

The Case for a ‘Manufacturing Imperative’ in Europe: **Why manufacturing is still special**

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A 'Manufacturing Imperative' in Europe: The Arguments

■ **A1 – Innovation**



■ **A2 – Productivity Growth**



■ **A3 – The Current Account**

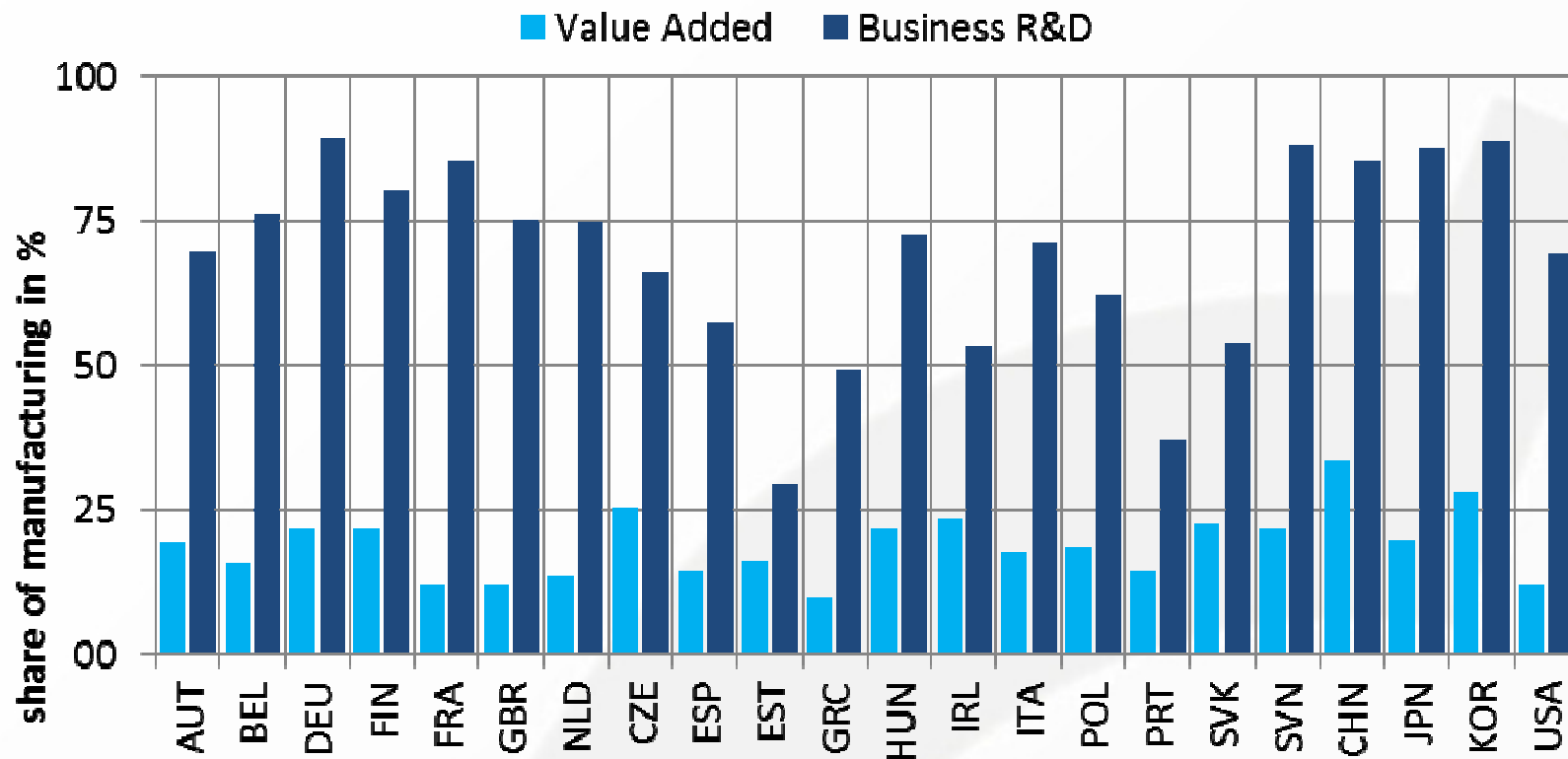


■ **A4 – The 'Carrier Function'**



Innovation

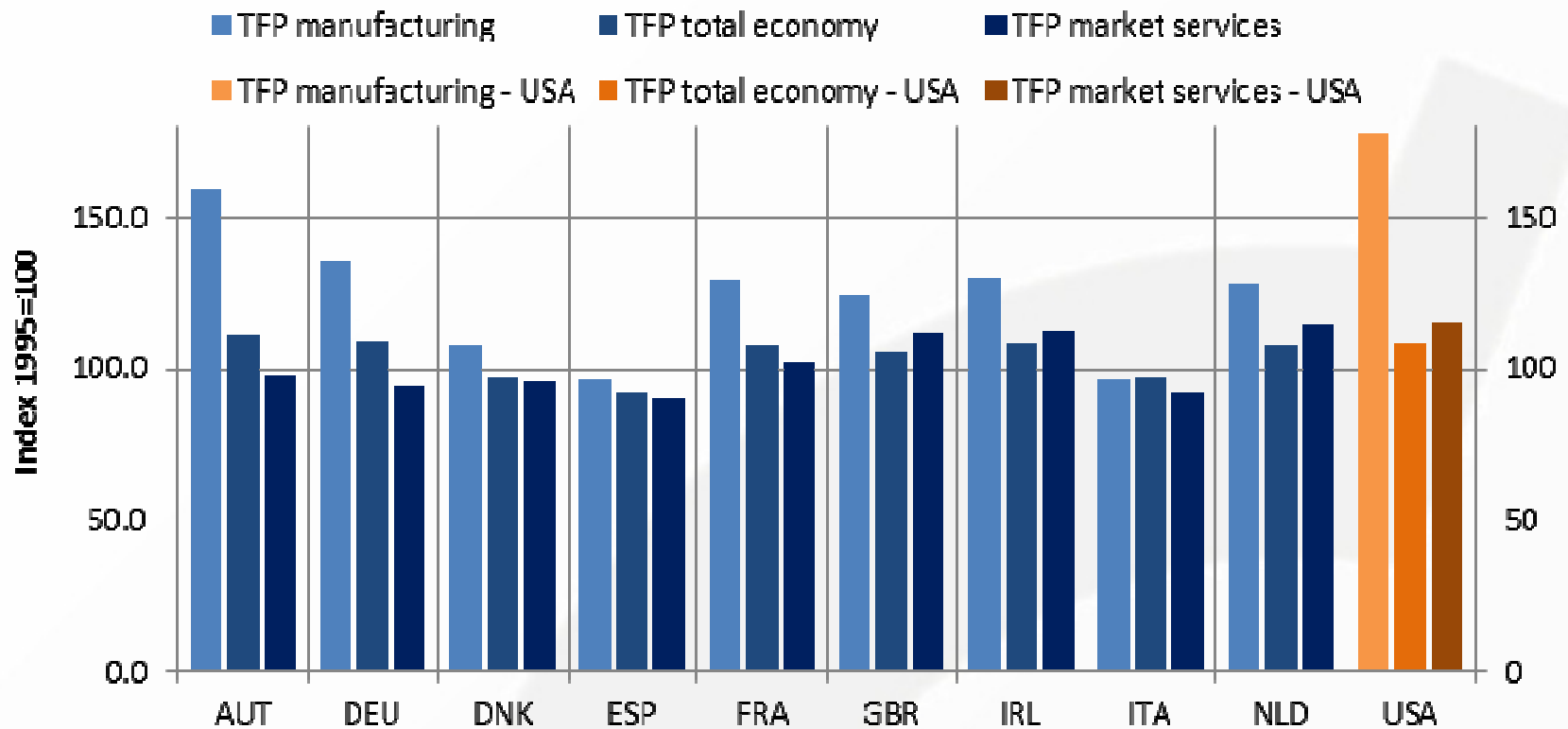
Share of Manufacturing in value added and business expenditure on R&D, 2005-2009



3 Source: WIOD, WIPO, OECD ANBERD, wiiw-calculations.
 Note: Business Expenditure on R&D include R&D by foreign enterprises.

Productivity Growth

Comparison of TFP growth in the manufacturing sector, total economy and market services, 1995-2007



Source: EU-KLEMS, wiiw-calculations.

The Current Account

Dependent variable: Current Account Balance in % of GDP

| | fixed effects 1995-2011 | | | | cross section 2011 |
|-----------------------------------|-------------------------|------------------------|------------------------|------------------------|-----------------------|
| | EU27 | EU27 + CESEE | NMS-10 + Balkan | CESEE | EU27+ CESEE |
| | (1) | (2) | (3) | (4) | (5) |
| manufacturing base | 0.7423 *** (0.150) | 0.8271 *** (0.136) | 0.6879 *** (0.207) | 0.7715 *** (0.187) | 0.4016 ** (0.169) |
| log GDP per capita | -0.574 *** (0.188) | -0.5477 *** (0.124) | -0.8401 *** (0.265) | -0.8514 *** (0.231) | -0.5496 ** (0.201) |
| (log GDP per capita) ² | 0.0277 *** (0.017) | 0.0250 *** (0.007) | 0.0375 ** (0.015) | 0.0392 *** (0.013) | 0.0316 *** (0.011) |
| F | 44.77 | 43.17 | 7.11 | 10.84 | 5.77 |
| R ² | 0.744 | 0.754 | 0.635 | 0.670 | 0.436 |
| R ² -adj. | 0.715 | 0.728 | 0.578 | 0.621 | 0.379 |
| Obs. | 448 | 577 | 253 | 299 | 34 |

Source: Eurostat, national statistics, wiiw-estimations. Fixed effects estimations control for country and time fixed effects



1 .p.p increase in the share of manufacturing improves the current account by approx. 0.74 p.p. – 0.83 p.p.

The Carrier Function

EU-27: Gross exports and Value Added Exported by broad sectors, 2011

| <i>in mn USD</i> | | Exporting Industry | | |
|-------------------------------|---------------|--------------------|---------------|-----------|
| | | Primary | Manufacturing | Services |
| source of value added | Primary | 151,282 | 397,933 | 41,090 |
| | Manufacturing | 19,696 | 2,593,900 | 93,035 |
| | Services | 61,051 | 1,922,685 | 1,464,715 |
| sectoral split: gross exports | | 3% | 73% | 24% |

Source: WIOD, wiiw-calculations.

Conclusions

- C1 – The manufacturing sector is the main source of **Innovation and technological progress**
- C2 – Manufacturing is also the primary sector where technological progress is realised in the form of **productivity growth**
- C3 – A larger manufacturing base reduces the risk of **external imbalances**
- C4 – The majority of services are exported indirectly via manufactures. **The manufacturing sector fulfils a carrier function** for services.

Additional Comments

- The share of manufacturing in GDP is not a good measure for the size of the **'manufacturing base'**. However, alternative measures are hard to find or are not operational (e.g. the 'manufacturing commons' – see Pisano and Shih, 2009)
- Does each Member State need a strong manufacturing base or is it sufficient to have a European Manufacturing Core?
- Arguable the distinction between **tradables** and **non-tradables** would be more appropriate.
- Does it matter in which location actual production takes place or is it sufficient to have **control over technology**?

The Trade Account

Relationship between the trade account and the manufacturing base, 1995-2011

Dependent variable: Trade account balance (goods and services balance) in % of GDP

| Variable | EU27 (4) | EU27 (5) | EU27 (7) | EU27 (8) | EU27 (10) | EU27 (11) |
|-----------------------------|-----------------------|-----------------------|-----------------------|------------------------|------------------------|------------------------|
| Manufacturing base | 0.5224 *** (0.131) | 0.5911 *** (0.134) | 0.5138 *** (0.139) | 0.8013 *** (0.135) | 0.7811 *** (0.133) | 0.7002 *** (0.139) |
| Manufacturing base x GDPcap | | | | | 0.6757 *** 0.148 | 0.7361 *** 0.157 |
| GDPcap | | -0.0420 (0.030) | -0.0430 (0.032) | -1.0840 *** (0.208) | -1.5750 *** (0.235) | -1.6966 *** (0.248) |
| GDPcap ² | | | | 0.0659 *** (0.012) | 0.0931 *** (0.014) | 0.1004 *** (0.015) |
| Δ Real effektive FX | | | -0.001 ** (0.001) | | | -0.001 *** (0.000) |
| F | 4.220 | 4.577 | 4.630 | 6.114 | 6.735 | 7.399 |
| R ² | 0.888 | 0.886 | 0.893 | 0.900 | 0.908 | 0.917 |
| R ² -adj. | 0.876 | 0.874 | 0.881 | 0.889 | 0.897 | 0.907 |
| Obs. | 459 | 454 | 427 | 454 | 454 | 427 |

Source: WIOD, Eurostat, World Development Indicators, wiiw-estimations.

Notes: All estimates include a constant, time and country fixed effects. standard errors in parenthesis. *, **, *** indicate statistical significance at the 1,5 and 10 level respectively. Specifications with interaction terms use mean-centered values of regressors.