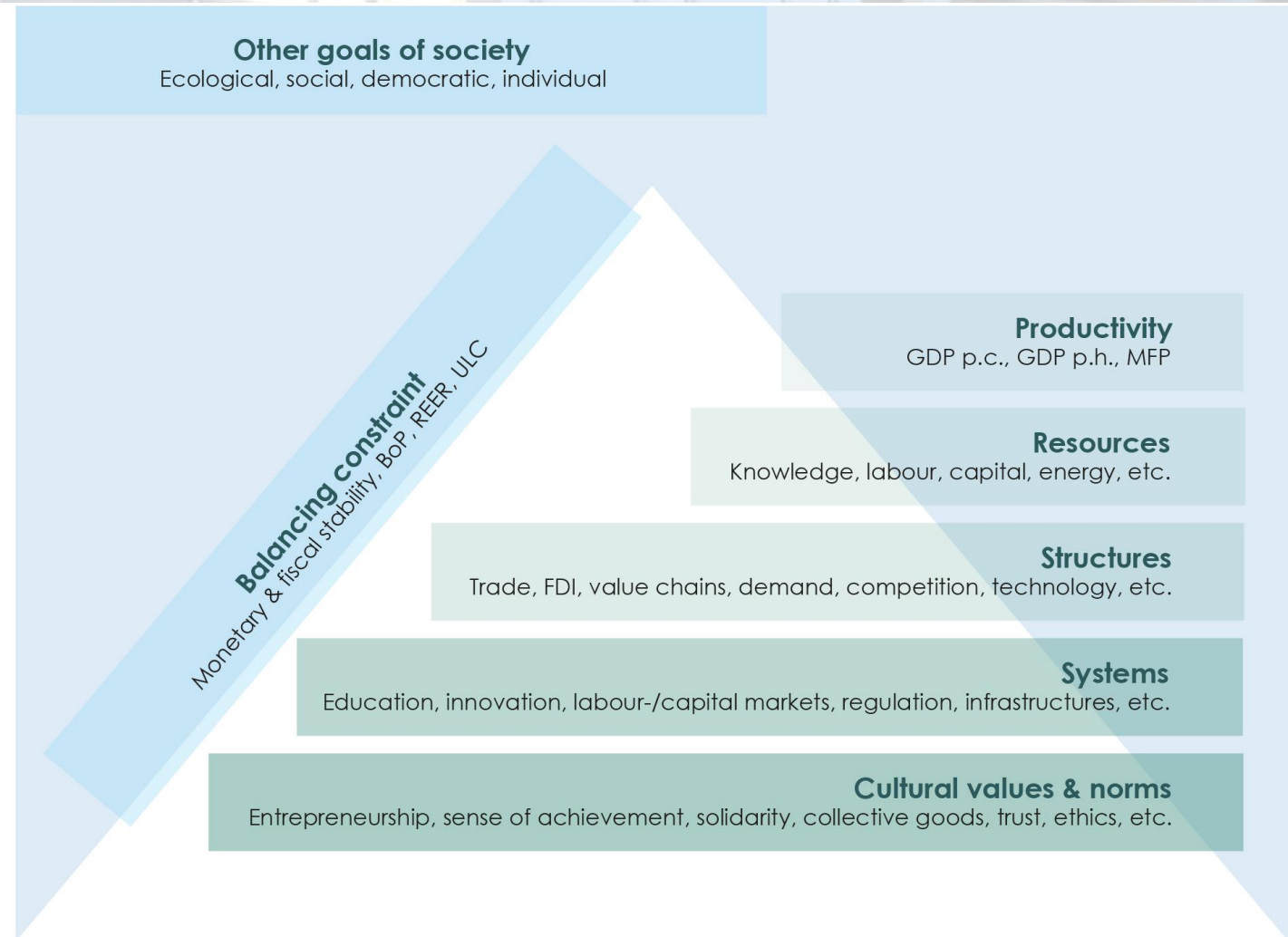
# Iceberg model

## Shift of **paradigms**

- Growth
- Welfare
- **Development**

## Three **pillars**

- **Economic** performance
- [Social balance/inclusion]
- [Ecological transformation]



Source: Peneder (2017).

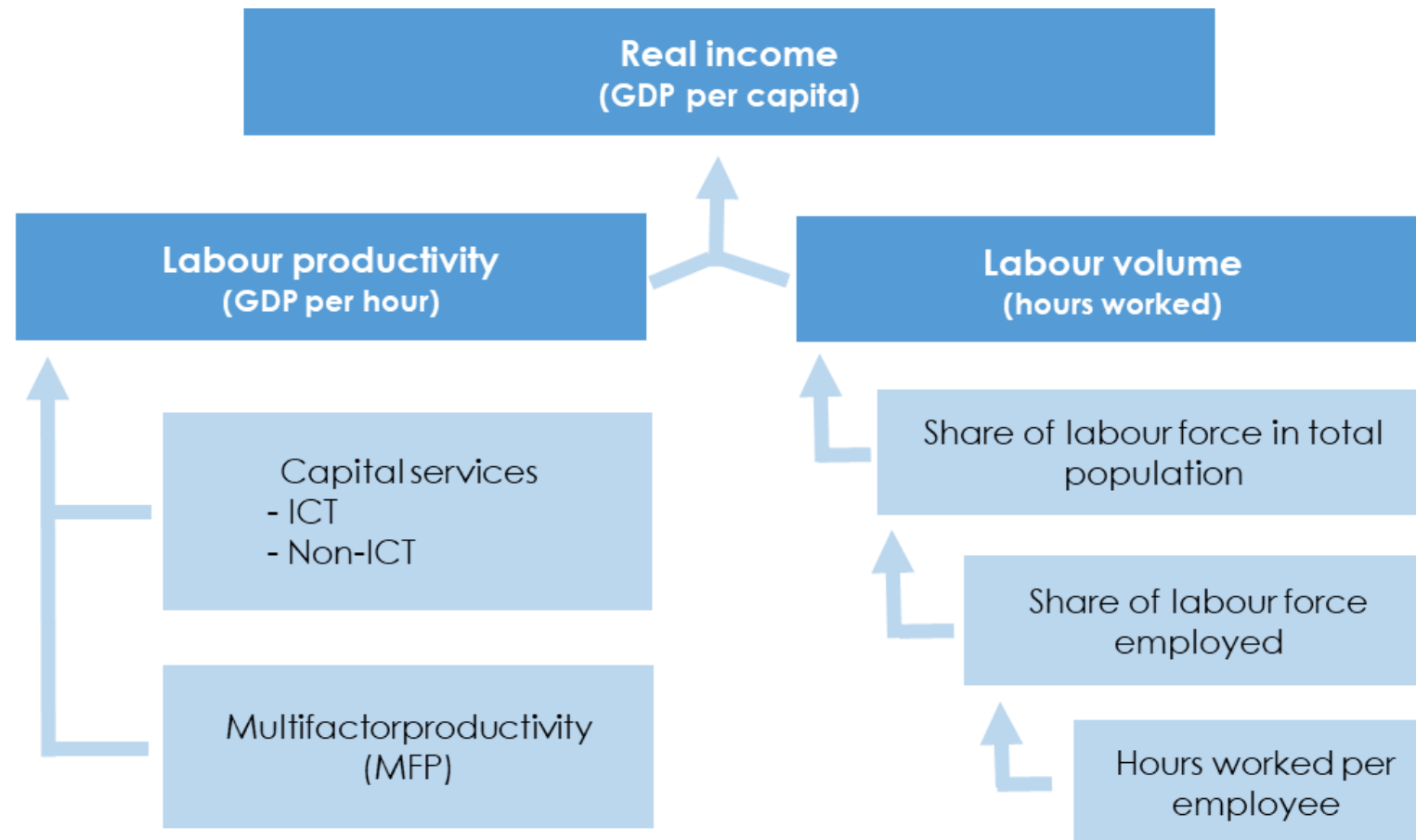
# Comparison groups

- **EU27**: European Union
- **MOEL11**: Estonia, Latvia, Lithuania, Poland, Czech Republic, Slovakia, Hungary, Slovenia, Romania, Bulgaria, Croatia
- **BENESCAND**: Belgium, Netherlands, Denmark, Sweden, Finland

# Productivity and resources

- GDP per capita
- Labour productivity
- Multifactor productivity (MFP)
- Capital formation
- Labour volume
- Cost of production (REER)

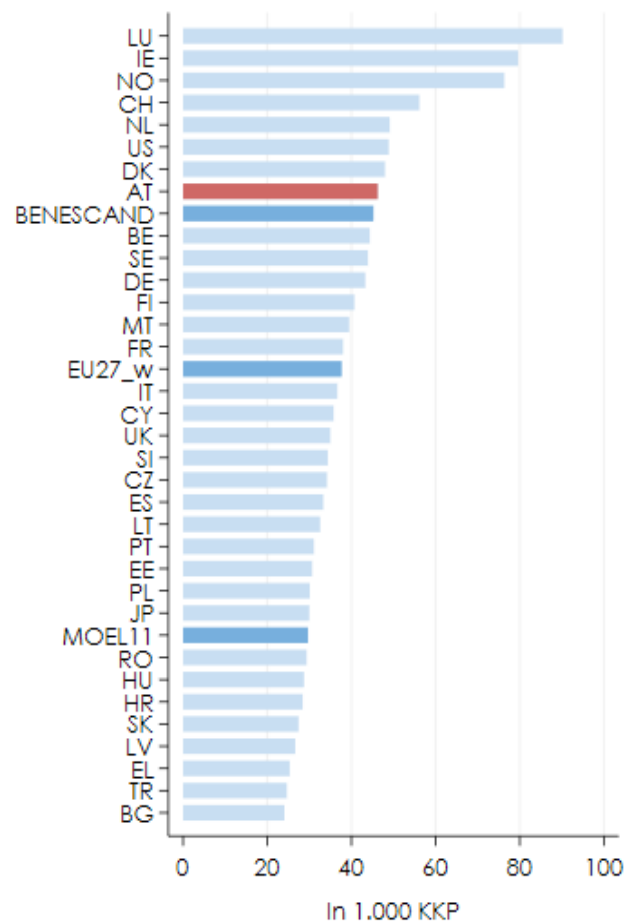
# Productivity, capital and labour inputs



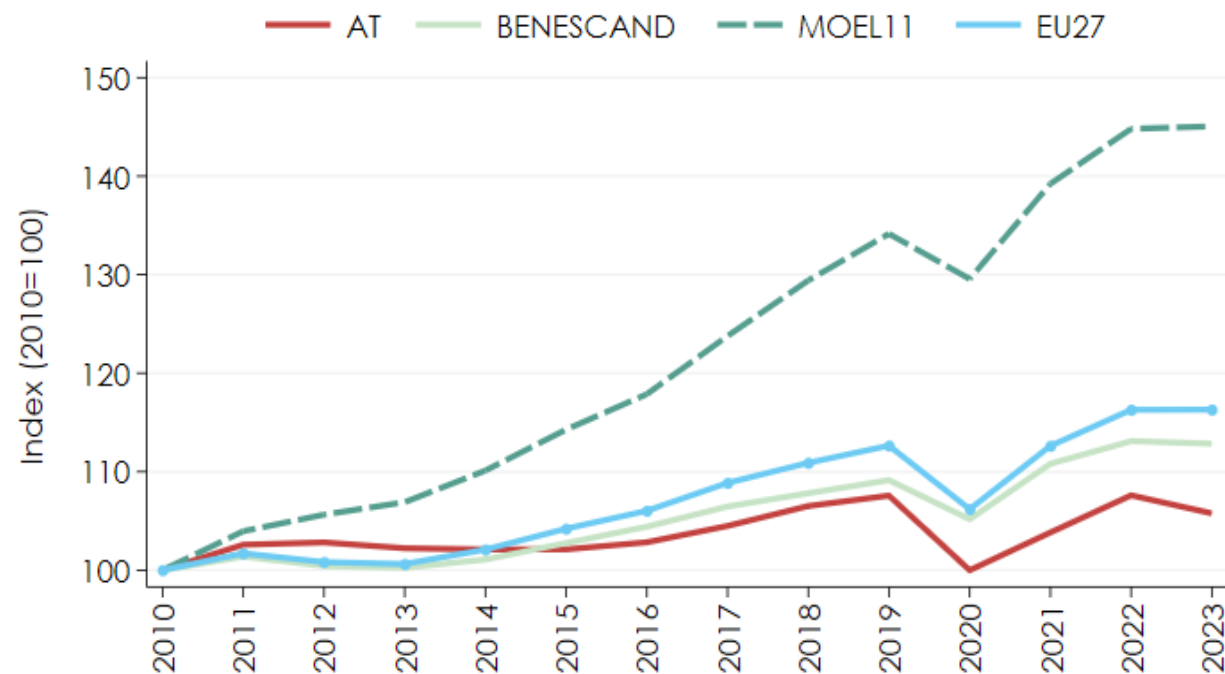
# GDP per capita

Current prices, PPP

2023



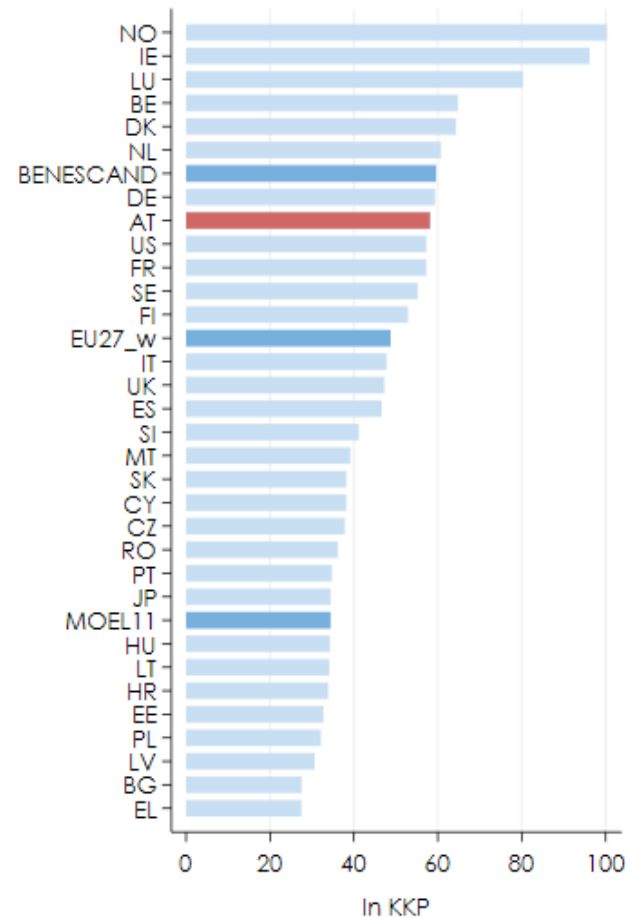
Index 2010=100



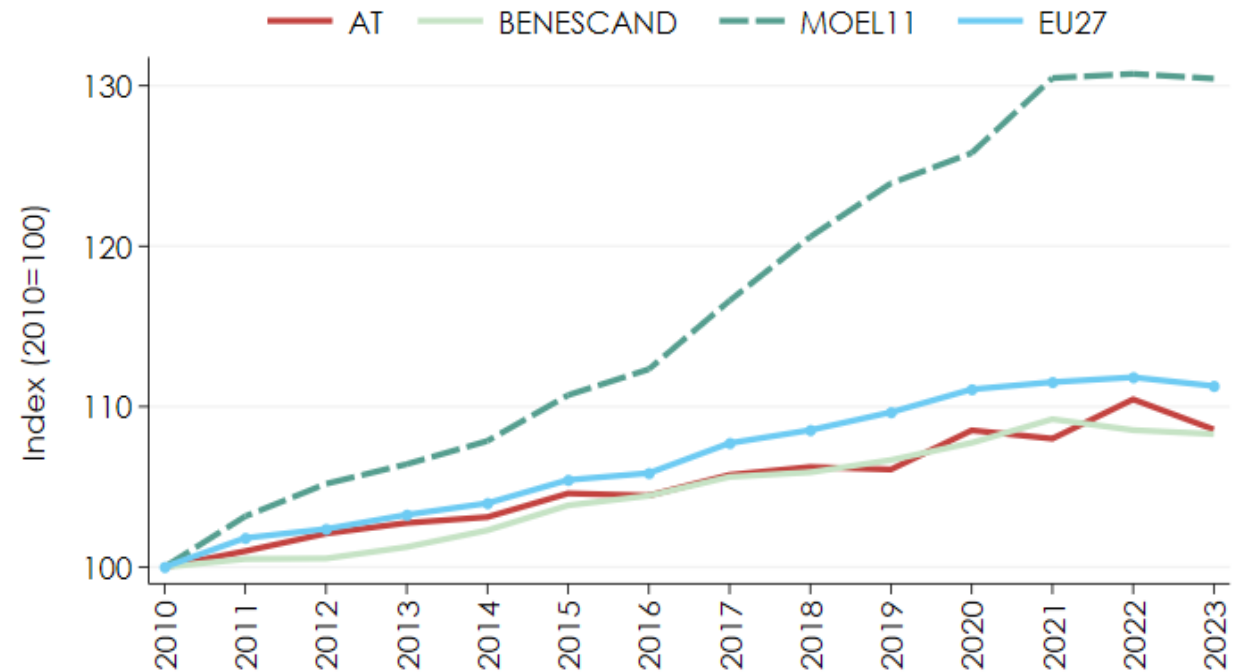
Source: EUROSTAT (AMECO), WIFO. Note: Aggregated values for the European Union. Unweighted averages for the country groups MOEL11 and BENESCAND.

# GDP per hour worked

2023



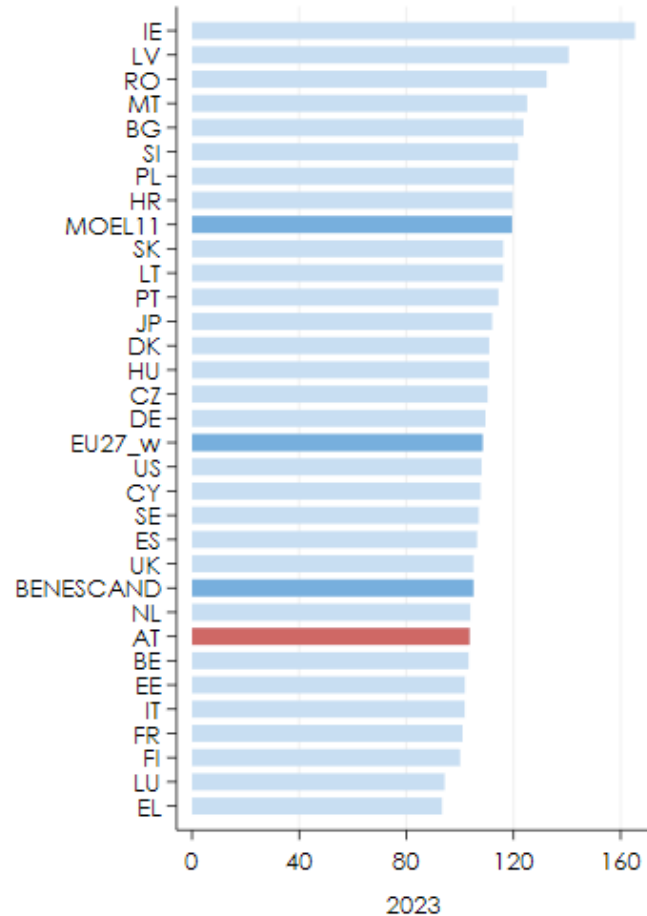
Index 2010=100



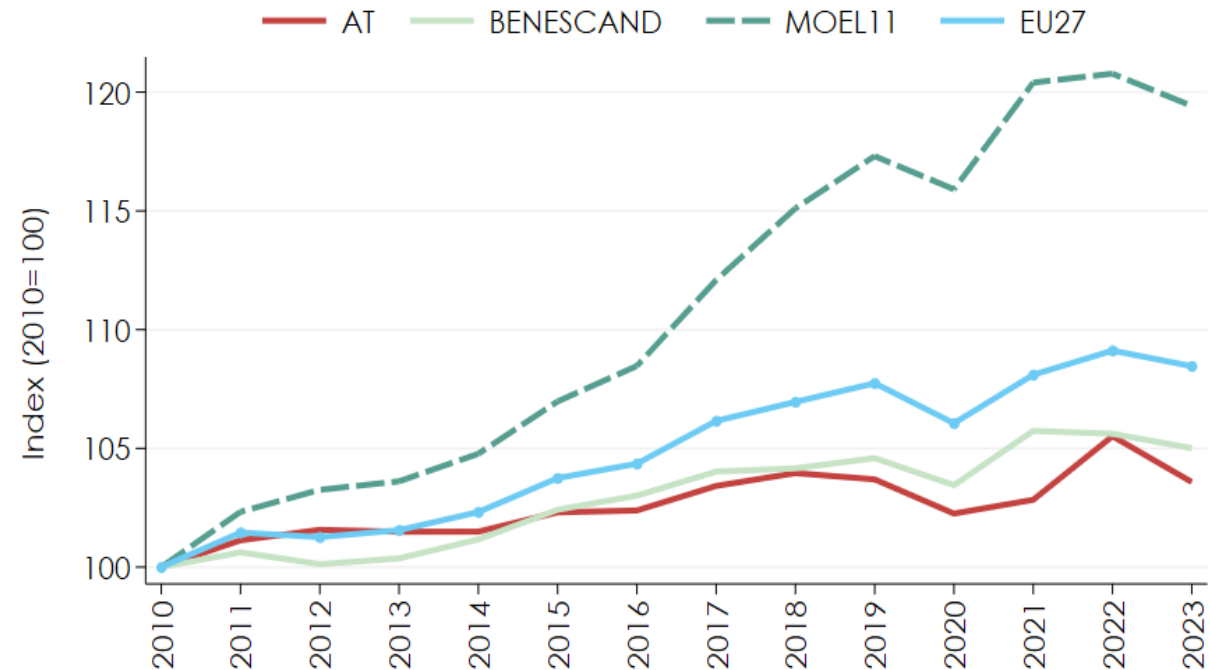
Source: EUROSTAT (AMECO), WIFO. Note: Aggregated values for the European Union. Unweighted averages for the country groups MOEL11 and BENESCAND.

# Multifactor productivity (MFP)

2023



Index 2010=100

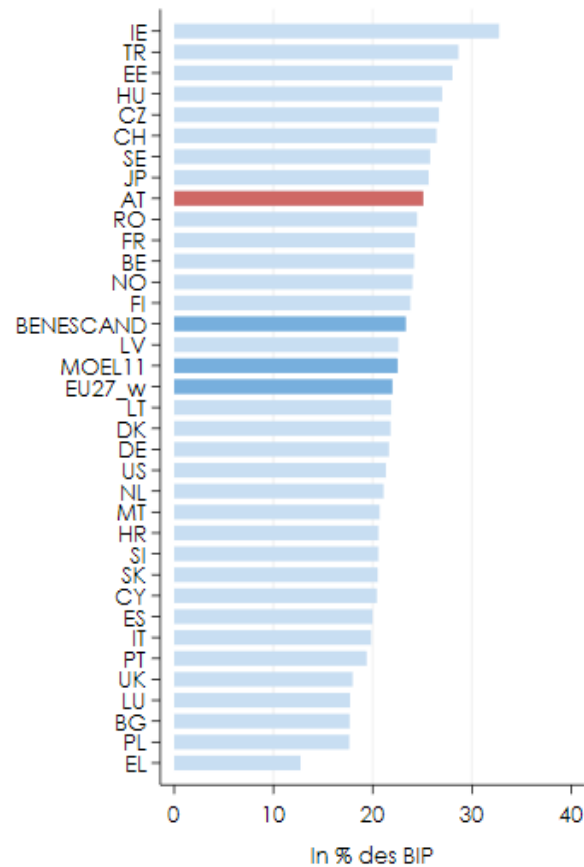


Source: EUROSTAT (AMECO), WIFO. Note: Aggregated values for the European Union. Unweighted averages for the country groups MOEL11 and BENESCAND.

# Gross fixed capital formation

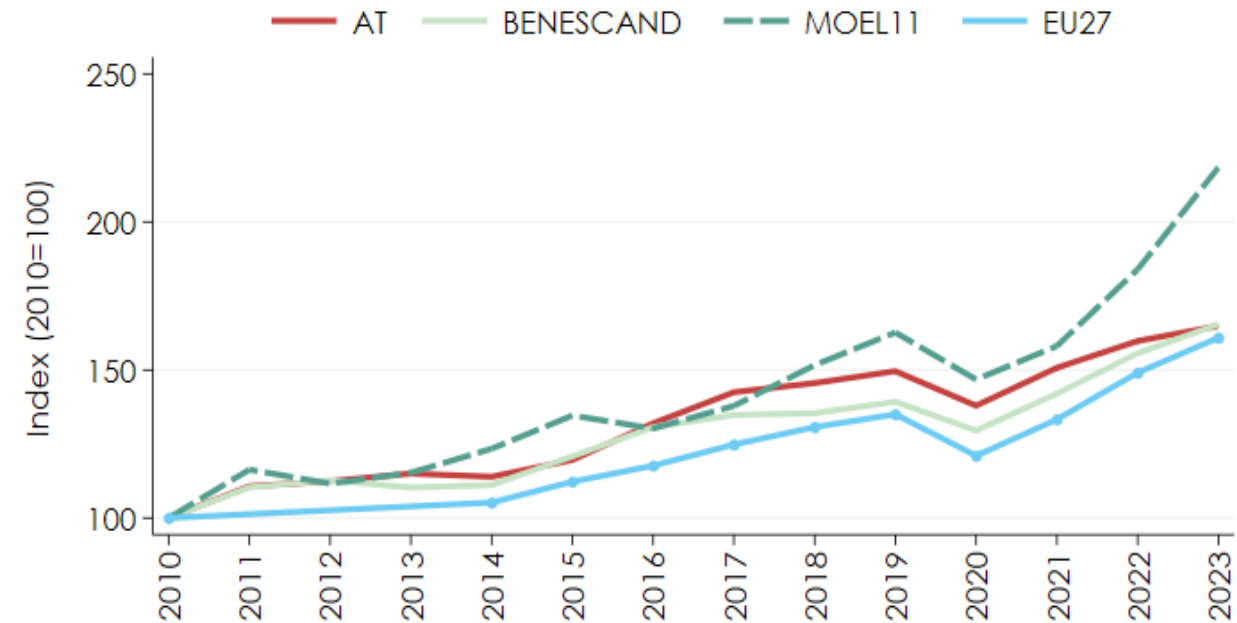
2023

Total



Index 2010=100

Equipment

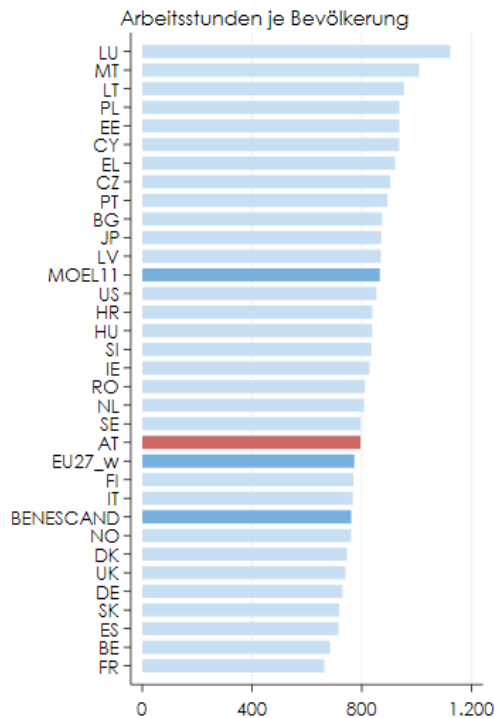


Source: EUROSTAT (AMECO), WIFO. Note: Aggregated values for the European Union. Unweighted averages for the country groups MOEL11 and BENESCAND.

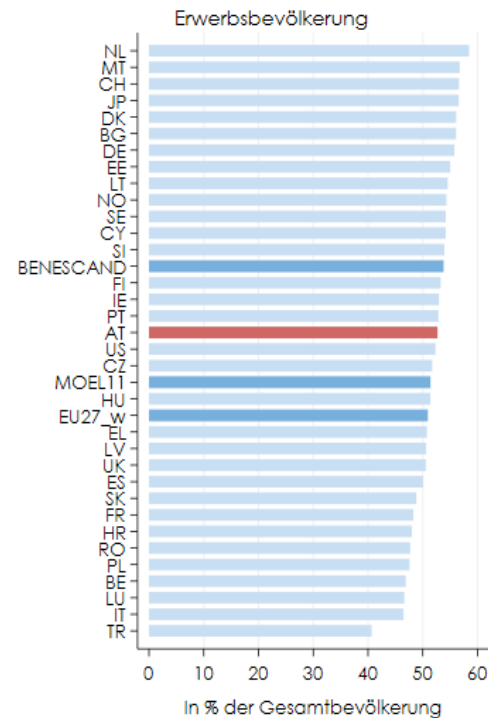
# Labour input and its components (i)

2022

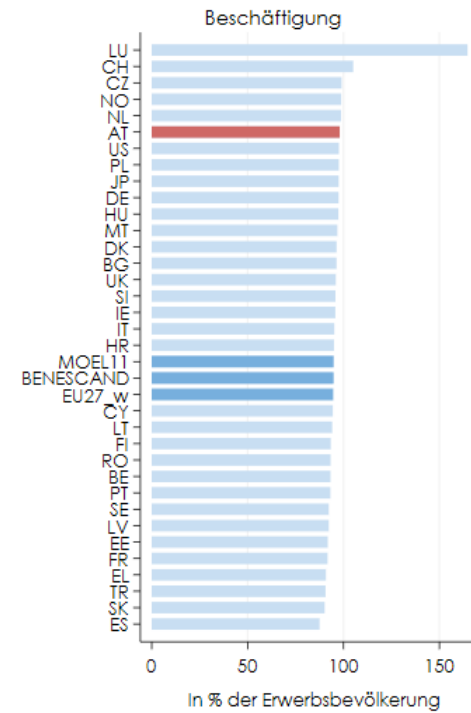
Hours worked pc



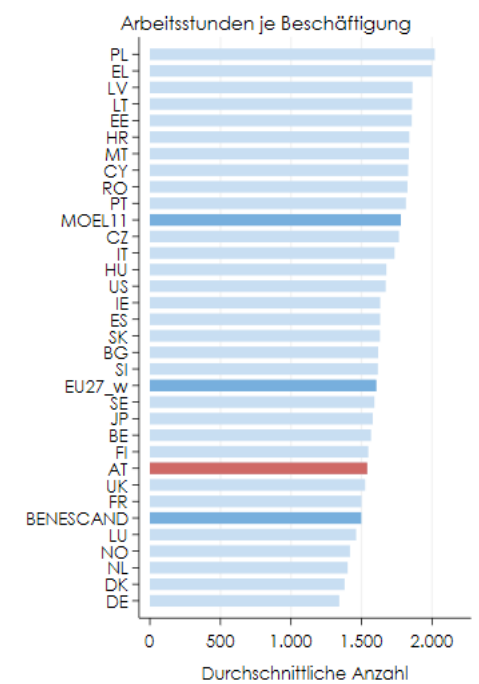
Labour force



Employment



Hours worked per employee



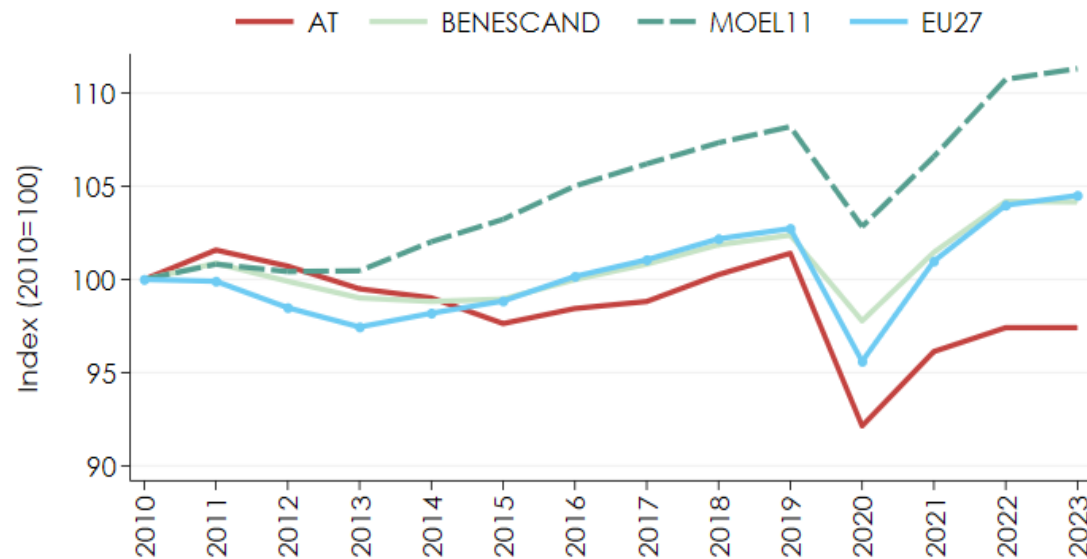
Source: EUROSTAT (AMECO), WIFO. Note: Aggregated values for the European Union. Unweighted averages for the country groups MOEL11 and BENESCAND.

# Labour input (ii)

Index 2010=100

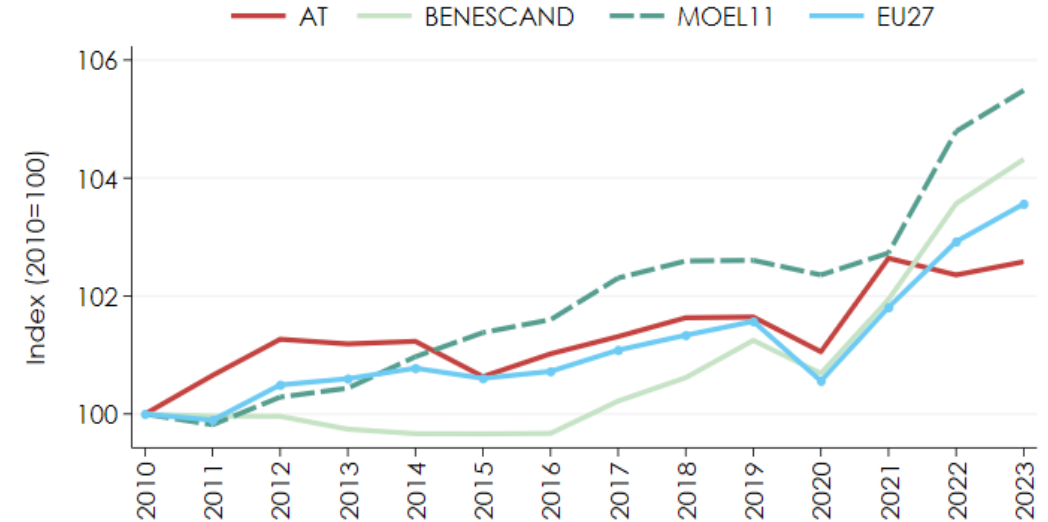
## Hours worked per capita

Arbeitsstunden je Bevölkerung



## Share of labour force in total population

Anteil der Erwerbsbevölkerung an der Gesamtbevölkerung

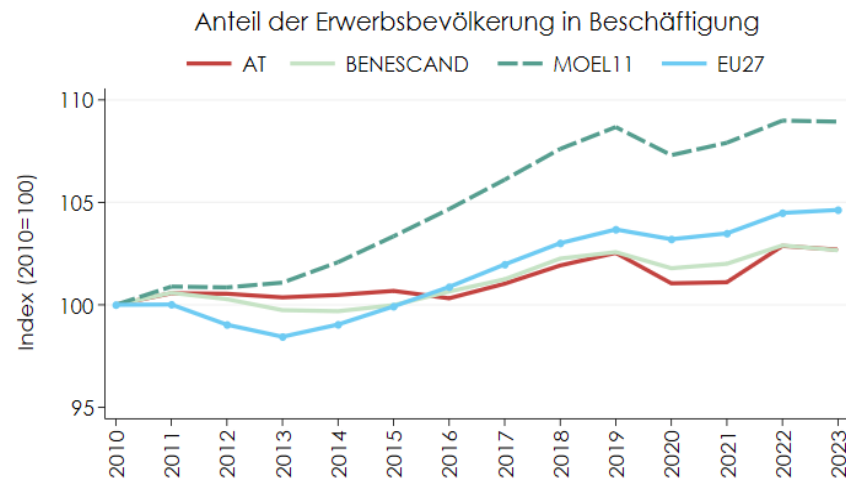


Source: EUROSTAT (AMECO), WIFO. Note: Aggregated values for the European Union. Unweighted averages for the country groups MOEL11 and BENESCAND.

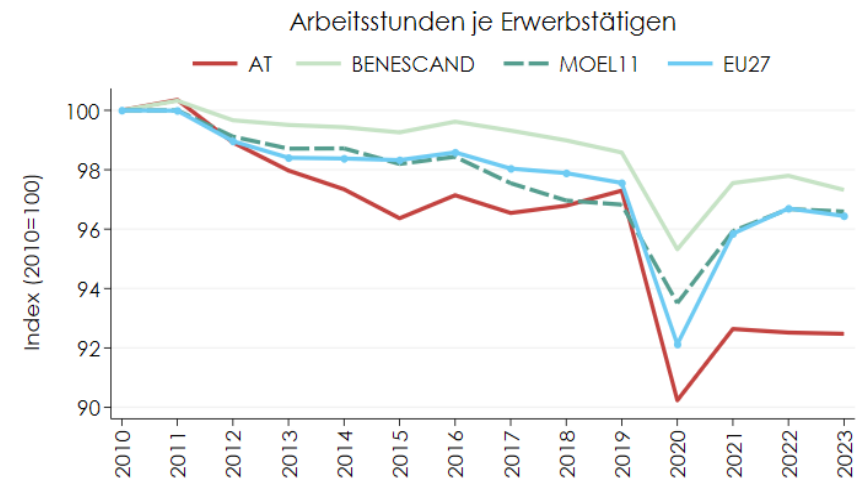
# Labour input (iii)

Index 2010=100

## Share of labour force employed



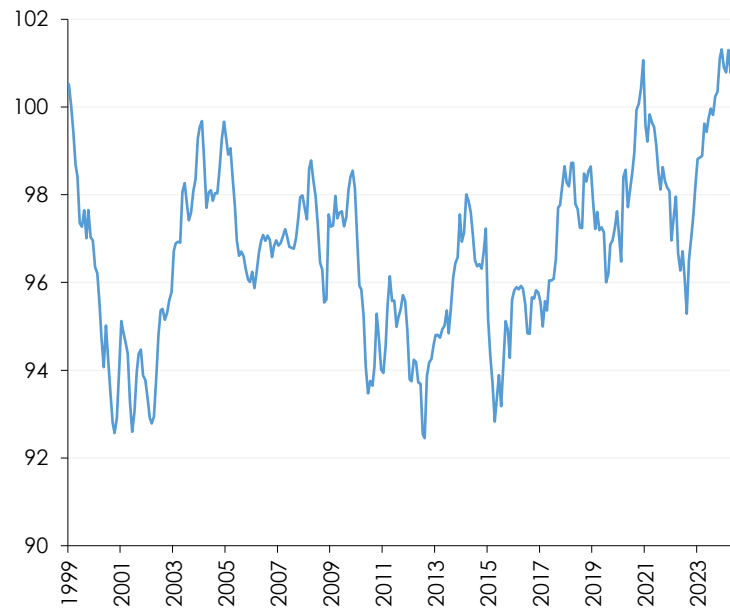
## Hours worked per employee



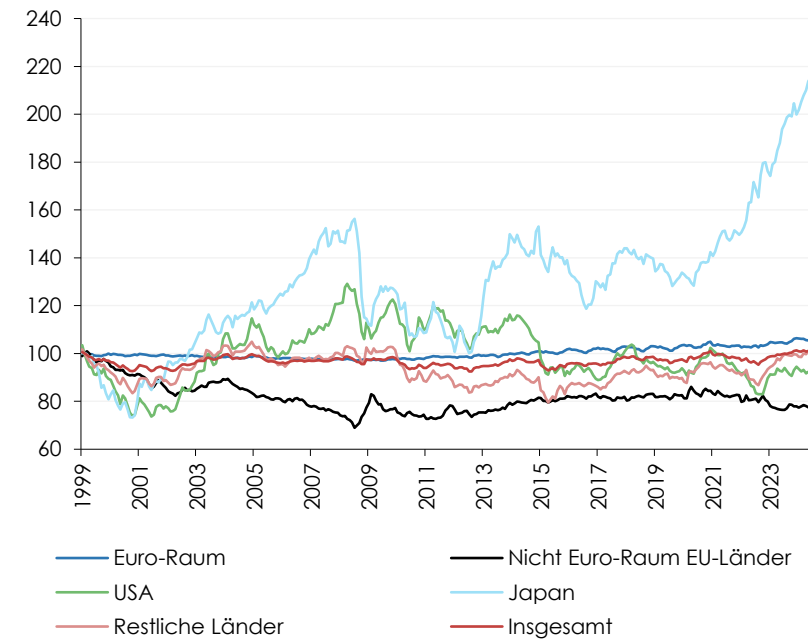
Source: EUROSTAT (AMECO), WIFO. Note: Aggregated values for the European Union. Unweighted averages for the country groups MOEL11 and BENESCAND.

# Real effective exchange rate (REER)

## Total



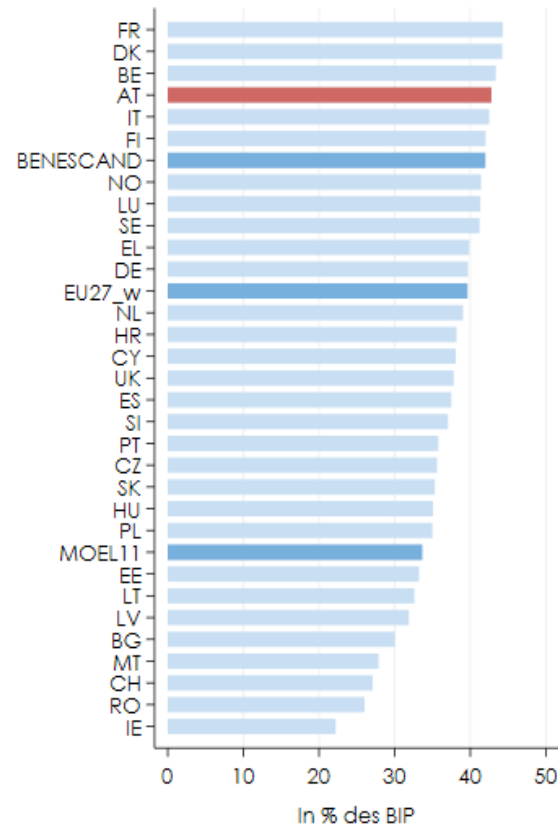
## By regions



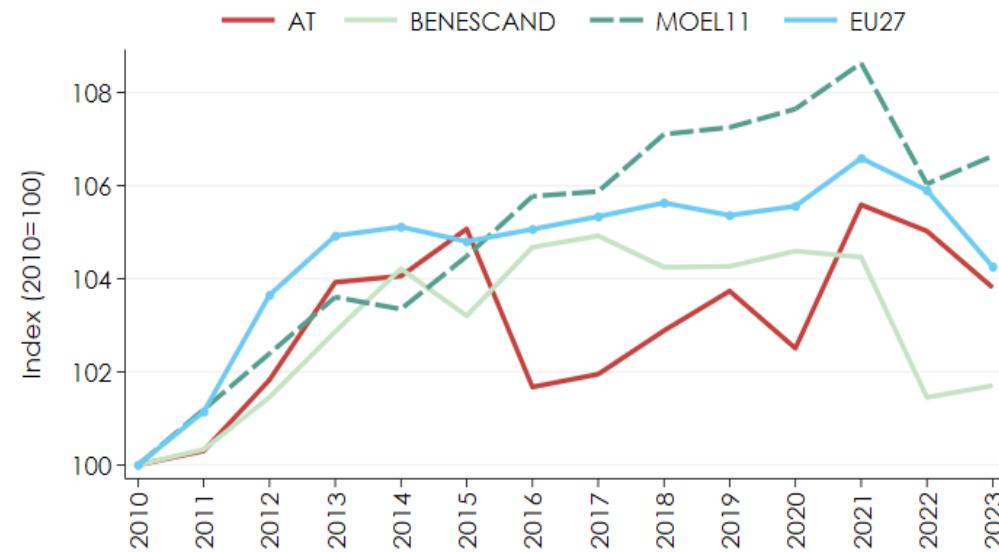
Source: OeNB, WIFO (Thomas Url).

# Fiscal burden

2023



Index 2010=100



Source: EUROSTAT (AMECO), WIFO. Note: Aggregated values for the European Union. Unweighted averages for the country groups MOEL11 and BENESCAND.

## Main findings (i)

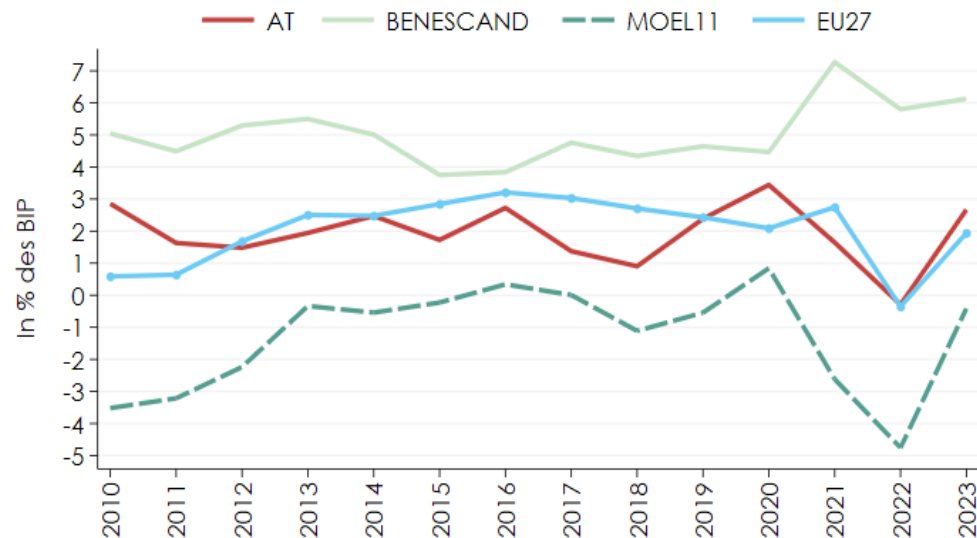
- Long shadow of multiple crises
  - Great recession; COVID-19, invasion of Ukraine / energy / inflation)
- Low dynamics of productivity and growth
  - Average performance in labour productivity
  - Poor growth of multifactor productivity (MFP)
  - Comparatively low average hours per employee
- Yearly fluctuations, but rather stable development of cost competitiveness in the long run (REER)

# Structural characteristics, selected aspects

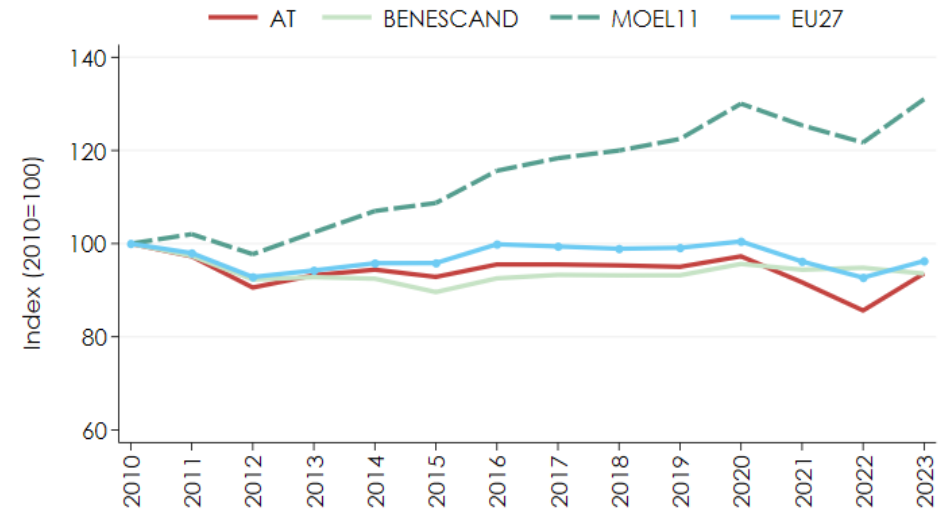
- **International trade**
  - Current account
  - Share in world exports
  - Complexity
  - Diversification
  - Global value chains
- **Foreign direct investments (FDI)**
  - Outward
  - Inward
- **Knowledge** intensive industries
  - Educational intensity
  - Innovation intensity
  - ICT producers

# International trade

## Current account



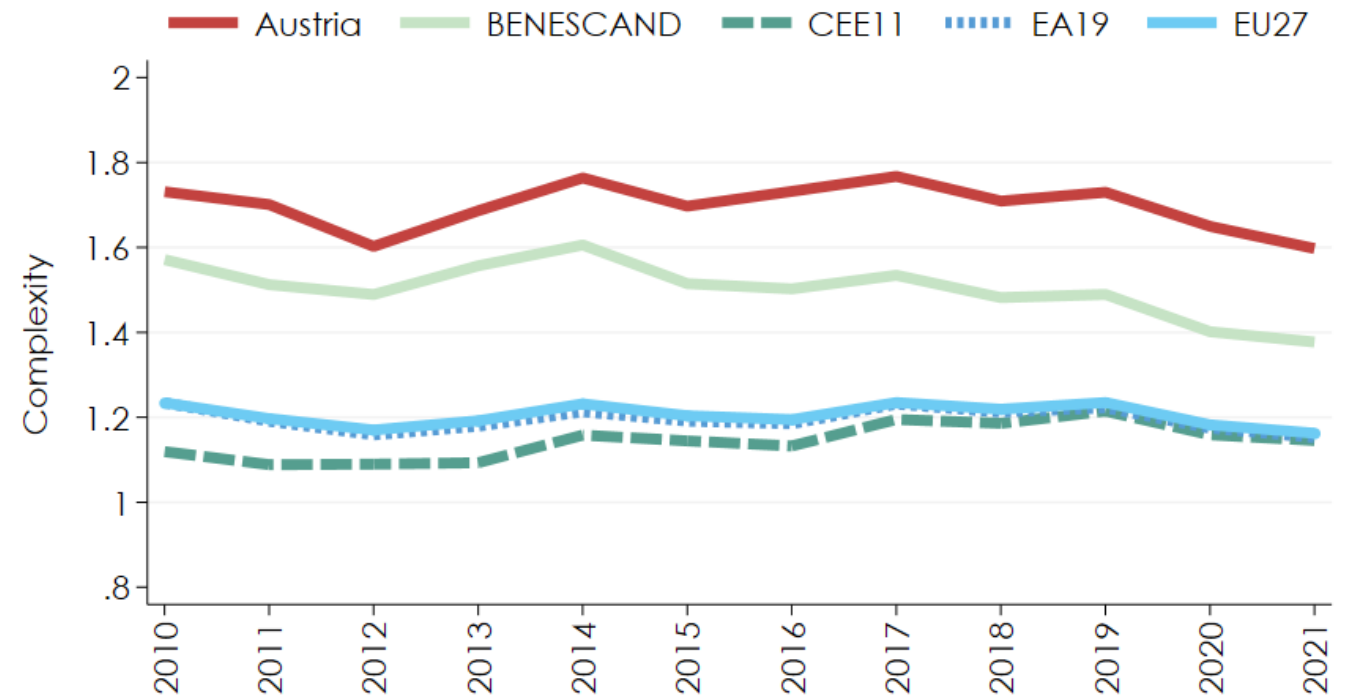
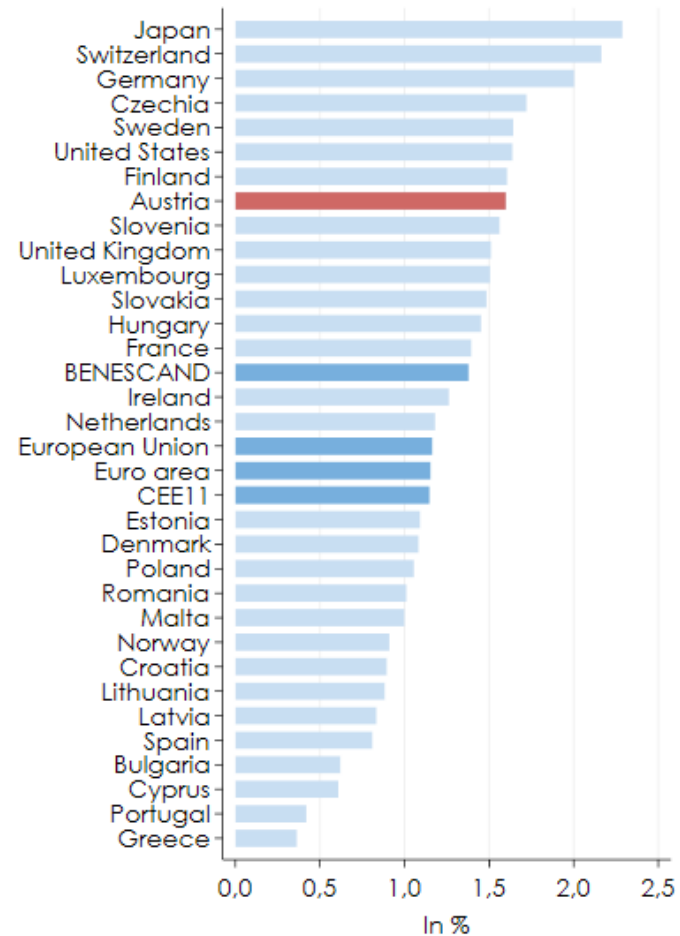
## Share in world exports of goods



Source: EUROSTAT (AMECO), WIFO. Note: Aggregated values for the European Union. Unweighted averages for the country groups MOEL11 and BENESCAND.

# Complexity of goods exports

2021

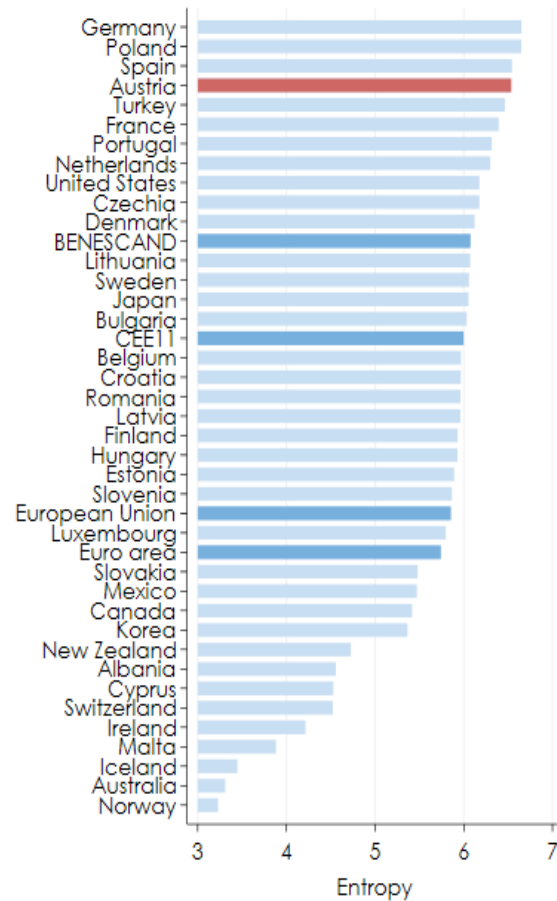


Source: BACI, WIFO.

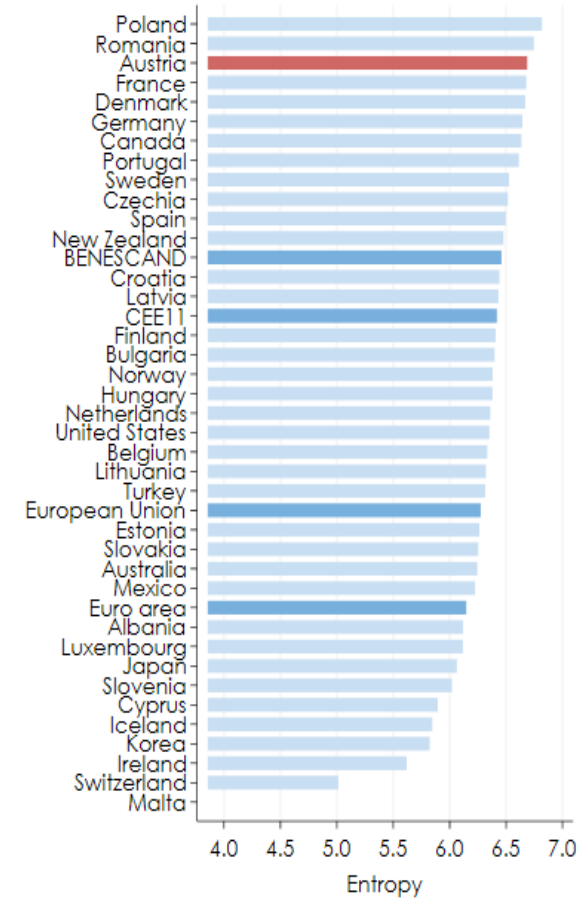
# Trade diversification: goods

Entropy 2021

## Exports



## Imports

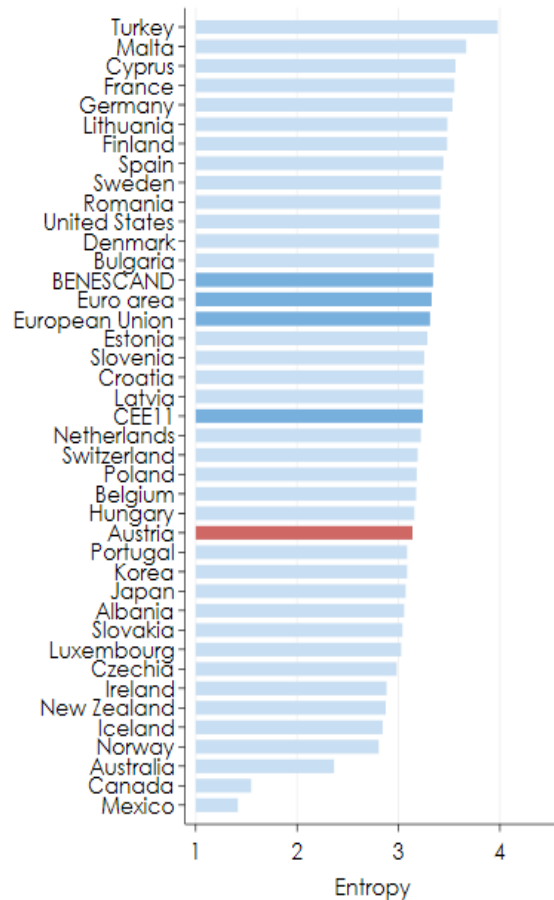


Source: BACI, WIFO.

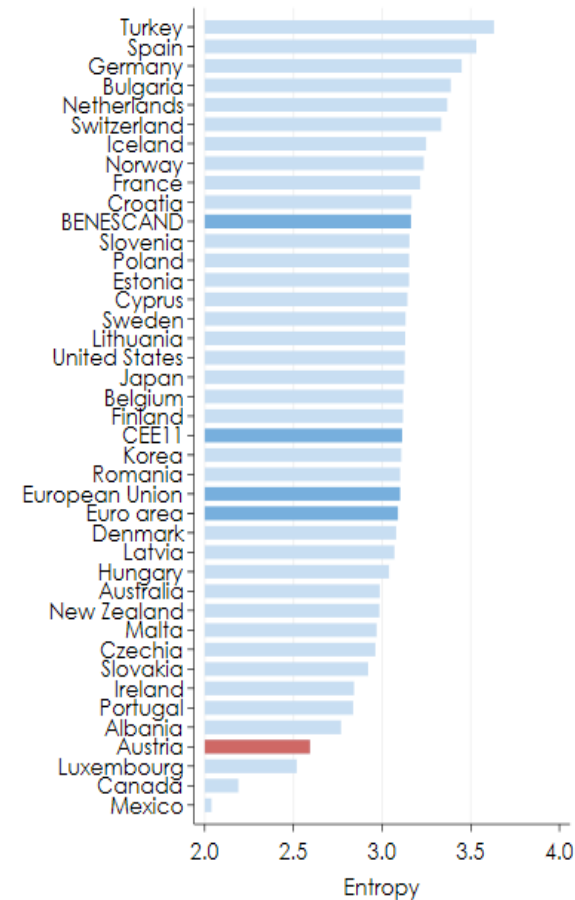
# Trade diversification: partner regions

Entropy 2021

Export destinations



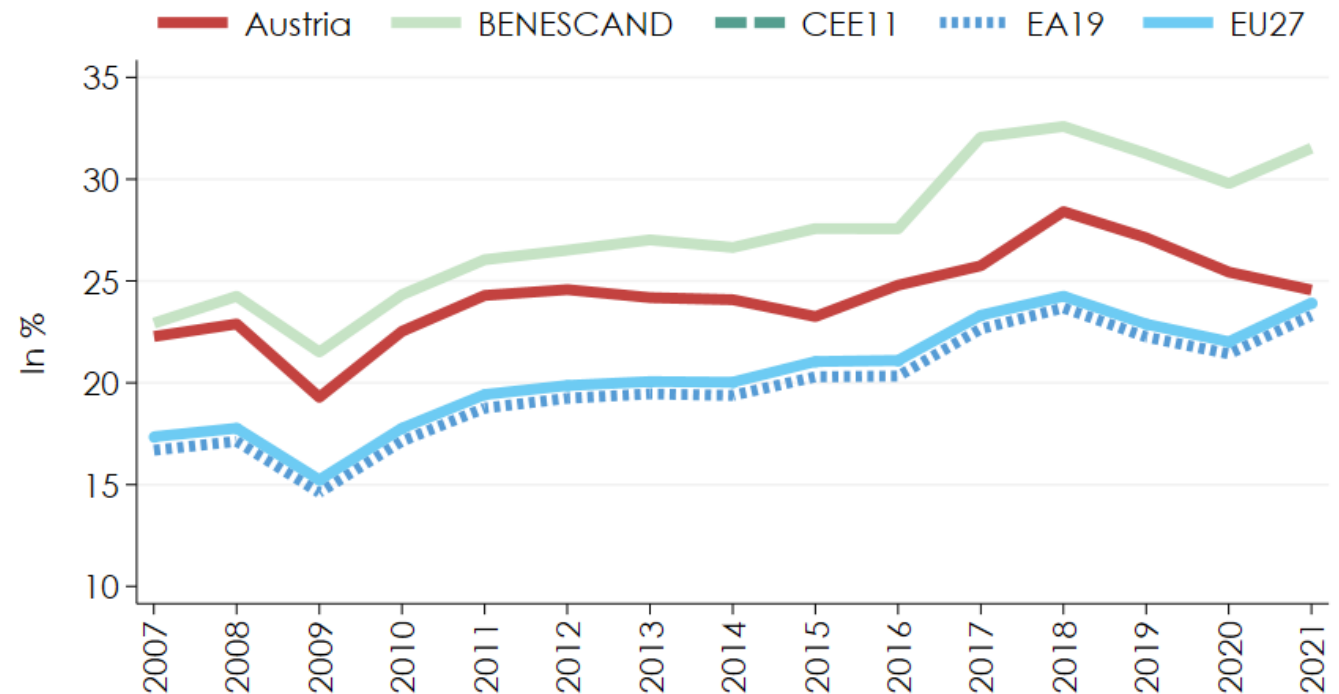
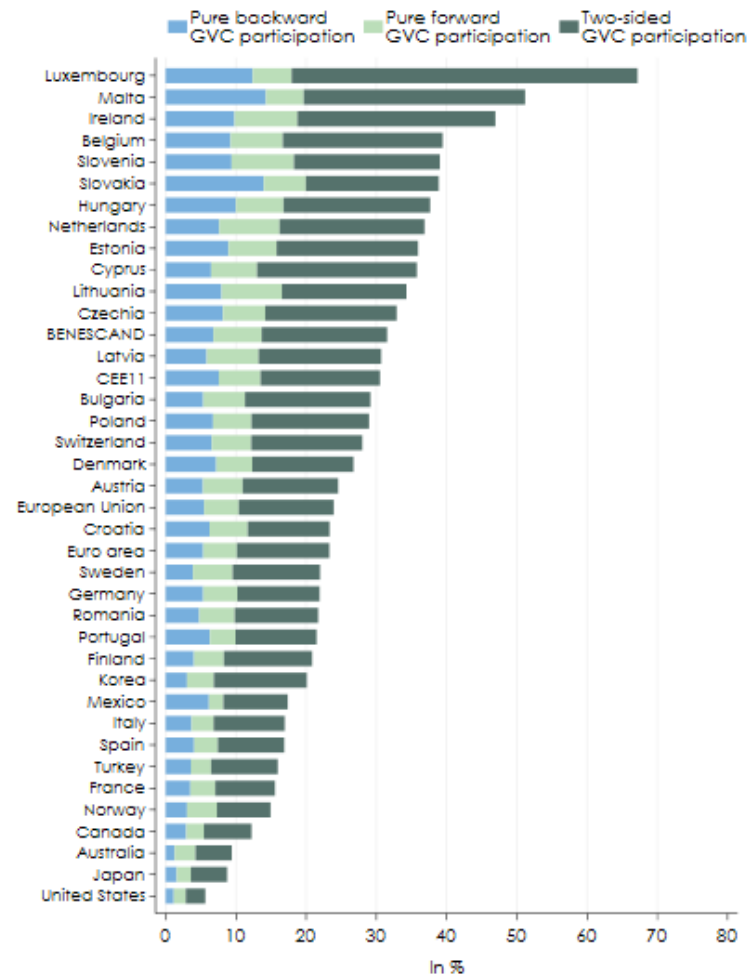
Origin of imports



Source: BACI, WIFO.

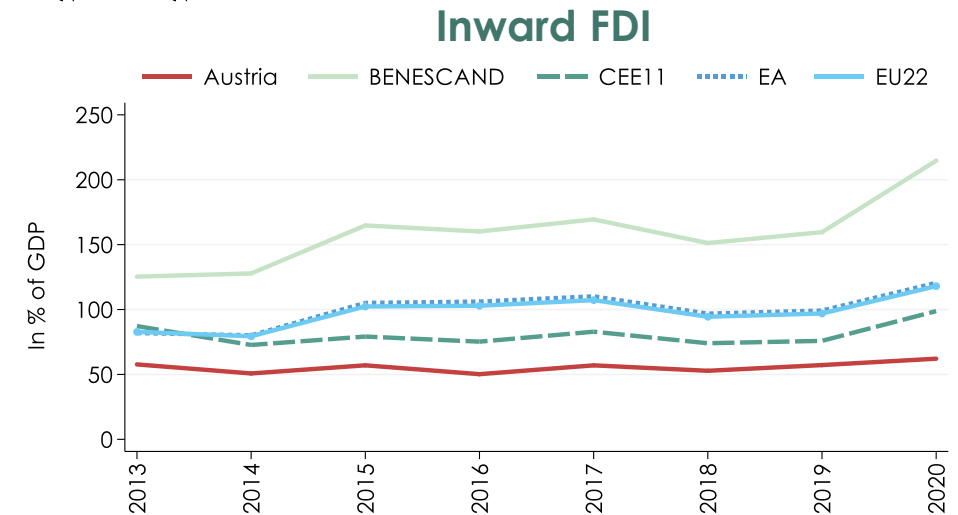
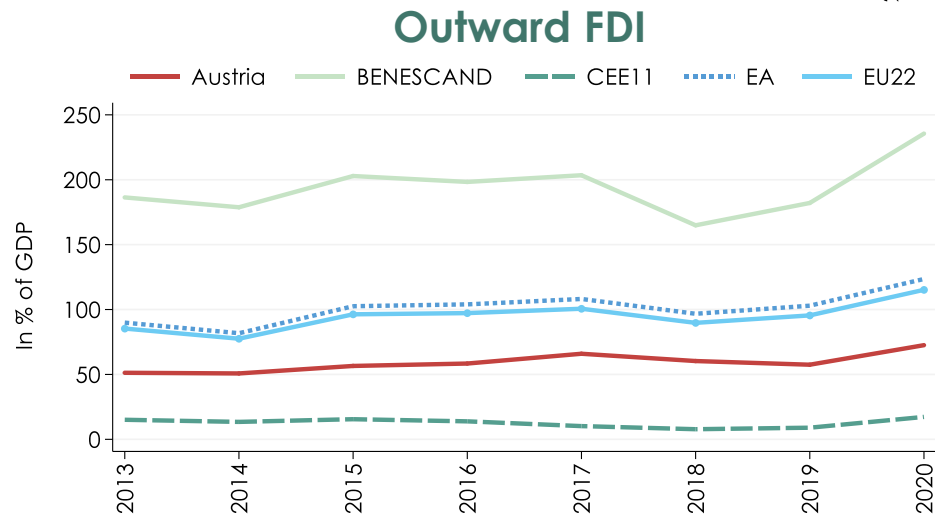
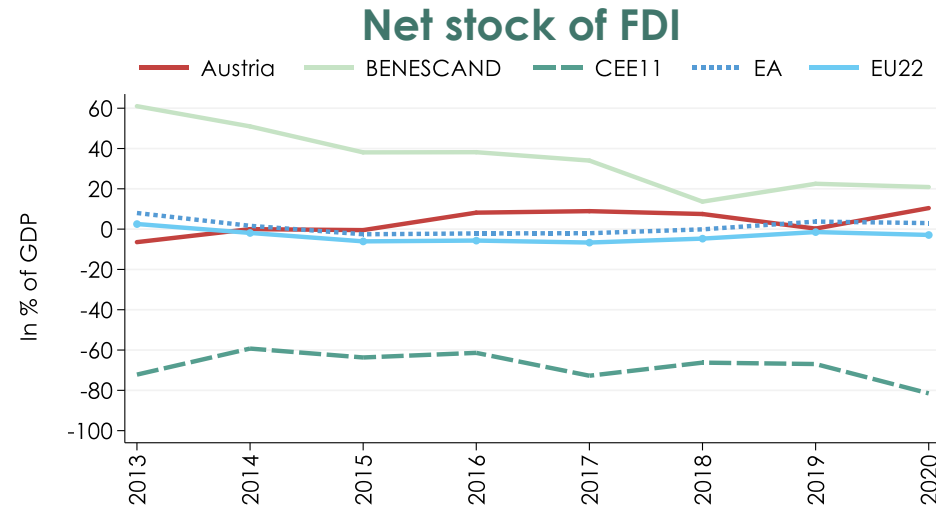
# Global value chains

## WITS Index of integration



Source: WITS, WIFO.

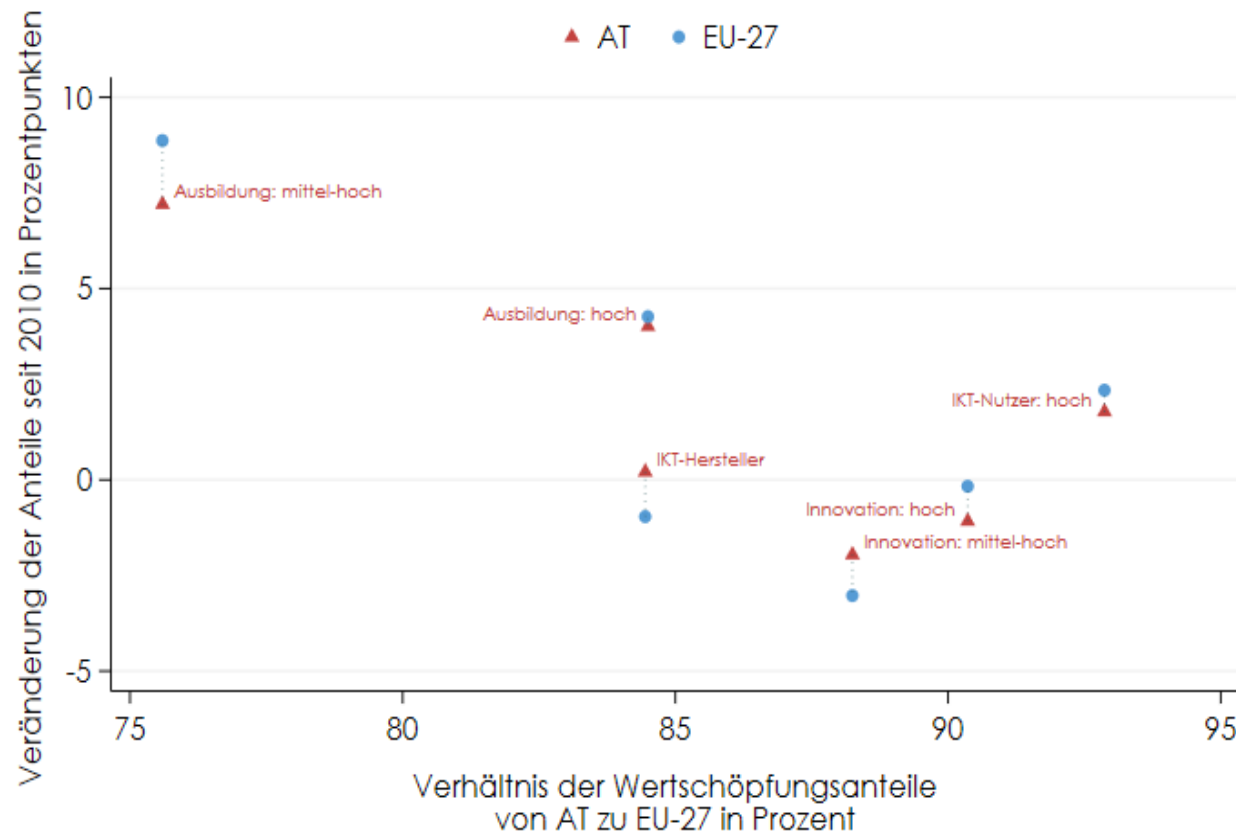
# Stock of foreign direct investments (FDI)



Source: OECD (FDI statistics), WIFO.

# Knowledge-intensive industries

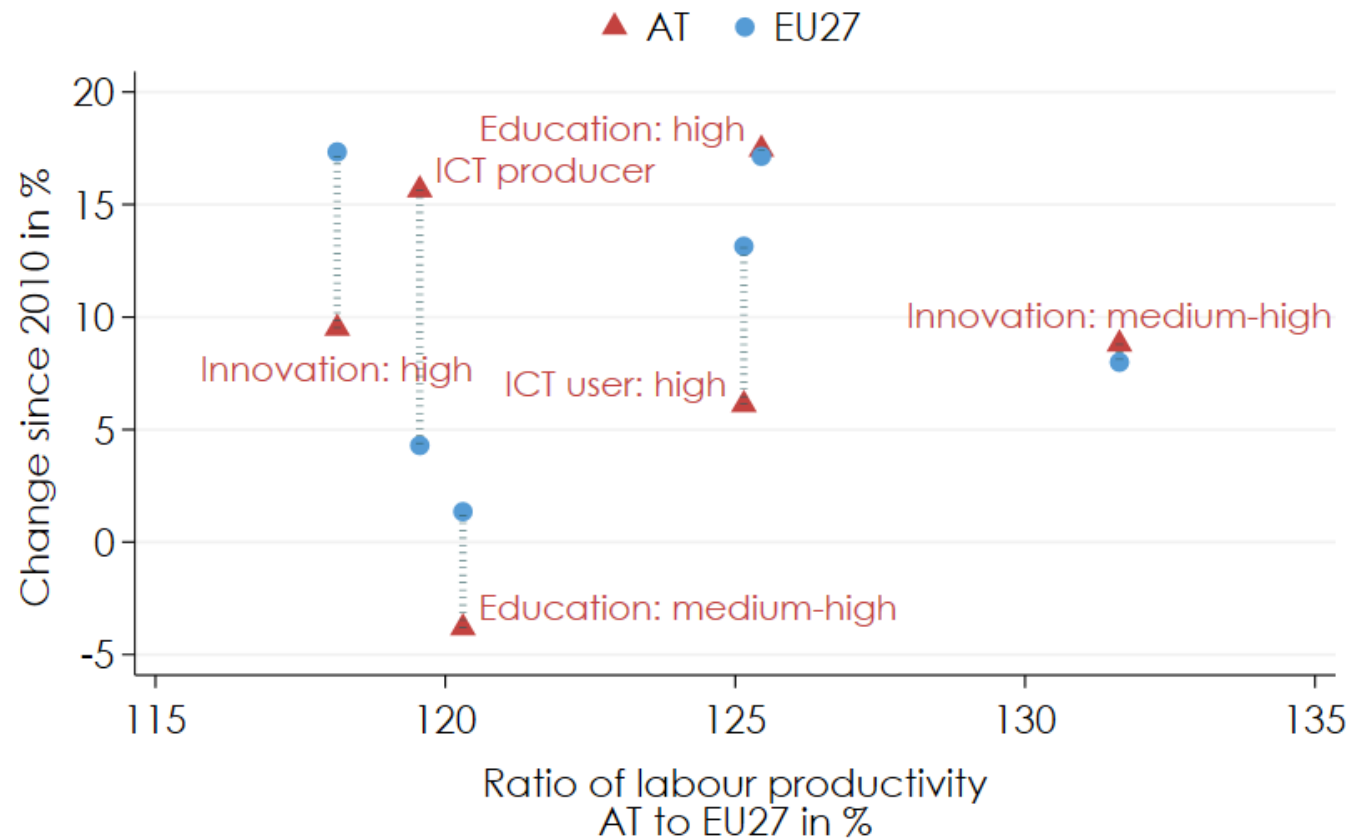
Value added shares, Austria vs. EU27 2022



Source: EUROSTAT (SBS), WIFO.

# Knowledge-intensive industries

Labour productivity, Austria vs. EU27 2020



Source: EUROSTAT (SBS), WIFO.

## Main findings (ii)

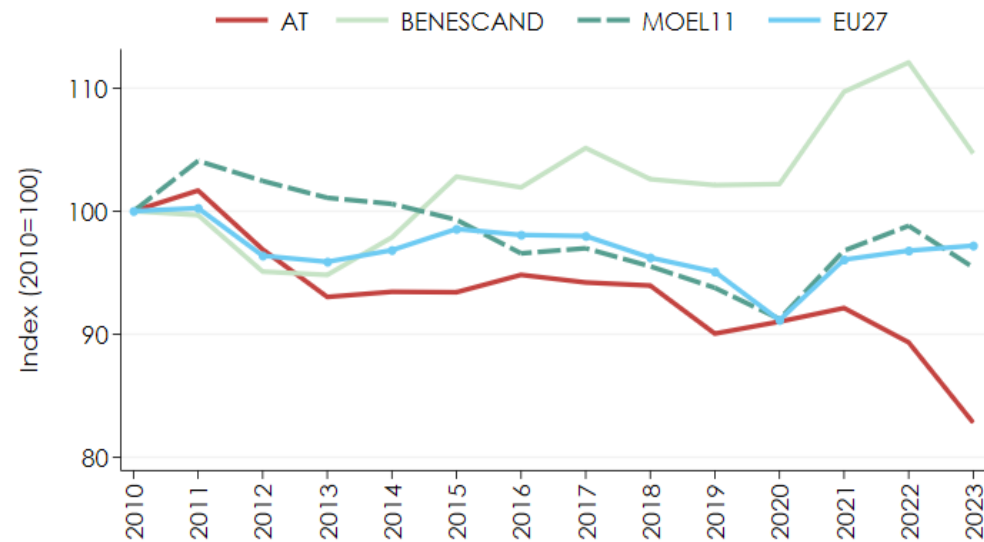
- Austrian **structure performance paradox**
  - High rank in GDP pc, but
  - Low share of especially knowledge-intensive industries
- Austria **holds up well** in foreign trade
  - Traditional indicators (e.g., current account balance, market shares)
  - Average degree of integration in global value chains
  - High complexity of exported goods
  - Low diversification of trade partners
- Geo-economics and **increasing fragmentation** of international trade (“de-globalisation”)
  - Requires more **diversification** in foreign trade
  - Face growing conflicts between the objectives of **efficiency** and **resilience**
  - European Union strives for more **strategic autonomy**
- Effective **European co-ordination** remains the most important foreign trade policy instrument also in Austria

# The system level

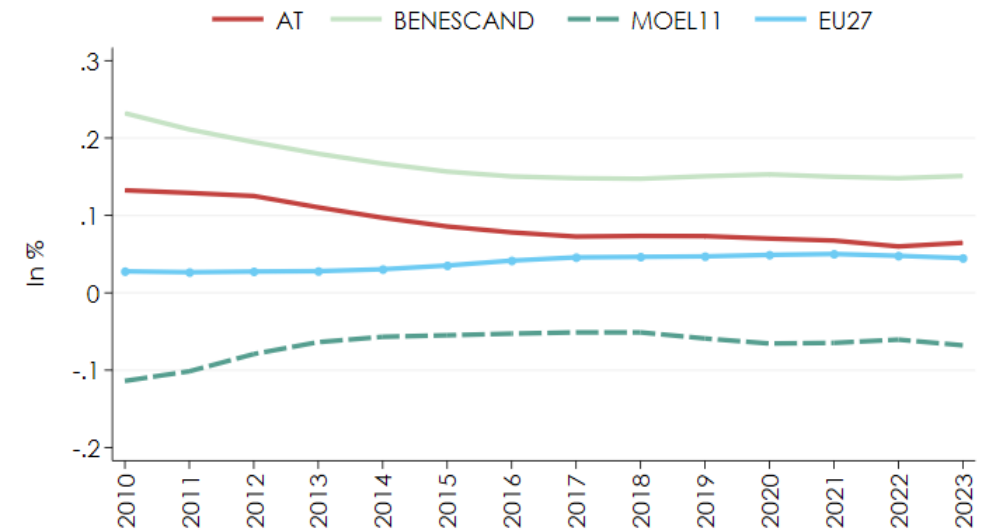
- Competition
- Innovation
- Education
- Corporate finance
- Infrastructure and quality of public institutions

# Competition

## Net operating surplus



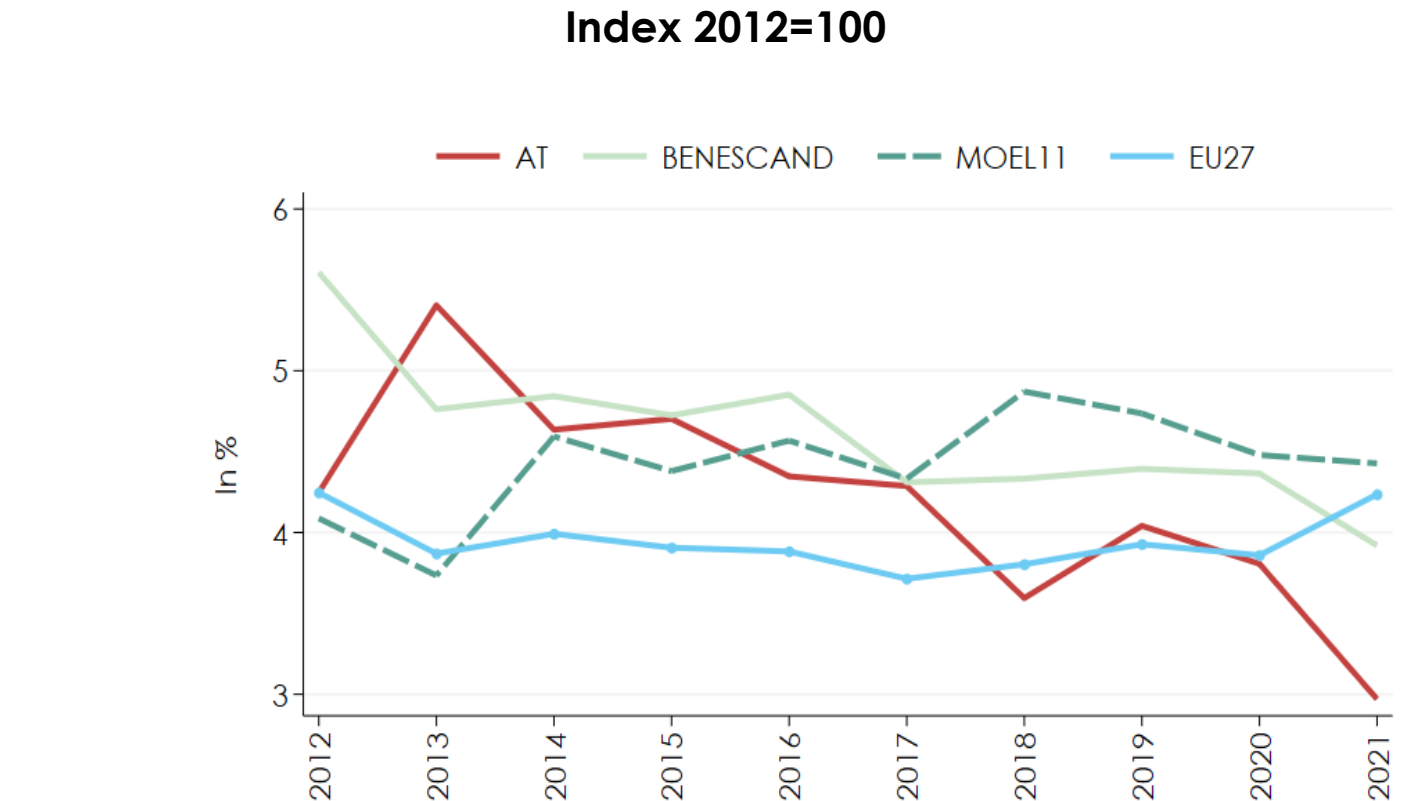
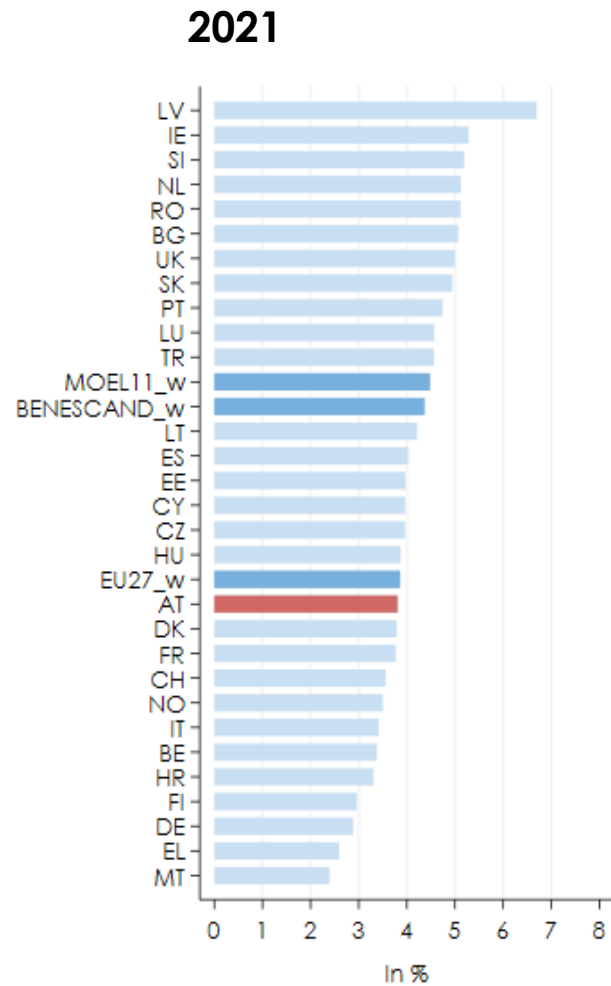
## Trade of openness, size corrected



Source: EUROSTAT (AMECO), WIFO. Note: Aggregated values for the European Union. Unweighted averages for the country groups MOEL11 and BENESCAND.

# Firm dynamics

Share of young firms (< 5 years old)

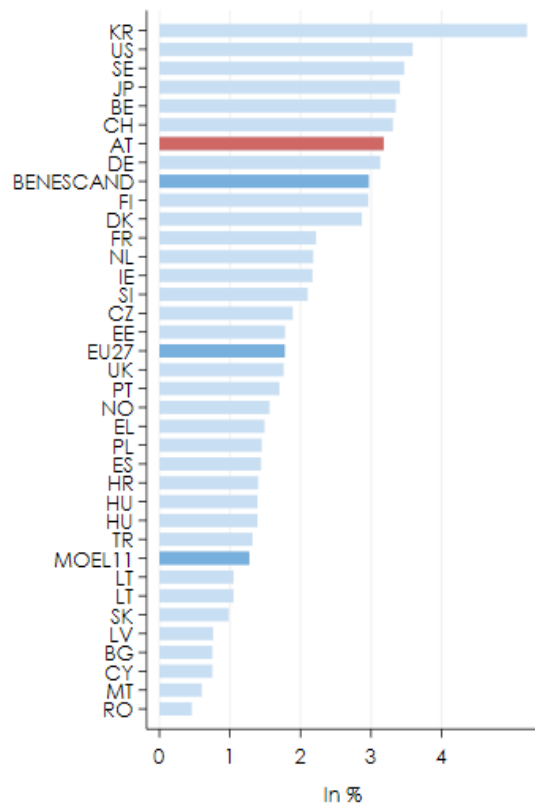


Source: EUROSTAT (SBS).

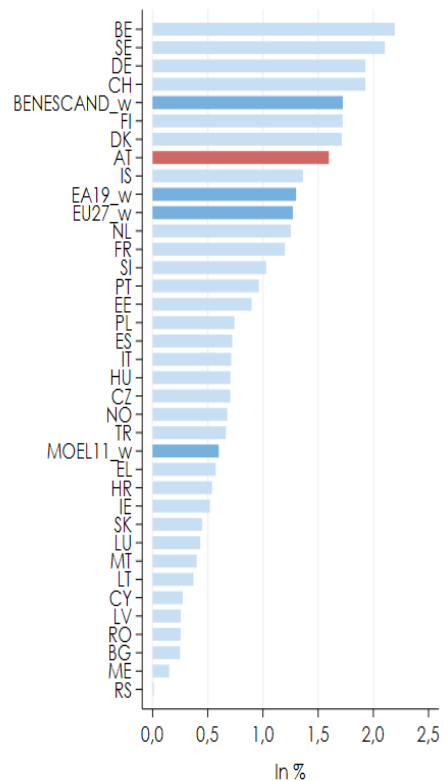
# R&D expenditures

in % of GDP, 2022

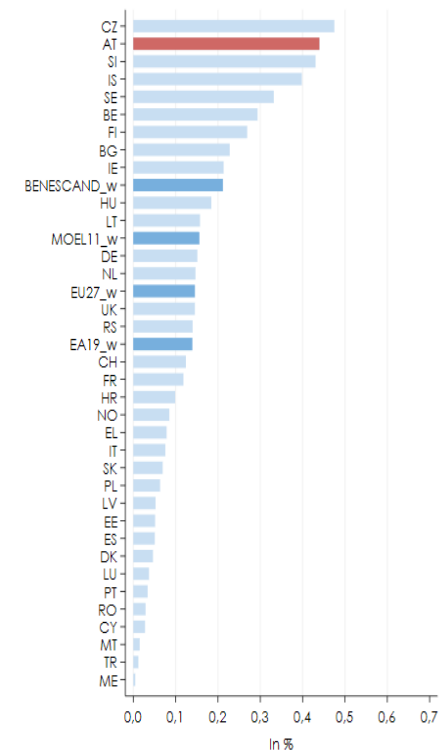
Total R&D expenditures



R&D expenditures by firms



Foreign financed (by firms)

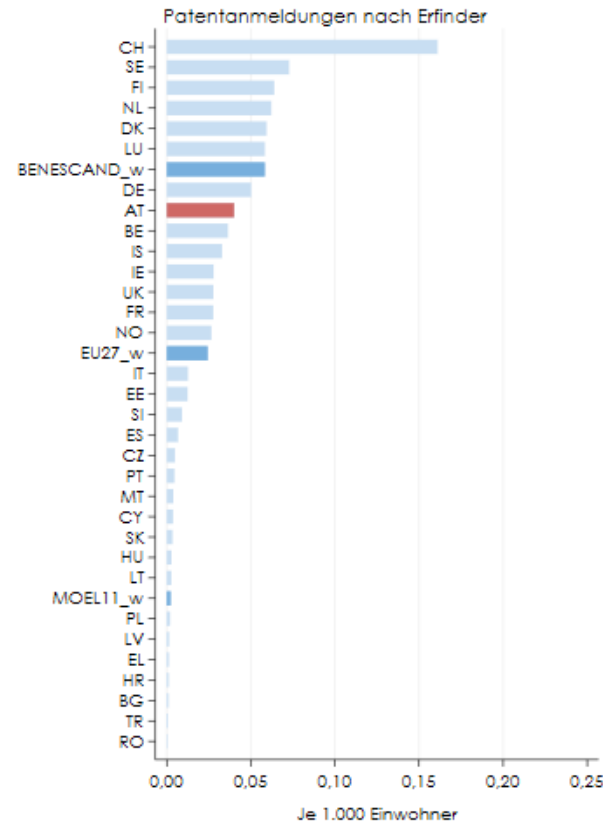
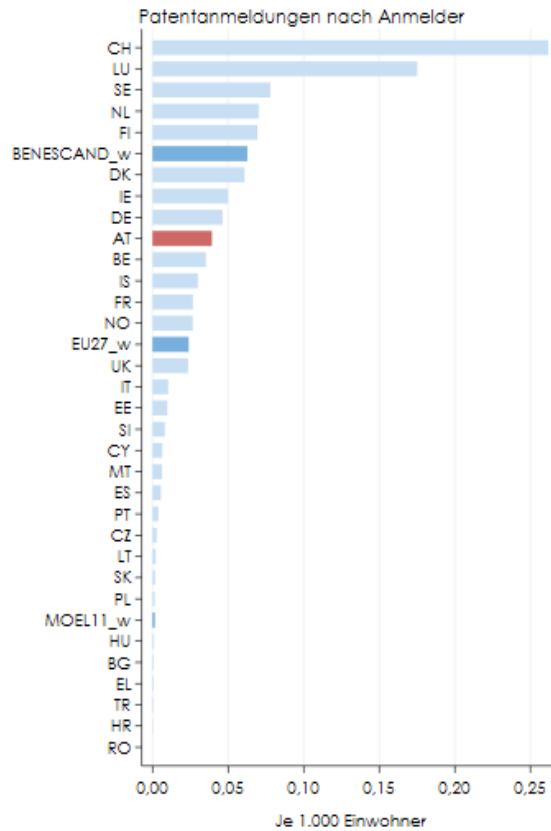


Source: EUROSTAT, WIFO.

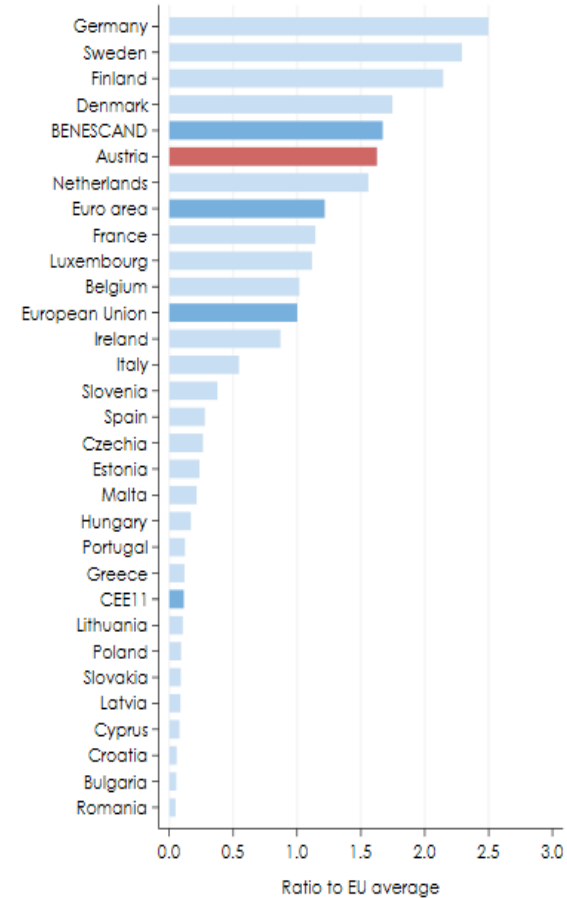
# Patents

per 1.000 inhabitants / relative to EU average

## Triadic patents, 2020



## Super patents, 2018

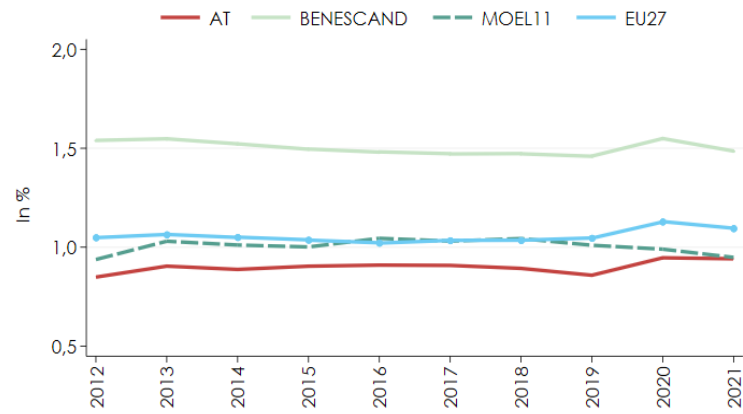


Source: Patstat, WIFO.

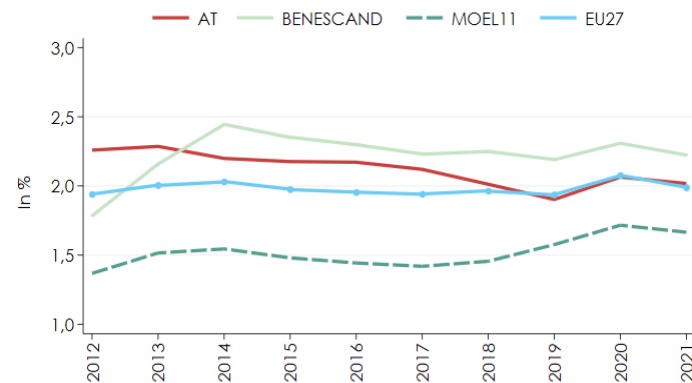
# Education

## Public expenditures

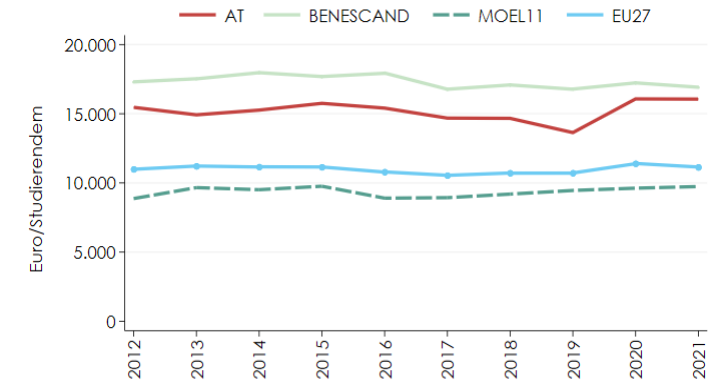
### Primary education



### Secondary education



### Higher education

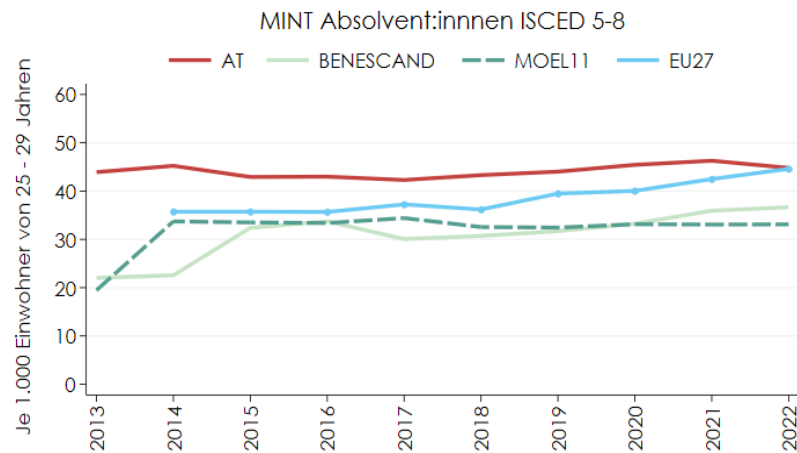


Source: OECD, WIFO.

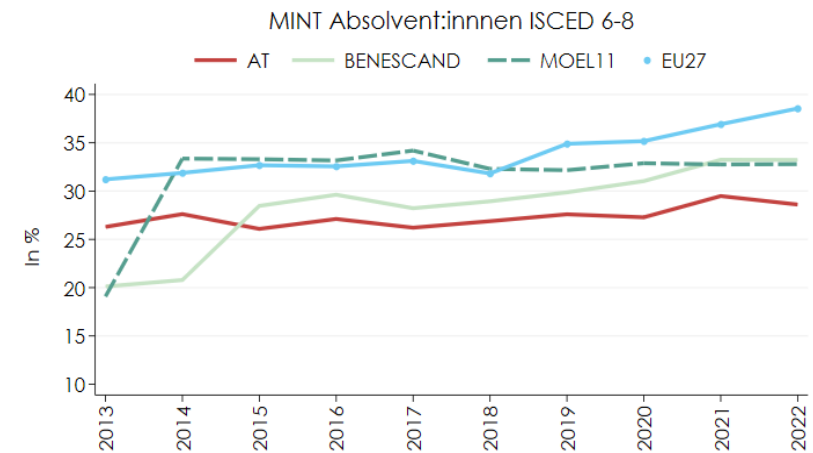
# MINT graduates

Share among 25-29 years old

## ISCED 5-8



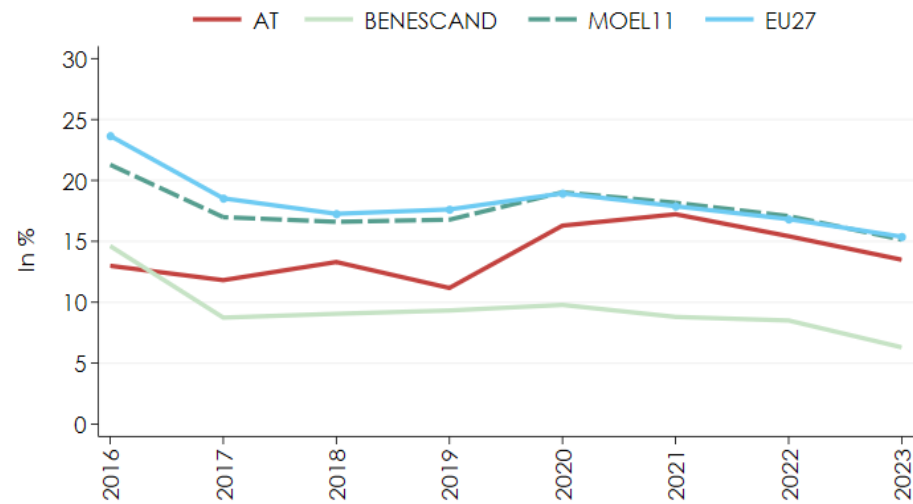
## ISCED 6-8



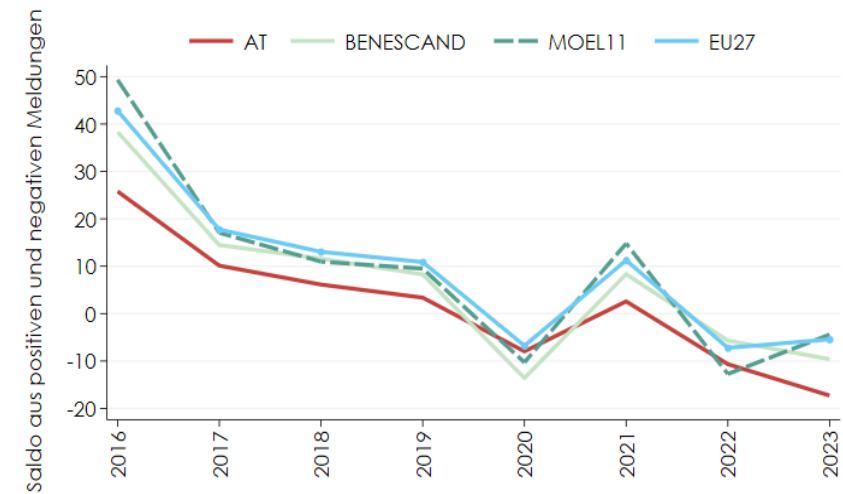
Source: OECD, WIFO.

# Financing constraints

## Major financing constraints



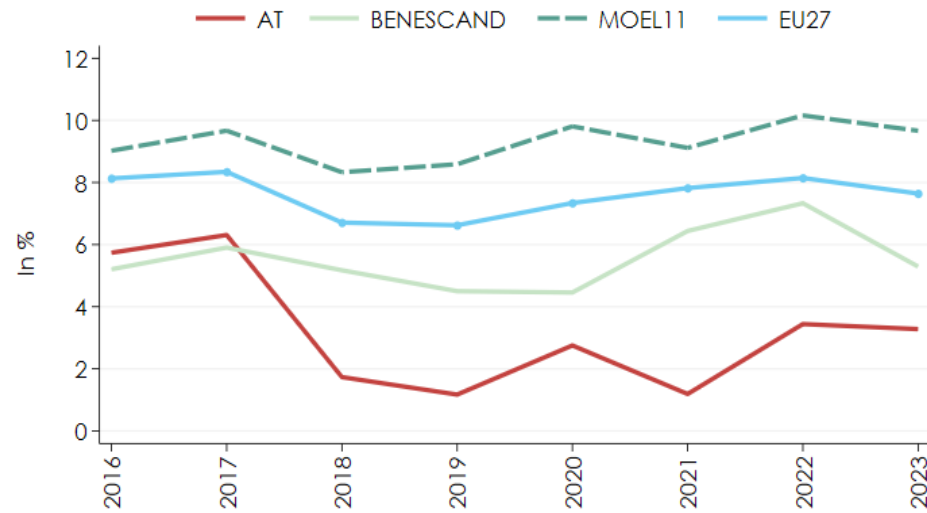
## Constraints in external finance



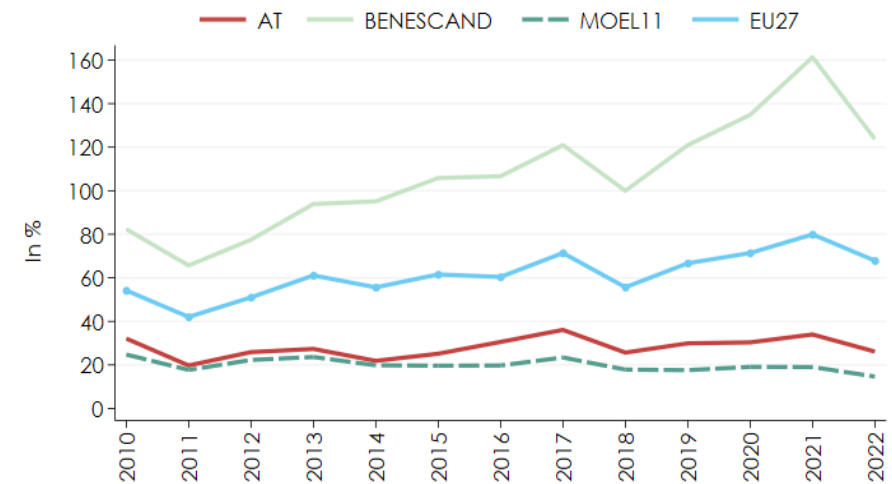
Source: EIBIS, WIFO.

# Credit constraints and market capitalisation

## Credit constrained firms



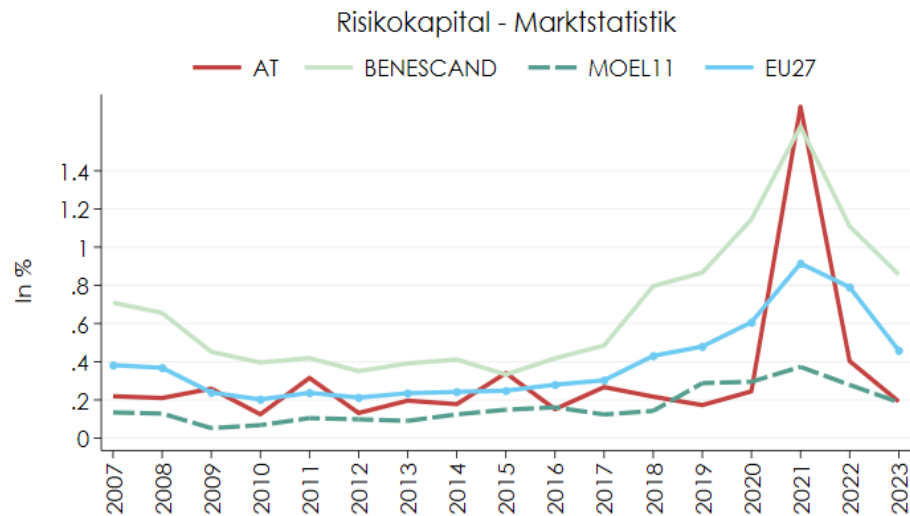
## Market capitalisation



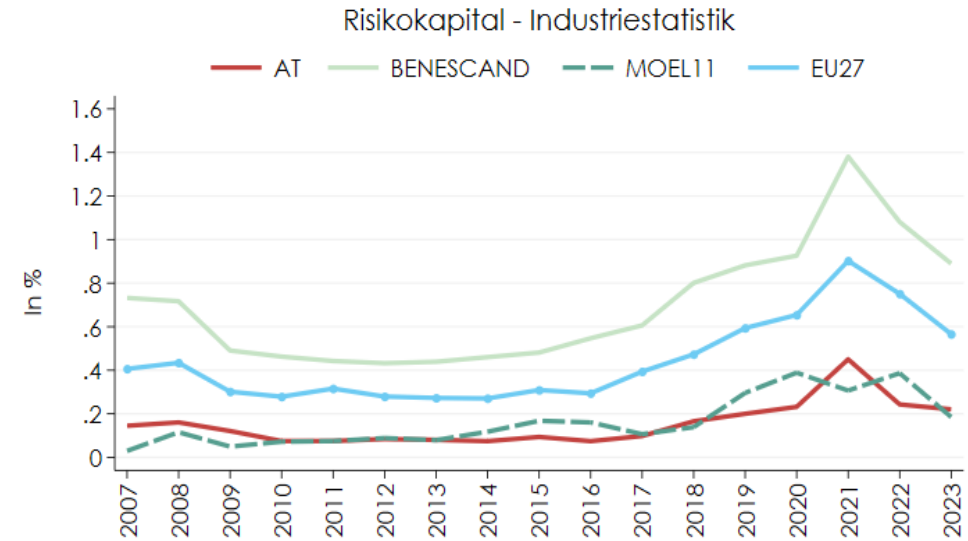
Source: EIBIS, WIFO.

# Venture capital

## Market statistics



## Industry statistics

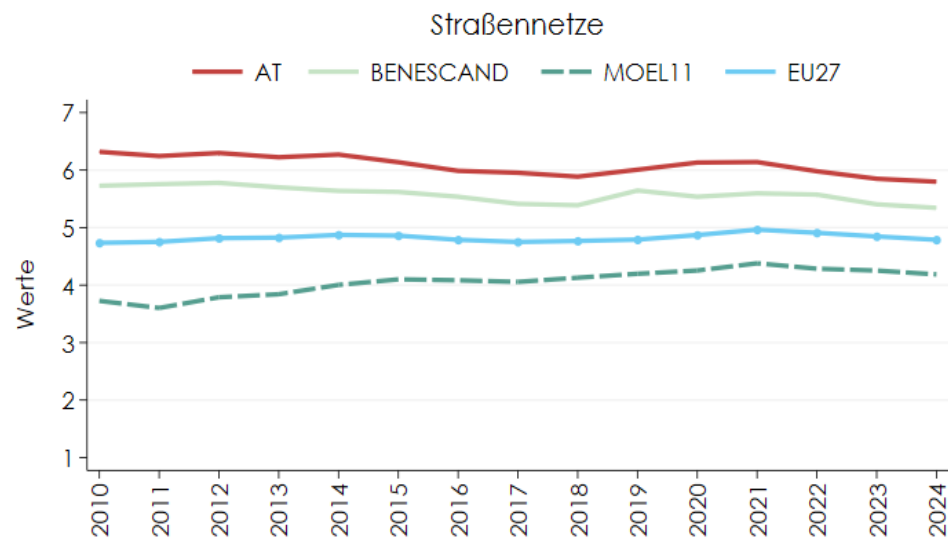


Source: Invest Europe, WIFO.

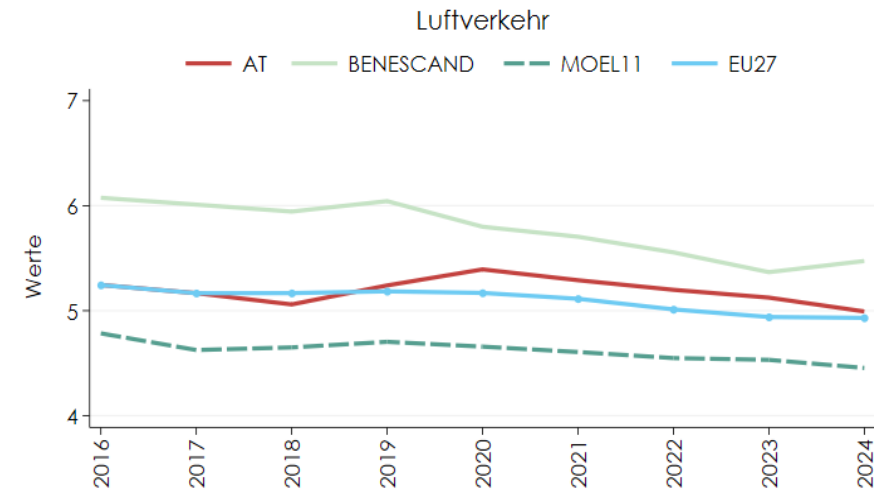
# Quality of public infrastructure

## Executive opinion survey (EOS)

### Road network



### Air connections

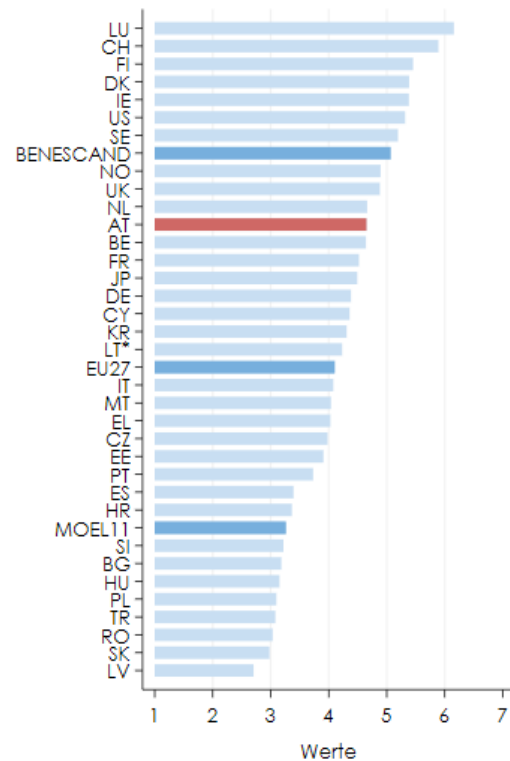


Source: WEF, WIFO.

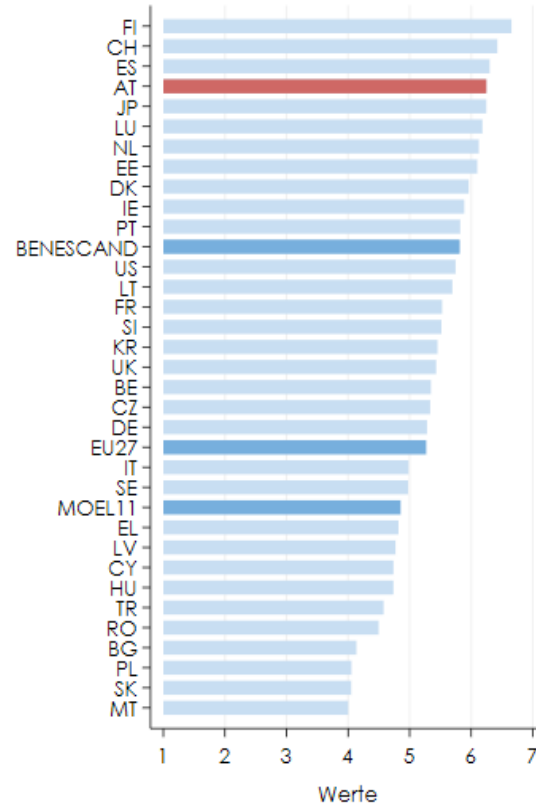
# Quality of public institutions

## Executive opinion survey (EOS 2024)

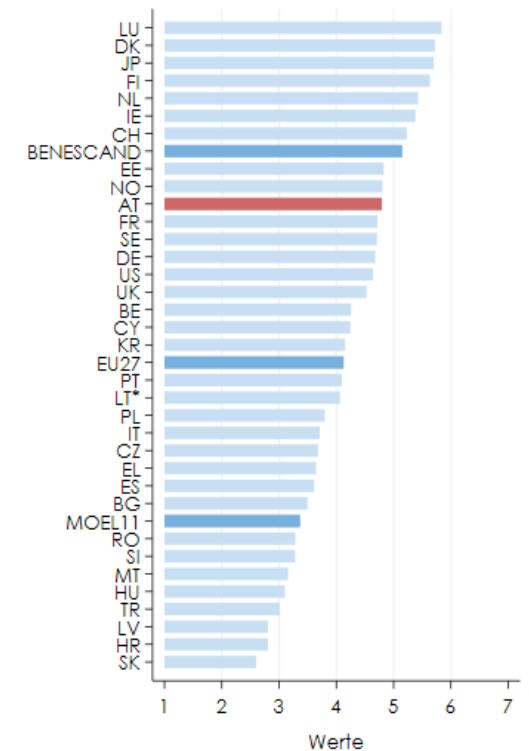
Stable framework conditions



Independent legal system



Corruption



Source: WEF, WIFO.

# Main findings (iii)

## ■ Competition

- Declining share of young companies (< 5 years)

## ■ Innovation

- High R&D rate but only intermediate patent performance

## ■ Education

- Low spending at the primary level

## ■ Corporate finance

- Below-average market capitalization and little venture capital

## ■ Infrastructure

- Generally positive; exception: fixed-line broadband

## ■ Public institutions

- Surveys traditionally show high scores on trust in public institutions, but recently Austria has fallen back into midfield in terms of corruption

# The WIFO radar

- [https://www.wifo.ac.at/en/research\\_priorities/competitiveness/competitiveness\\_radar](https://www.wifo.ac.at/en/research_priorities/competitiveness/competitiveness_radar)

# WIFO

 ÖSTERREICHISCHES INSTITUT FÜR  
WIRTSCHAFTSFORSCHUNG

**Michael Peneder**

michael.peneder@wifo.ac.at

<https://michael.peneder.wifo.ac.at/>  
@PenederMichael

