



EUROPEAN HEALTH CARE OUTCOMES,
PERFORMANCE AND EFFICIENCY

Country level differences – Are they related to health care systems?

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EUROHOPE

EuroHOPE – Country level differences



Financing of health systems:

Tax-based health system (the Beveridge-model):

Finland, Italy, Norway, Scotland (U.K.) and Sweden

Social Health Insurance System (the Bismarck-model):

Hungary and the Netherlands

Financing and structure of EuroHOPE countries



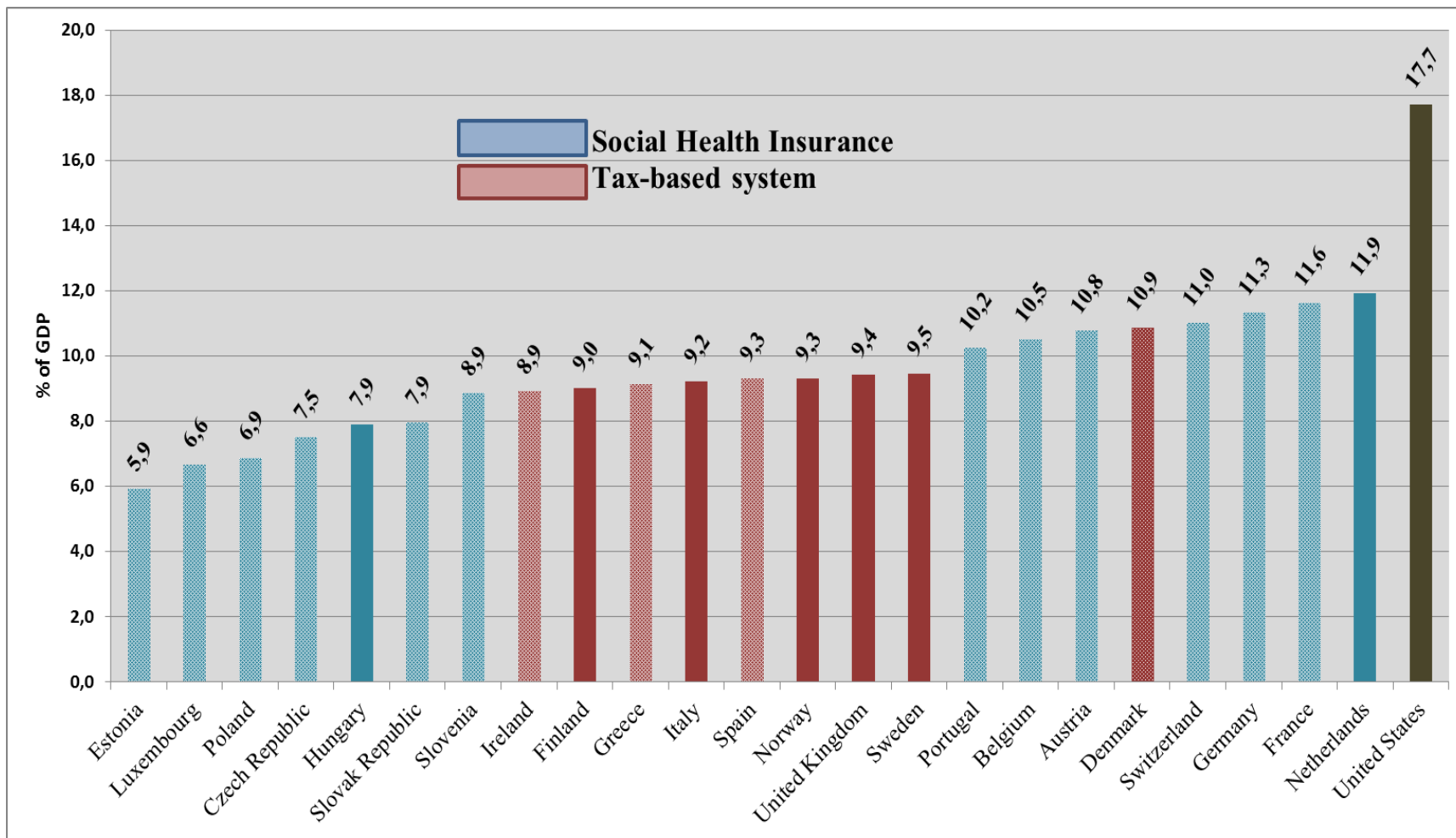
Tax-based systems

- Nordic countries; regionalized tax-based systems (Norway moved towards more centralized funding)
- Scotland part of the NHS (centralized with some autonomy)
- Italy – decentralization towards regional levels

Social Health Insurance systems

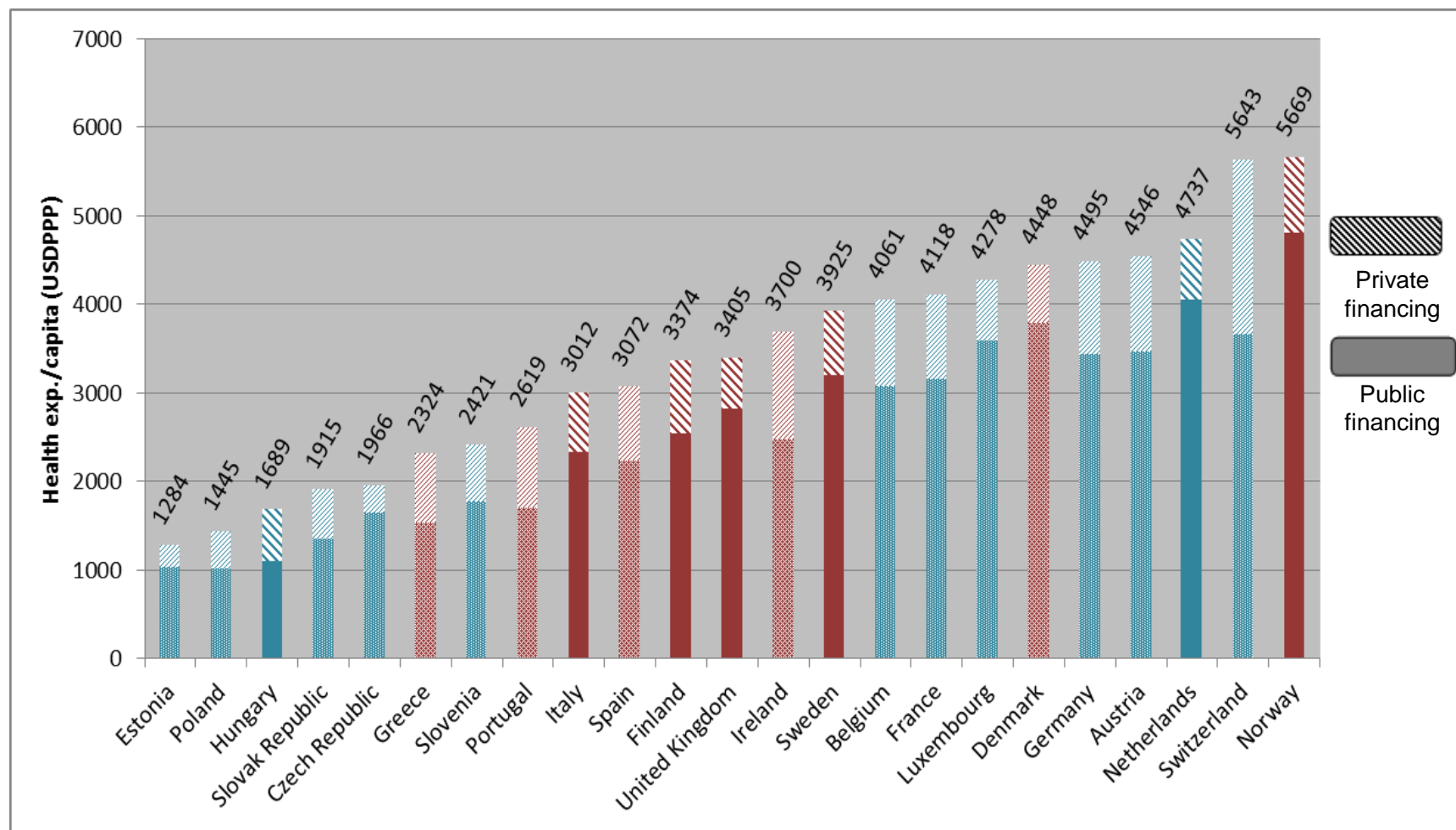
- Hungary – a single social health insurance scheme
- The Netherlands – regulated competition between sickness funds

Health care expenditures as a share of GDP: Tax-based systems and Social Health Insurance systems





Health care expenditures per capita: Tax-based systems and Social Health Insurance systems



Provision of hospital services in EuroHOPE countries



Tax-based systems (public provision)

- Finland, Italy and Sweden: Regionalized hospital system
- Norway: (larger regional entities)
- Scotland: (centralized with some autonomy)

Social Health Insurance systems

- Hungary – publicly owned hospitals run by regional authorities
- The Netherlands – Private non-profit hospitals (university hospitals under public ownership)

Determinants for country and regional variation in utilization and outcomes

Macro-economic factors:

- GDP level associated with health expenditures and health outcomes
- Unemployment
- Socio-economic differences and health status

Demand-side factors:

- Age
- Income and education
- Health status

Macro-economic indicators

	Country							
	Finland	Hungary	Italy	Netherlands	Norway	Scotland/ UK	Sweden	OECD EU
GDP/ capita	37479	21409	32648	42716	61060	36158	41461	37050
Life expectancy	80.6	75	82.7	81.3	81.4	81.9	81.1	80.4
Infant mortality	3.6	7	4.4	6.3	4.9	7.5	4.9	5.6
GINI	0.259	0.272	0.315	0.286	0.250	0.32/0.34	0.259	0.286

Source: OECD Health Database

Determinants for country and regional variation in utilization and outcomes (con'd)

Supply-side factors:

- Capacity (doctors, beds, medical technologies)
- Centralization/decentralization of services
- Monopoly/competition

Institutional factors:

- Reimbursement and incentives
- Patients fees/gate-keeping
- Freedom of choice
- Regulation of providers
- Guidelines

Regional structure of health care

- Division of regions – different functions
 - Health care
 - Non-health care (other public authorities, historical reasons etc.)
- Function of regions (from a health service perspective)
 - Funding health service
 - Purchasing of health service
 - Provision of health service
- Size and number of regions

Structure of purchasers/provider relationship

Function	Finland	Hungary	Italy	Netherlands	Norway	Scotland	Sweden
Number of funders	320	1	6	24	1	1	21
Number of purchasers	320	1	6	24	4	14	21
(Monopsony purchasers)	Yes	Yes	Yes	No	Yes	Yes	Yes
Number of hospitals	32	63	42	100 (appr.)	39	35	65
(Monopolist provider)	(Yes)	No	No	No	(Yes)	(Yes)	(Yes)
Herfindahl-Hirschman index (hospital)	0,75	0,37	0,22	0,23	0,69	--	0,63
Number of regions (N)	19	20	6	12	10	9	21
Role of region (F, P, H)	H	H	F, P, H	--	(P)/H	(P)/H	F, P, H
(F=Funder, P=Purchaser, H=Hospital provider)							

Payment and incentives

- Fixed payments (budget allocation)
 - Finland
 - Scotland
 - part of Sweden
- Activity based funding (DRGs etc.)
 - Hungary
 - Italy
 - The Netherlands
 - Norway
 - part of Sweden
- FFS
 - Partial service (PCI in Hungary)

Health care capacity and medical technologies

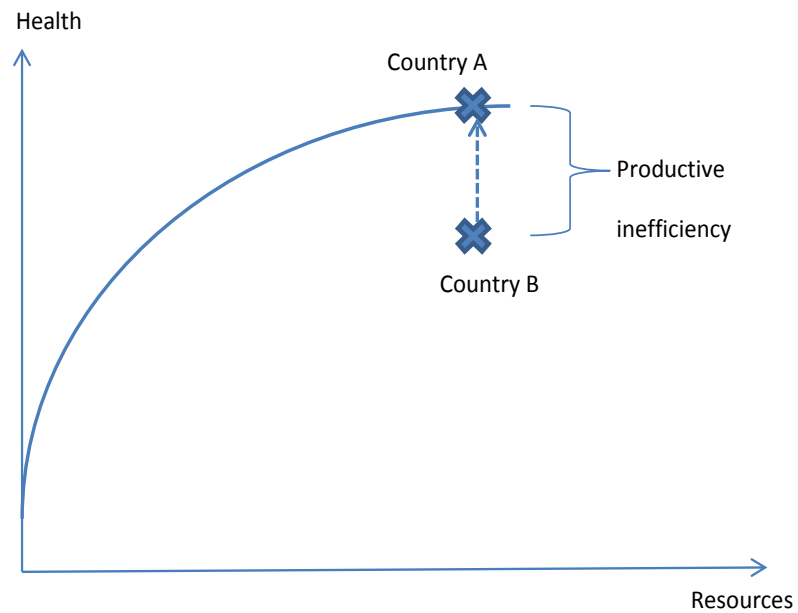
	Country							
	Finland	Hungary	Italy	Netherlands	Norway	Scotland/ UK	Sweden	OECD EU
Hospital exp./Total HEC exp	36	30.2	47.1	33.5	37.5	NA	43.4	37
Total beds/capita	5,5	7,7	3,4	4,7	3,3	2,7	2,9	5,2
Curative beds/capita	2,9	4,1	2,7	3,3	2,4	2	2,4	3,5
CT-scanners, total, per million pop.	21.3	7.3	32.1	12.5	NA	8.9	20.0	17.9
Practising doctors/1000pop.	2.7	3.1	3.7	2.9	4.0	2.6	3.7	3.2

Source: OECD Health Database

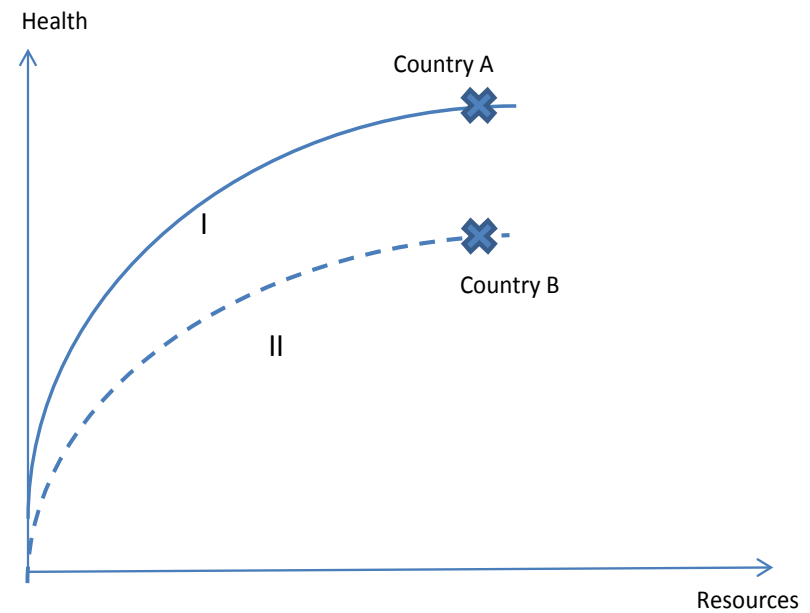
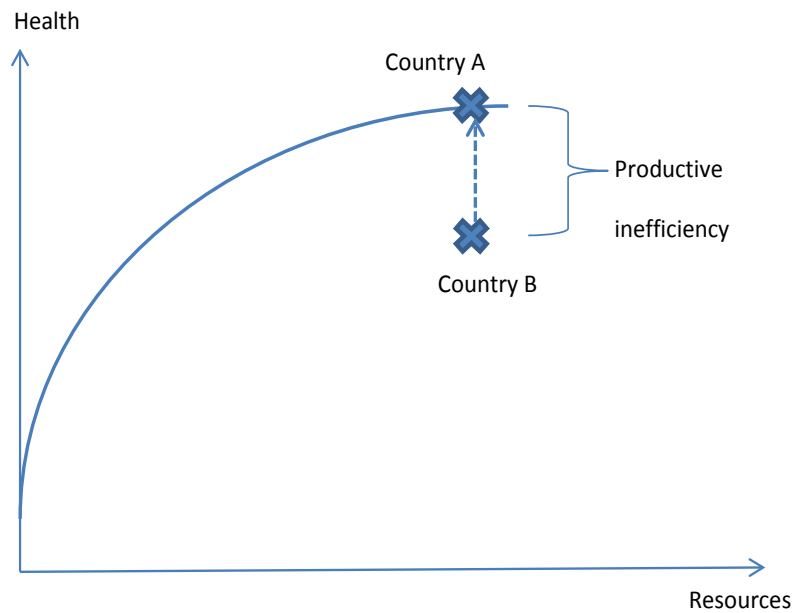
Differences in production function?

- What impact does the general health status in a country have on hospital outcomes?
- Differences in socio-economic status and unemployment linked to health status
- Is the production function embodied in each health system different across countries?
- Explaining cross-country differences and regional variations by allowing the production function to differ

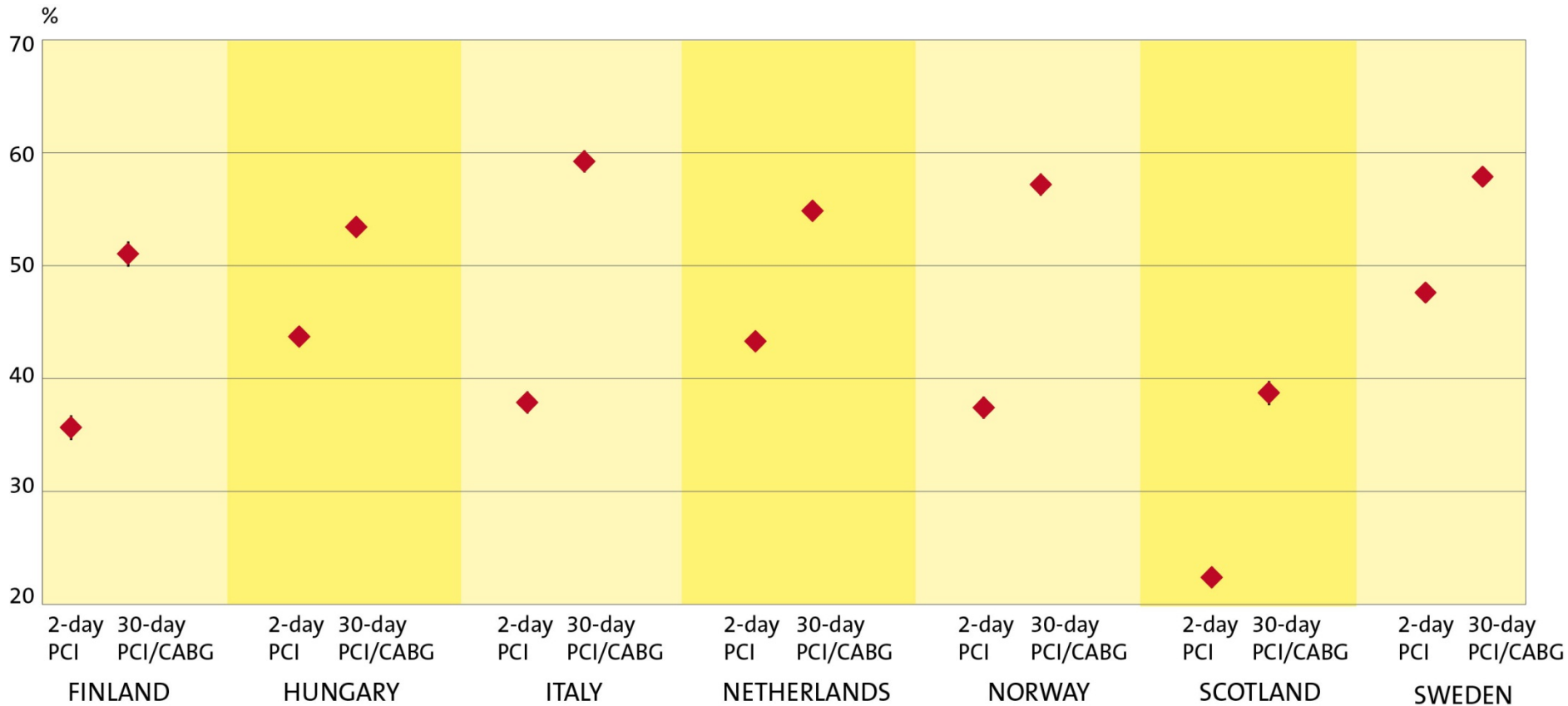
Different production functions



Different production functions



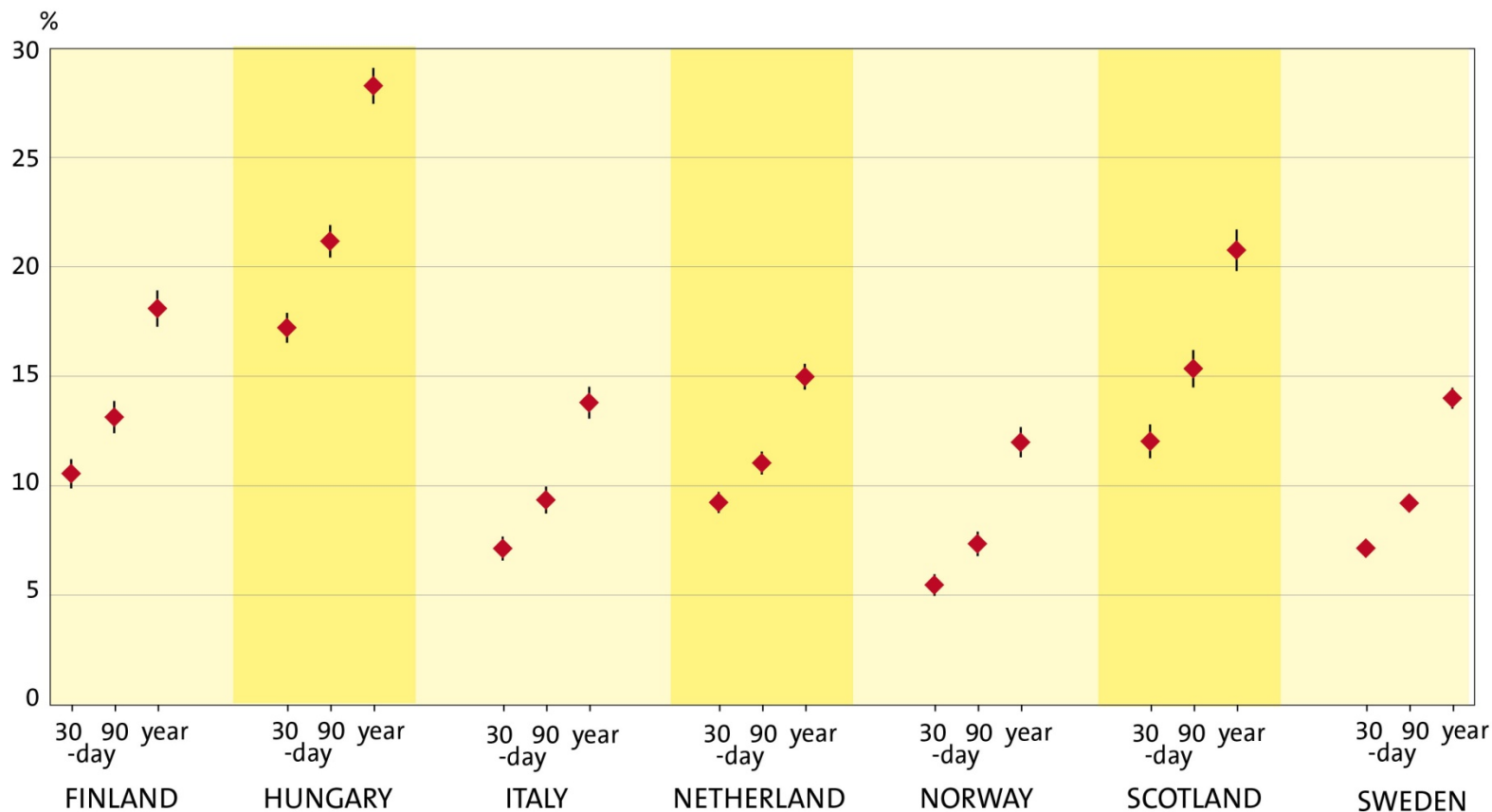
Country-level differences: PCI and PCI/CABG rate (2-day and 30-day, age/sex-standardized)





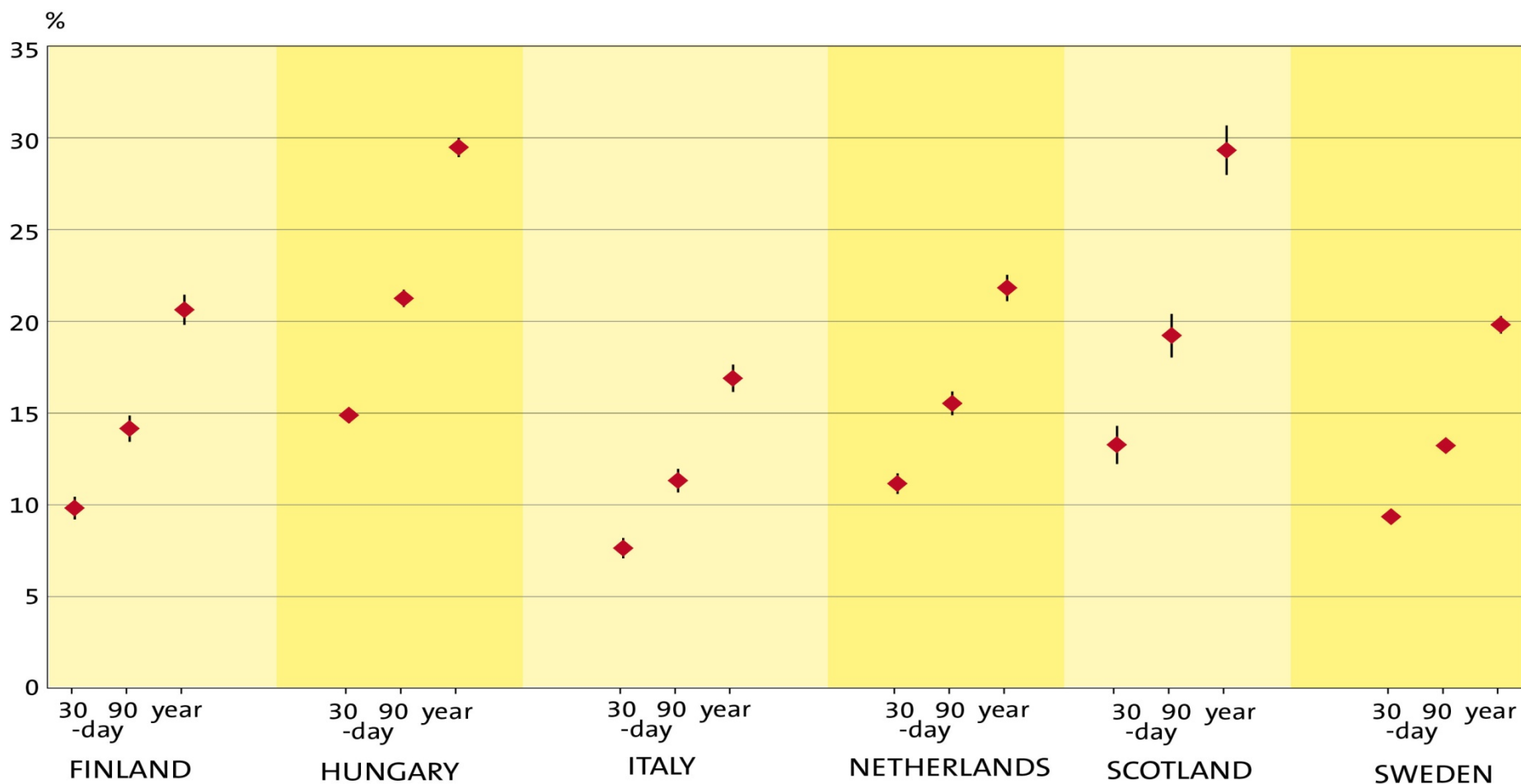
Country-level differences

AMI: 30-day, 90-day and one-year mortality (age/sex-standardized)



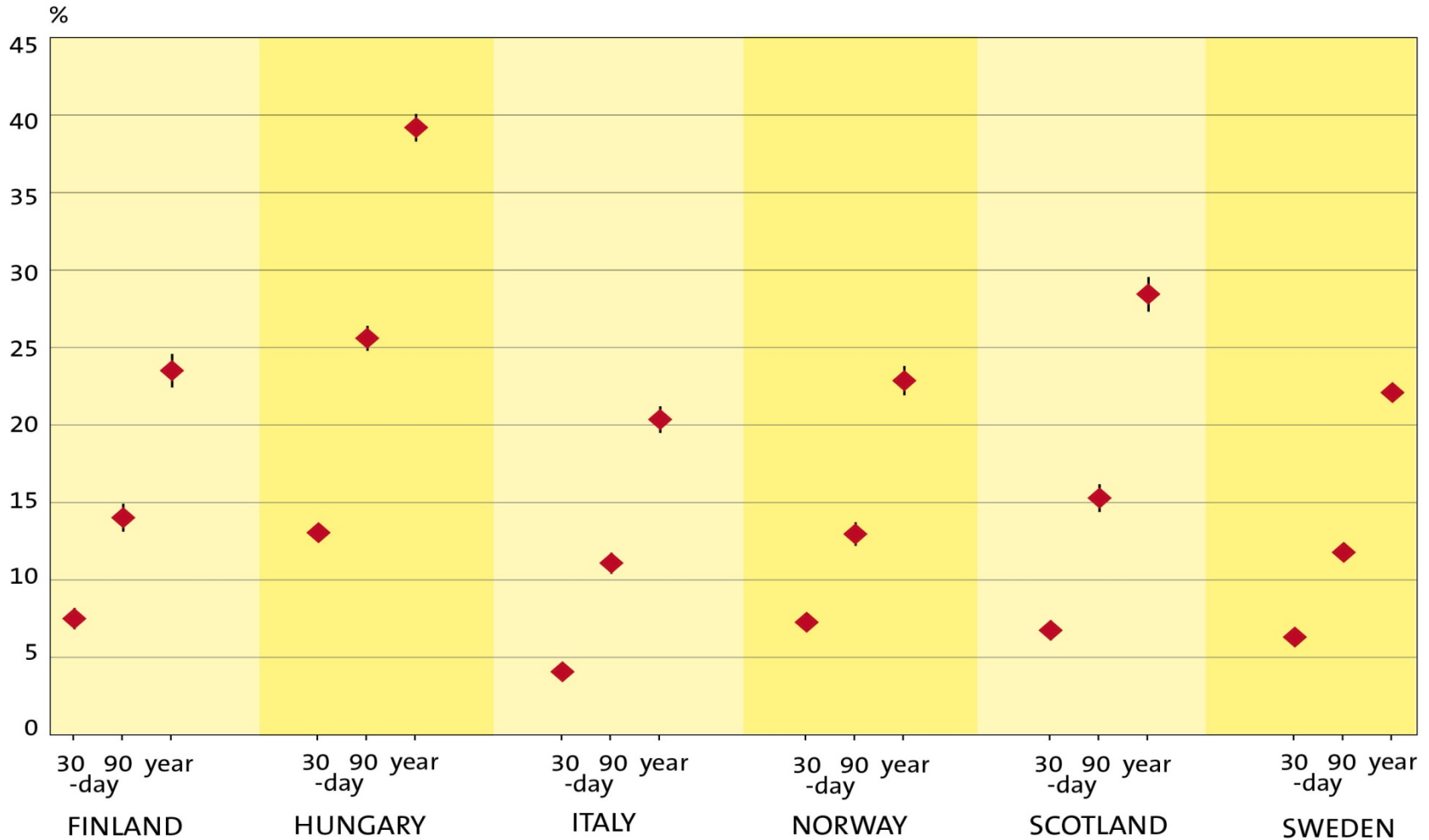
Country-level differences

Ischaemic stroke patients: 30-day, 90-day and one-year mortality (age/sex-standardized)



Country-level differences

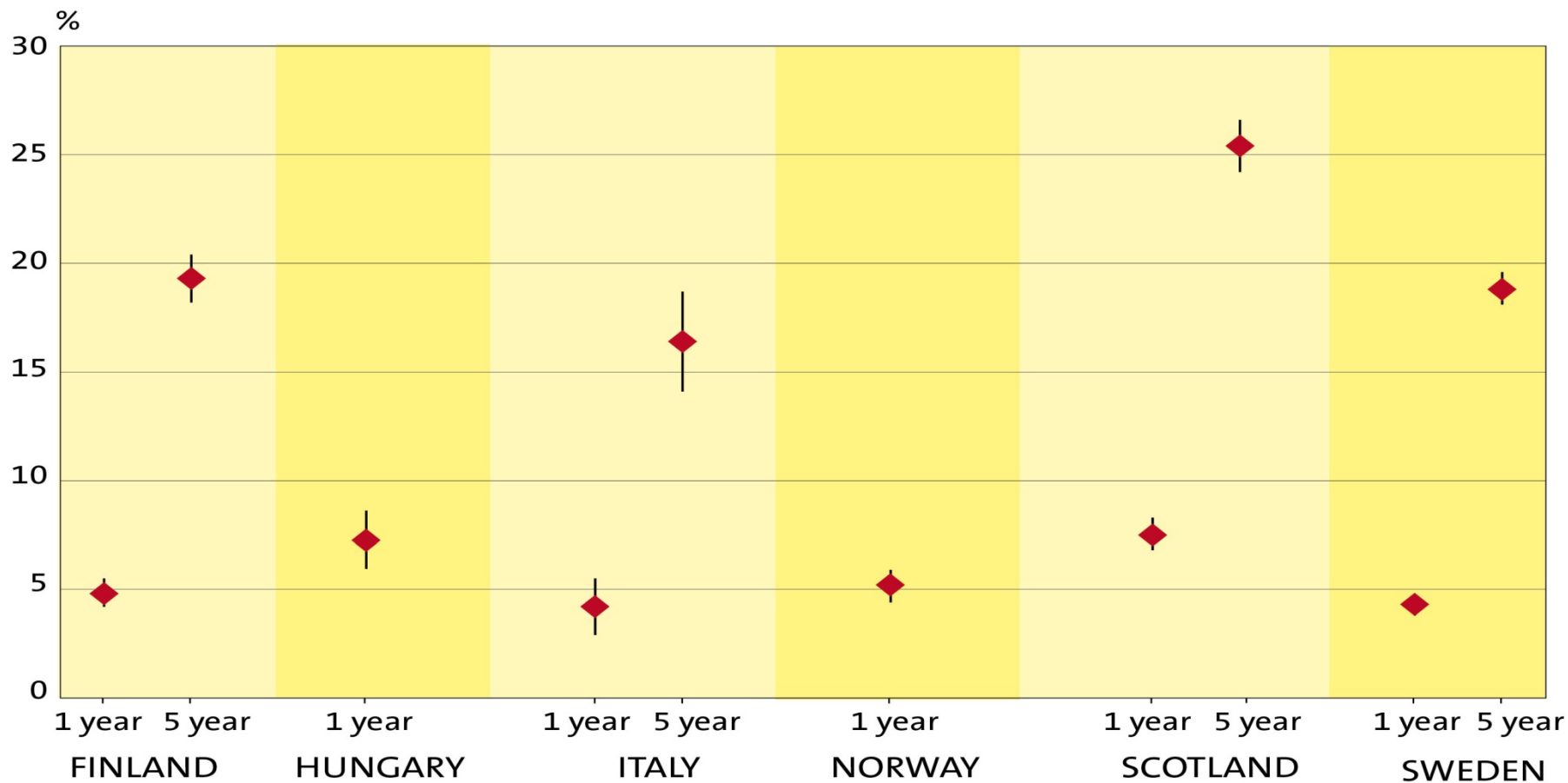
Hip fracture patients: 30-day, 90-day and one-year mortality (age/sex-standardized)





Country-level differences

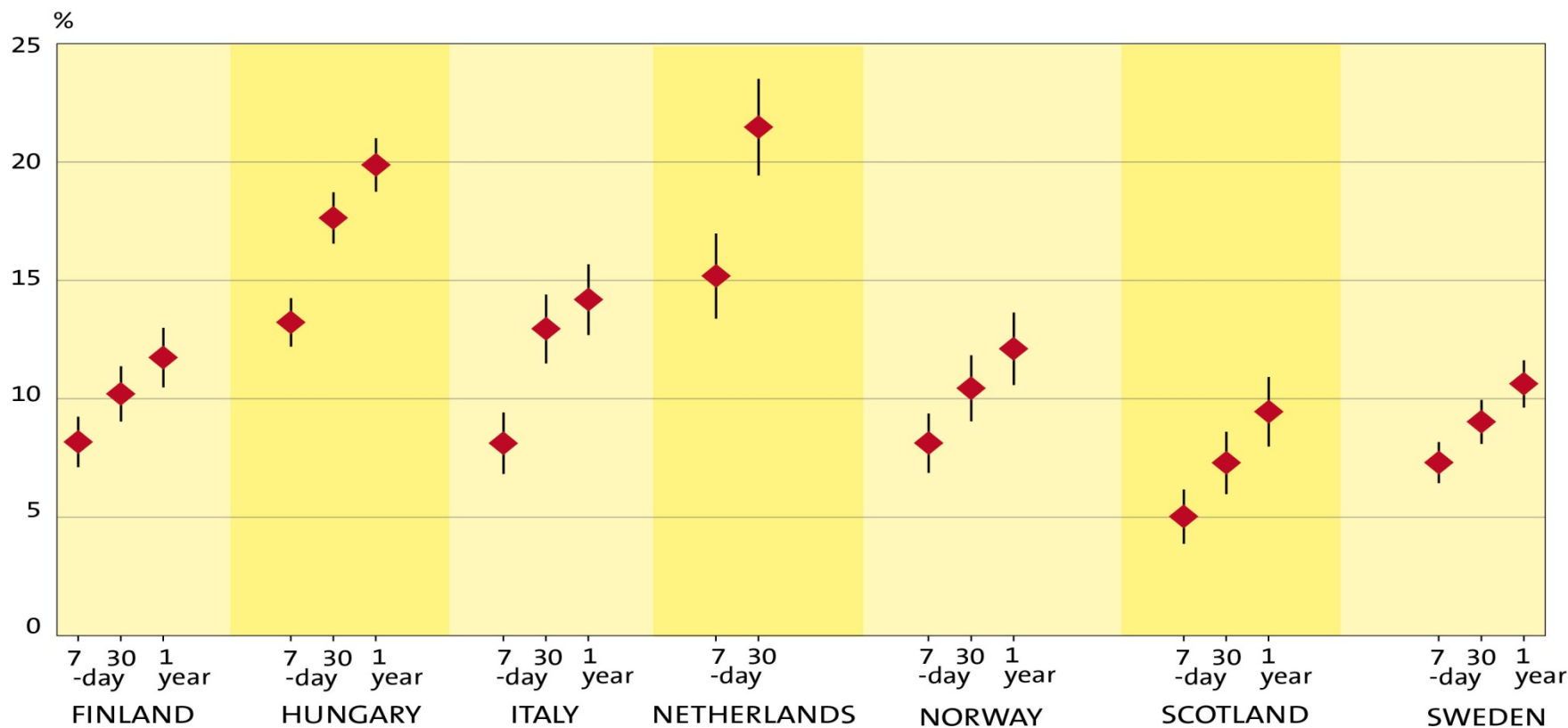
Breast cancer patients: one-year and five year mortality (age/sex-standardized)





Country-level differences

Very low birth weight and very low gestational age infants: 7-day, 30-day and one-year mortality (risk-adjusted)



Hypotheses to be considered

- Macro-economic indicators
 - Country differences
 - Regional variations within countries
- Demand factors
- Supply of services
- Reimbursement and incentives
- Regulation and guidelines

Concluding remarks

- Funding of health services largely public and universal
- Differences between integrated provision and contracted services
- The function of regional structure differ according to levels of funding, purchasing and provision
- Differences in reimbursement and incentives
- Differences in determinants of resources and outcomes implies regional variations (GDP/capita, health status, provider structure and regulation)
- Socio-economic differences and health status might effect the production function in each country

Length of first acute hospital episode for AMI, stroke and hip fracture patients by country

