Developments in costly cancer treatments

Focus on use of oncology drugs in Europe

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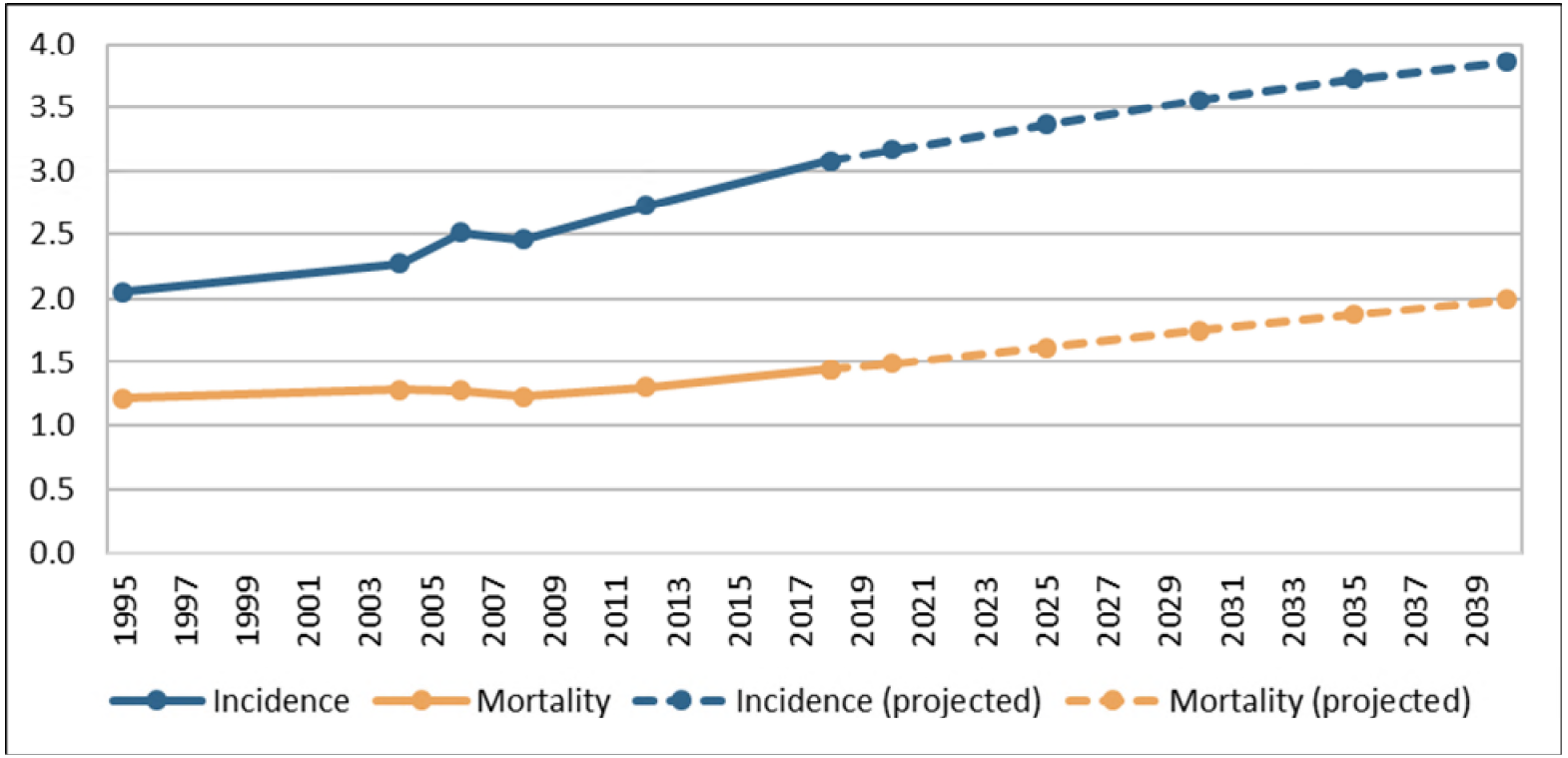
This presentation is based on the IHE report on cancer in Europe
https://ihe.se/en/publicering/comparator-report-on-cancer-in-europe-2019/

Conflict of interest

- NW reports personal fees from AstraZeneca, Bayer, Daichii Sankyo, Incyte, Jansen , MSD , Novartis , Pierre Fabre and Oasmia for participation in advisory boards and educational activities

Trends in incidence and mortality



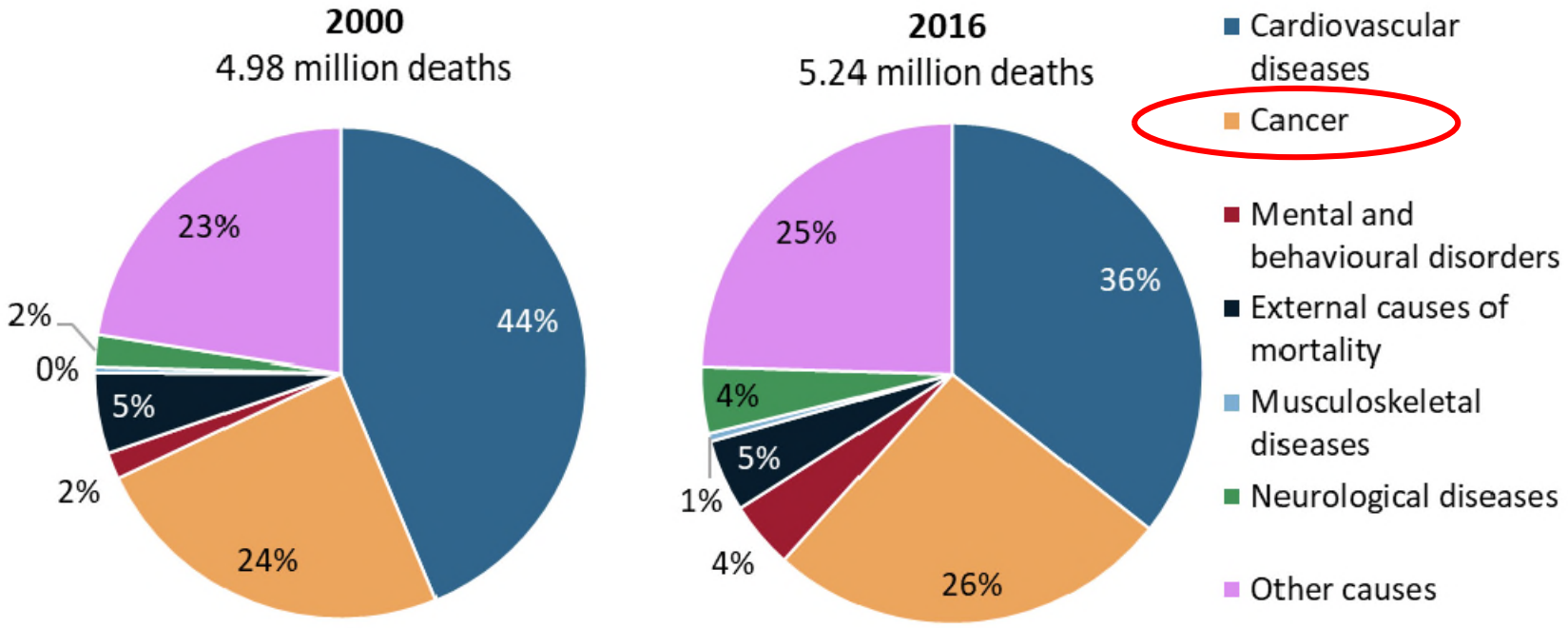
50% increase in incidence (from 2.1 to 3.1 million cases) 1995–2018
20% increase in mortality (from 1.2 to 1.4 million cases) 1995–2018

Population aging is a major determinant of trends in incidence and mortality

Cancer incidence and mortality (in million cases) in Europe, 1995–2018 and projection of status quo 2020–2040

Notes: Europe includes the EU-28, IS, NO, and CH. Cancer is defined as ICD-10 C00-C97/C44.
Source: Boyle et al (2005), Bray et al (2002), Ferlay et al (2007+2010+2013+2018)

Disease burden of cancer - deaths



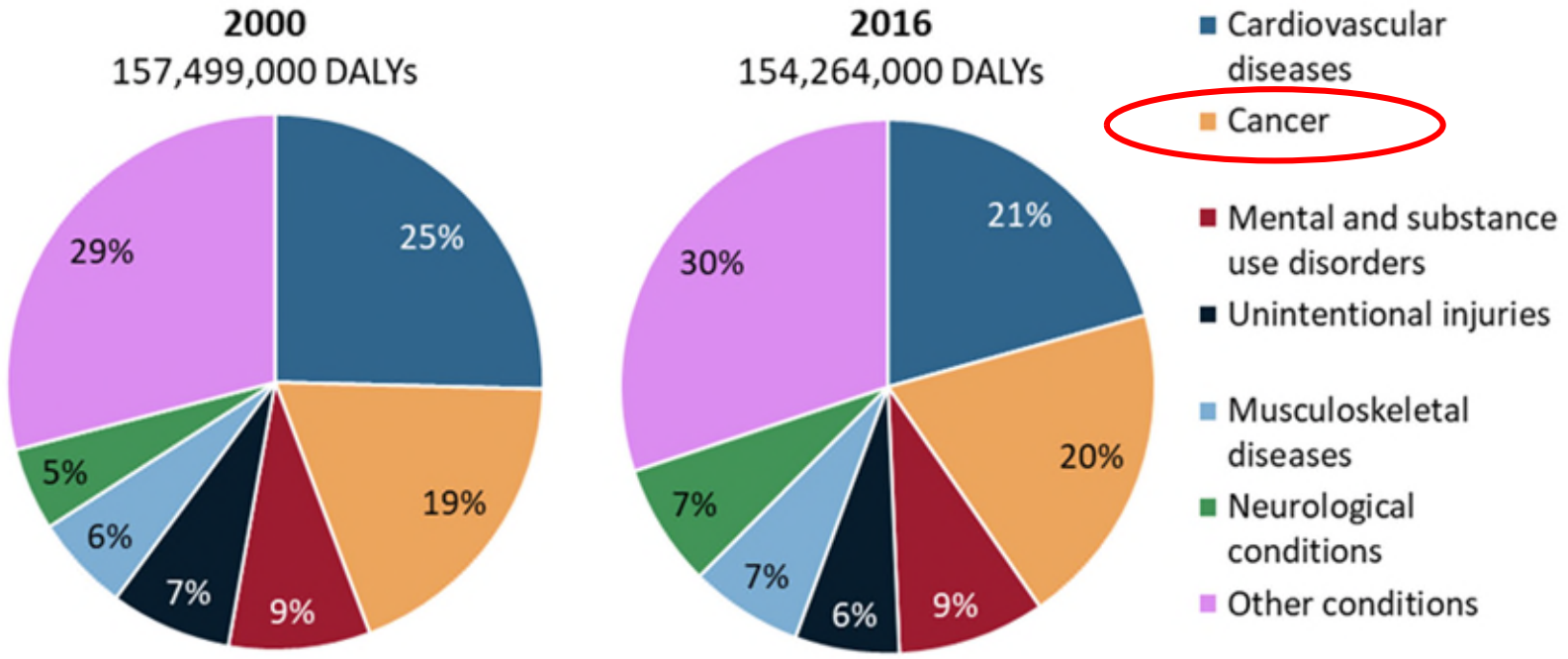
Cancer is the 2nd leading cause of death behind cardiovascular diseases

Cancer has already become the leading cause of death in DK, FR, NL, UK in 2016

Number of deaths by cause in Europe, 2000 & 2016

Source: Eurostat, WHO

Disease burden of cancer - DALYs



Disease burden of the largest disease groups in Europe, 2000 & 2016

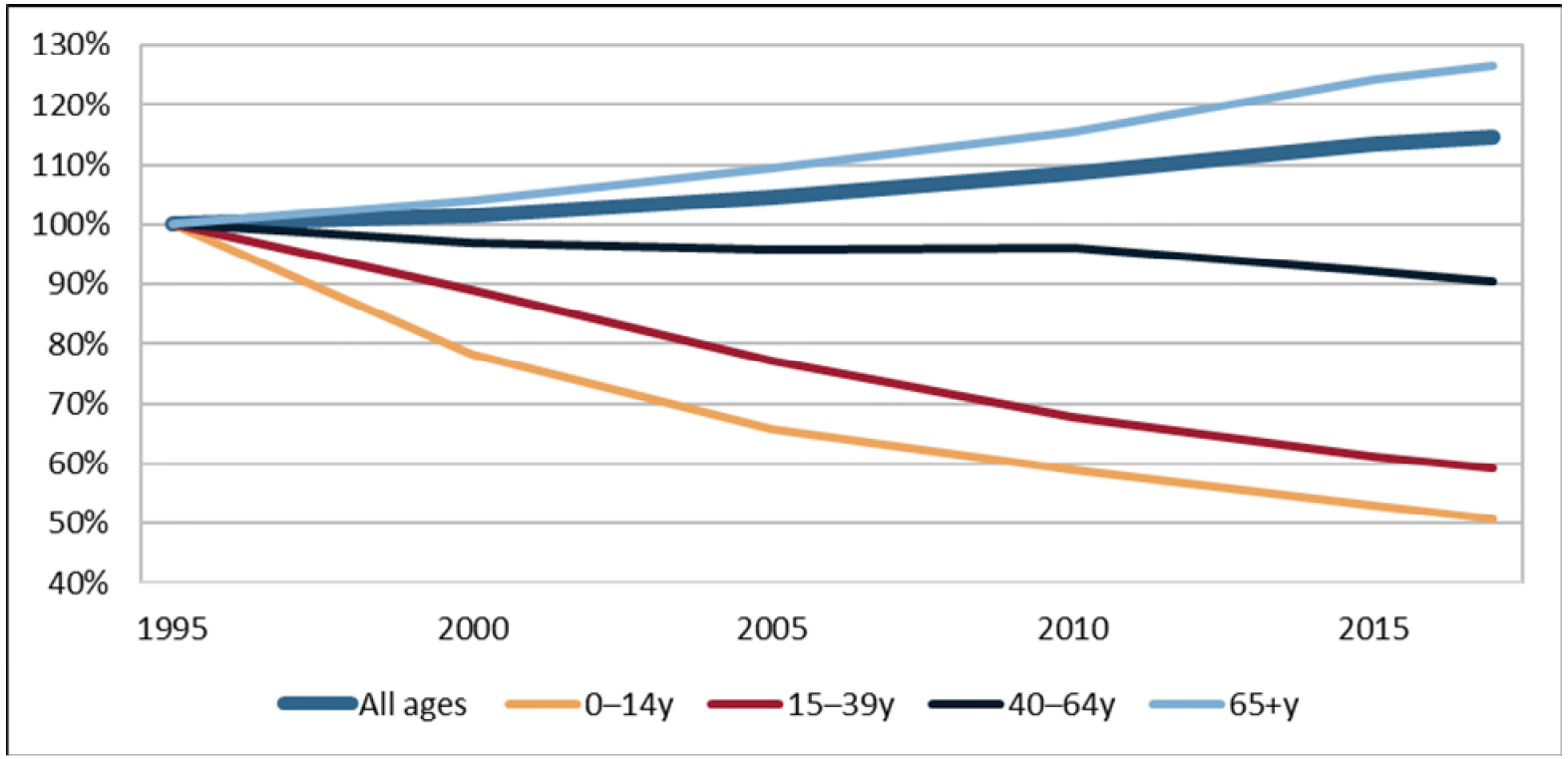
Source: WHO

Cancer is the 2nd leading cause of DALYs behind cardiovascular diseases

Cancer has already become the leading cause of DALYs in many wealthier countries (BE, DK, FR, IS, IE, IT, LU, NL, NO, PT, SI, ES, CH, UK)

DALYs (Disability Adjusted Life Years) comprise the effect of premature mortality and morbidity of a disease

Cancer mortality by age group



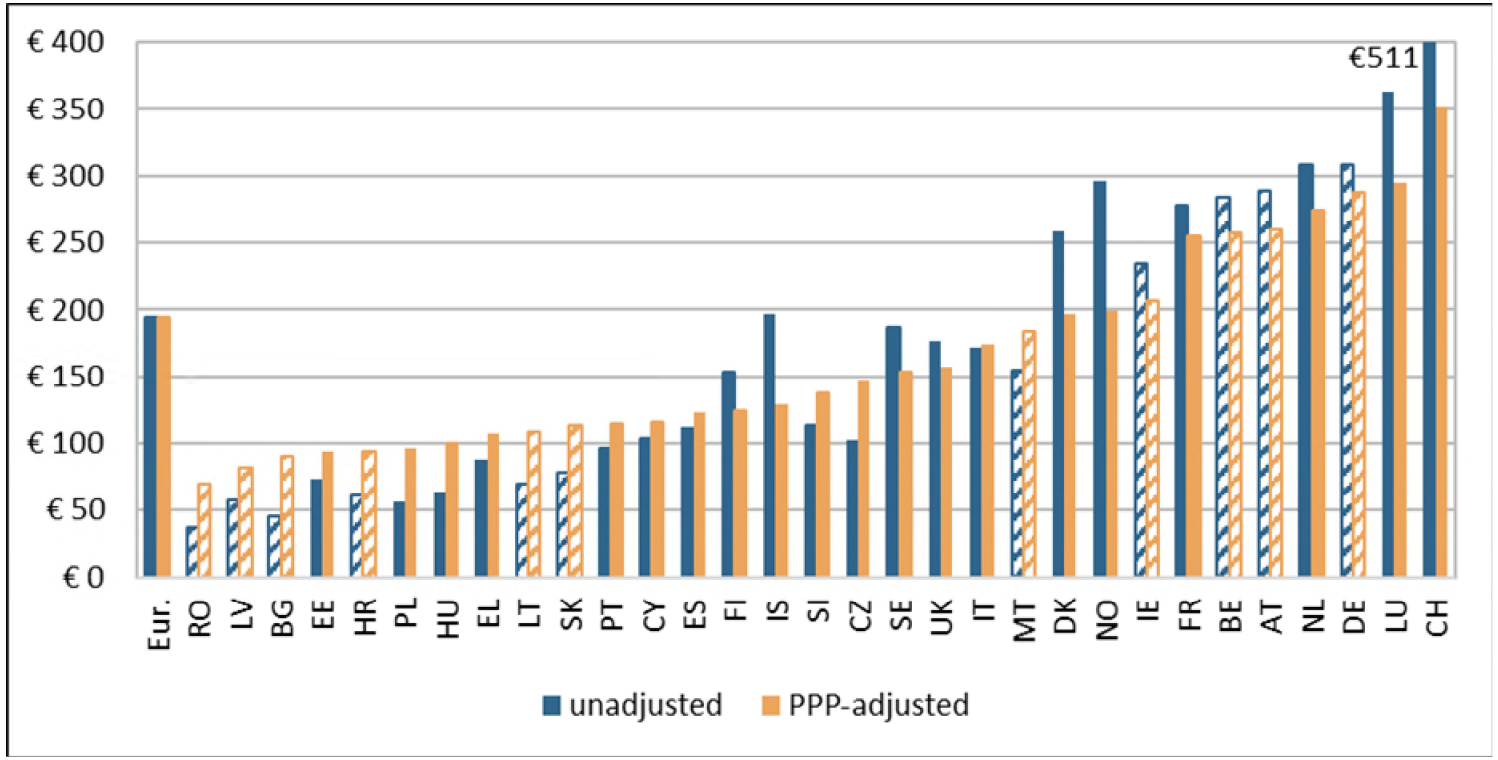
Deaths from cancer are still increasing overall

In age groups below 65 years, deaths are (strongly) decreasing

Cancer mortality by age group (1995=base year) in Europe, 1995–2017

Notes: Figures are based on total number of deaths (not per 100,000 inhabitants)
Source: IARC and Eurostat

Direct costs of cancer in 2018



Direct costs of cancer per capita (in €), 2018

Notes: Hatched bars indicate that the direct costs are estimated based on data from similar countries; see Appendix for methodology. The blue bar for CH is truncated - its true size is €511.

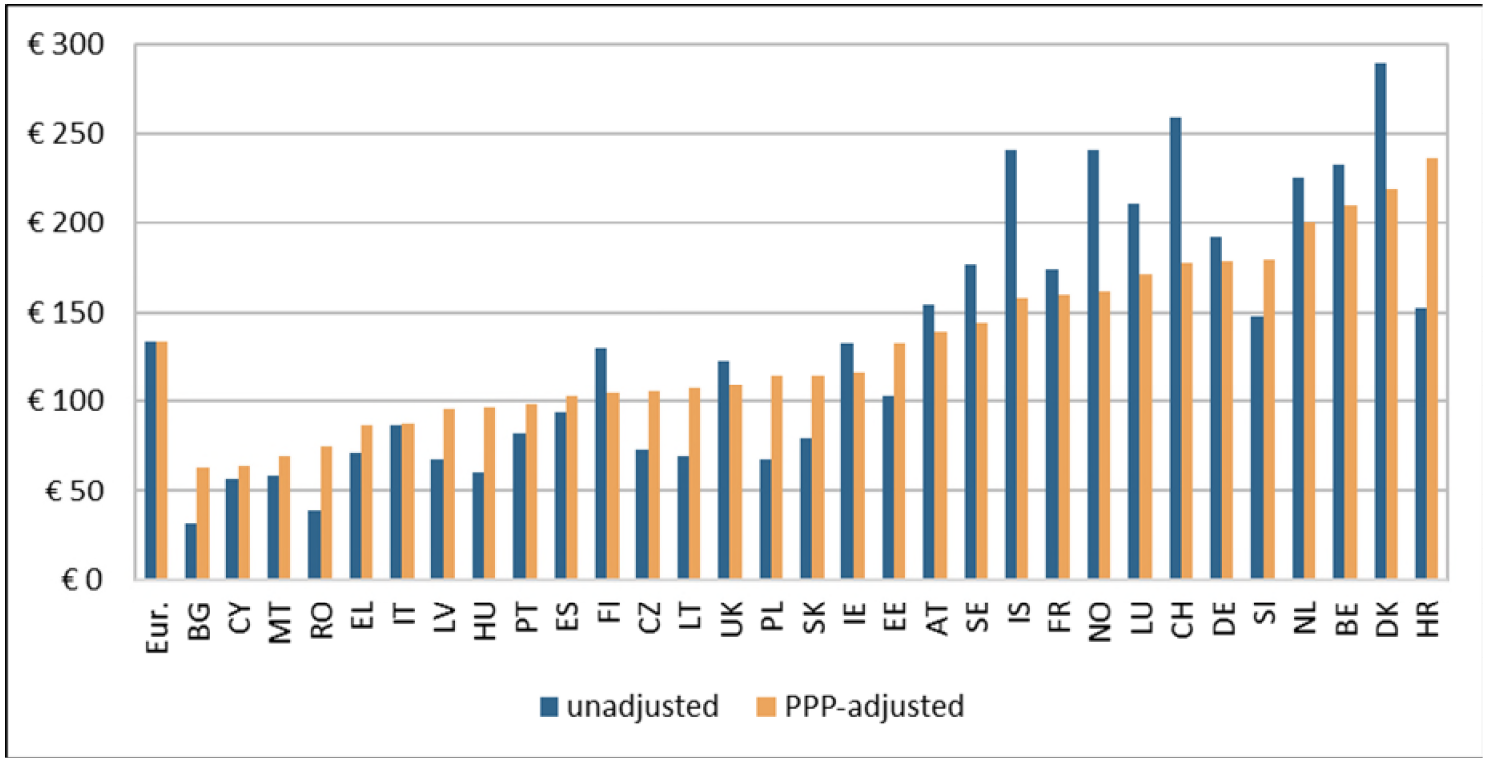
All countries spent between 4–7% of total health expenditure on cancer in 2018

Europe = €195 per capita

5-fold difference between lowest spender (€70, Romania) and highest spender (€352, Switzerland) if PPP-adjusted (if not, 14-fold difference!)

Direct costs = resources within the health care system (medical equipment, staff, medicines, etc.)

Indirect costs of cancer in 2018



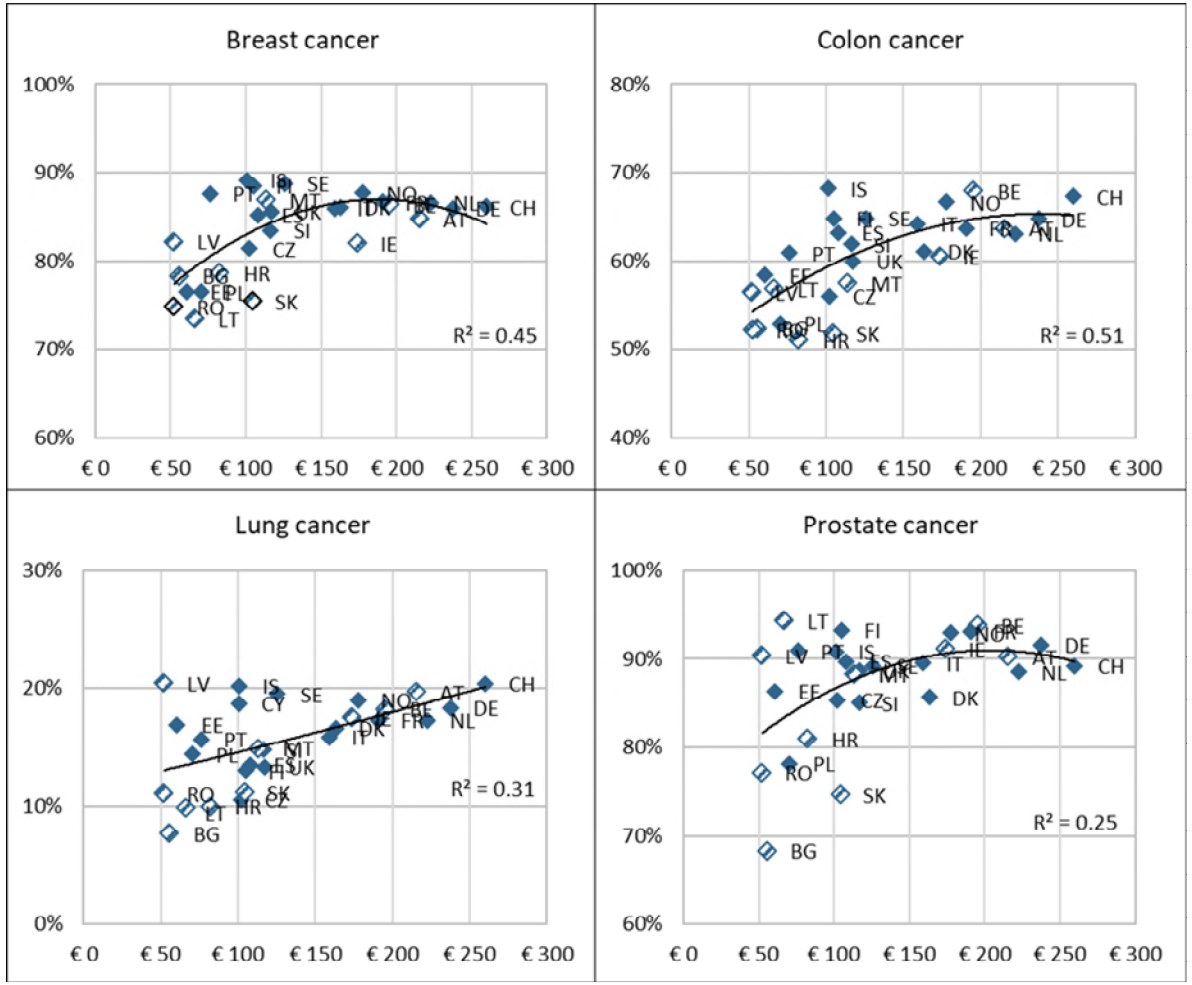
Indirect costs of cancer per capita (in €), 2018

Europe = €133 per capita

Smaller country differences than for direct costs

Indirect costs = productivity loss from (1) premature mortality in working age, and (2) morbidity (sickness absence and permanent incapacity/disability) of people of working age

Efficiency of cancer care spending and patient outcomes

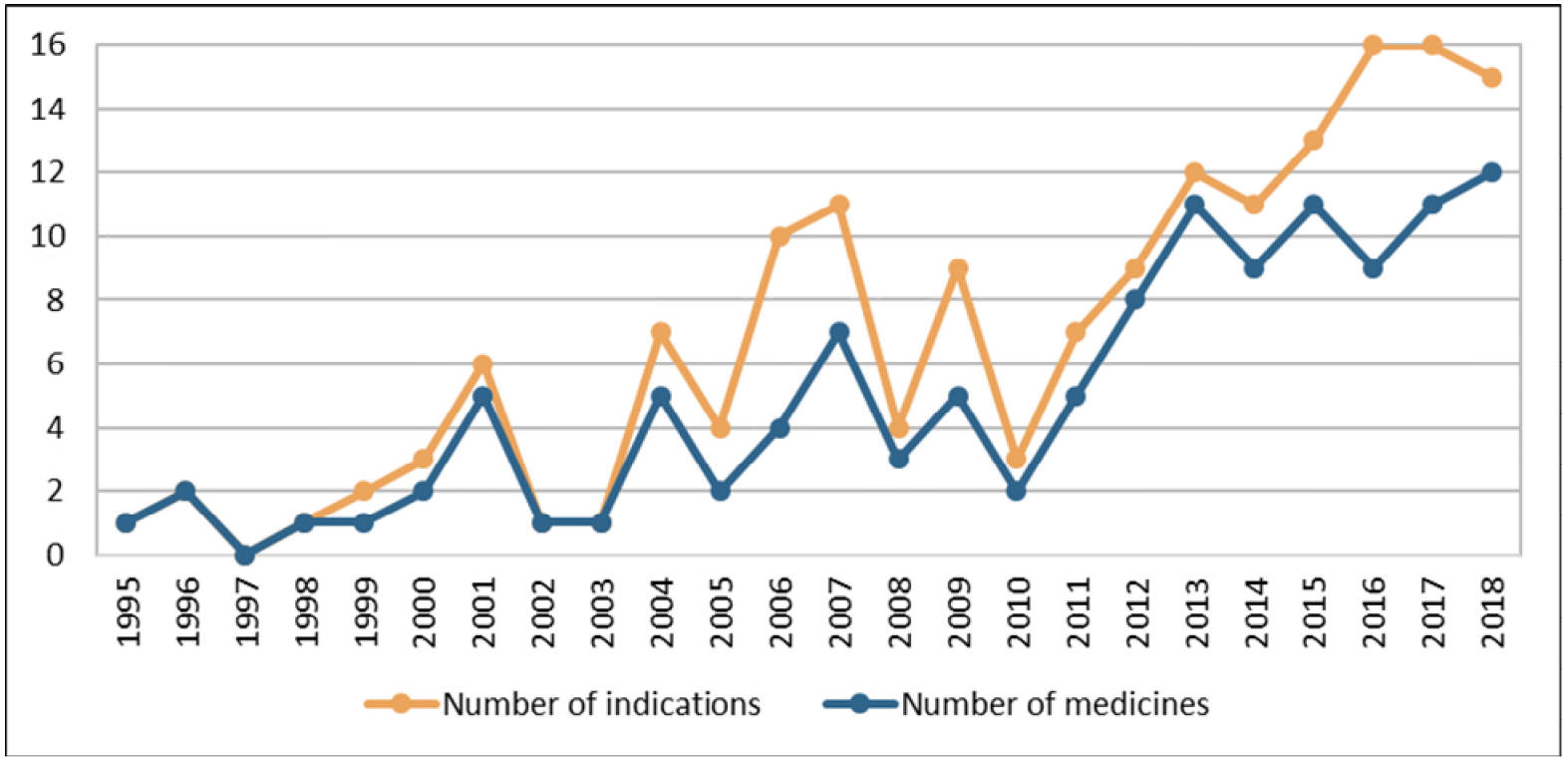


Cancer expenditure (in € per capita, PPP-adjusted) in 2010 and 5-year net survival (in %) in 2010–2014

Upward sloping trend lines
→ adequate health spending on cancer is a prerequisite for achieving high survival rates

Great variation in health spending on cancer between countries that achieve similar survival rates
→ opportunities to improve efficiency and outcomes

Growing stream of cancer medicines and indications



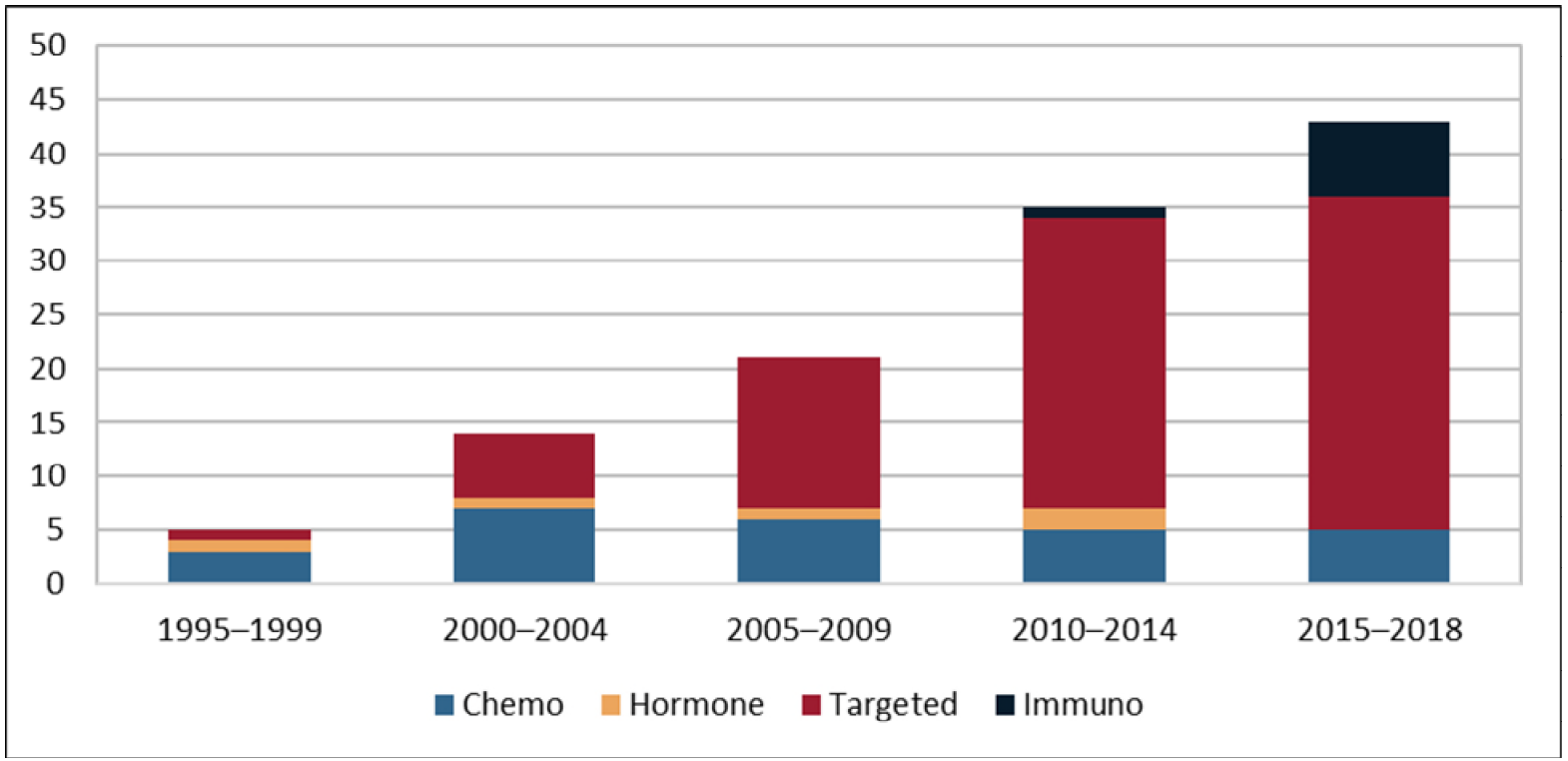
118 EMA approvals of new medicines in oncology (ATC groups L01, L02 and some in L04) and 164 indications

Steep increase in the number of approved cancer medicines and indications

Number of EMA-approved cancer medicines and indications, 1995–2018

Notes: Indications refer to label extensions to cancer types in addition to the initially approved cancer type
Source: EMA

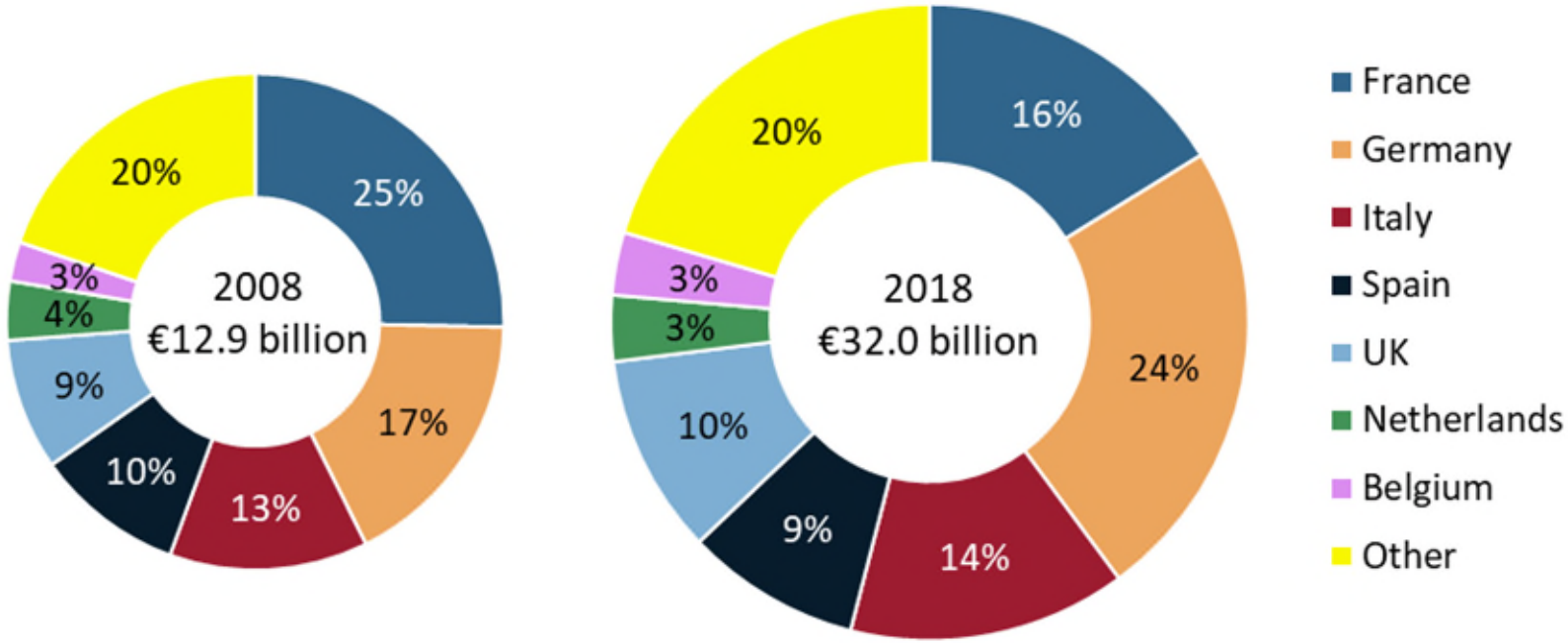
Increasing approval of targeted therapies and immunotherapies



Number of EMA-approved medicines by type of therapy

Source: EMA

Access to cancer medicines (sales value)



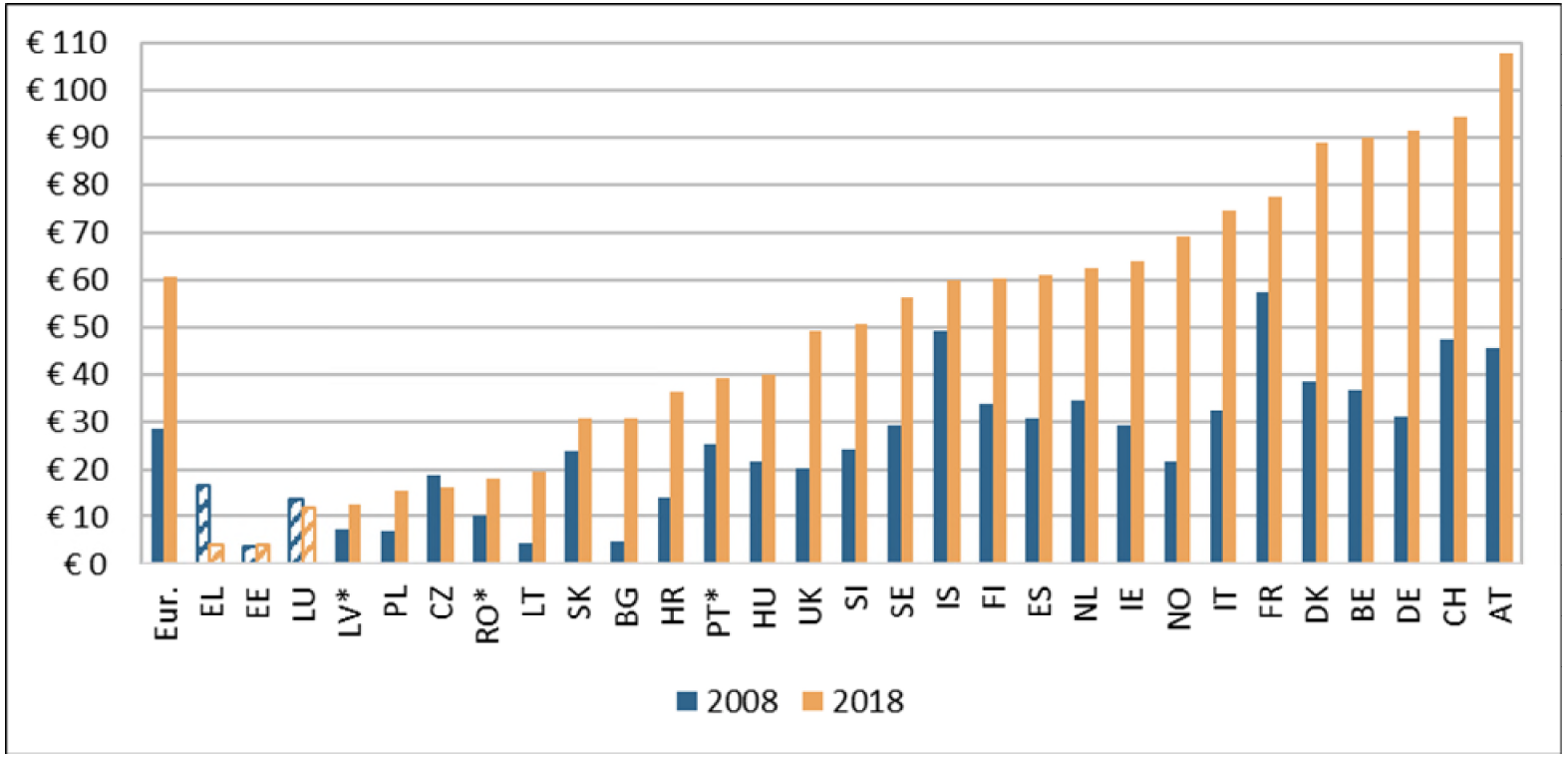
Total cost of cancer medicines (in current prices) in Europe, 2008 & 2018

Notes: Cancer medicines in groups ATC L01, L02, L04
Source: IQVIA

Many reasons for increased spending over time:

- Higher prices of new medicines (cost per treatment)
- More cancer patients
- More rounds of treatment due to increased survival
- Many newly approved medicines (86) and indications (115)
- New medicines for previously untreated patient groups
- More adjuvant treatment
- Increasing use of combination therapies

Access to cancer medicines (sales value)



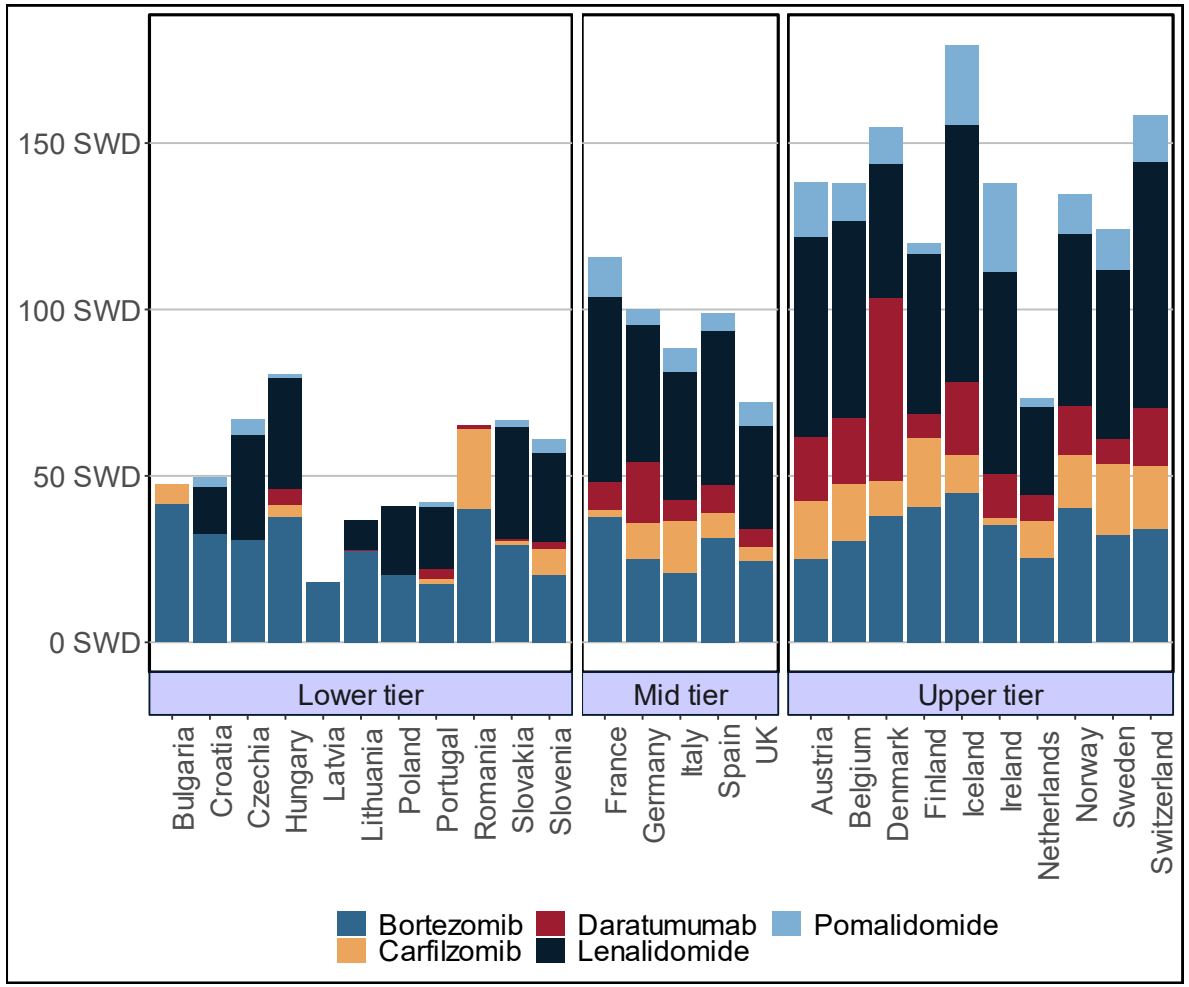
Large country differences in spending on cancer medicines, and no signs of shrinking country differences over time

Poorer countries spend around one third of the amount of wealthier countries

Cost of cancer medicines per capita (in 2018 price levels and exchange rates), 2008 & 2018

Notes: Eur. = Europe. Hatched bars indicate that data for EE, EL, and LU only comprise retail sales. CY and MT are missing due to lack of data. * The values in 2008 are from 2014 for LV, from 2009 for RO, and from 2010 for PT.
Source: IQVIA

Access - multiple myeloma medicines (volume)



Highest uptake in the wealthiest countries

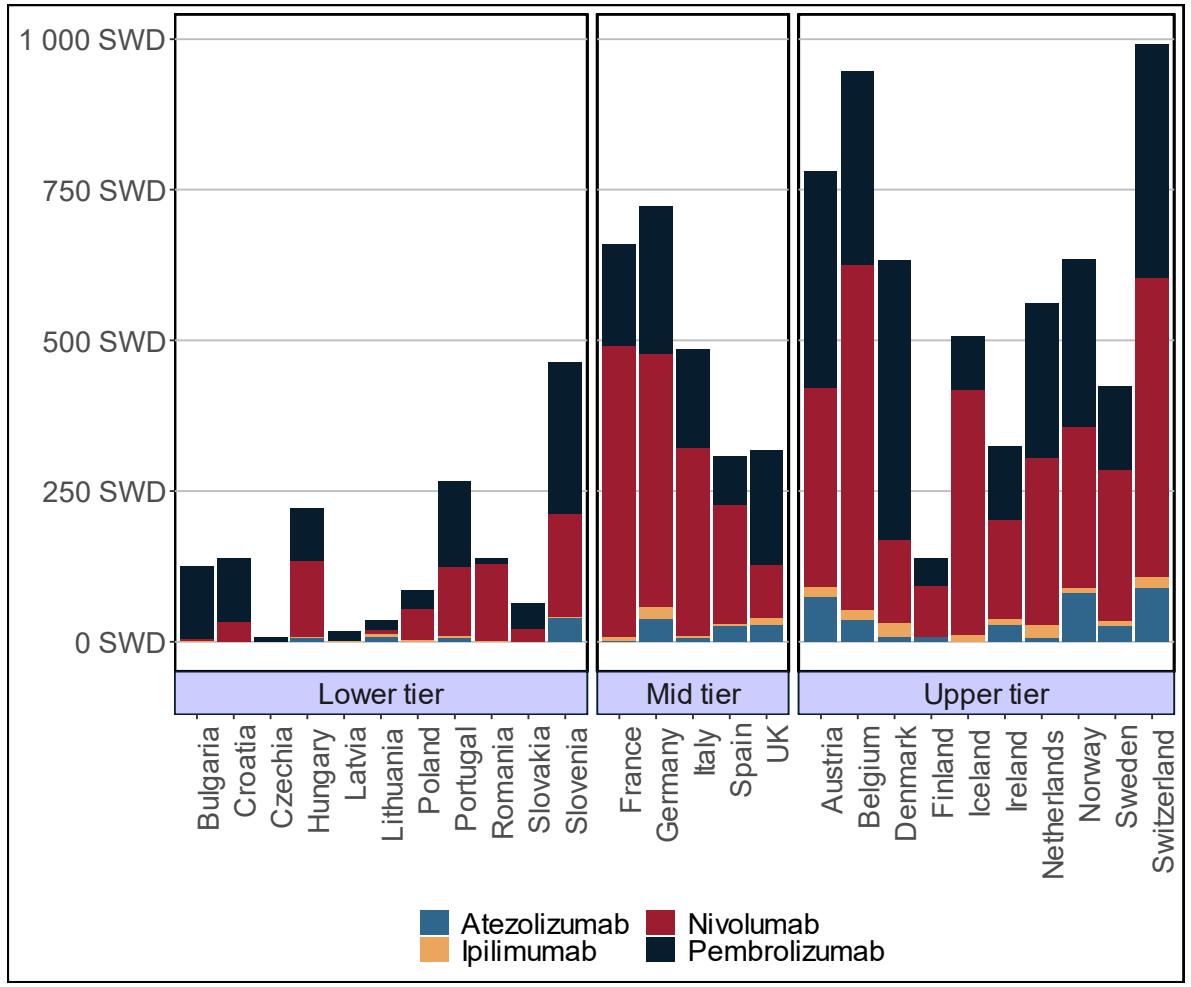
Fairly similar uptake among the Big5 countries

Very low uptake in all poorer countries

Uptake of medicines in multiple myeloma expressed as sales in SWD per case, 2018

Notes: SWD = standard weekly dose ; case = number of mortality cases from multiple myeloma
Source: IQVIA

Access - immunotherapy medicines (volume)



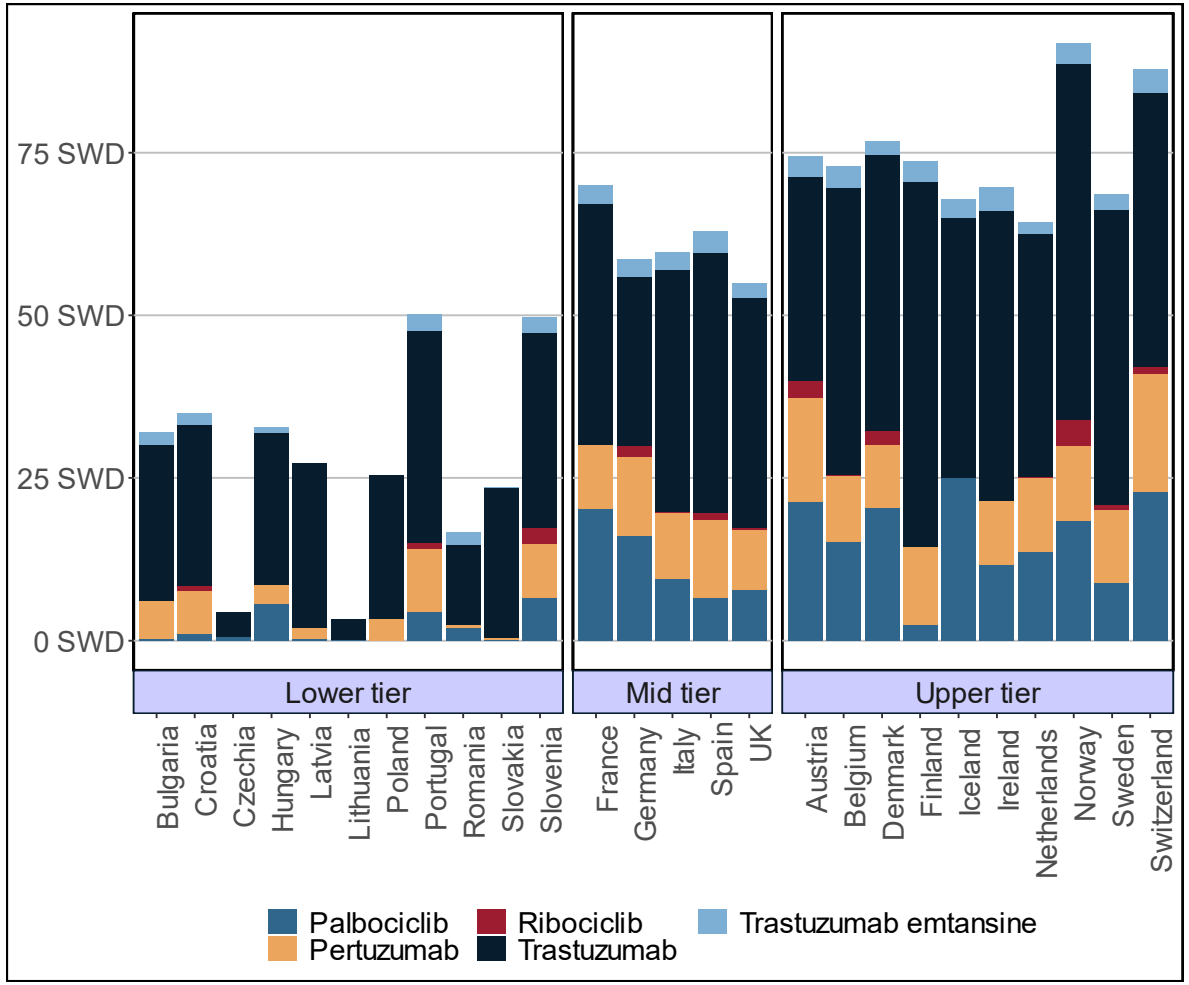
Large differences in uptake even within country groups

Very low uptake in almost all poorer countries

Uptake of immunotherapy medicines expressed as sales in SWD per 100,000 inhabitants, 2018

Notes: SWD = standard weekly dose
Source: IQVIA

Access - breast cancer medicines (volume)



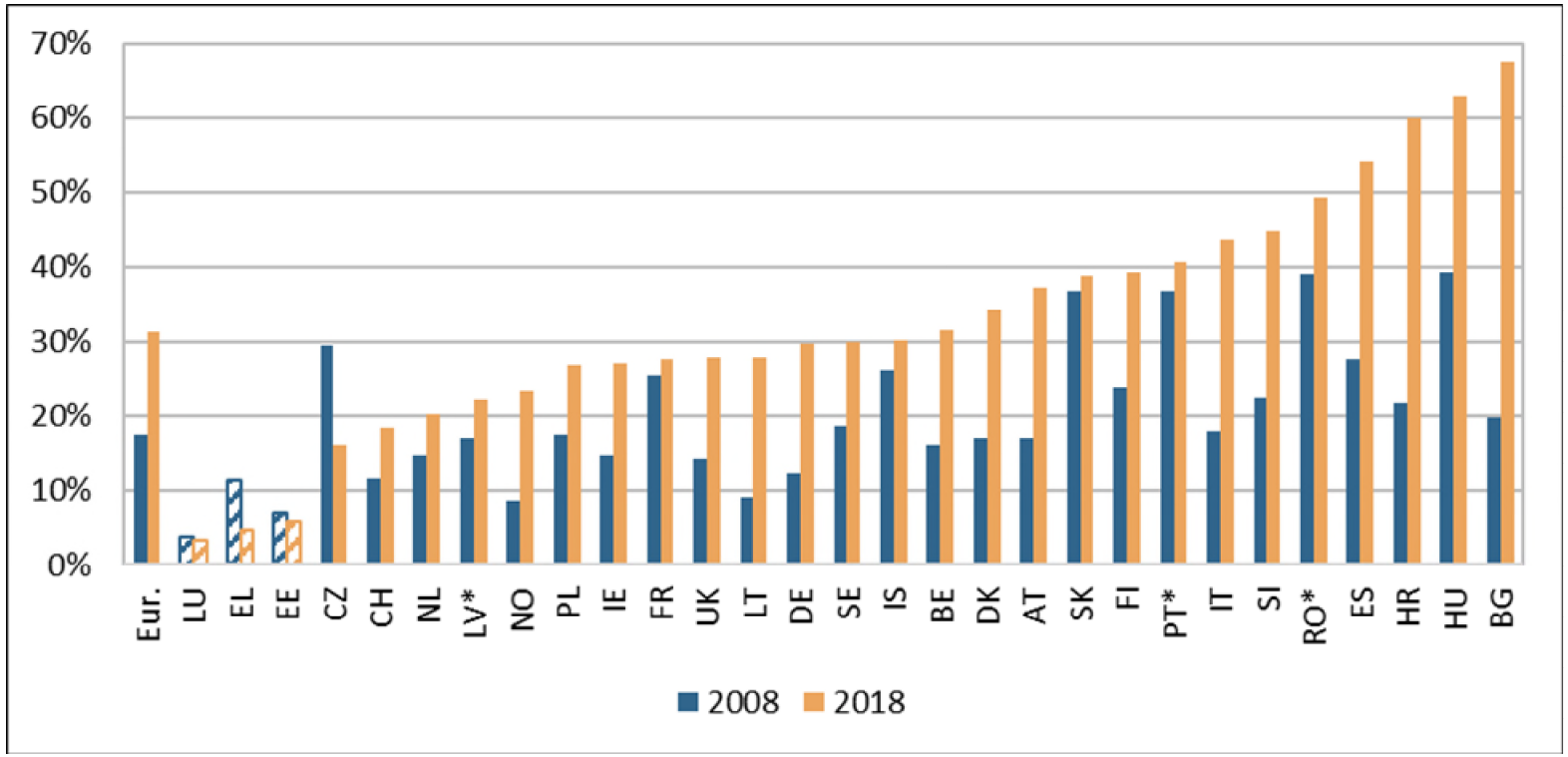
Fairly similar uptake in wealthier countries

Much lower uptake (≈1/3) in poorer countries than in most wealthier countries

Uptake of medicines in breast cancer expressed as sales in SWD per case, 2018

Notes: SWD = standard weekly dose ; case = number of mortality cases from breast cancer
Source: IQVIA

Cancer medicines account for a growing share of direct costs



Share of the cost of cancer medicines on the direct costs of cancer, 2008 & 2018

Notes: Hatched bars indicate that data for cancer medicines for EE, EL, and LU only comprise retail sales. * The share in 2008 for PT is from 2010, for RO from 2009, and for LV from 2014.

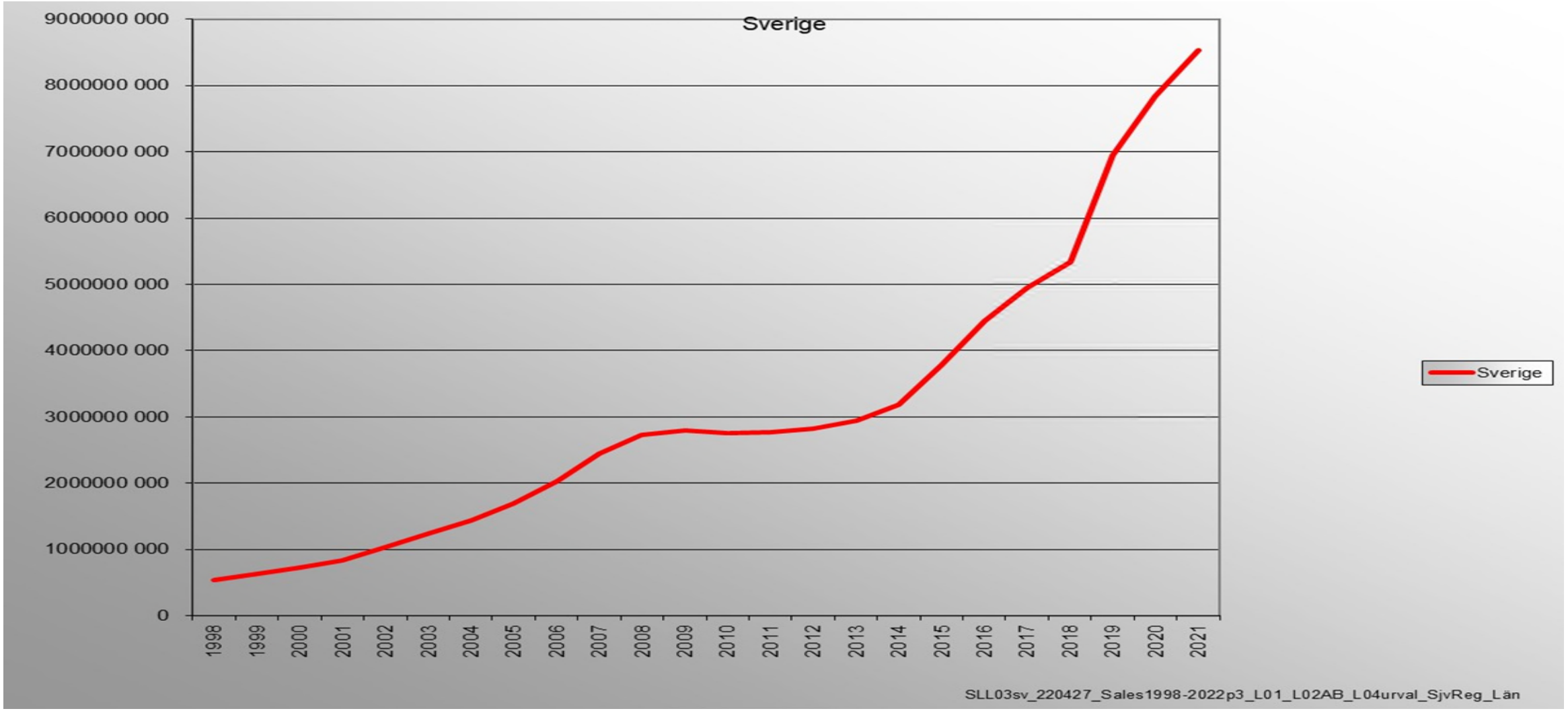
Share of cancer medicines increased from 17% to 31% in Europe

Poorer countries spend a larger share of direct costs spent on cancer medicines

Wealthiest countries spend the lowest share of direct costs on cancer medicines

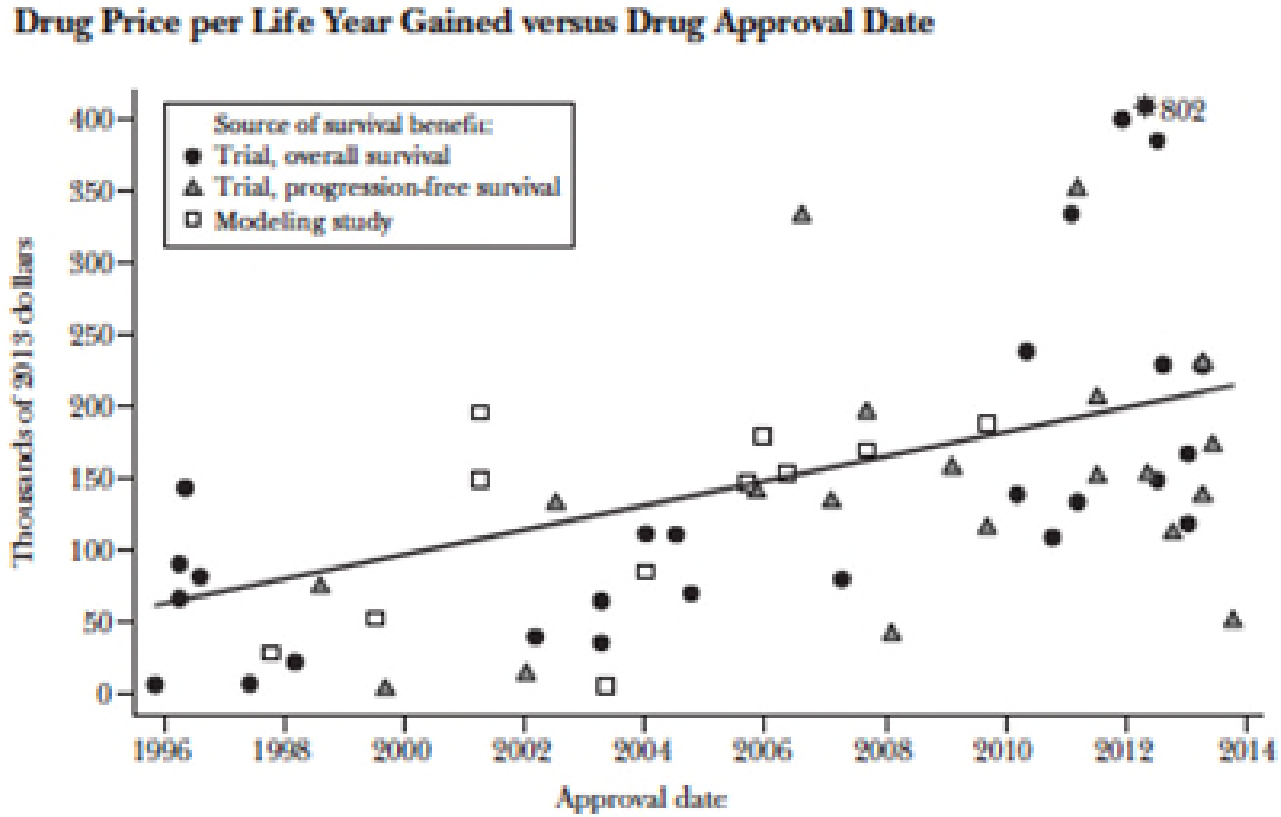
Spending on oncology drugs in Sweden

60% increase from 2018 to 2021 based on list prices



Cost-effectiveness of new cancer medicines

- A minority of new cancer drugs come to the market with data on OS and quality of life
- Thus estimates of cost-effectiveness are based on models with high uncertainty about predictions



Howard et al, Journal of Economic Perspectives 2015 (29) 139–162

Summary – patient access to oncology drugs in Europe

- Cost of cancer drugs has increase by a factor 2.5 between 2008 and 2018 based on list prices
  - Cost of cancer drugs has increase by 60% in Sweden between 2018-2021
  - Poor correlation between price and impact on survival and quality of life
- Much greater access to new cancer medicines in wealthier than in poorer countries
  - Irrespective of measuring access in terms of value or volume
  - No noticeable convergence over time (see previous Comparator reports)
- Largest country differences in uptake (in volume) in 2018 in
  - Immuno-oncology medicines
  - Multiple myeloma medicines
  - Breast cancer medicines
- Large differences in access even between “similar” countries