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The diversity of industrial policies in Europe: With specific emphasis on the French case

**Colloquium on the Growth of Tomorrow, Paris, Sept 12, 2011
Centre d'Analyse Strategique
Organized on behalf of French government**

Karl Aiginger

- **Industrial Policy – stages, justifications, definition**
- **Policy changes, strengths, weaknesses in France**
- **Indicators on performance (outcomes)**
- **Discussion and hypothesis**
- **Summary**

- "Industrial policy: past, diversity, future", *Journal of Industry, Competition and Trade*, Vol. 7, No 3+4, 2007, pp. 143-146.
- "Industrial policy: a dying breed or a re-emerging phoenix", *JICT*, Vol. 7, No 3+4, 2007, pp. 297-323.
- "The Matrix Approach to Industrial Policy", *International Review of Applied Economics*, Vol. 20, No.5, 2006, pp. 573-603 (jointly with Sieber, S.).
- "Competitiveness: From a Dangerous Obsession to a Welfare Creating Ability with Positive Externalities", *JICT*, Vol. 6, No 2, 2006, pp. 161-177.
- *Evaluation of the Finnish National Innovation System - Policy Report, 2009.*
- *Evaluation of Government Funding in RTDI in Austria, 2009.*
- *World Bank Telephone Conference 2008.*
- *Analyses by EU, OECD, Erawatch, Fraunhofer, P. Aghion, G. Cetto, E. Cohen, M. Lemoine (Crise et Croissance, 2011), Bruegel, 2011.*

WIFO ■ Industrial Policy: from past to future

Past:

Activity that creates a favourable environment for business, for manufacturing and its industries *

Today:

Merging with Innovation Policy*

Tomorrow:

A Systemic Industrial/Innovation Policy (SIIP) fitting to competitive advantages, driven by challenges and vision.

- **Post war interventions**
- **Vertical dominance (sectors, firms, Grand projects)**
- **Horizontal dominance (competitiveness, framework)**
- **Matrix approach, integrated IP (2000 ff, 2010) ***

⇒ **Systemic Industrial and Innovation Policy (SIIP).**

- **Static market failures**
- **Dynamic advantages ***
- **Decline of manufacturing/unemployment**
- **Financial crisis; double deficits Greece/Portugal ***
- **Globalization/China**
- **New challenges environment, health, food, nano-technologies**
- **Booming World Economy (4%+).**

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From secteurs de pointe, national champions, defense to

- **Bottom up, clusters, competition for funds**
- **Excellence initiatives, Les pôles de compétitivité**
- **New institutions ANR, CRITT, OSEO**
- **Impressive tax credit 30%, 40% for increases (marginal) unlimited albeit decreasing: 5% above 100 mill. €***

Reform of universities:

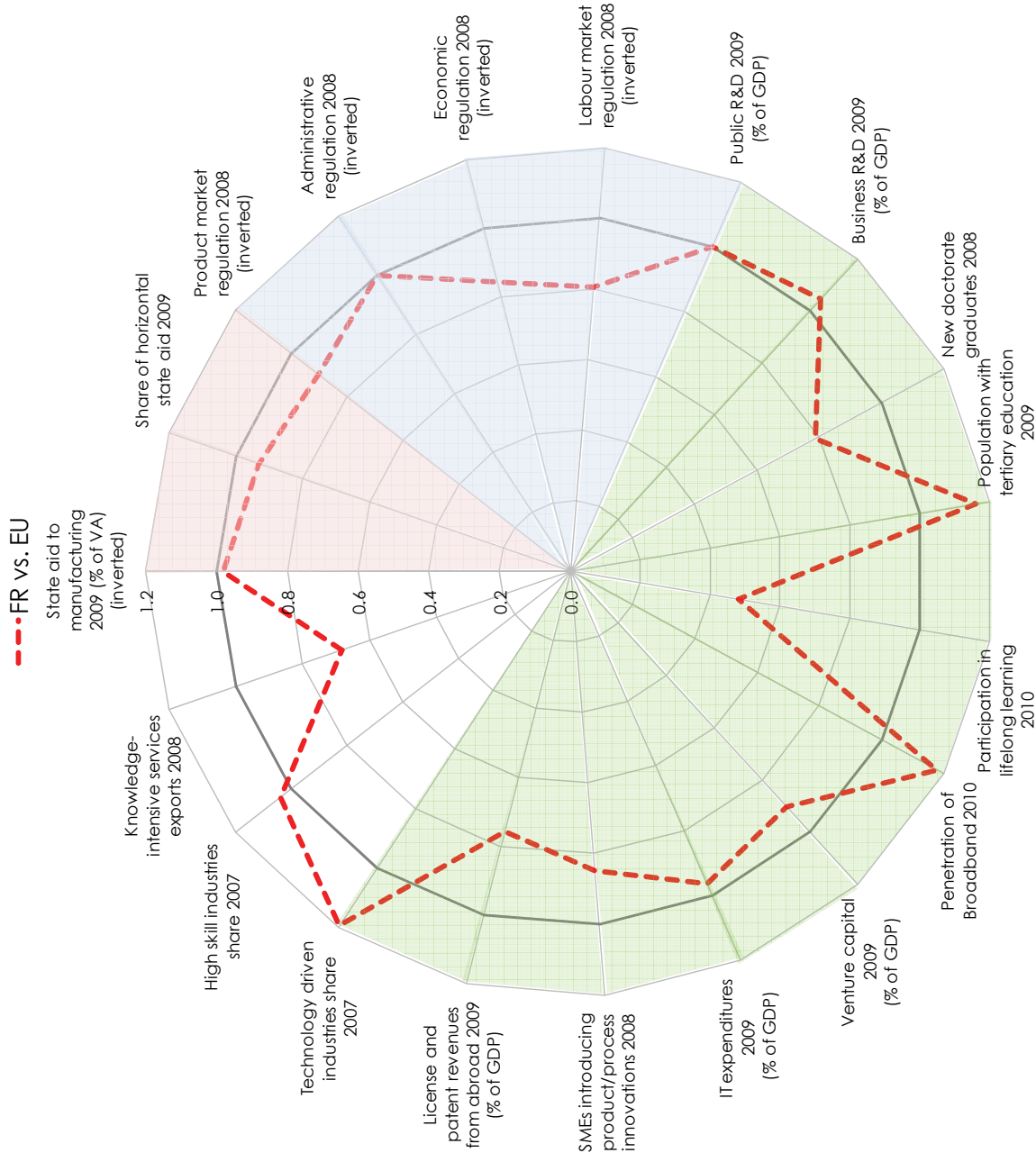
Bologna:

Competition for funds, mergers of institutes

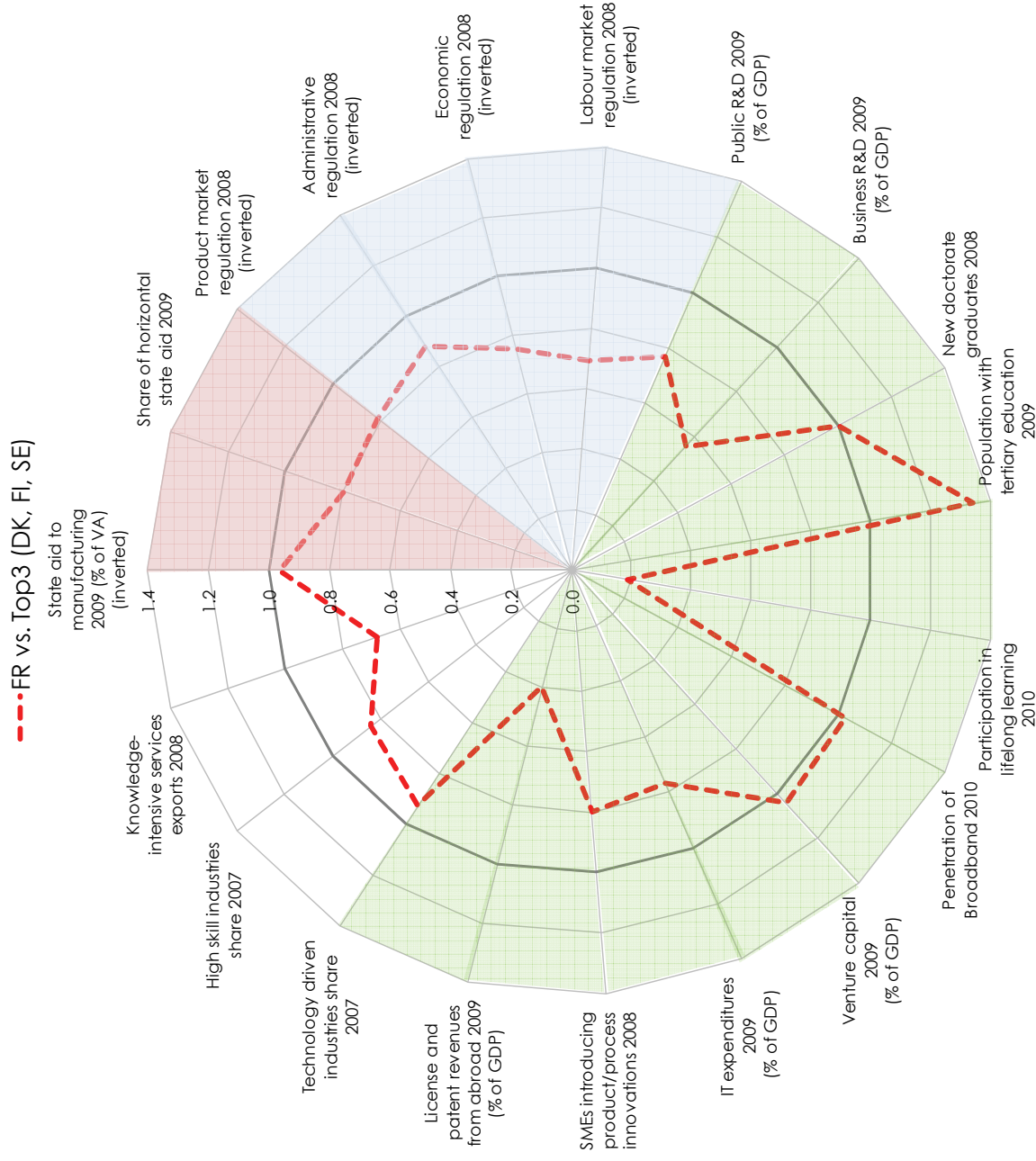
CIFRE: trilateral contract: PHD/labs/firm

Instituts Carnot: based on firm contracts of institutes.

France relative to EU Aid & Regulation, future investment, sectors

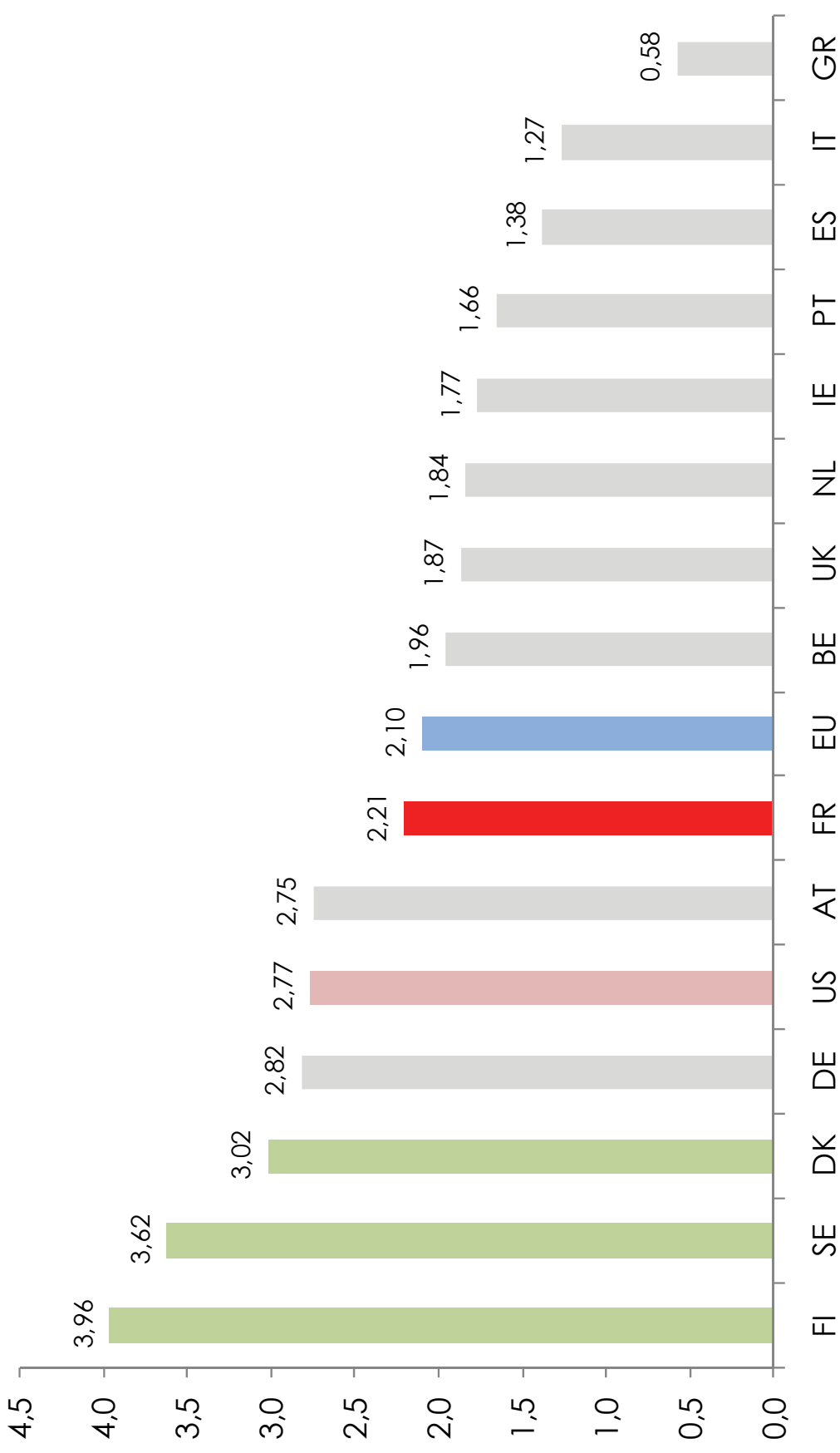


France vs. Denmark, Finland, Sweden Aid & Regulation, future investment, sectors

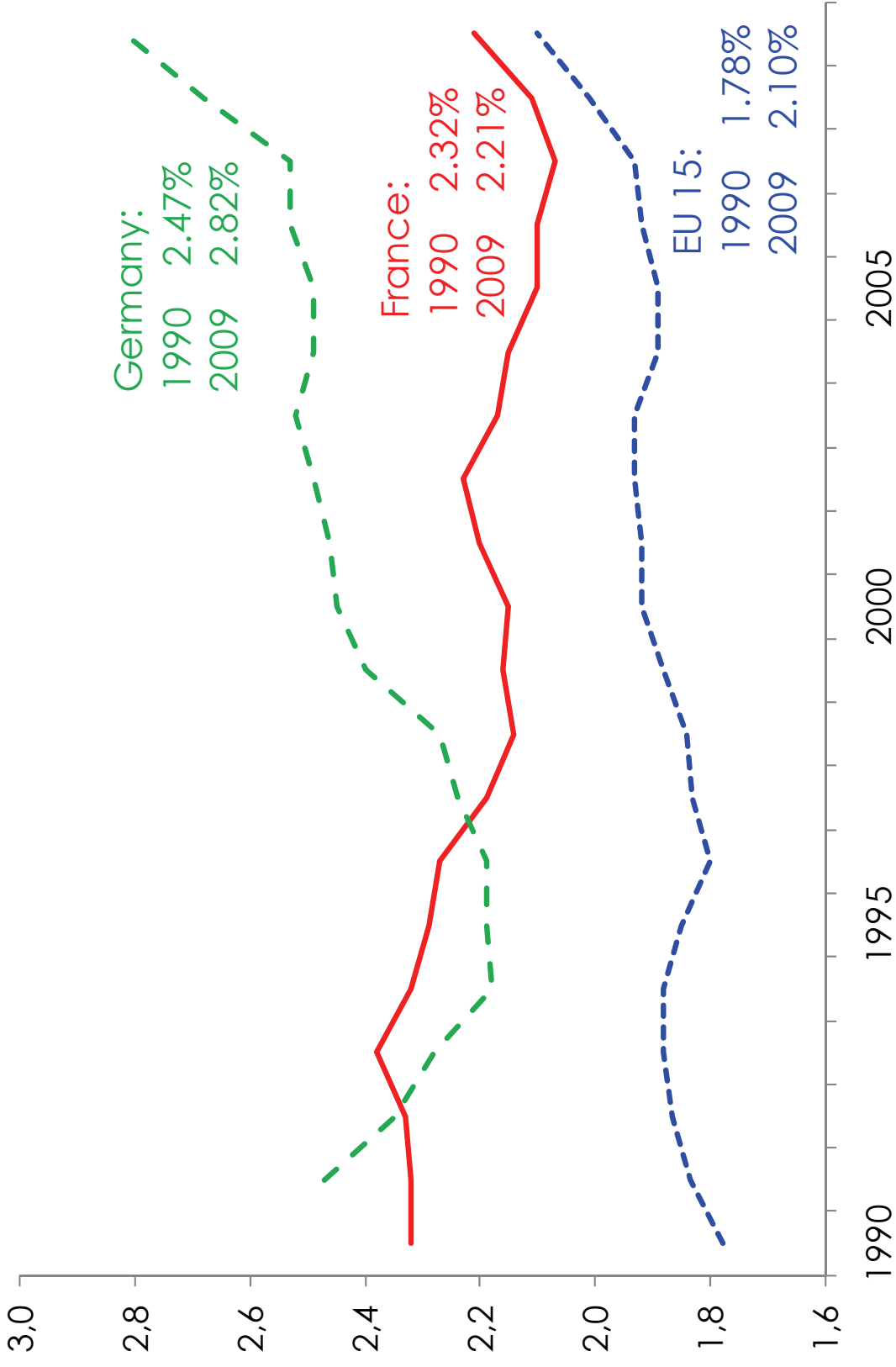


- **R&D input stagnating at 2%+ (& large share military)**
- **Education expenditures declining, Pisa results**
- **Innovation deficits in SME & skill intensive services**
- **Lifelong learning**
- **Low license, patent revenues from abroad**
- **Concentration of R&D in a few firms**
- **Industry-science relations.**

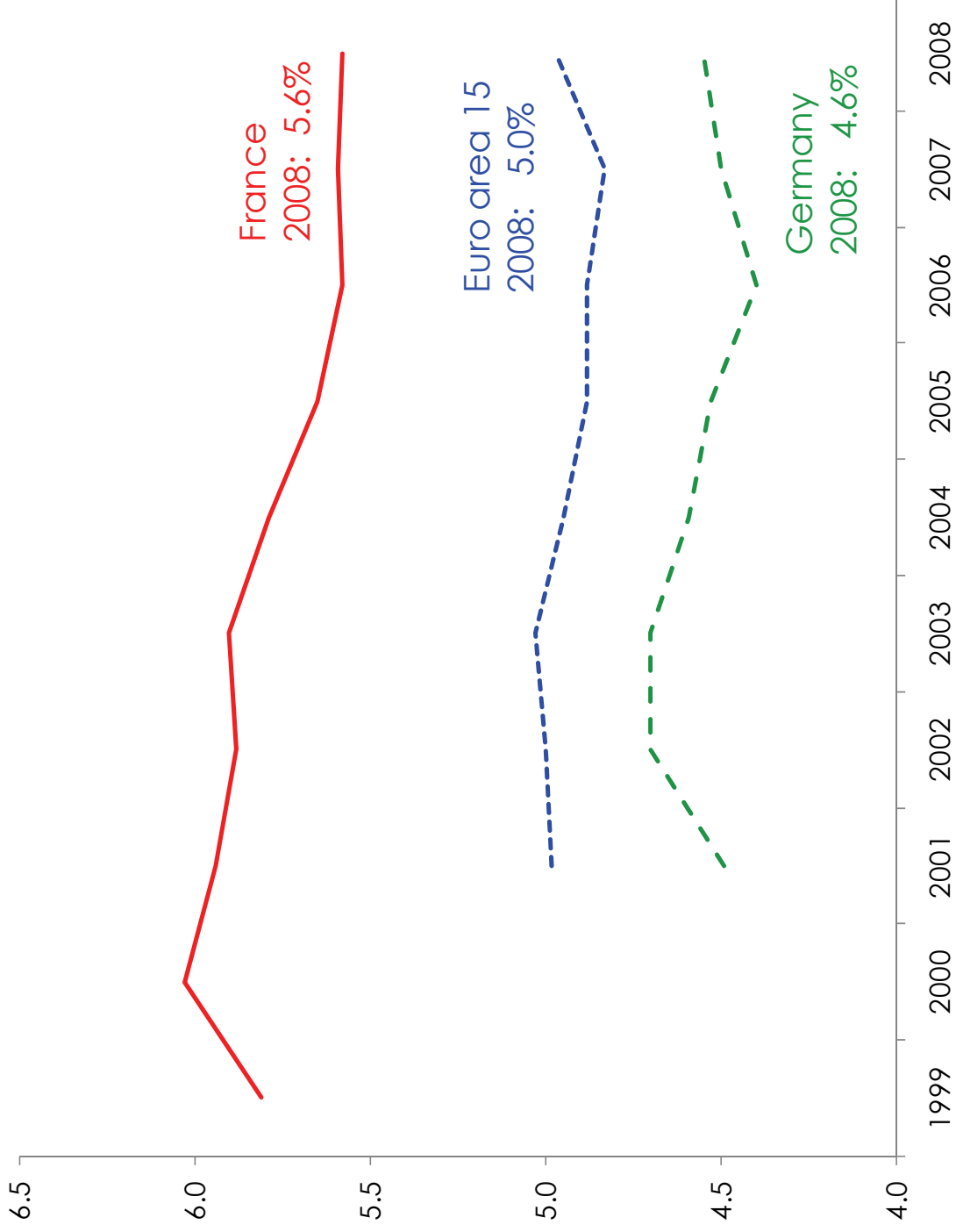
R&D in % of GDP 2009 (EU member countries)



R&D in % of GDP declining and far away from 3%; 1990- 2009

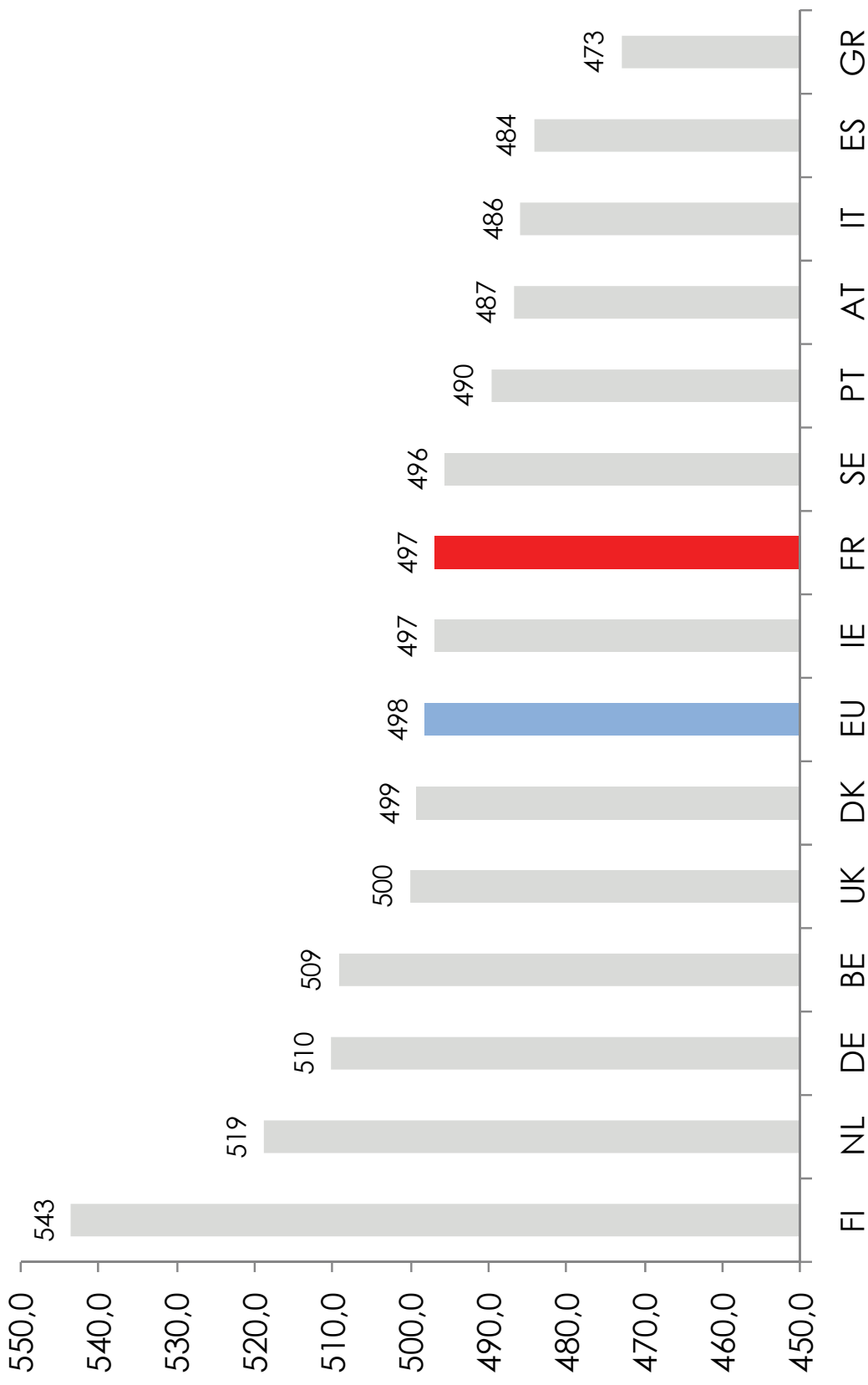


Education expenditures in % of GDP 1999- 2008



PISA Results 2009: far behind the best

(Average overall reading scale + mathematics scale + science scale)



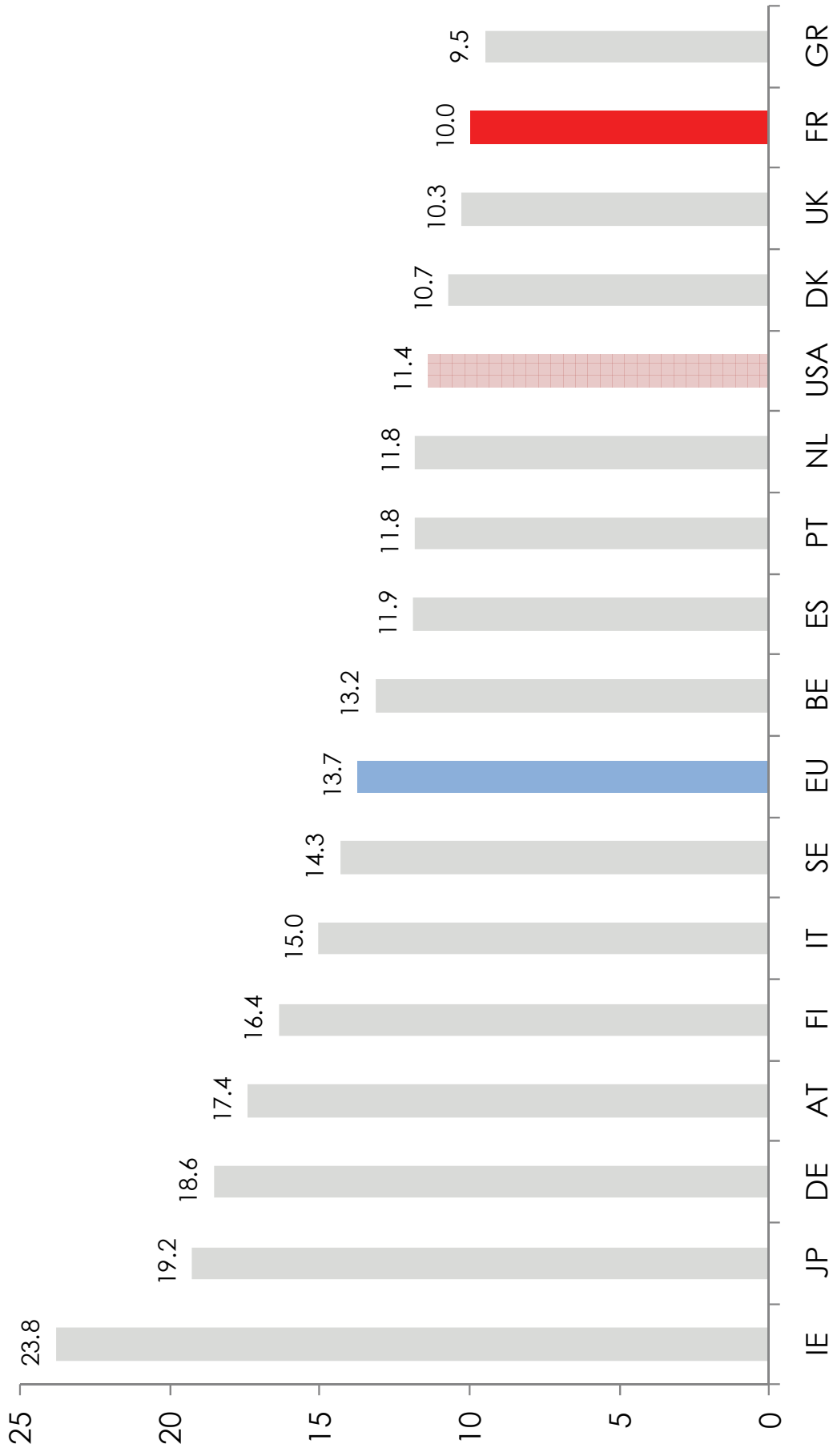
- **Human resources, share of tertiary education**
- **Open, excellent attractive research system**
- **Finance and support**
- **Production, exports in technology driven industries.**

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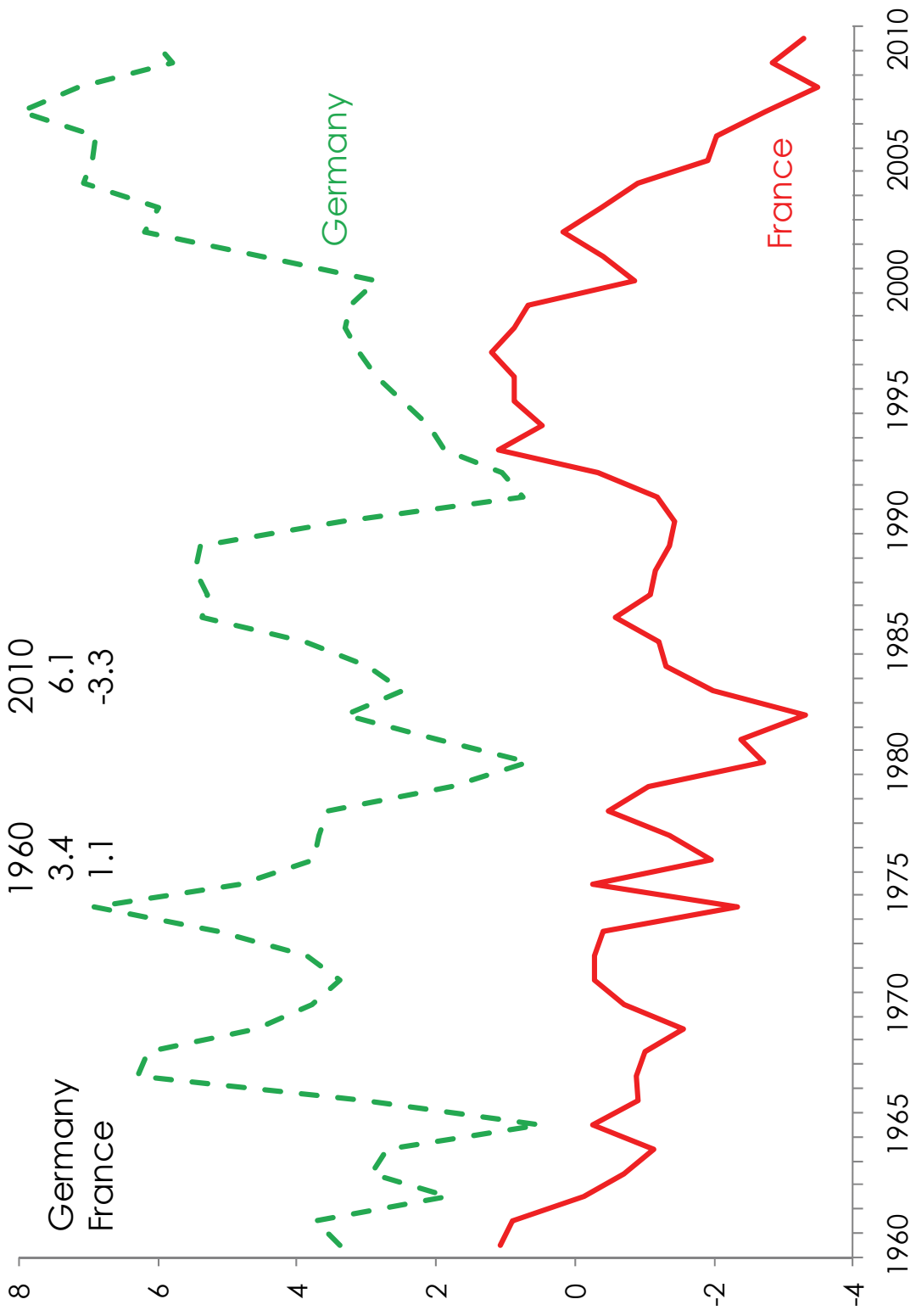
- **Average macro performance**
- **Higher taxes, regulation**
- **Trade deficit, youth unemployment**
- **Strong decline in manufacturing**
- **Second lowest share in EU 10% (1960: 22%)**
- **Trade deficit in technology driven industries.**

The second lowest share of manufacturing

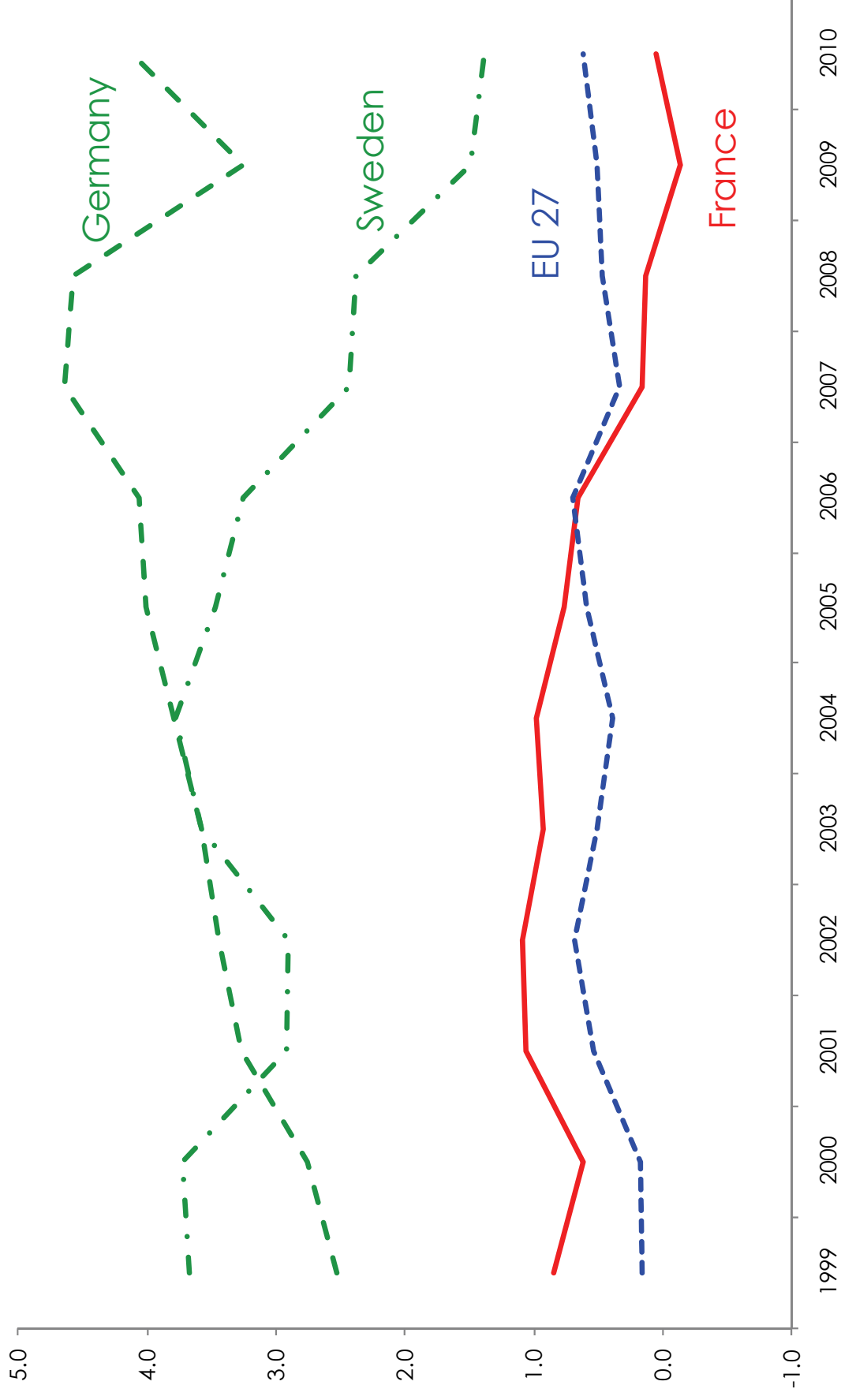
Nominal terms; 2010



Trade balance in % of GDP (Germany, France)



Trade balance of technology driven negative & deteriorating (in % of GDP)



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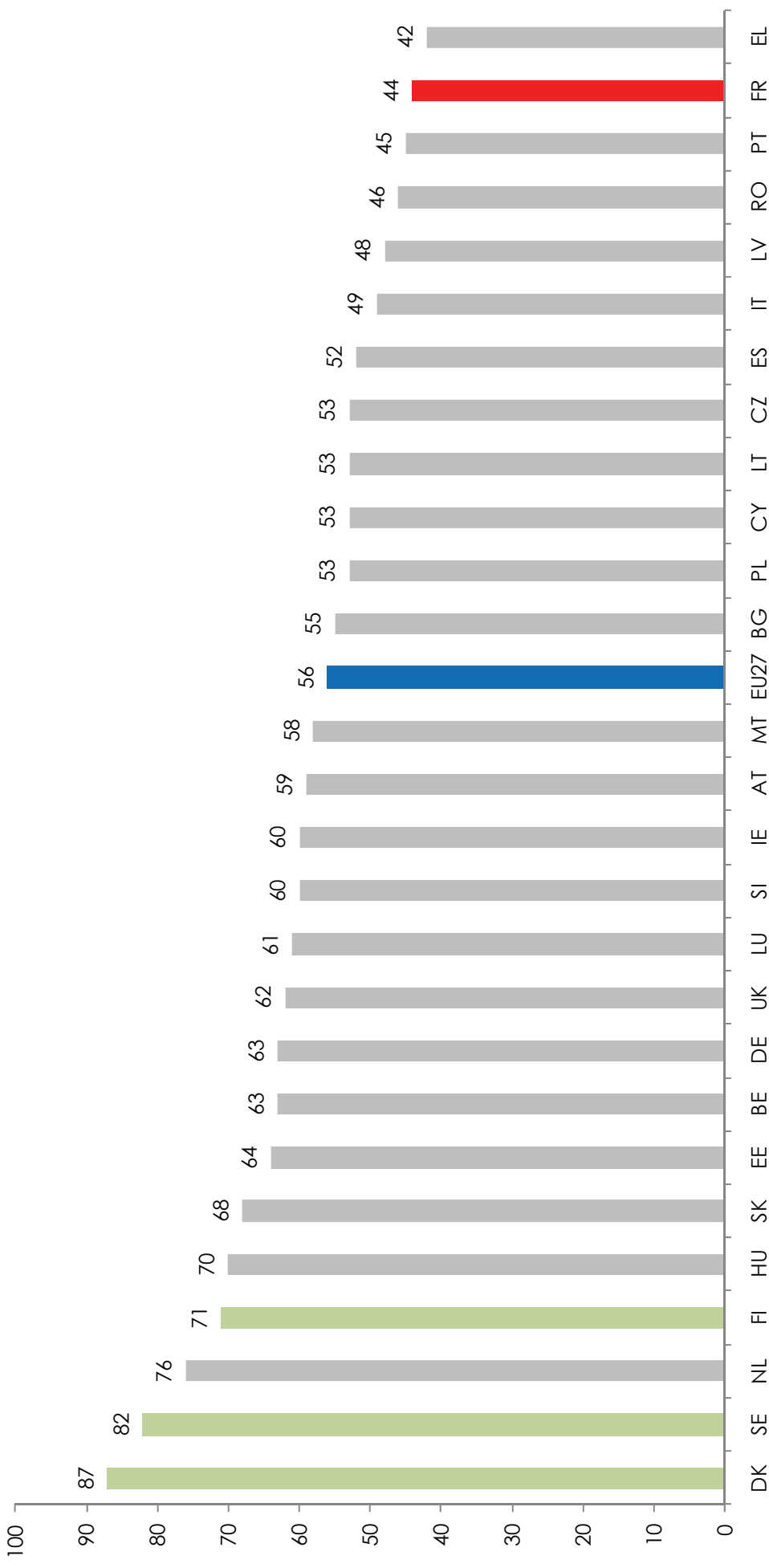
Sweeping changes – meager outcomes

- **H1: changes in policy measures not yet seen in data**
- **H2: measures inadequate for French system**
 - Not ambitious enough, not fitting to system
 - Neither horizontal nor sectoral, no more grand projects
- **H3: Systemic reasons:**
 - lacking competition
 - negative attitude to globalization
 - **Missing vision:**
 - new growth path,
 - ecological/social innovation,
 - societal goals.

- Trade openness 42%, EU-15: 59%, Germany 72%, diff. rising
- Deficit in competition, flexibility, training
- Globalization “not good for growth” (France: 44%, EU: 56%)
- Shelter from globalization needed, “only good for firms”:
France: 77%, EU: 62%
- Cheap energy is important, big government no problem
- Middle position in environment, falling back since 2000.



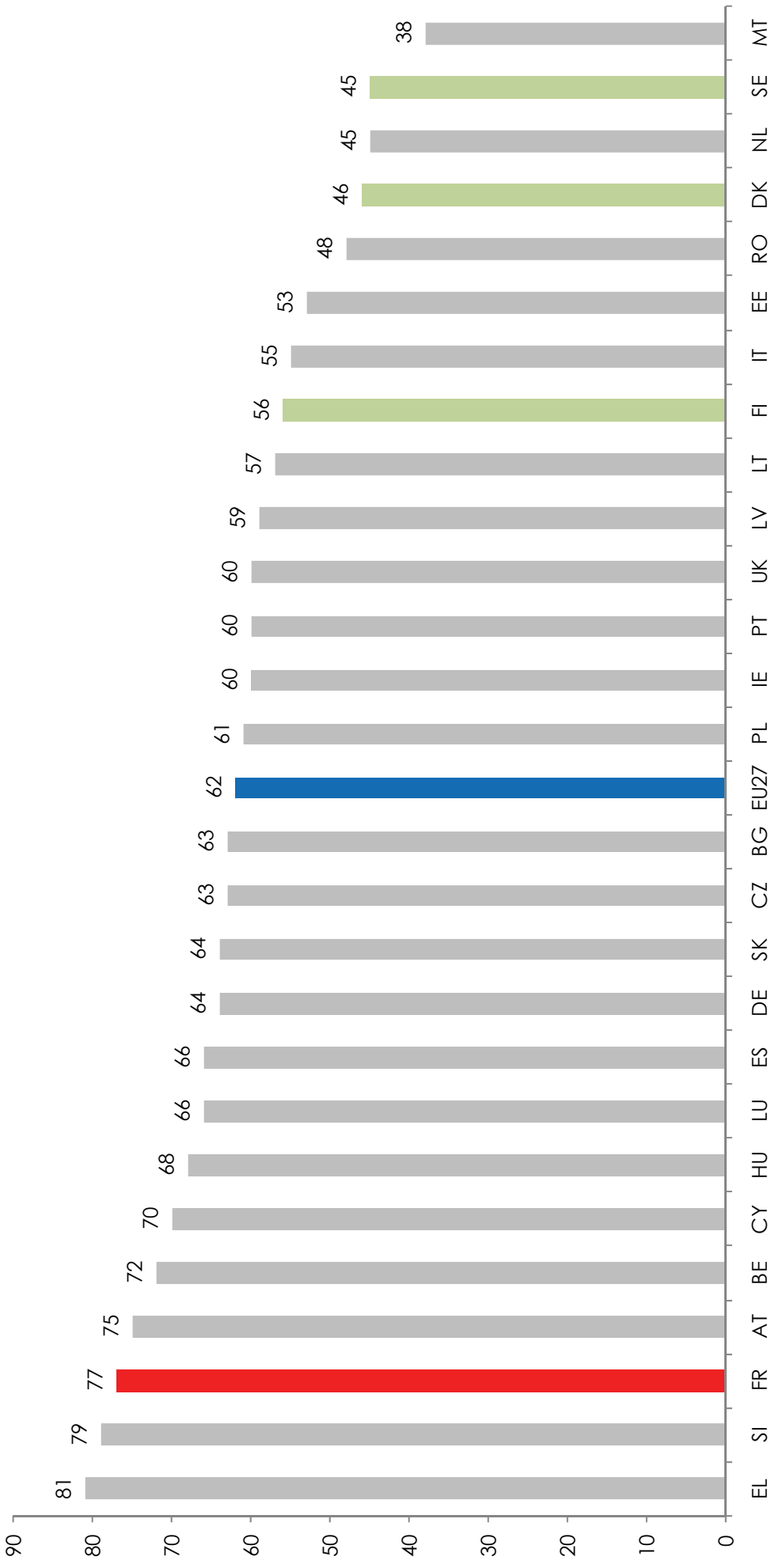
Attitude to Globalization I: Not seen as a chance for high growth



S: Eurobarometer.

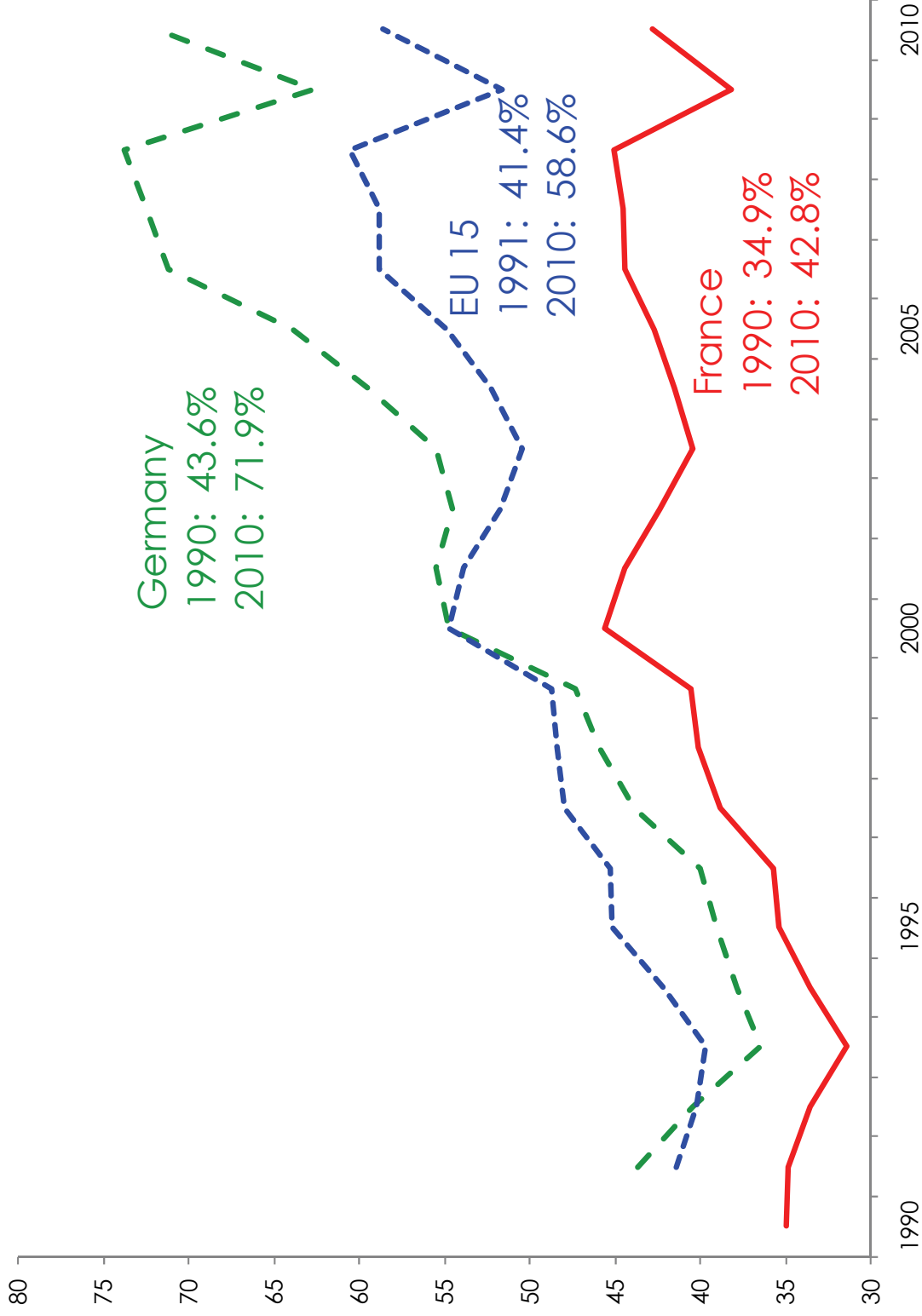


Attitude to Globalization II: Good only for large firms, not citizens



S: Eurobarometer.

Trade openness (Exports + imports) in % of GDP



Current socioeconomic system

- Low competition, mental and legal opposition to globalization, high taxes
- “Middle of the road” in inputs and output of the innovation and education system
- Without strategy to go for a new growth path with ecological and societal emphasis

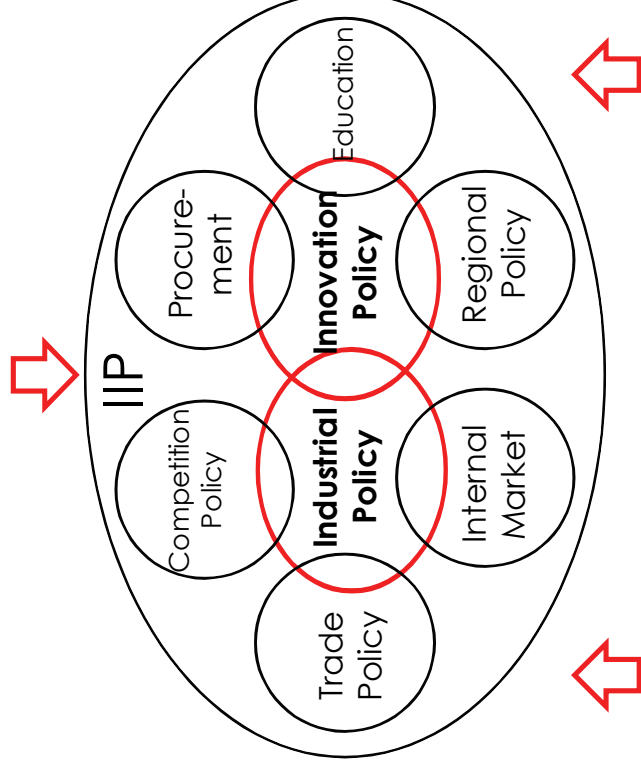
⇒ **In a competitive environment with positive attitude to globalization and a vision of a new growth path the sweeping changes in the innovation system enacted more effective.**

- **Promoting dynamic competitiveness, including growth, social cohesion and sustainability**
- **Synergy with education, innovation and competition policy**
- **Targeted on future-orientated activities with positive externalities and societal needs**
- **Embracing globalization as a chance**
- **Understanding competitiveness as driver of growth and innovation**
- **Changing labor market regulation into temporary assistance with focus on activation (flexicurity).**

The Systemic Industrial and Innovation Policy (SIIP) in a nutshell

Pulling forces

Vision of a new growth path (welfare beyond GDP)
Societal goals (health, climate, social cohesion)
Excellence in specific technologies (emphasis on tradables)



Pushing forces

Competition, openness and globalization
Activated, trained and retrained labor force (flexibility)
Competitive advantages (supported by policy)
Climate change, ageing

- Built on national or local competitive advantages
 - Following the market rather than predicting
 - Sector where government has interest (societal need)
 - In sectors where competition exists
- ⇒ **Growth rich tradables**
(instead of mis-investment in non tradables), ©ACCM
- ⇒ **Reestablish a focus on manufacturing.**

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- **Five stages, divide between French and German**
- **Best practice: knowledge based policy in S, SF, DK**
- **Share of manufacturing declines differently across countries**
- **Crisis: countries with double deficits in trade and budget ***

France:

- **Middle of the road macro performance**
- **Sweeping changes in innovation system.**

- **Single measures do not work whether taxes, grants, agencies**
- **Industrial and innovation policy merged, integrated with competition policy, regulation, education**
- **Benchmark: Sweden, Finland, Denmark: no deficit, high growth**
- **Excellence in education, innovation, energy efficiency**
- **Systemic policy is consistent with societal vision, includes sectoral policies and flagships ***

- ⇒ **New European growth strategy with social cohesion and ecological excellence needs a SIIP**
- ⇒ **SIIP built on strengths, powered by competition & openness, driven by vision.**

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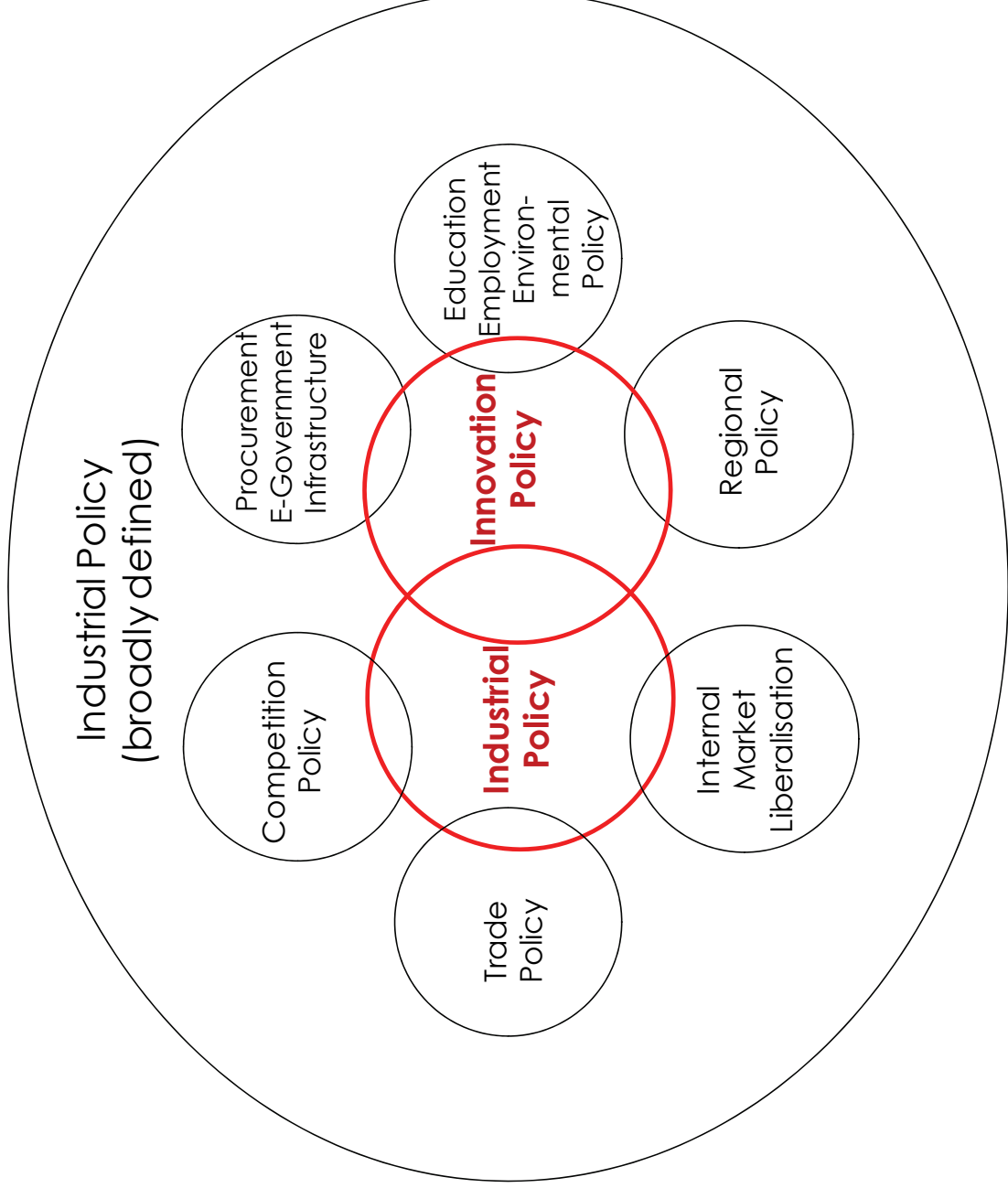
The diversity of industrial policies in Europe: With specific emphasis on the French case

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„Scope of Industrial Policy“

Merging with innovation policy



The object of intervention: Market failures prevent firms and consumers to reach welfare optimum

- Externalities
- Public goods
- Information asymmetry
- Market power
- Economies of scale

⇒ **A market economy – to reach highest efficiency – must provide public goods, prevent market power and support activities with positive externalities and tax activities with negative externalities.**

The object: to increase dynamics

Compensate: advantages of scale, scope, early start

Create: strategic advantages, clusters, future growth

- Temporary protection of infant industries
- Product cycle theory
- Strategic trade theory
- Prevent specialization in footloose, low wage industries with low income elasticity
- Foster structural change towards tomorrow's competitive advantages.

1. **Interventionist: Community of Coal and Steel (1951 ff)**
2. **Sectoral Interventions (ailing firms, future industries)**
3. **Horizontal interventions (“Competitiveness”, “Framework conditions”)**
4. **Matrix approach (mainly horizontal, but different impact and different complements across industries)**

- ⇒ **Today: Matrix Approach or Integrated Industrial Policy (IIP)**
- ⇒ **Competitiveness plus sectoral policies e.g. in space, mobility, societal challenges.**

French style Industrial Policy

“Interventions in order to change the structural composition of manufacturing”

Sectoral planning after WWII (“soft”, indicative planning)

Priority for Grand Projects or Champions

Looking out for dynamic sectors: computer, telecom, biotech

Cheaper credits, subsidies in preferred sectors/projects

Emphasis on large firms

Leading firms partly owned by banks, insurances (Kernels)

- ⇒ **Many failures: telecommunication (minitel), software (“French” Google)**
- ⇒ **A few successes: Airbus, TGV, Ariane.**

German Style Industrial Policy

“Policies effecting all industries without differences”

- Favourable “framework condition”
- Stable macroeconomic growth and prices
- Competition policy and entry promotion (SME)
- Low interest rates and taxes,
- R&D, education

⇒ **Horizontal policies are necessary but not sufficient;
should be forward looking and therefore
differentiate.**

Scandinavian style Industrial Policy

- Excellence in R&D (>4% of GDP)
- Best schools (comprehensive, autonomous), PISA
- ICT as growth driver, generic technology
- Social inclusiveness

No specific subsidies for firms

Excellence of institutions, education, innovation system

**⇒ Sweden, Finland, Denmark are considered as
success stories of a forward looking Industrial Policy,
based on high quality education and research.**

- **Weak economy/high unemployment rate**
- **Debts of government and external balance are seen as “package” (GR, P)**
- **Rebalance economy away from finance and property**
- **Renationalization of firms after the crisis**
- **Challenge of China**
- **Chances of Green technology.**

Sectors prioritized:

- **Health, biotech: 2.4 bill. €**
- **Renewable energy: 1 bill. €**
- **Nuclear energy: 1 bill. €**
- **Space, aeronautics: 2 bill. €**

⇒ **All infrastructure related, state owned, sectors with priority in China, too.**

- **Digital technology**
- **Eco industries**
- **Energy and transport**
- **Chemicals**
- **Innovative materials.**

Six key enabling technologies

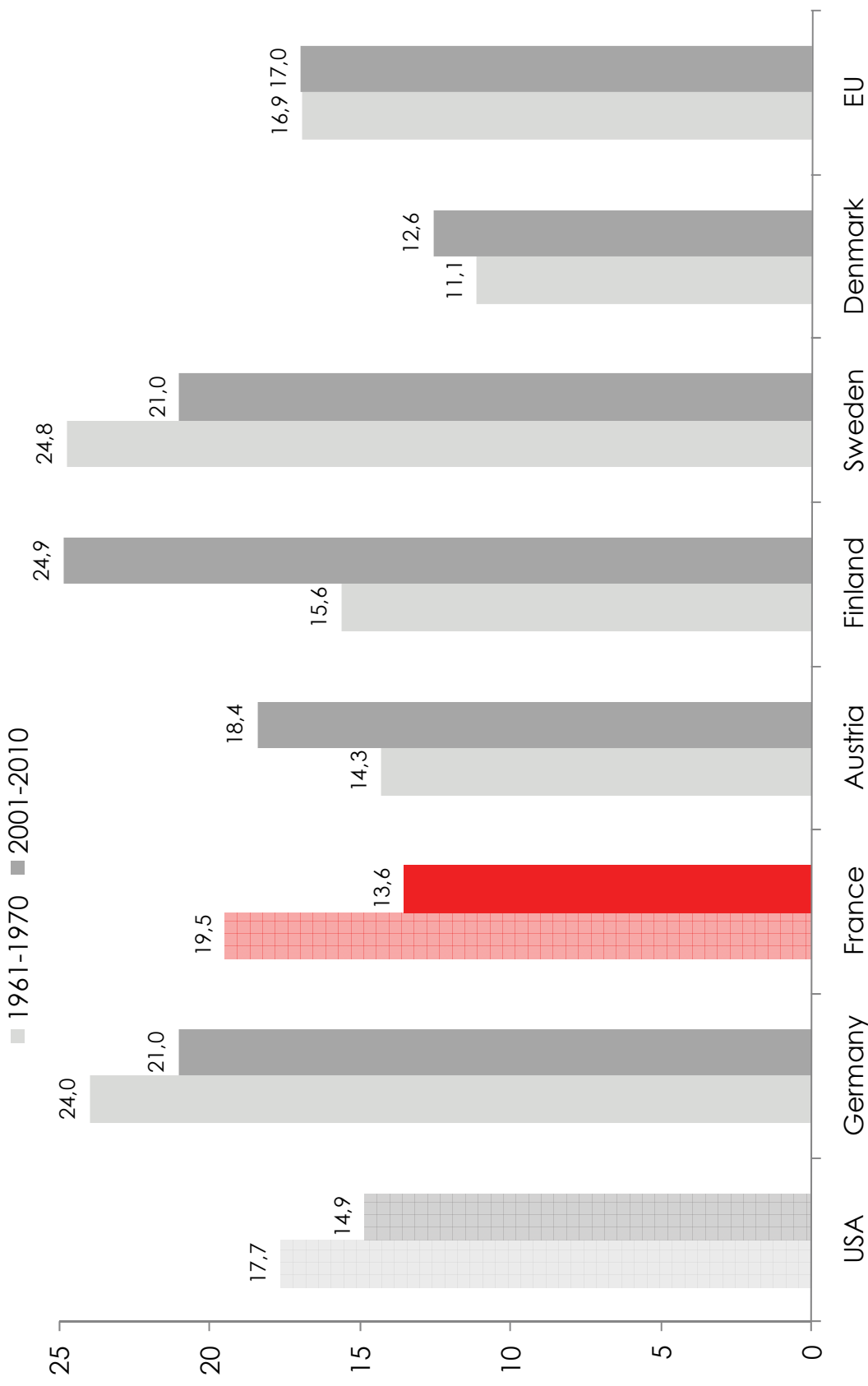
- **Nanotechnology**
- **Micro- and Nano-Electronics**
- **Industrial biotechnology**
- **Advanced material**
- **Advances manufacturing technologies.**

France is an innovation follower (rank 11 among 27)

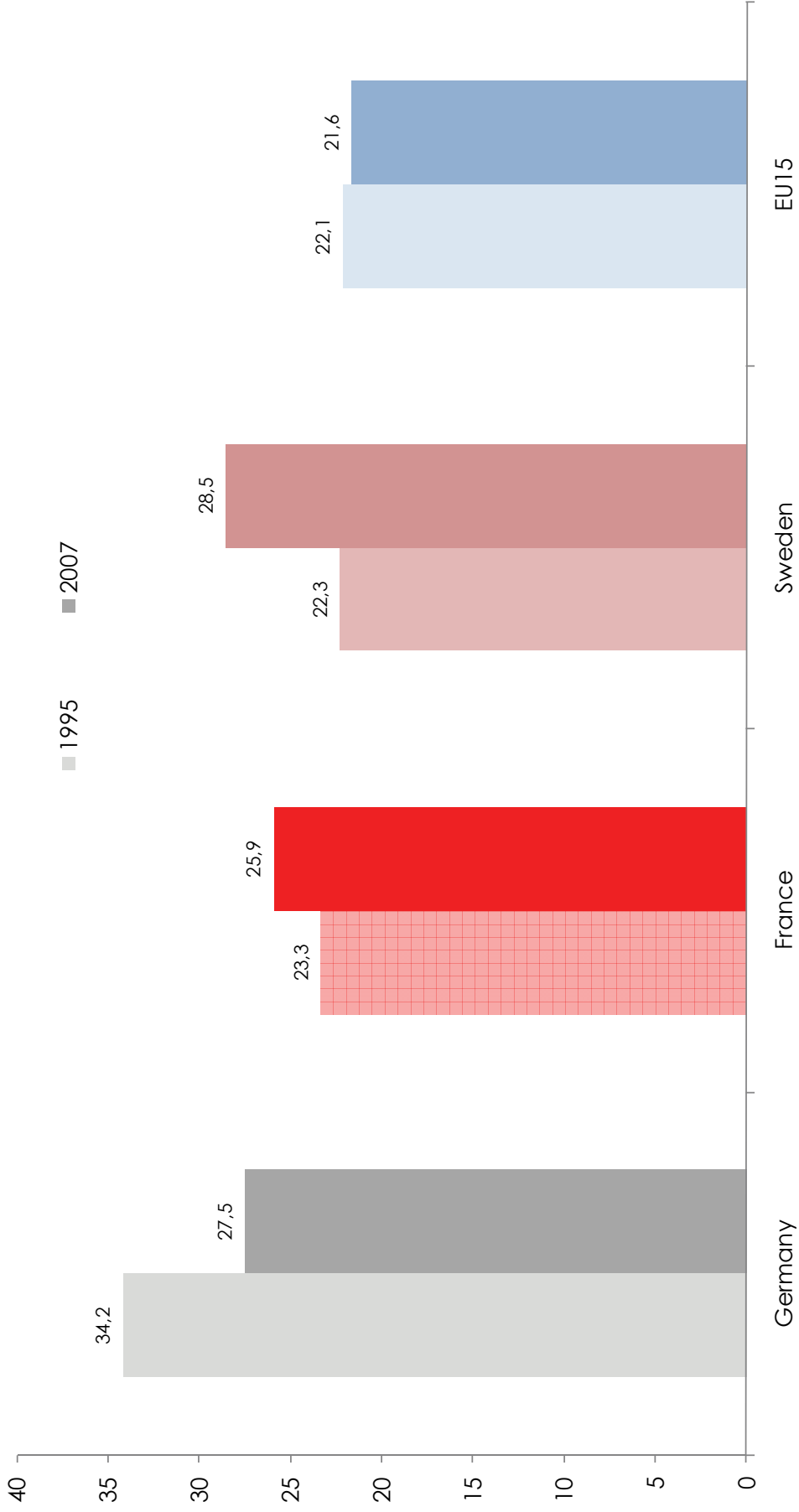
- **Leaders are DE, FI, DK, SE (top)**
- **No change in position over past 5 years**
- **R&D/GDP 2.2%; less than 1995**
- **Rank 2 in 1995, rank 6 in 2010**
- **A larger part: military research**
- **Education/GDP falling (albeit high)**
- **PISA below EU average.**

- **Strength**
 - **Human resources, share of tertiary education**
 - **Open, excellent attractive research system**
 - **Finance and support**
 - **Output exports, license and patent income**
- **Weaknesses:**
 - **Number of innovations**
 - **Entrepreneurship, SME innovations**
 - **Intellectual asset and innovators**
 - **Skill-intensive services (incl. exports)**
 - **Patent applications, country trademarks**
 - **Lifelong learning.**

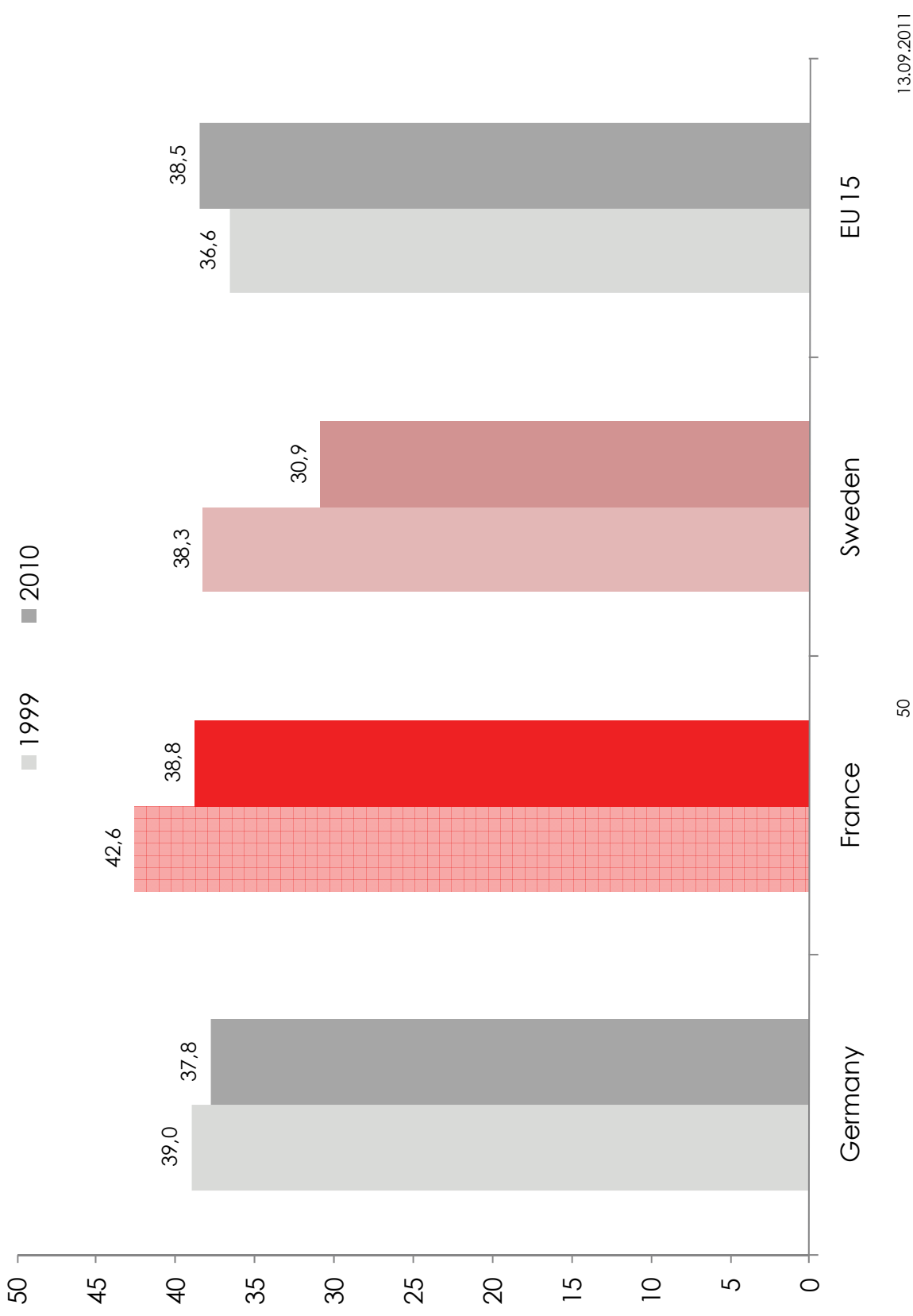
Industry/GDP now below EU-average Real terms; 1961-1970 vs. 2001-2010



The share of technology driven industries in value added



The share of technology driven industries in exports



- Globalization Rank 15 (Vujakovic); Rank 12 (KOF)
- Openness ((exports + imports)/GDP): Rank 54 among 70
- Distance weighted trade rank: 69
- Social globalization: Rank 30
- Co-publication France/US: 7703
Germany/US: 12595 (+60% more)
- R&D financed by abroad
France 8.3%, UK 19.4% (2003)

⇒ **A laggard in economic & social globalization**

⇒ **High ambition in foreign policy.**

- **Entry barriers for professions**
- **Transport, national districts**
- **Transfer of training rights across firms**
- **Bonus/malus dependent on lifelong learning**
- **(In)flexibility of labor markets**
- ⇒ **Competition is not high on French agenda**
- ⇒ **Government procurement ownership linkages, elites.**

- **Top3: Finland, Sweden, Denmark**
 - **future orientated IP (low regulation; high investments into the future, lower state aid)**
- **Big 3: Germany, France, Italy**
 - **medium to high regulation and state aid**
 - **moderate to poor investments into the future**
 - **more state aid**
- **Countries with IP focuses on future investment with tougher competition have better economic performance (GDP/social/ecological; Aiginger – Sieber, 2006).**

Indicators of macro performance France vs. EU



Indicators of macro performance France vs. Top3 (DK, FI, SE)



Negative aspects

Often poorly designed, always heavy opposed

**Misused by vested interests, political goals, regional leaders
Often decelerating structural change**

Ineffective if focused on very few large projects, not connected

To regional supplies, capabilities, societal needs

**Industrial policy tends to be biased in favour of existing large firms,
lobbies if not properly designed.**

Positive aspects

Necessary because of externalities, bottlenecks, learning curves

Today the necessary complement to active globalisation

Globalisation implies winners and losers

The losers have to be retrained and reemployed

Then and only then advantages will be larger than disadvantages

Forward looking towards needs of tomorrow, but broad (“horizontal”)

Then clustering where competitiveness is within reach

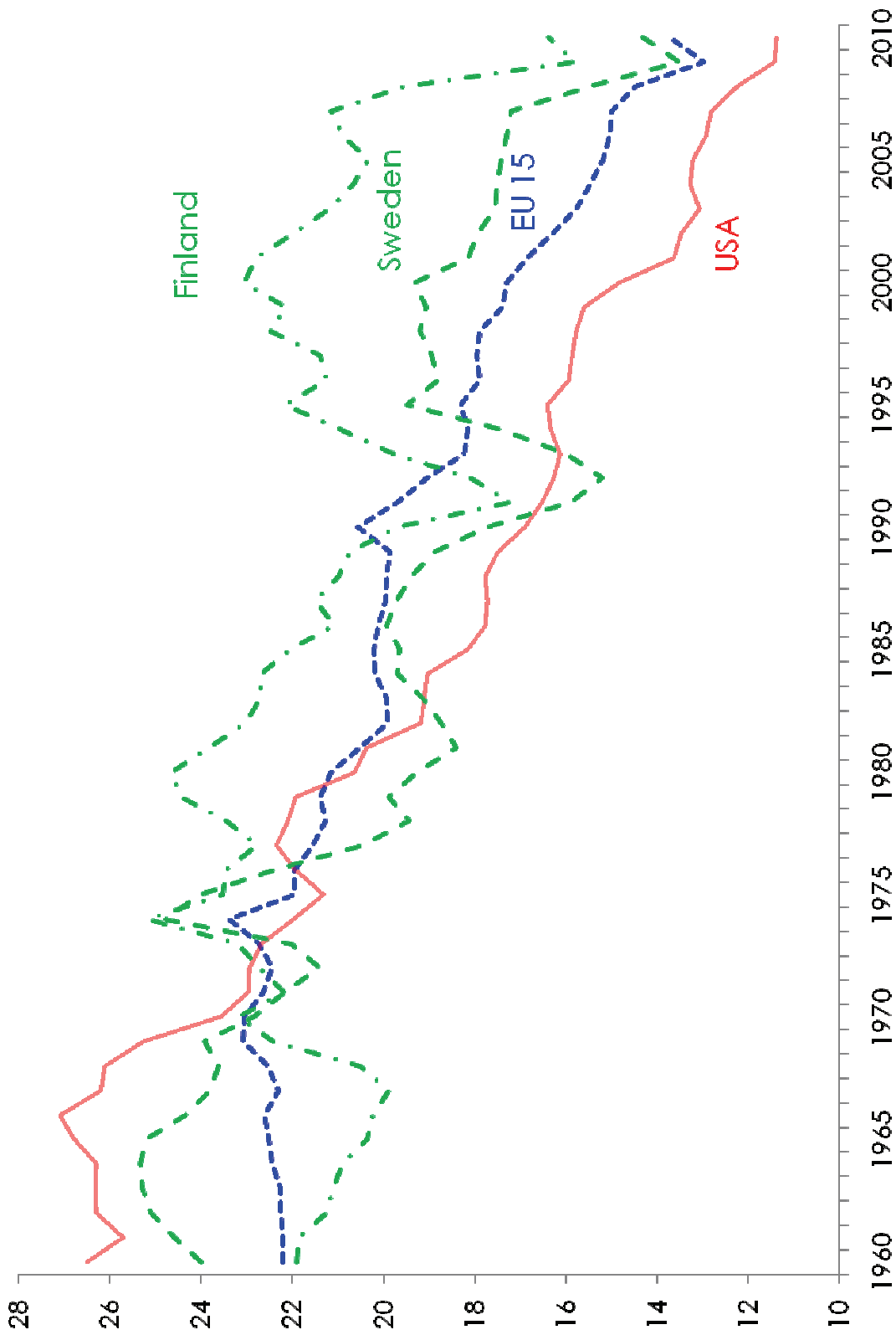
Starting from existing strength, developing new ones

Providing skills, good institutions and

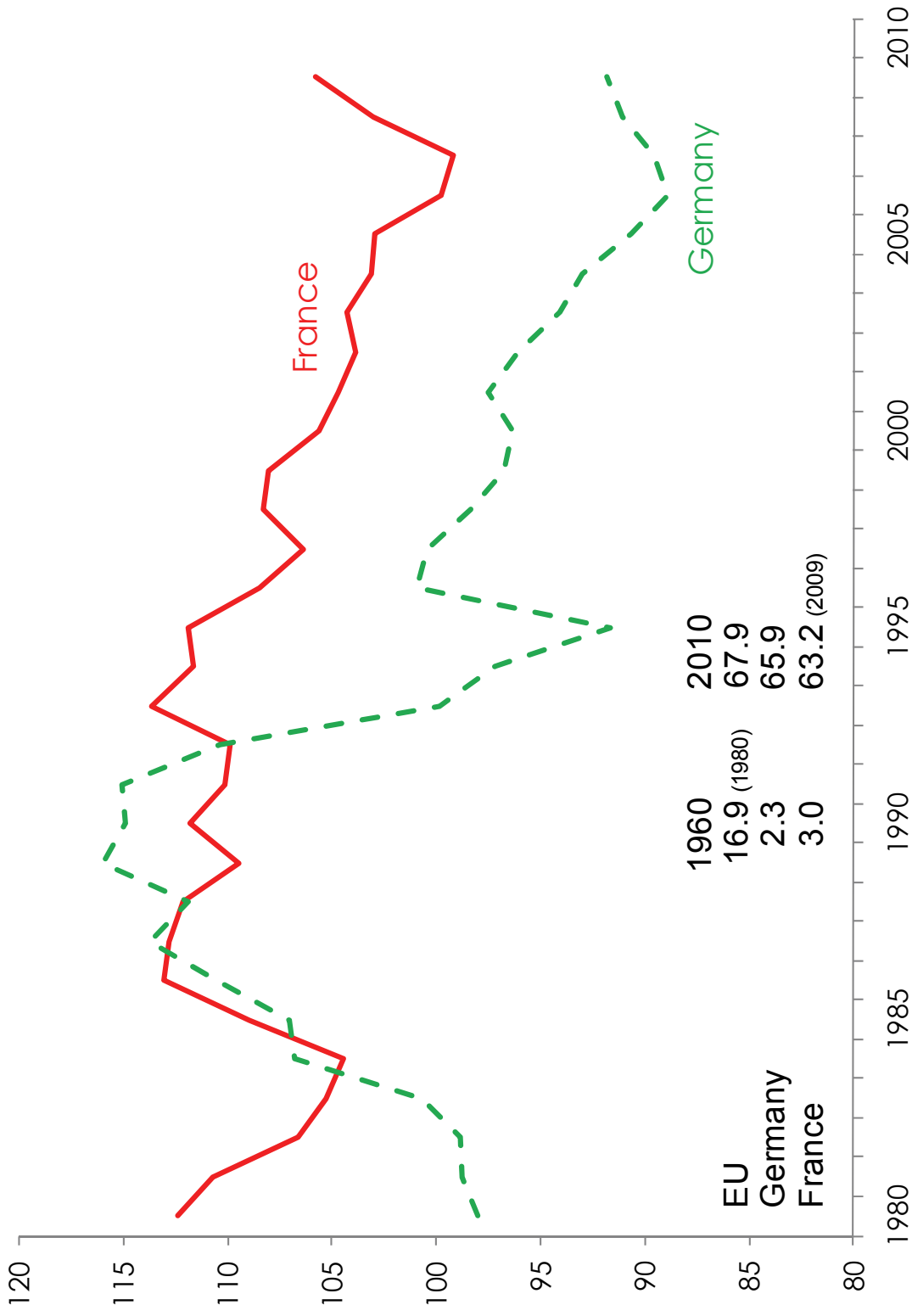
A community of small rapid growing firms and with luck some flagships

⇒ It has to embrace openness, competition, globalization, ecological excellence.

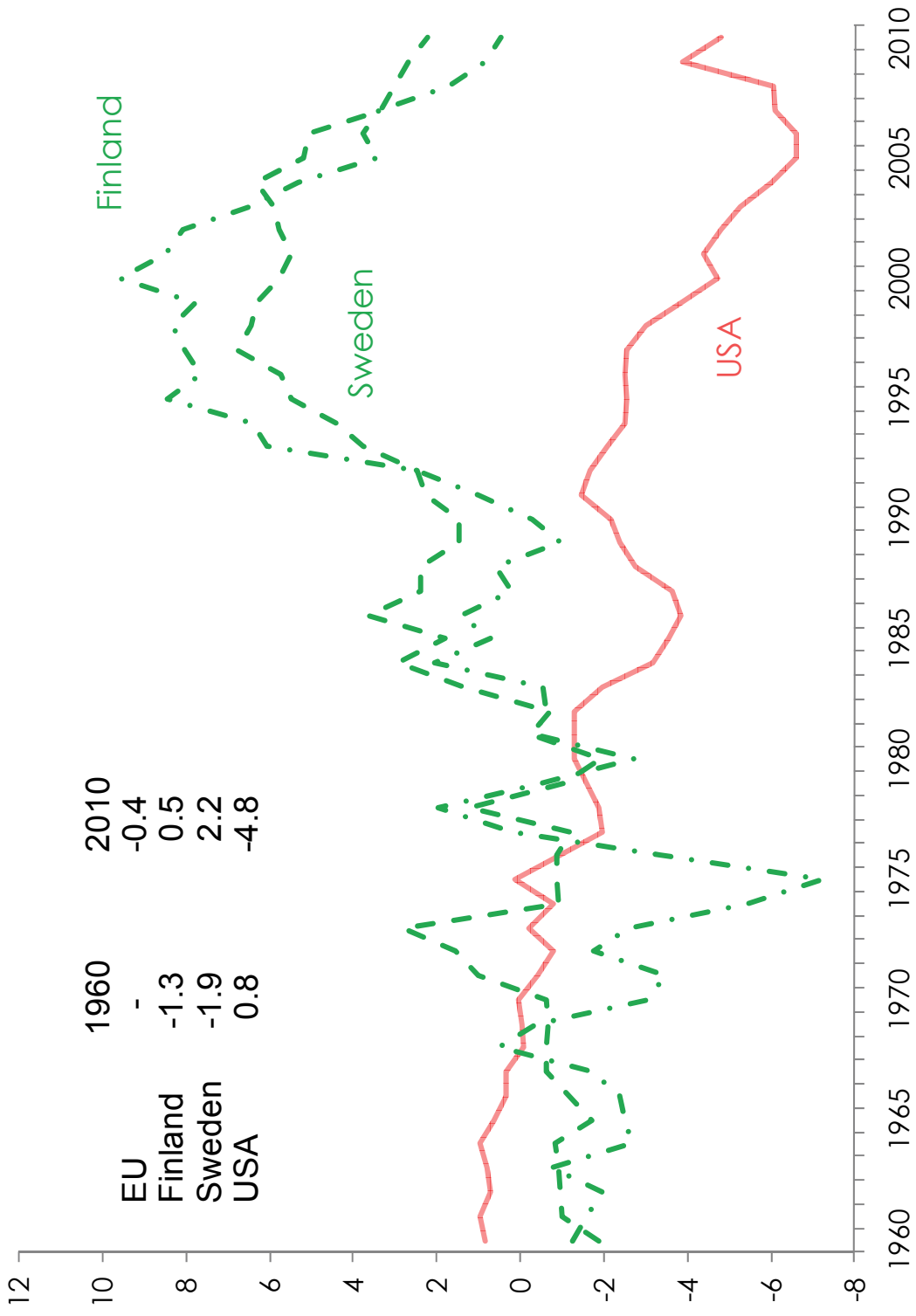
The share of industry in GDP (Finland, Sweden, EU, US; nominal terms)



Value added per employee in manufacturing (Germany, France; EU = 100, nominal terms)

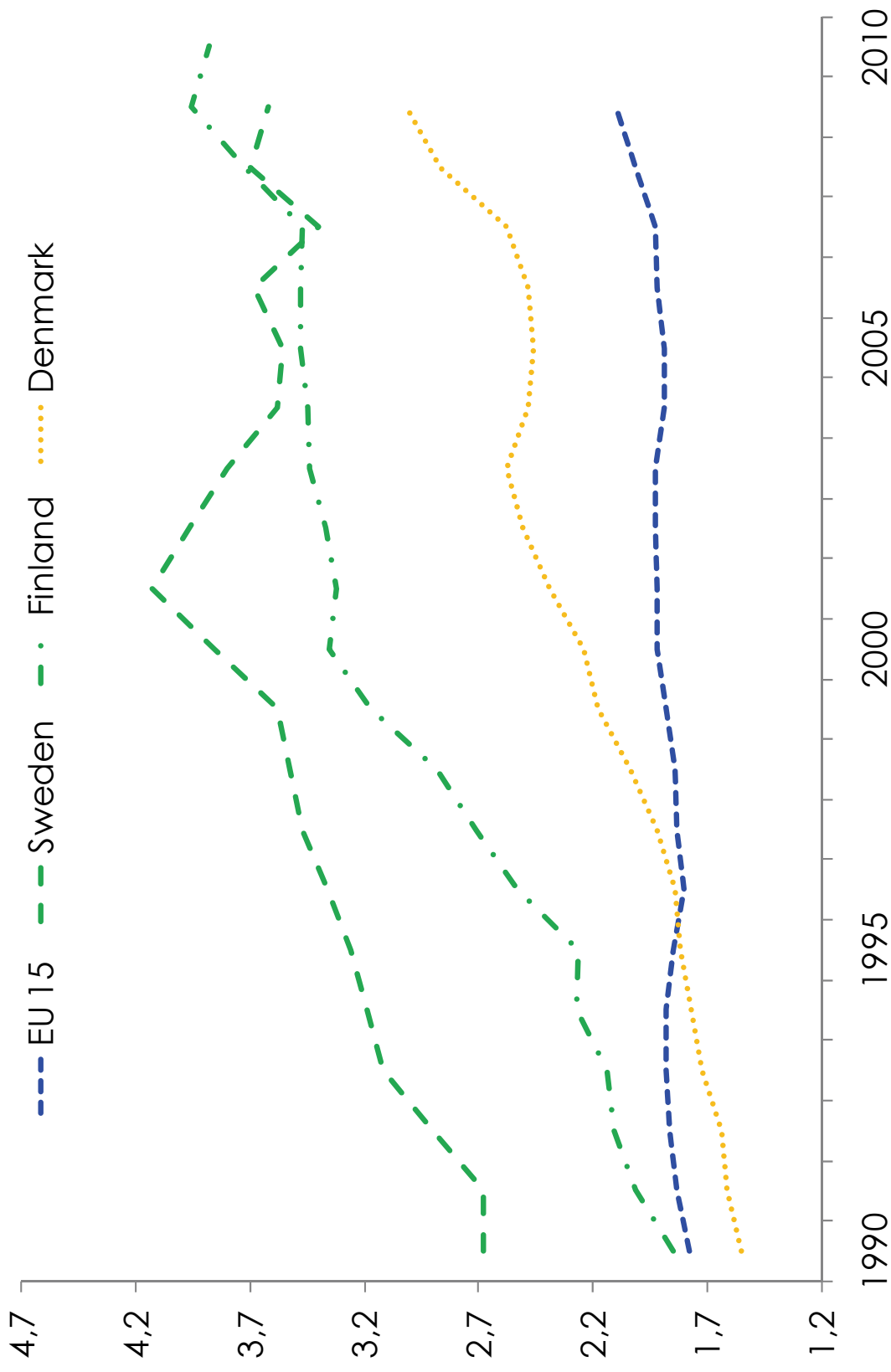


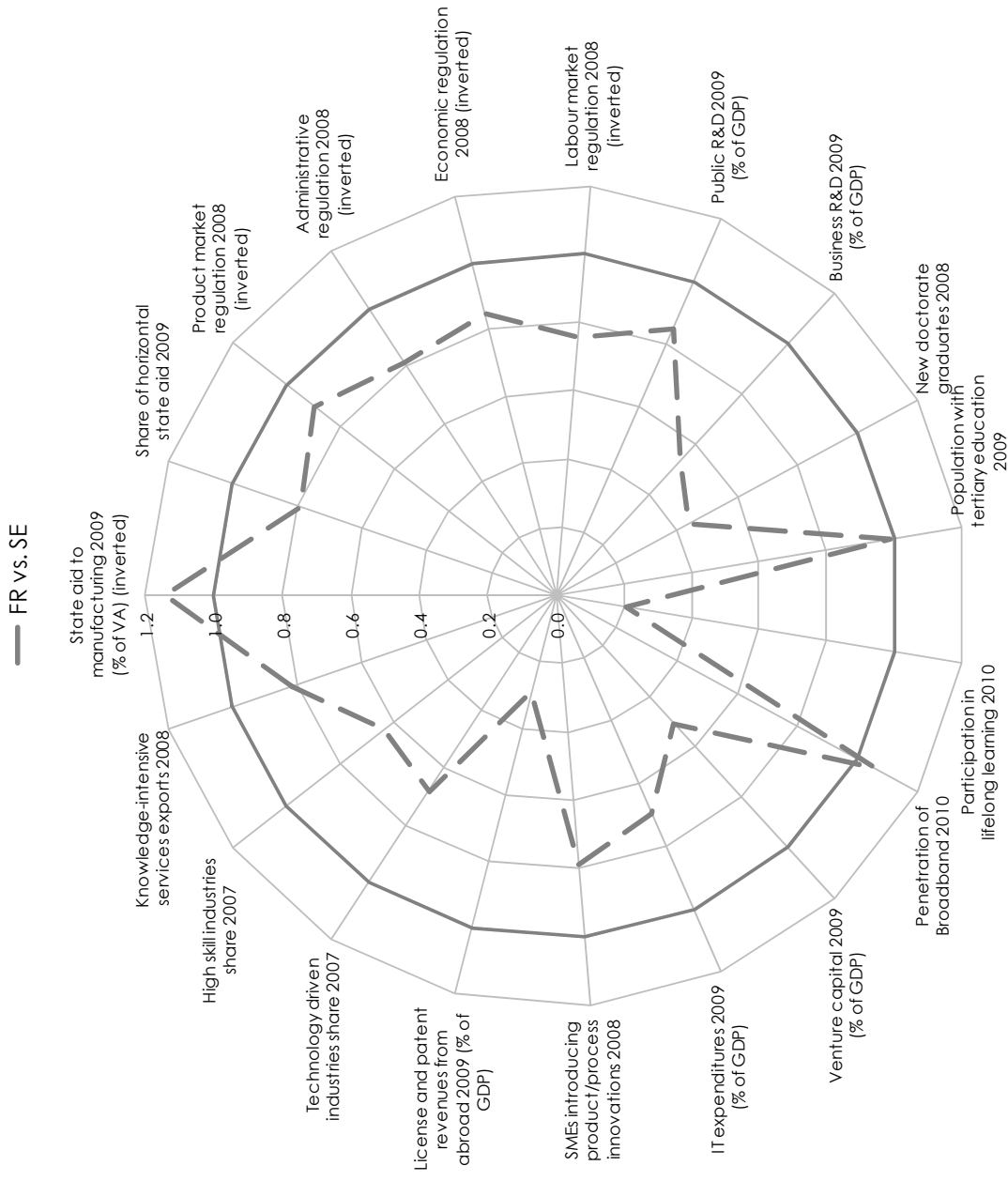
Trade balance in % of GDP (Finland, Sweden, US)

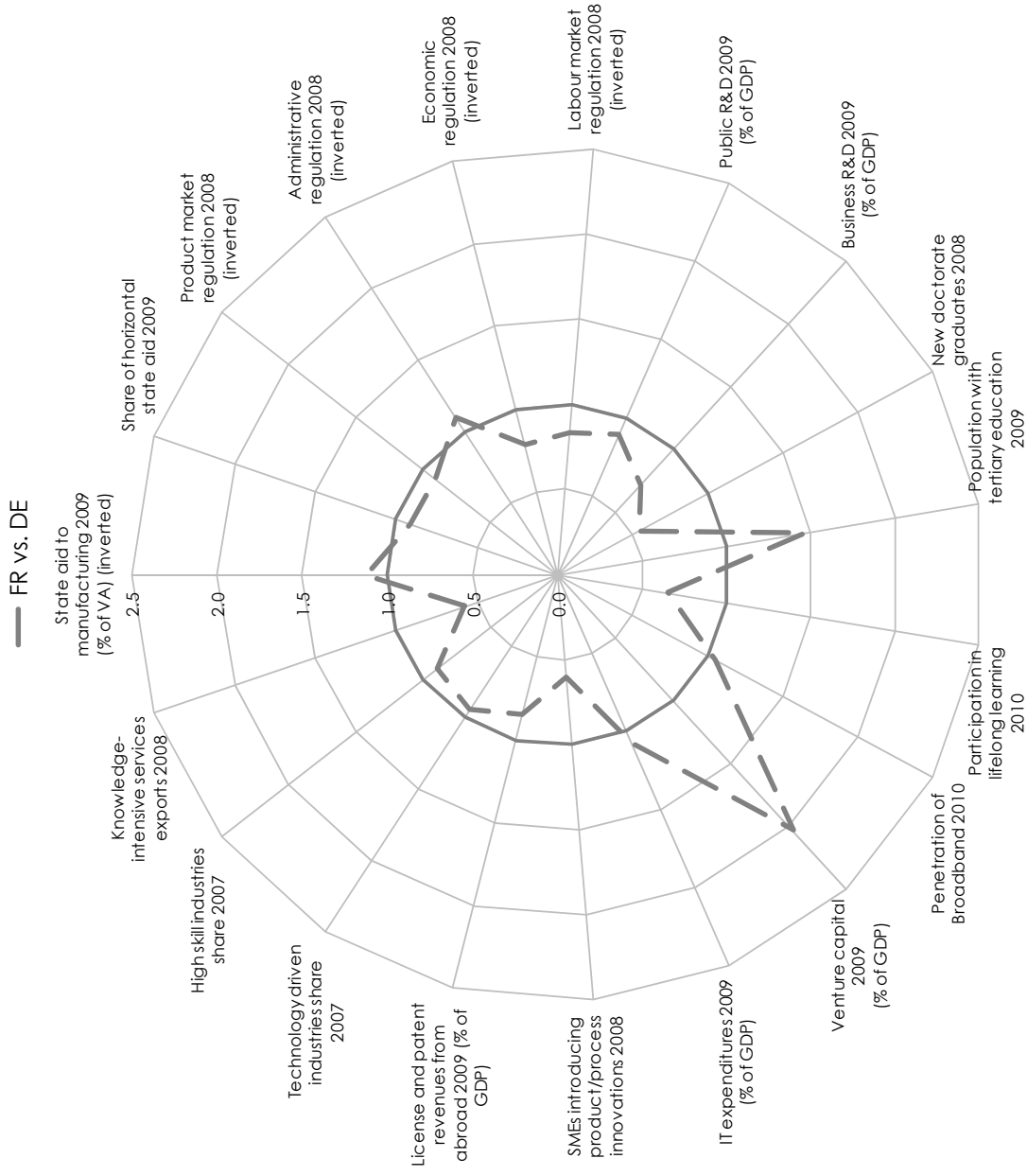


R&D in % of GDP

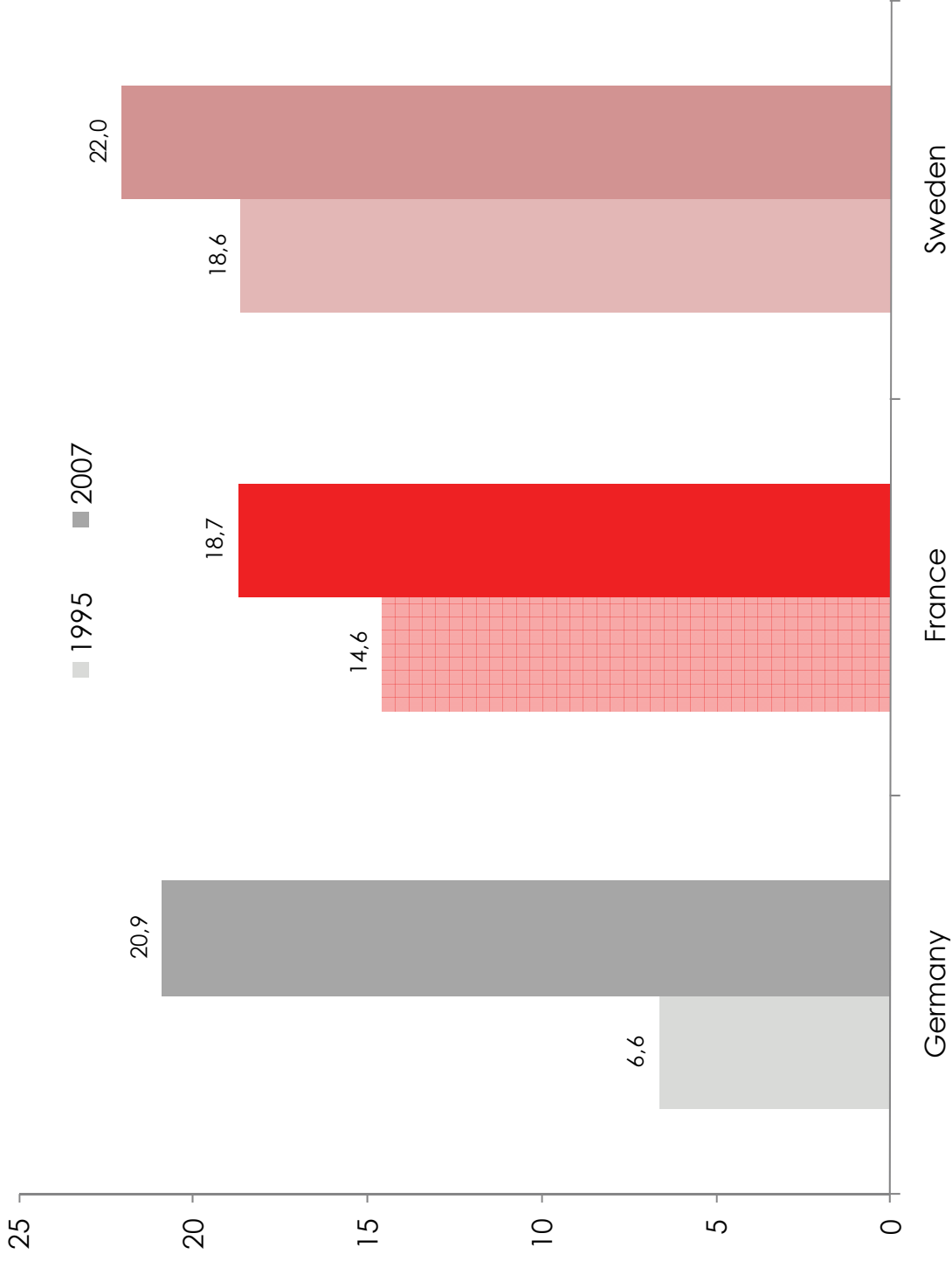
(EU, Finland, Sweden, Denmark; 1990- 2010)



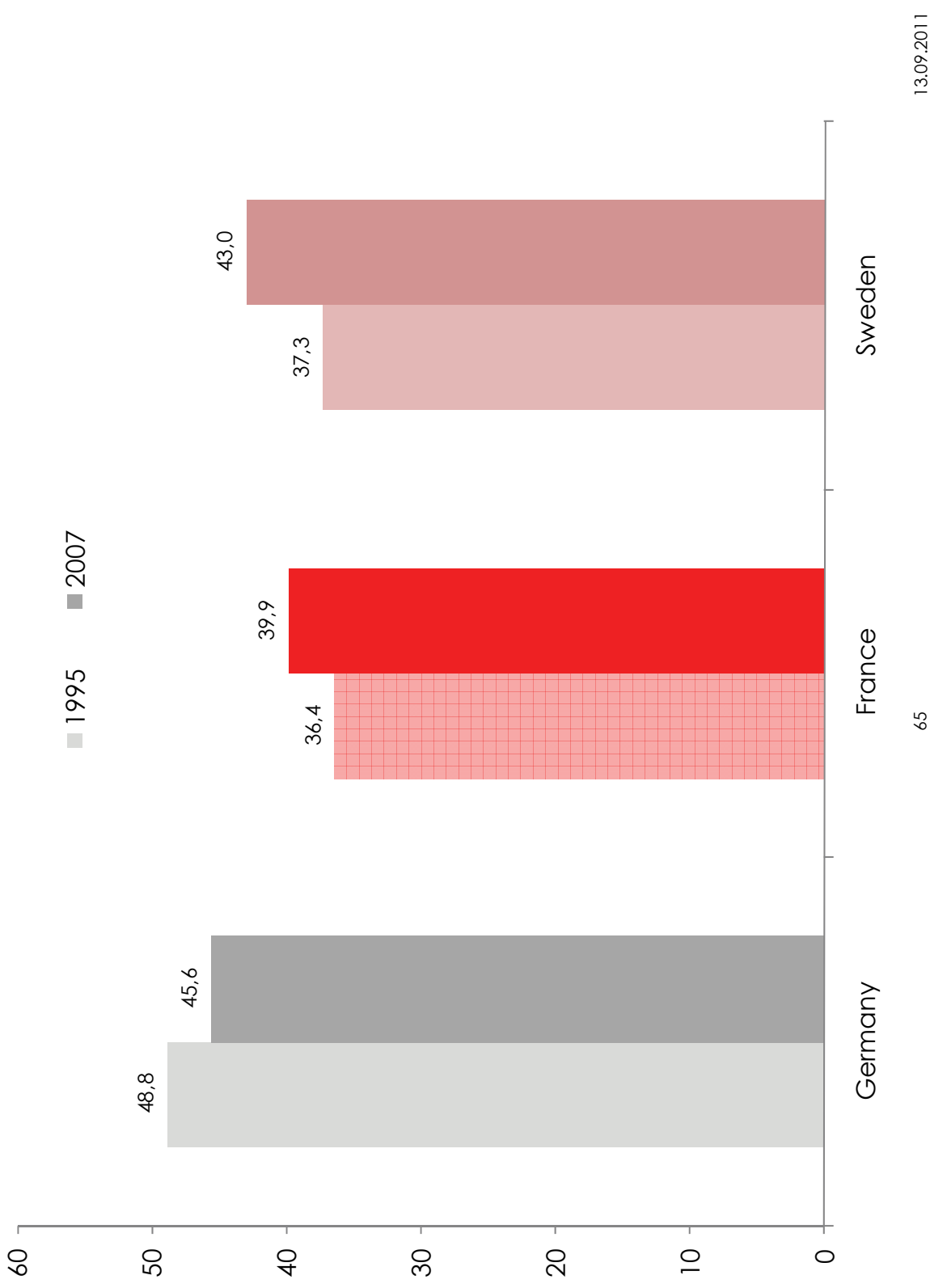


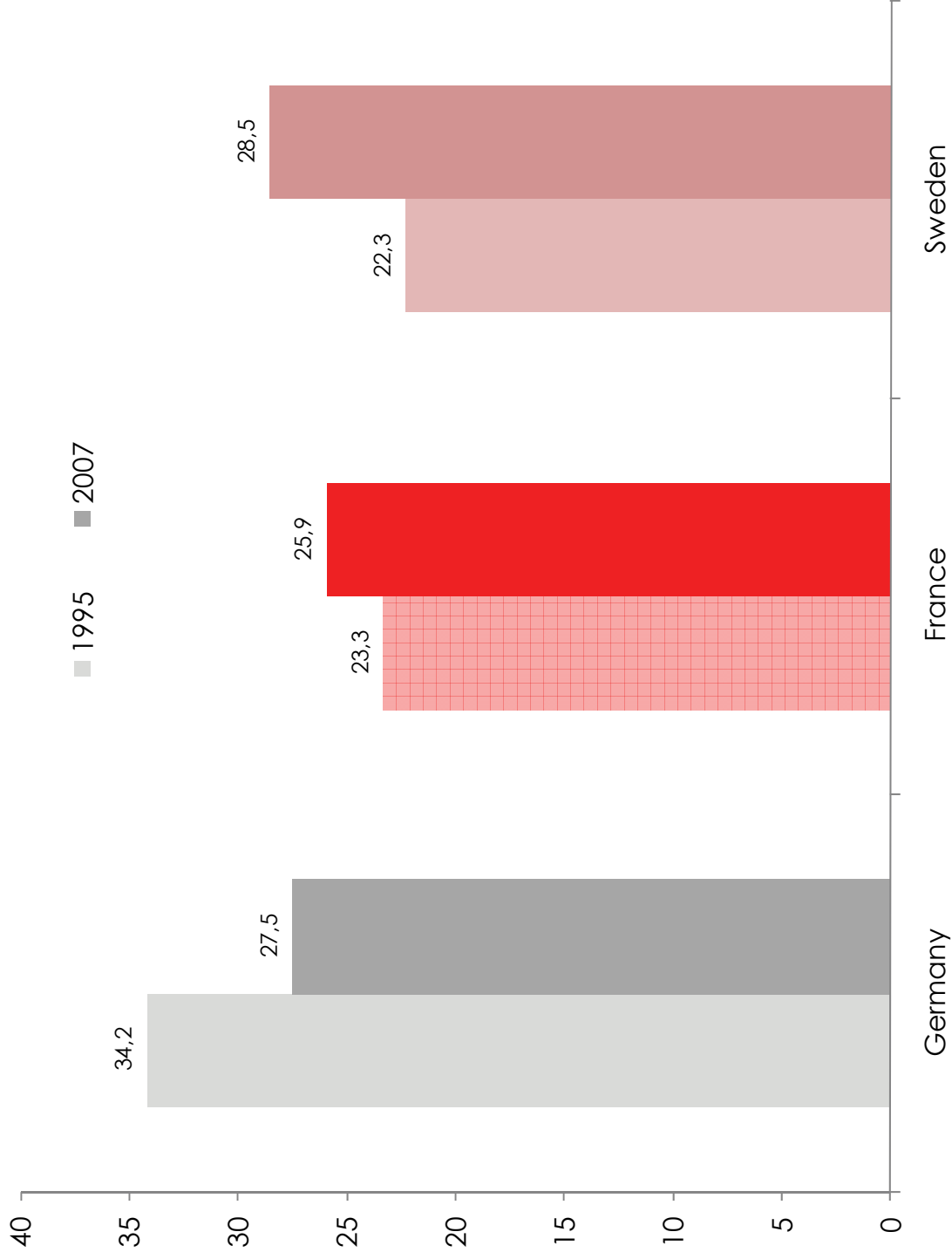


The share of high skill industries in value added

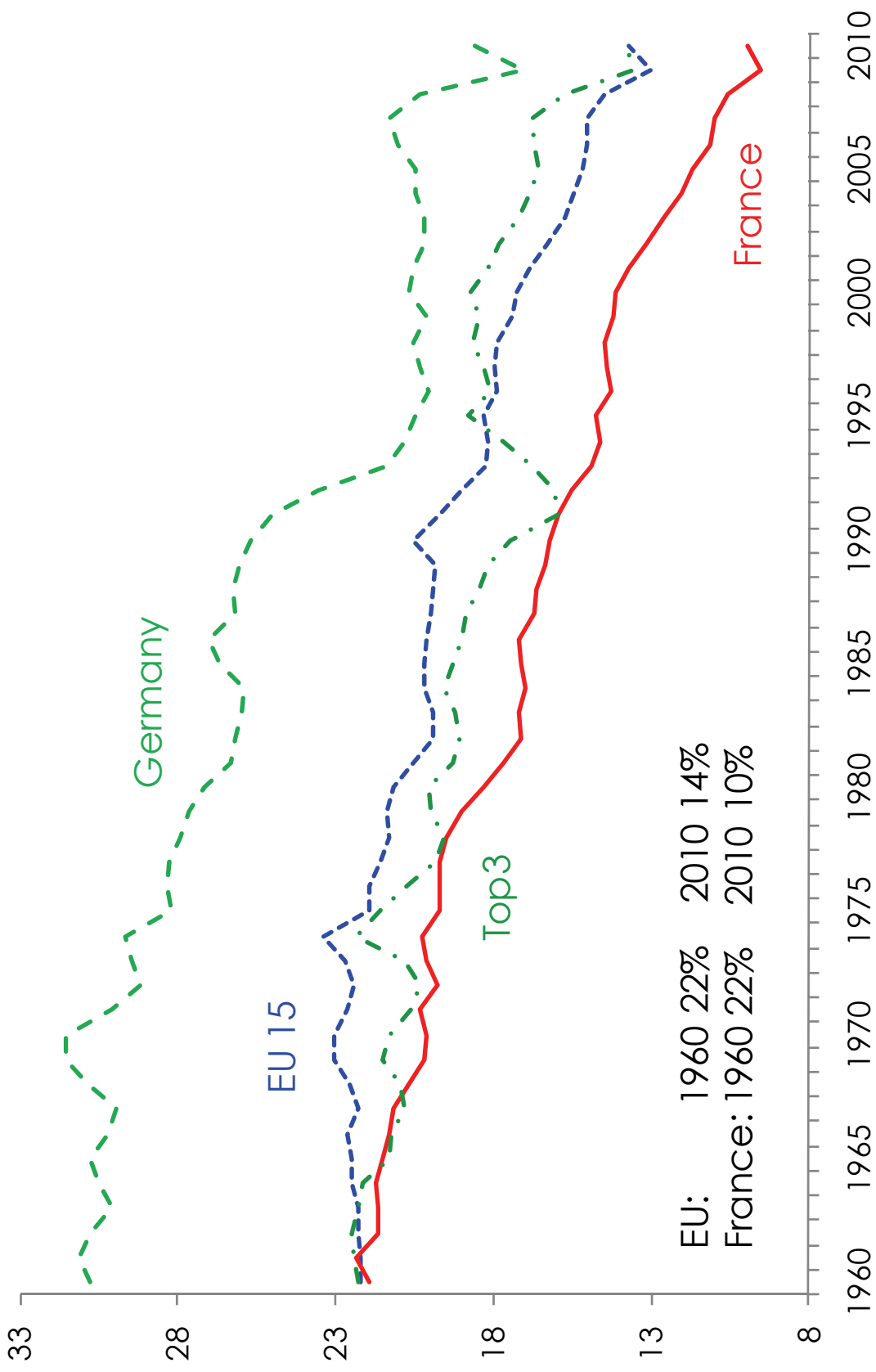


The share of high RQE industries in value added

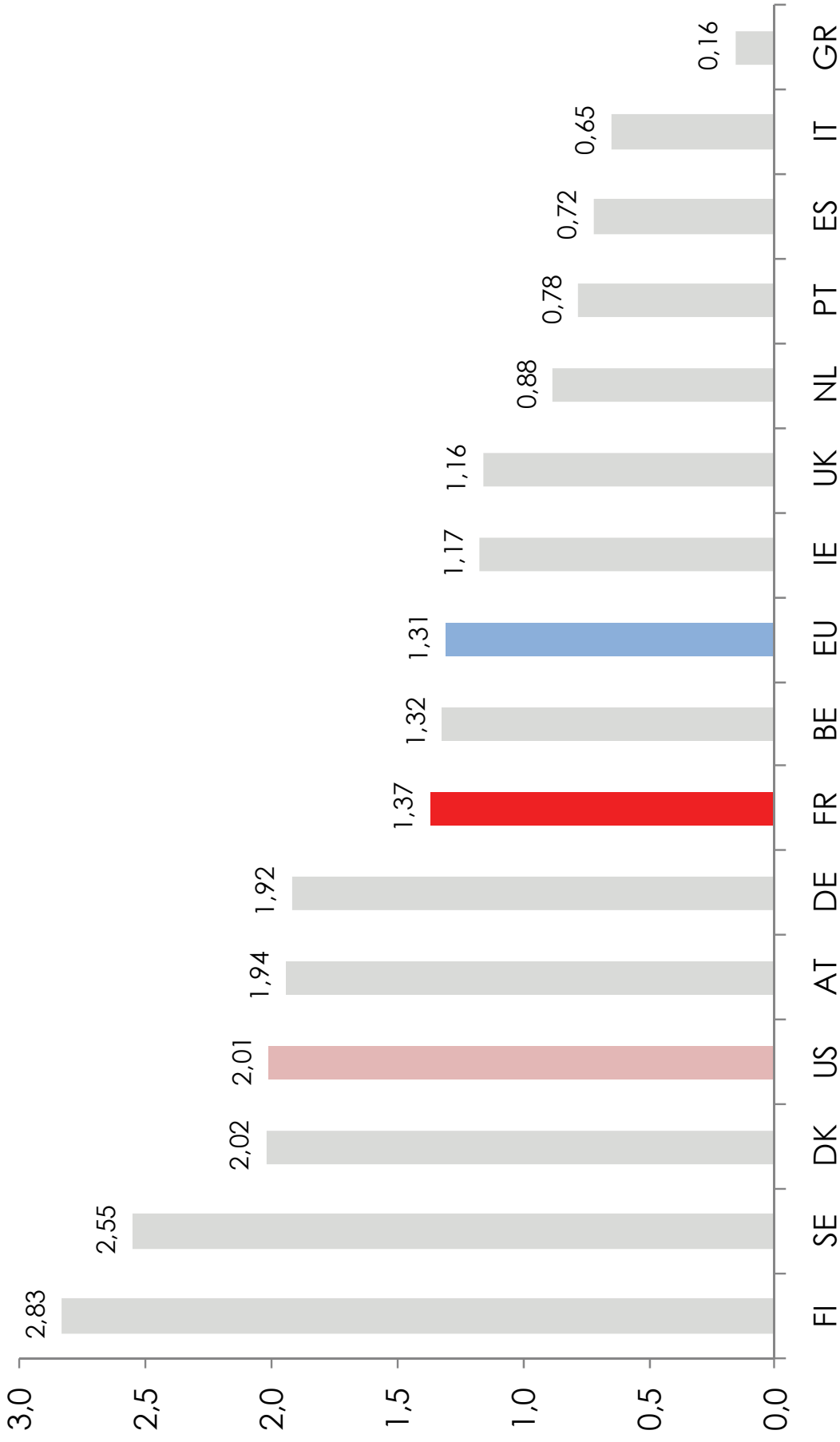




The share of industry in GDP (Germany, France, Top3, EU; nominal terms)



Business R&D in % of GDP 2009 (EU member countries)



Declining importance of IP in last decade of 20th century

Renewed interest since 2000

- Globalisation
- Fear of de-industrialisation
- Slow growth

Philosophy:

Primarily horizontal approach maintained
(e.g. to provide a favorable competitive environment);
but acknowledgement that **effects** of horizontal policies
can **vary significantly** between sectors and
that **complementary sector specific** measures might be needed

⇒ **Specific sectors need specific policy mixes.**

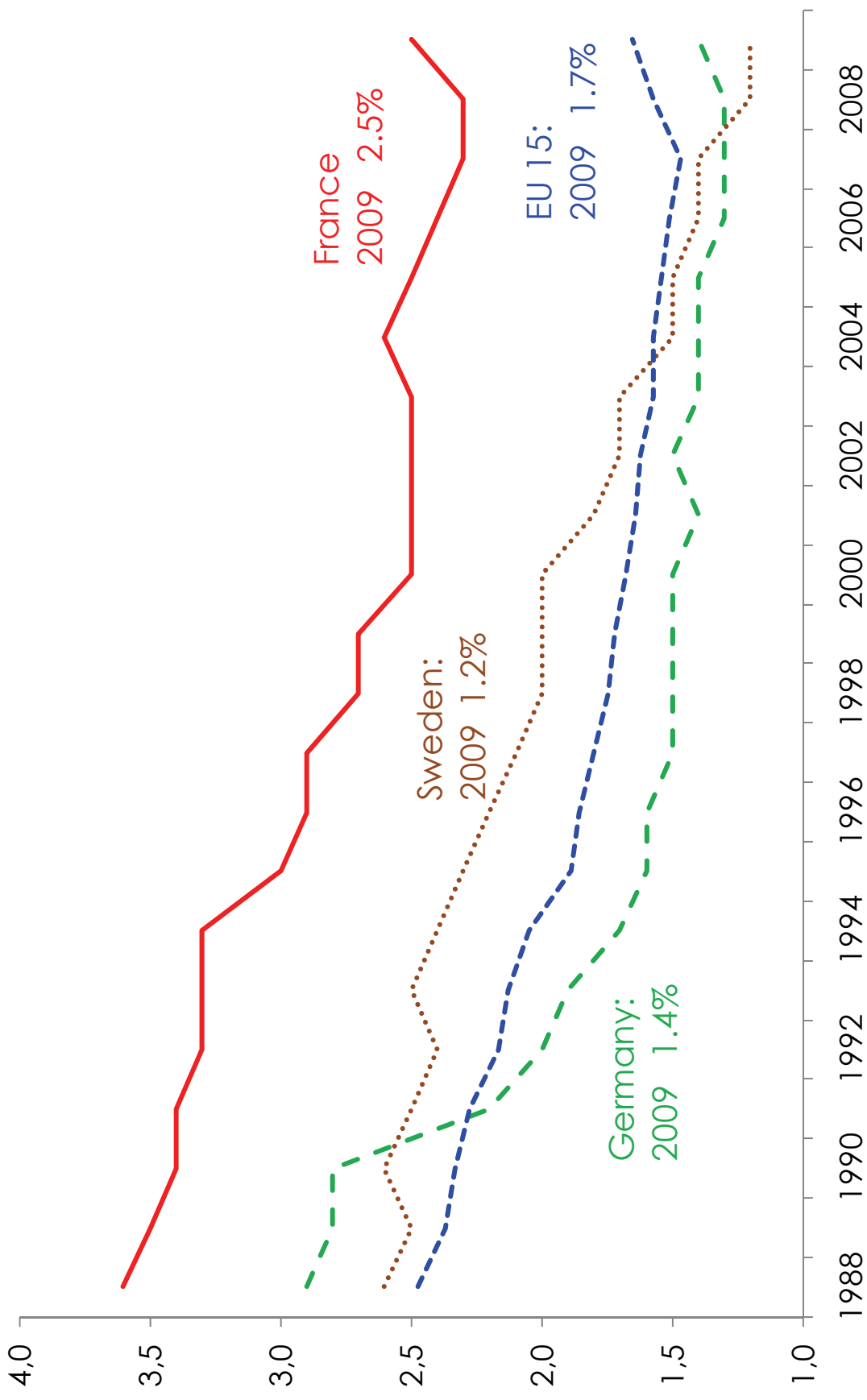
Education is important for all sectors but more important in machinery than apparel

And if a country is specialized or wants to specialize e.g. in machinery specific elements in education are more important

and if a country moves into machinery it needs besides education a minimum of firms, technology in this field

- ⇒ **Fine tuning of horizontal policies for specific need**
- ⇒ **Determining additional need specifically important for competition in a specific industry.**

Military expenditures in % of GDP (EU, France, Germany, Sweden; 1988- 2009)



Country rankings for 3 policy and 2 performance sets (Aiginger–Sieber, 2006)

	Superrank State Aid (low)	Superrank Regulation (low)	Superrank Future Investment (high)	Superrank Industry Structure	Rank Marco- economic Performance
Top3					
Finland	1	5	1	8	2
Sweden	2	2	2	1	4
Denmark	10	3	3	3	3
Big3					
Italy	8	13	13	9	14
France	10	11	6	5	12
Germany	13	7	8	2	13
Southern3					
Greece	6	11	14	14	9
Portugal	12	14	12	13	8
Spain	13	9	11	12	10
Small3					
Netherlands	4	8	5	10	7
Austria	5	6	10	10	6
Belgium	7	10	7	7	11
United Kingdom	3	1	4	6	5
Ireland	9	4	9	3	1

Country rankings for 3 policy and 3 performance sets (Aiginger–Sieber, 2006)

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Finland	1	5	1	8	6	2
Sweden	2	2	2	1	2	4
Denmark	10	3	3	3	1	3
Big3						
Italy	8	13	13	9	14	14
France	10	11	6	5	8	12
Germany	13	7	8	2	9	13
Southern3						
Greece	6	11	14	14	11	9
Portugal	12	14	12	13	12	8
Spain	13	9	11	12	13	10
Small3						
Netherlands	4	8	5	10	5	7
Austria	5	6	10	10	3	6
Belgium	7	10	7	7	10	11
United Kingdom	3	1	4	6	4	5
Ireland	9	4	9	3	7	1

Correlations between policy and performance (Aiginger–Sieber, 2006)

	Superrank Industry Structure	Rank Lisbon Strategy	Rank Marco- economic Performance
Superrank State Aid (low)	0,05	0,53	0,49
Superrank Regulation (low)	0,64	0,83	0,73
Superrank Future Investment (high)	0,63	0,76	0,54

Countries with

- **low degrees of regulations, as well as countries with**
 - **high levels of investment into the future**
- Perform better according to all three performance criteria.**

- **Directorate-General of Global Affairs:
“Action to promote Innovation 2010”**
- **France invested 40 billion € to R&D in 2008, putting it in fourth place in the world behind US, Japan and Germany**
- **2.1% is very meager; S, FI, CH, Israel... all have 3+**
- **3% is an unambitious goal for 2020 for a rich country; it's the average goal of all countries incl. new member countries**
- **Significant part is military research plus nuclear, plus space, with decreasing spillovers to civic firms.**