

Gerhard Bosch

**Public Policy, Labor Market governance and
Economic Innovation**

CRIMT

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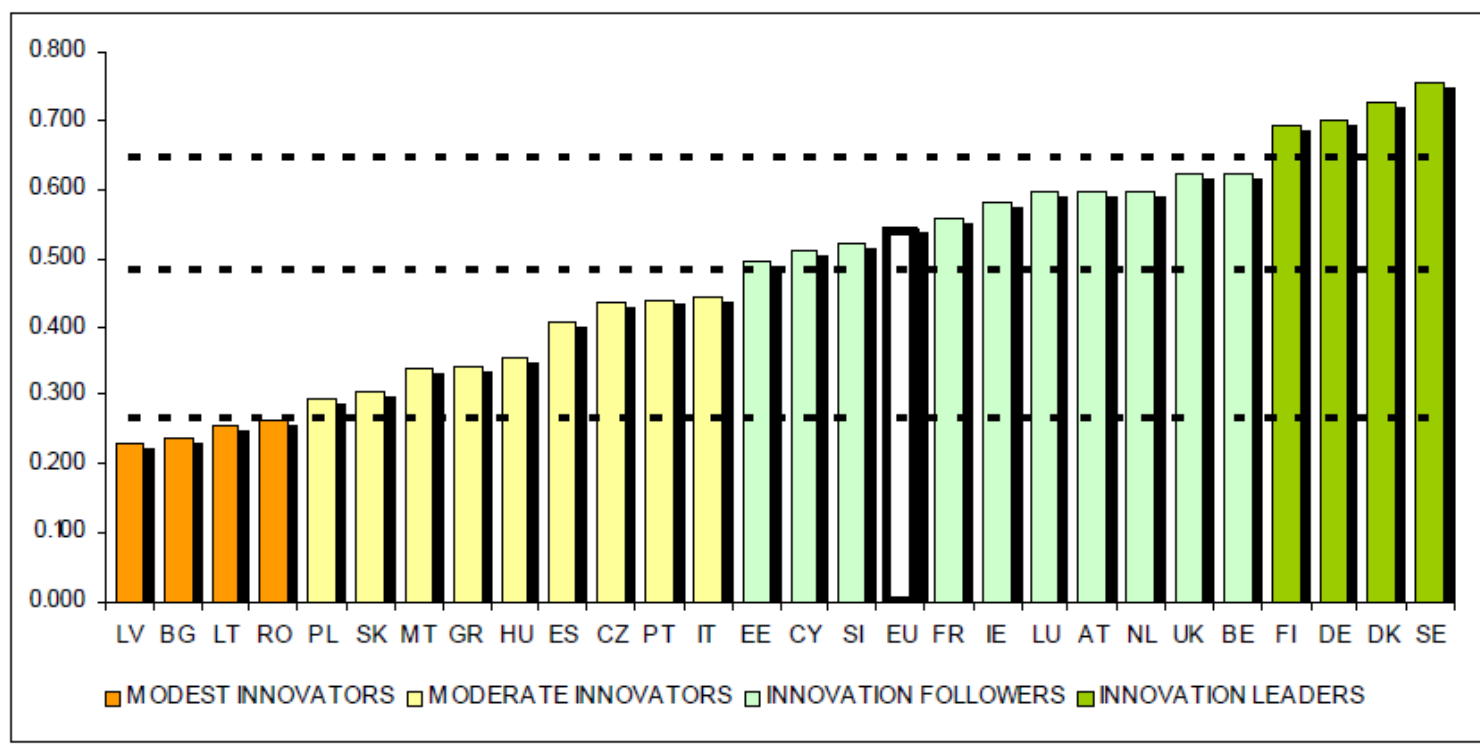
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1.1 EU Member States' Innovation Performance



Note: Average performance is measured using a composite indicator building on data for 24 indicators going from a lowest possible performance of 0 to a maximum possible performance of 1. Average performance in 2011 reflects performance in 2009/2010 due to a lag in data availability.

Source: European Commission 2012, Innovation scoreboard

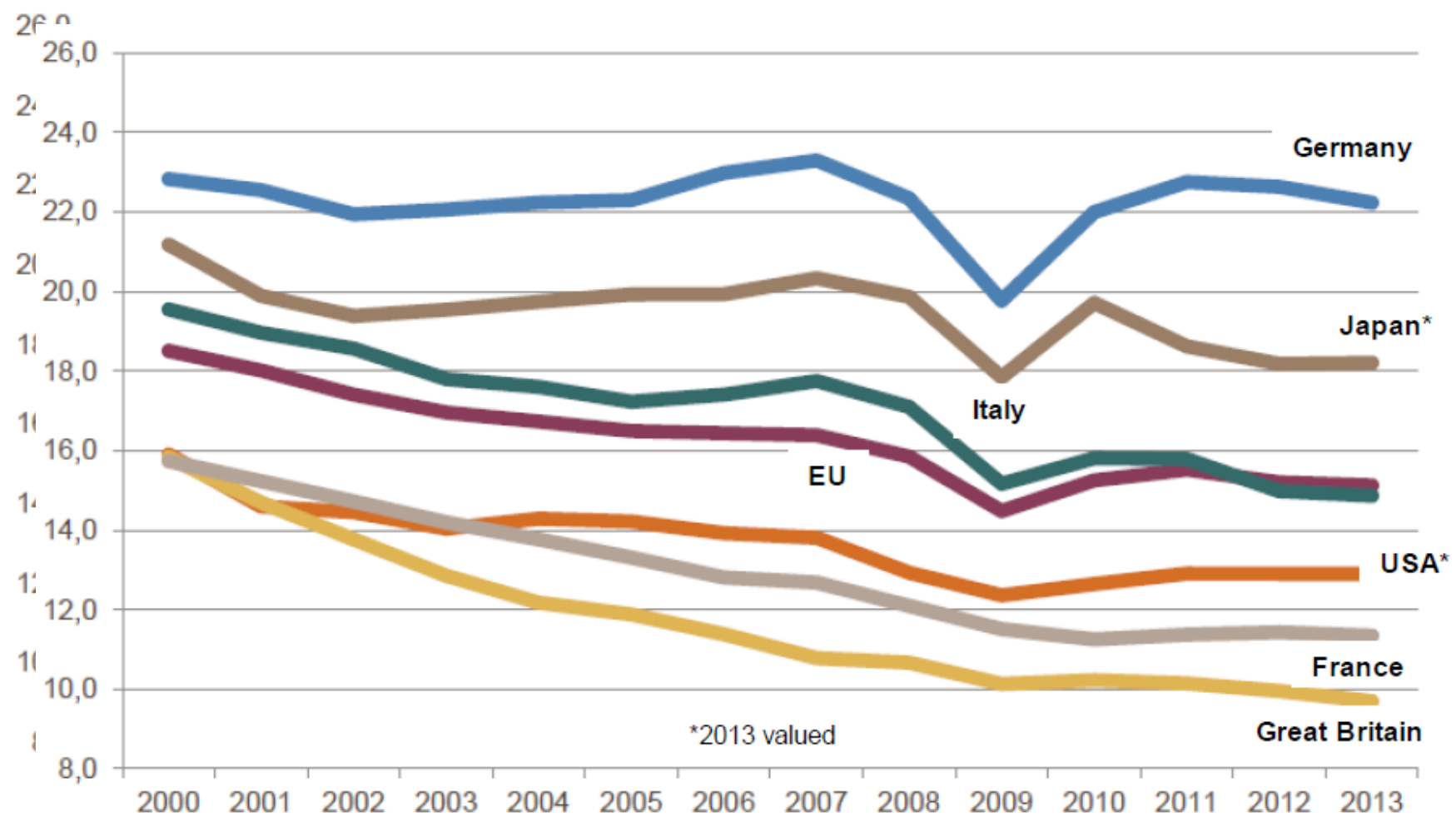
1.2 Innovation leaders in the EU – FI, SE, DE, DK

- High taxes, strong welfare states, regulated labour markets, strong unions, low income inequality (not in DE)
- Why are they “Innovation Leaders”?
 - *“Beneficial constraints”* (Streek 1997) : directs employers to high road strategies
 - Complementary institutions to create virtuous circles between employment model and innovation

Mainly:

- Investments in skills -“cheap skilled labour” with high internal flexibility (*“Making solidarity work”* Dølvik 1997)
- R&D - competitive advantage in product markets

2.1 Share of manufacturing of gross value added in % 2000 – 2013



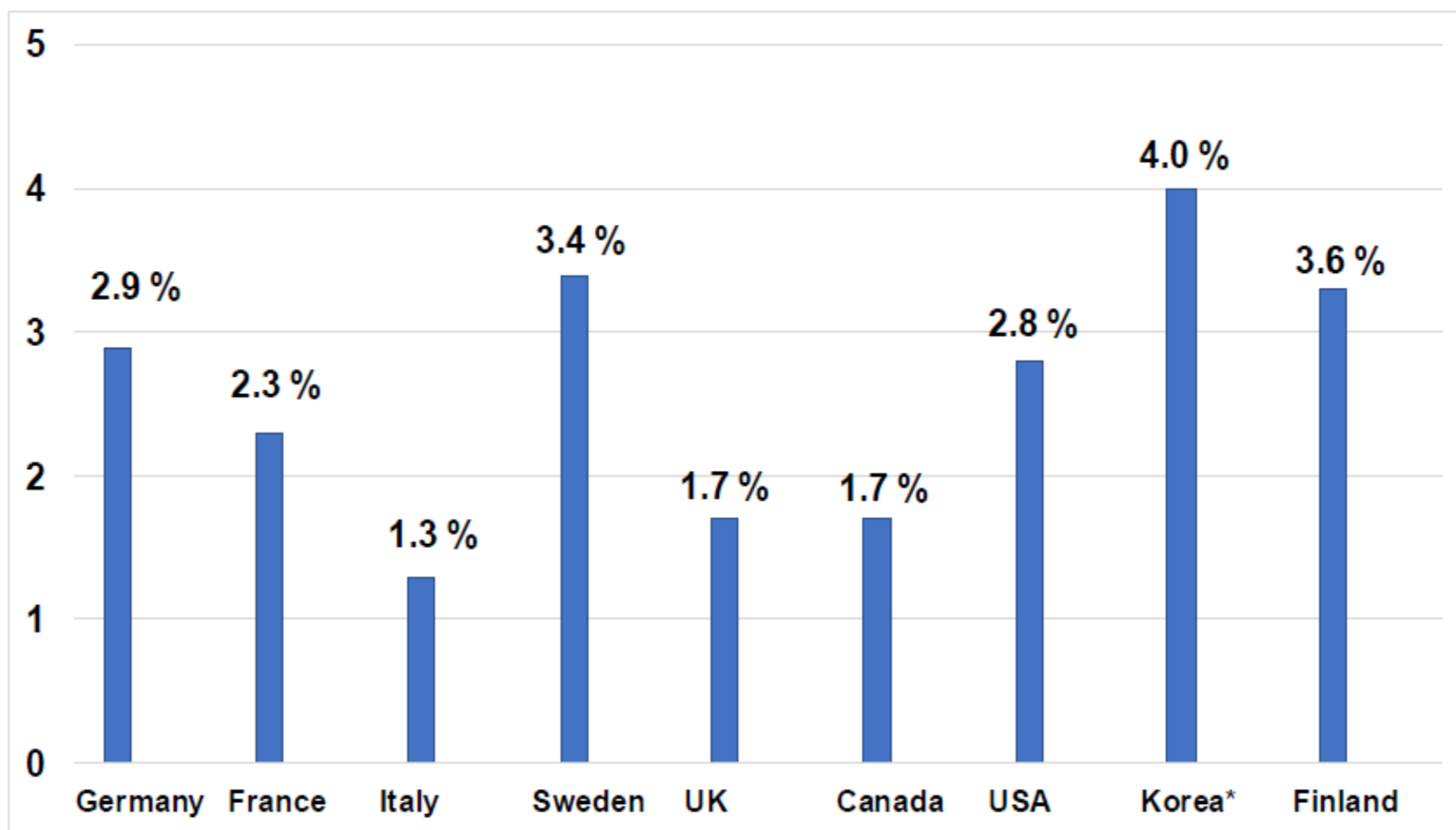
Source: VCI, Industrieland Deutschland, Teil 1, S. 6, Januar 2015

2.2 Reasons for competitiveness of German manufacturing industry

1. High Tech Strategy – investment in R&D
2. Internal devaluation within Euro-Zone through wage-moderation
3. High skill level
4. High numerical and functional flexibility

Dualistic labour market : Highly regulated segment and deregulated segment (not covered by CA, no works councils)

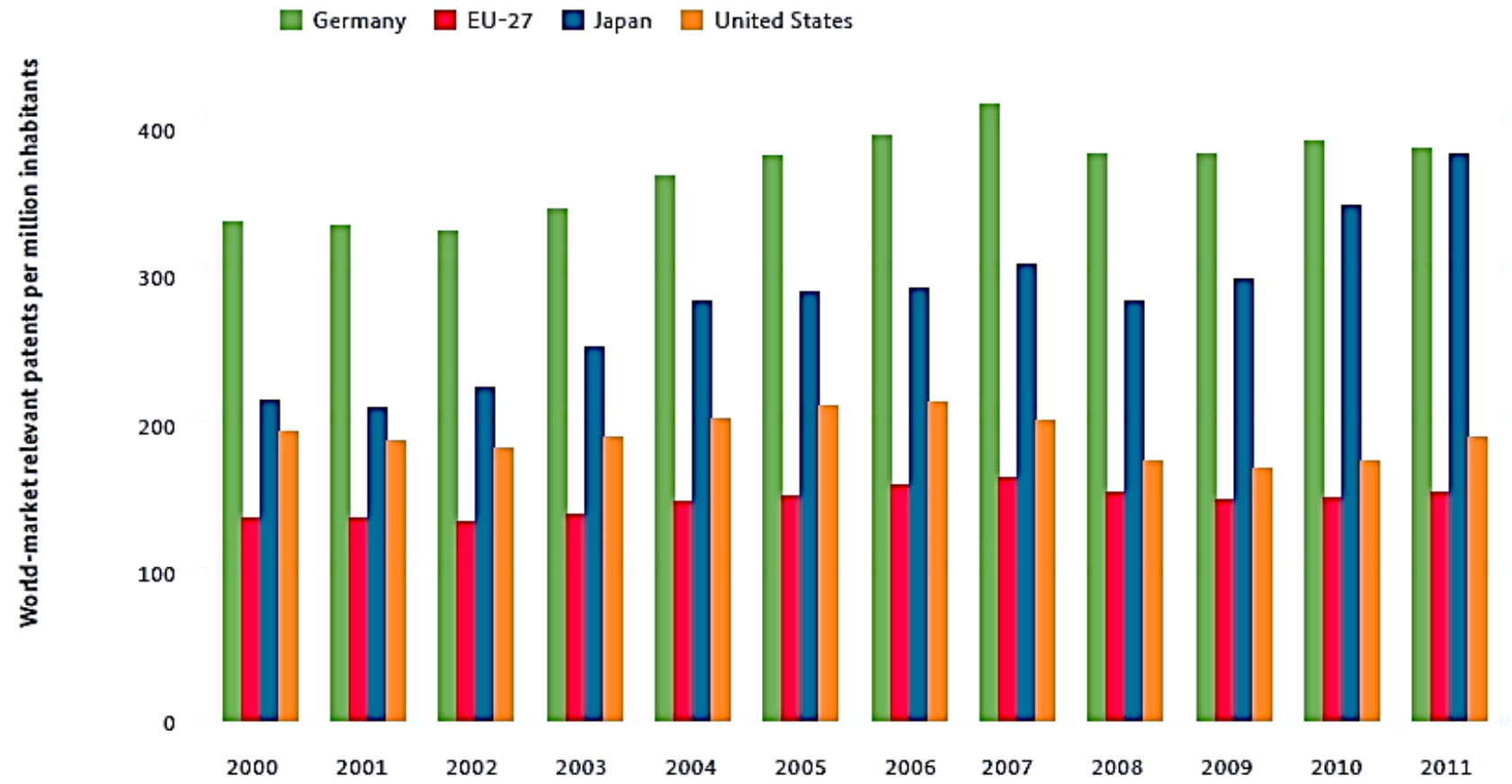
3.1 Expenditure for R&D in % of GDP, 2012 (2/3 in Germany from companies)



*2011

Source: Statistisches Bundesamt, DESTATIS (2015), Basistabelle, Ausgaben für Forschung und Entwicklung

3.2 Transnational patents: Germany, EU 27, Japan and the United States, 2000 - 2011

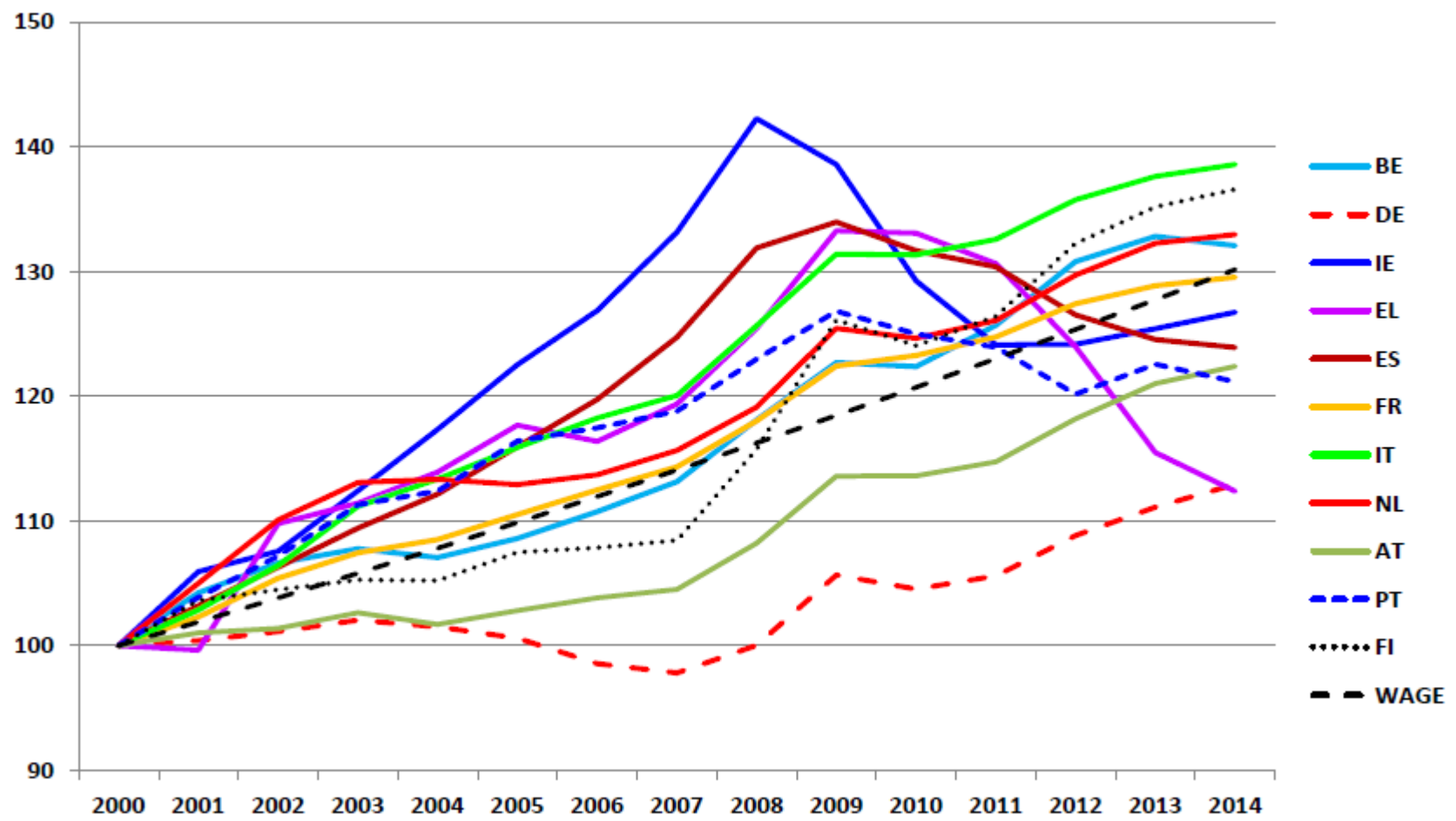


Source: Federal Ministry of Education and Research (BMBF), Federal Report of Research and Innovation 2014, S. 80

3.3 High-Tech Strategy and Work

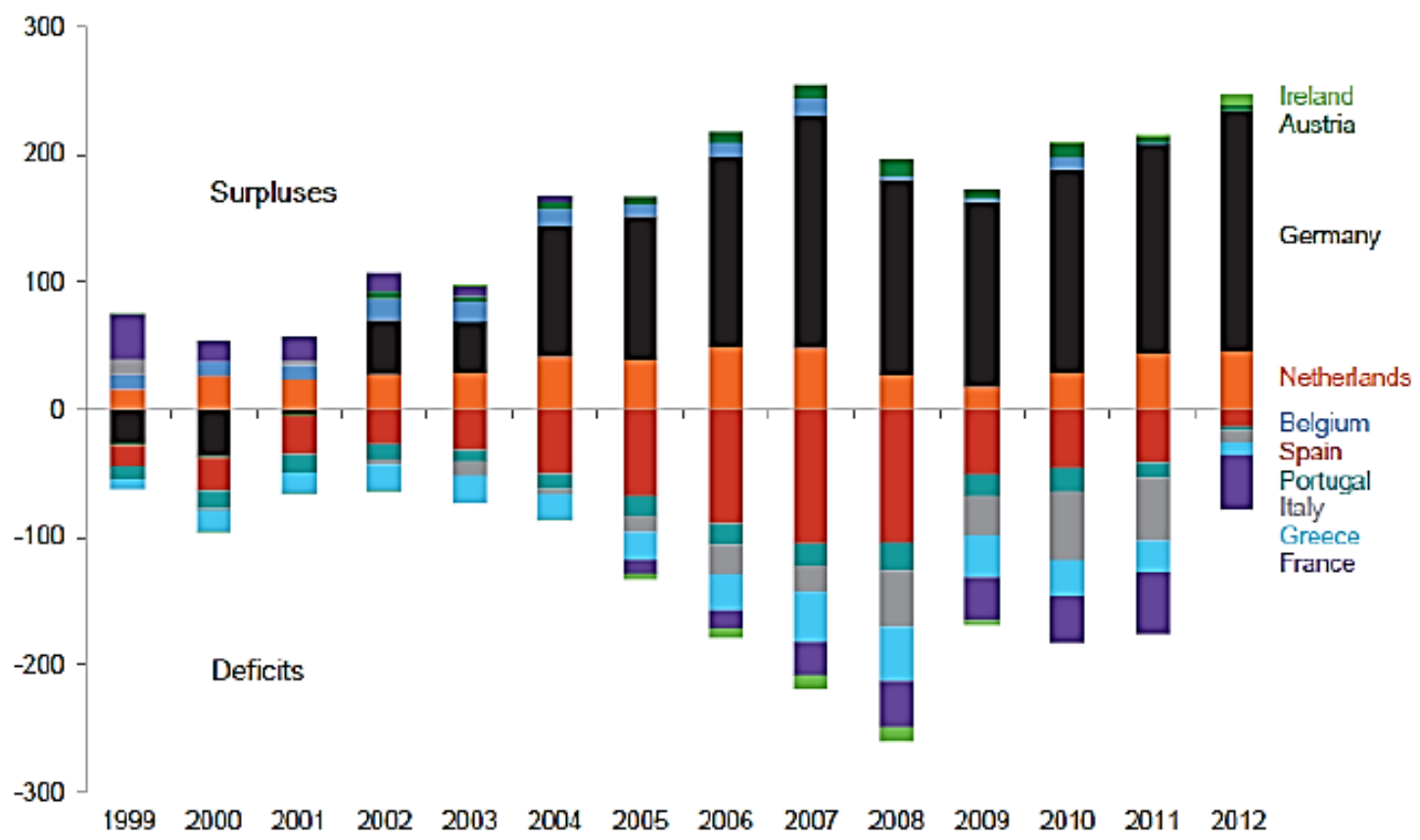
- German “High-Tech Strategy” – thematic priorities in R&D (health, mobility, resource efficiency, smart factory etc.)
- Initiative of innovative business leaders – Focus on technological innovation – neglect of working conditions
- Unions demanded *follow-up to “humanization of work programmes” of the 70’ and 80’s* - New Federal R&D-Program “Innovation in work and services” (200 Million € 2015-2020)
- Goals: (1) *early intervention* in the design of work organization in “Industry 4.0”, (2) *prototypes with decent working conditions*, (3) *supporting works councillors* in shaping working organization
- “*Redundant capacities*” (Crouch) to create opportunities to cope with changing environment

4.1 Internal devaluation in Euro-Zone



4.2 Internal devaluation in Euro-Zone

Current account balances in the euro area
EUR billion



Source: HBS / IMK 2014, Vortrag A. Watt, 2014-09-17, S. 14

4.3 Internal devaluation

- **High price: Growth of low wage sector**
- **Negative impact on innovation: Move from the high road to the low road in some companies**
 - **come-back of business models based on cheap labour, low skills, hierarchical work organization , lower productivity**
 - **many often hidden costs (for example higher accident rates etc.) in some segments (construction, meat industry, retail trade ...)**
 - **More research on the negative impact of low labour standards on innovation needed**

5.1 Investments in skills

- Reduction of share of unskilled employees from around 64% in 1964 to 15% in 2015
- around 2/3 of employees have at least a vocational certificate (mainly 3- 3,5 years of training) in one of the 360 national occupational profiles in the German apprenticeship system – mainly financed by employers –apprenticeship rate of about 6%
- promotional training curricula in all occupations (master, technicians, business administrator) on bachelor level (Level 6 European Qualification Framework) (around 12% of employees)

5.2 Modernization of the German apprenticeship system

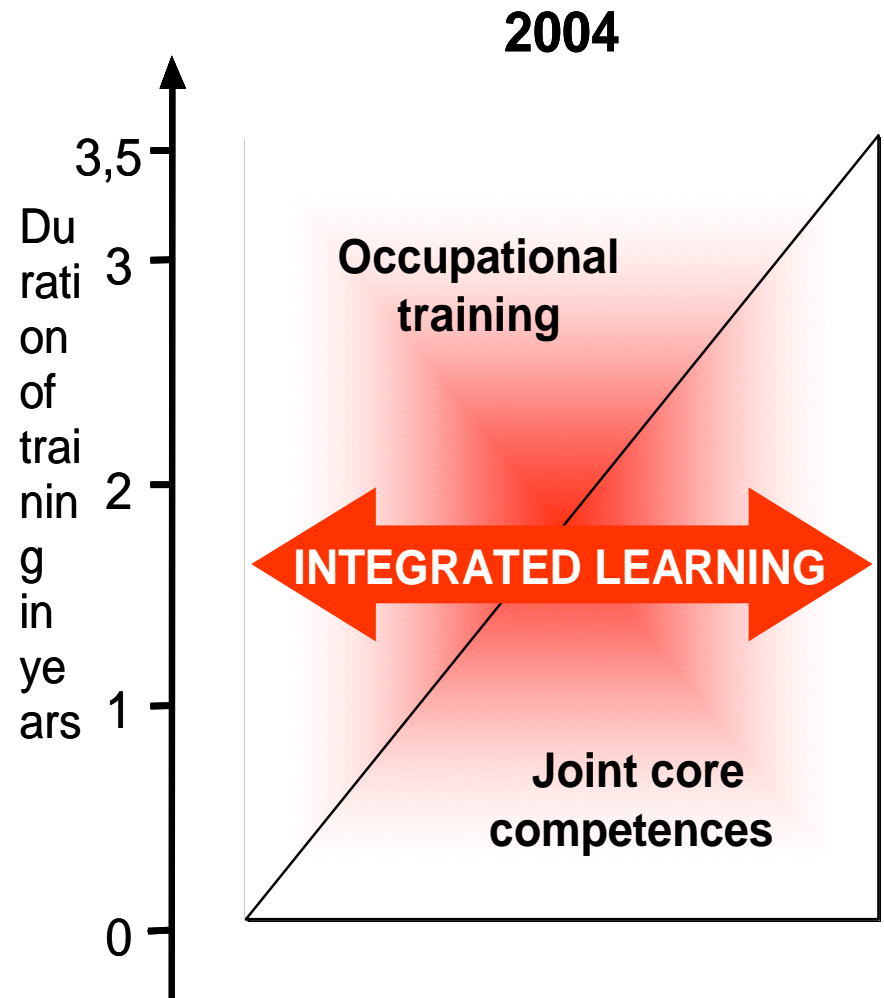
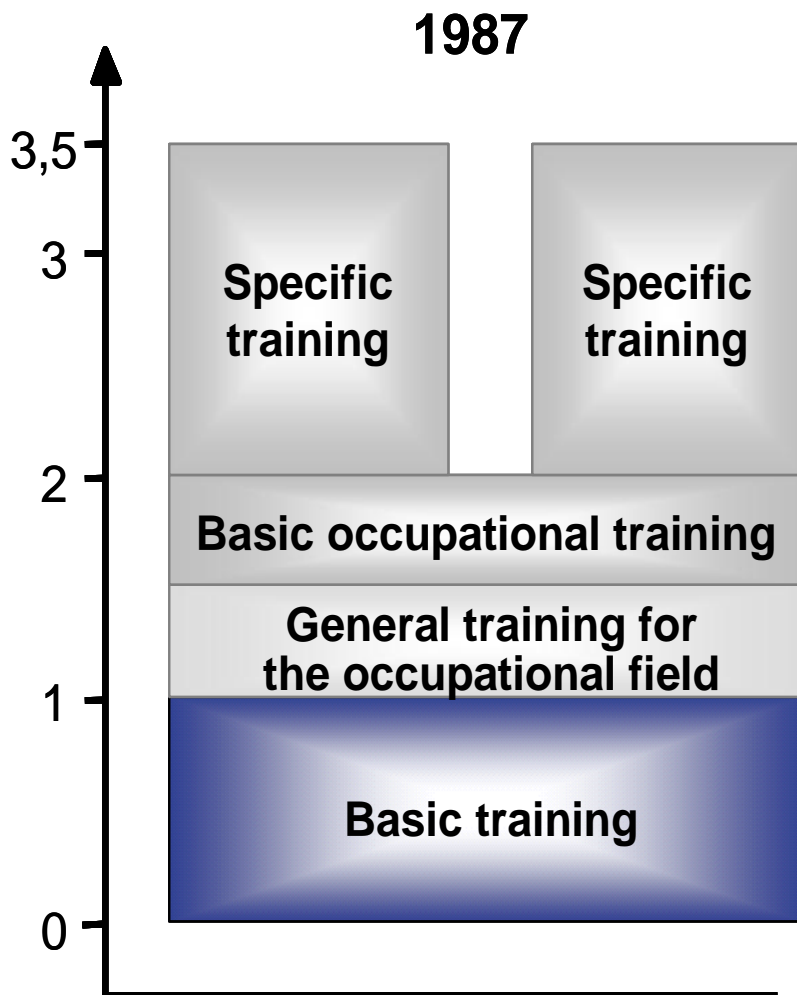
Social partners agreed to

- **create broader occupations**
- **Introduce new learning forms reflecting modern decentralized work organization**

Reforms always compromise between modern and traditional companies

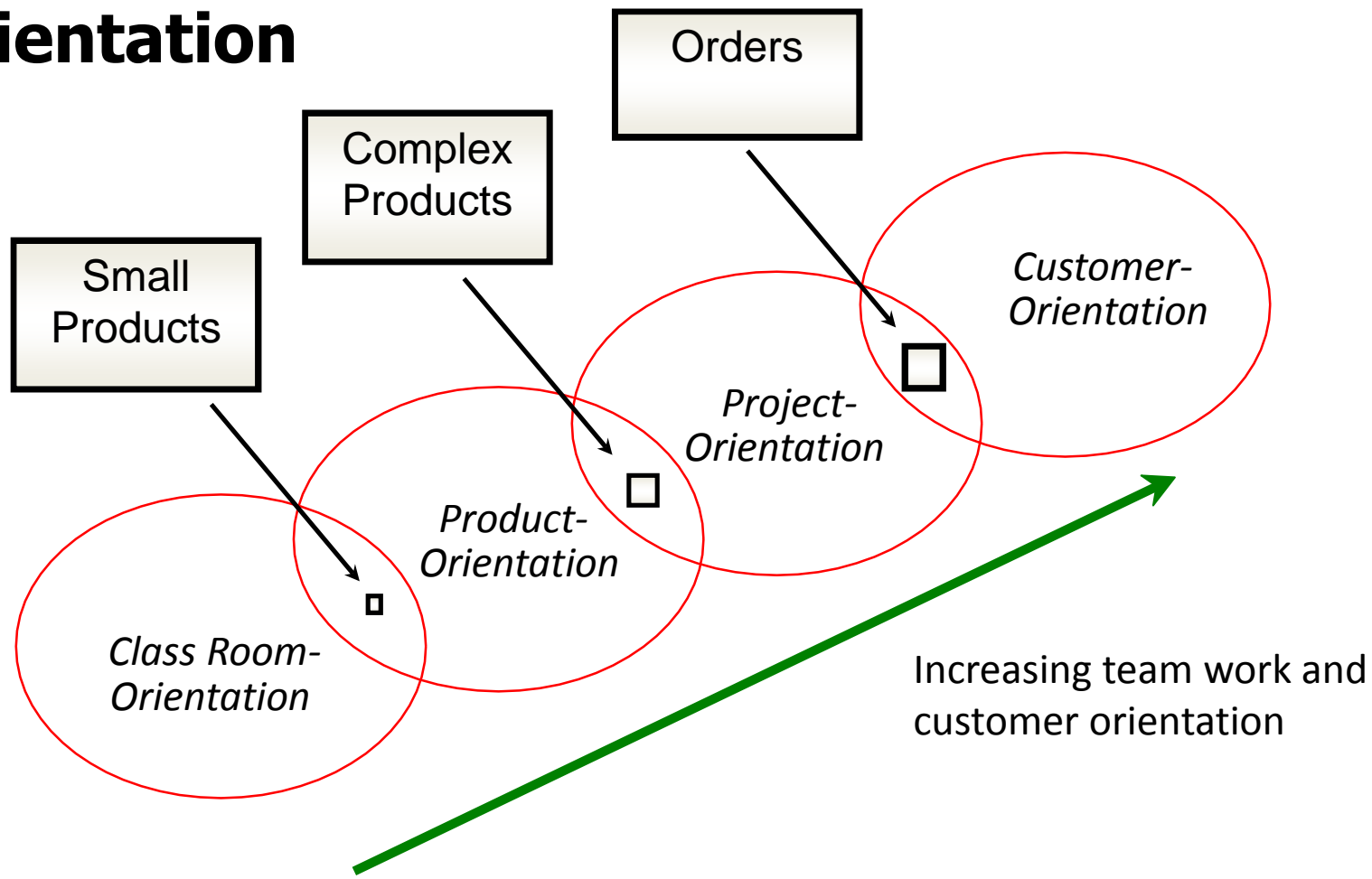
- **implementation of new curricula and learning forms – innovation stimuli for traditional companies**

5.3 Example: Training curricula in the German metalworking trades 1987 and 2004 (1987 - 45, 1987 - 16, 2004 – 5 occupations)



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5.4 New learning forms: From product towards team work and customer-or business process orientation



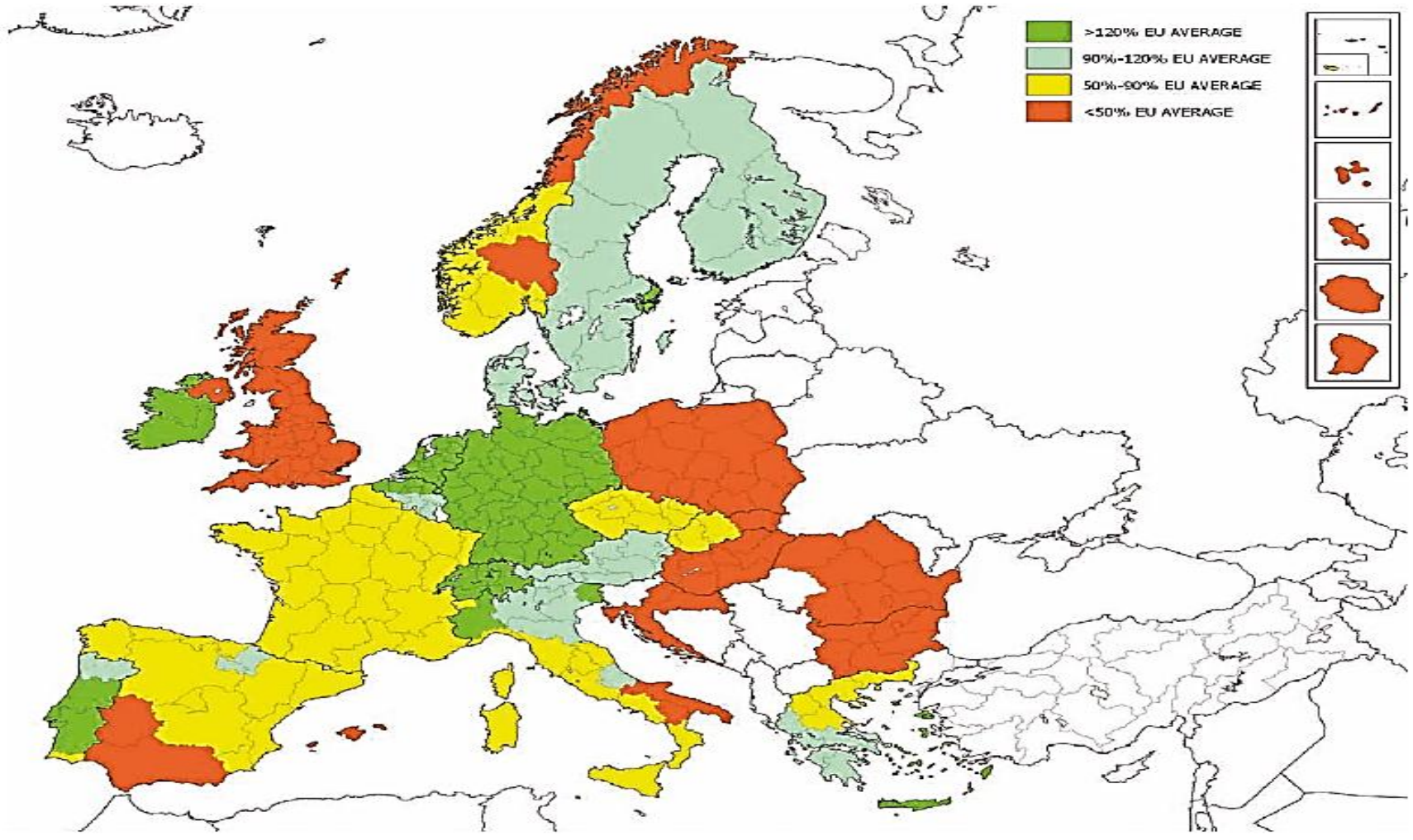
5.5 Outcomes of broad training

Promotes work organization with more autonomy at the shop floor:

- **Less supervisors: in German machine-tool companies 4% of employees in bottom layer of management compared with 11% in the UK** (Ryan et. al. 2011)
- **Better communication flow if middle managers are recruited from the skilled shop floor**
- **More incremental innovation – specialisation in products of higher value** (Prais et. al 1989; Steedman/Wagner, 1989)
- **Dissemination of innovation into SME's**

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5.6 SME` introducing product and process-innovation 2010 as % of SME`s



Quelle: European Commission (2014): Regional Innovation Scoreboard, p. 59.

6. 1 Internal flexibility

In last 2 decades social partners agreed on new „tool box“ for working time flexibility:

50% of enterprises have working time accounts (for overtime hrs. etc.)

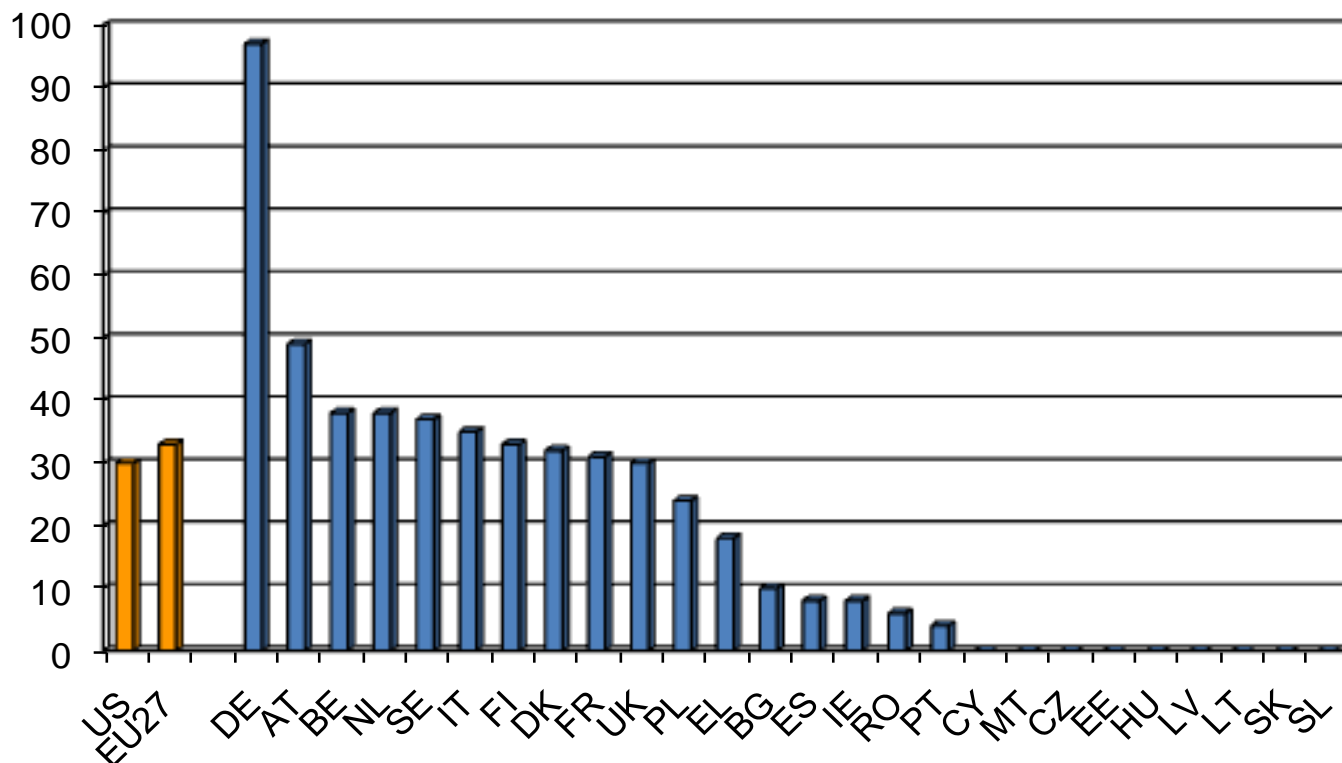
most collective agreements allow temporary reduction of standard weekly w-hrs. (metall industry from 35/38 hrs to 30/33 hrs)

State subsidizes short-time – in financial crisis up to 24 months

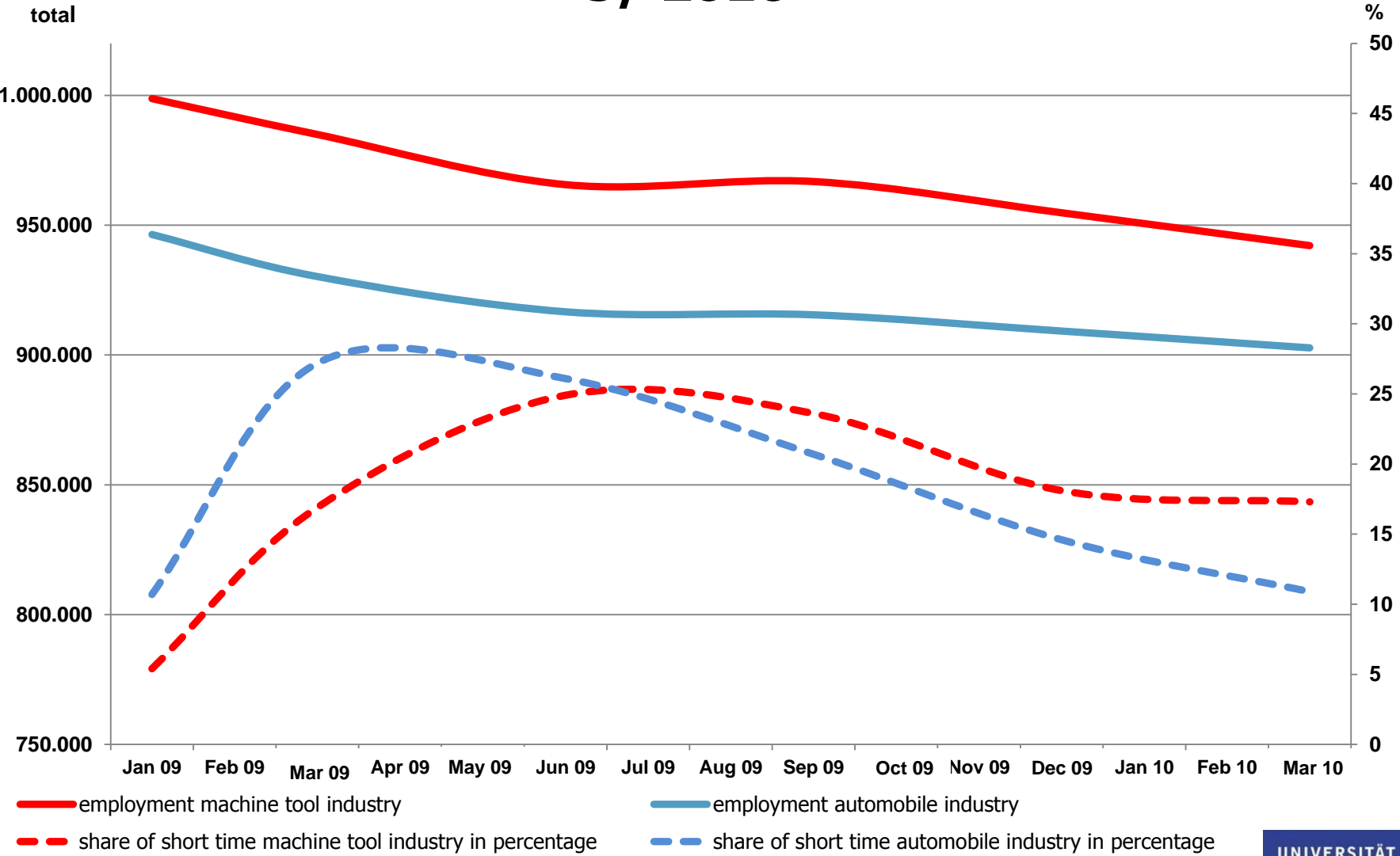
German Job „miracle“ in big recession: „Dismissing hours not workers“

Short time scheme = Industrial policy to save the industrial fabric of the country

6.2 Percentage of fall in total labour input due to fall in working hours per employee, Germany, 2008–2009



6.3 Employment and short time in machine tool and automobile industries, Germany, 1/2009 – 5/ 2010



Source: own calculation

7. Conclusions

Strong impact of public policy and labour market governance on innovation in both directions: positive and negative

Positive impacts base of political alliances between labor and capital

„Making solidarity work“ – requires pro-active modernization of employment models

Main pillars: upgrading skills, developing internal flexibility, promotion of R&D