

International Benefits Transfer: Methods and Validity Tests

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Outline

- How is international BT different?
- 5-country health study
- some observations

Unique aspects of international BT



- Currency conversion
- Differences in measurable characteristics of populations
- Differences culture, shared experiences, etc.

Currency Conversion

- How should WTP measured in one country be converted to another country's currency?
 - Assume identical preferences between countries
 - $V(I, p, Q_0) = V(I-CV, p, Q_1)$
 - Indirect utility function homogenous degree 0 in prices and income
 - $V(\beta*I, \beta*p, Q_0) = V(\beta*I-\beta*CV, \beta*p, Q_1)$
 - Use exchange rate that measures differences in prices (PPP) – not financial exchange rate

Currency Conversion

5-Country Study

	Financial Exchange Rate	PPP-Adjusted Exchange Rate	
		National	City
England	1.00	1.00	1.00
Oslo	12.47	14.21	15.13
Amsterdam	3.36	3.16	3.18
Lisbon	305.81	189.81	276.08
Vigo, Spain	252.98	191.36	N/A

Currency Conversion

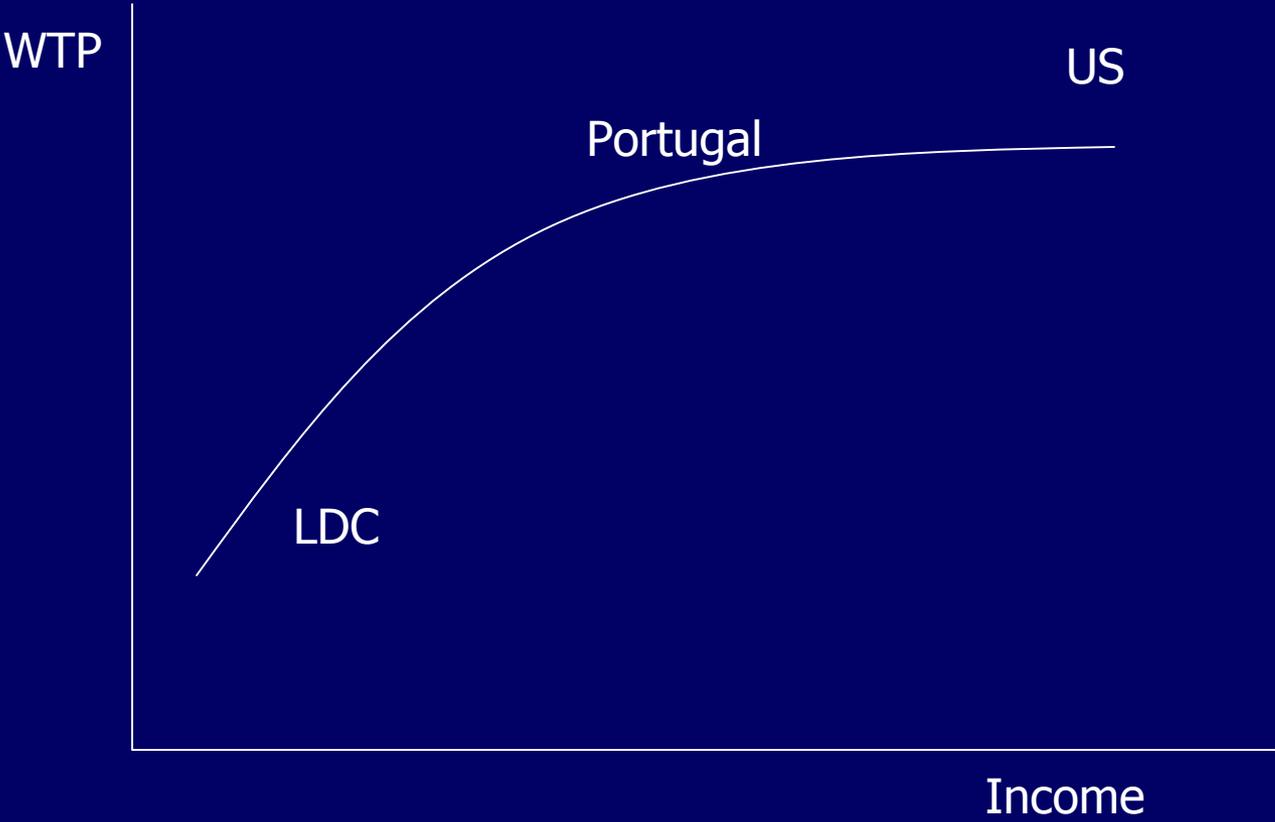
- More-difficult issue - differences in in-kind income
 - Free health care, college tuition, retirement income increases residents' real incomes
 - Don't need to save as much – can pay more for environmental goods
 - How to measure?

Measurable Characteristics

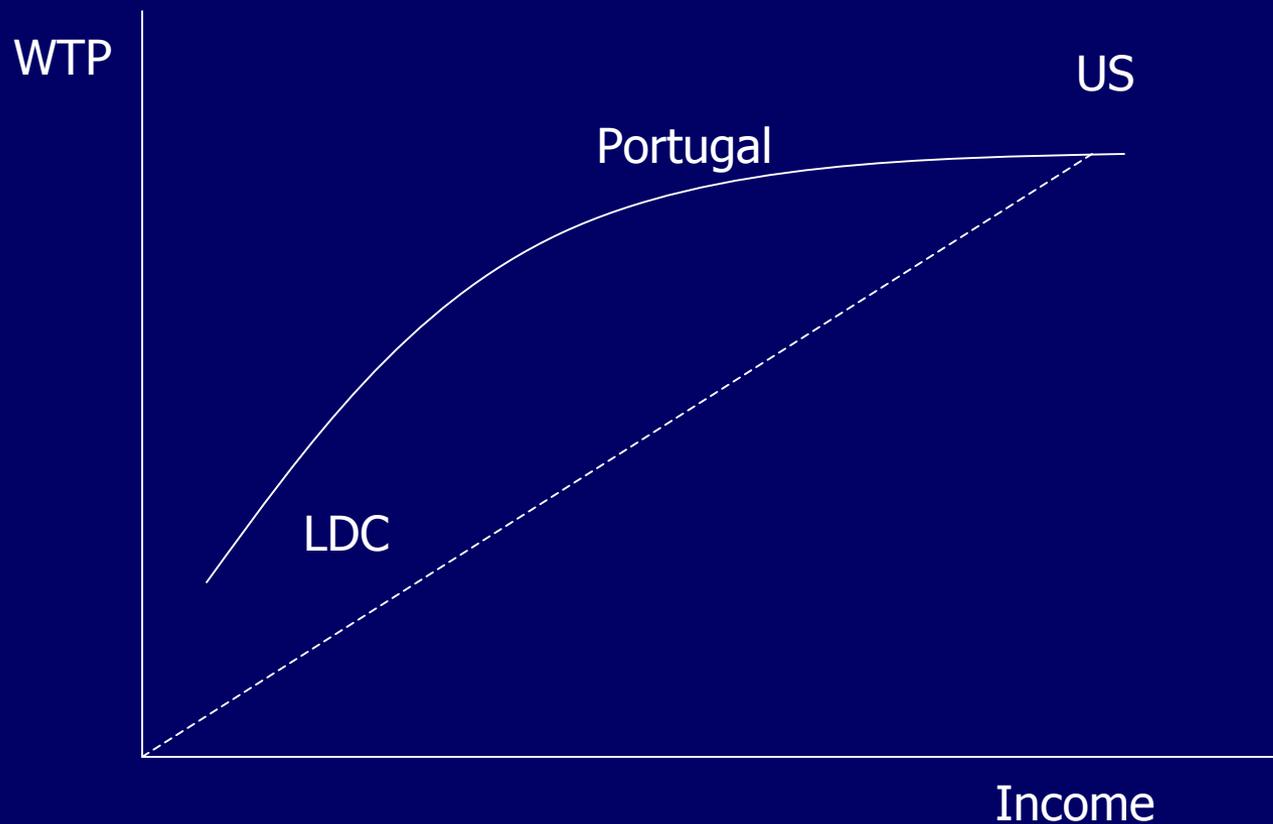


- Average income, age, education differs among countries
- Two standard approaches:
 - Value transfer with income adjustment
 - Value function transfer

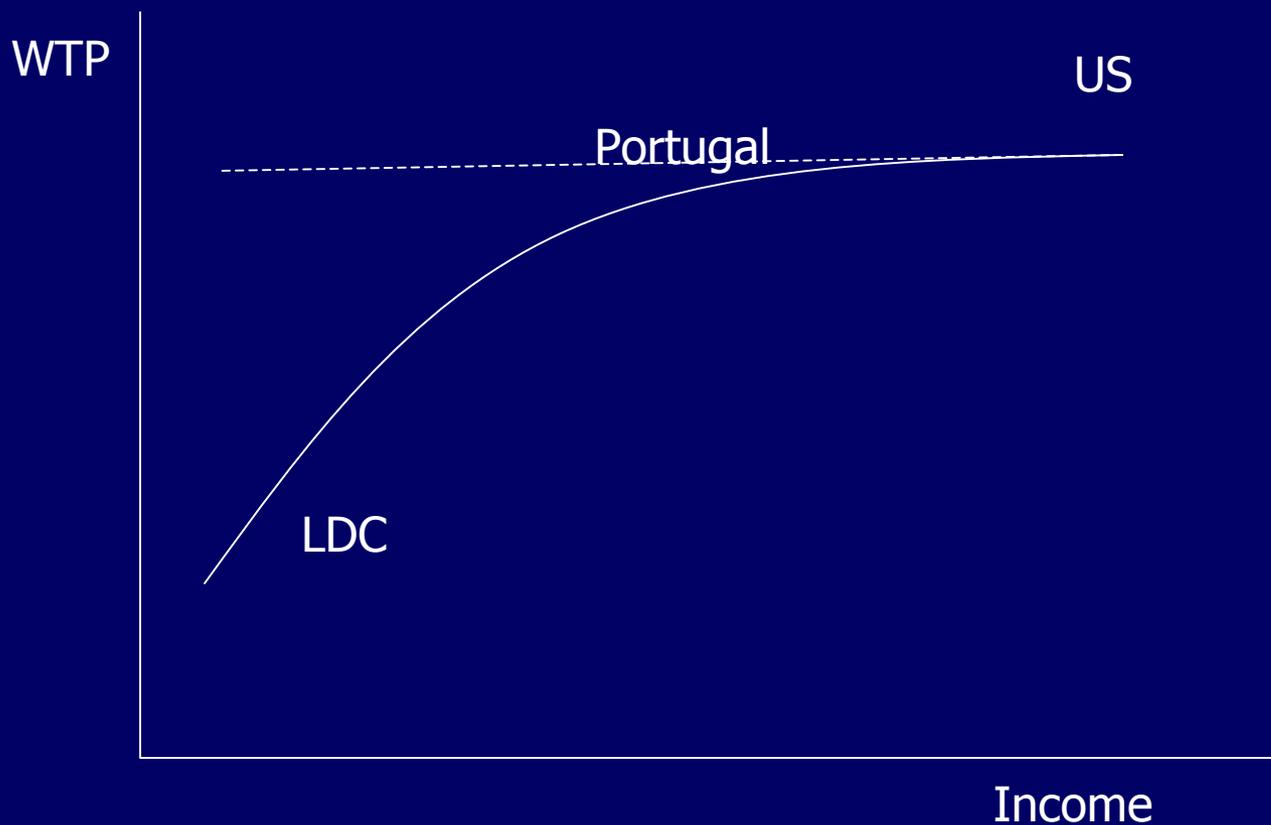
Income Adjustment of WTP



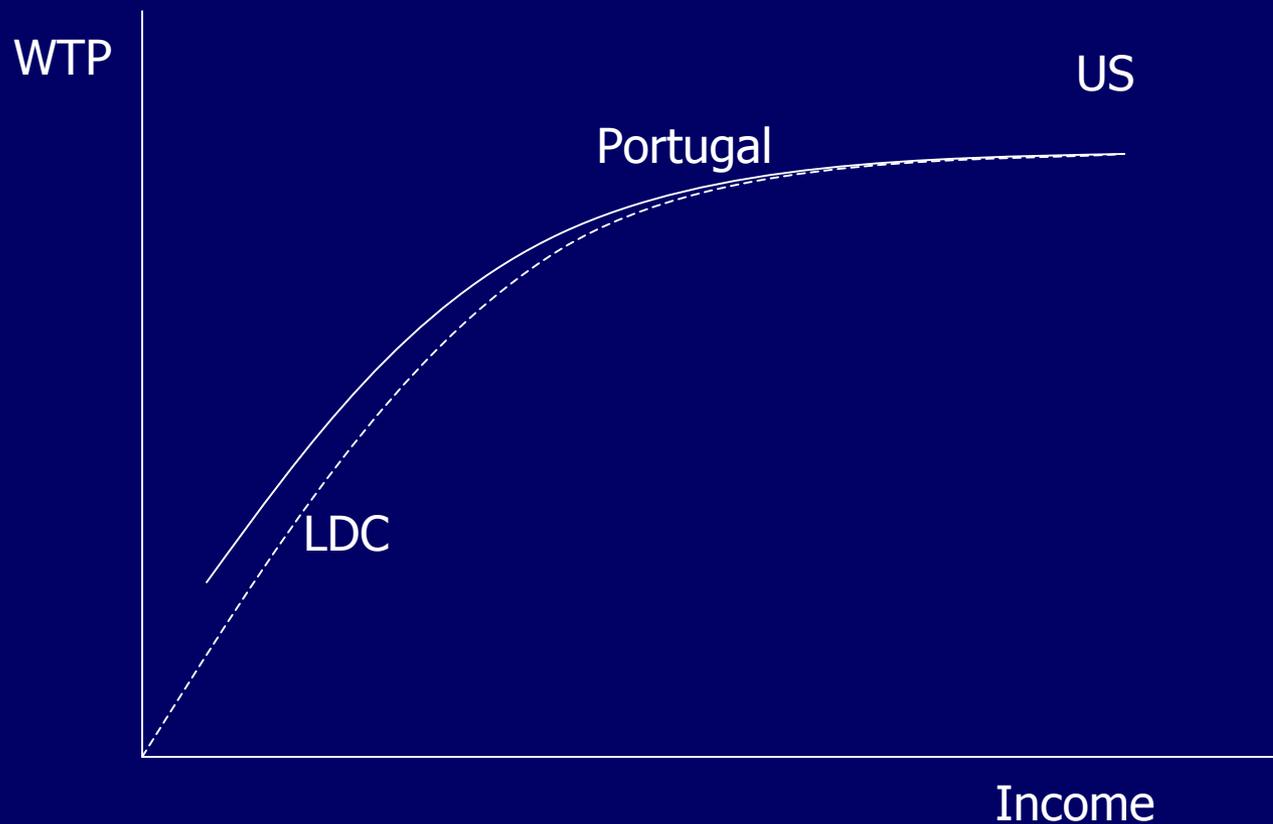
Income Adjustment – Ratio Approach



Income Adjustment – Value Function Approach



Income Adjustment – CEI approach



Differences in Culture, etc.

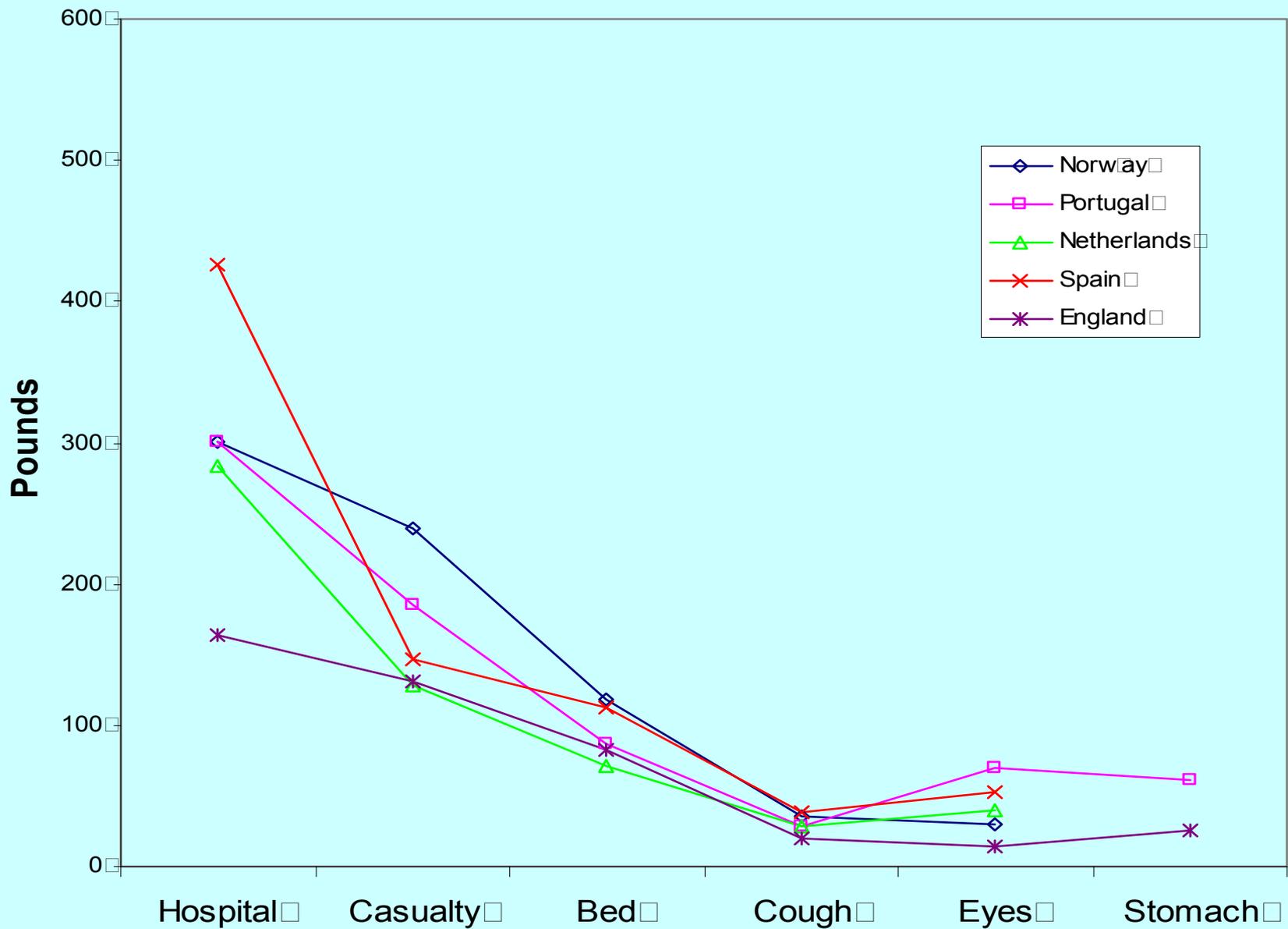


- Are you measuring differences in preferences, or something else
 - Different perceptions of the good
 - Different contexts

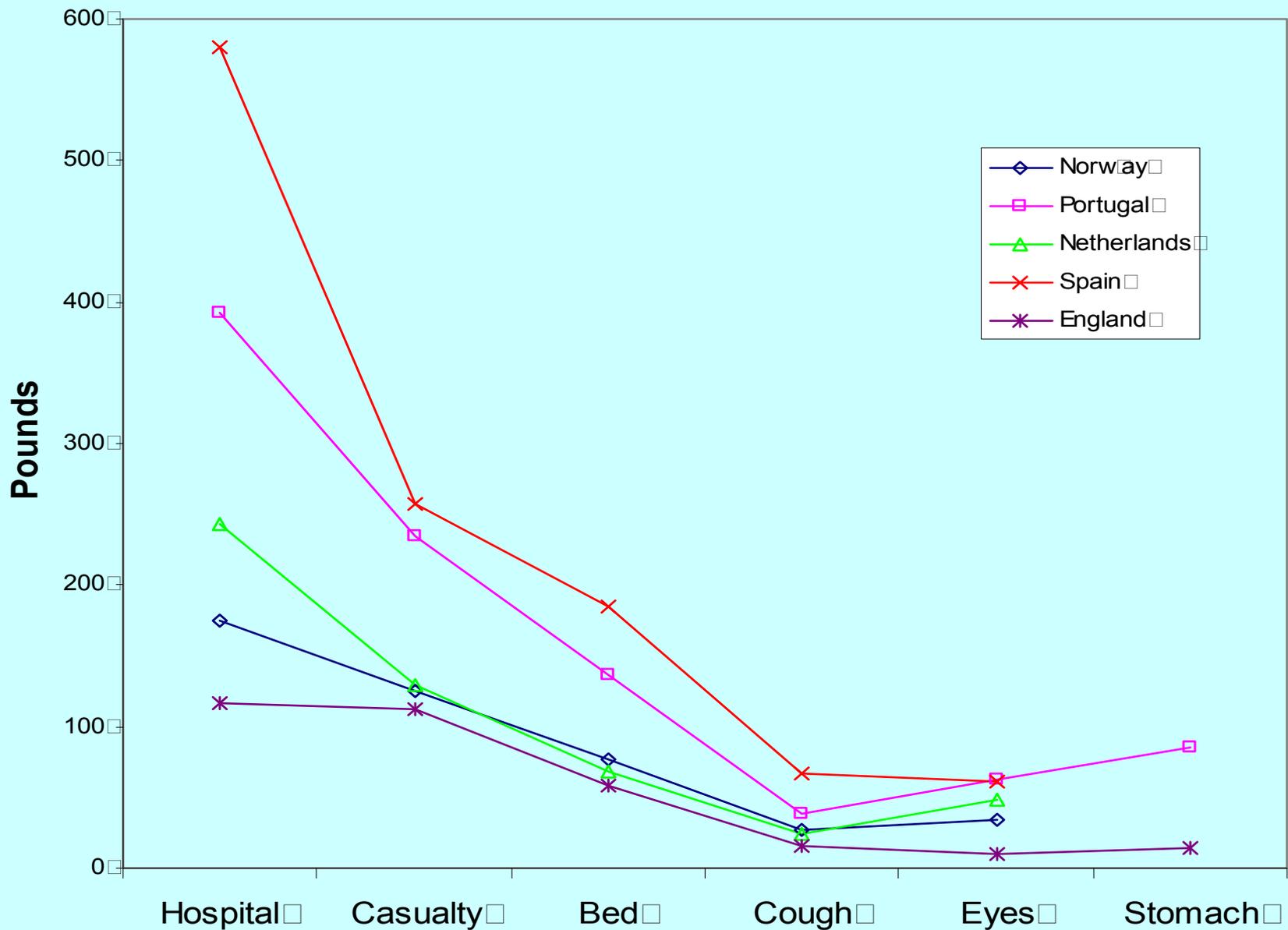
5-Country Study

- CV study of WTP to avoid ill-health episodes
 - symptom day, 3 bed days, ER visit, hospital admission
 - modified payment card format
 - in-person interviews
 - “magic wand” policy mechanism

Mean WTP in Each Country



Predicted WTP for a "Standard" Respondent



Transfer Tests

- Common Value Function – consistently rejected at high levels of significance
- Common WTP values –
 - Spain/Portugal significantly higher WTP than England/Norway/Netherlands

Transfer Error

- Pick one country as policy site – all other countries as study site

- $$TE = \frac{|WTP_T - WTP_{PS}|}{WTP_{PS}}$$

Transfer Error

- Average TE
 - Naïve Value Transfer: 38%
 - Value Transfer with Income Adjustment (ratio method): 37%
 - Value Function Transfer: 38%
- Worst transfer error = +230%
- $\frac{3}{4}$ of transfers had TE less than 50%
- Excluding “eyes” episode drops average transfer error to 27%

Observations

- Value Function Transfer does not necessarily perform better than simpler approaches
- With enough data, transfer tests will always be rejected
- TE is calculated under assumption that WTP_{PS} known
 - Suppose you conducted same test using two different samples from the same population
 - Average TE = 16%

Observations

- How much error is too much?
- What probability of a large error is too high?
- Bayesian approaches – not a question of either/or
- Need more inter-country studies

Thank you