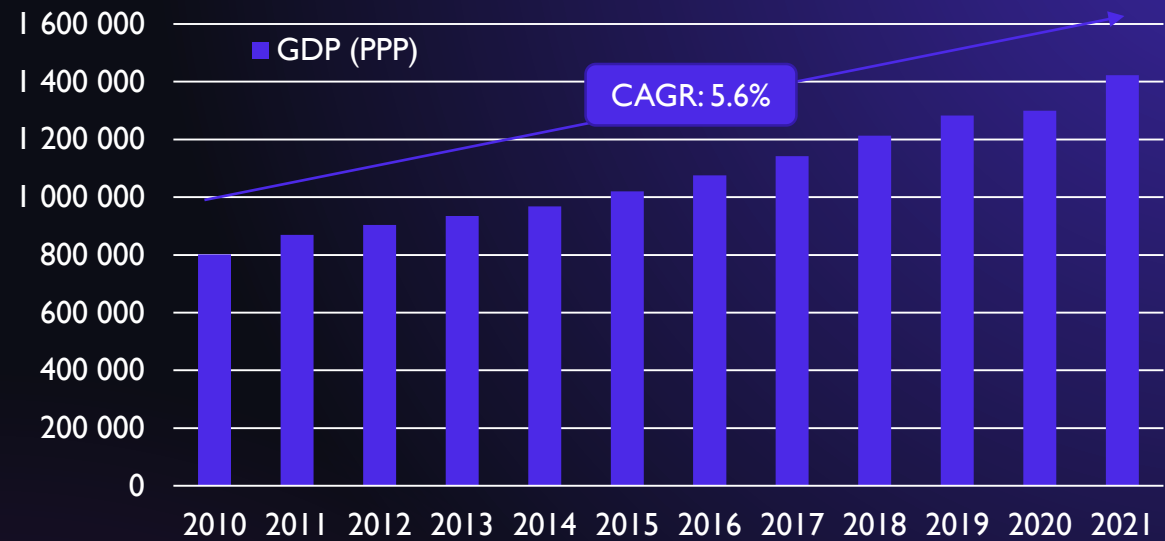


Poland in GVCs – the case of automotive sector

ANDŻELIKA KUŹNAR,
ELIZA PRZEŹDZIECKA

WARSAW SCHOOL OF ECONOMICS

ECONOMIC TRENDS, 2010-2021 (USD)



Source: OECD.Stat

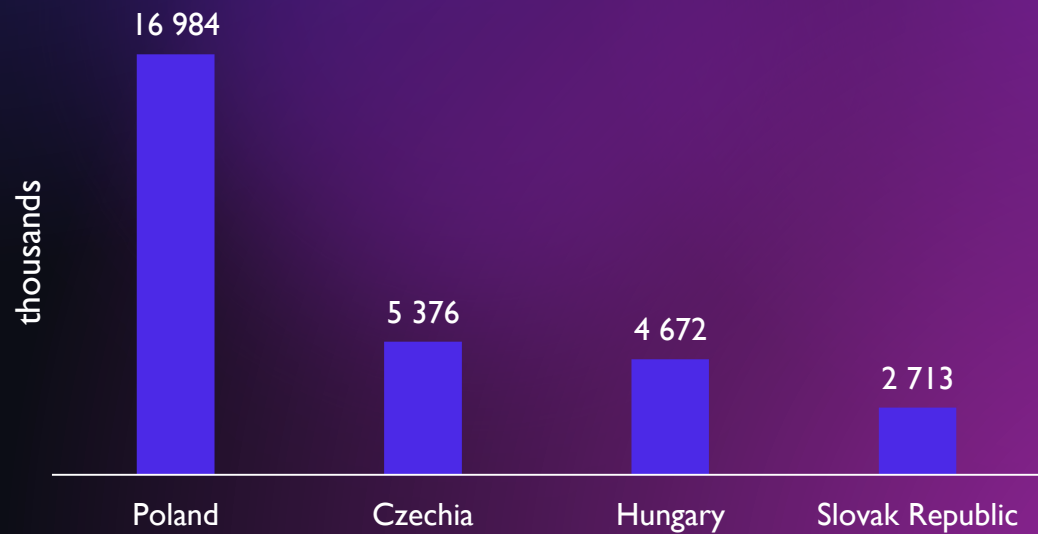
5.4% Unemployment rate (Q1'2022)
PLN 6,338 (\$1,508) average monthly gross salary in enterprises (Q1'2022)
1.6 million students (22% in STEM)
37,500 graduates in engineering per year
30% of CEE GDP - Poland is the largest country in the CEE

TOP FOREIGN INVESTORS BY COUNTRIES

-  1. Germany
-  2. US
-  3. United Kingdom

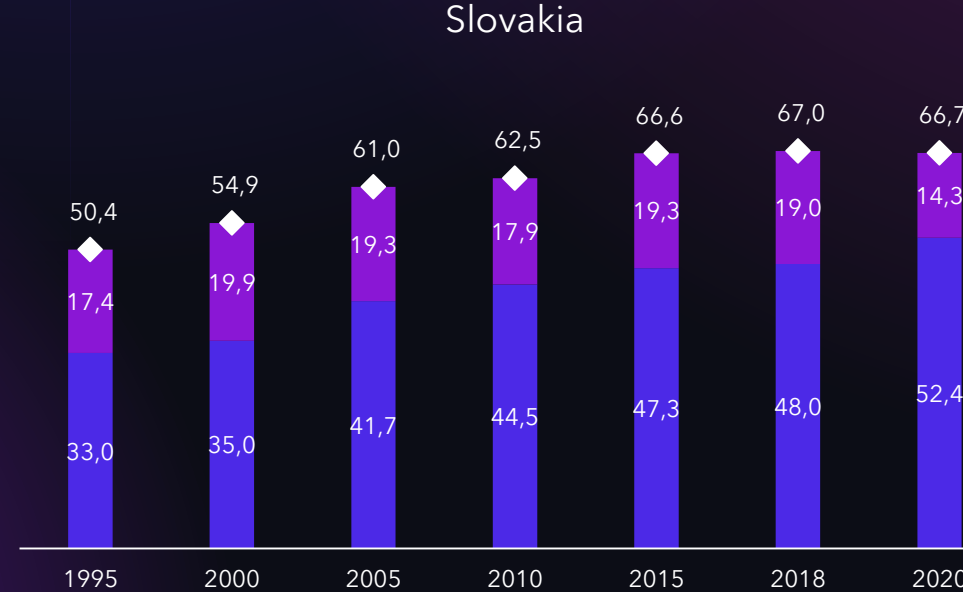
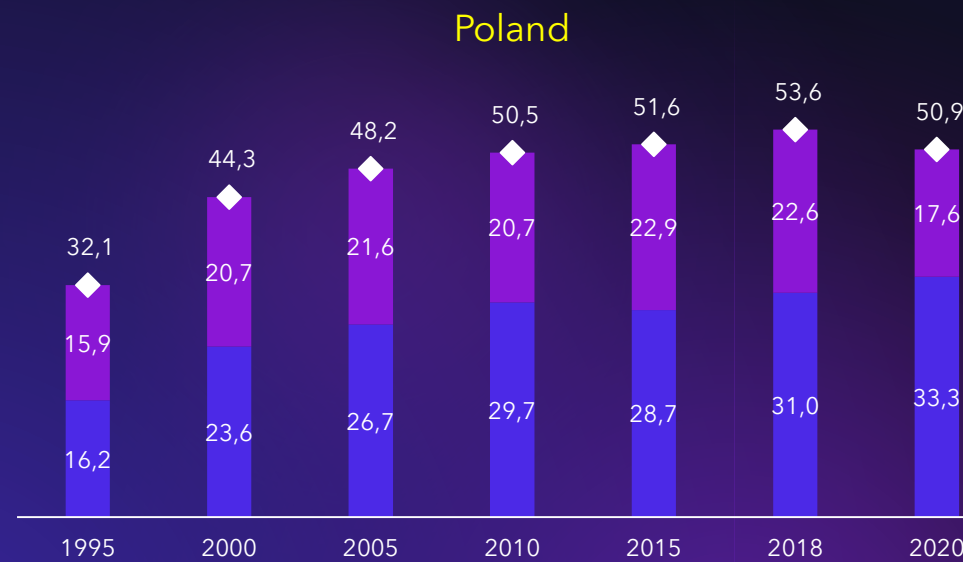
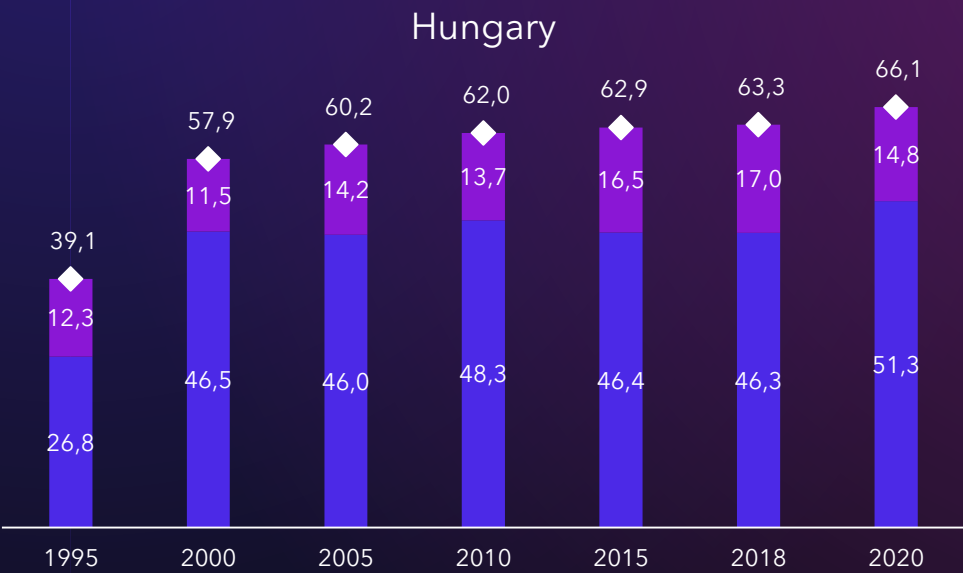
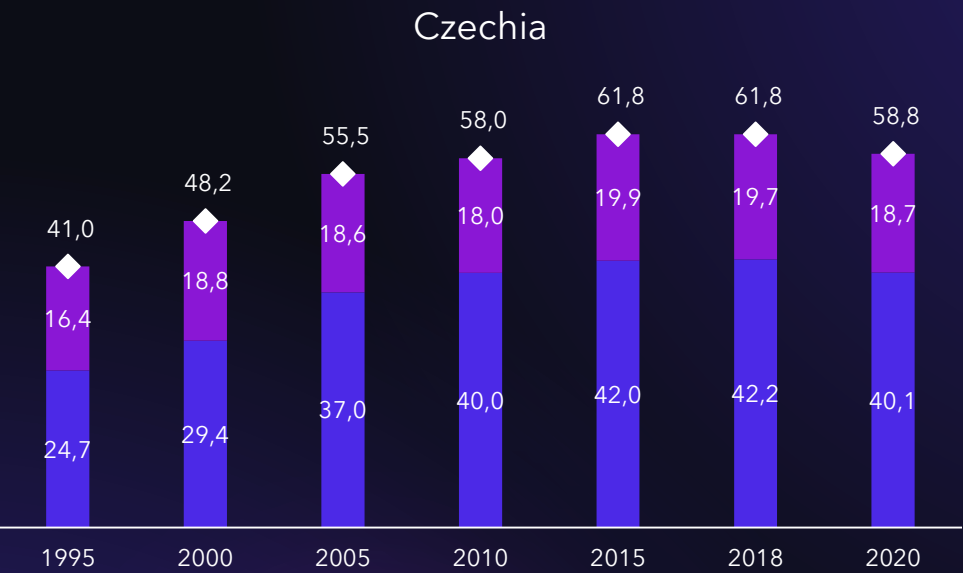
Source: Statistics Poland

LABOR FORCE IN THE V4 COUNTRIES, 2020

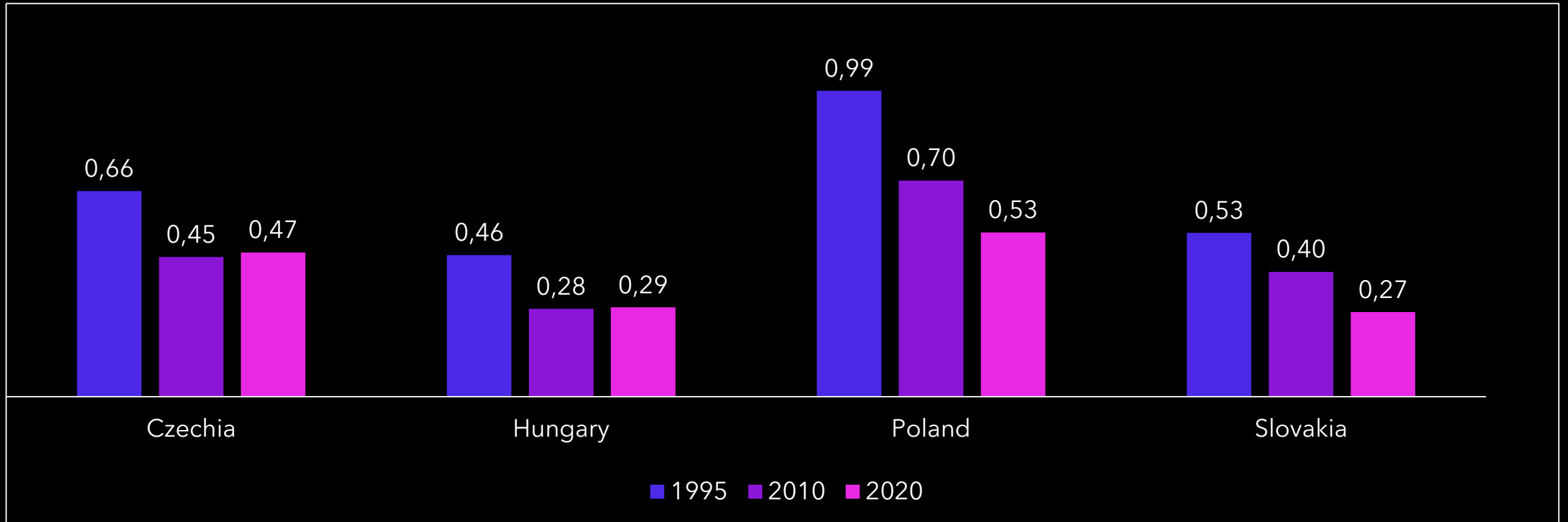


Source: OECD.Stat

GVC participation index of V-4 countries in 1995-2020, in % of gross exports

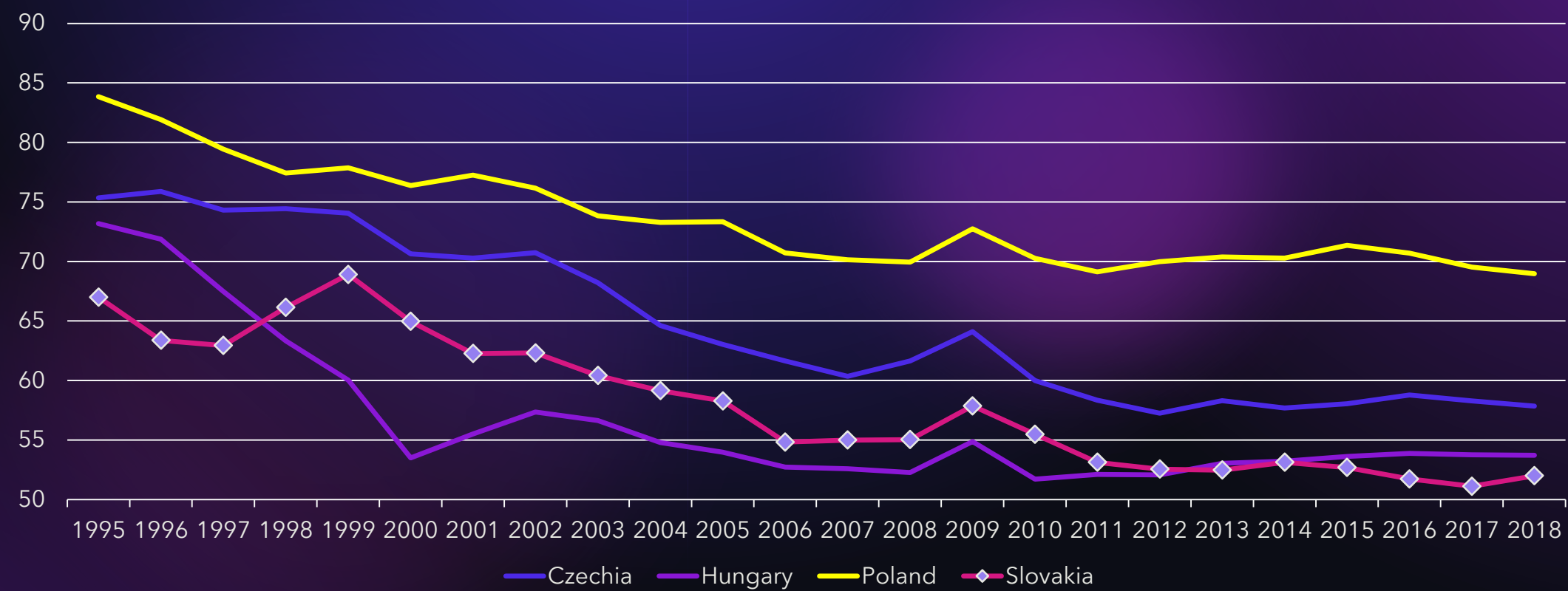


■ Backward participation (FVA) ■ Forward participation (DVX)
◆ GVC participation index

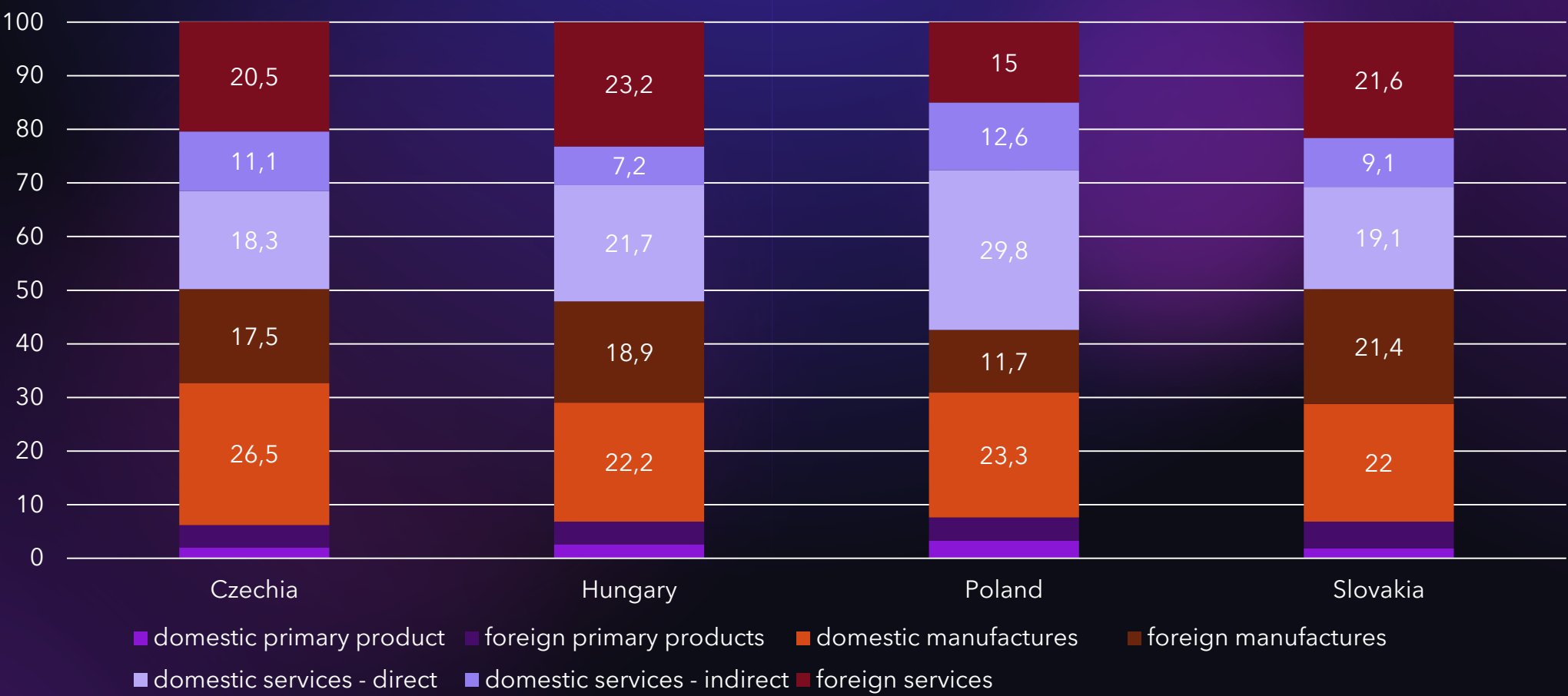


Ratio of forward to backward linkages in V-4 countries, 1995-2020

Share of domestic value added in gross exports of V-4 countries, in 1995-2018, in %



Domestic and foreign sectoral value added contribution to gross exports, in 2018 (% share in industry total gross exports)



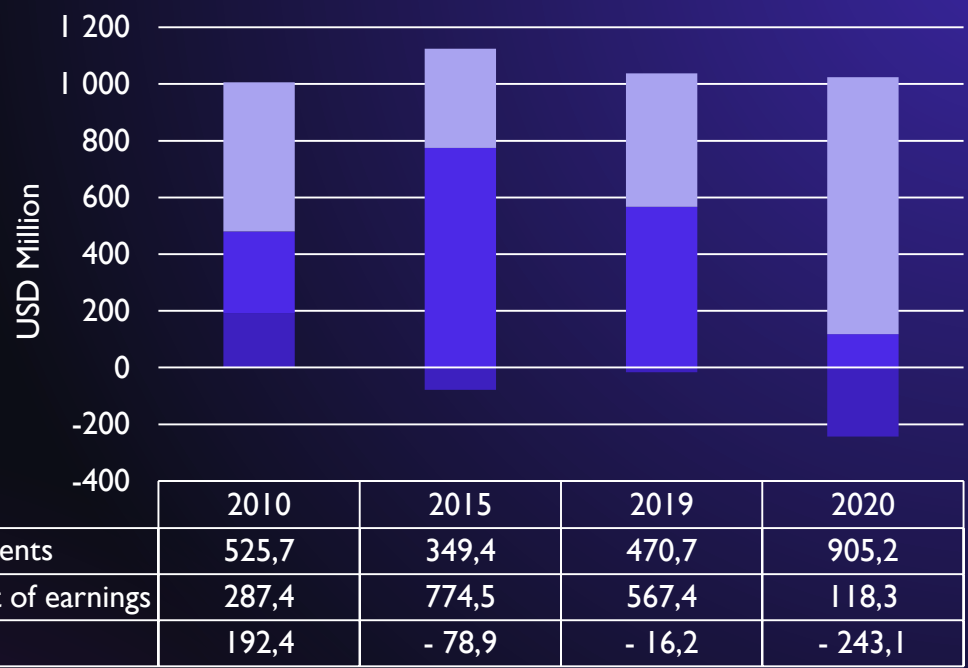
Sectoral GVC linkages in V-4 countries and in EU, in 2018, in %

| | Manufacturing | | | Services | | |
|-----------------|------------------------------|-----------------------------|---------|------------------------------|-----------------------------|---------|
| | Backward participation (FVA) | Forward participation (DVX) | FVA+DVX | Backward participation (FVA) | Forward participation (DVX) | FVA+DVX |
| Czechia | 49.4 | 15.3 | 64.6 | 20.9 | 3.8 | 24.7 |
| Hungary | 56.9 | 12.5 | 69.3 | 23.8 | 4.0 | 27.8 |
| Poland | 40.0 | 16.6 | 56.5 | 17.7 | 5.2 | 22.9 |
| Slovakia | 57.8 | 15.2 | 73.0 | 19.8 | 3.3 | 23.1 |
| EU27 | 18.6 | 10.1 | 28.7 | 11.8 | 3.8 | 15.6 |
| EU15 | 18.7 | 12.7 | 31.4 | 10.2 | 4.2 | 14.4 |

Top-3 industries involved in GVC in V-4 countries, in 2018, in %

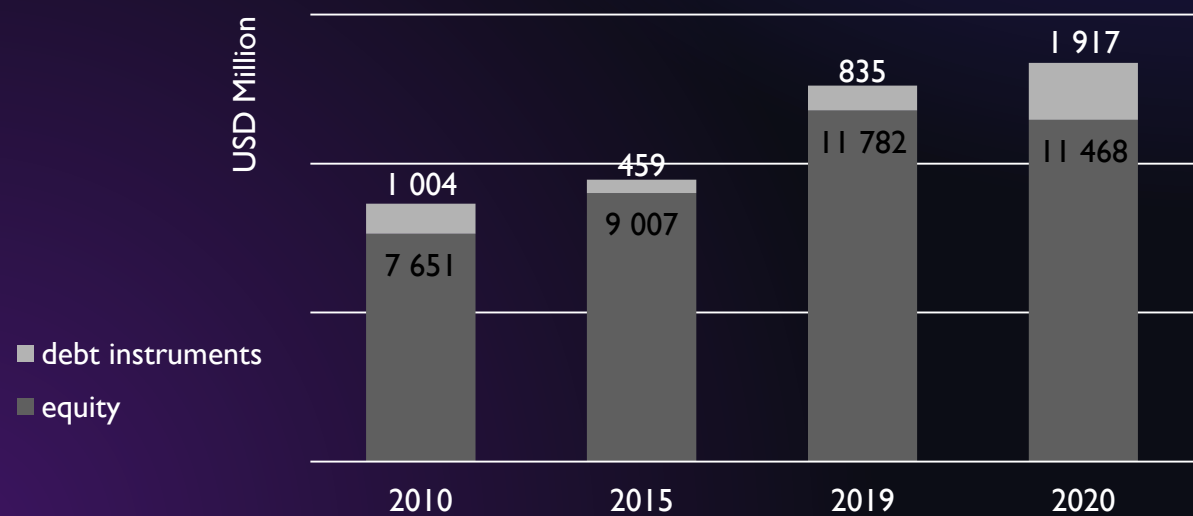
| | Forward (% share in total exports of domestic inputs sent to third economies) Top export industries to GVCs | | Backward (% share in total foreign content of exports) Top GVC-importing industries | |
|----------|--|------|--|------|
| Czechia | Wholesale and retail trade | 14.6 | Motor vehicles | 34.8 |
| | Motor vehicles | 11.1 | Computer/electronic products | 9.6 |
| | Metal products | 6.9 | Other machinery and equipment | 6.9 |
| Hungary | Wholesale and retail trade | 12.1 | Motor vehicles | 31.6 |
| | Motor vehicles | 11.4 | Computer/electronic products | 14.6 |
| | Scientific/technical activities | 8.4 | Other machinery and equipment | 5.4 |
| Poland | Wholesale and retail trade | 19.9 | Motor vehicles | 16.3 |
| | Land transport | 9.3 | Land transport | 6.8 |
| | Scientific/technical activities | 8.1 | Food and beverages | 6.7 |
| Slovakia | Wholesale and retail trade | 13.9 | Motor vehicles | 42.6 |
| | Motor vehicles | 8.5 | Computer/electronic products | 7.8 |
| | Scientific/technical activities | 8.1 | Other machinery and equipment | 6.2 |

FDI inflows in Poland in 2010-2020, *Manufacture of motor vehicles, trailers and semitrailers*



FOREIGN INVESTORS IN THE SECTOR

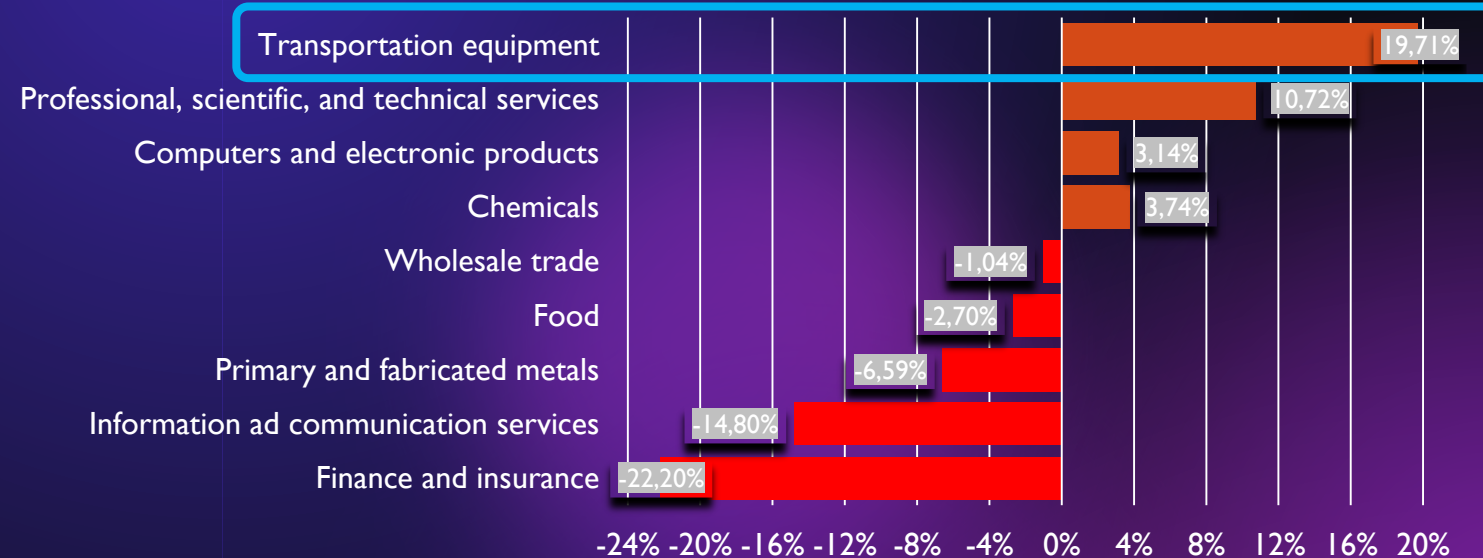
FDI inward position 2010-2020, *Manufacture of motor vehicles, trailers and semitrailers*



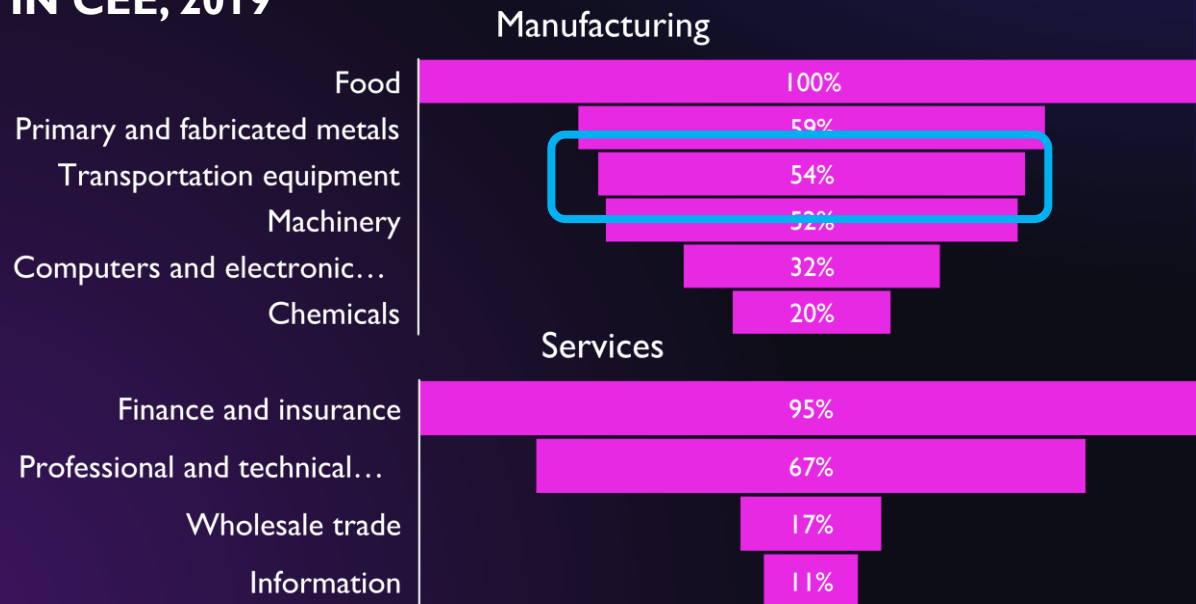
#1 sector in FDI in manufacturing
21% of total FDI in manufacturing

Empoyment in transportation equipment has been the most dynamically changing among US-owned firms in Poland.

US. FDI in Poland: EMPLOYMENT CHANGE BY SECTOR, CAGR 2010-2020



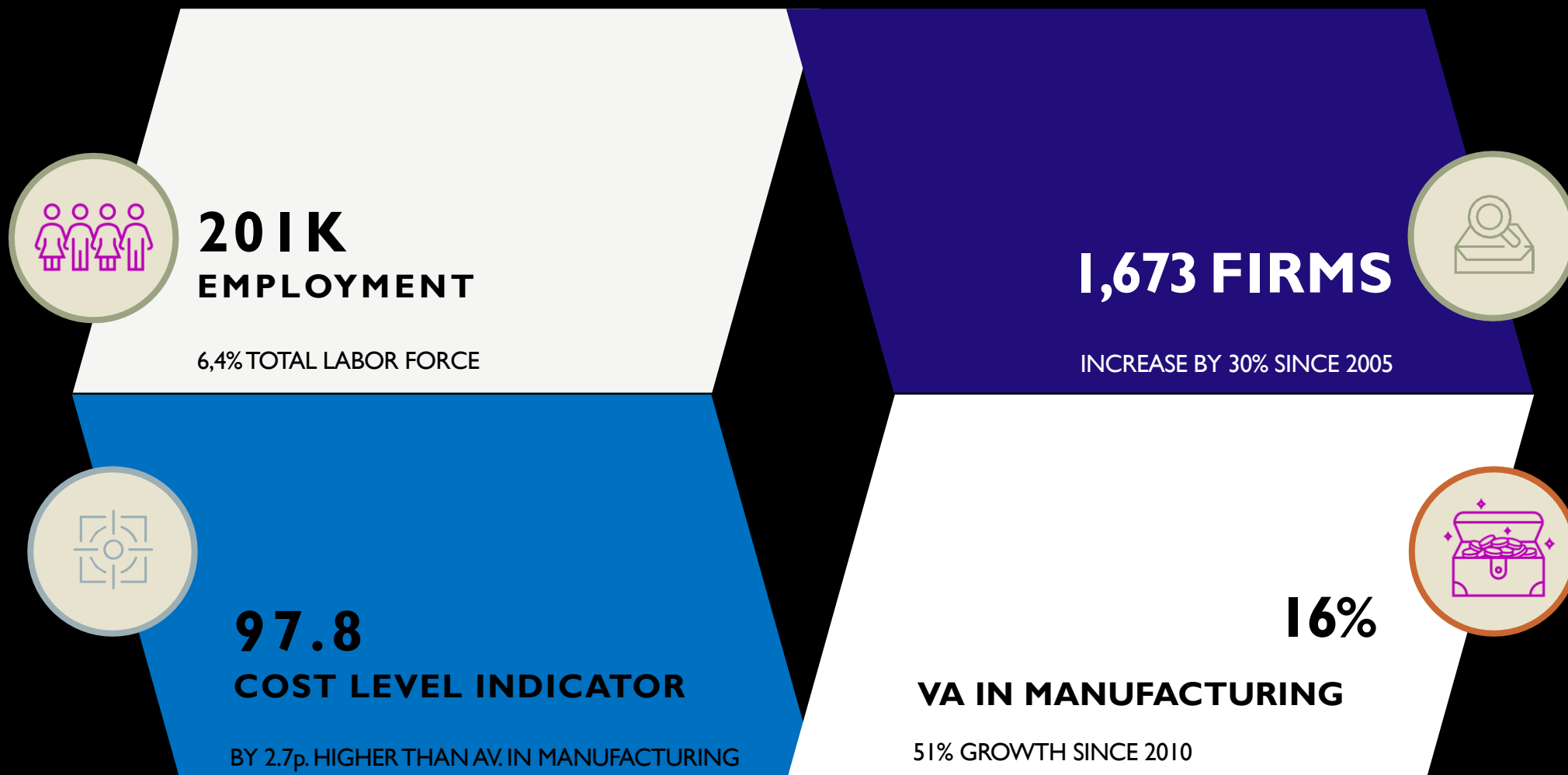
U.S. DIRECT INVESTMENT POSITION IN POLAND, % IN CEE, 2019



Over a half of US business (by shareholders' funds) located in the CEE region is based in Poland.

AUTOMOTIVE SECTOR IN POLAND (2020)

MANUFACTURE OF MOTOR VEHICLES, TRAILERS AND SEMI- TRAILERS



AUTOMOTIVE SECTOR IN POLAND (2020)

MANUFACTURE OF MOTOR VEHICLES, TRAILERS AND SEMI- TRAILERS

| | Economic entities | Sold production in million PLN | Average paid employment (in thousands) | Gross value of fixed assets (in million PLN) |
|---|-------------------|--------------------------------|--|--|
| Manufacture of motor vehicles, trailers and semi-trailers | 350 | 137,495 | 189.7 | 90,205 |
| <i>% of manufacturing total</i> | <i>4%</i> | <i>12%</i> | <i>10%</i> | <i>12%</i> |
| manufacture of motor vehicles | 29 | 51,306 | 34.00 | 39,380 |
| % of manufacturing of motor vehicles (...) | 8% | 37% | 18% | 44% |
| manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers | 64 | 4,974 | 11.2 | 1,818 |
| % of manufacturing of motor vehicles (...) | 18% | 4% | 6% | 2% |
| manufacture of parts and accessories for motor vehicles | 257 | 81,215 | 144.5 | 49,008 |
| % of manufacturing of motor vehicles (...) | 73% | 59% | 76% | 54% |

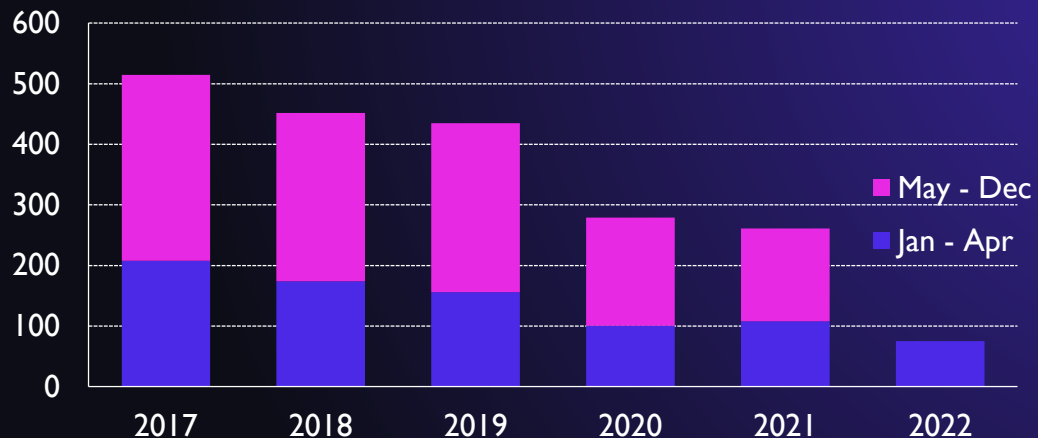
AUTOMOTIVE SECTOR IN POLAND (2020)

MANUFACTURE OF MOTOR VEHICLES, TRAILERS AND SEMI- TRAILERS

- TOP 10 Foreign-owned entities

| Company's name | Number of employees | Operating revenue (mln USD) | Global ultimate owner | GUO country of origin |
|---|---------------------|-----------------------------|---------------------------------------|-----------------------|
| VOLKSWAGEN POZNAN SP.Z O.O. | 10 491 | 4 362 409 | FAMILIEN PORSCHE/PIECH | DE |
| LEAR CORPORATION POLAND II SP.Z O.O. | 7 237 | 535 457 | LEAR CORP | US |
| APTIV SERVICES POLAND S.A. | 5 697 | 539 098 | APTIV PLC | GB |
| ZF AUTOMOTIVE SYSTEMS POLAND SP.Z O.O. | 5 497 | 965 039 | ZEPPELIN-STIFTUNG | DE |
| VOLVO POLSKA SP.Z O.O. | 3 427 | 944 295 | AB VOLVO | SE |
| INTER CARS SA | 3 378 | 2 448 853 | INTER CARS SA | PL |
| AUTOLIV POLAND SP.Z O.O. | 3 254 | 445 233 | AUTOLIV, INC. | US |
| MAN BUS SP.Z O.O. | 2 976 | 610 082 | FAMILIEN PORSCHE/PIECH | DE |
| ADIENT POLAND SP.Z O.O. | 2 944 | 335 012 | ADIENT PLC | IE |
| SUPERIOR INDUSTRIES PRODUCTION POLAND SP.Z O.O. | 2 805 | 422 947 | SUPERIOR INDUSTRIES INTERNATIONAL INC | US |

Motor vehicle production (in thous. units)



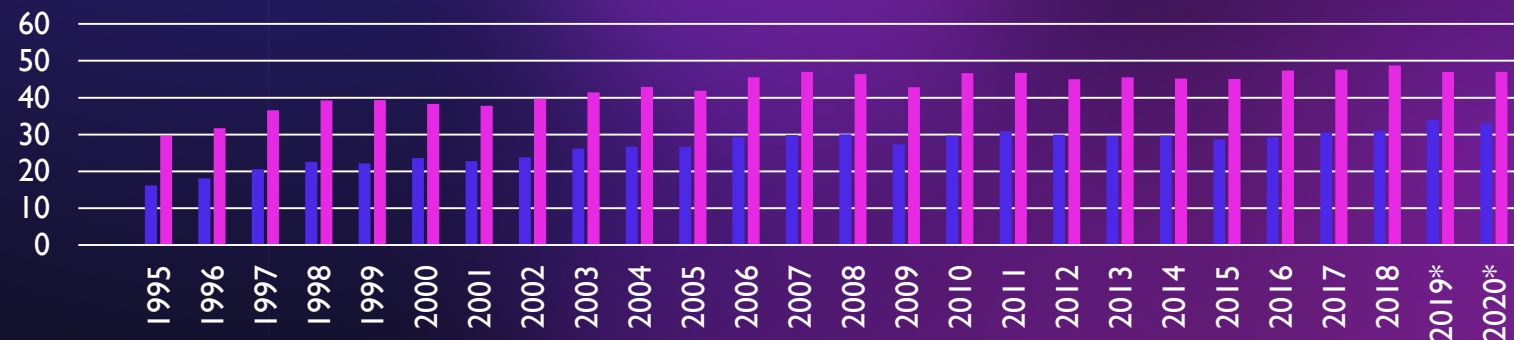
Source: Statistics Poland

AVERAGE MONTHLY PRODUCTION:

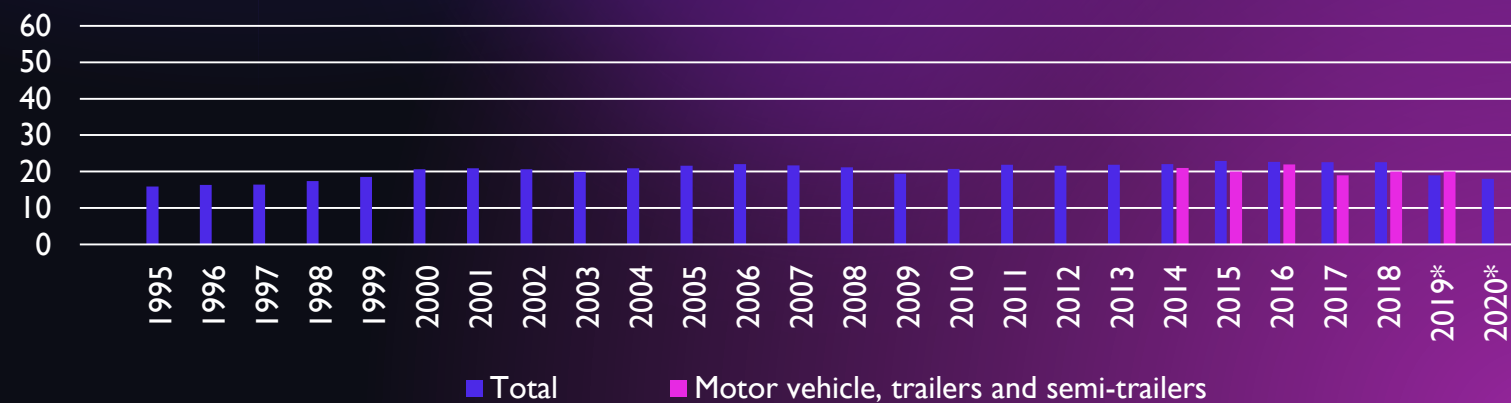
- 43 (2017)
- 18.4 (2022)

Polish automotive production sector in the GVC

Backward participation in GVCs (in percentage)



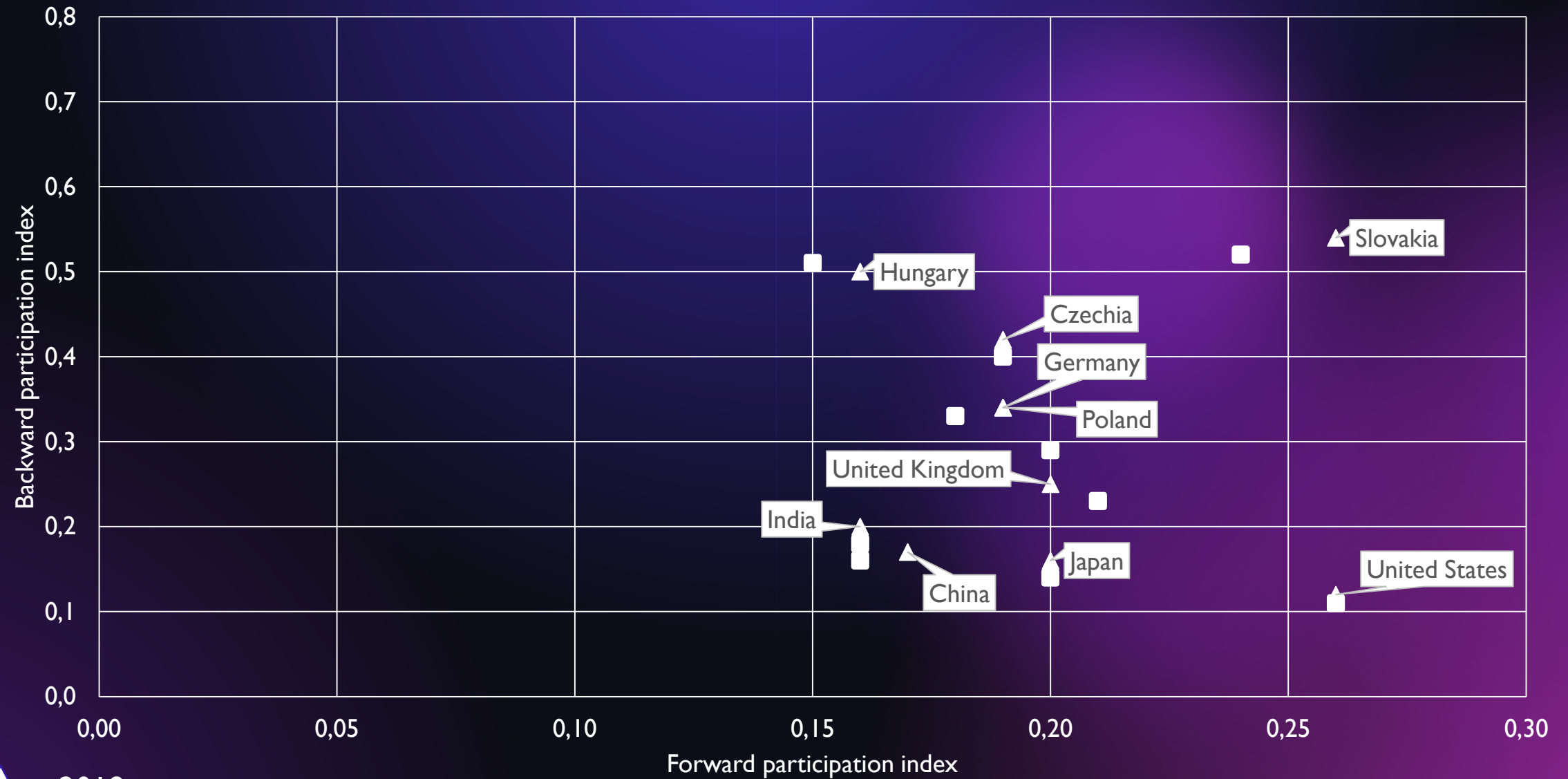
Forward participation in GVCs (in percentage)



Source: OECD, TiVA 2021

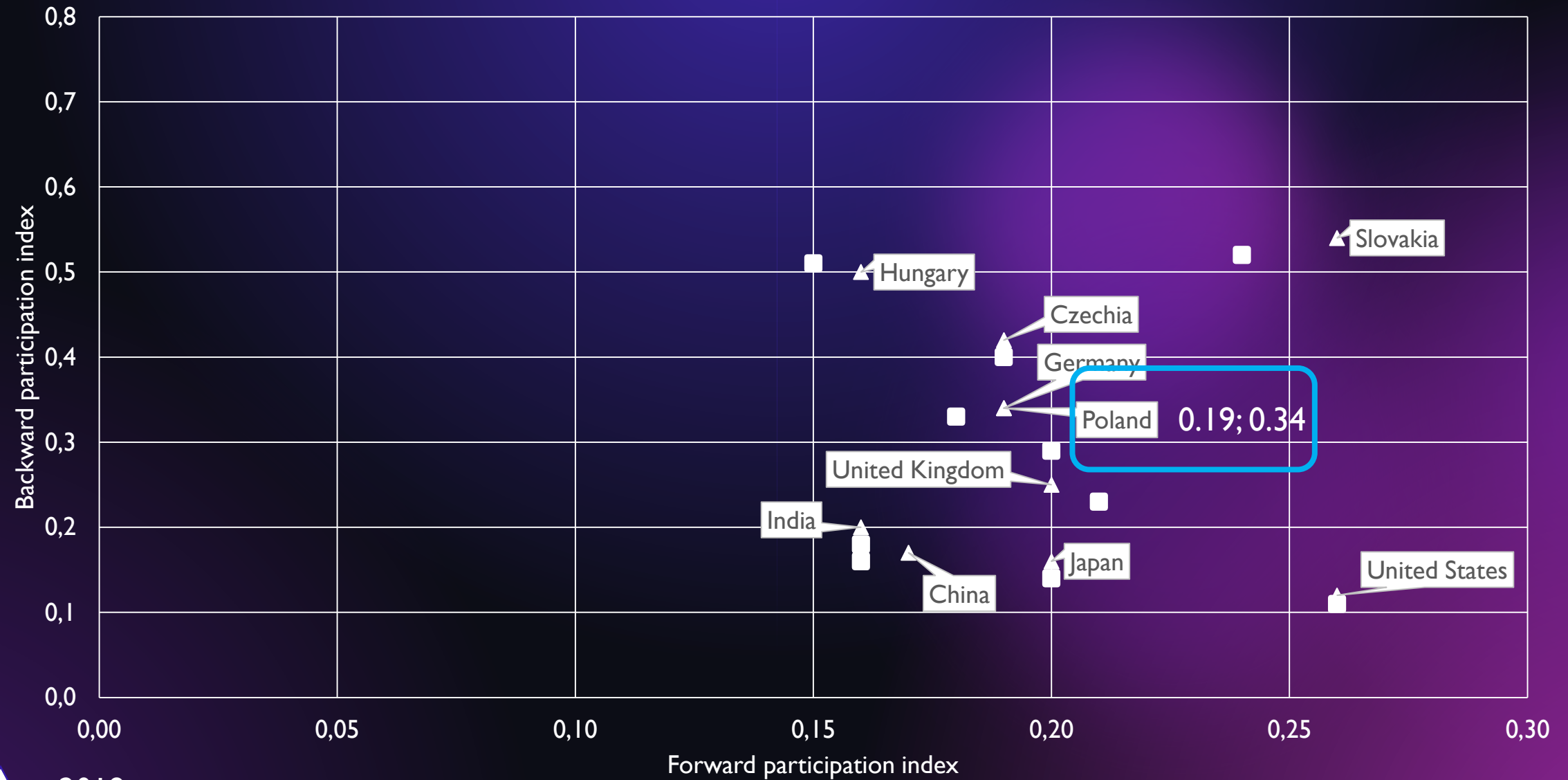
Poland in the GVC

TOTAL



Poland in the GVC

TOTAL

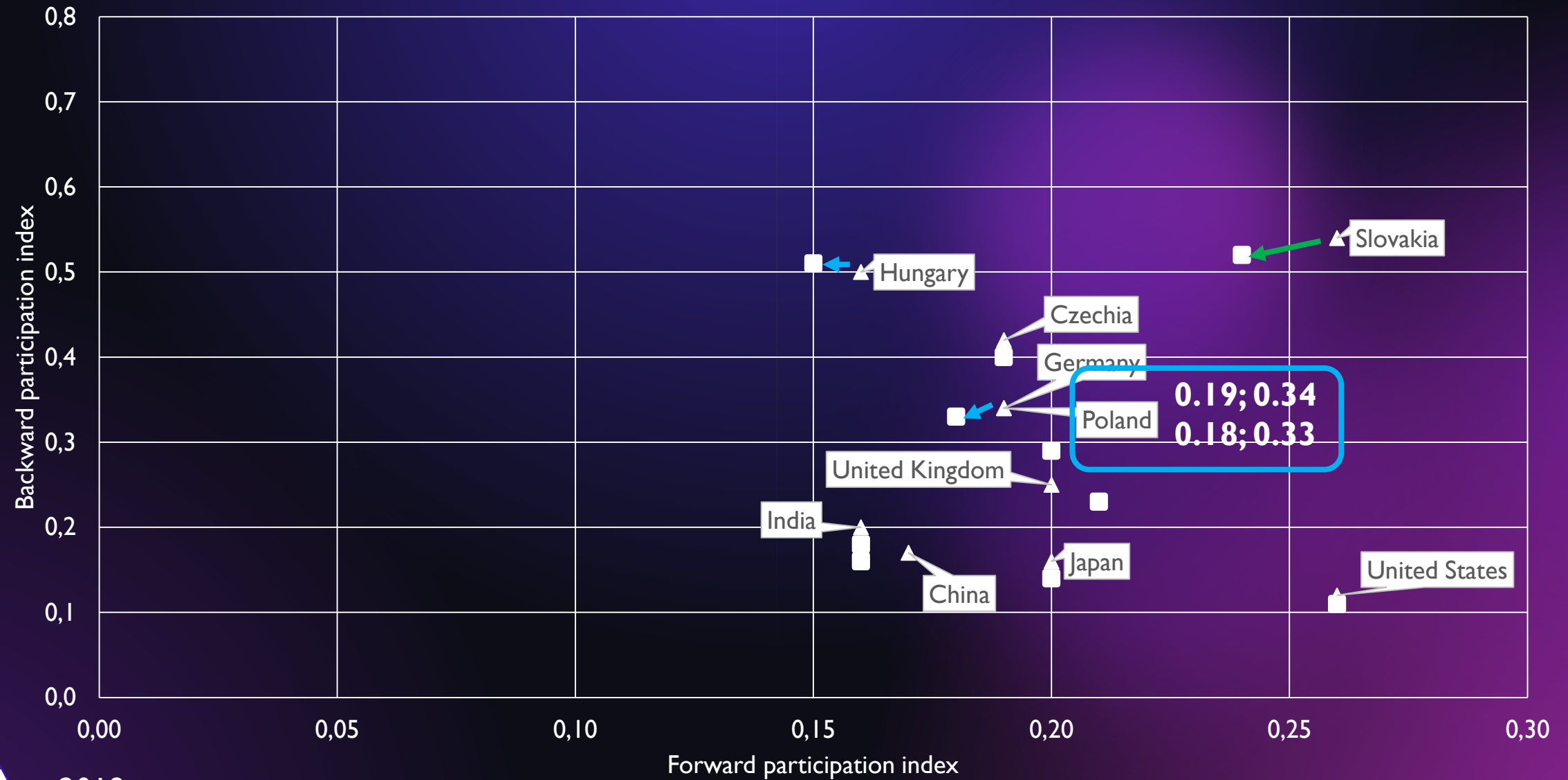


▲ 2019

■ 2020

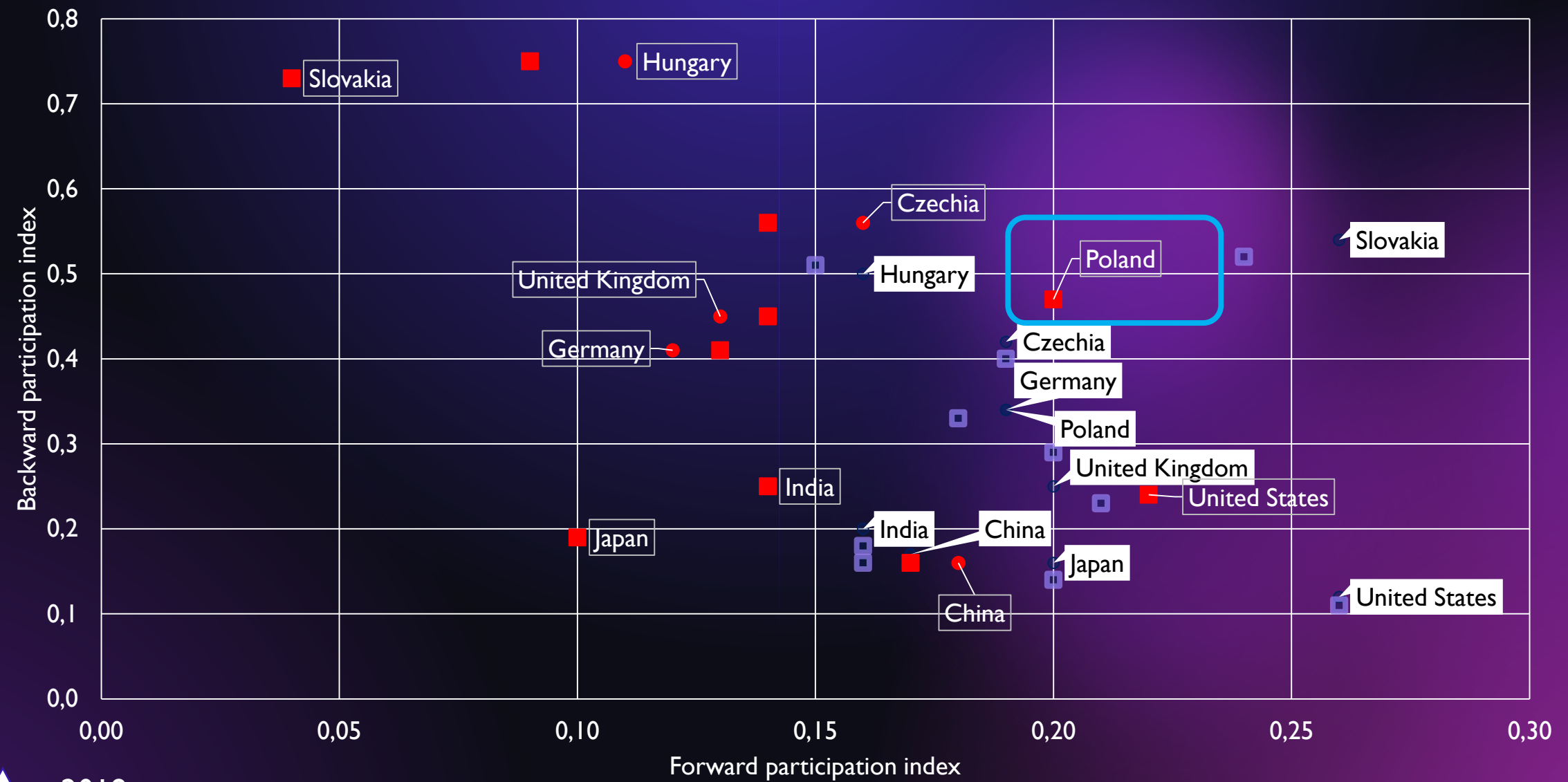
Poland in the GVC

TOTAL



Poland in the GVC

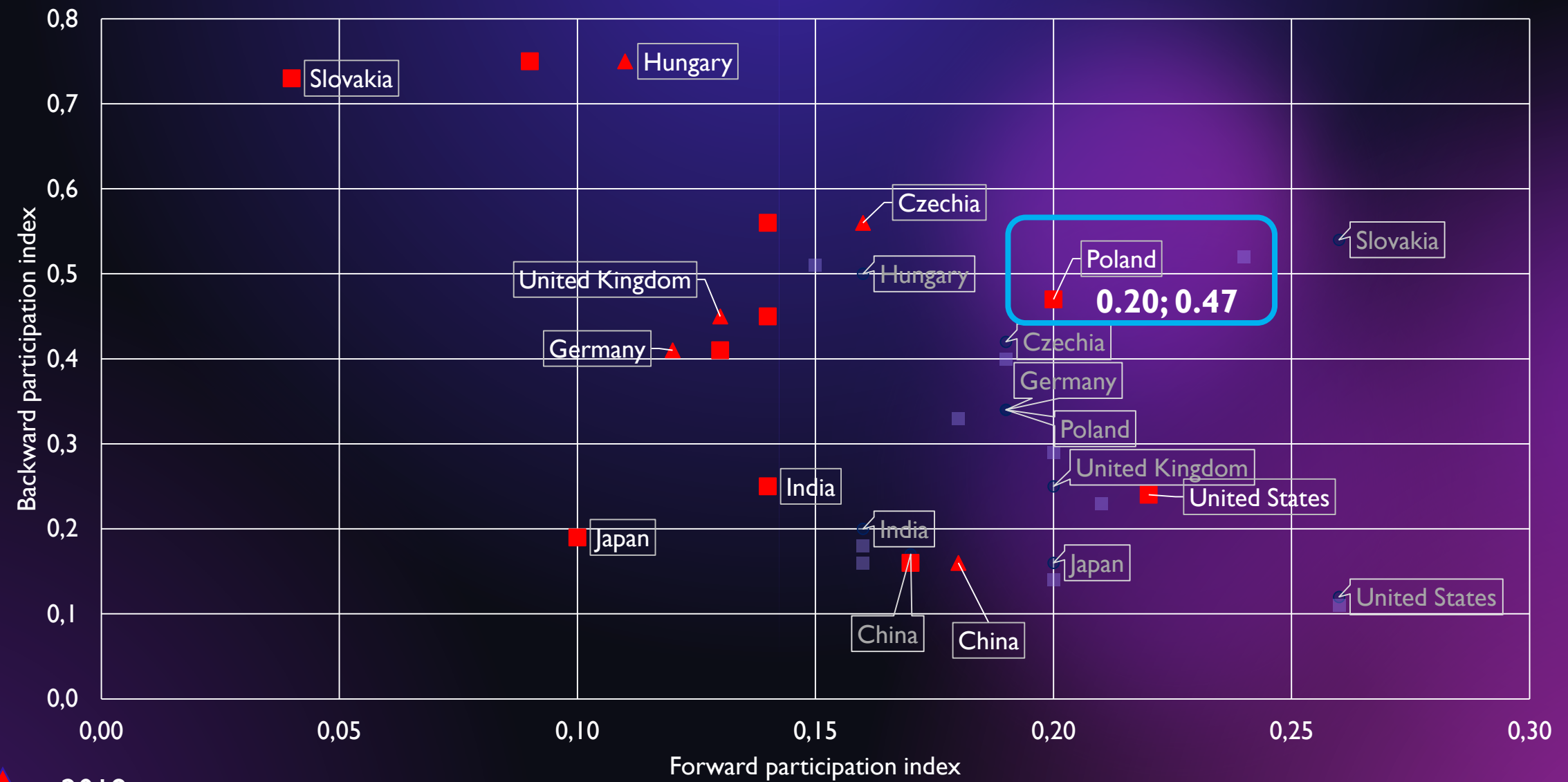
TRANSPORT EQ.



▲ 2019
■ 2020

Poland in the GVC

TRANSPORT EQ.



▲ 2019

■ 2020

SUMMARY

Polish economy has been developing dynamically for the last three decades. The major sector in industrial manufacturing is **manufacture of motor vehicles, trailers and semi-trailers**.

Poland still attracts lots of **FDI in the automotive sector** every year, but reinvestments are increasingly important.

Transportation equipment recorded the greatest increase of employment within US-owned business.

Automotive sector participates in GVCs backward much stronger than average. Forward participation is alike average.

Barriers: costs of energy, materials and components, obstacles in supply of components, rising wages (inflation spiral), rising cost of capital, withholding in gross fixed capital formation (GFCF).