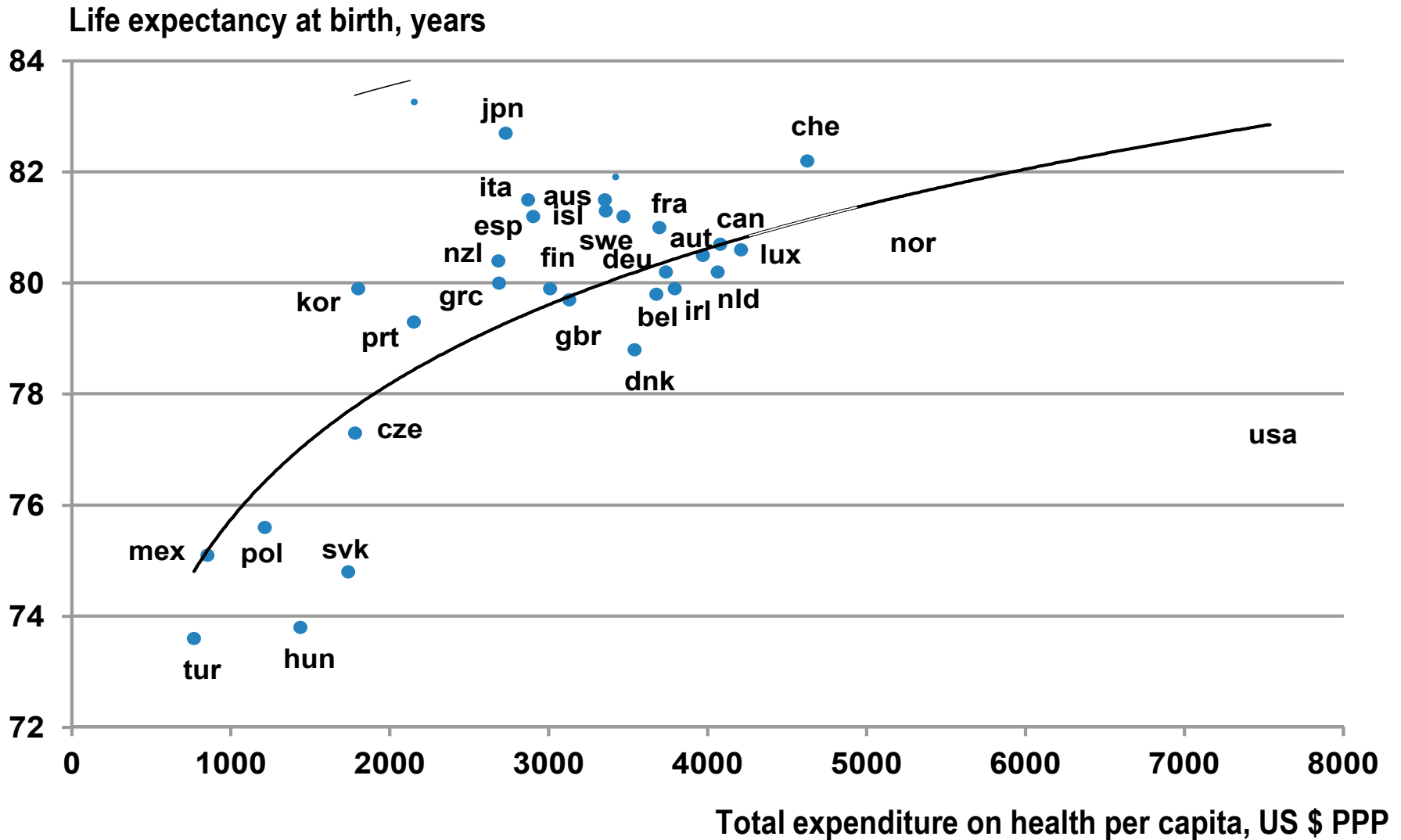


Cross-country comparison of health care system efficiency

Isabelle Joumard, OECD, Economics Department
IMF conference, June 21, 2011

“Public Health Care Reforms: Challenges and
Lessons for Advanced and Emerging Europe”

Weak link between health care spending and outcomes








Presentation outline

1. Measuring health care spending efficiency
2. Reaping efficiency gains: why (effect on public spending) and how

1. Measuring health care efficiency: difficulties

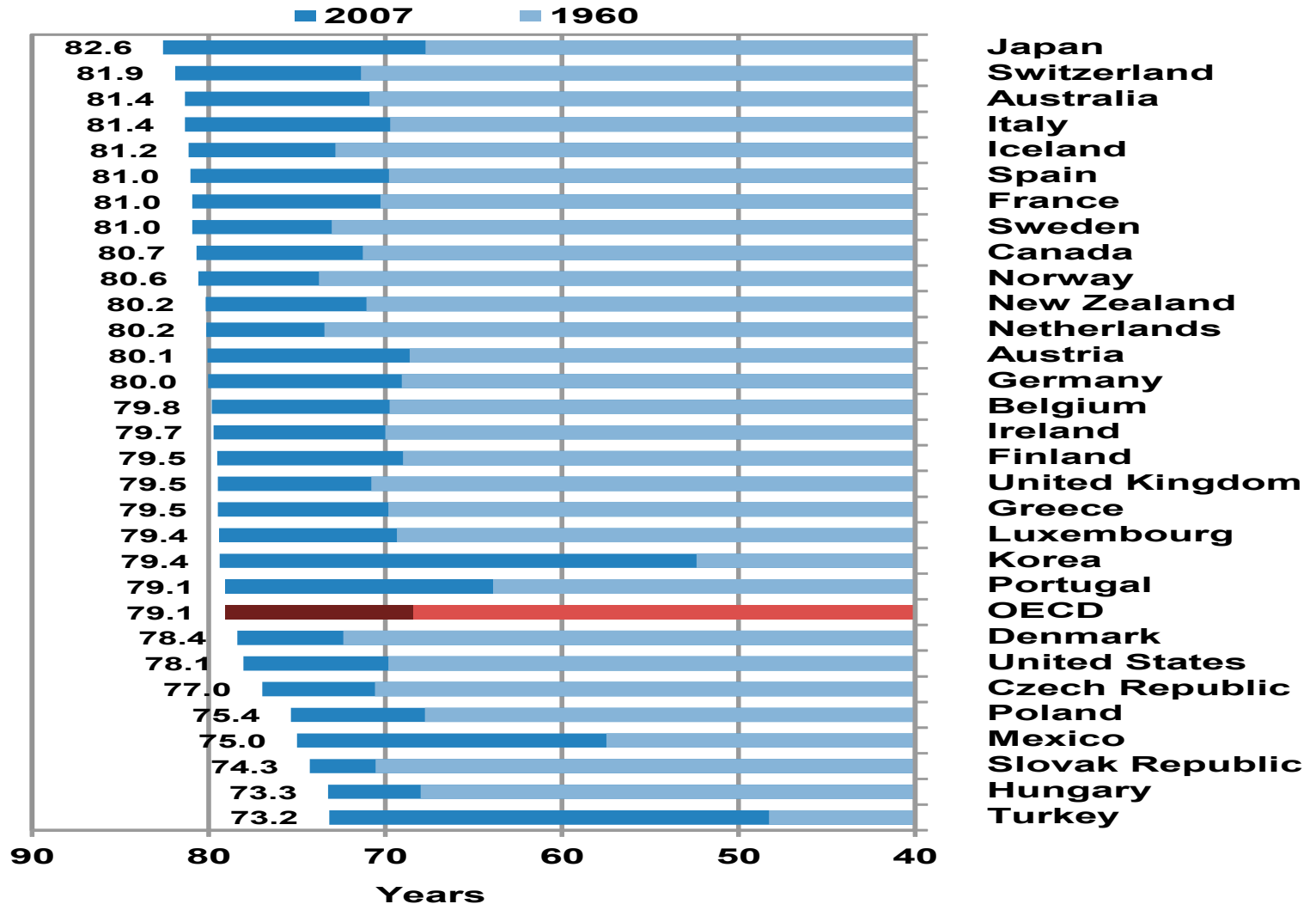
- No obvious definition of health care outcomes and inputs; cross-country data on outcomes are imperfect
- A large variety of actors (hospitals, outpatient physicians, drug companies, etc.) and co-ordination matters a great deal
- Mix of public and private spending

1. Measuring health care efficiency: OECD approach

- Choose an outcome indicator 
- ... and an input indicator 
- Identify the other determinants 
- Implement various approaches (panel regressions and DEA) and robustness checks 
- Complement/compare the overall efficiency index with other performance indicators 

Life expectancy at birth

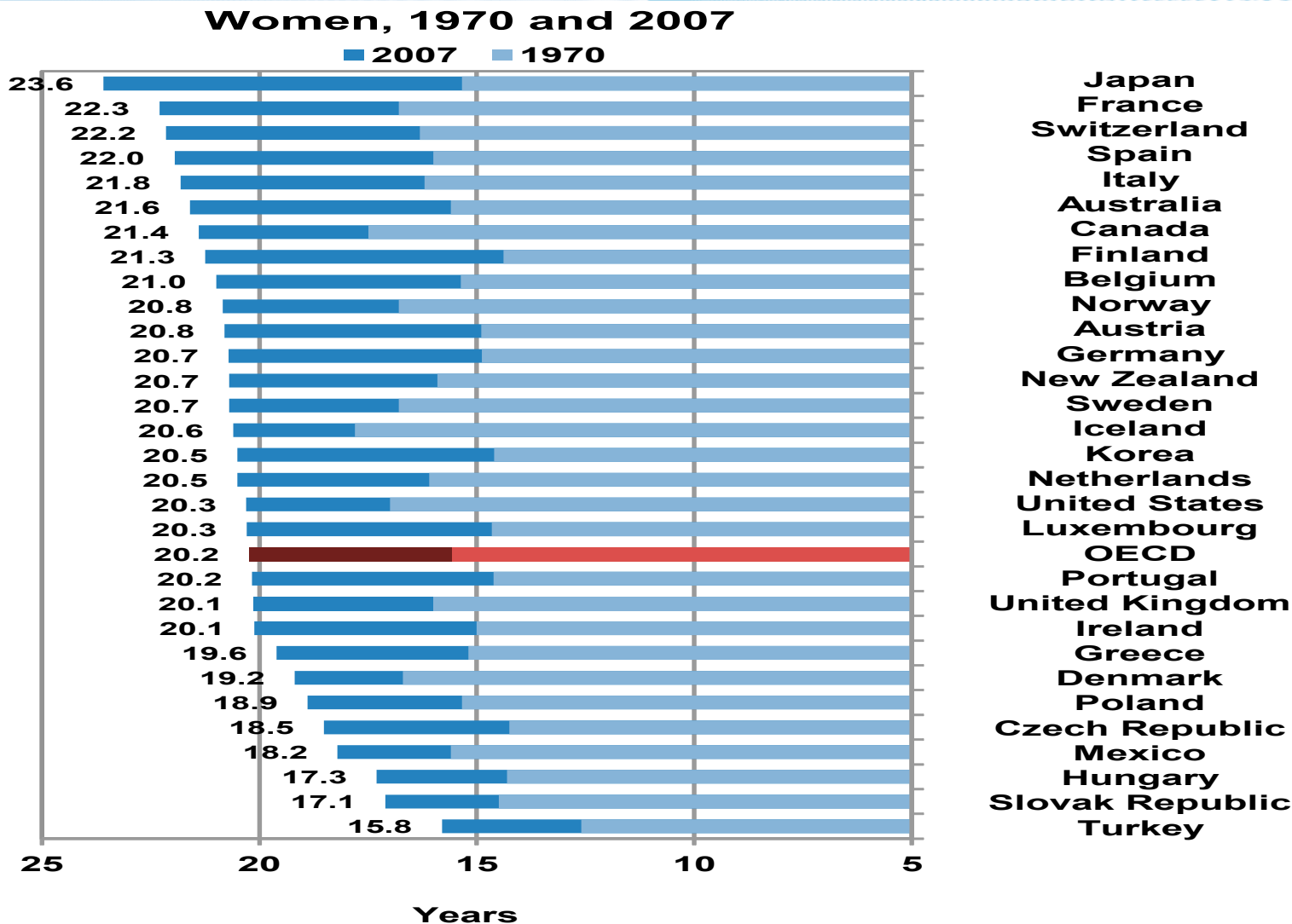
Total population, 1960 and 2007



Source: Health at a Glance 2009, OECD Indicators.

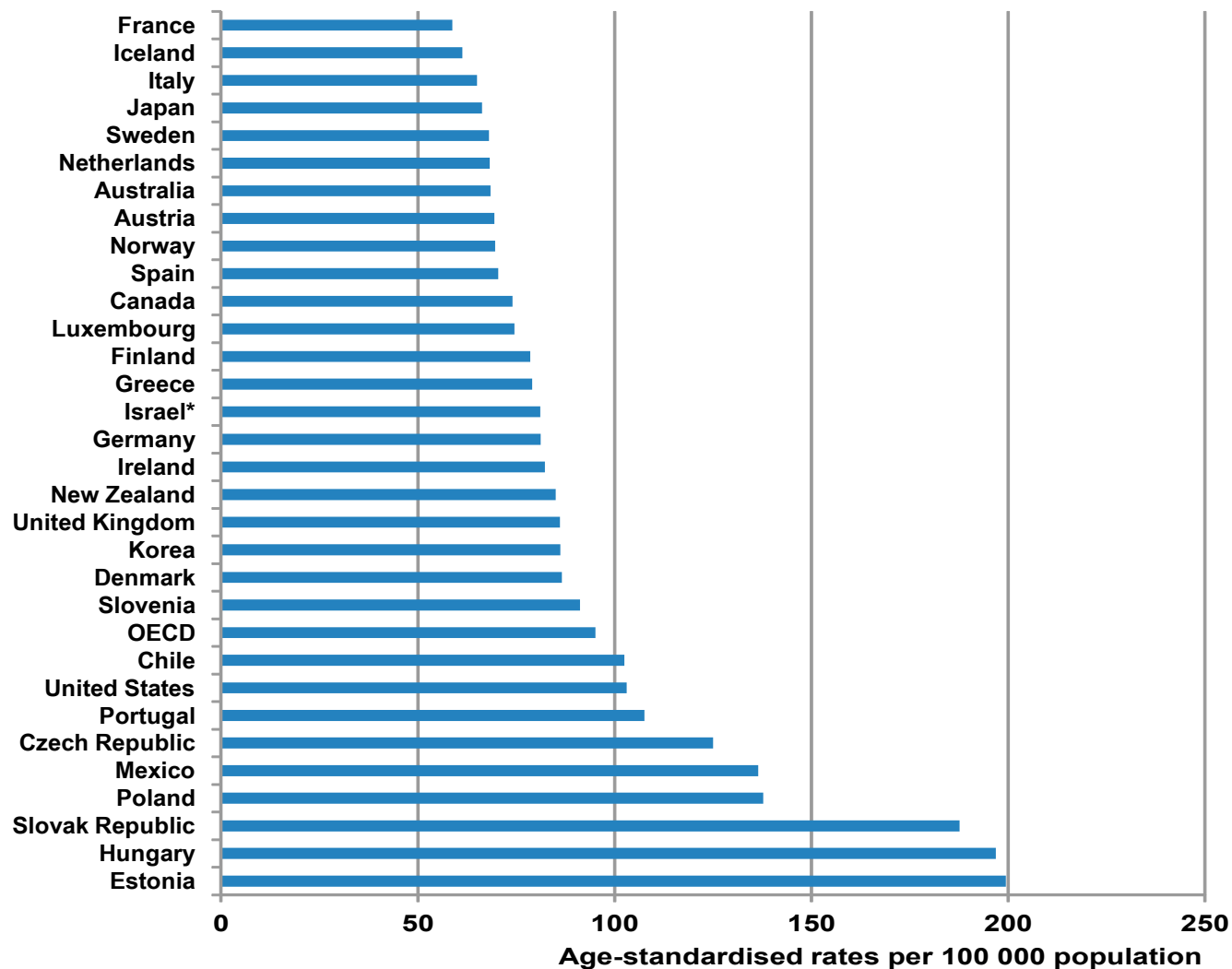


Life expectancy at 65, women



Amenable mortality

All causes, 2007 or latest year available



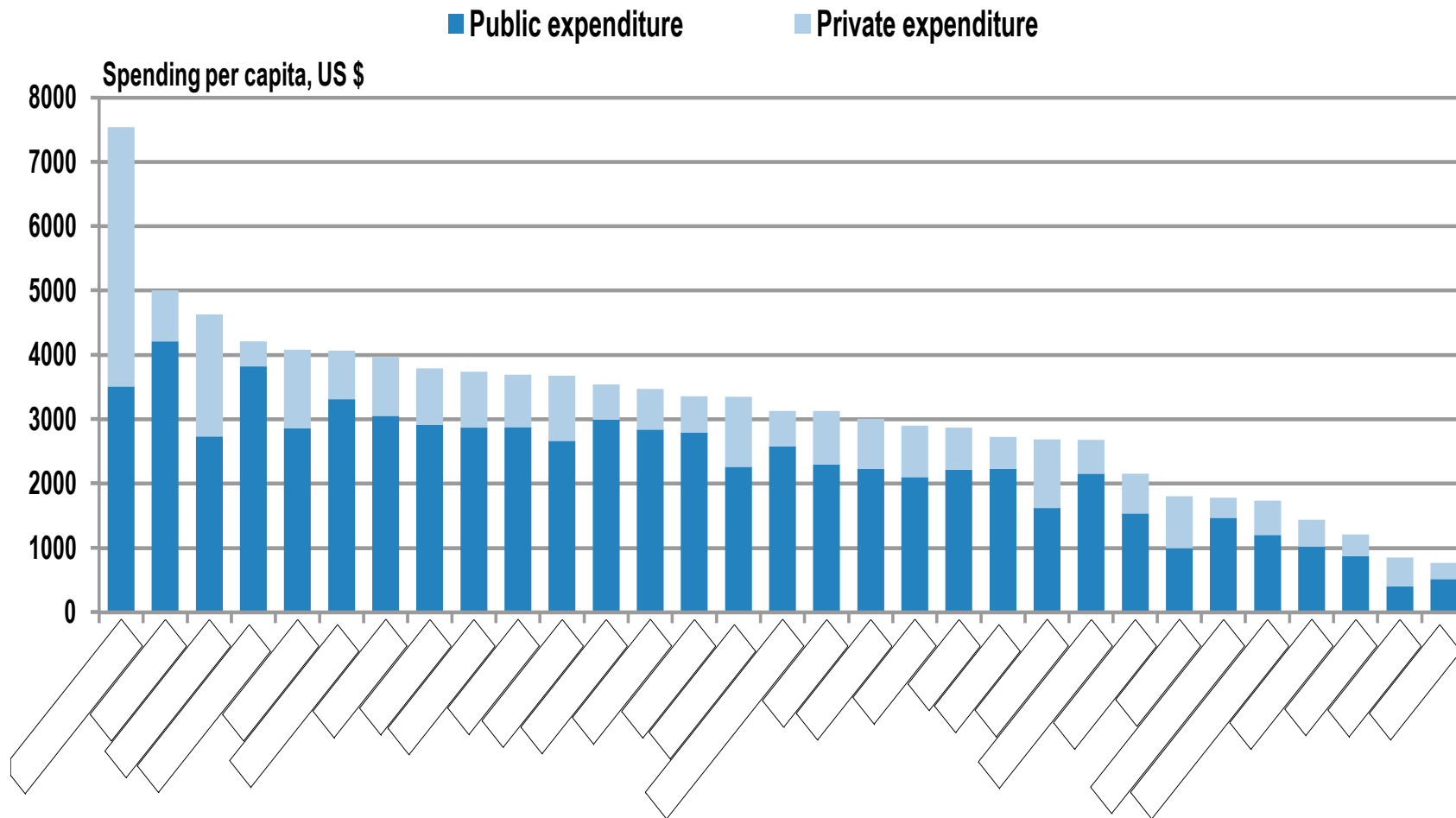
Correlations between outcome measures (level and rank)

	LE at birth Total	LE at 65 Female	Adjusted PYLL	Health- adjusted LE	Amenable mortality
Life expectancy at birth, total	1.00	0.94 **	-0.93 **	0.96 **	-0.96 **
Life expectancy at 65, female	0.89 **	1.00	-0.77 **	0.91 **	-0.86 **
Adjusted PYLL, total	-0.82 **	-0.64 **	1.00	-0.90 **	0.91 **
Health-adjusted life expectancy at birth	0.95 **	0.85 **	-0.84 **	1.00	-0.89 **
Amenable mortality	-0.92 **	-0.82 **	0.85 **	-0.93 **	1.00

Source: Joumard , André & Nicq (2010), "Health Care Systems: Efficiency and Institutions", *OECD Economics Department Working Paper*, No. 769.

Health care spending

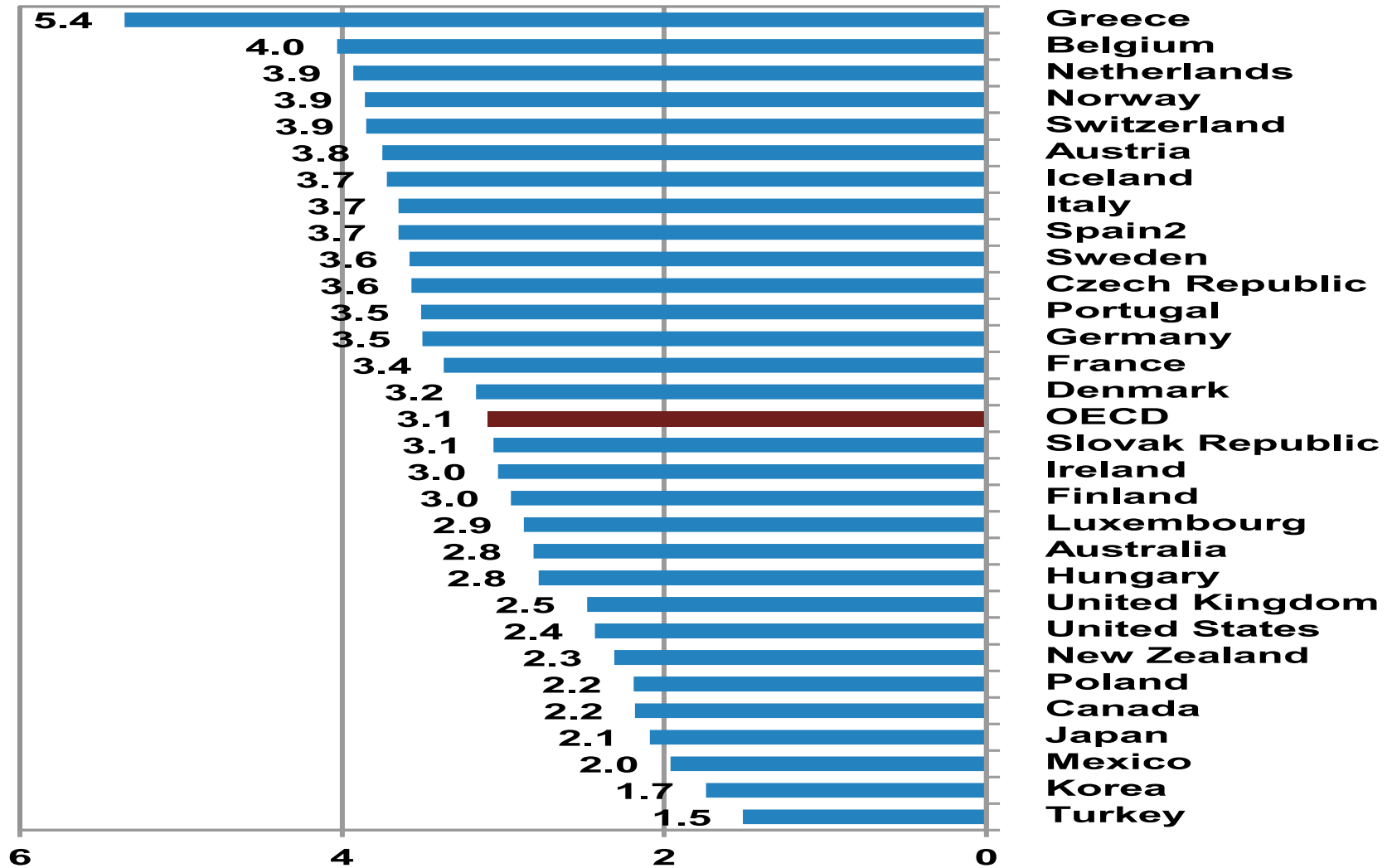
2008



Source: OECD Health Data 2010.



Practising physicians per 1000 population, 2007

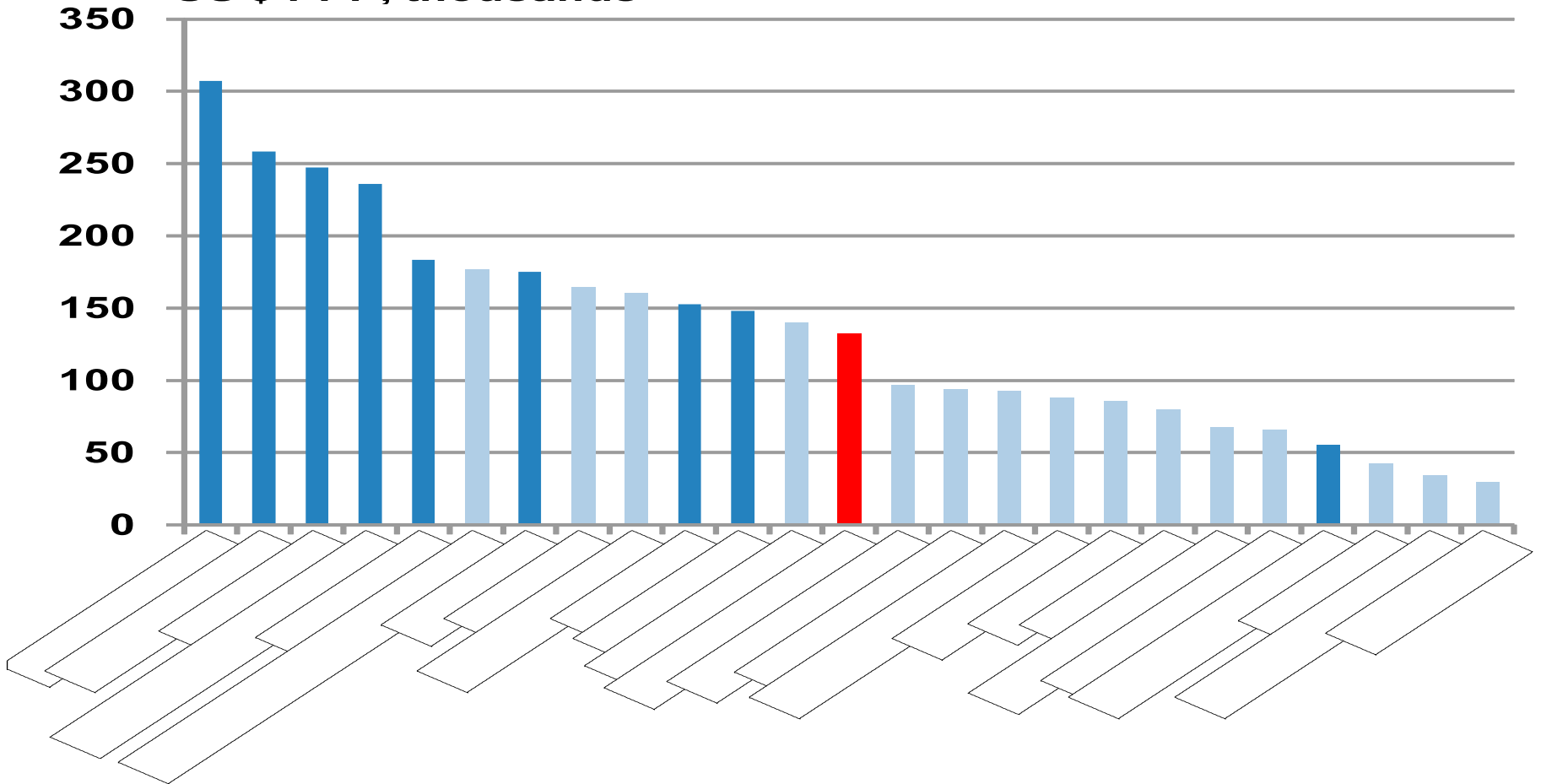


Source: Health at a Glance 2009, OECD Indicators.

Remuneration of specialists

■ Self-employed ■ Salaried

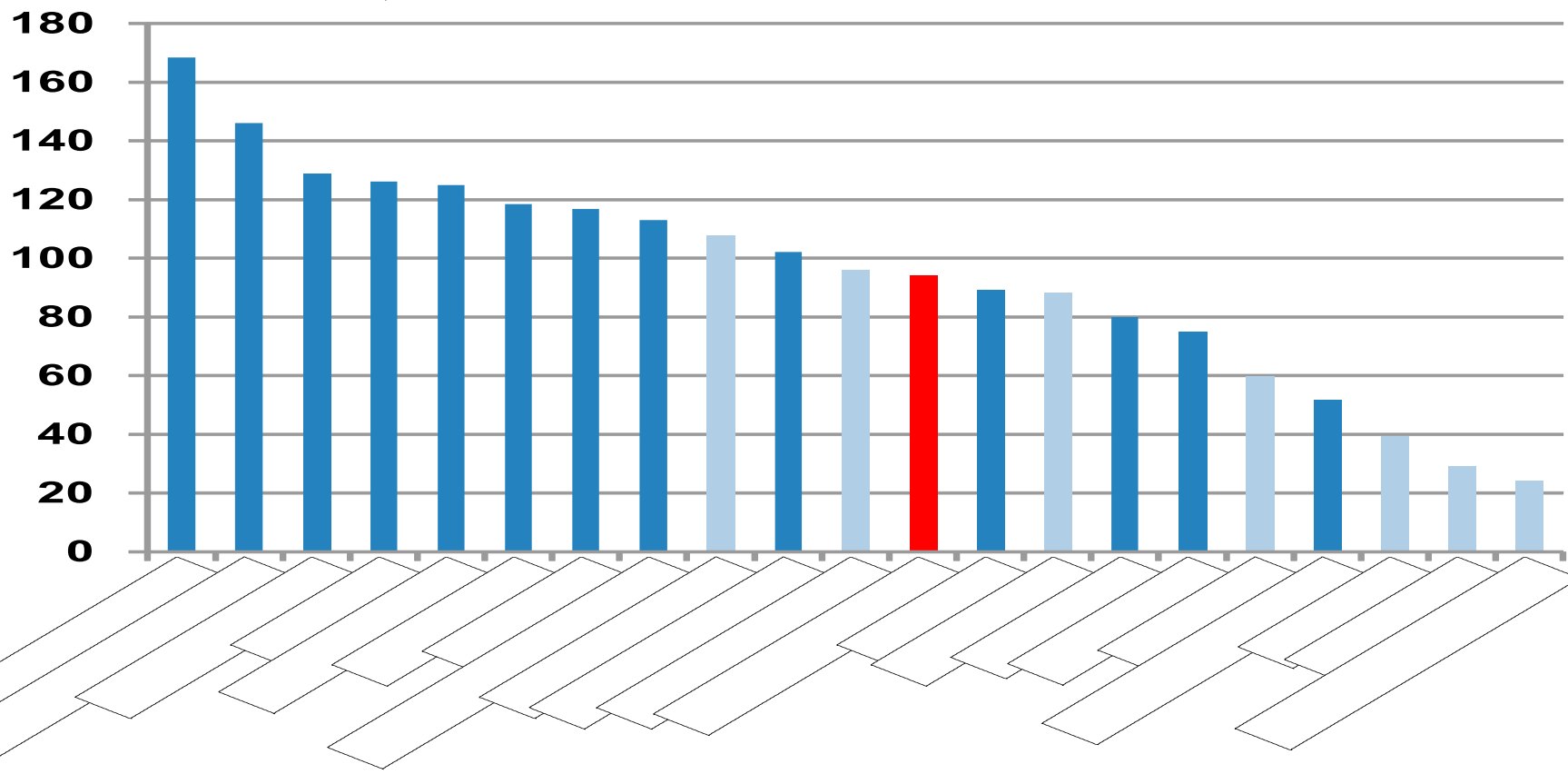
US \$ PPP, thousands



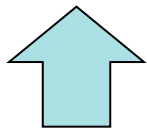
Remuneration of general practitioners (GPs)

■ Self-employed ■ Salaried

US \$ PPP, thousands



Source: OECD Health Data 2010.



Health care status determinants

- Health care resources
- Lifestyle factors: diet, alcohol & tobacco consumption
- Socioeconomic environment: income and education
- Pollution



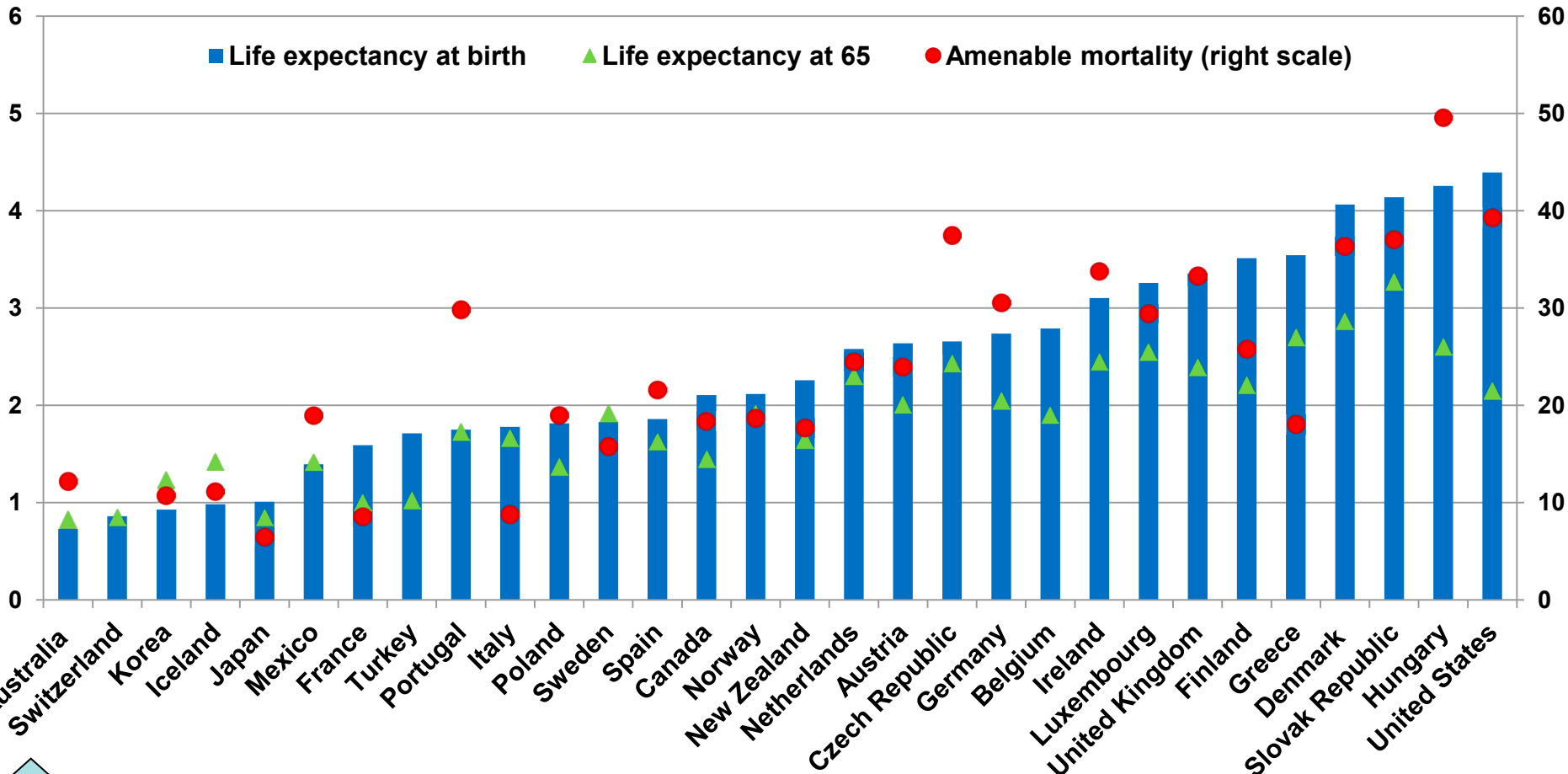
DEA – defining the efficiency frontier and potential efficiency gains

DEA – results and sensitivity analysis

(for different outcome indicators)

Potential gains in life expectancy, years

Potential gains in amenable mortality, %



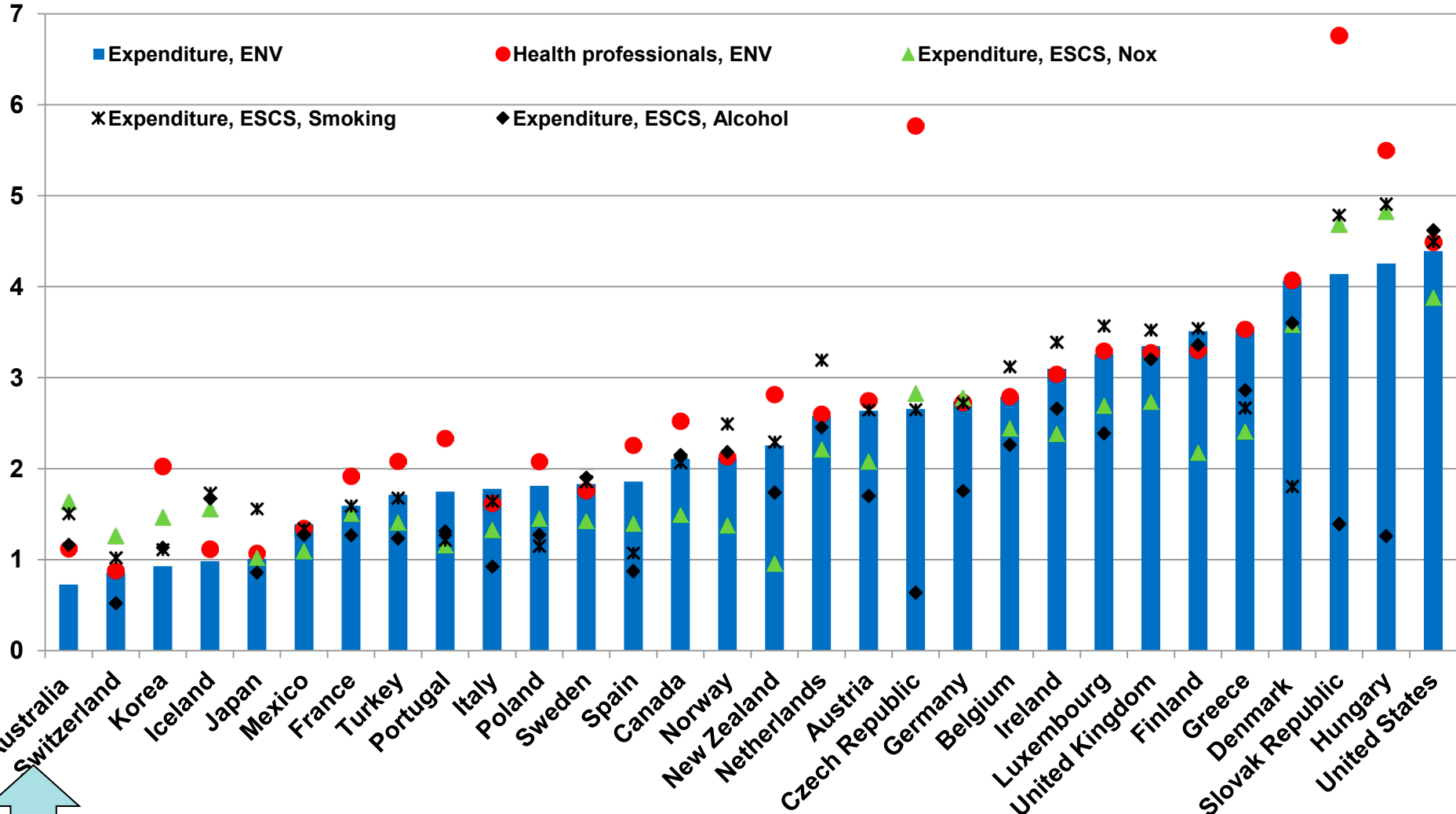
Source: Joumard, André & Nicq (2010), "Health Care Systems: Efficiency and Institutions", *OECD Economics Department Working Paper*, No. 769.



DEA – results and sensitivity analysis

(for different input indicators)

Potential gains in life expectancy, years



Source: Joumard, André & Nicq (2010), "Health Care Systems: Efficiency and Institutions", *OECD Economics Department Working Paper*, No. 769.

Panel regressions – model specification (log form)

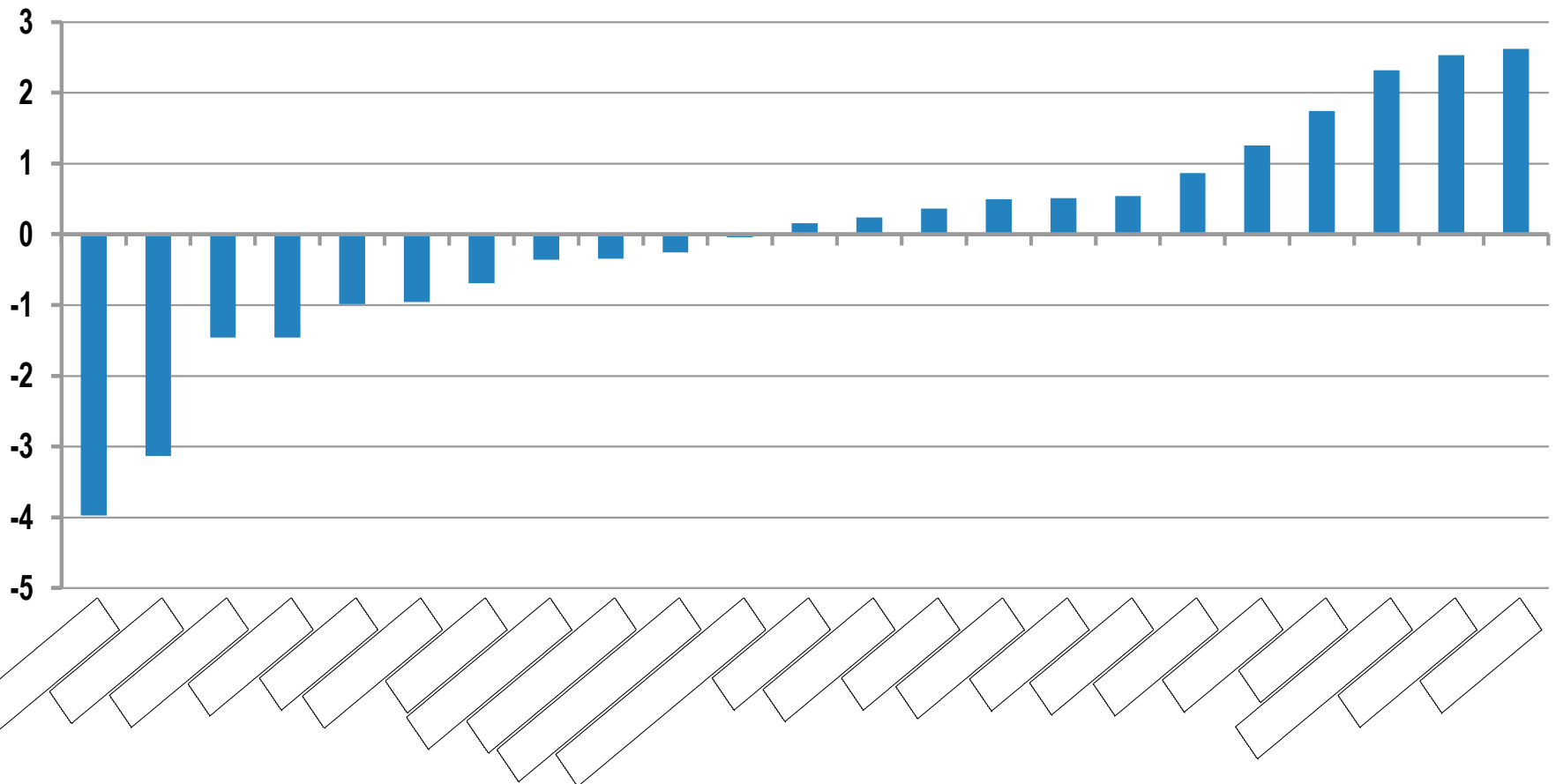
$$\begin{aligned} Y_{it} = & \alpha_i + \beta \cdot HCR_{it} \\ & + \gamma \cdot SMOK_{it} + \phi \cdot DRINK_{it} + \theta \cdot DIET_{it} \\ & + \delta \cdot AIRPOL_{it} + \sigma \cdot EDU_{it} + \lambda \cdot GDP_{it} + \varepsilon_{it} \end{aligned}$$

Panel regressions: contribution of main explanatory variables to cross-country differences in life expectancy

	Life expectancy at birth	Determinants							Country-specific effect
		Spending	Education	Tobacco	Alcohol	Diet	Pollution	GDP	
United States	-0.5	2.9	0.5	0.0	0.0	0.0	-0.6	0.6	-4.0
Germany	0.6	0.8	0.4	-0.1	-0.1	0.0	0.5	0.1	-1.0
France	1.3	0.9	-0.2	0.0	-0.3	0.0	0.4	0.2	0.4
United Kingdom	0.5	-0.1	0.4	0.1	-0.2	0.0	0.1	0.2	0.0
Canada	1.8	0.9	0.4	0.1	0.1	0.0	-0.8	0.3	0.9
Czech Republic	-2.7	-1.8	0.5	-0.1	-0.3	-0.1	0.0	-0.6	-0.3
Korea	-0.6	-2.4	0.1	0.0	0.0	0.1	0.3	-0.4	1.7

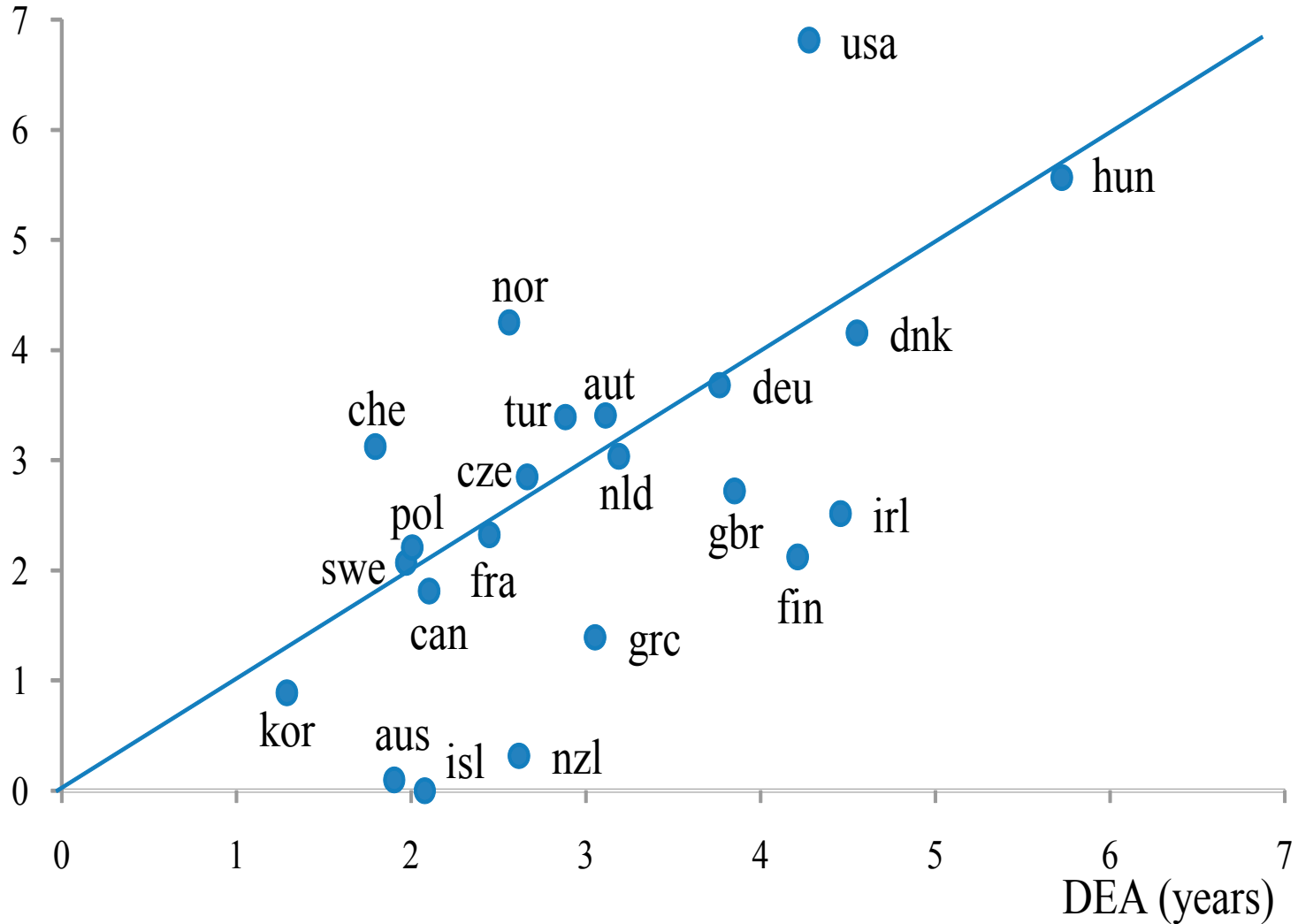
Panel regressions: years of life not explained by the model

With health care resources measured in monetary terms

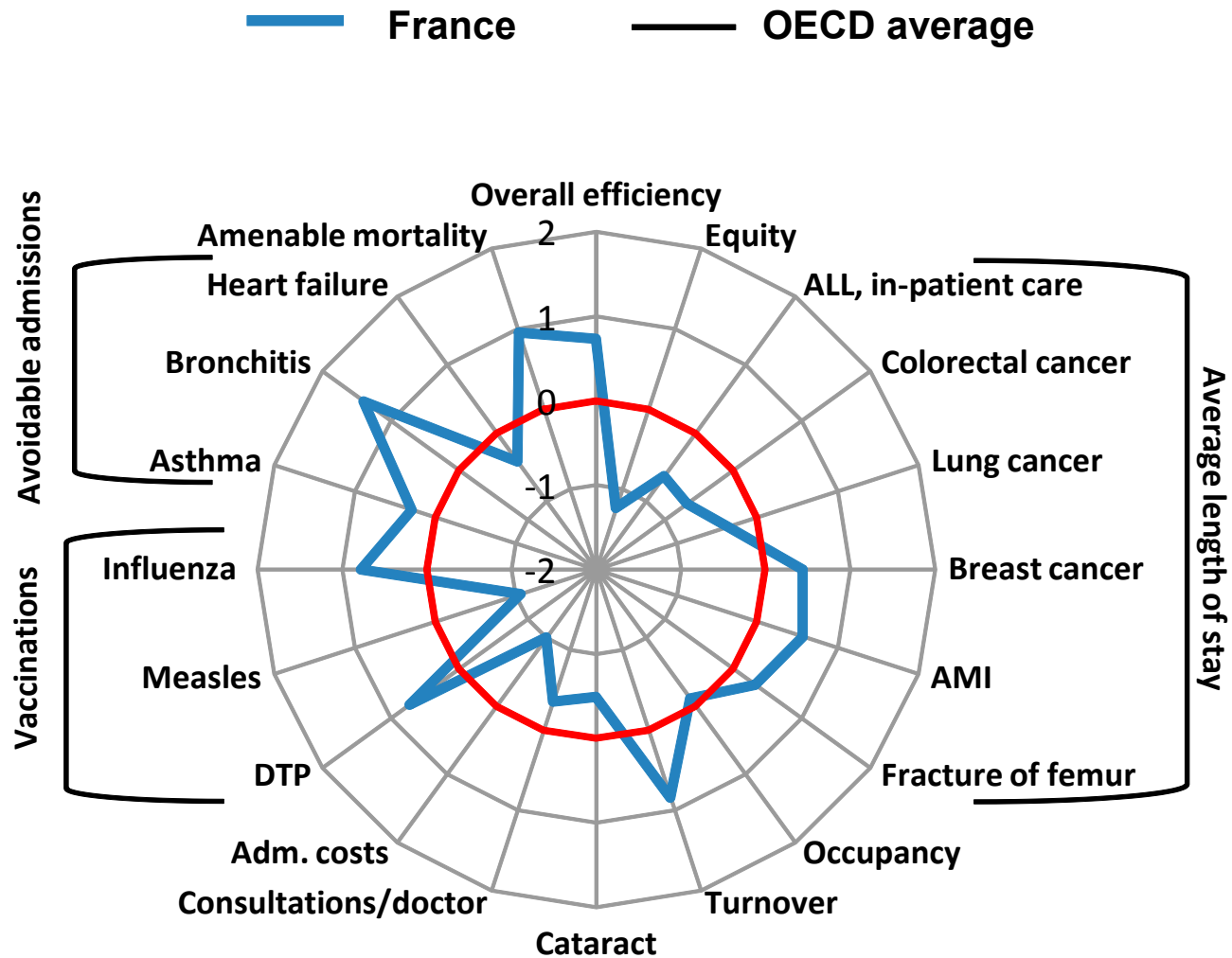


Comparing efficiency indicators derived from panel regressions and DEA

Panel regression (years)






Complementing overall efficiency score by other performance measures -- France



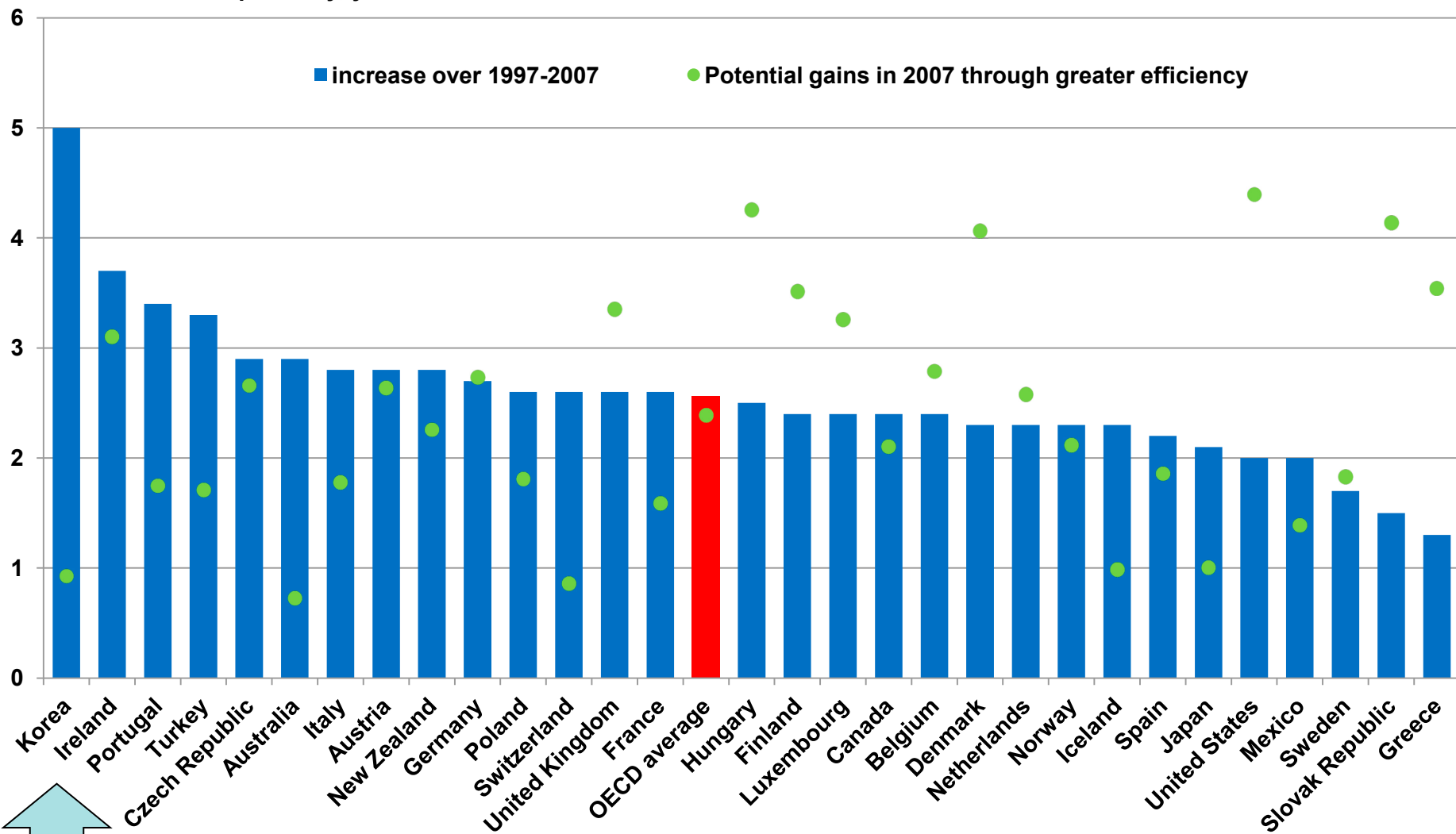
2. Reaping efficiency gains -- Impact on public spending

Main assumptions:

- Health outcomes improve as they did in the past 
 - Two scenarios on the spending side are compared:
 1. No reform scenario – spending increases as it did in the past 
 2. Reform scenario – efficiency gains are realised to finance all or part of health status improvements
- ➔ Potential savings in public spending are large 

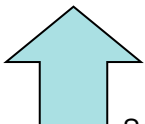
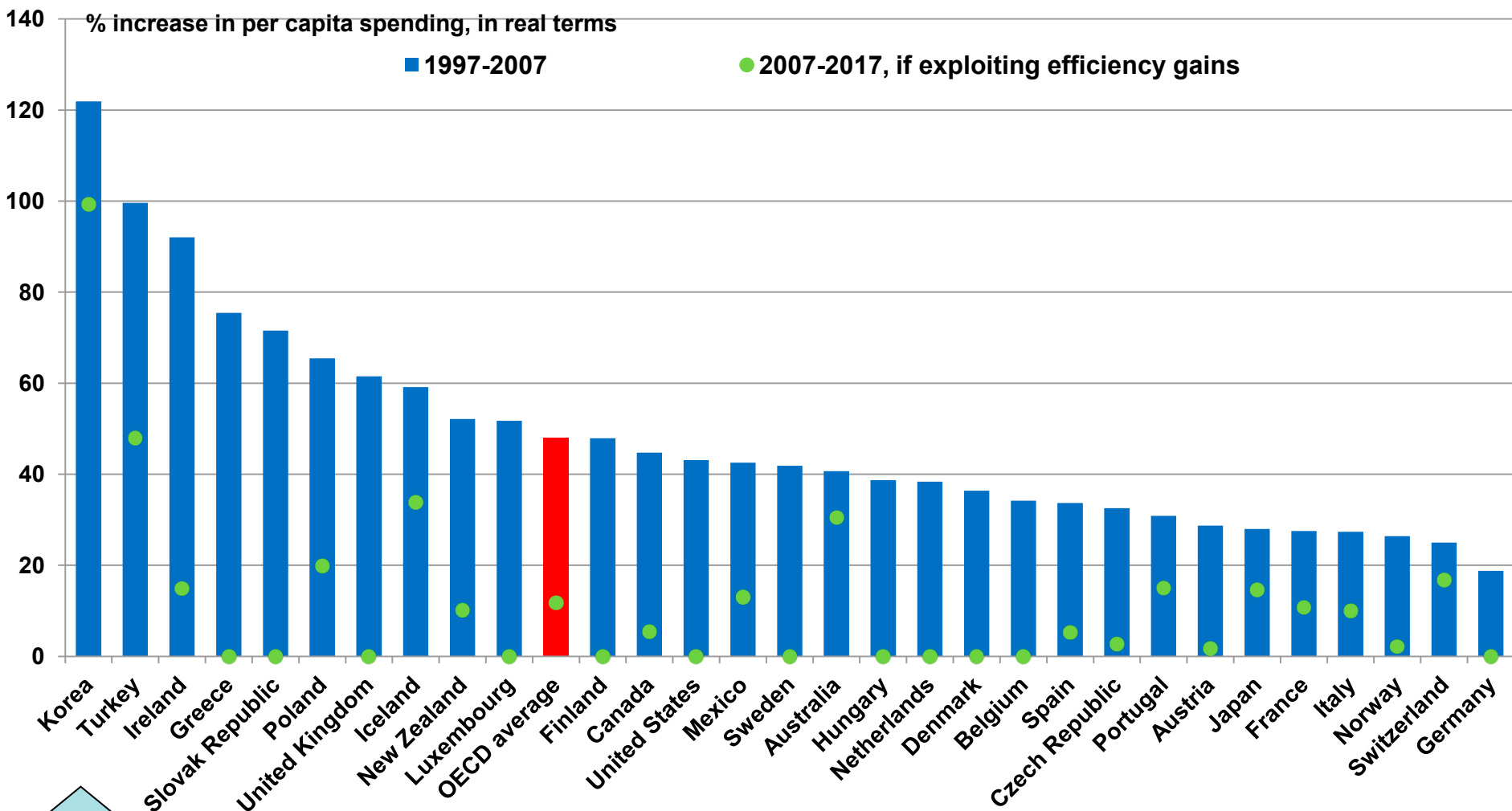
Exploiting efficiency gains would allow to improve health outcomes further

Gains in life expectancy, years



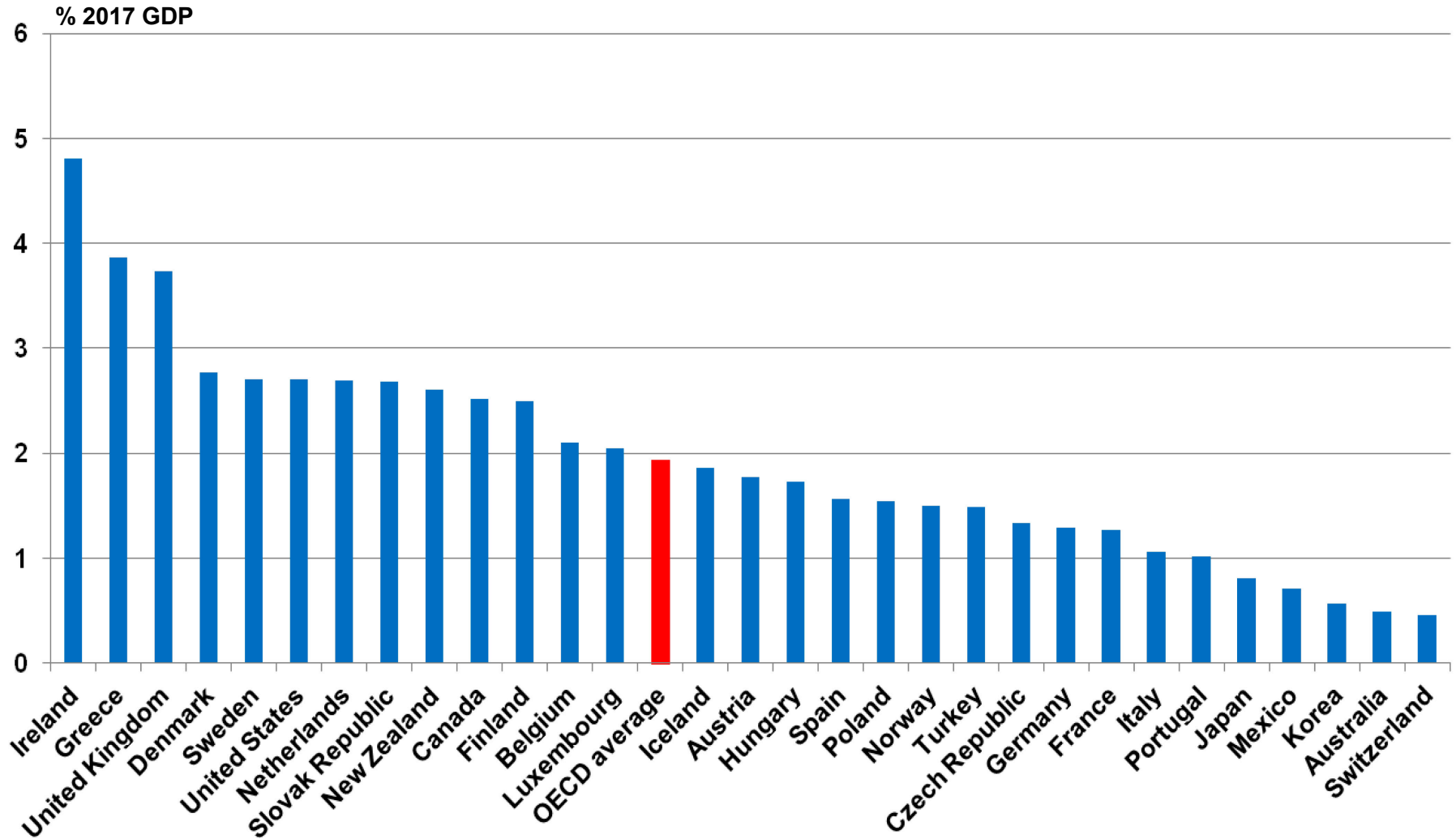
Source: OECD Health Data 2009; OECD calculations.

Exploiting efficiency gains would help to contain future spending



Source: OECD Health Data 2009; OECD calculations.

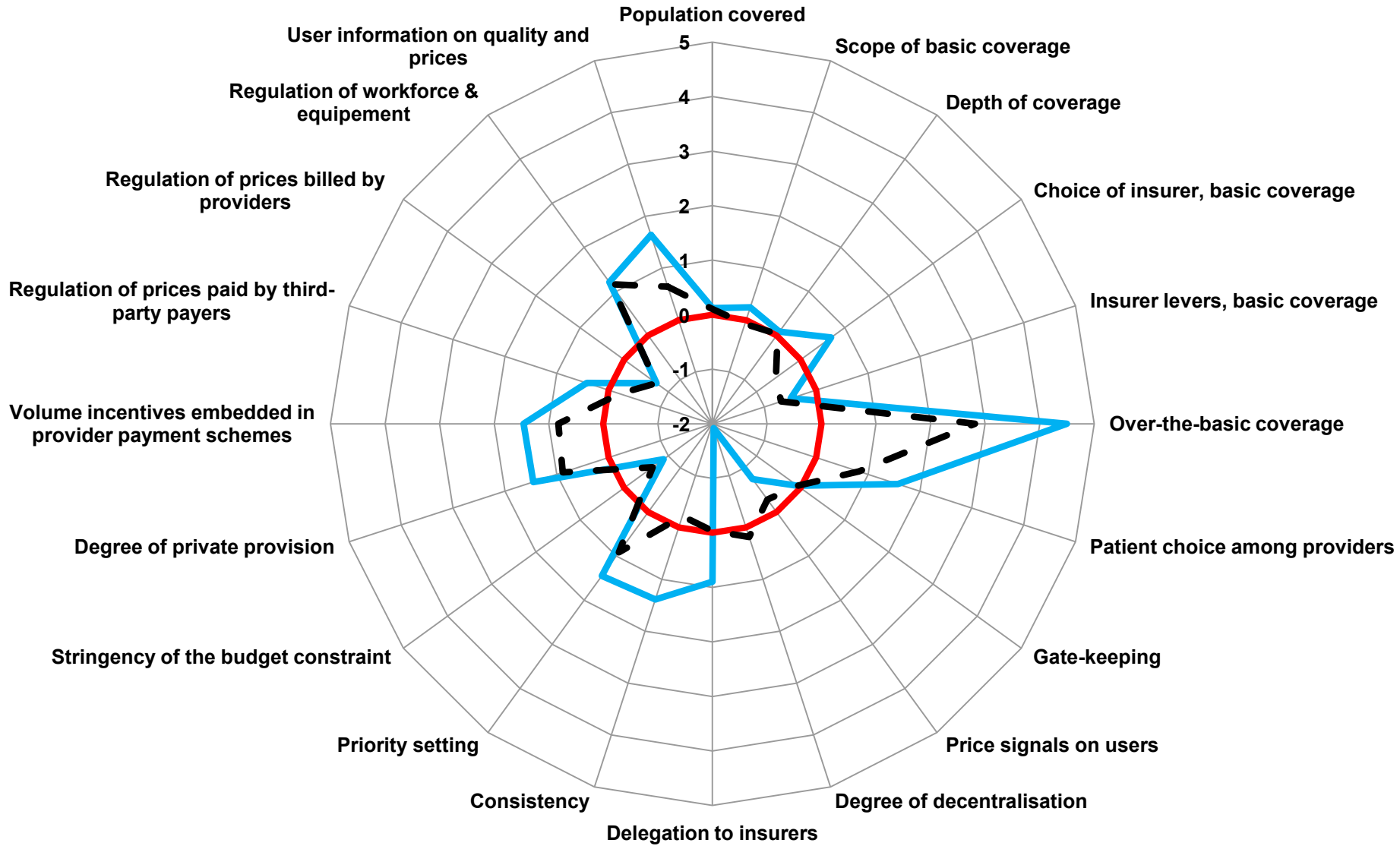
Potential savings in public spending are large



How to reap efficiency gains?

A new set of policy indicators provides guidance

— France — OECD average — -Group 2



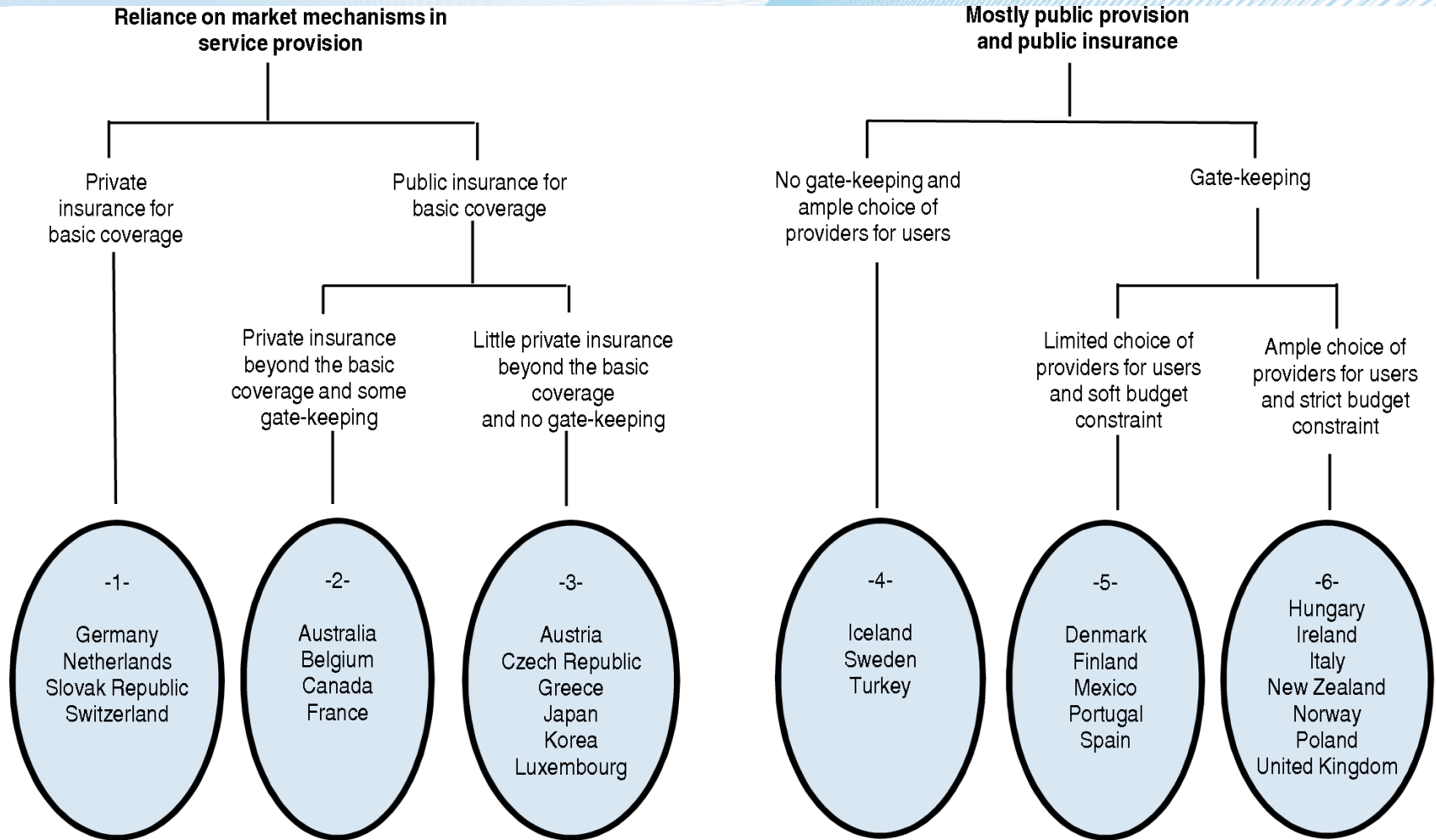
To conclude

- Indicators of health care spending efficiency at the system level can be built and are relatively robust
- They can be complemented by indicators of the quality of care and other performance indicators
- Exploiting potential efficiency gains would help contain public spending and result in large savings for some countries (on average 2% of GDP by 2017)

For more information

- OECD (2010), *Health Care Systems: Efficiency and Policy Settings*.
- Joumard, André, Nicq & Chatal (2008), "Health Status Determinants: Lifestyle, Environment, Health Care Resources and Efficiency", *OECD Economics Department Working Paper*, No. 627.
- OECD, *Health at a Glance* (bi-annual publication).

Characterising health care systems: country groups



No health care system clearly outperforms the others → No big-bang reform is warranted

Potential gains in life expectancy (years, DEA)

