Health Care Sector Efficiency: Measuring and improving it

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High Performing Health Systems

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The OECD's work on health
Selected publications and weblinks

- *Health at a Glance* and Health Data
- *Health Care Systems: Efficiency and Policy Settings*
- *OECD Economic surveys: Canada, 2010*
- *Improving Value in Health Care – Measuring quality*
- *Value for Money in Health Spending*
- *Obesity and the Economics of Prevention: Fit not Fat*

Websites:

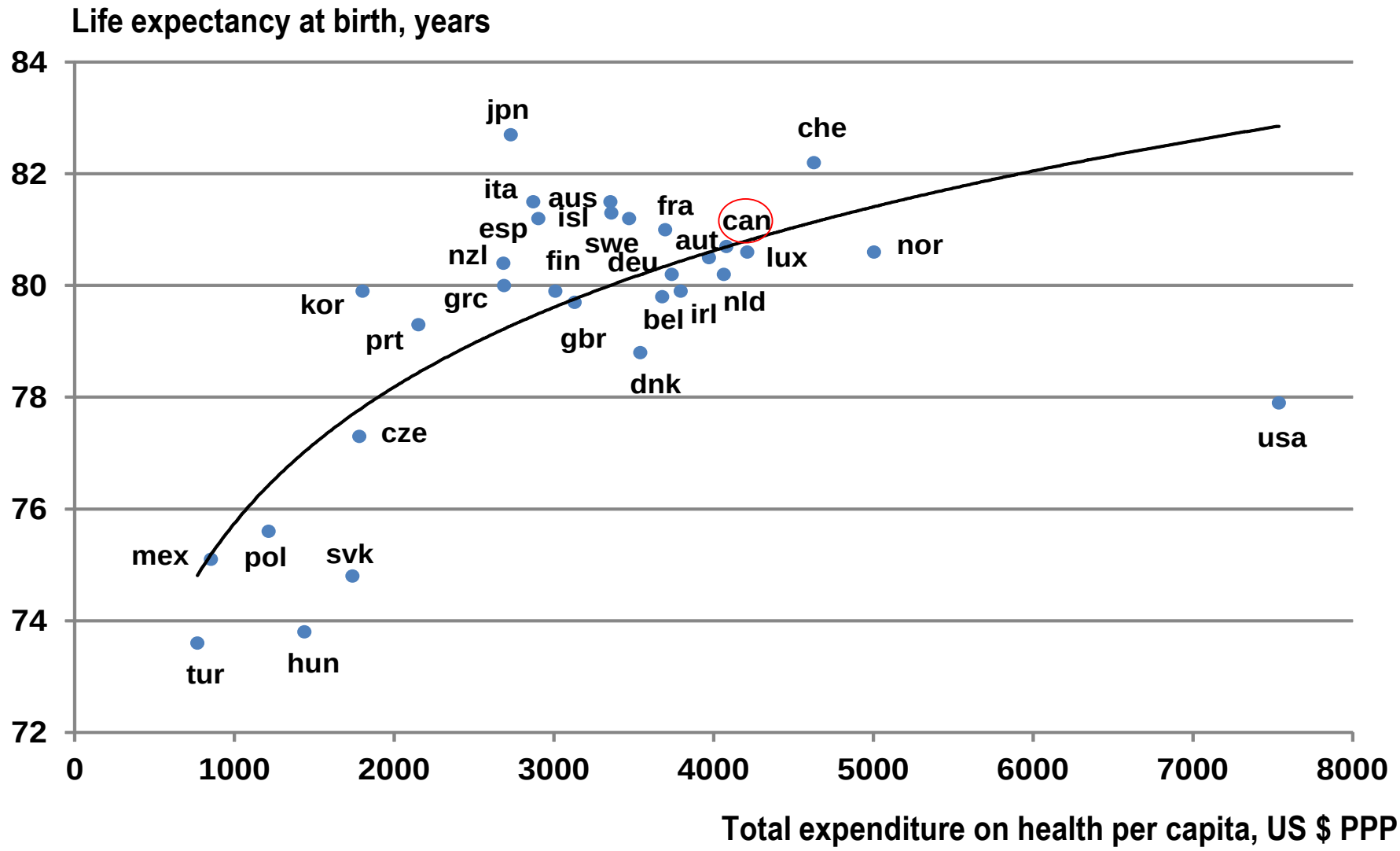
Health

The Economics of Health

Outline of the presentation

1. Measuring health care outcomes…
2. …and inputs
3. Deriving efficiency indicators
4. Reaping efficiency gains: the impact on public spending
5. Performance and institutions

A positive link between health care spending and outcomes but with country differences



Source: OECD Health Data 2010.

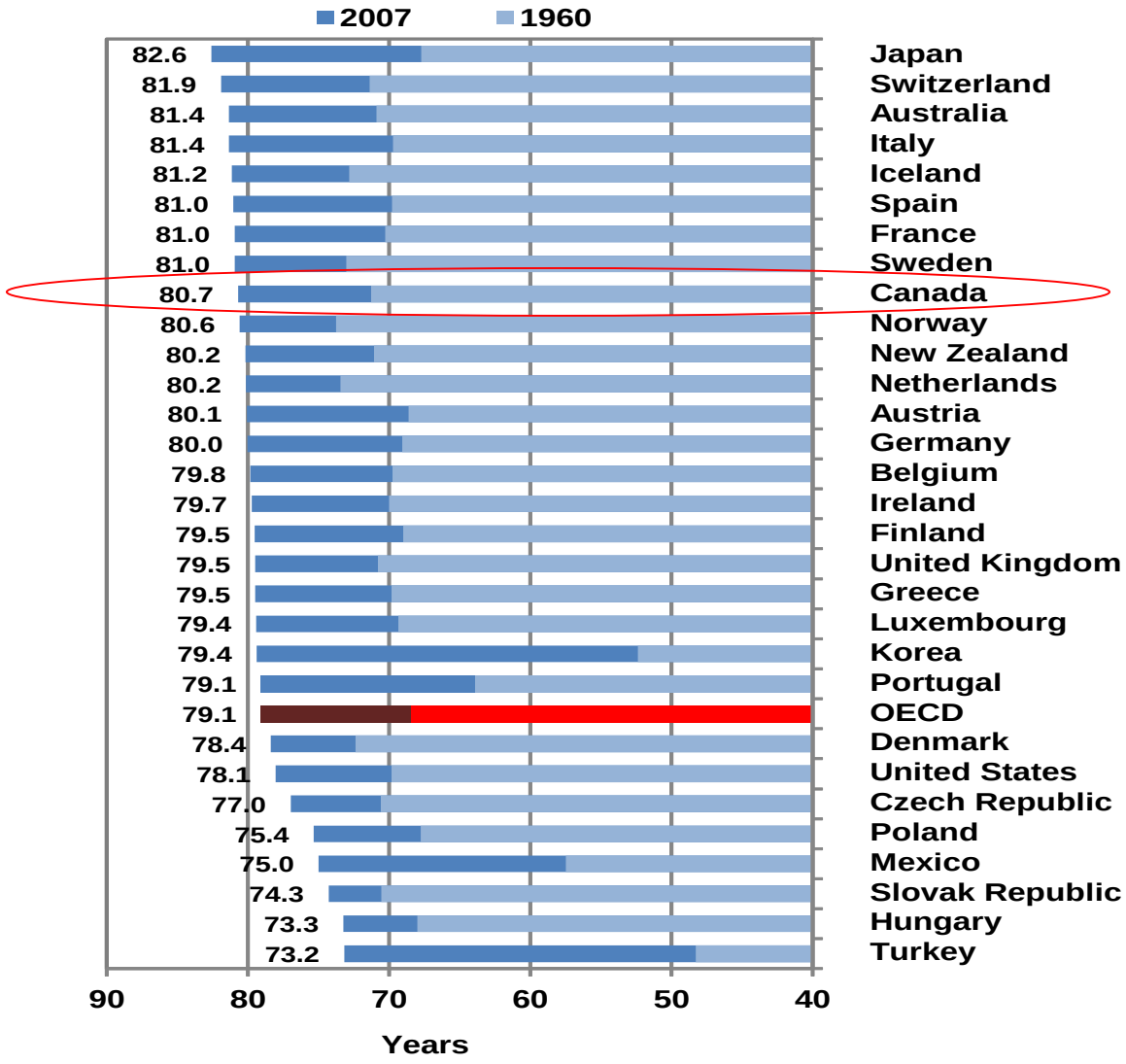
1. Measuring health care outcomes

- Life expectancy (raw and adjusted for morbidity and disabilities), specific mortality indicators (infant, premature and amenable mortality)

- Volume of health care consumption

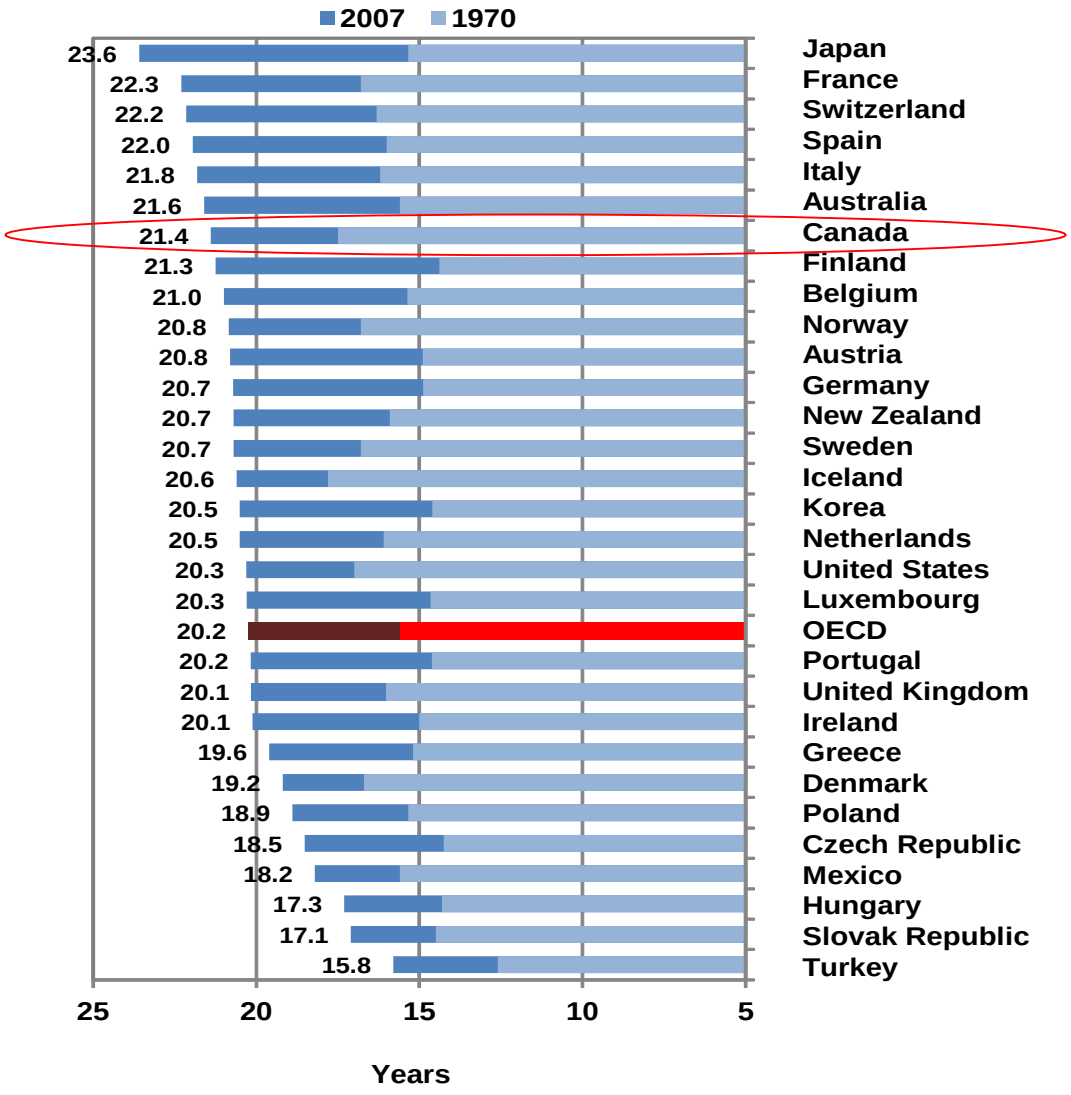
- Quality of care (avoidable hospital admissions and in-hospital fatality rates)

Life expectancy at birth



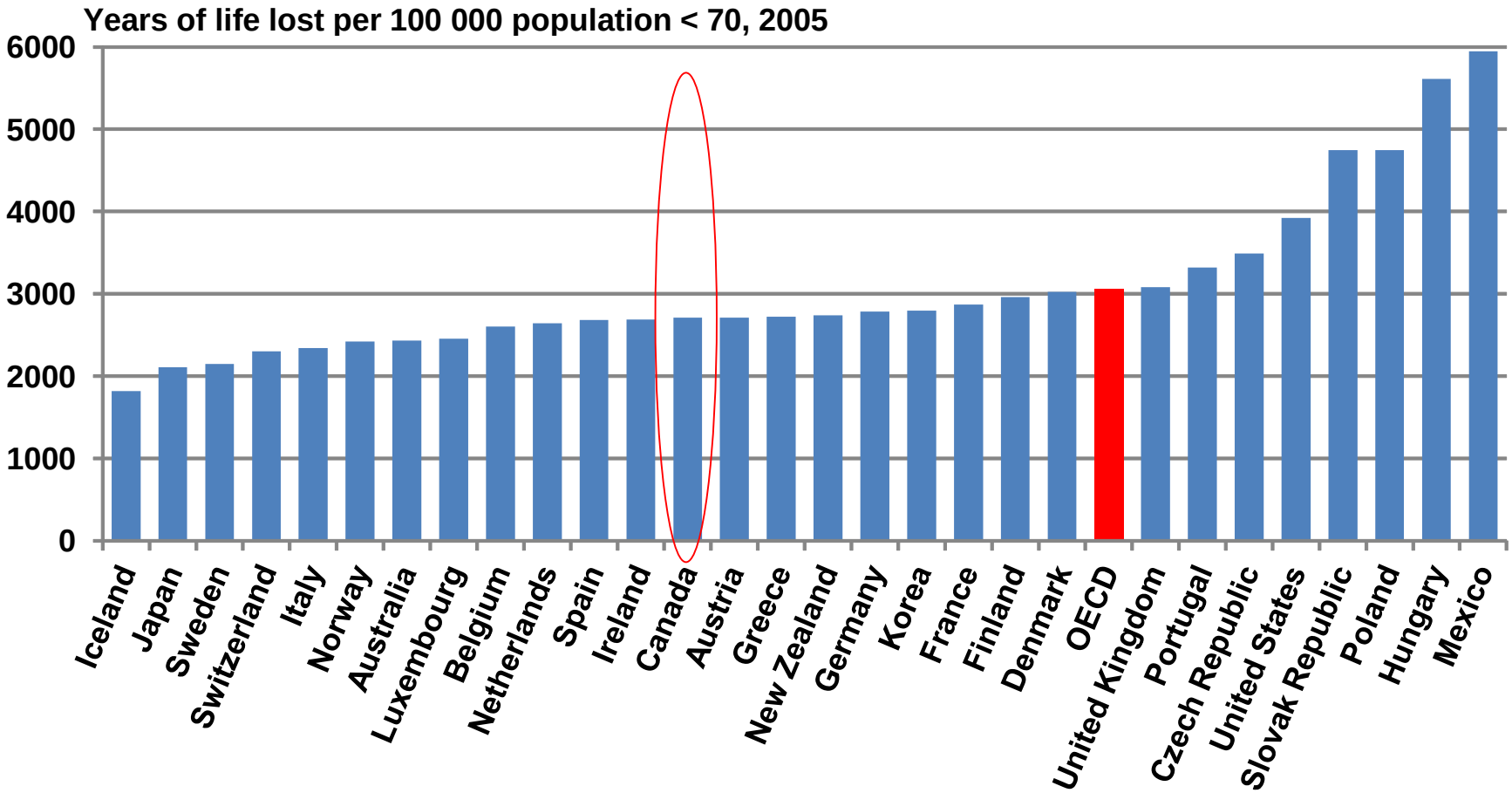
Source: Health at a Glance 2009, OECD Indicators.

Life expectancy at 65, women



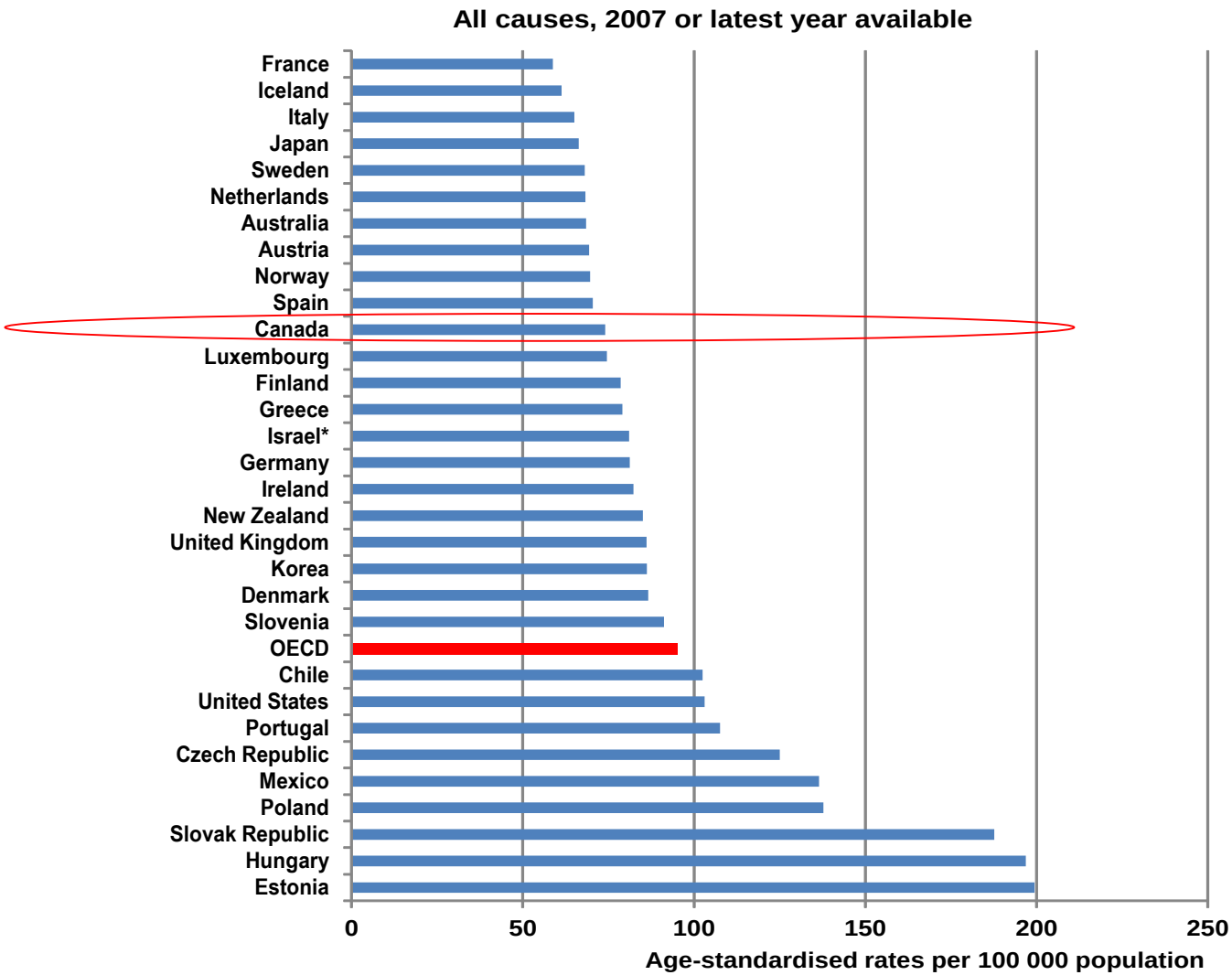
Source: Health at a Glance 2009, OECD Indicators.

Premature mortality, adjusted for transport accidents, suicides and assaults



Source: OECD Health Data.

Amenable mortality



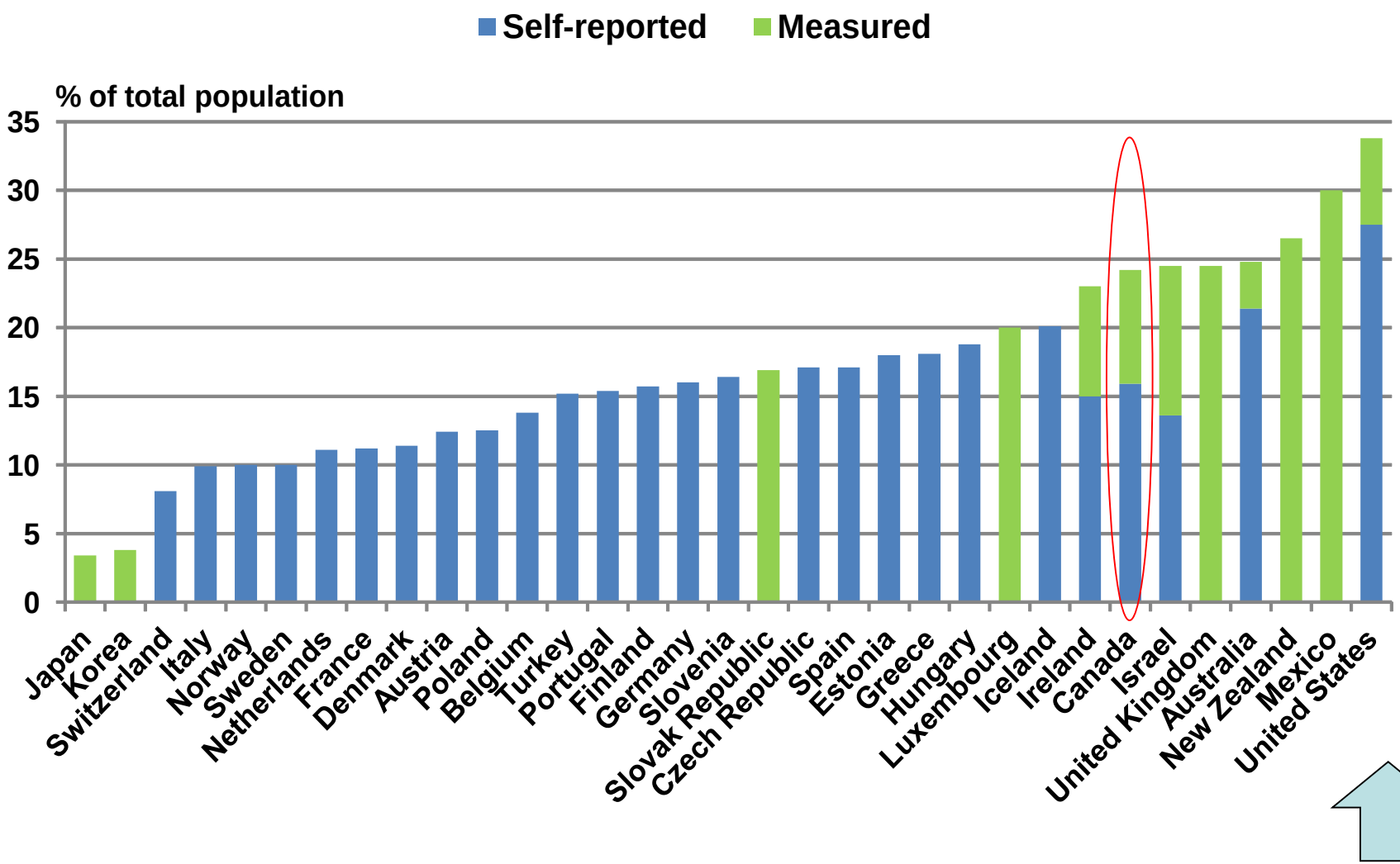
Source : Gay *et al.* (2011), "Mortality Amenable to Health Care in 31 OECD Countries: Estimates and Methodlogical Issues", *OECD Health Working Paper*, No. 55.

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	

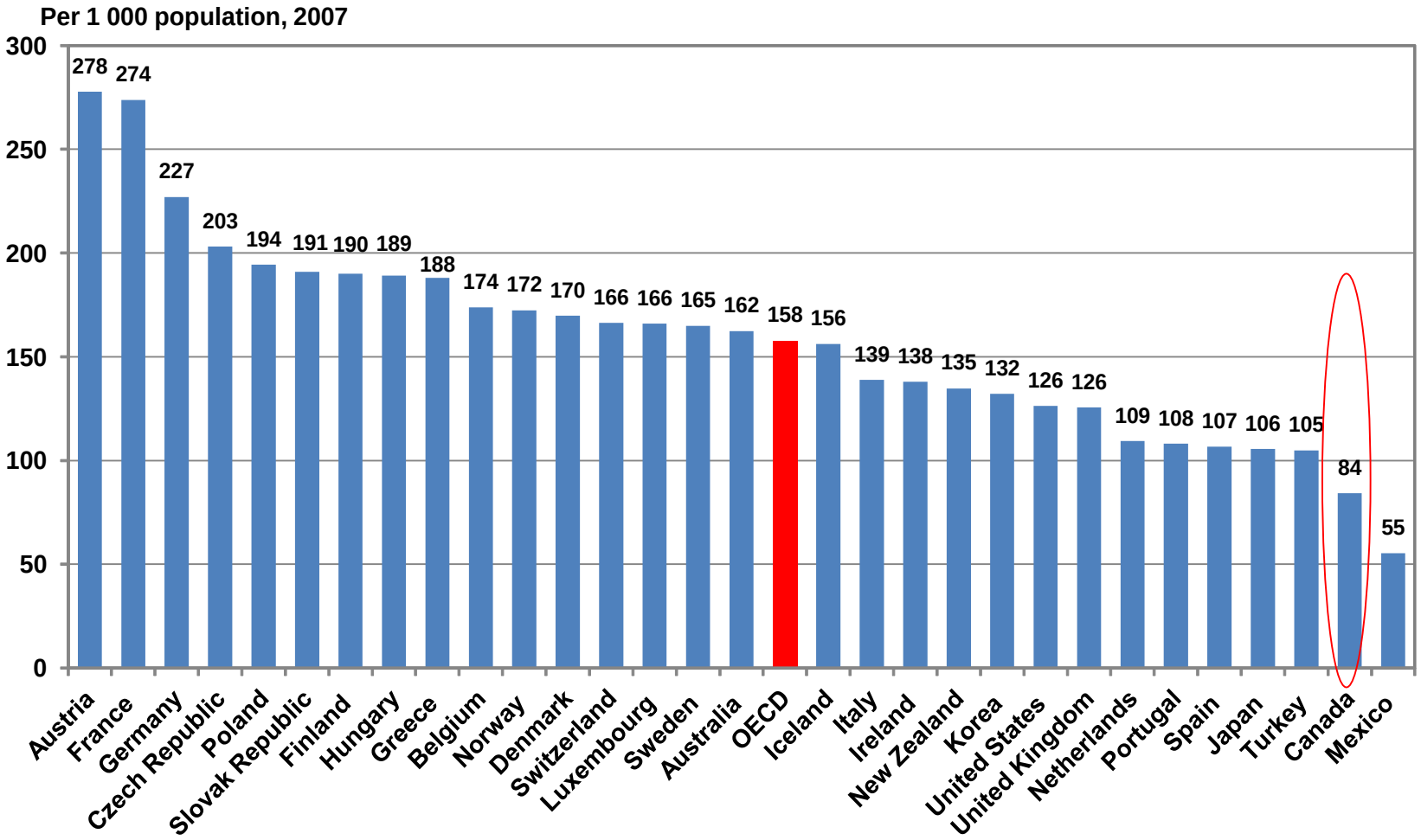
Source: Joumard , André & Nicq (2010), "Health Care Systems: Efficiency and Institutions", *OECD Economics Department Working Paper,* No. 769.

Obesity rates



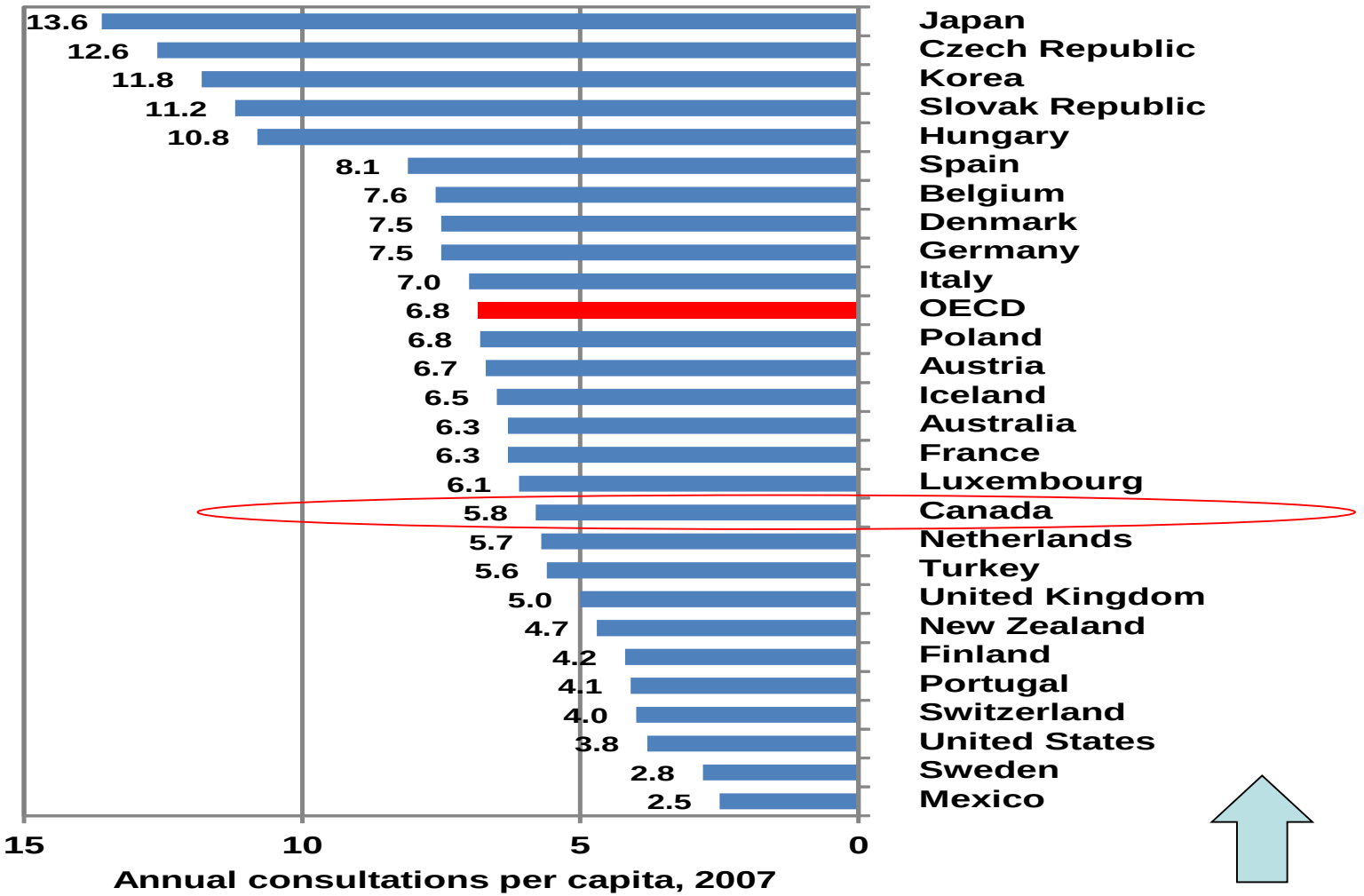
Source: OECD Health Data.

Volume of care
Hospital discharges



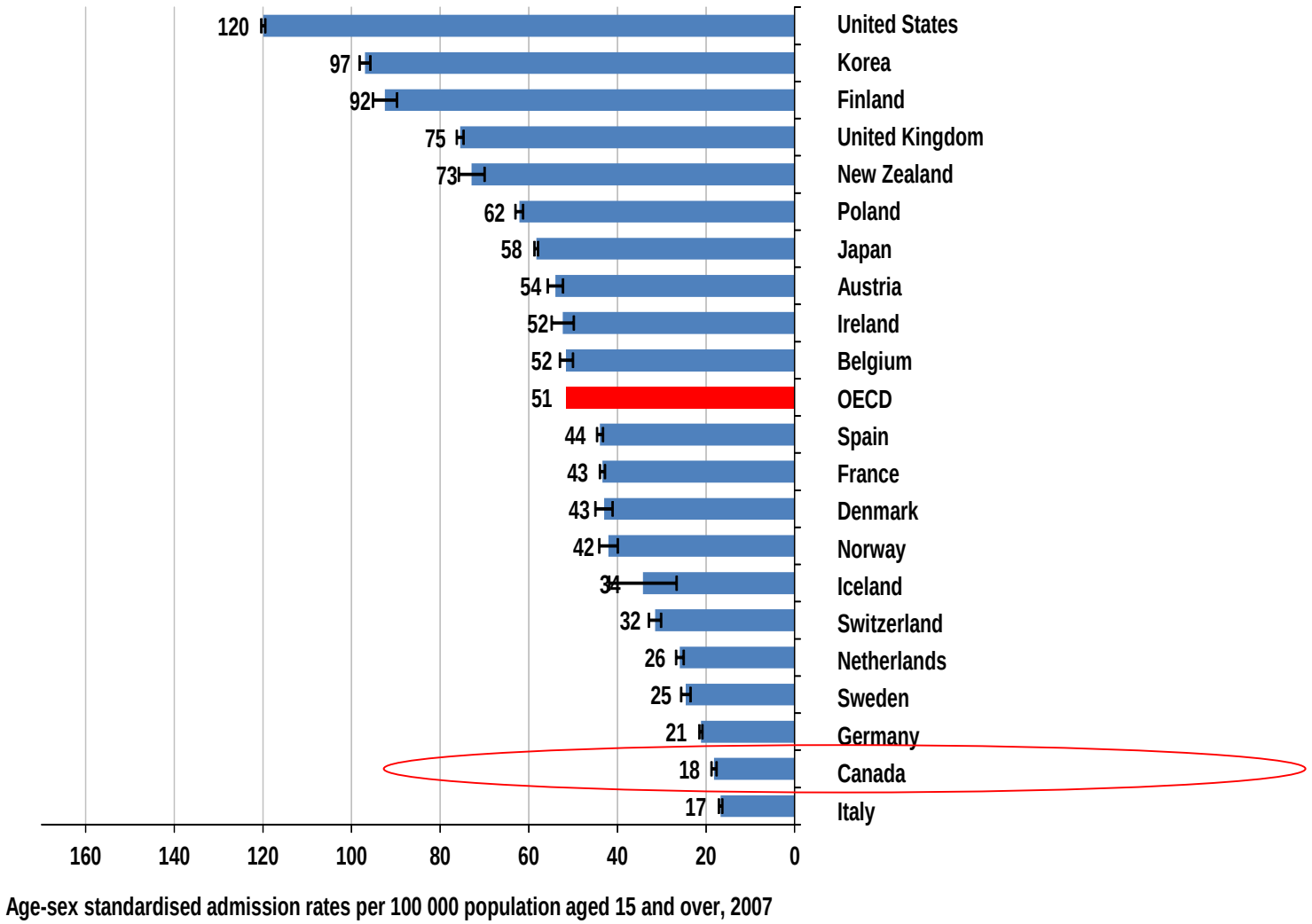
Source: OECD Health Data.

Volume of care
Physician consultations



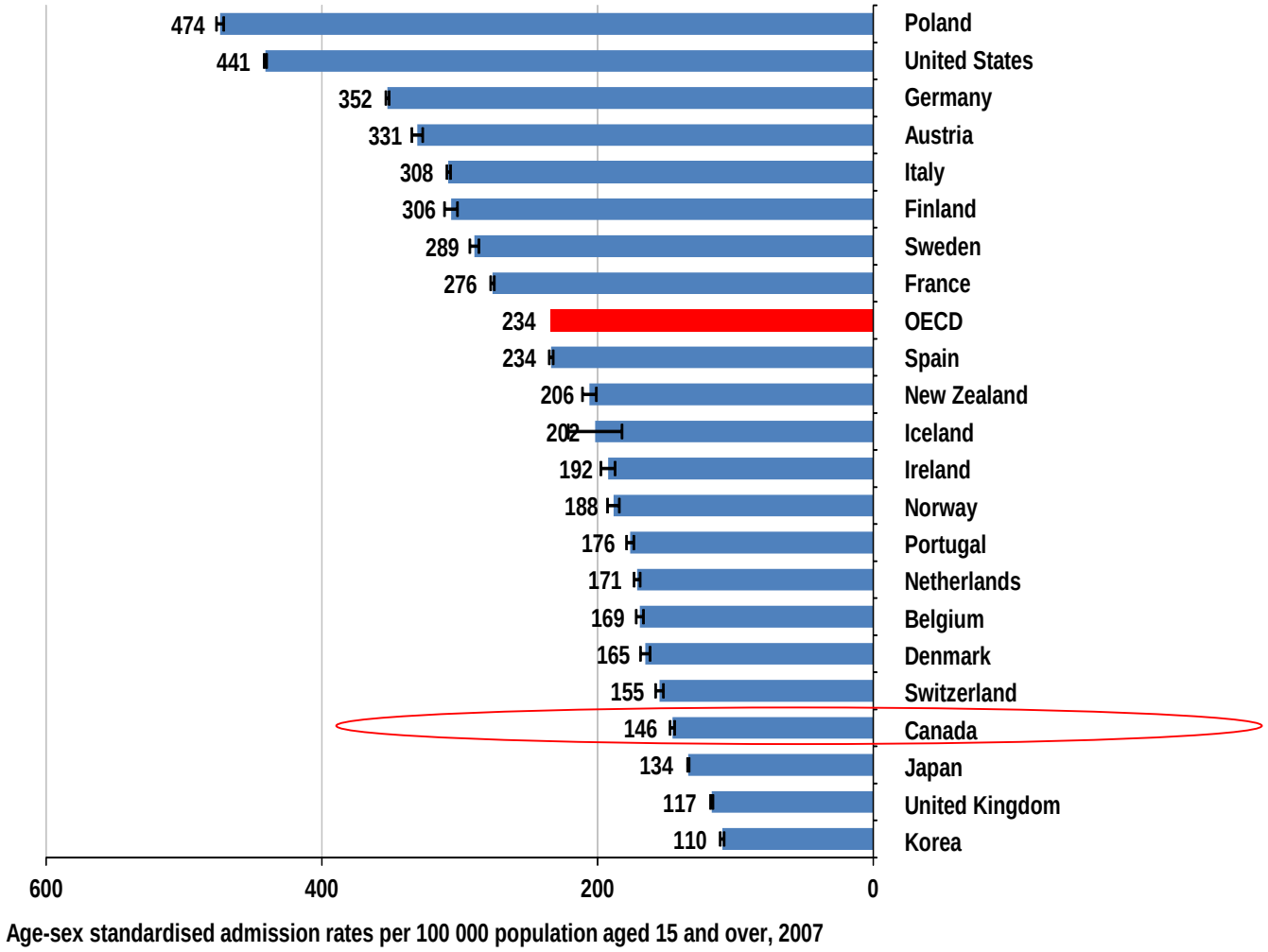
Source: OECD Health Data.

Quality of care
Asthma avoidable hospital admissions



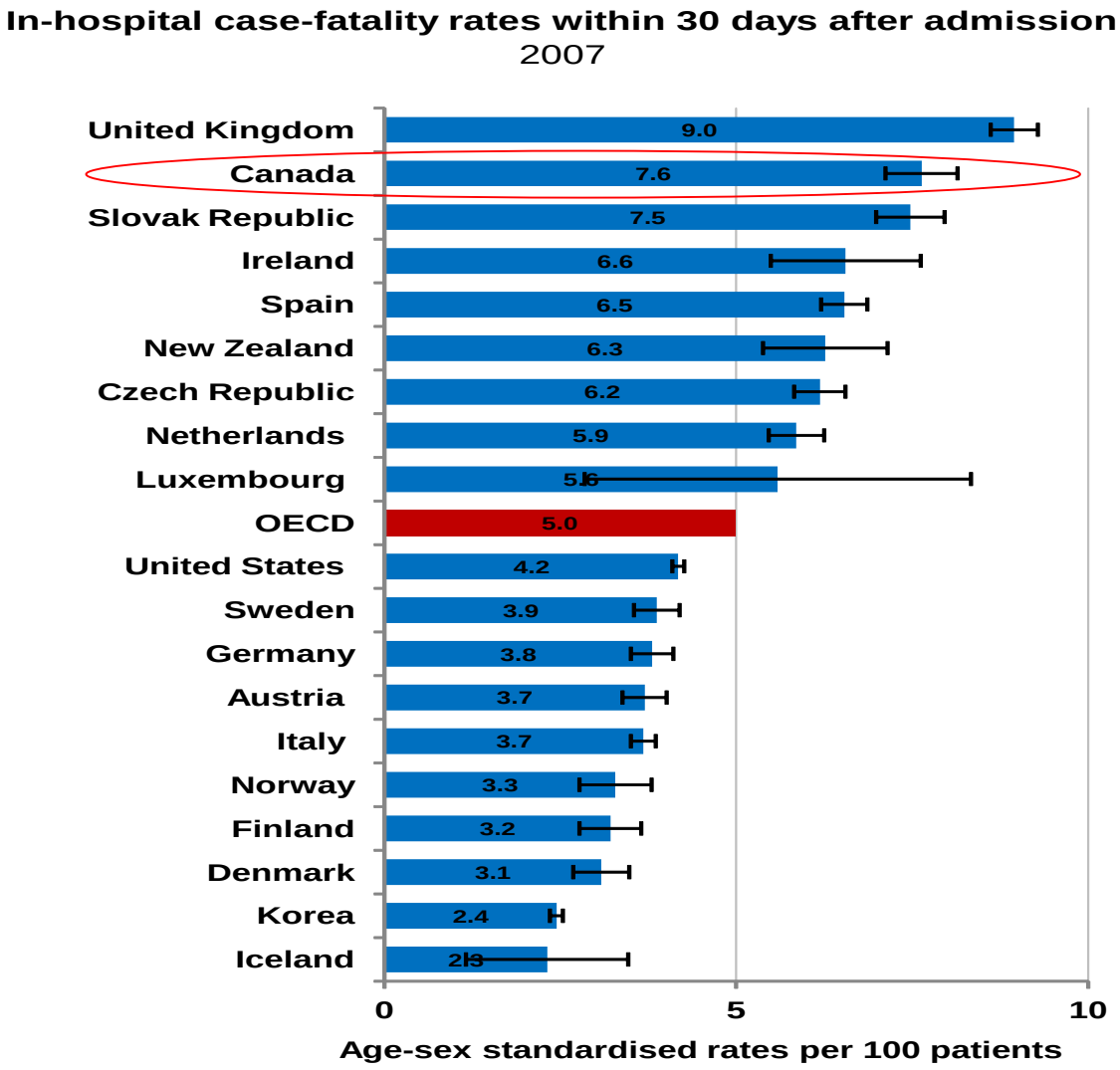
Source: OECD Health Data.

Quality of care - Congestive heart failure avoidable hospital admission



Source: OECD Health Data.

Quality of care
Ischemic stroke



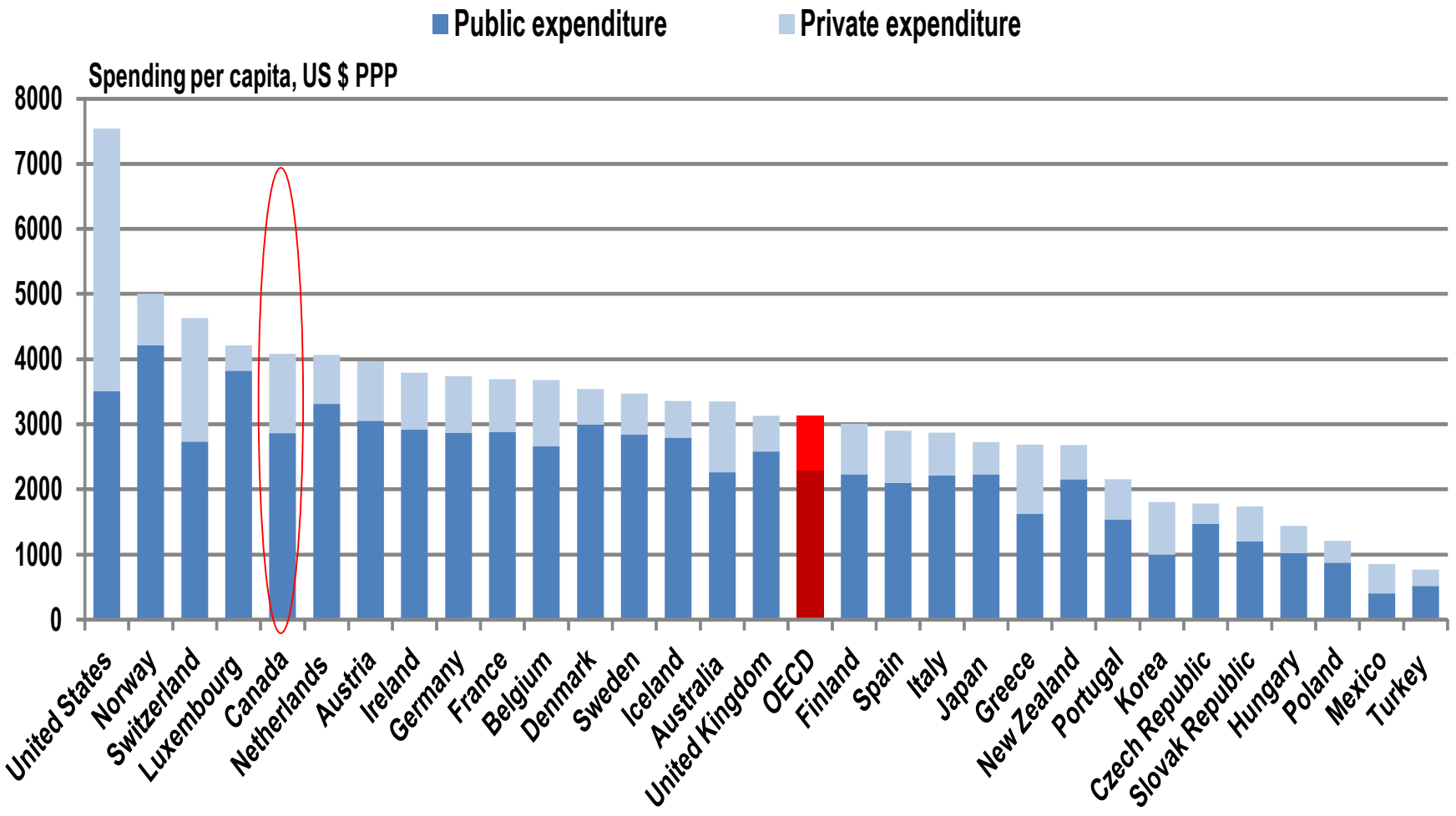
Source: OECD Health Data.

2. Measuring health care inputs

- Spending on health care 
- Number of physicians 
- Remuneration and prices 

Health care spending

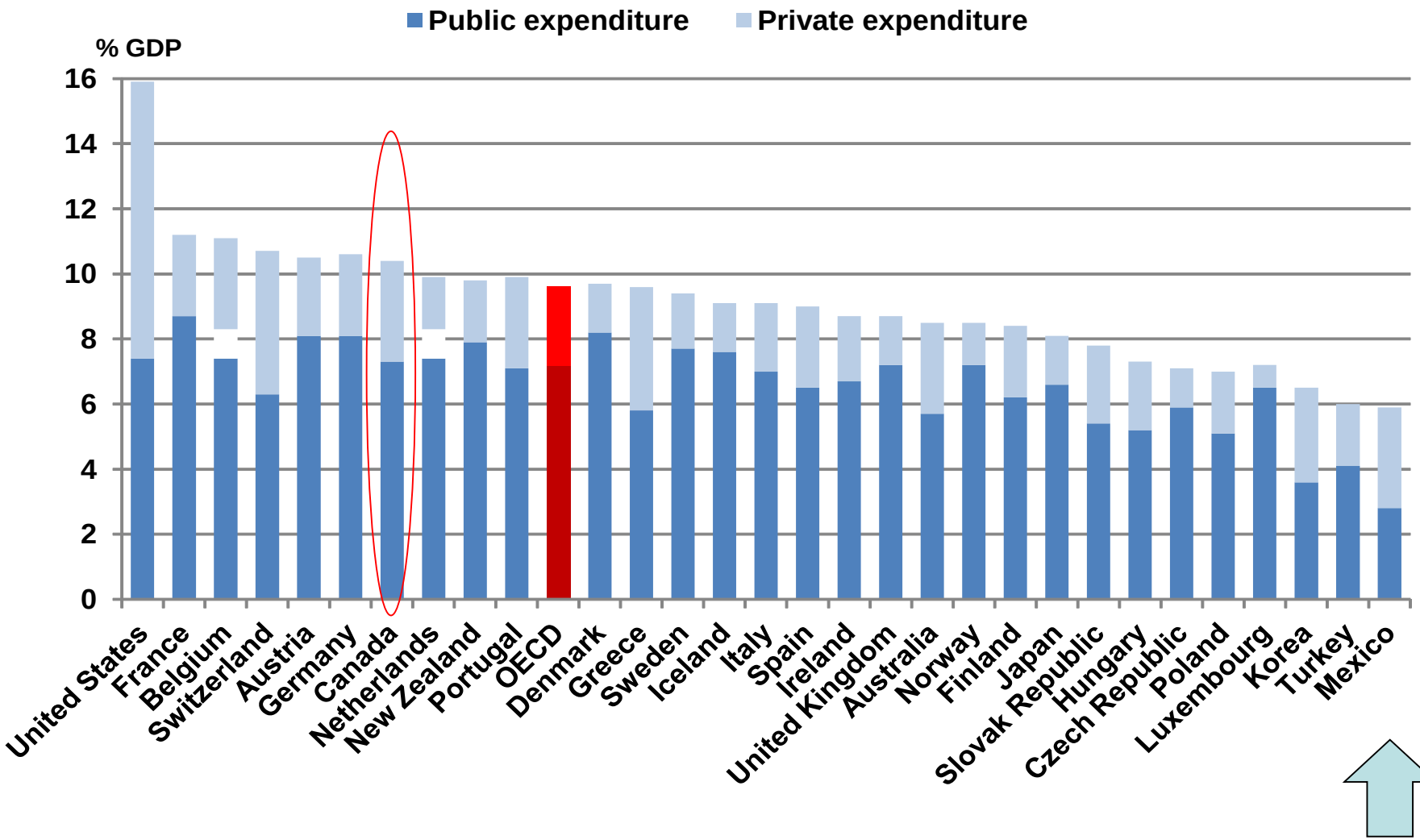
2008



Source: OECD Health Data 2010.

Health care spending (% of GDP)

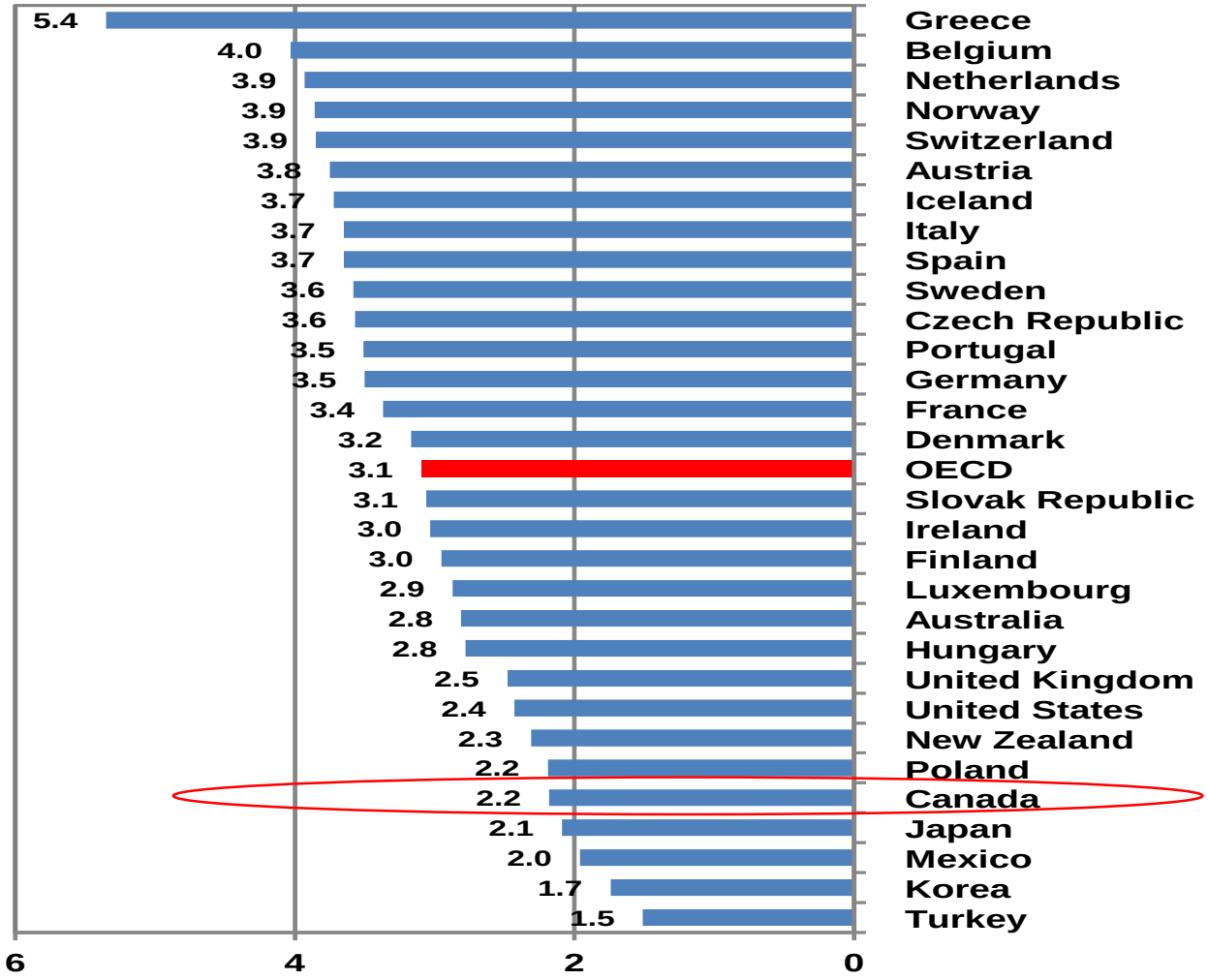
2008



Source: OECD Health Data 2010.

Practising physicians

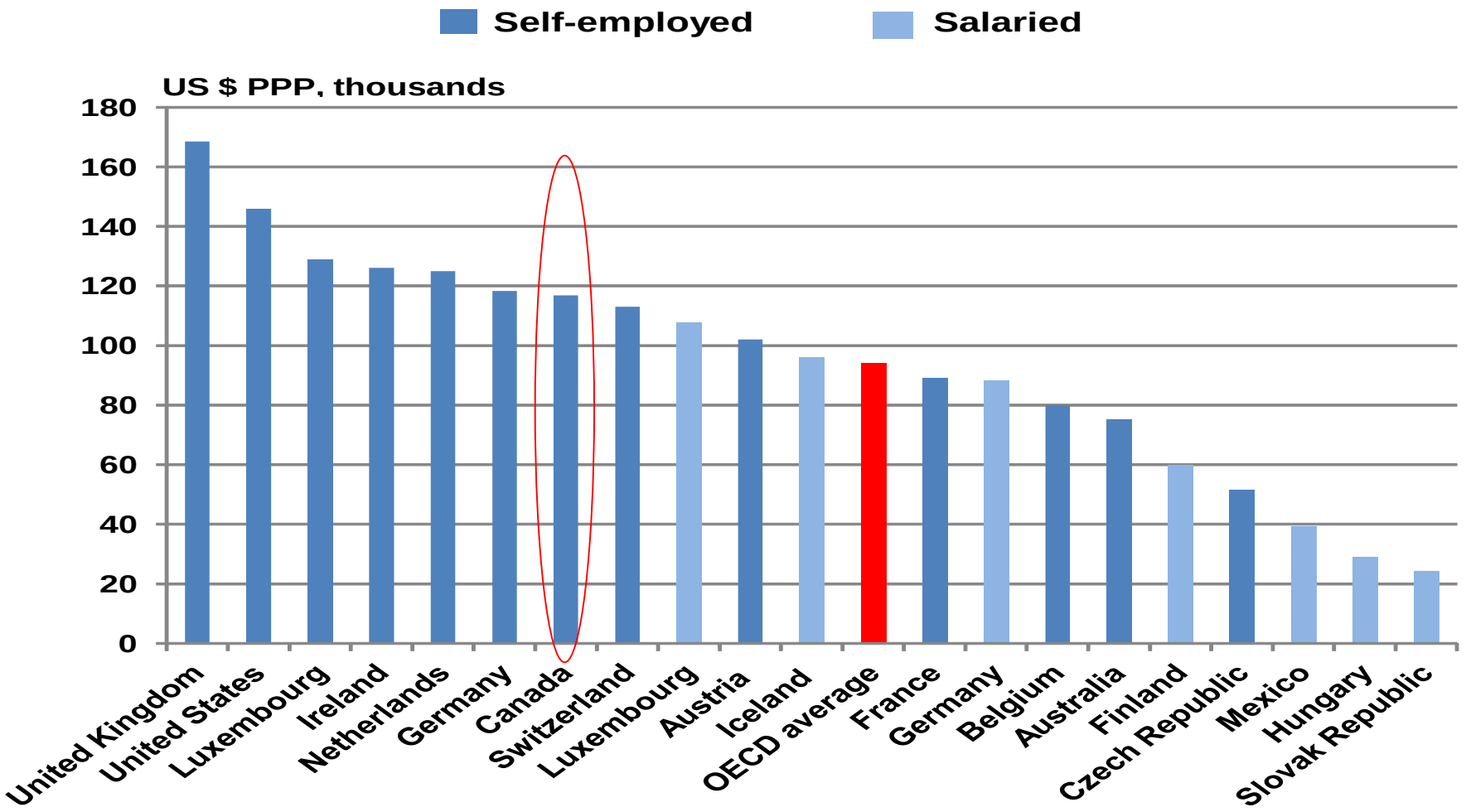
per 1000 population, 2007



Source: Health at a Glance 2009, OECD Indicators.

Remuneration of general practitioners (GPs)

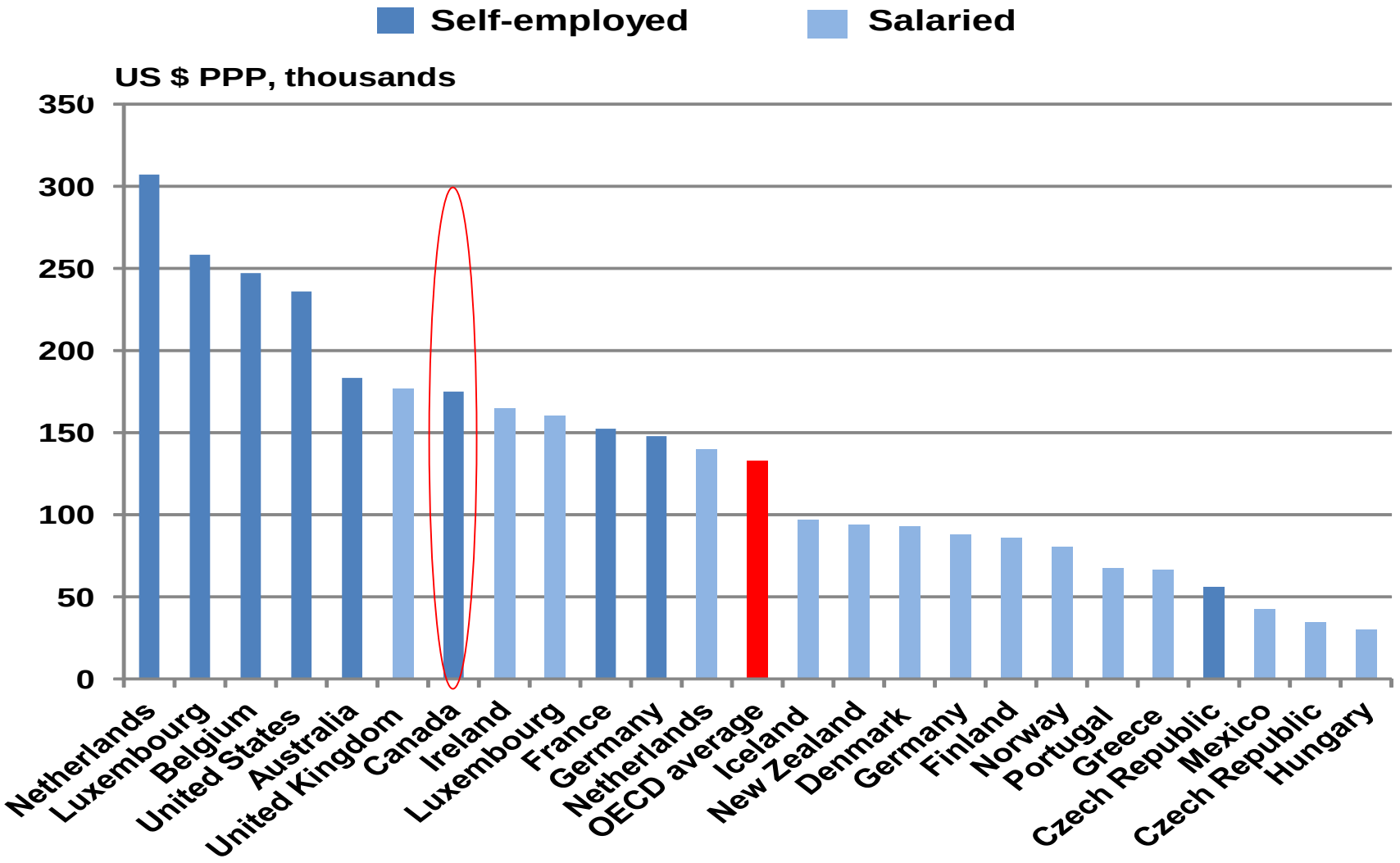
2006 (2003 for the US)



Source: OECD Health Data.

Remuneration of specialists

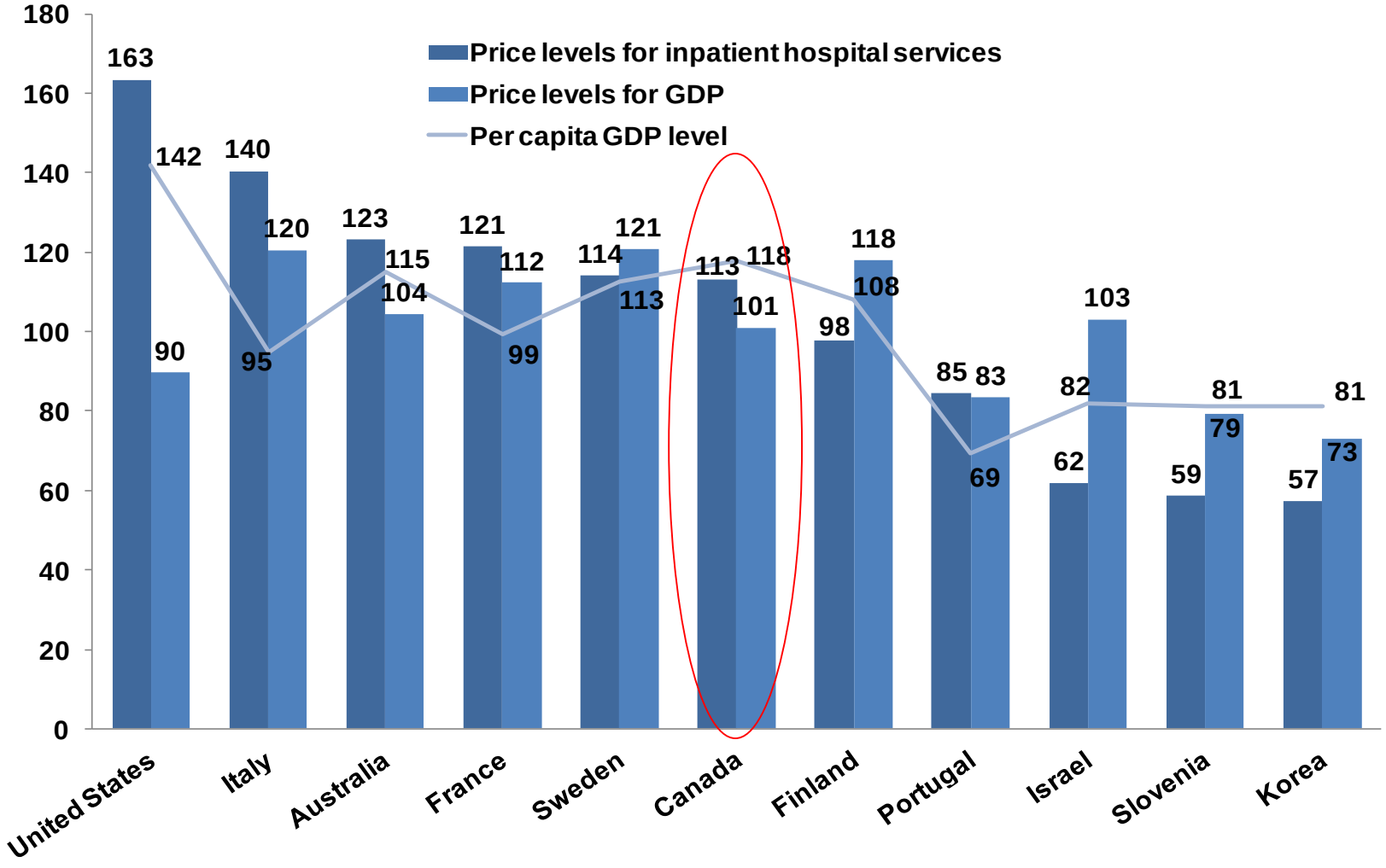
2006 (2003 for the US)



Source: OECD Health Data.

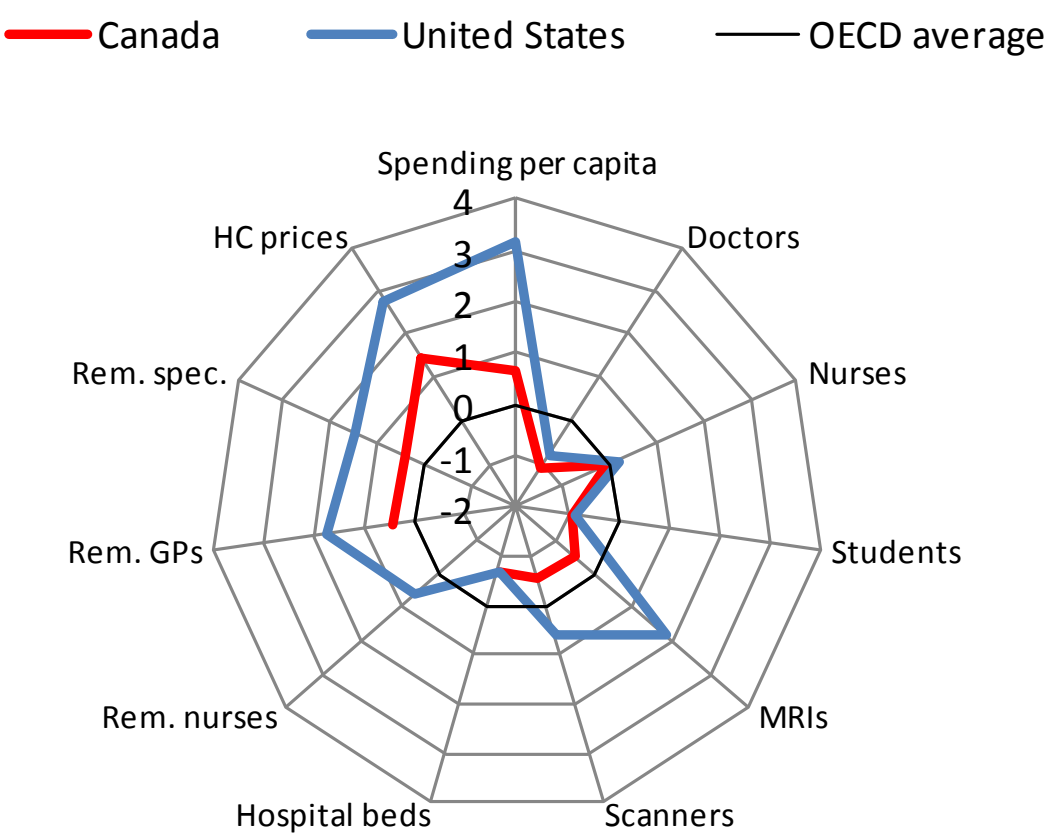
Comparative price levels for hospital services

Average of countries in the sample = 100



Source: F. Koechlin, L. Lorenzoni, P. Schreyer, Comparing Price Levels of Hospital Services Across Countries – Results of pilot study, OECD Health Working Paper No. 53 (2010).

Health care prices and volumes



Source: OECD Health Data.

3. Deriving efficiency indicators

- Identify health status determinants
- Implement 2 methods (panel regressions and DEA) and various robustness checks
- Complement the overall efficiency index with other performance indicators

Health care status determinants

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

Panel regressions – Model specification (log form)

$$Y_{it} = \alpha_i + \beta \cdot HCR_{it}$$

$$+ \gamma \cdot SMOK_{it} + \phi \cdot DRINK_{it} + \theta \cdot DIET_{it}$$

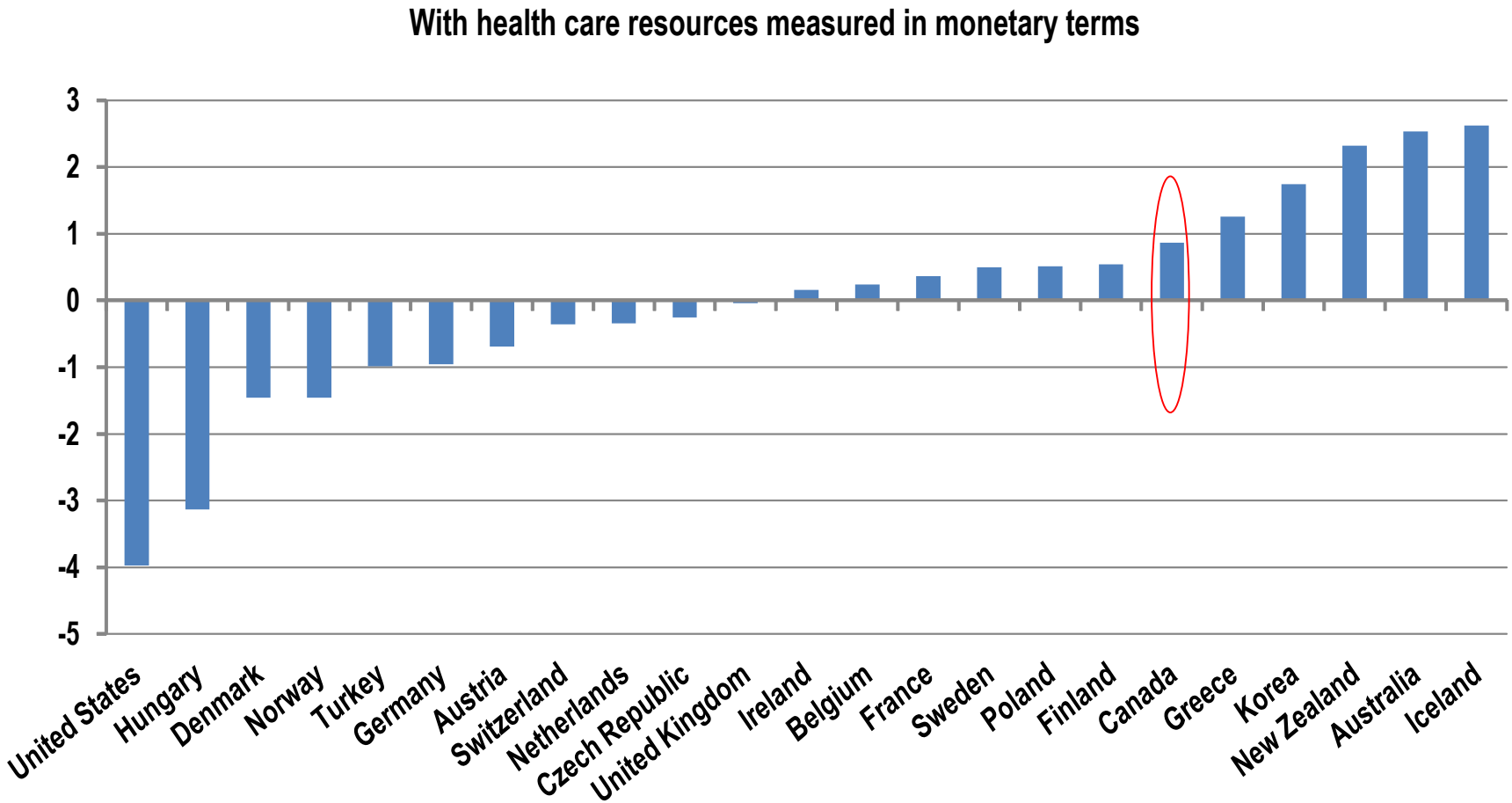
$$+ \delta \cdot AIRPOL_{it} + \sigma \cdot EDU_{it} + \lambda \cdot GDP_{it} + \varepsilon_{it}$$

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

	Life expectancy at birth	Determinants							
		Spending	Education	Tobacco	Alcohol	Diet	Pollution	GDP	Country-specific effect
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

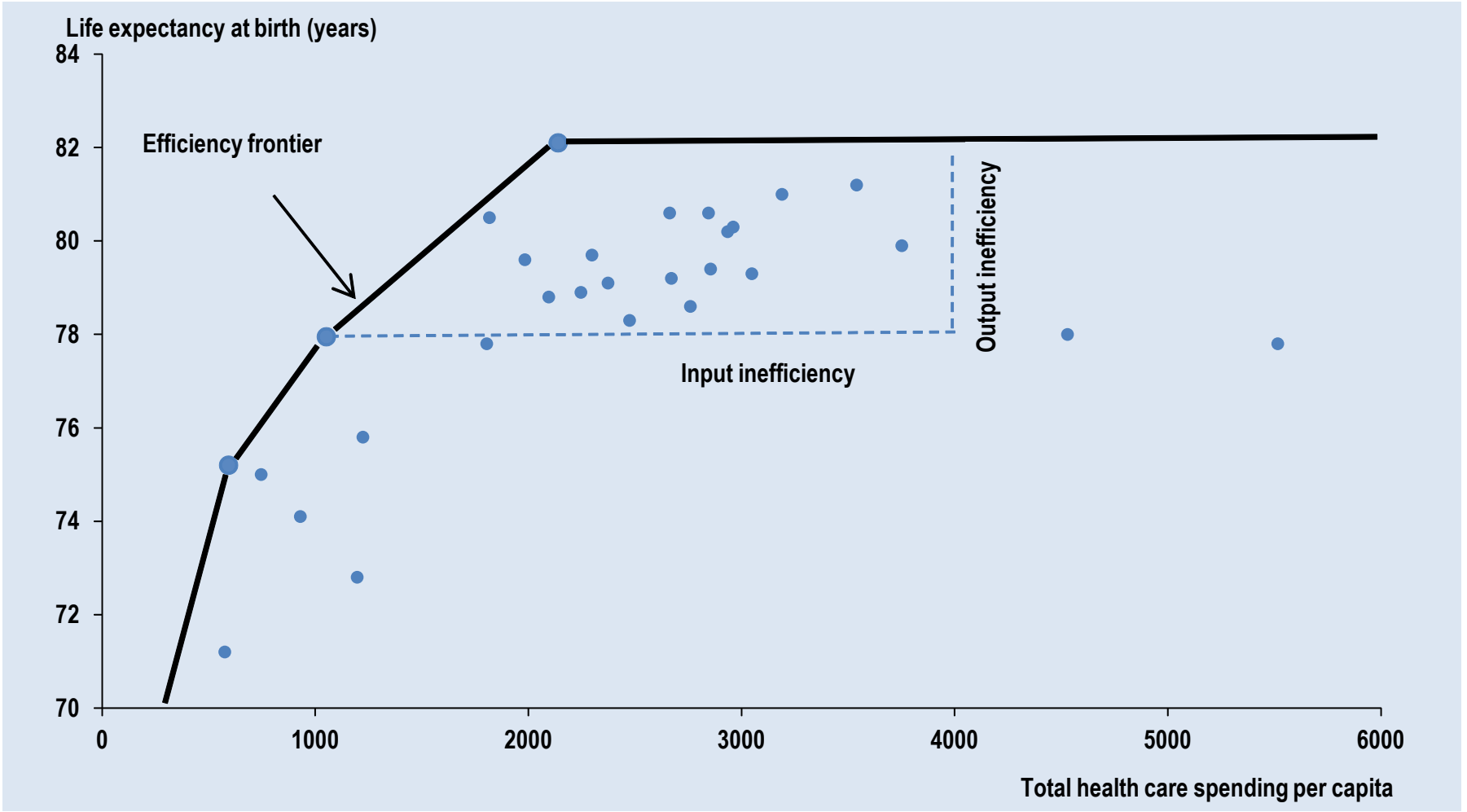
Source: Joumard , André, Nicq & Chatal (2008), "Health Status Determinants: Lifestyle, Environment, Health Care Resources and Efficiency ", *OECD Economics Department Working Paper*, No. 627.

Panel regressions
Years of life not explained by the model



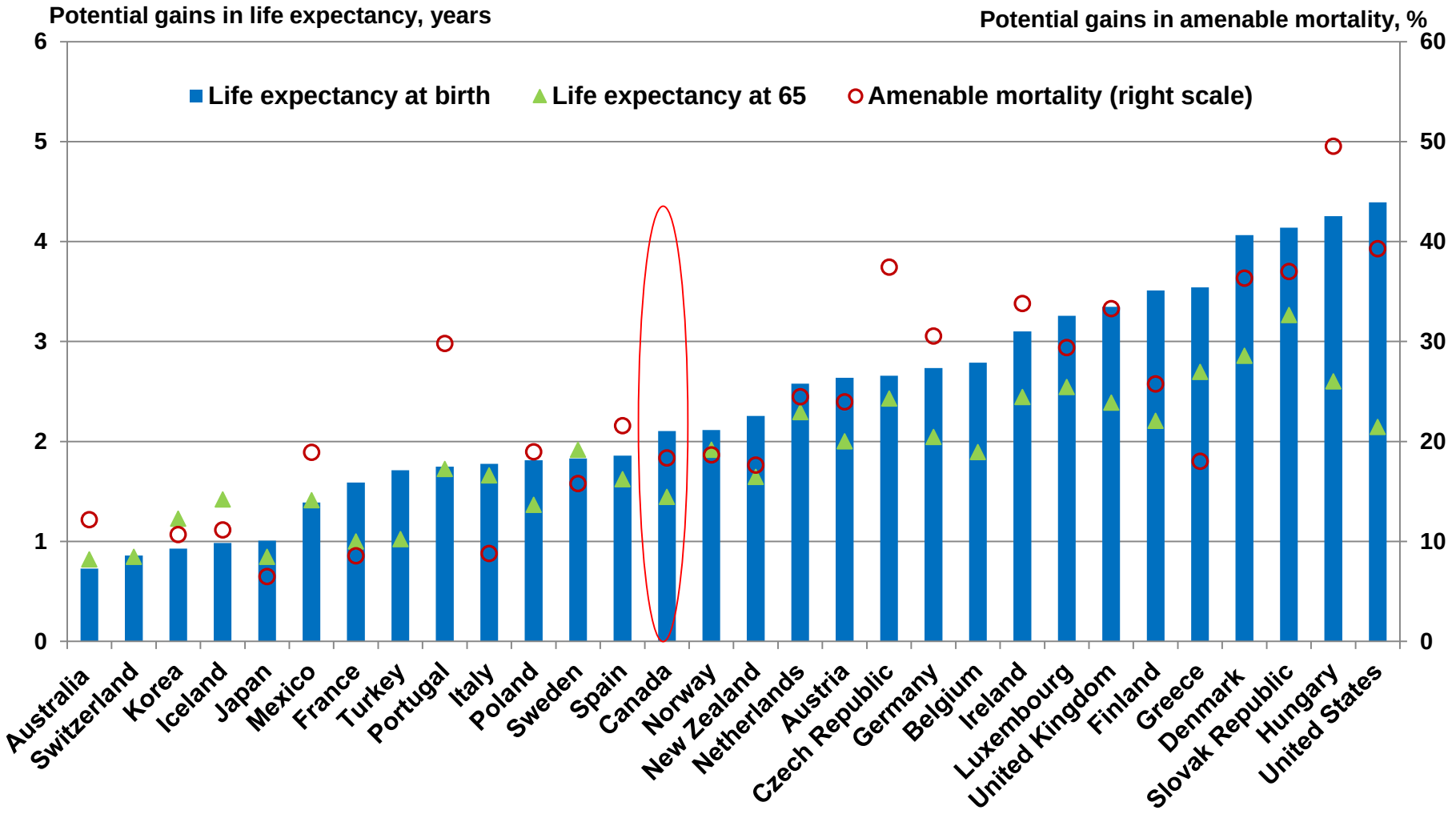
Source: Joumard , André, Nicq & Chatal (2008), "Health Status Determinants: Lifestyle, Environment, Health Care Resources and Efficiency ", *OECD Economics Department Working Paper*, No. 627.

DEA – Defining the efficiency frontier and potential efficiency gains



DEA – Results and sensitivity analysis

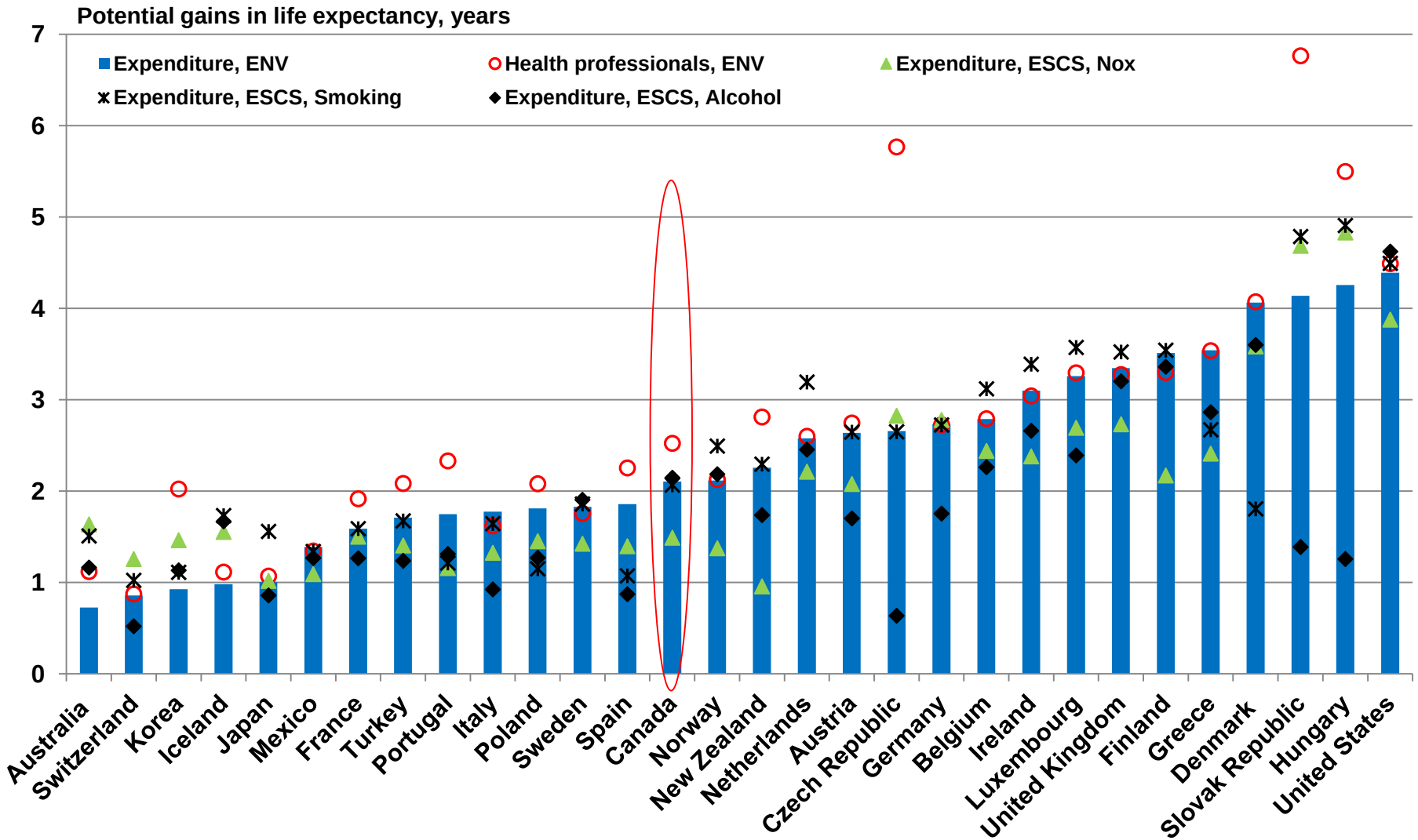
(for different outcomes)



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

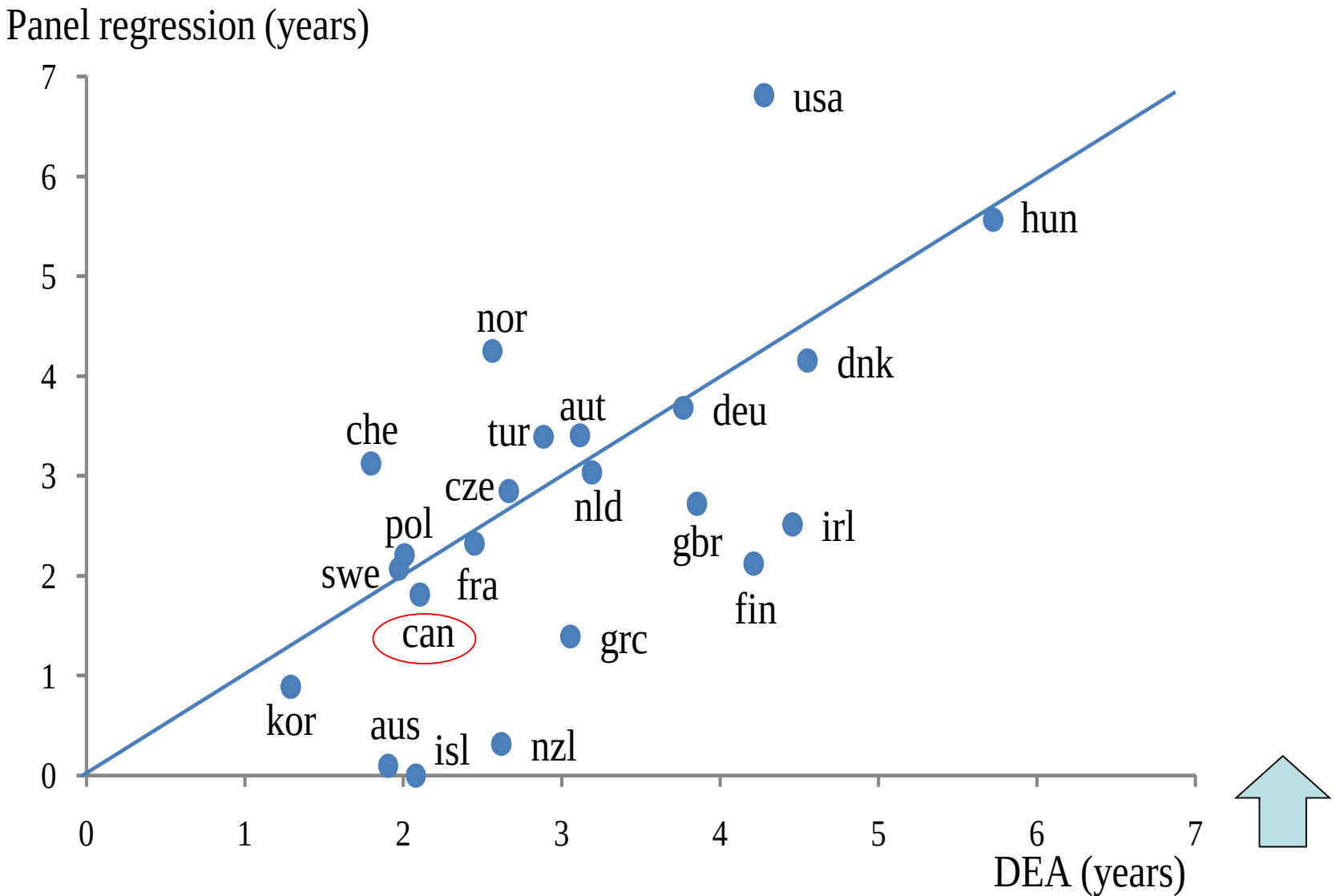
DEA – Results and sensitivity analysis

(for different inputs)

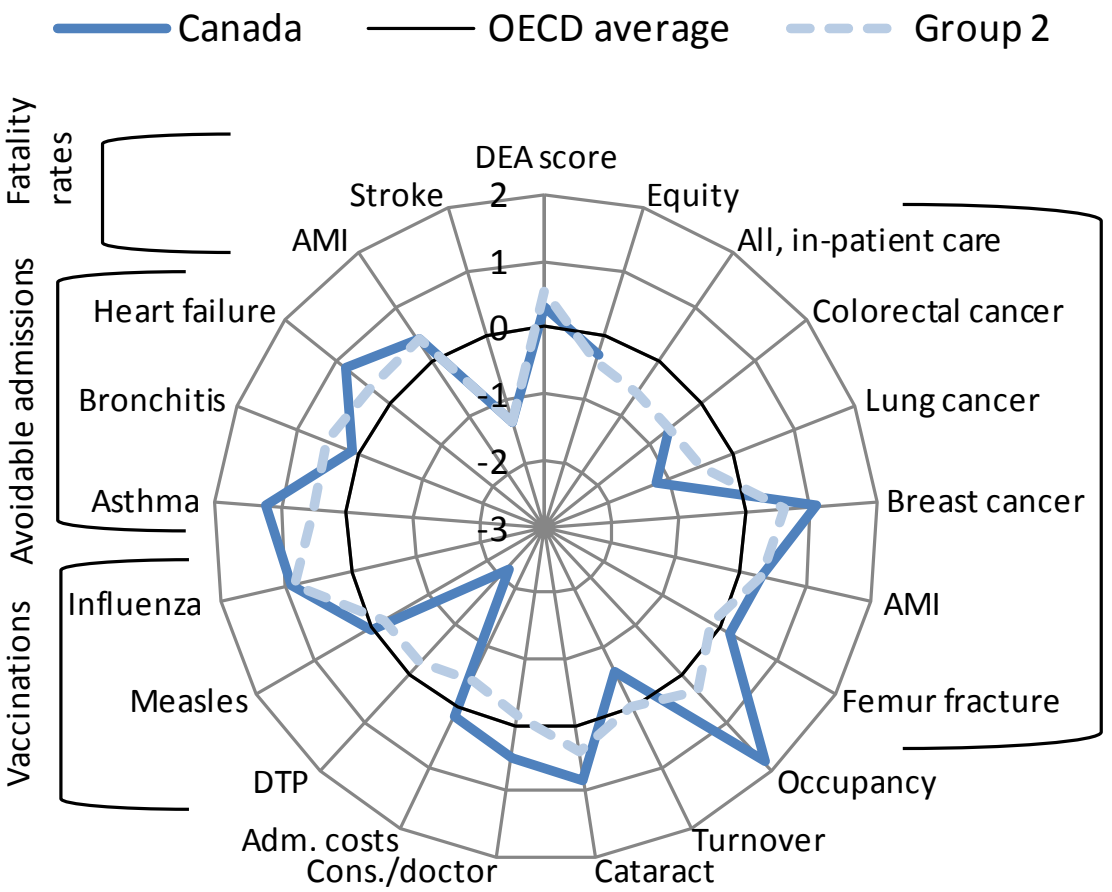


Source: Joumard , André & Nicq (2010), "Health Care Systems: Efficiency and Institutions", *OECD Economics Department Working Paper*, No. 769.

Comparing efficiency indicators derived from panel regressions and DEA



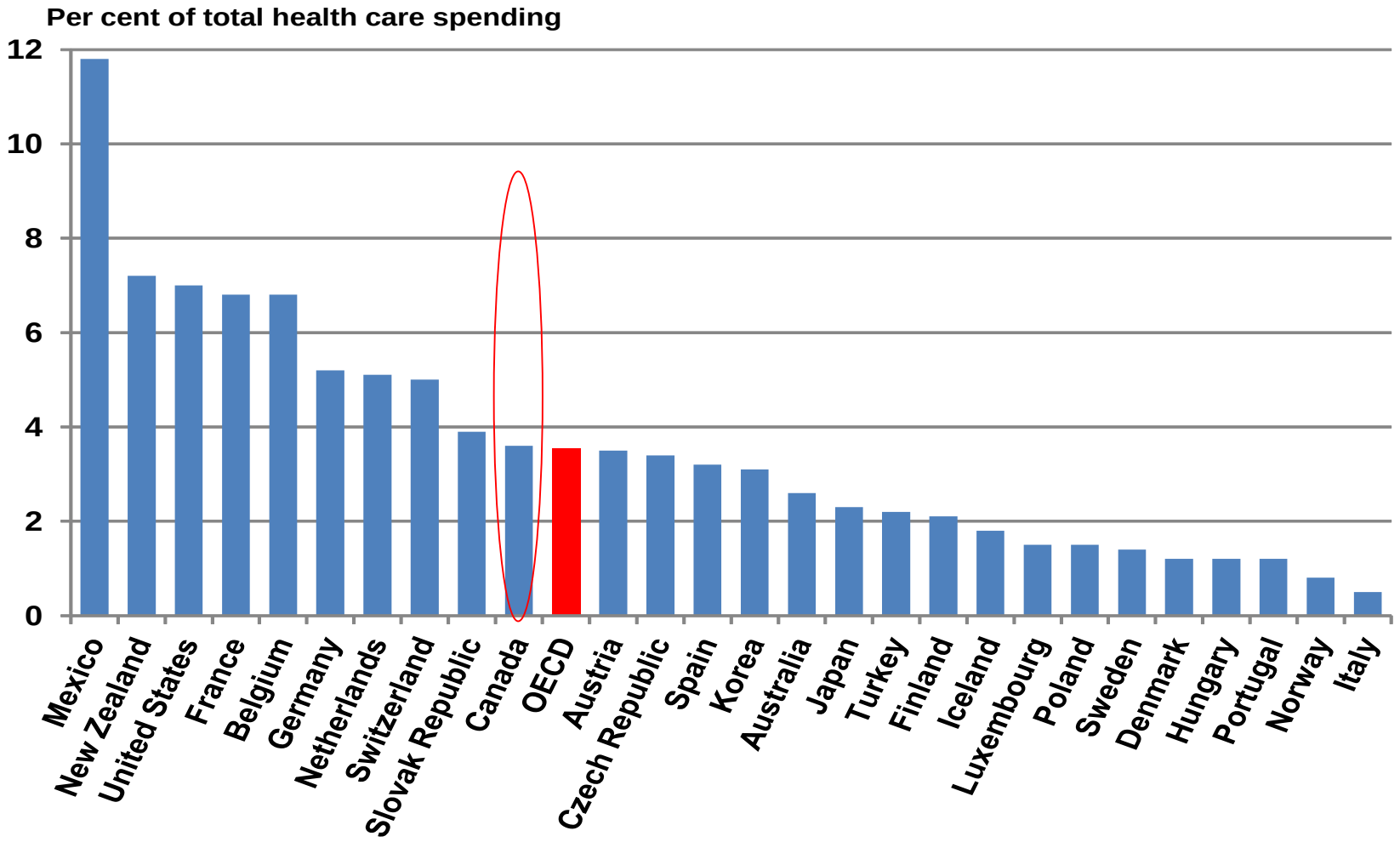
Efficiency: DEA efficiency score and other performance measures



Group 2: Australia, Belgium, Canada, France

Source: OECD Health Data.

Efficiency: a closer look at administrative costs



Source: OECD Health Data.

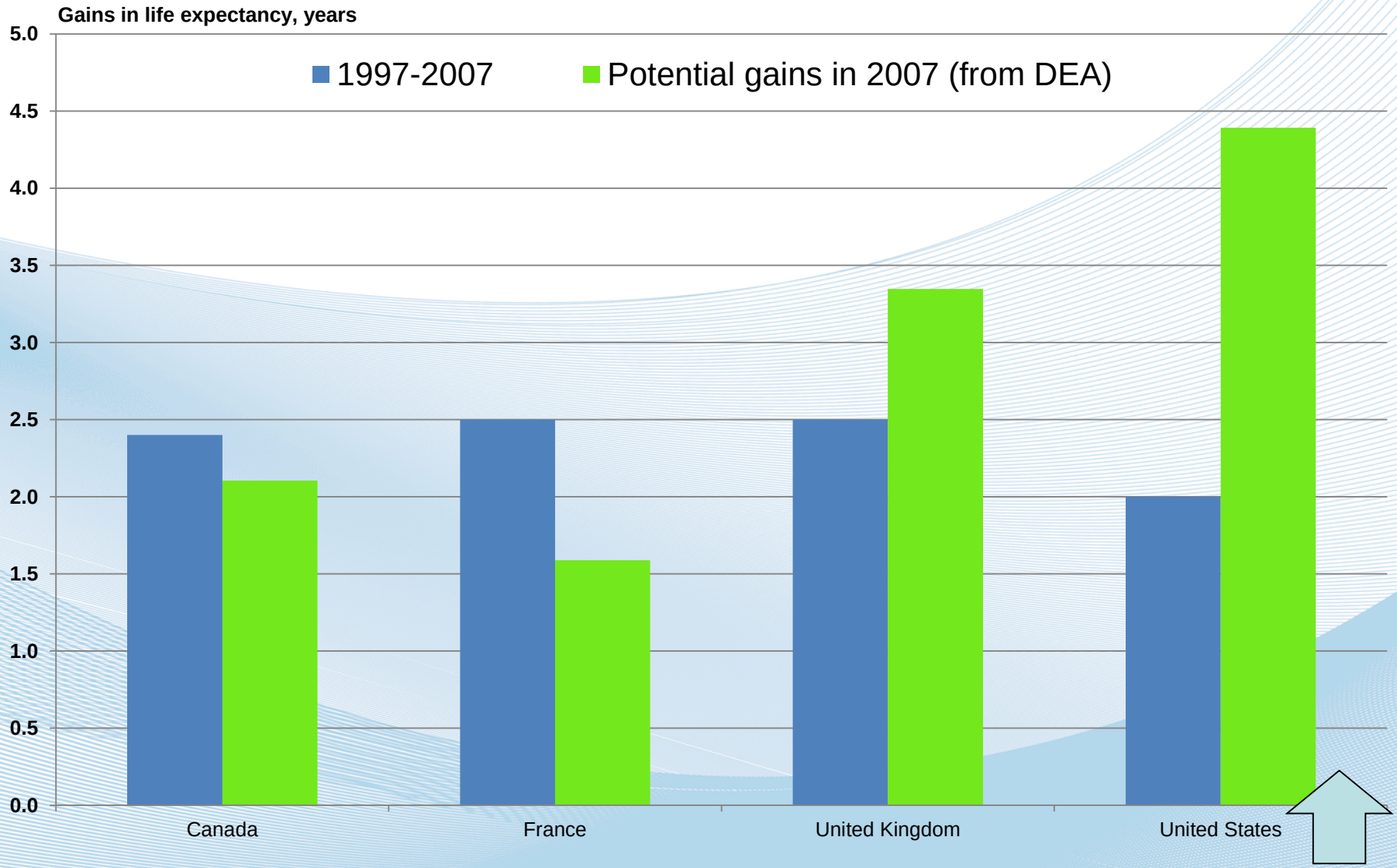
4. Reaping efficiency gains: the impact on public spending

Main assumptions:

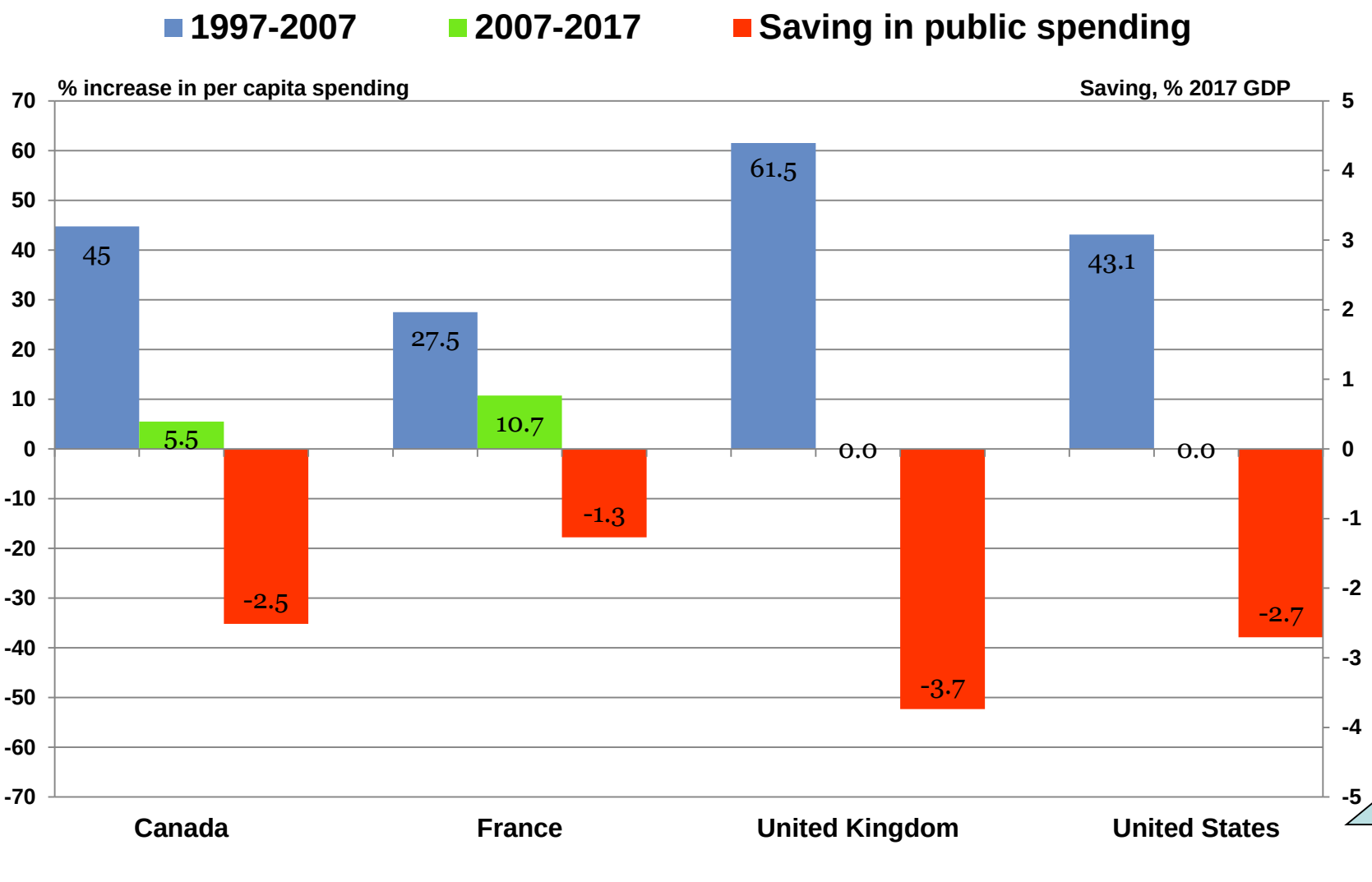
- Health outcomes improve as they did in the past
- Two scenarios on the spending side are compared:
  1. No reform scenario – spending increases as it did in the past
  2. Reform scenario – efficiency gains are exploited and finance all or part of the improvement in health status

➔ In most countries, potential savings in public spending are large

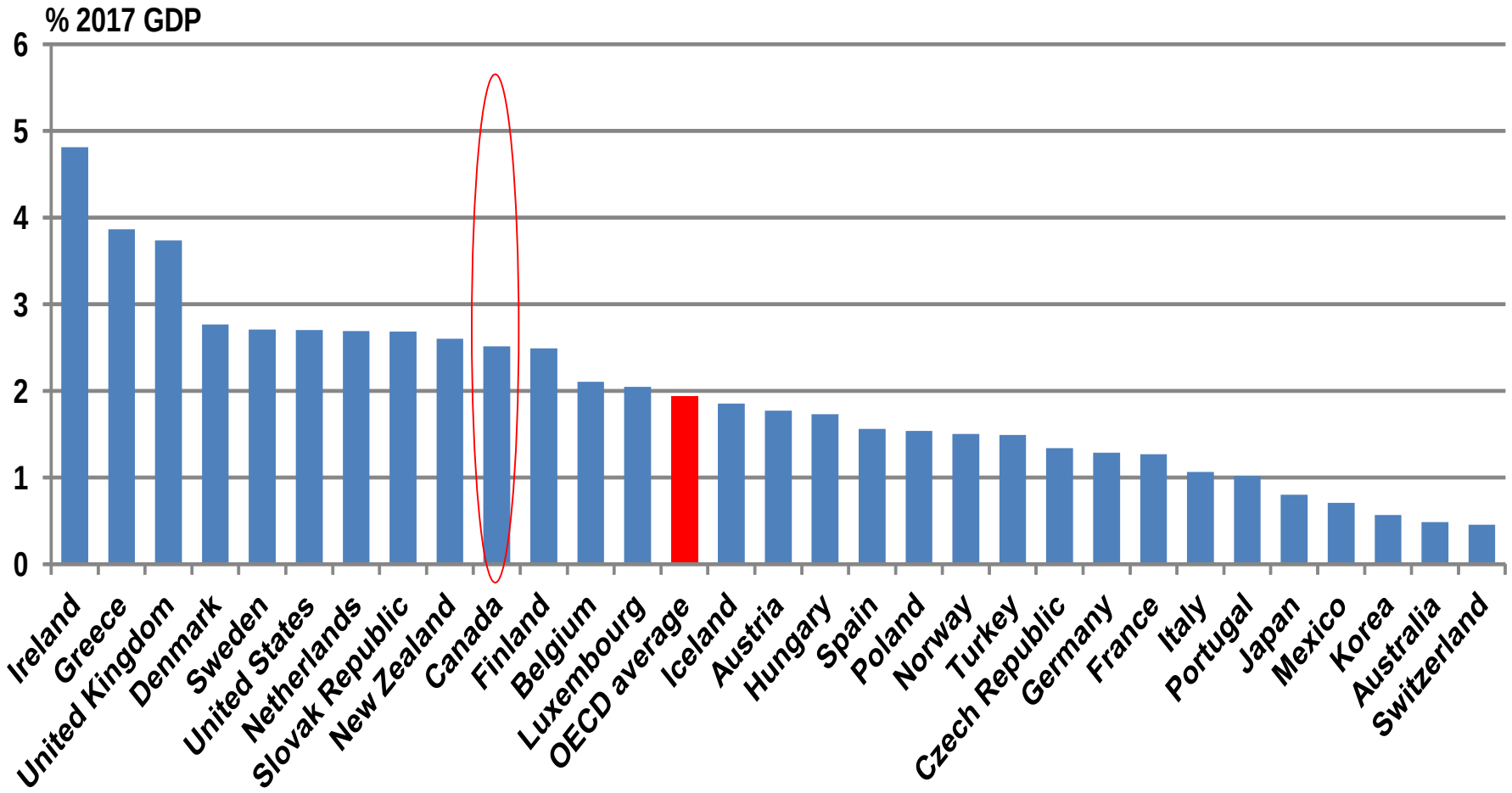
Exploiting efficiency gains would allow to improve health outcomes further



Exploiting efficiency gains would help to contain future spending



Potential savings in public spending

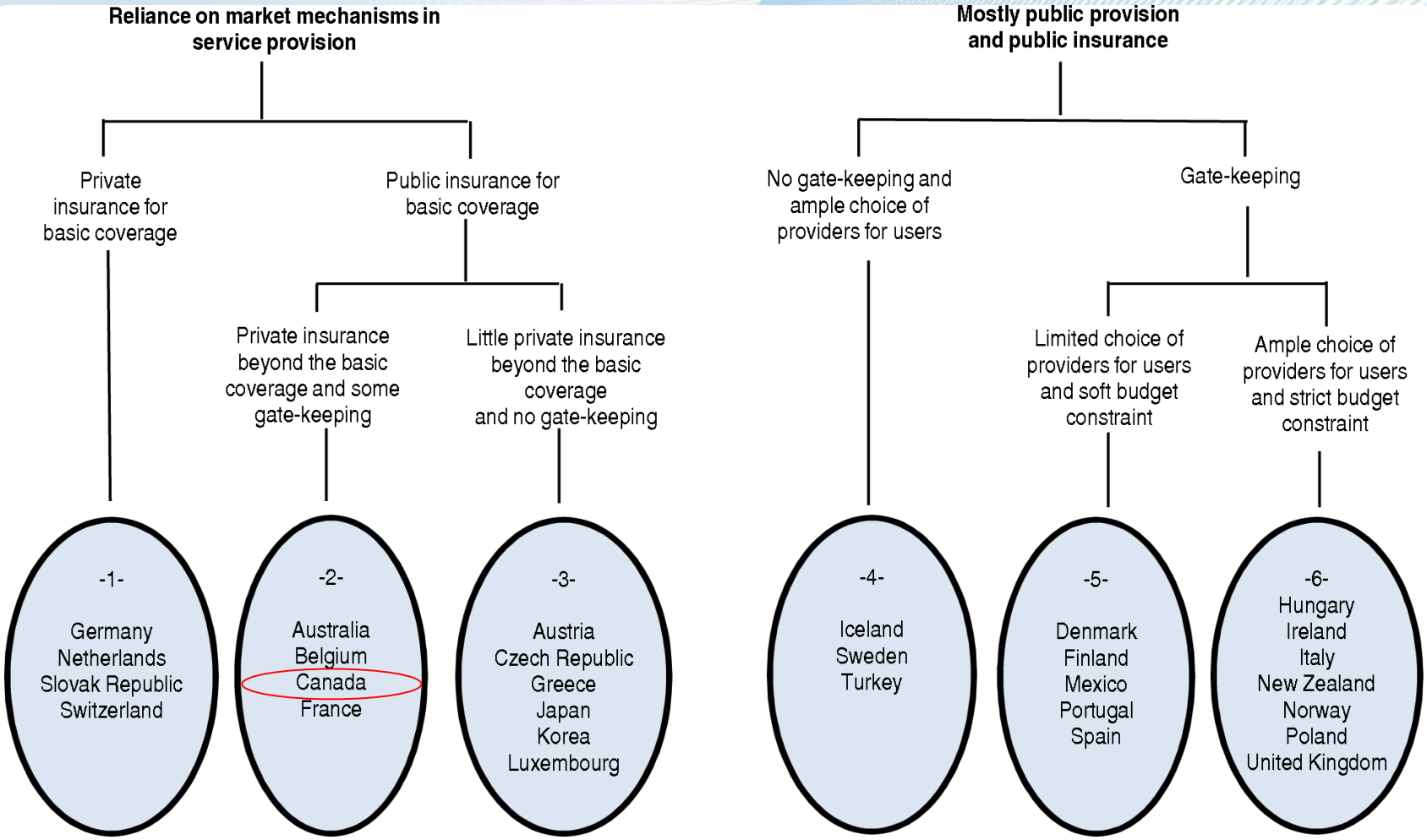


Source: OECD Health Data 2009; OECD calculations.

5. Performance and institutions
Is there an ideal health system ?

- A new set of OECD indicators on health care policies and institutions (see *Health Care Systems: Efficiency and Policy Settings*)
- Cluster analysis to identify health care models
- The bad news is: there is no ideal system…
- The good news is… there is no ideal system ! …
- … No « big bang » reform is required to improve performance. Incremental reform can yield large benefits

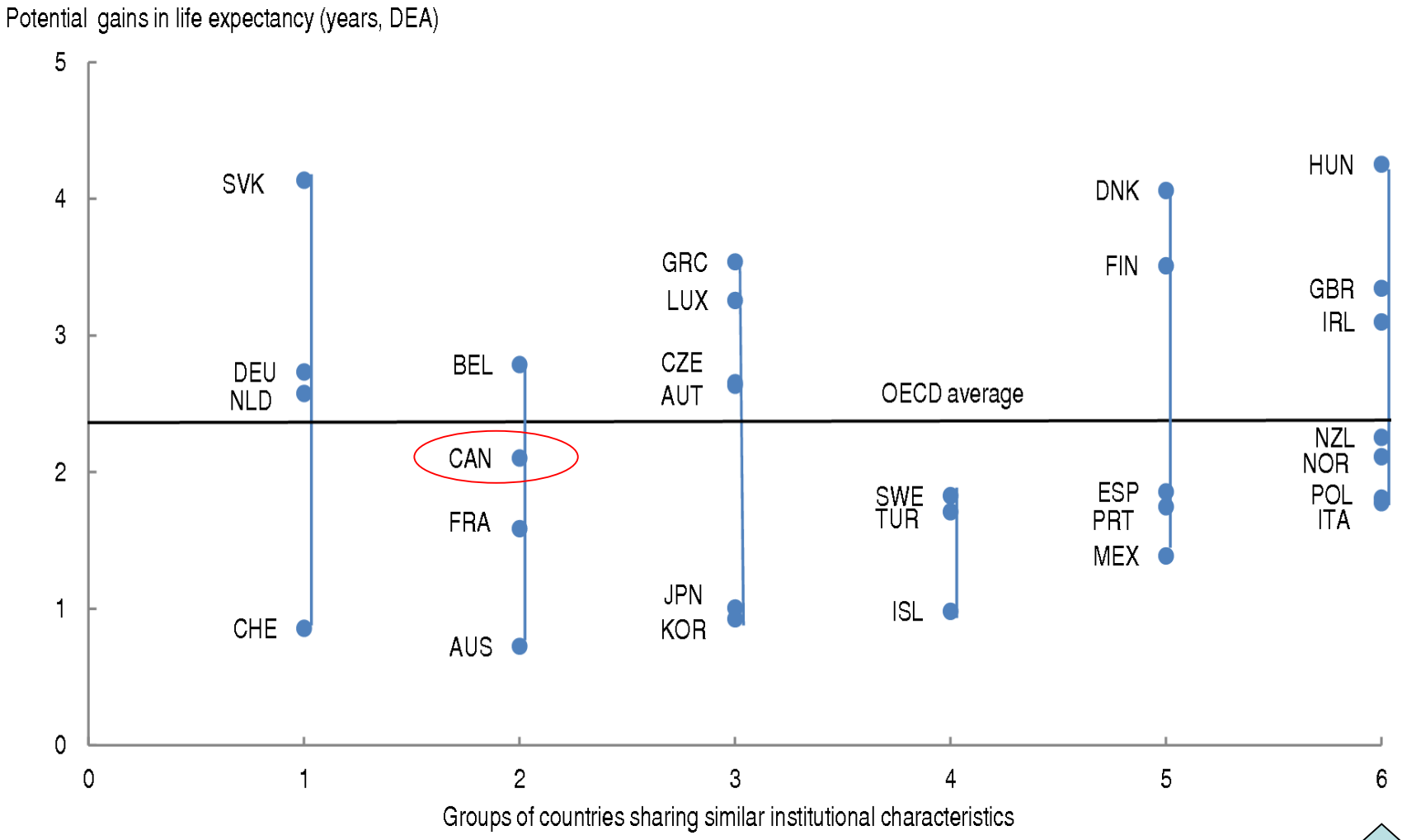
Characterising health care systems: country groups



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

Linking efficiency with policy settings

No health care system clearly outperforms the others



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

Conclusions

- Indicators of health care spending efficiency can be built and are relatively robust
- The efficiency indicators can be complemented by indicators of the quality of care and other performance indicators
- There is a large potential for efficiency gains in many OECD countries
- No health care model clearly outperforms others
  Incremental reform is the way forward

Thank you !