

6th CEE Automotive Forum
November 21, 2019

Hungarian Automotive Industry

Unique facilities – growing R&D&I



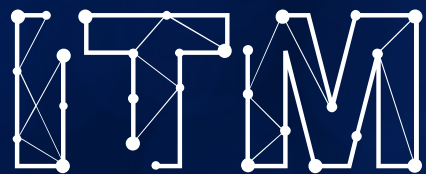
MINISTRY FOR
INNOVATION AND TECHNOLOGY

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minister



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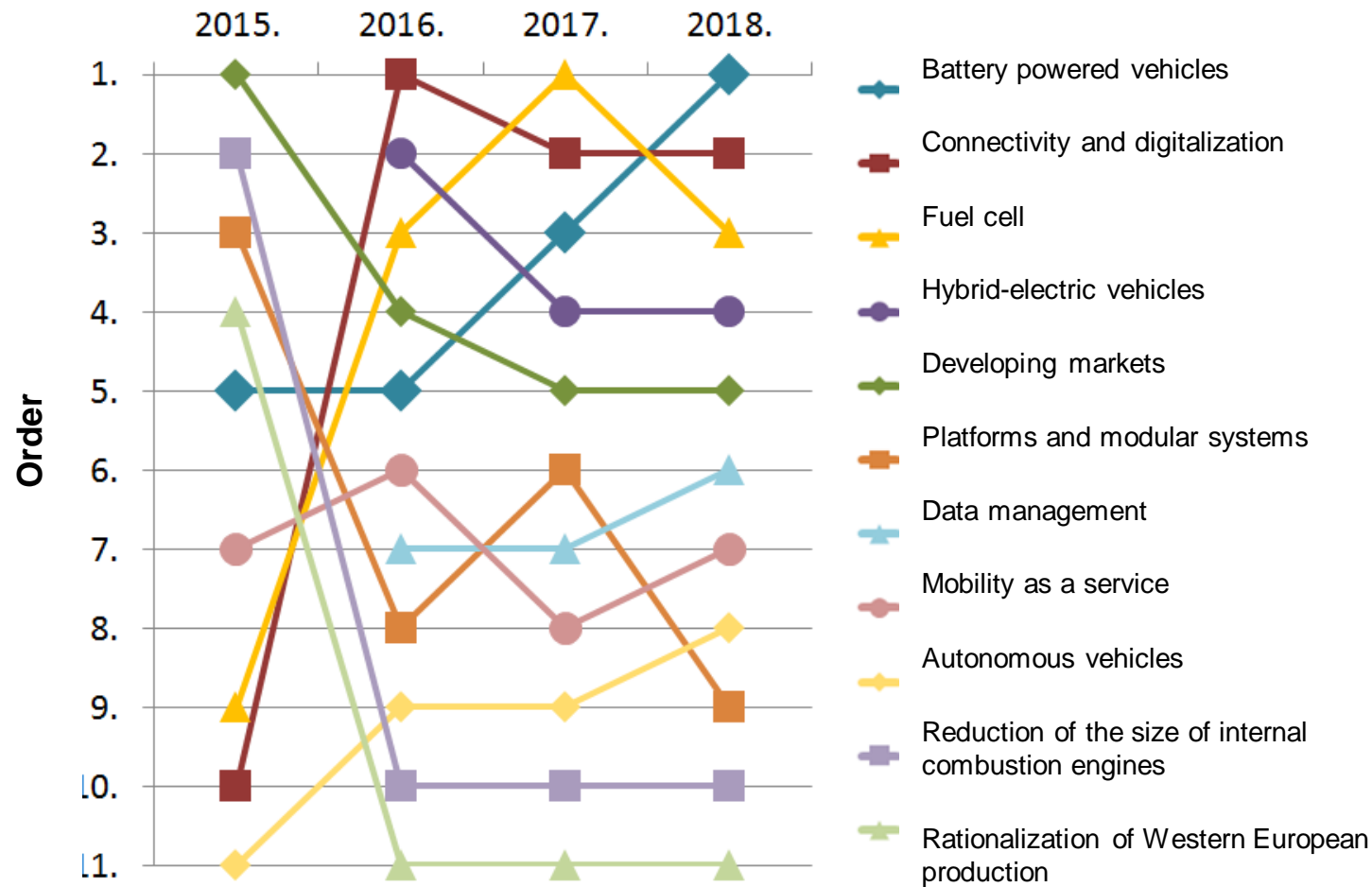
INNOVATION AT WORK

Mobility challenges

Challenges of the Vehicle Industry

1. Zero Emission
2. Sustainability
3. Production of renewable fuel
4. Changing consumer customs
5. Competitiveness challenges
6. US trade war
7. Technology challenges

Global Trends





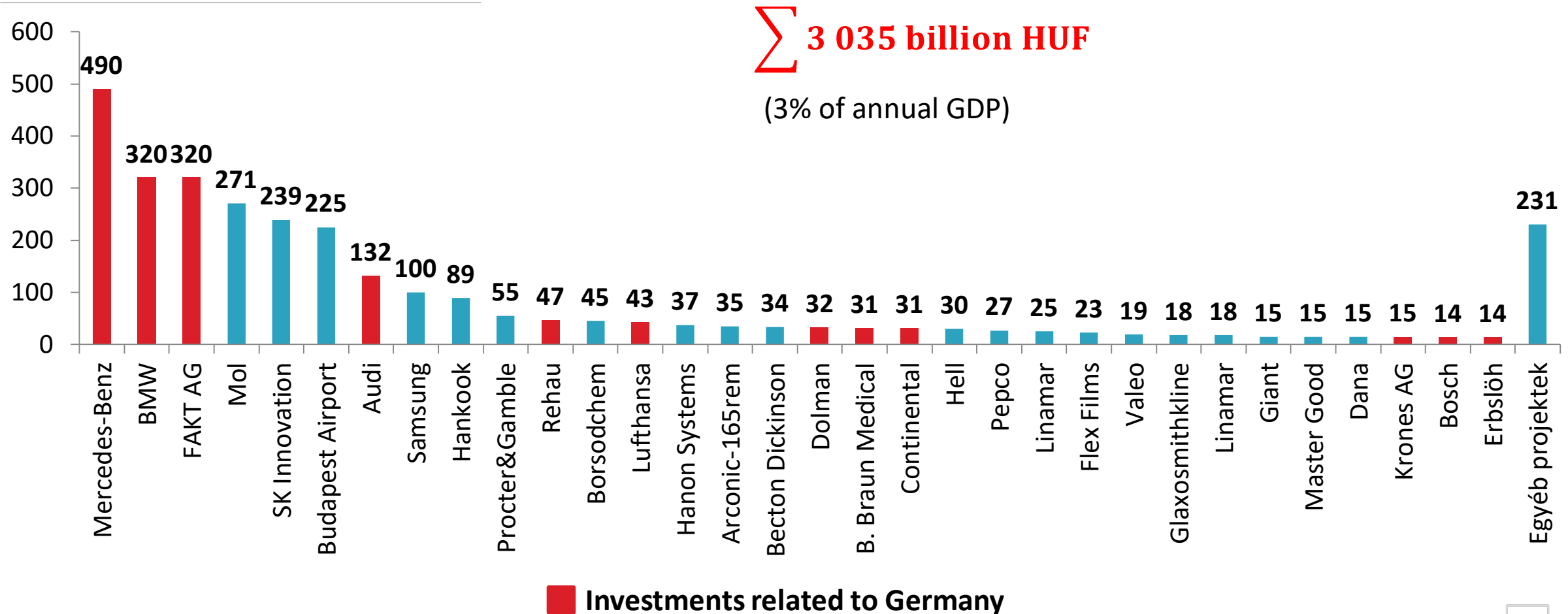
INNOVATION AT WORK

Macroeconomic situation in Hungary

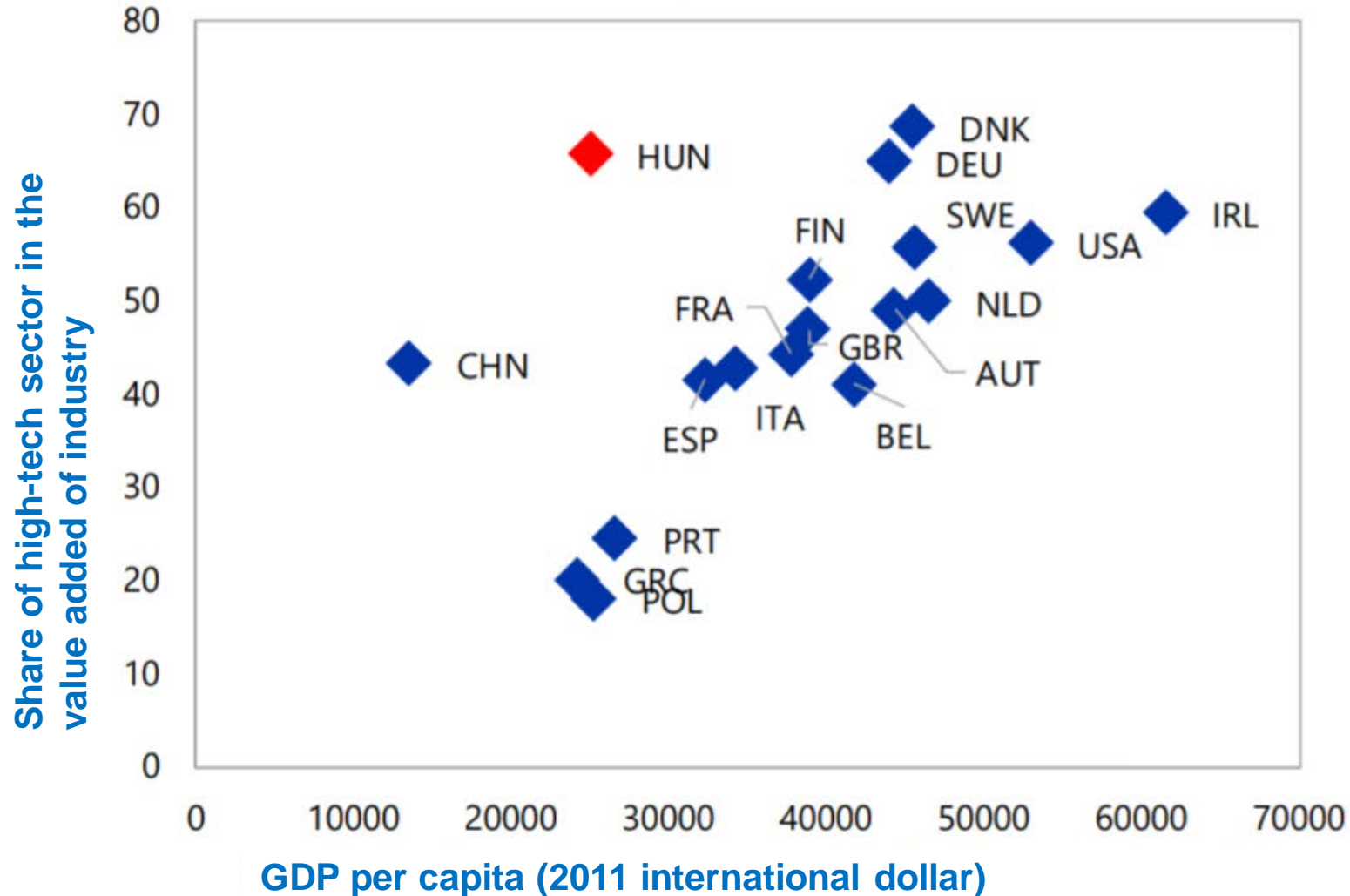
As a consequence of the economic policies leading to the upgrades, there has been a significant inflow of foreign investment in recent years, which has a significant impact on Hungary's GDP growth rate

The most significant realized and ongoing investments in Hungary

From 2015, billion HUF



High value-added investments: high-tech sector accounts for 70% of industry value added

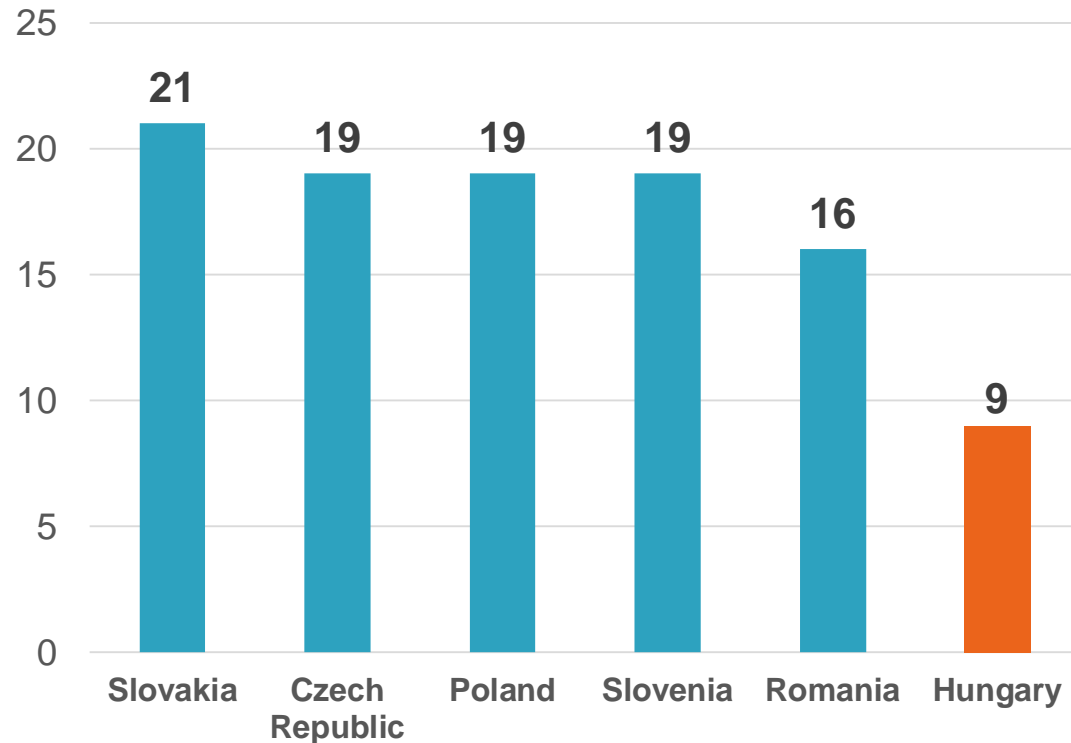


- With this, Hungary is almost a record: ahead of Germany, the United States, Great Britain, the Nordic countries or Austria.
- Hungary is successfully joining international value chains to channel the knowledge they contain into their economies.

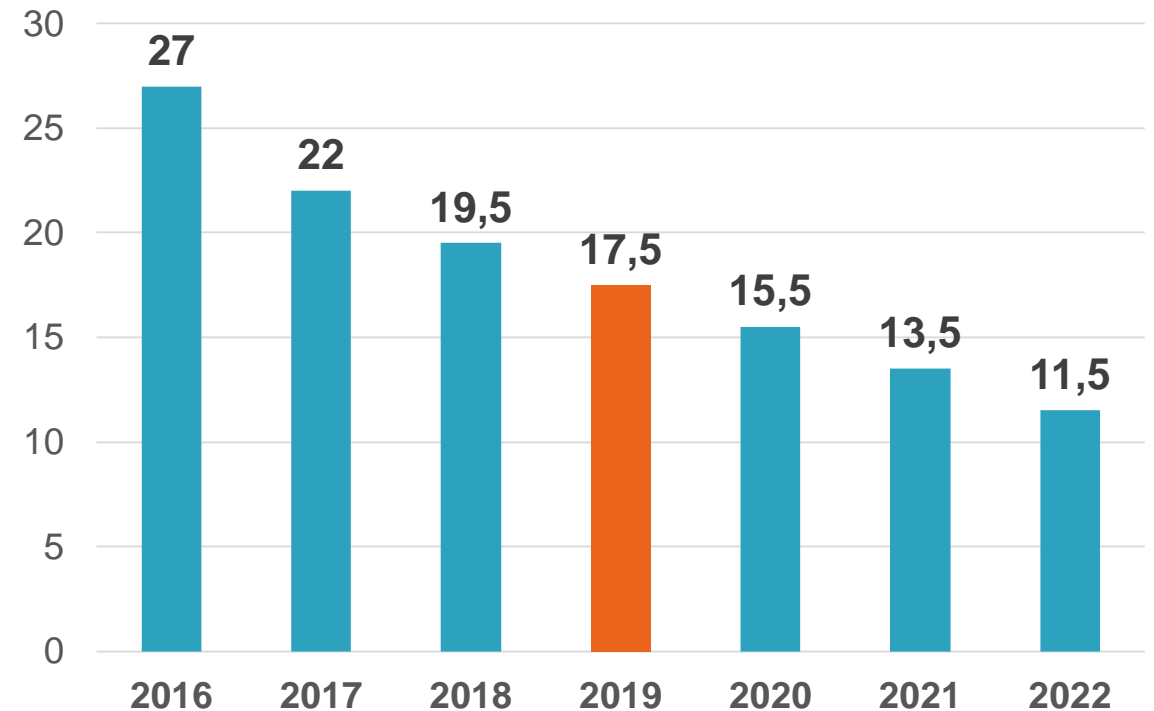
Investment friendly, predictable environment – competitive tax system: 6 years wage agreement between the government and stakeholders, lowering social contribution tax rate

- From 2017 the corporate income tax rate is 9%, the lowest value in the EU
- Flat personal income tax rate: 15%
- Social contribution tax rate will be lowered to 11.5% by 2022

Corporate income tax rate (%)¹



Social contribution tax rate (%) – six-year wage agreement

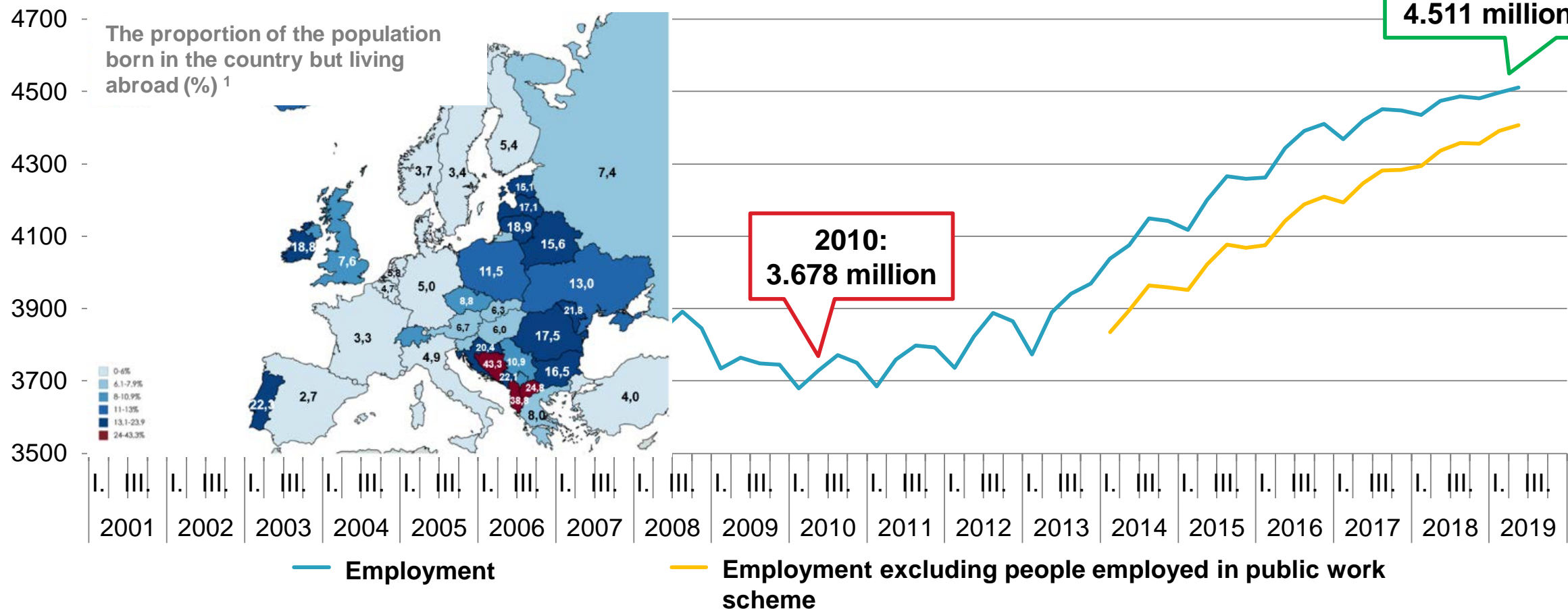


¹ Deloitte, KPMG

Creating jobs instead of diminishing them: 833 thousand more people worked in 2019 Q2 compared to 2010, of which more than 600,000 were on the domestic primary labor market

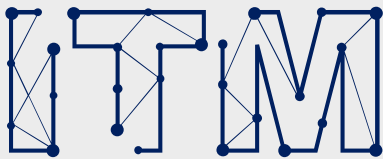
Employment trends after 2010

aged 15-74¹

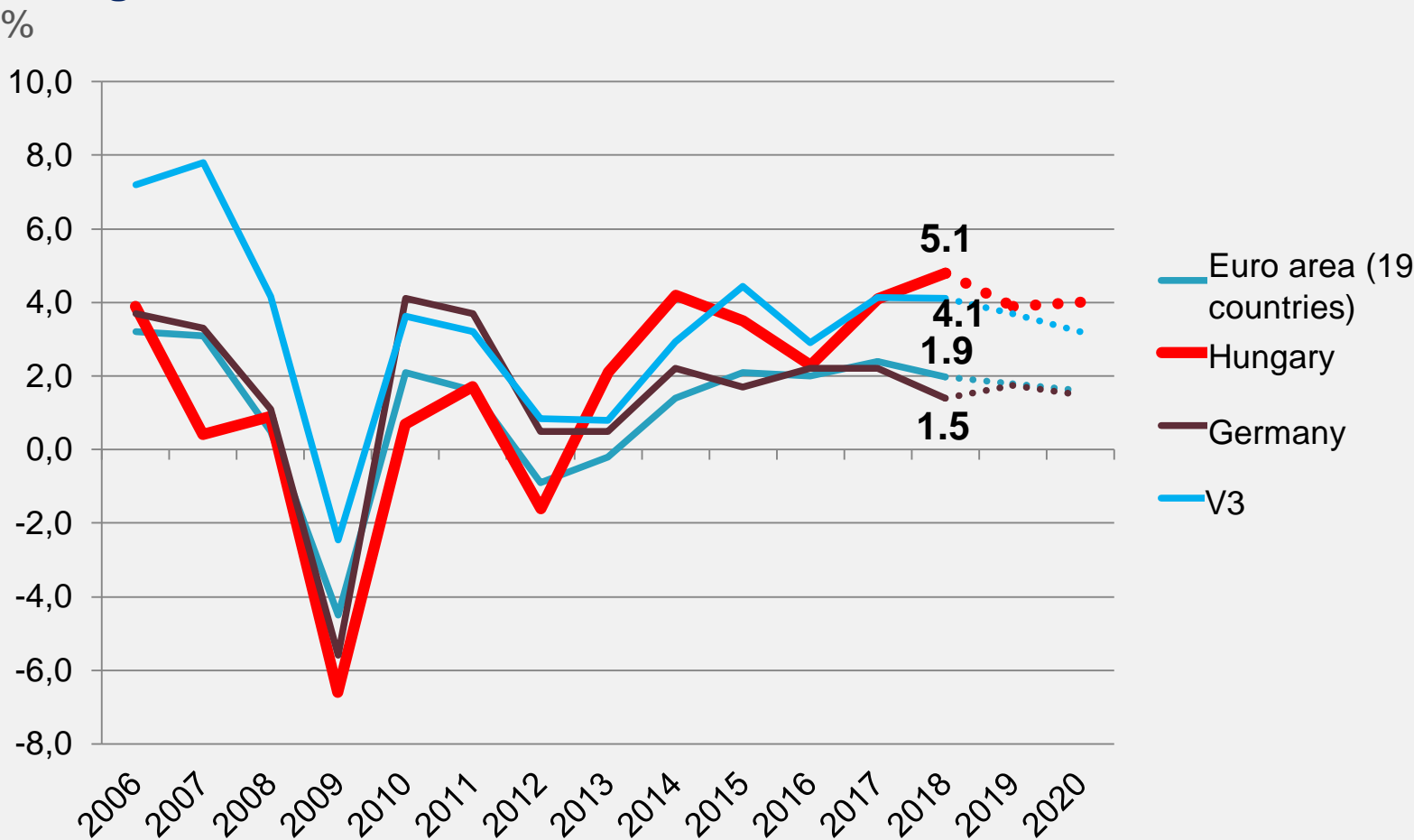


¹ Hungarian Central Statistical Office

The 5.1 percent Hungarian GDP growth in 2018 exceeded analyst expectations, while growth in competing countries slowed down in 2018; highest growth rate in 2019 Q3 among EU countries



GDP growth rate



2019 Q3 (year/year, %)*



4.8



0.5



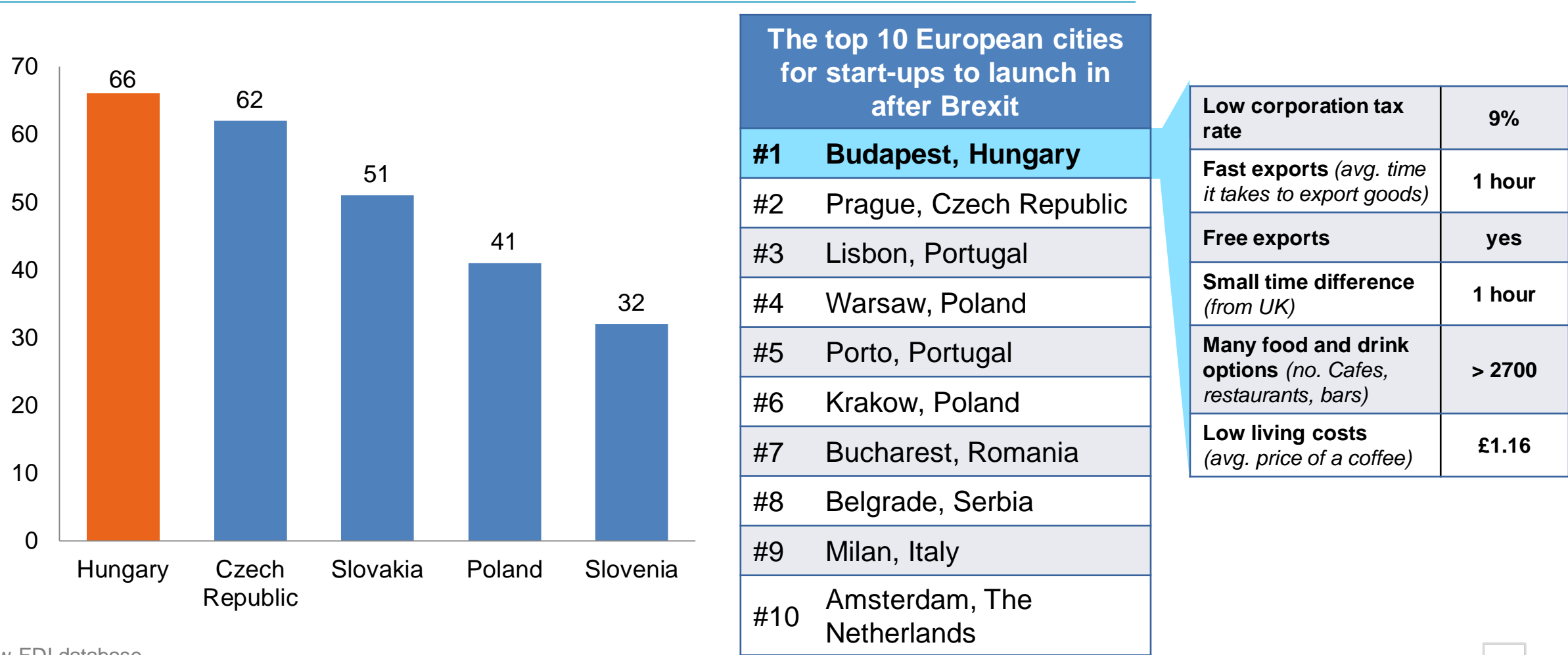
1.3



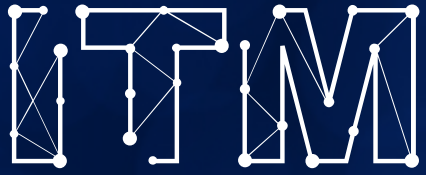
2.7

As a result of macroeconomic consolidation and the investment friendly environment, Hungary has become one of the world's most significant and favored investment targets

Inward FDI stock in 2016 (% of GDP)¹ , Top 10 European cities for start-ups to launch in after Brexit (Right)²



¹ wiiw FDI database
² The top 10 European cities for start-ups to launch in after Brexit, startups.co.uk (2019)

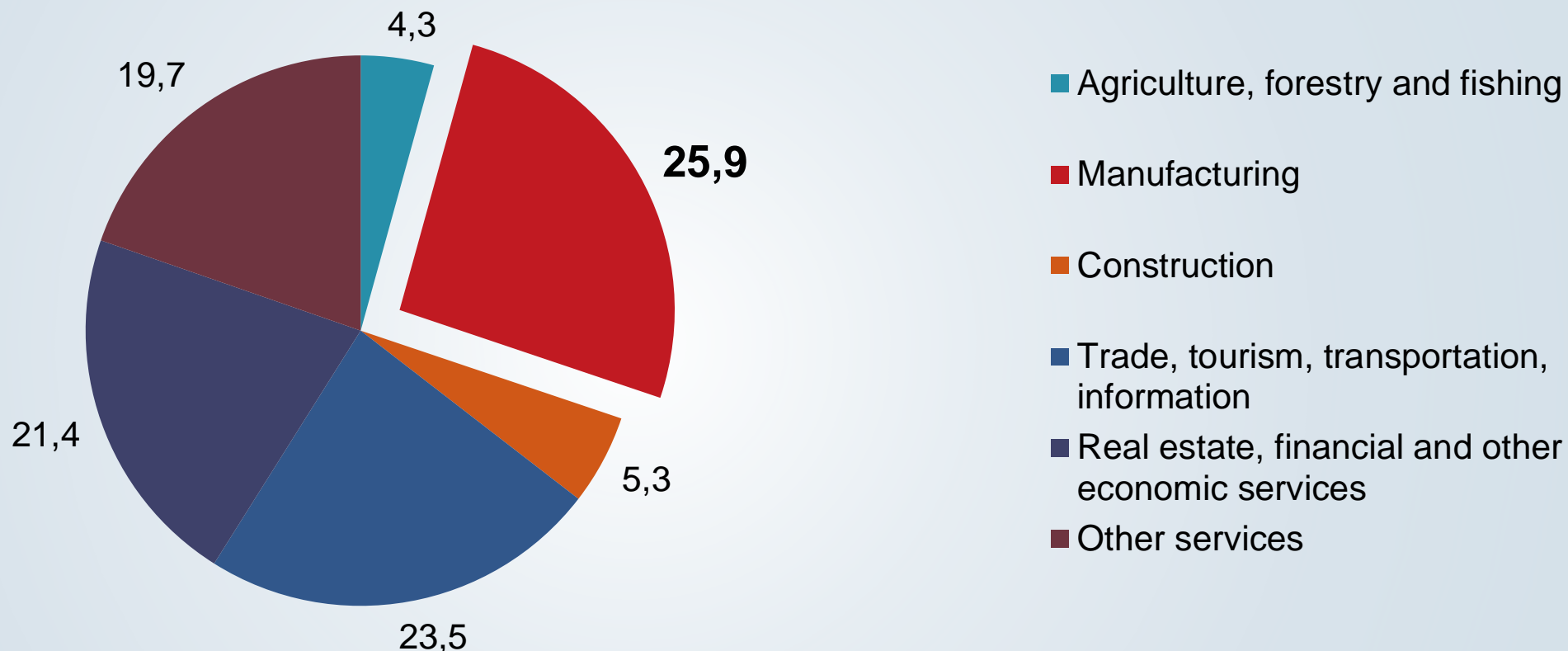


INNOVATION AT WORK

Hungarian automotive industry: How to meet challenges?

Gross value added: Manufacturing and as part of it the automotive industry plays a decisive role in the Hungarian economy

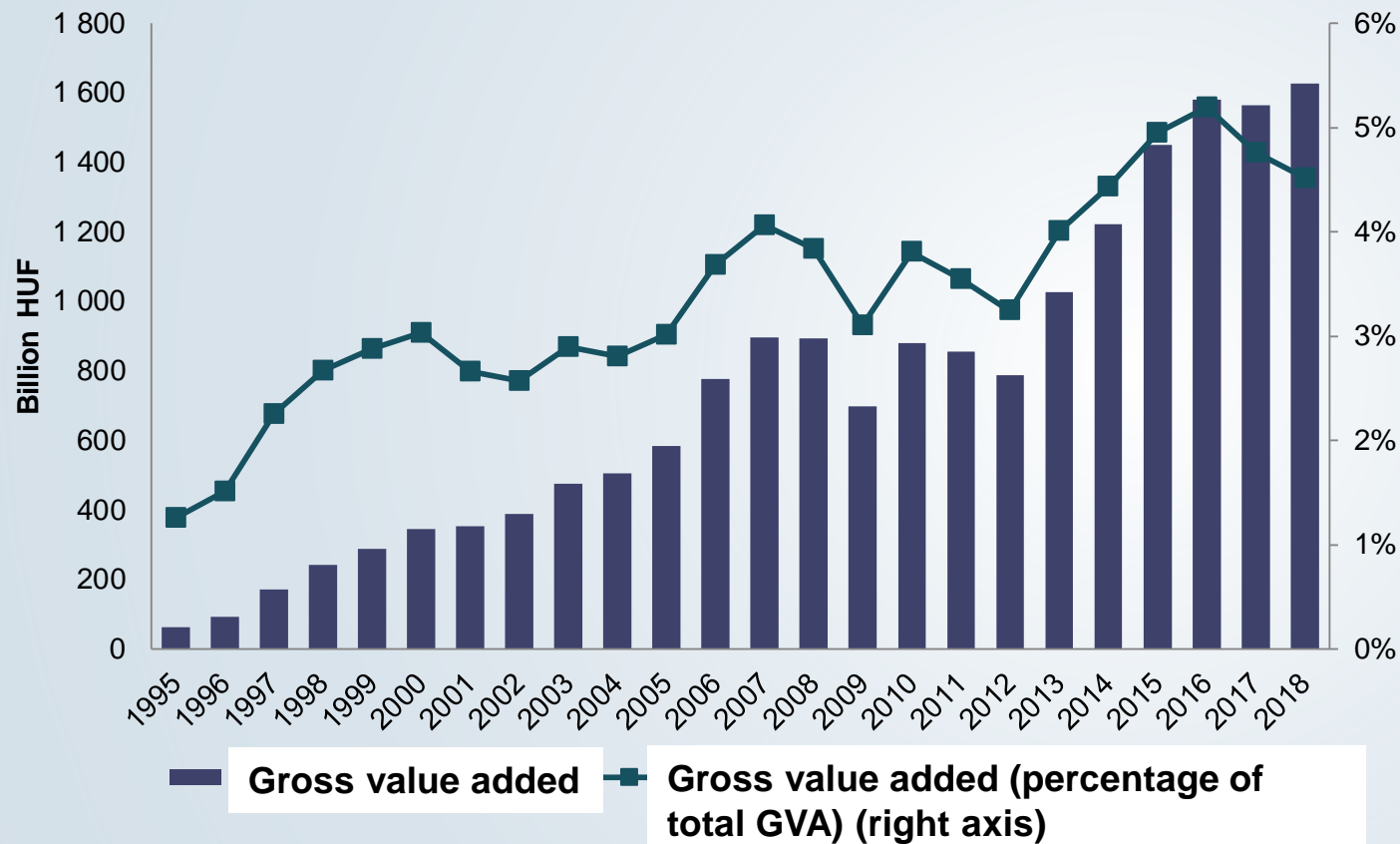
Gross Value Added by Sector (2018)



Manufacture of transport equipment accounted for 28% of total manufacture production in 2018

Share of the automotive industry in total gross value added (GVA) grew from 3.1 percent in 2009 to 4.5 percent in 2018

Share of the automotive industry in total gross value added (GVA)

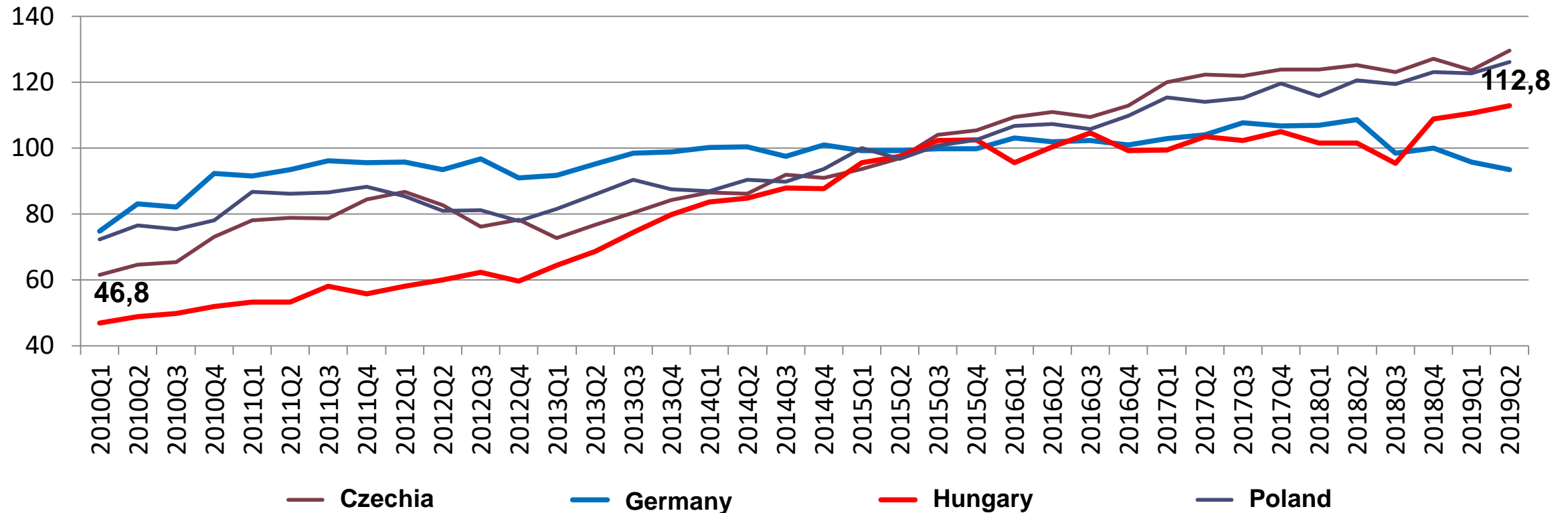


Country	Automotive industry's share in the total GVA (percent)
Hungary	4.5
Czechia	5.7
Romania	3.1
Slovakia	4.6
Slovenia	2.0
Austria	1.6

The production volume in the automotive industry has more than doubled since 2010 in Hungary

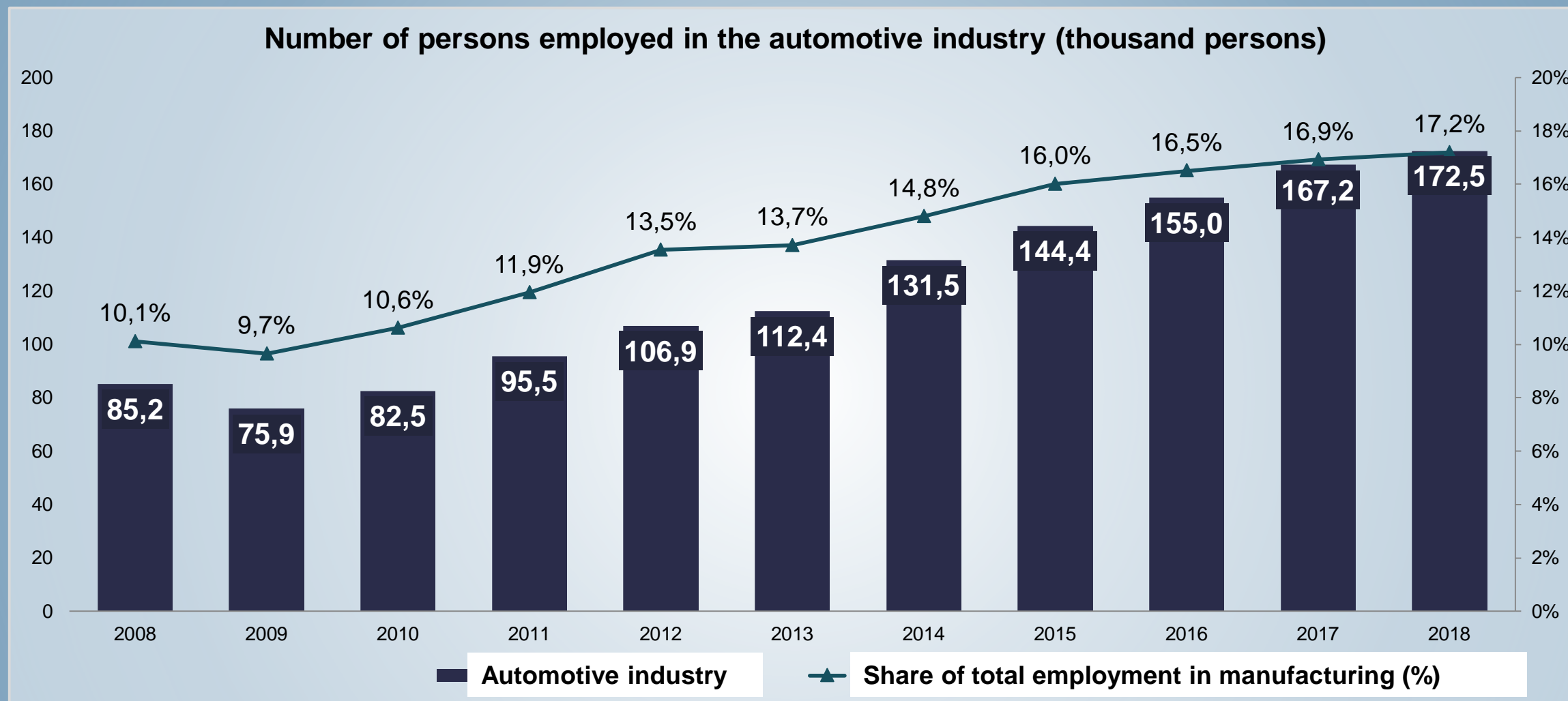
Production of automotive industry

%, 2015=100



Production of automotive industry in Germany is on a significant downward trend, while growth in the V4 countries, including Hungary, is still evident in 2019 Q2

The number of persons employed in the automotive industry has also more than doubled since 2010



Some more recent examples – After Suzuki and Opel decision in 1990



**Audi in Győr since
1993**



**The most modern
Mercedes-Benz
factory is being built
in Kecskemét**



**New BMW factory in
Debrecen (more than
1 billion EUR
investment)**



**Jaguar:
New R&D center in
Budapest**

Automotive industry: diverse and numerous suppliers

15 out of the world TOP 20 TIER1 suppliers and more than
40 out of the world TOP 100 TIER1 suppliers



49 indirect suppliers for tool, machine and equipment manufacturing

Tire manufacturing



Tier2 and +

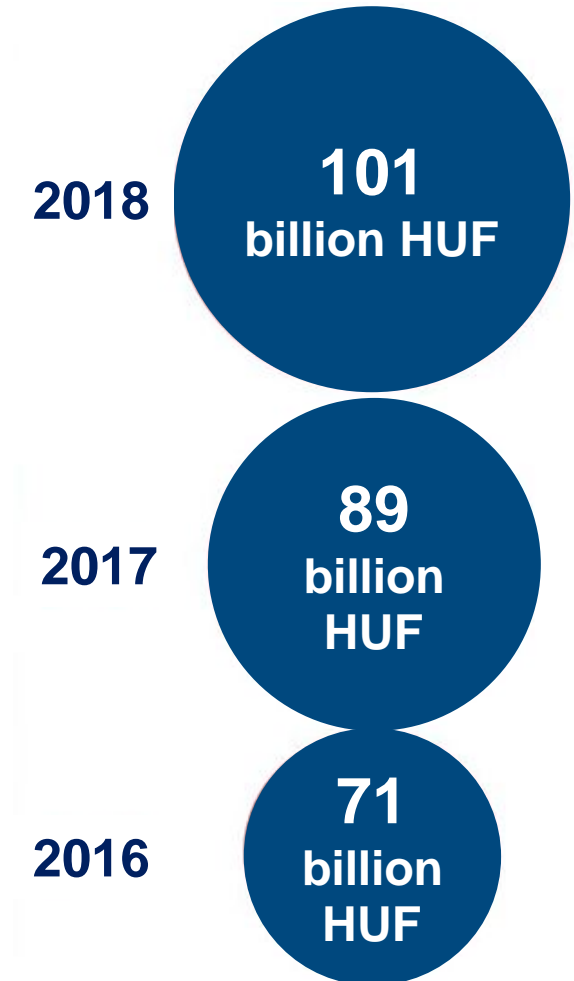


The value of automotive R&D investments is increasing every year in Hungary in which German companies play a decisive role

Automotive R&D Investment in Hungary



Amount of R&D investments in the automotive industry in Hungary



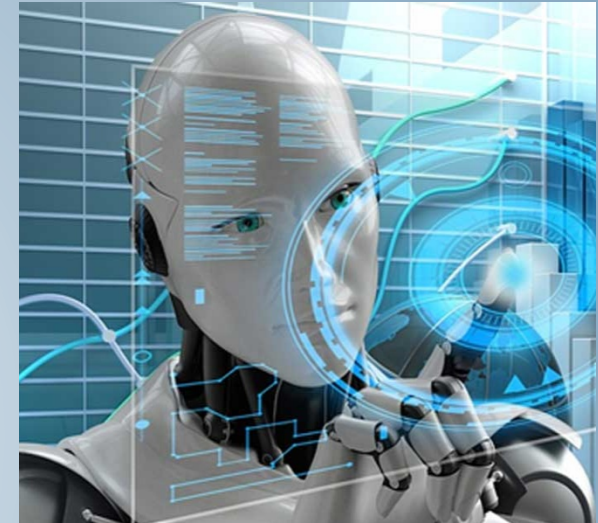
How to support the automotive industry: Creating technological platforms to foster technological change



**Industry 4.0
National Technology
Platform**



5G Coalition



AI Coalition

How to support the automotive industry: In order to ensure innovation-driven economic growth, we are working on creating university-centered innovation ecosystems

Science Parks under development




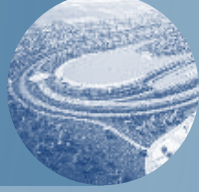



ZALAZONE proving ground for 'traditional' and autonomous vehicles



ELI Science Park
Szeged (laser research)

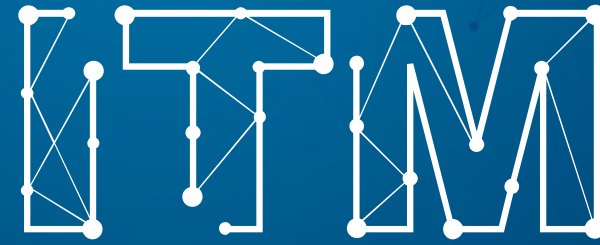
How to support the automotive industry: Hungary builds a multi-layer autonomous transport ecosystem

5	Crowdsourced Traffic Cloud	<ul style="list-style-type: none">▪ Cloud and Fog Computing▪ HD Map with dynamic layers▪ Database with processed events	
4	Fleet of Sampling Vehicles	<ul style="list-style-type: none">▪ L1 and L2 vehicles equipped with sensors▪ AI decision▪ HD Map dynamic layer update	
3	Public road and urban environment	<ul style="list-style-type: none">▪ Road Infrastructure (M76, M70, M7) and Urban Infrastructure (Zalaegerszeg) both supports tests▪ Legal environment for AV public road tests	
2	Proving Ground	<ul style="list-style-type: none">▪ Autonomous, Connected and Electric vehicle testing environment	
1	Education and Research	<ul style="list-style-type: none">▪ Dedicated BSc/BEng and MSc courses▪ Basic and advanced research in Artificial Intelligence, Co-operative control, Cyber security and Driverless technologies	

How to support the automotive industry: Test track layout – smart city environment



High and low speed, city, intercity and motorway



Thank you!



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