



Valuing accident risks and time in HEATCO

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Background of the HEATCO project

All EU countries apply an appraisal framework for transport projects, BUT

- The frameworks differ considerably in scope, sophistication, methodology and parameter values
- Research results are not fully transferred between countries
- There are problems with trans-national projects – harmonised guidelines are needed for the TEN
- Therefore HEATCO – *Harmonised European Approaches for Transport Costing and Project Assessment*

Project duration: March 2004 – May 2006, 14 Partners, coordination: IER

<http://heatco.ier.uni-stuttgart.de/>



HEATCO – areas considered

- General appraisal framework
- Construction, maintenance and operating costs
- Travel time and congestion
- Accident risks
- Air pollution
- Noise
- Greenhouse gases
- Wider economic impacts



HEATCO – main principles

- Balance of pragmatism and theoretical robustness
- Consider data availability (transport models)
- Identify state-of-the-art methodologies for valuation (“minimum standard”)
- Use of *national values* recommended, if based on state-of-the-art studies
- Provide “fall-back” values which can be used otherwise



Value of changes in accident risks I

Impacts considered

- Fatality: death caused by the accident
- Serious injury: injury requiring hospital treatment and having lasting injuries (excl. fatalities)
- Slight injury: injury not requiring hospital treatment or effects quickly subside
- Accidents with material damages only
(associated costs small compared to casualties; cost data assumed to be available in different countries, therefore no fallback values provided)
- Correction for unreported accident impacts recommended for road transport



Value of changes in accident risks II

Cost components and requirements for national values

- **Value of safety per se:** WTP to reduce accident risks
requirement: values from up-to-date stated preferences studies
- **Direct cost:** medical and rehabilitation cost, legal cost, emergency services and property damage cost
requirement: cost data for the country under assessment
- **Indirect cost:** production capacity lost for economy
requirement: cost data for the country under assessment



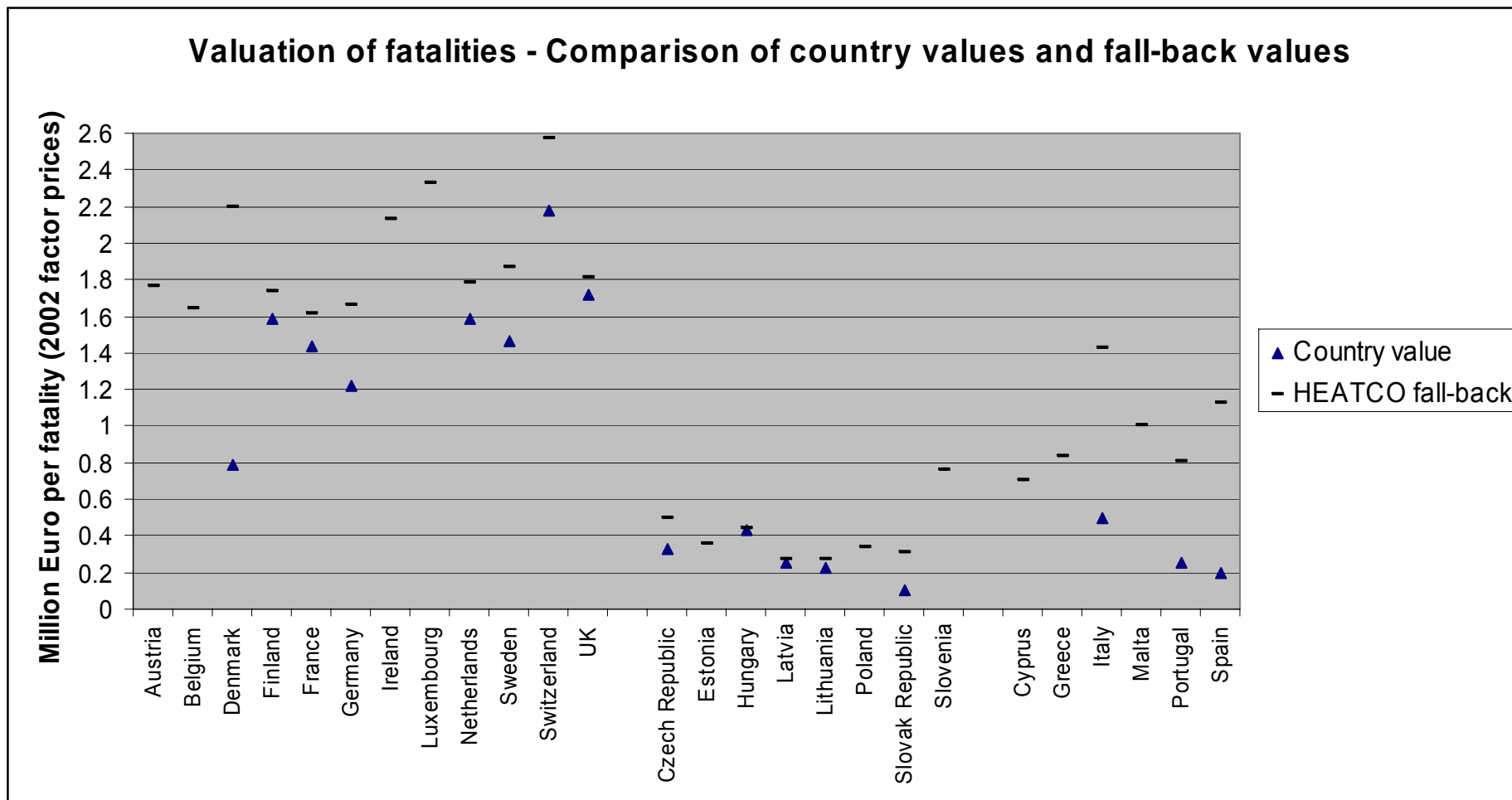
Derivation of fall-back values for casualties

- Value of safety per se
 - i. Value of a prevented fatality (VPF)
based on meta-analysis carried out in UNITE
→ EU25 average €1.25 million (2002 factor cost)
 - ii. Severe injury 13%, slight injury 1% of VPF (ECMT 1998)
 - iii. Transfer to country-specific values based on GDP per capita (PPP) with
income elasticity of 1.0

- Direct and indirect economic costs
 - i. for fatality 10% of the value of safety per se (UNITE)
 - ii. severe and slight injury based on European Commission (1994)

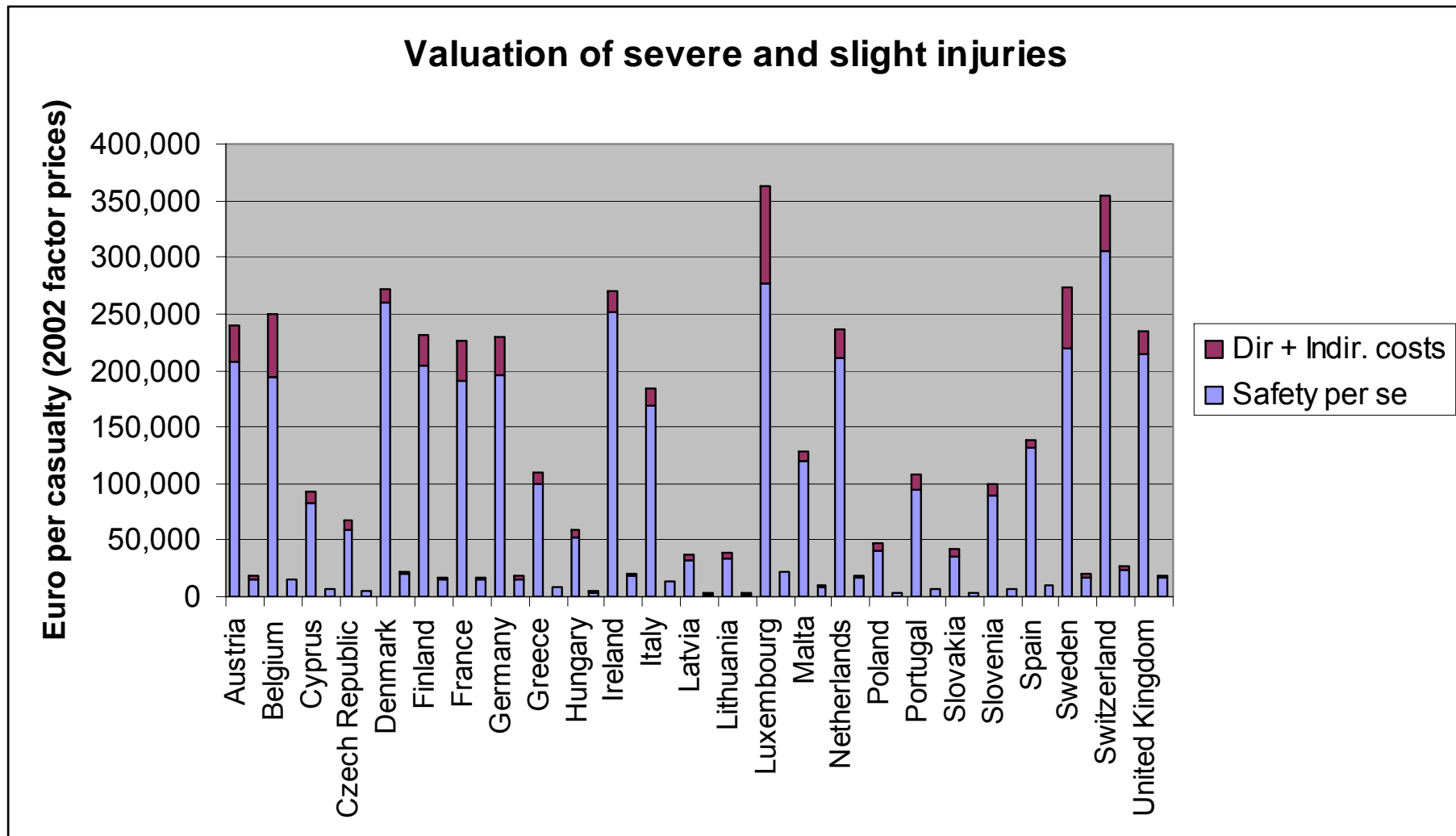


Fall-back values for casualties I





Fall-back values for casualties II





Value of travel time savings (VTTS)

- Proposes disaggregation – income, journey purpose, journey length etc.
but: level of disaggregation dictated by transport modelling system
- Meta-analysis of 77 studies from 30 countries for passenger and 33 studies from 18 countries for freight
→ Provision of ‘fall-back’ values
- Treatment of small time changes
 - i. most countries with guidelines use constant VTTS
 - ii. recommendation: use constant values, identify proportion of benefit due to time changes < 3mins
- Valuation of delays in public transport:
value travel time in excess of that expected with a factor of 2.5
- Intertemporal income elasticity: 0.7



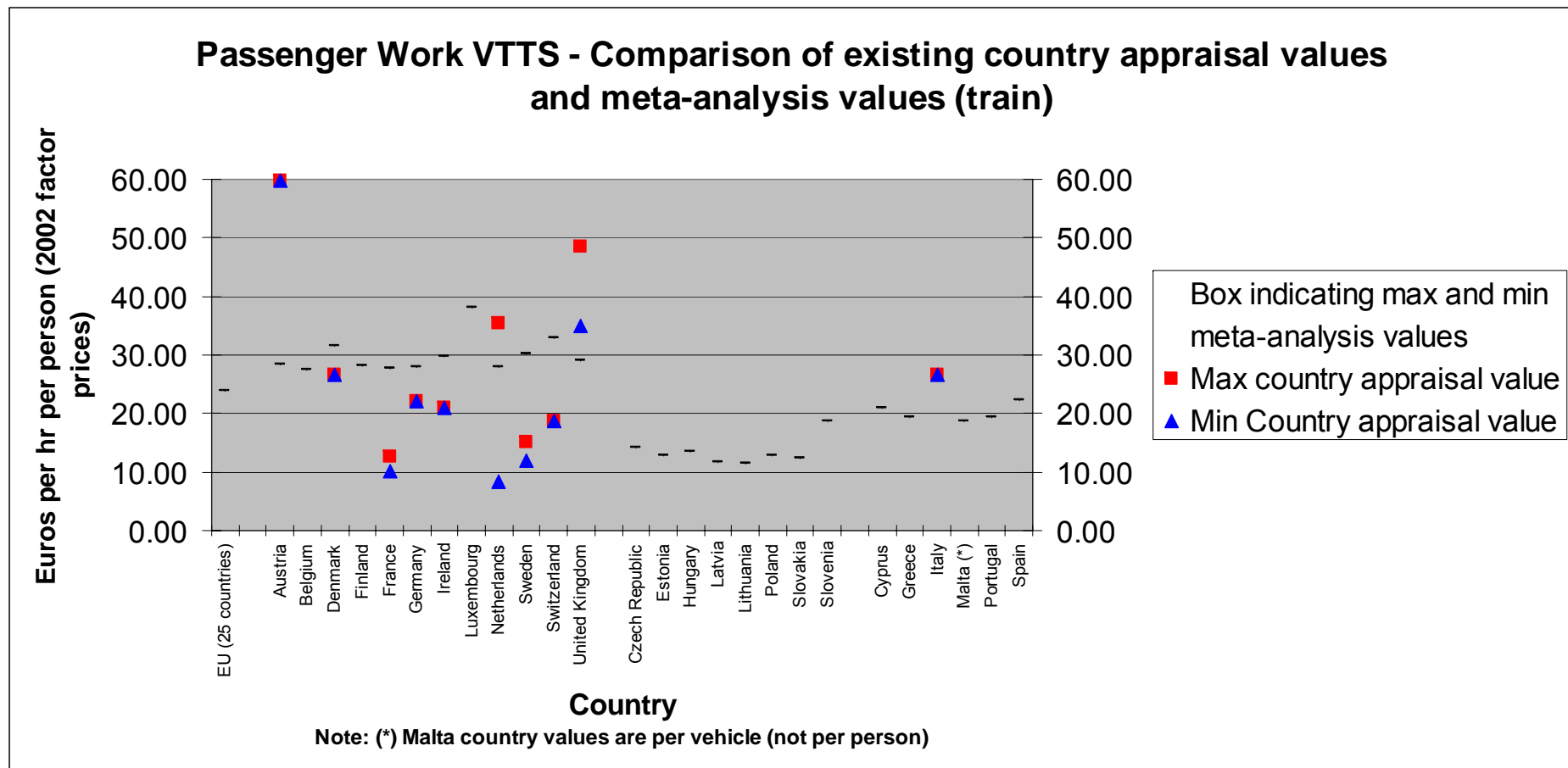
Value of time – methodology

Trip category	Minimum approach	More sophisticated
Passenger – work	Cost saving (meta-analysis)	Hensher approach
Passenger – non-work	Willingness-to-pay (meta-analysis)	
Commercial Goods traffic	Cost saving (meta-analysis)	Willingness-to-pay

Trip category	Minimum disaggregation	Units
Passenger – work	None	€/person-hr or €/vehicle-hr
Passenger – non-work	None	€/person-hr or €/vehicle-hr
Commercial Goods traffic	Mode (road, rail, sea, waterway, air)	€/tonne-hr or €/vehicle-hr



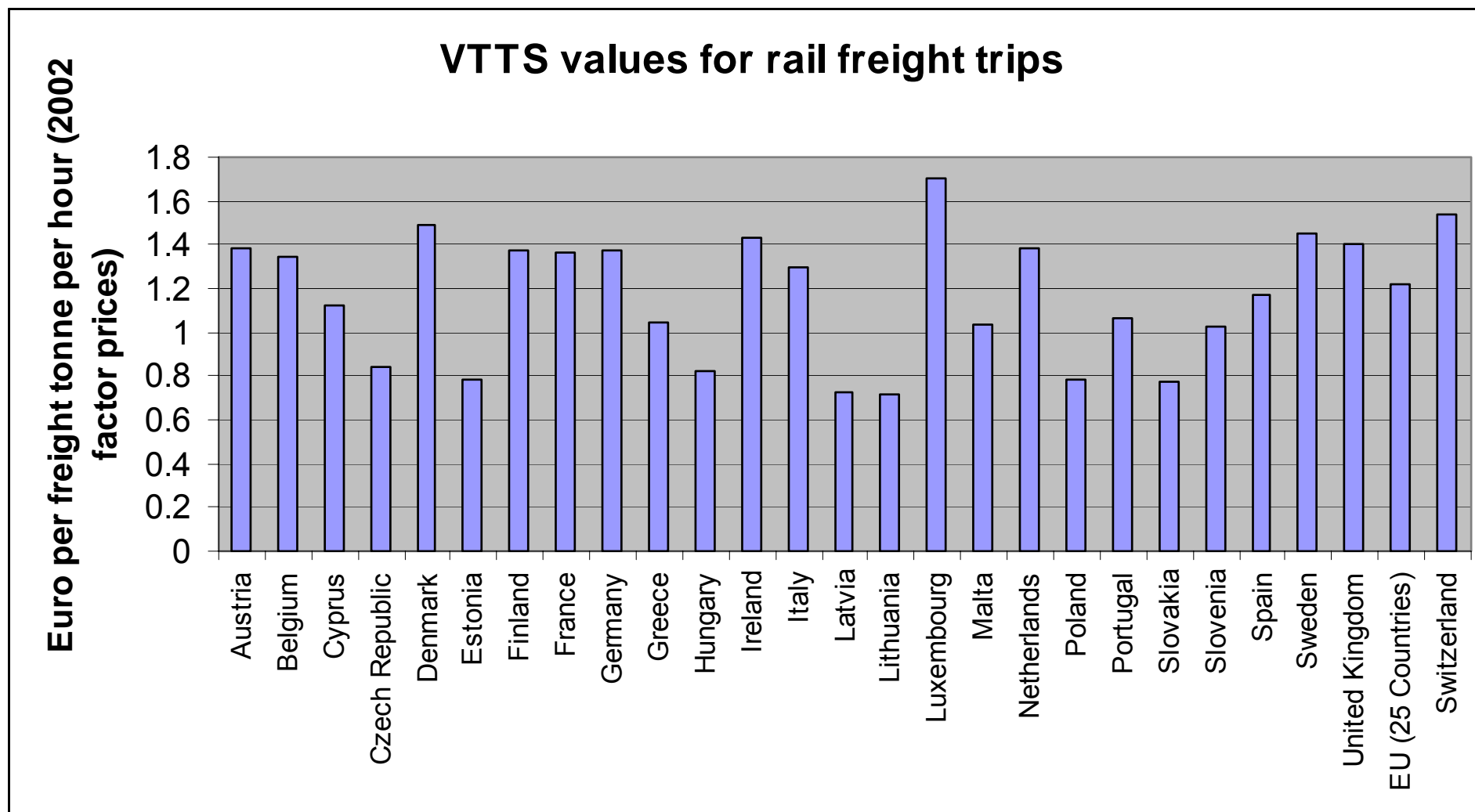
Value of time – fall-back values I



Source: Annex A to HEATCO D5



Value of time – fall-back values II





Summary

- HEATCO provides a consistent framework for valuation of accident risks and value of time (as well as other components of project appraisal), which can be applied for valuing CSIs
- Central principle and recommendation:
 use up-to-date values from national studies
- Fall-back values are provided in case no such values are available