

# Globālās ekonomikas attīstības tendences un Latvijas iespējas

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UNIVERSITĀTE



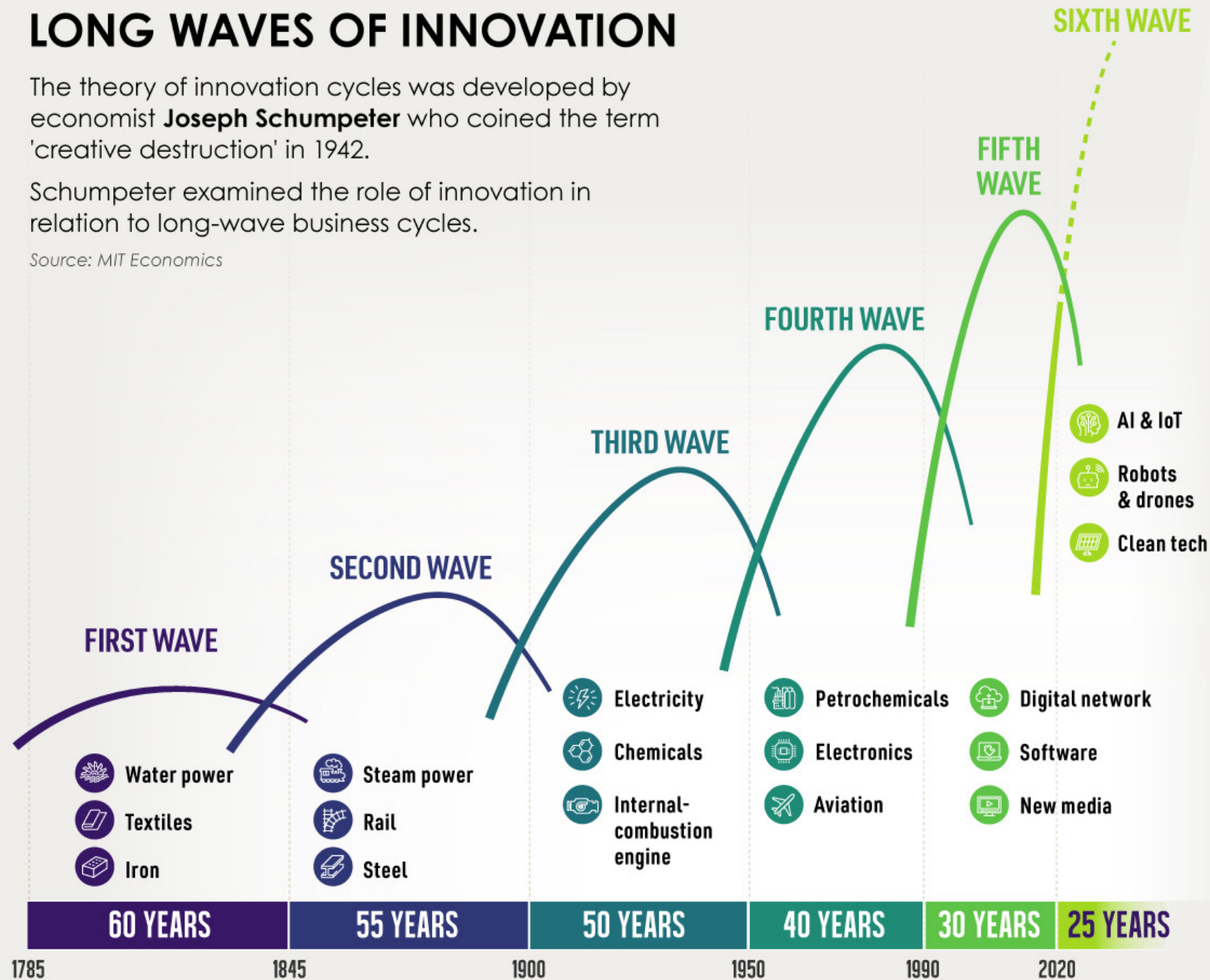


# LONG WAVES OF INNOVATION

The theory of innovation cycles was developed by economist **Joseph Schumpeter** who coined the term 'creative destruction' in 1942.

Schumpeter examined the role of innovation in relation to long-wave business cycles.

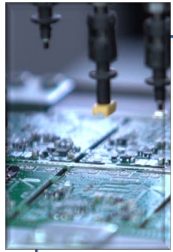
Source: MIT Economics



Source: Edelson Institute

Inovācijas -  
galvenais  
globālās  
ekonomikas  
attīstības  
virzītājspēks

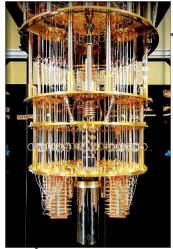
# Ekonomikas attīstības veicinātāji nākošajā dekādē...



Procesu automatizācija  
un virtualizācija



Nākotnes sakaru  
tehnoloģijas un Lietu  
internets



Kvantu skaitļošana



Mākslīgais intelekts



Paplašinātā realitāte



Blokķēde



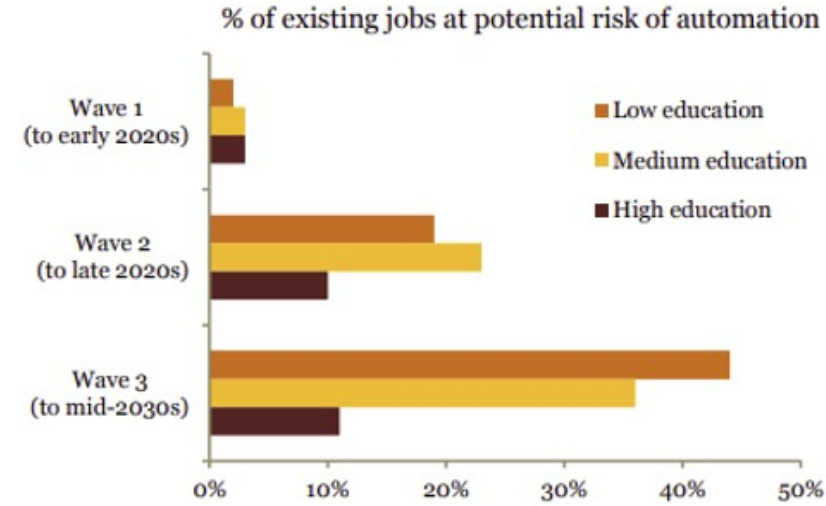
Gēnu tehnoloģijas

Avoti:

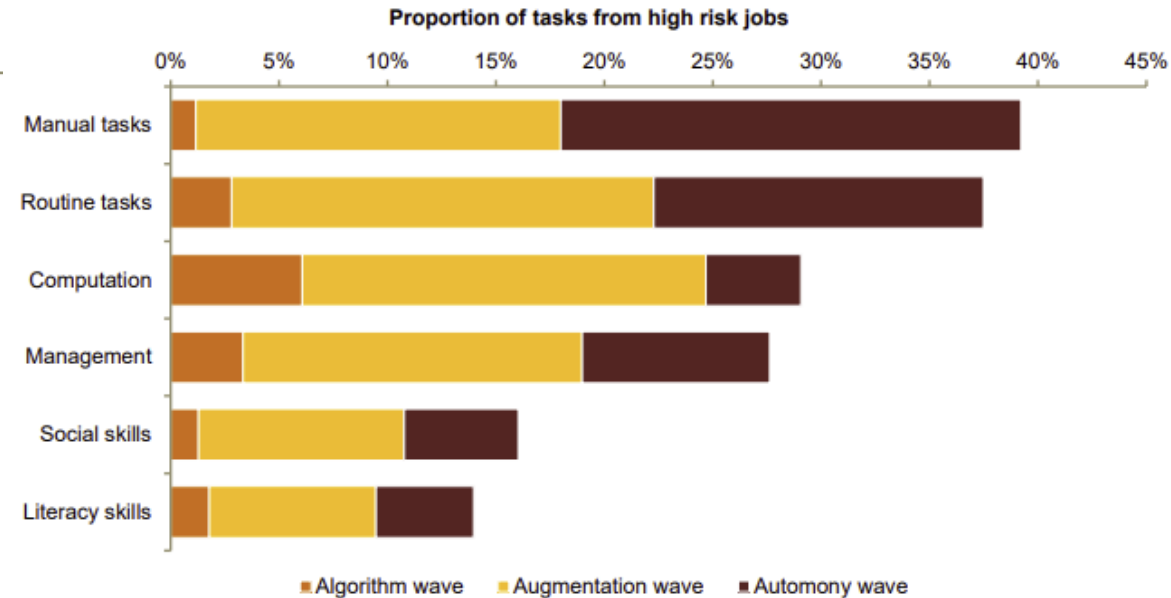
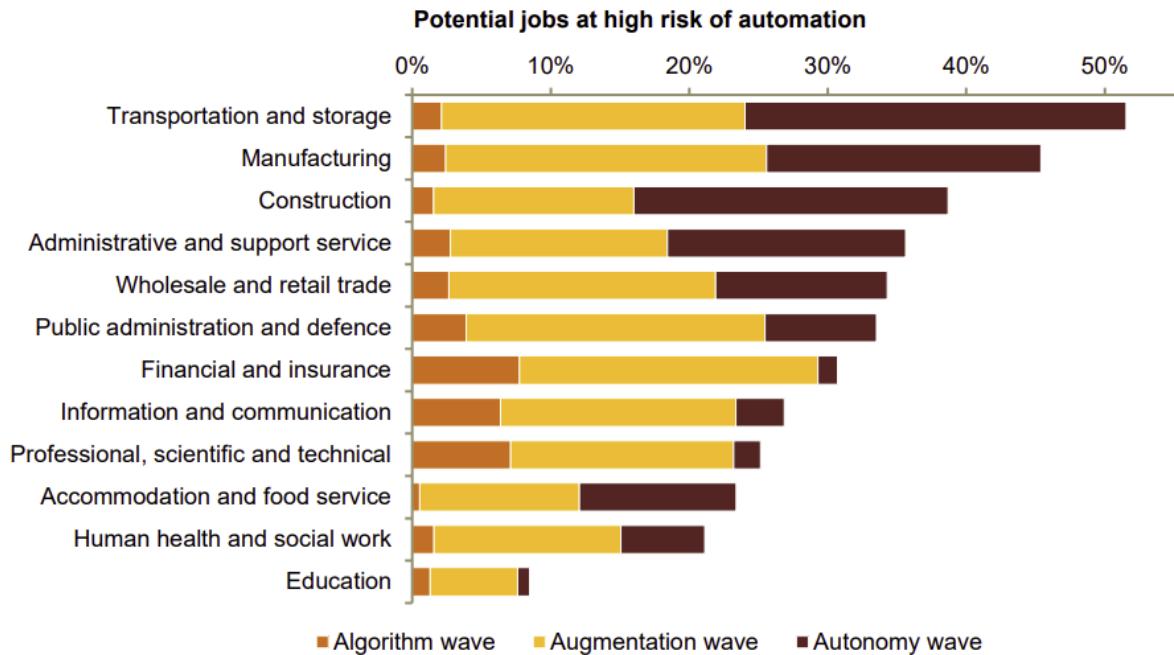
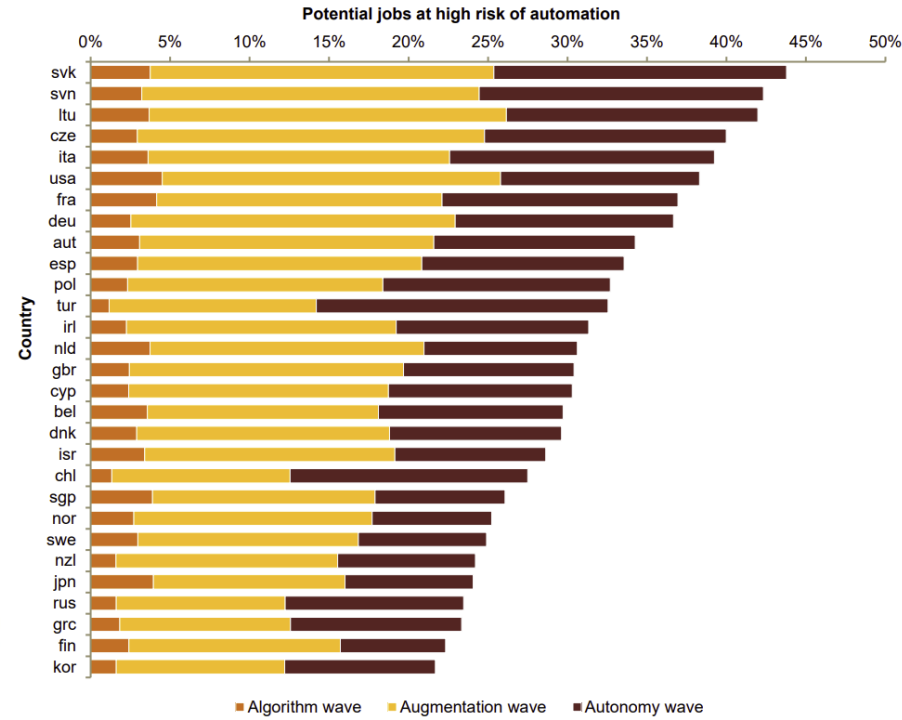
1. *World Economic Forum*
2. *Harvard Business Review*
3. *Forbes*
4. *McKinsey*

Waves	Description and impact
<b>Wave 1:</b> <b>Algorithmic wave (to early 2020s)</b>	Automation of simple computational tasks and analysis of structured data, affecting data-driven sectors such as financial services.
<b>Wave 2:</b> <b>Augmentation wave (to late 2020s)</b>	Dynamic interaction with technology for clerical support and decision making. Also includes robotic tasks in semi-controlled environments such as moving objects in warehouses.
<b>Wave 3:</b> <b>Autonomous wave (to mid-2030s)</b>	Automation of physical labour and manual dexterity, and problem solving in dynamic real-world situations that require responsive actions, such as in transport and construction.

**Figure 2 – Potential job automation rates by education level across waves**



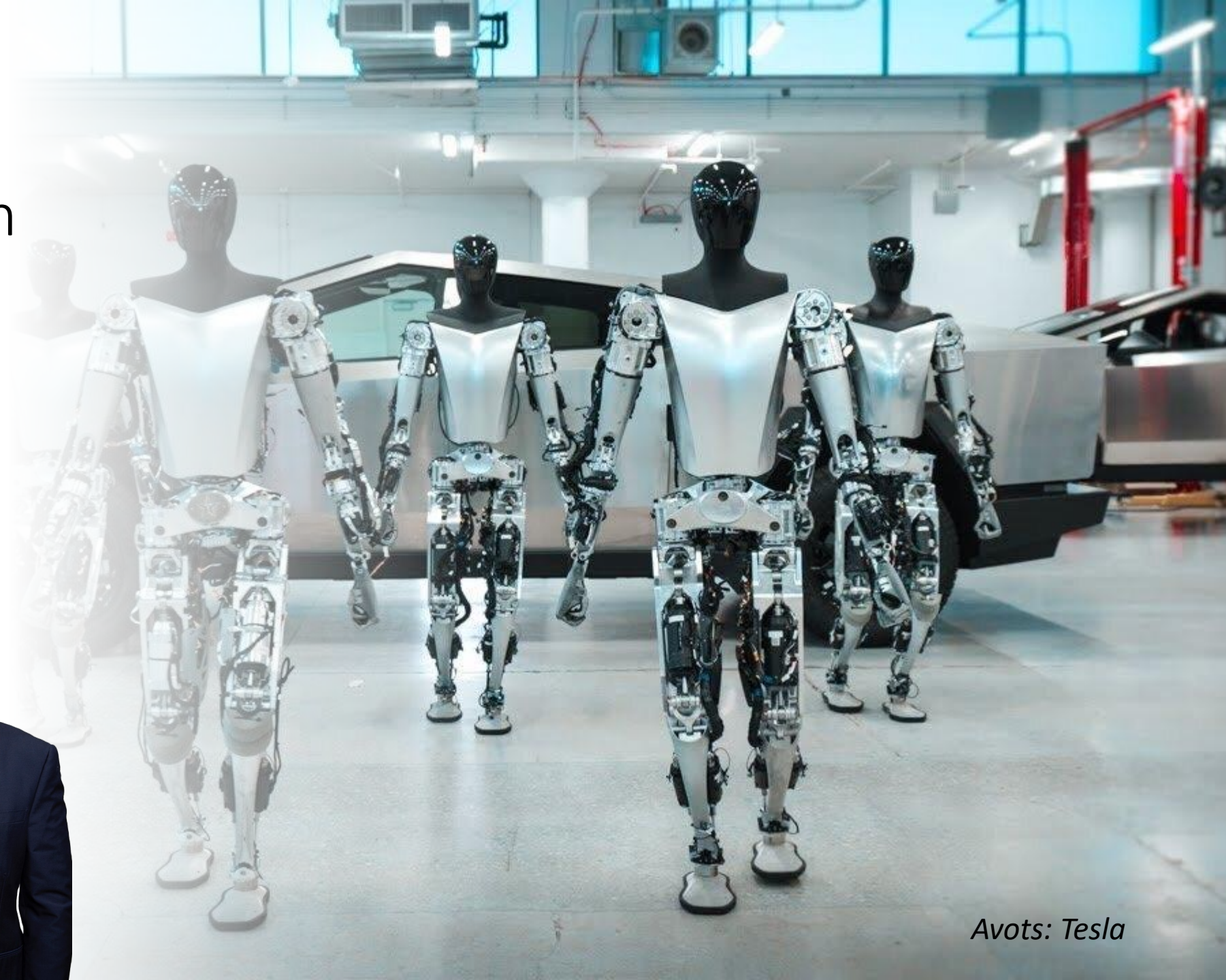
Source: PwC estimates based on OECD PIAAC data (median values for 29 countries)



# Procesu automatizācija un robotizācija

Tesla is set to begin building humanoid Artificial Intelligence (AI) powered robot assistants designed to "eliminate dangerous, repetitive and boring tasks."

"Essentially, the future of physical work will be a choice."



*Avots: Tesla*

# Nākotnes darbs...

Future of Jobs

## Reskilling needs

# 44%

of workers' core skills are expected to change in the next five years



Source: World Economic Forum, Future of Jobs Report 2023.



Future of Jobs

## Human-machine frontier

Proportion of tasks completed by humans vs machines



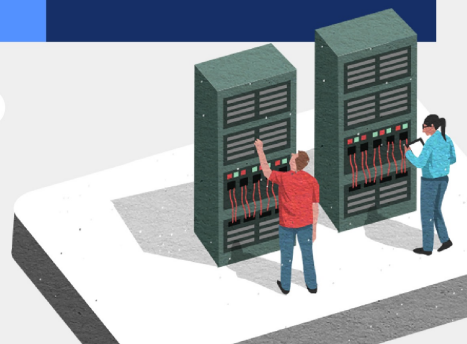
2022



2027



● Machine ● Human

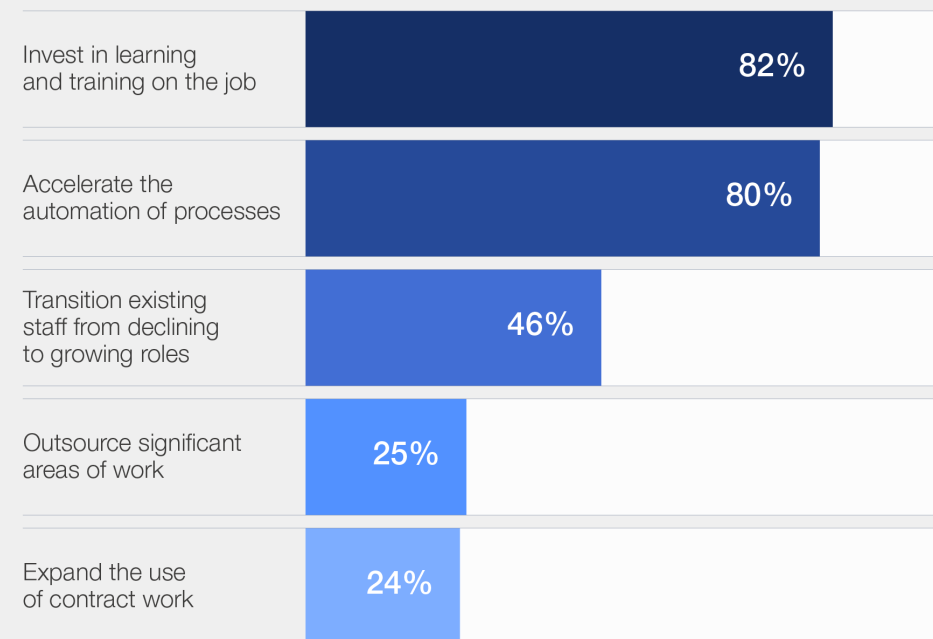


Source: World Economic Forum, Future of Jobs Report 2023.


Future of Jobs

## Workforce strategies, 2023-2027

Share of organizations surveyed planning to adopt these workforce strategies

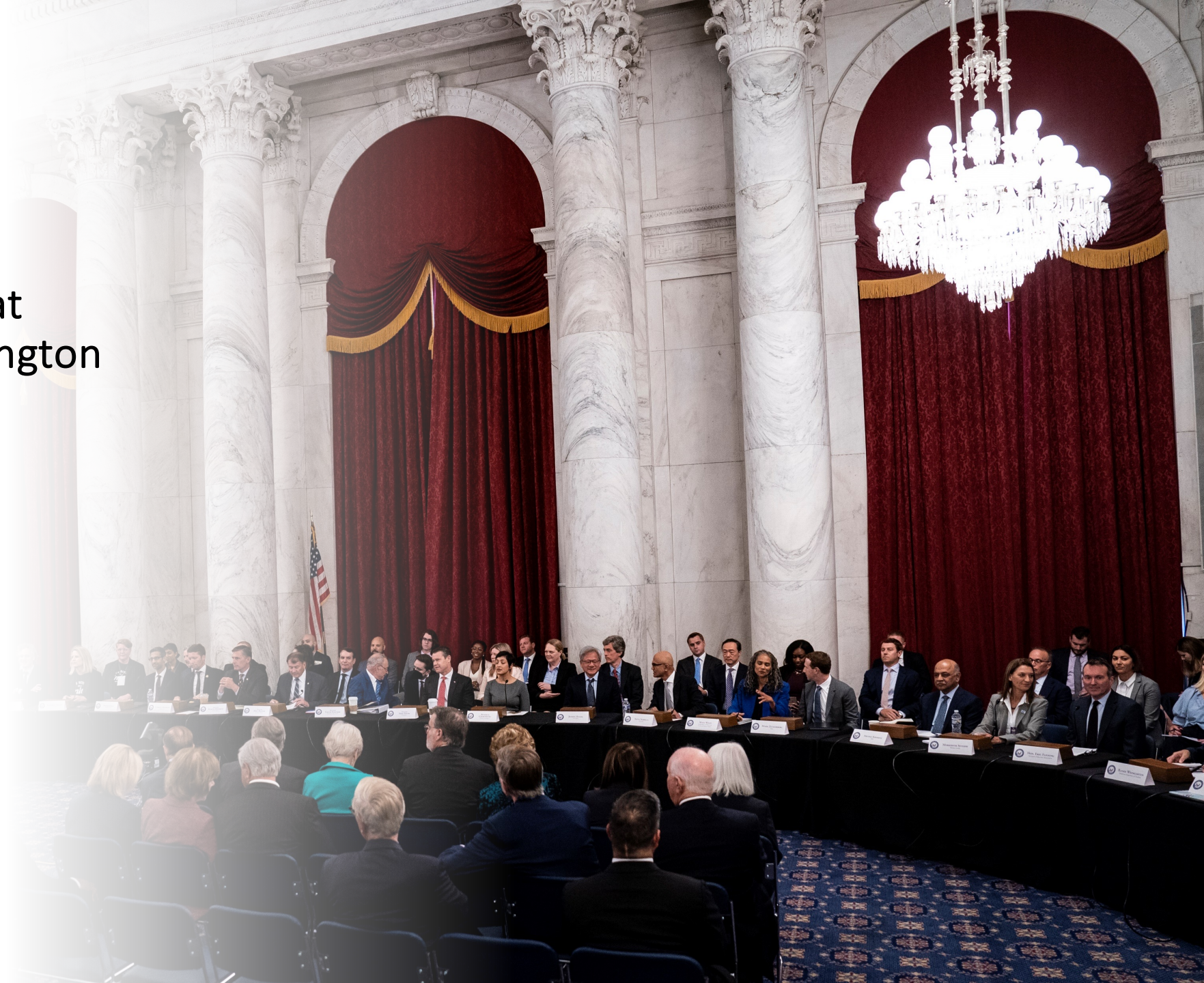


Source: World Economic Forum, Future of Jobs Report 2023.



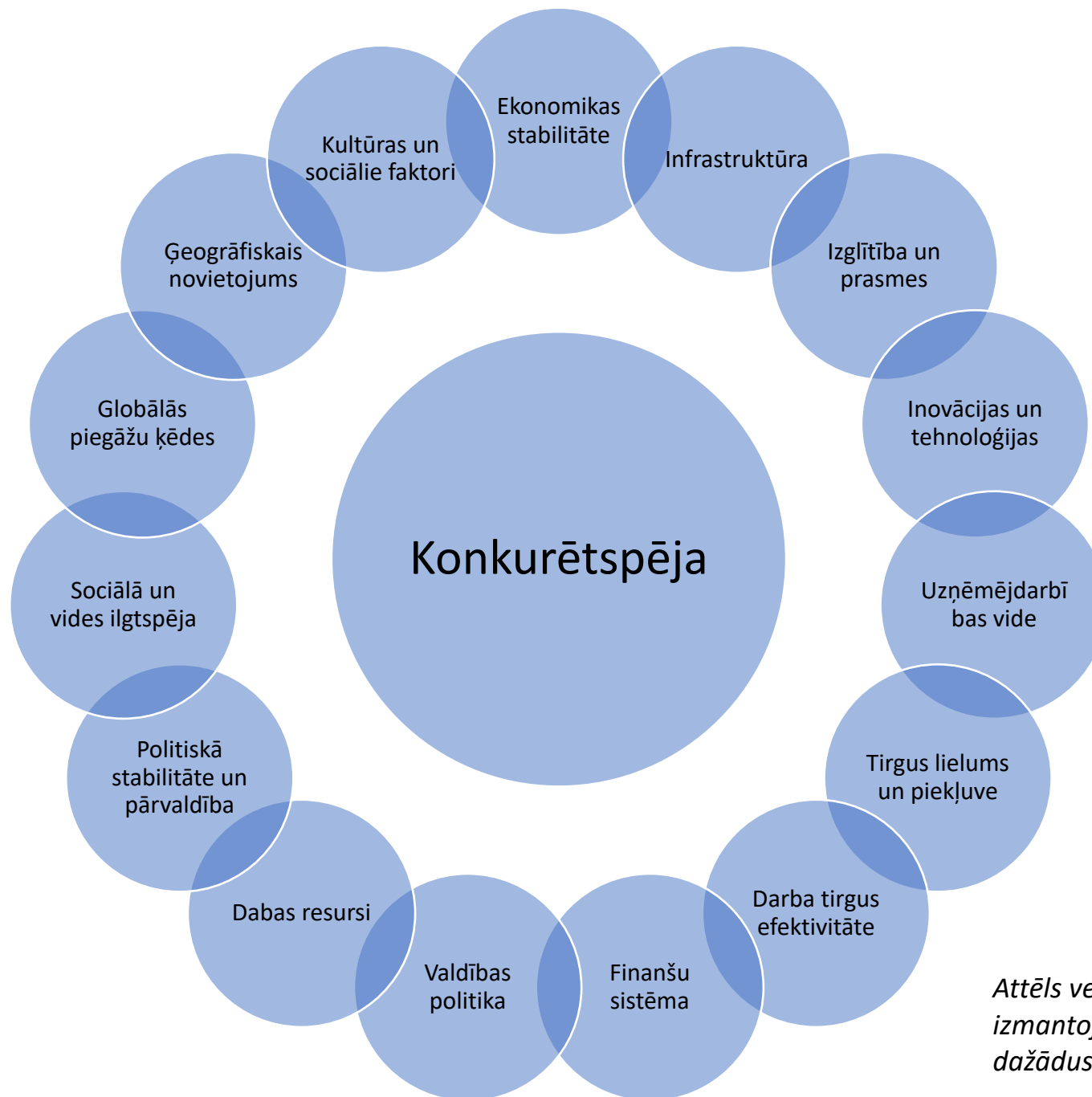
Tech industry leaders  
endorse regulating  
artificial intelligence at  
rare summit in Washington

September 2023

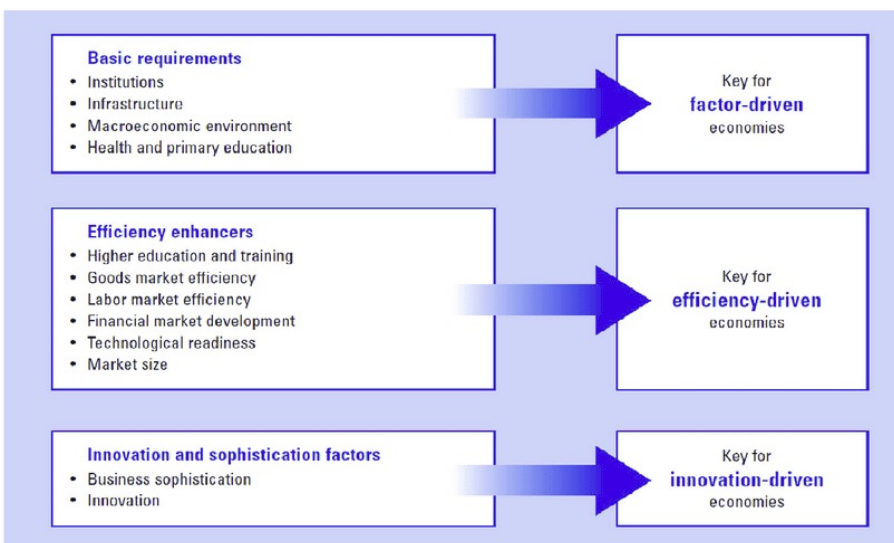




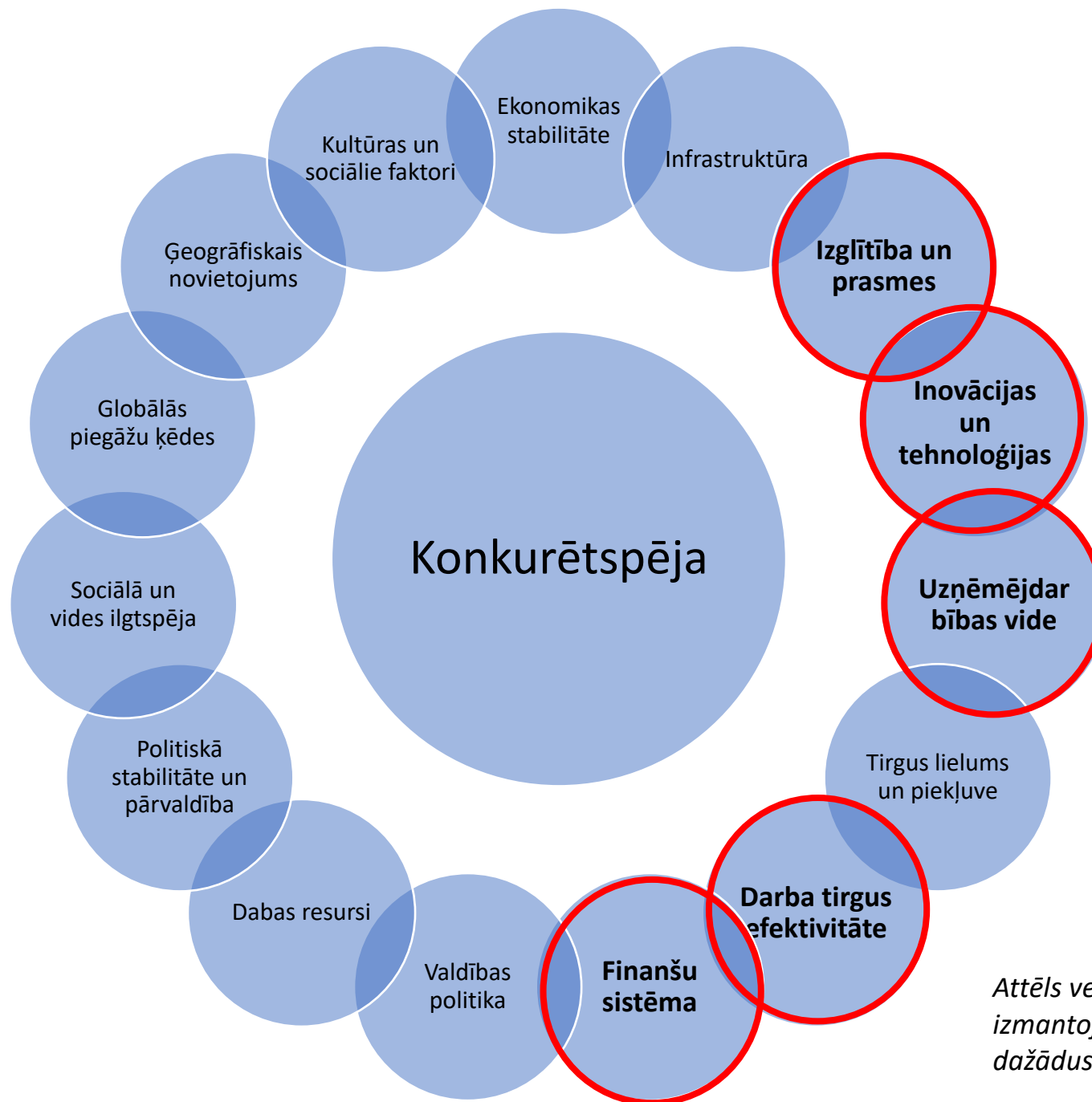
# Kas nosaka ekonomikas konkurētspēju?



Attēls veidots, izmantojot dažādus avotus

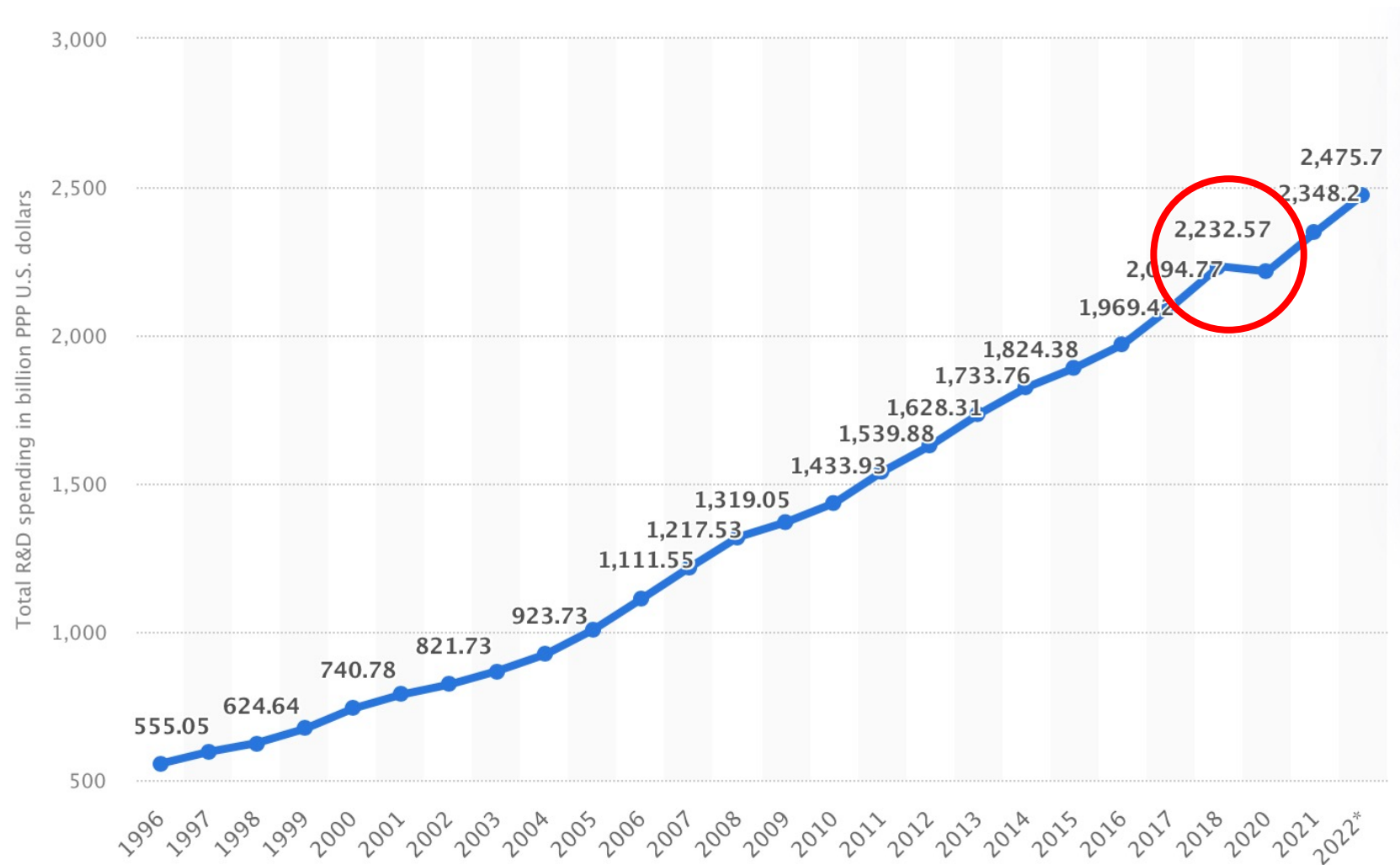


Kas nosaka ekonomikas konkurētspēju un kādas ir Latvijas iespējas?



*Attēls veidots,  
izmantojot  
dažādus avotus*

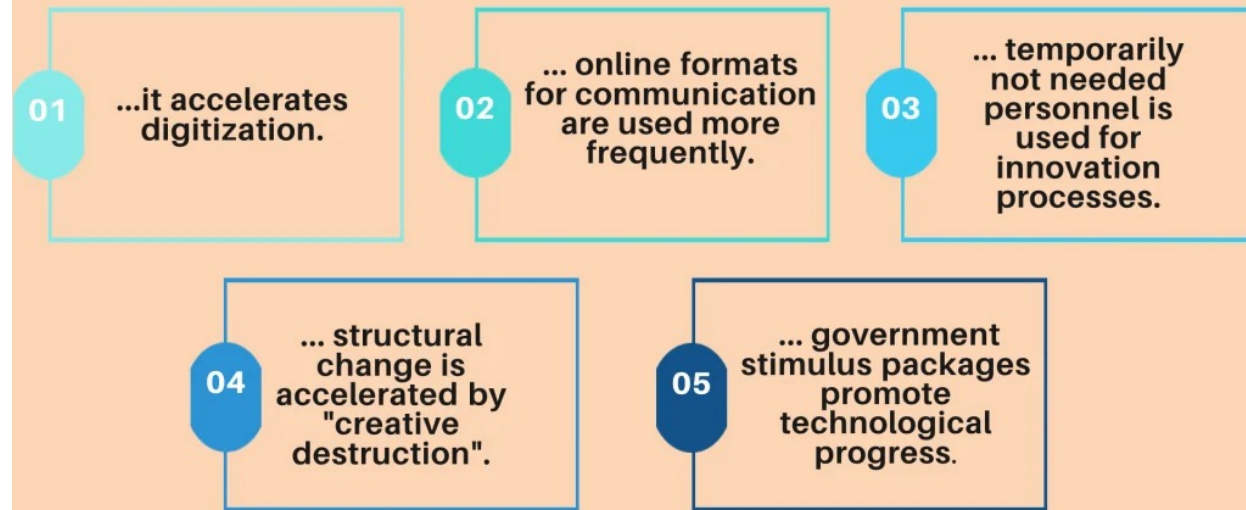
# Kopējie izdevumi pētniecībai un attīstībai pasaulē (R&D) 1996. līdz 2022.gads



Avots: Statista

# COVID šoks

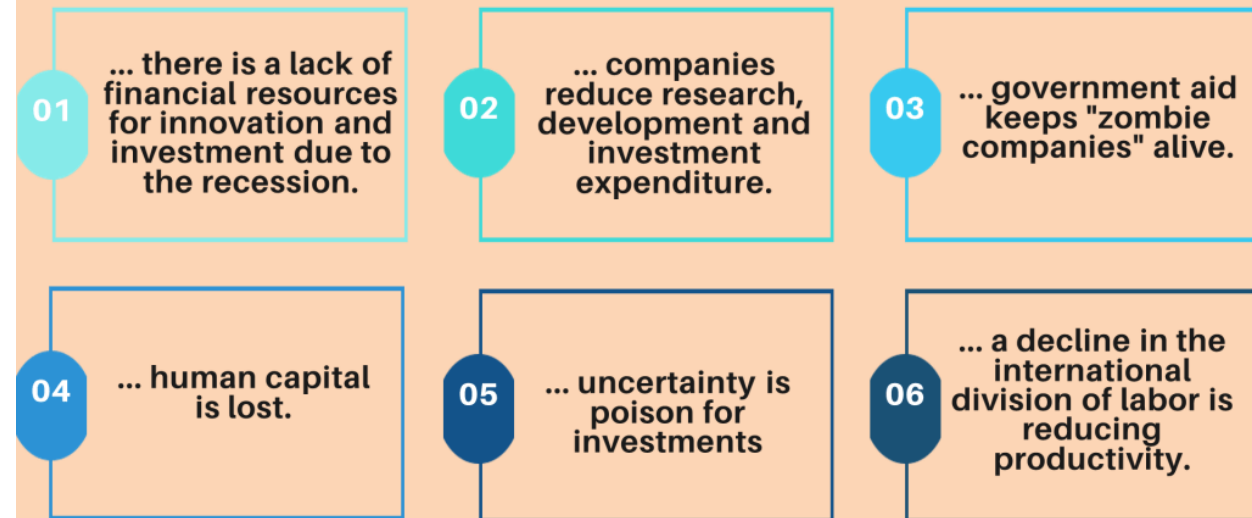
Fig. 1: Corona pandemic is a productivity boost because...



Source: Own representation

| BertelsmannStiftung

Fig. 2: Corona pandemic is a brake on productivity because...

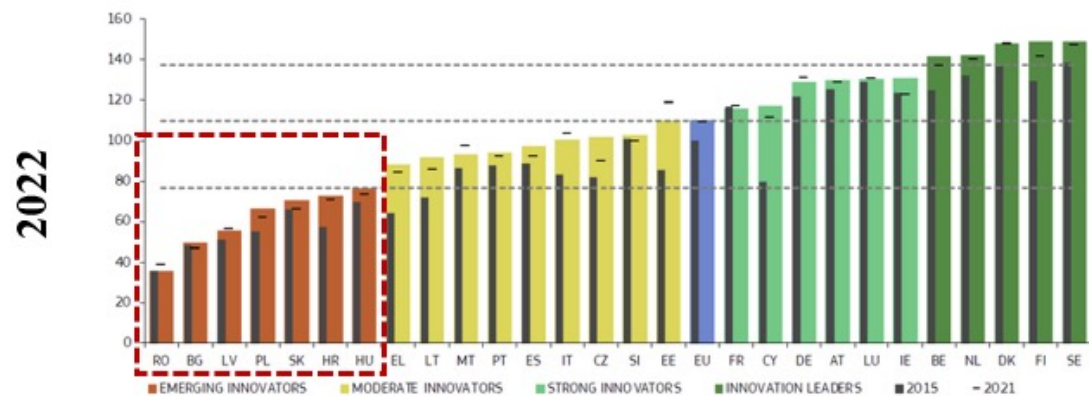
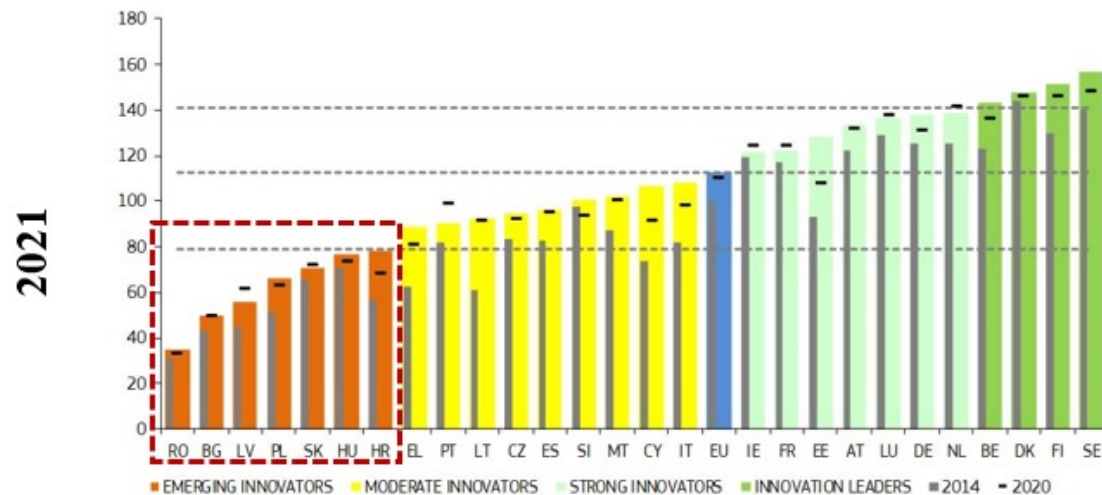
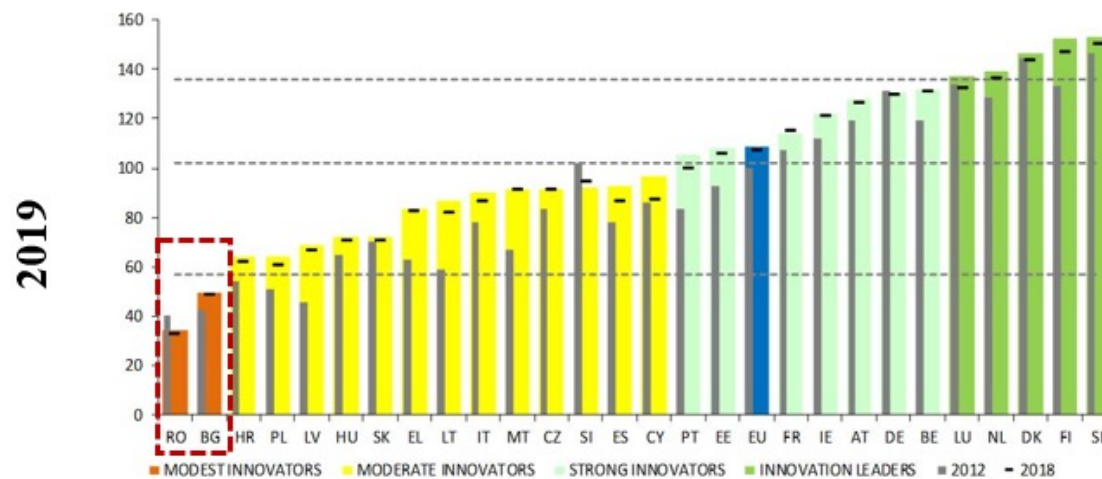


Source: Own representation

| BertelsmannStiftung

Avots: 2020 Thieß Petersen «Corona pandemic – thrust or brake for productivity?»

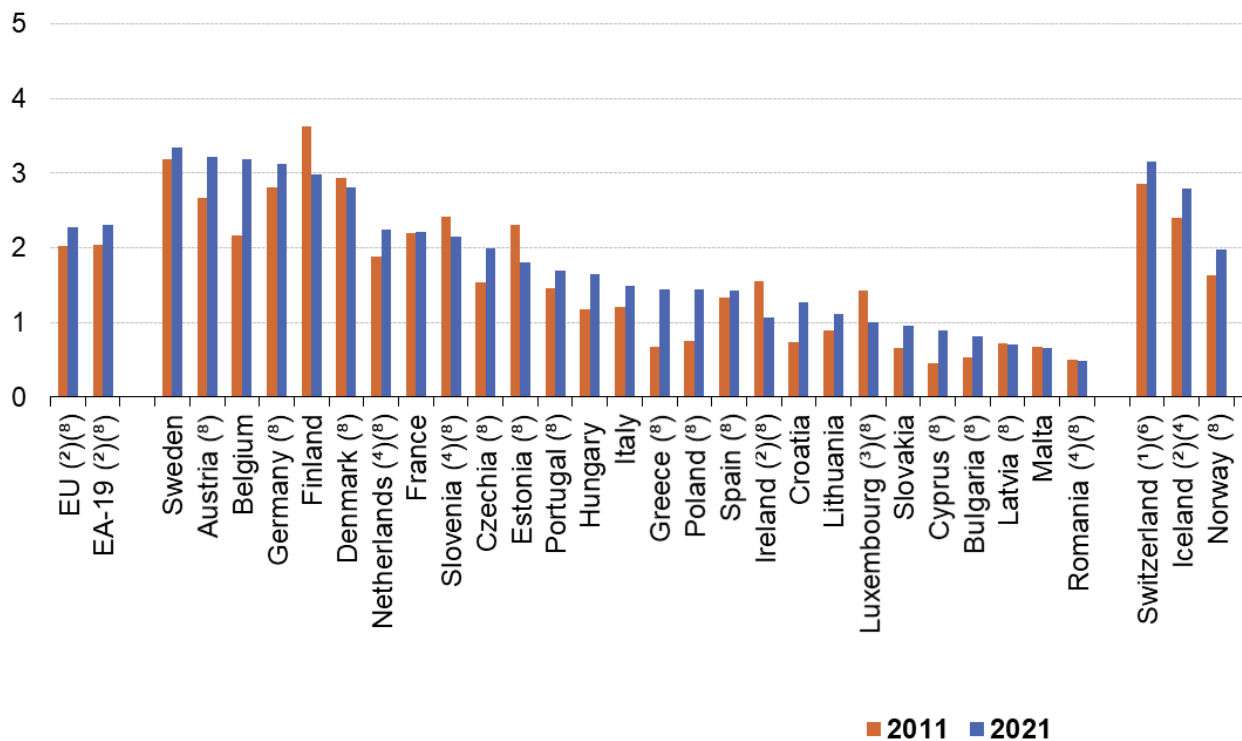
# Inovāciju sniegums ES valstīs 2019., 2021. un 2022. gadā



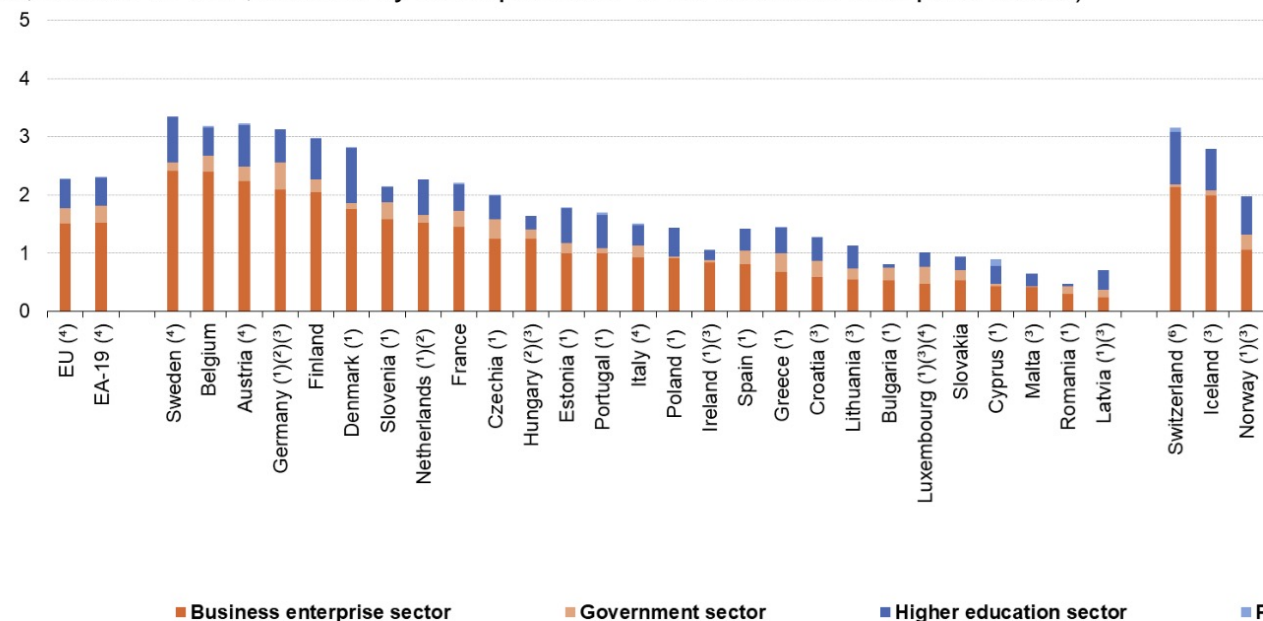
Avots:  
Innovation  
scoreboard,  
Eiropas Komisija

# Pētniecība un attīstība

**Gross domestic expenditure on R&D, 2011 and 2021**  
(%, relative to GDP)



**Gross domestic expenditure on R&D by sector, 2021**  
(%, relative to GDP, ordered by the expenditure in the business enterprise sector)

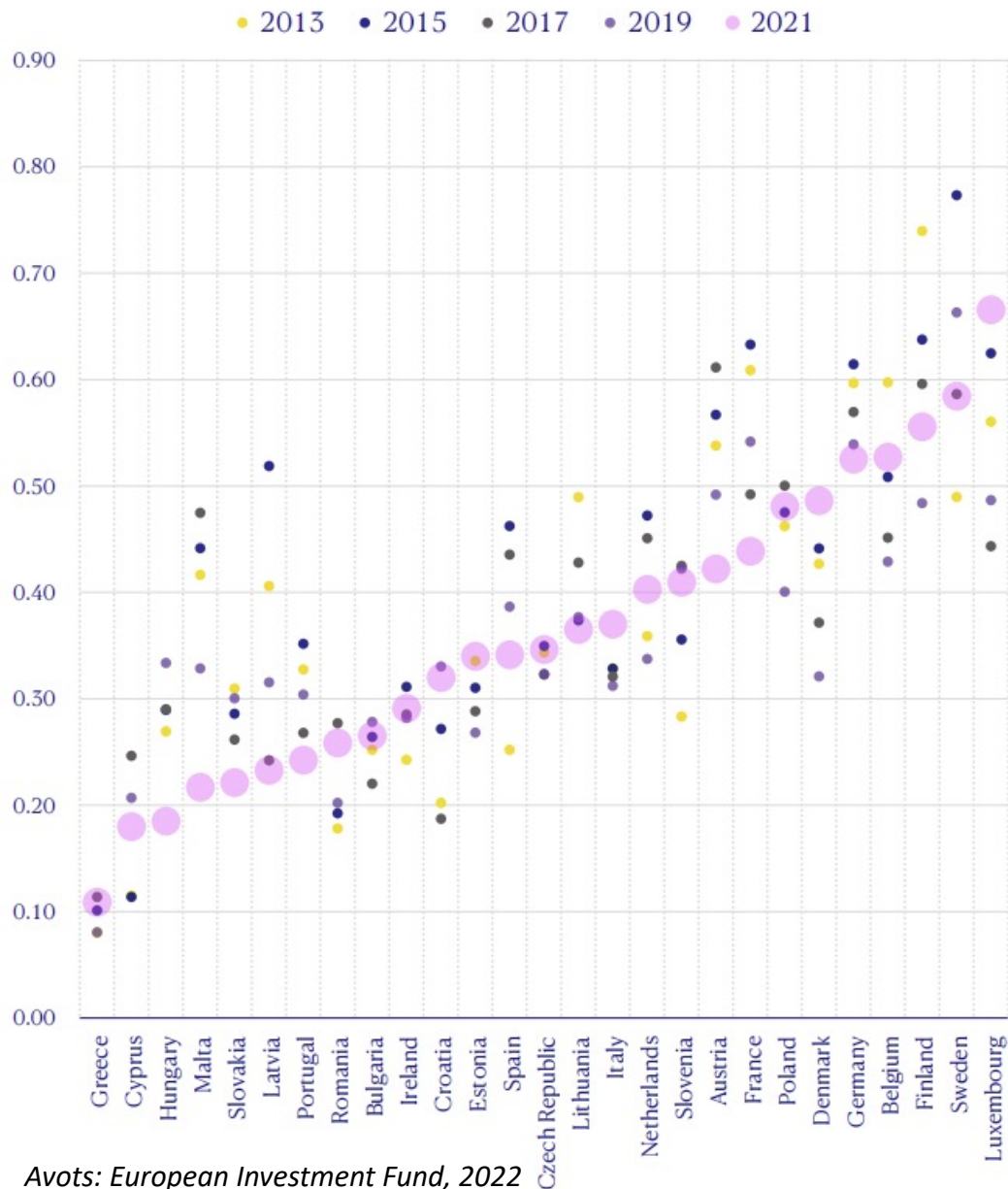




# Galvenie faktori uzņēmējdarbībai ES

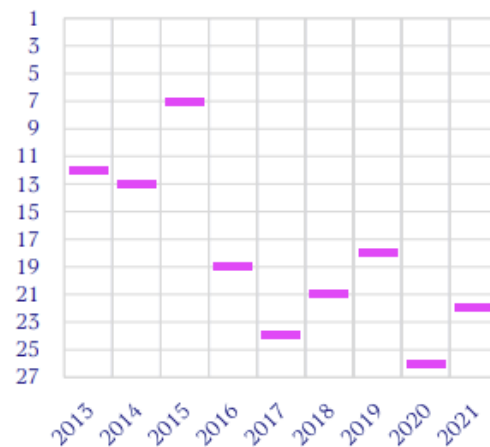
- **Liels tirgus:** ES ir pasaulē lielākais vienotais tirgus ar vairāk nekā 500 miljoniem patērētāju. Tas dod uzņēmumiem iespēju paplašināt savu klientu bāzi un sasniegt jaunus tirgus.
- **Ekonomiskā stabilitāte:** ES ir viens no visstabilākajiem ekonomiskajiem reģioniem pasaulē. Tas padara to par pievilcīgu vietu uzņēmumiem investīcijām un izaugsmei.
- **Piekļuve finansējumam:** ES nodrošina piekļuvi vairākiem finanšu instrumentiem, piemēram, aizdevumiem un riska kapitālam, kas var palīdzēt uzņēmumiem uzsākt darbību un augt.
- **Kvalificēts darbaspēks:** ES ir liels kvalificētu darbinieku skaits, kas padara to par pievilcīgu galamērķi uzņēmumiem, kuri vēlas paplašināt savu darbaspēku.
- **Labvēlīgs nodokļu režīms:** ES uzņēmumiem piedāvā vairākus nodokļu atvieglojumus, tostarp zemākas uzņēmumu ienākuma nodokļa likmes.
- **Administratīvās barjeras**

# MVU piekļuve finansējumam



Latvia ( $\Delta$ -ranking: +4)

## ESAF Ranking



## Subindex Ranking



### Loans

	2020	2021	$\Delta$ %
Interest rate for loans under EUR 250K (floating rate with IRF up to 1 year)	5.9%	5.8%	-0.1%
Interest rate spread (under EUR 250K vs over EUR 1m for floating rate with IRF up to 1 year)	0.6%	0.5%	-0.1%
Percentage of SMEs not applying for a bank loan because of possible rejection in the last 6 months	12.9%	9.4%	-3.6%
Percentage of SMEs using bank loans in the last 6 months	15.3%	12.9%	-0.4%
Percentage of SMEs using grants or subsidised bank loans in the last 6 months	4.6%	10.7%	+6.1%

### Equity

Percentage of SMEs using equity capital in the last 6 months	15.6%	9.0%	-6.6%
Value of IPO market / GDP	0.0%	0.0%	+0.0%
Venture Capital Investments / GDP	0.0%	0.1%	+0.1%

### Credit & Leasing

Median interest rate charged to SMEs for credit line or bank overdraft application in the last 6 months	3.0%	3.6%	+0.6%
Percentage of SMEs not applying for a bank overdraft, credit line, or credit card overdraft because of possible rejection	8.5%	6.7%	-1.8%
Percentage of SMEs using bank overdraft, credit line, or credit card overdraft in the last 6 months	19.0%	19.3%	+0.3%
Percentage of firms using leasing or hire-purchase in the last 6 months	30.4%	19.8%	-10.6%

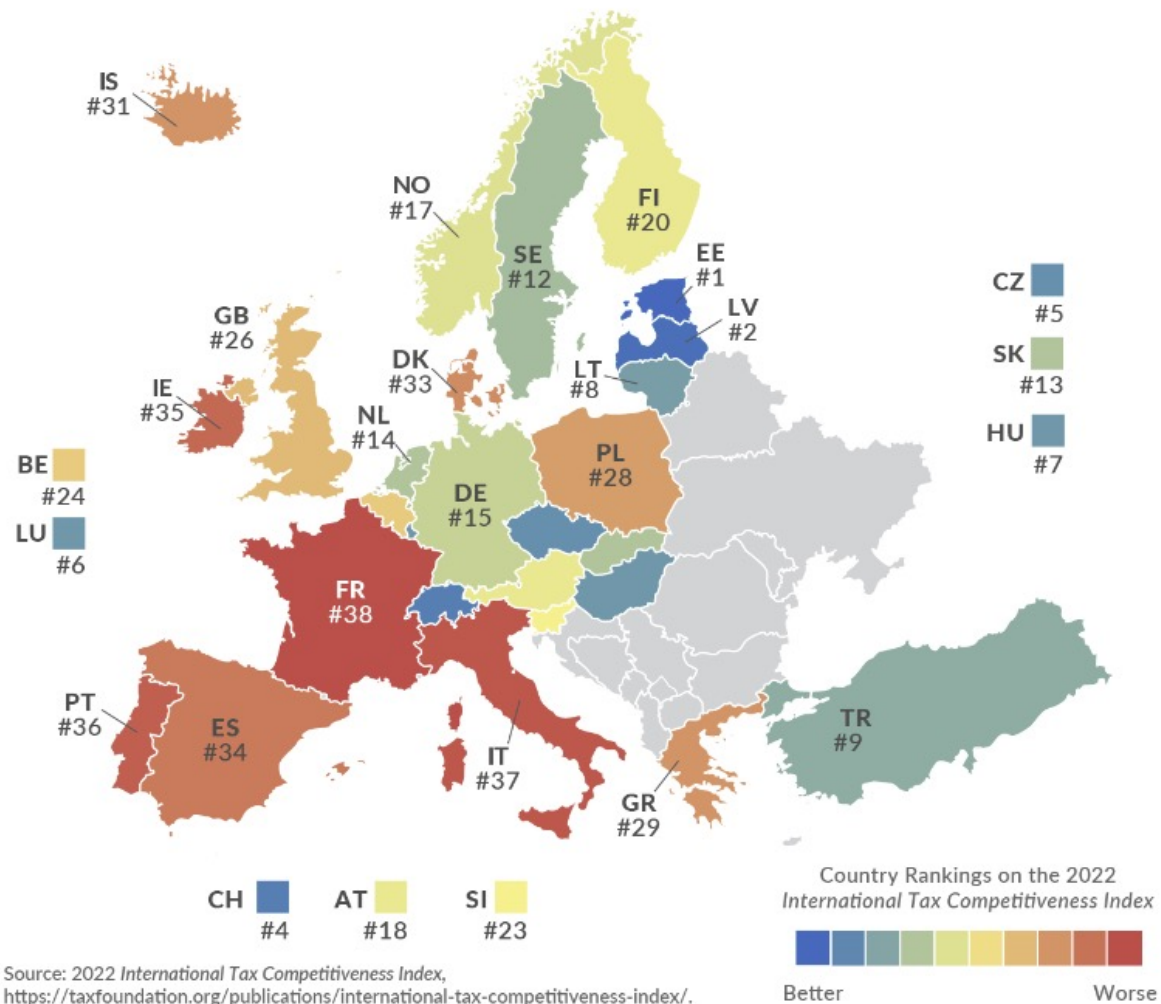
### Macro Factors

Bank non-performing loans to total gross loans	5.0%	2.5%	-2.5%
Gap between actual and potential GDP	-5.3%	-0.7%	+4.6%
Percentage of SMEs feeling that there are no financing obstacles	19.9%	15.8%	-4.1%



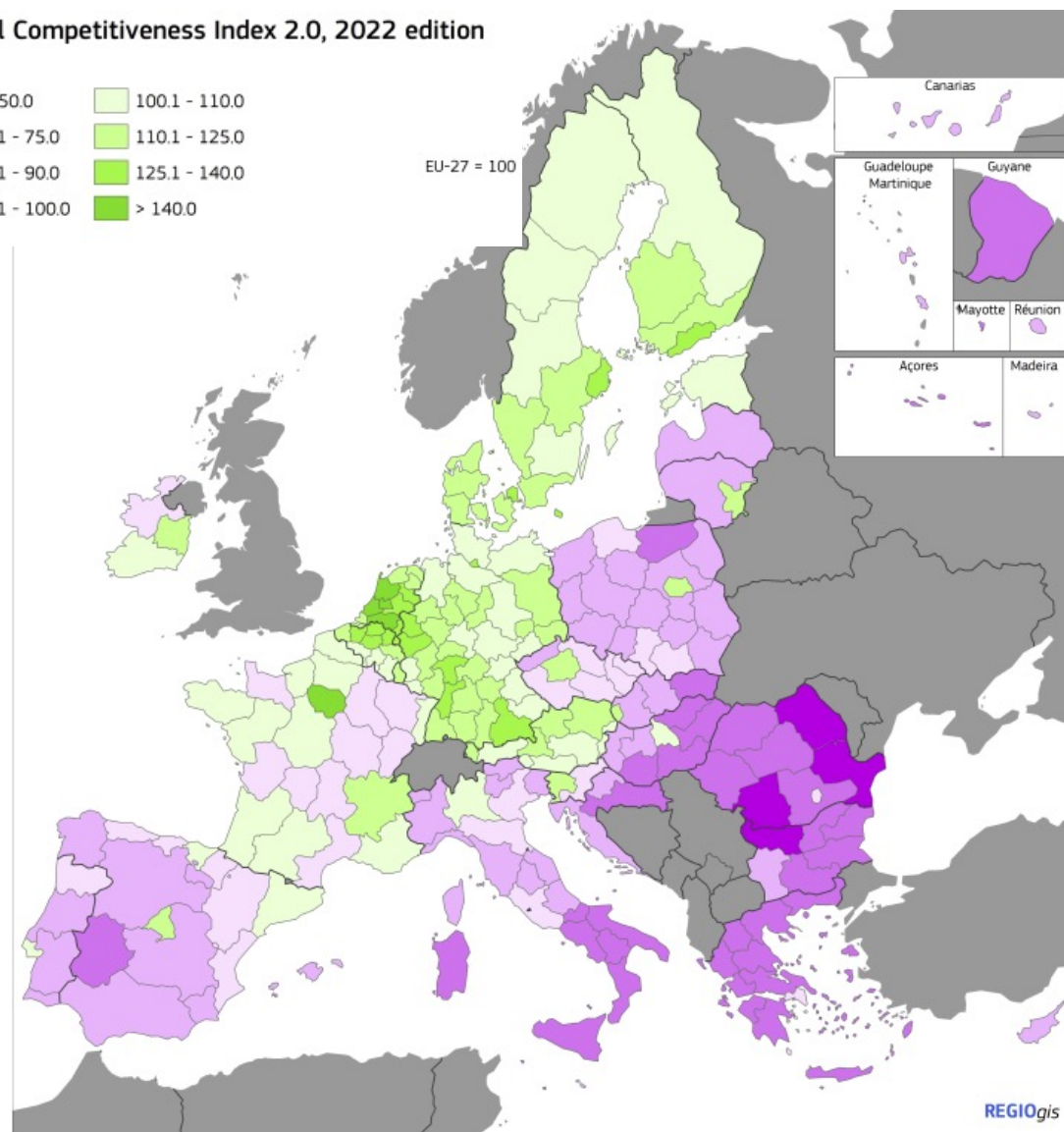
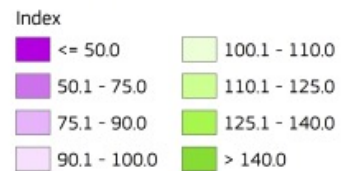
# Nodokļi un konkurētspēja...

European OECD Country Rankings on the 2022 International Tax Competitiveness Index



Avots: Tax foundation

Regional Competitiveness Index 2.0, 2022 edition



Avots: EU Regional Competitiveness Index, EC

Paldies par  
uzmanību!



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