

# Comments on the Robinson et al. Mortality Risk Valuation Paper

By

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# Main Points of the Paper

- What is the Value per Statistical Life (VSL)?
- How is it used?
- How can we form VSL values for other countries when we do not have original studies from those countries?

# Approach: Benefit Transfer

$$VSL_X = VSL_{USA} \left( \frac{income_X}{income_{USA}} \right)^\alpha$$

\$9 million

- Must decide if  $\alpha=1$ .
- Then compare  $VSL_X$  with values from original studies in country X and others.

# How is the VSL estimated?

## Revealed Preference Studies (actual purchases and decisions)

- Wage-risk studies
- Housing transactions
- Price of cars with additional safety features (e.g., collision prevention assist, etc.)
- Time v. safety tradeoffs
  - Leon and Miguel (2015)
  - Kremer et al. (2011)
- Must be observing voluntary decisions

**Difficult; heavy data requirements; lots of assumptions needed about markets, people, data**

## Stated Preference Studies (surveys; hypothetical decisions)

- Two major types
  - Contingent valuation surveys (“What is the most you would pay for...?”)
  - Choice experiments (see example)
- Could be done like any of the RP approaches here listed

**Difficult; heavy reliance on statistical models; people may not understand the valuation task**

# Questions & Comments

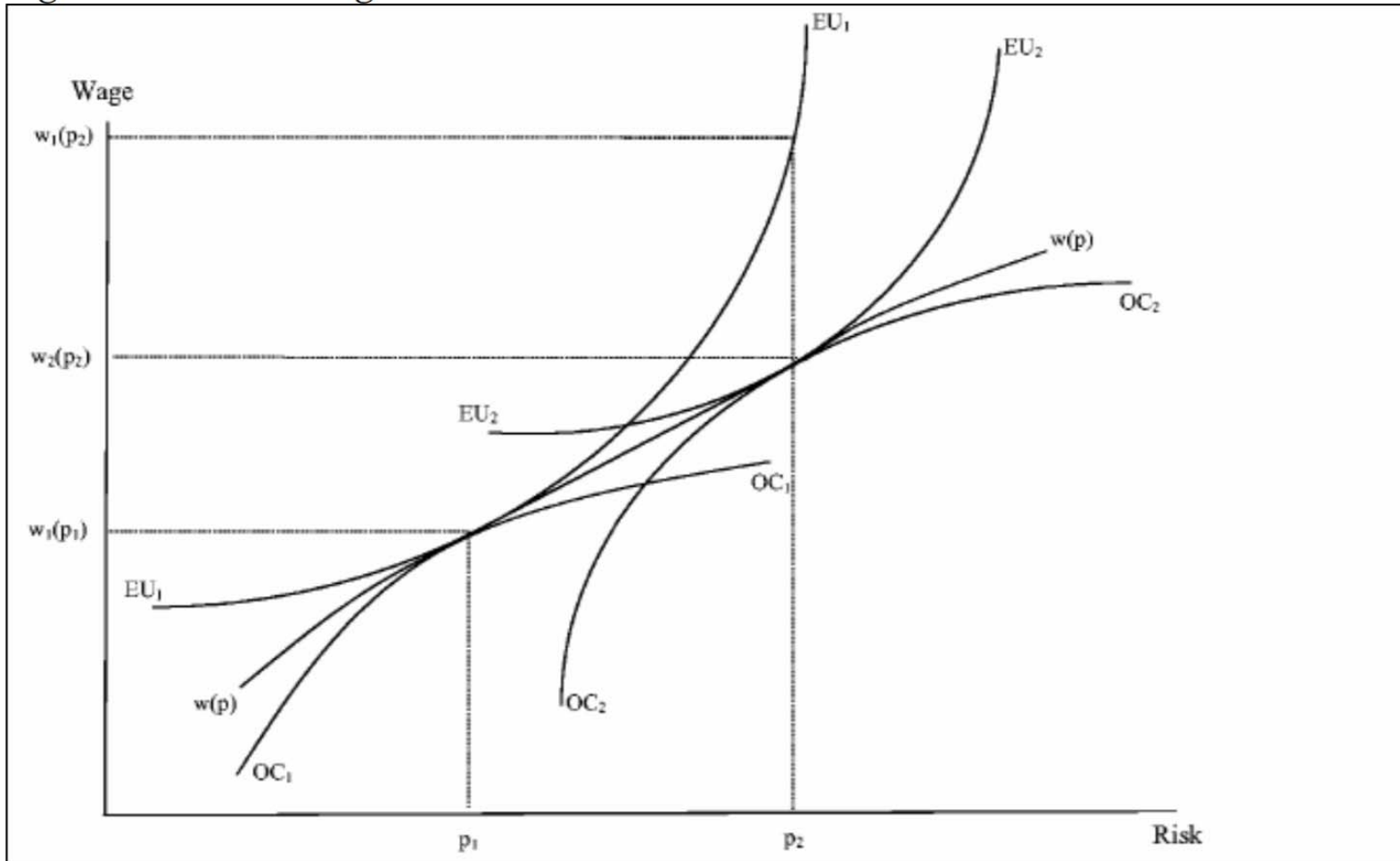
- Selection of the studies used to come up with  $VSL_{USA} = \$9$  million
  - 6 wage-risk studies
  - 3 stated-preference studies
- Selection of the studies from low- and middle-income countries
  - 25 candidate studies
  - Final selection: 17 stated-preference studies + 8 wage-risk studies

# Selection of VSLs for the US: Wage-Risk Studies

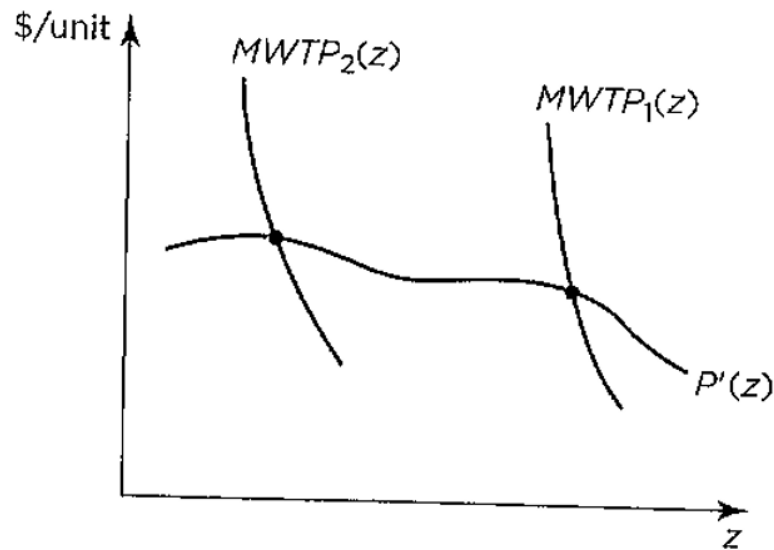
- 6 wage-risk studies...
  - Excludes 3 high-quality studies that use panel data and instrument for risk...!
  - ...because they do not cover women. In the CFOI, men's risks are 5x those of women → these studies were seeking to impute risks to workers more precisely.
  - Keeps studies of worse quality (cross-sections, risks are not instrumented for, large variations in VSL within the same study)
- Double standards!
  - No one requires strict proportionality from a wage-risk study
  - Generally content with finding a statistically significant association
  - Wage-risk equations describe the market equilibrium, but technically do not give the marginal WTP
- Concerns remain that...
  - the coefficient on risk may capture the effect of risk *and* something else
  - labor markets have changed

# Hedonic wage curve

Figure 1. Hedonic wage curve



Source: Viscusi and Aldy (2003).



**FIGURE 8.8** Marginal willingness to pay for  $z$ .  $p'(z)$ , slope of hedonic price line with respect to  $z$  (marginal value of  $z$ );  $MWTP_i(z)$ , marginal willingness to pay for one more unit of  $z$ , consumers  $i = 1, 2$ .



# Selection of VSLs for the US: Stated-Preference Studies

- 3 stated-preference studies.
  - Two are by Jim Hammitt (with co-authors)
  - The third uses an extremely complicated scenario and modeling framework
  - Fixation with requirement that WTP be strictly proportional to the risk reduction
  - Why not...
    - the OECD meta-analysis?
    - The figures used by the Health Executive in the UK?

# Selection of VSLs from other countries

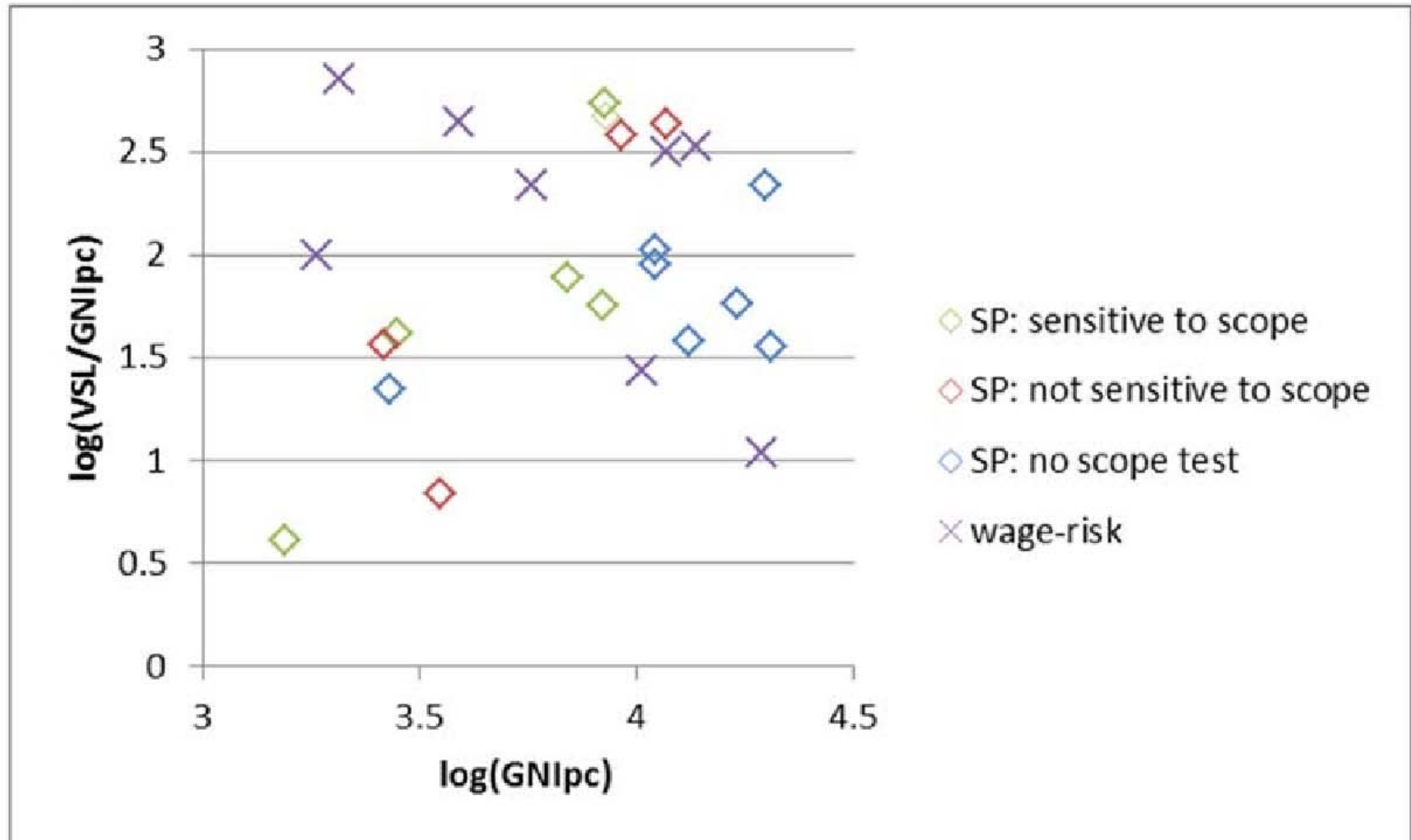
## General considerations

- Approaches that are well-established in developed countries are not always possible elsewhere
  - Housing transactions may be just within families
  - Different labor markets
- In surveys, issues of literacy or cultural factors that impede honest answers

## Robinson et al. paper

- Tell us more about the SP papers you selected
  - Quality of work
  - Sample size
  - If survey based, was this...
    - CV or discrete choice experiments?
    - If CV, how was WTP elicited (open-ended or yes/no questions)?
    - If CV, what distributional assumption and model were used to compute the VSL?
- Selected wage-risk studies do not pass muster (cross sections; risks not instrumented for; perceived risk likewise not instrumented for; no info re: response rates; etc.)

**Figure 3.5. Ratio of VSL to GNI per Capita (GNIpc)**



Thank you!  
Questions and comments?  
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Anna Alberini <sup>a</sup>  , Milan Ščasný <sup>b</sup> 

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y

# Example Choice Card

Chance of getting cancer over 5 years

**25 in 1 000**

**20 in 1 000**

Chance of 5-year survival (if you get cancer)

**60 %**

**70 %**

Effects on everyday activities (if you get cancer)

**Unable to work**

**Unable to work**

Pain (if you get cancer)

**Mild pain**

**Mild pain**

Annual cost for each of the next 5 years (total in parentheses)

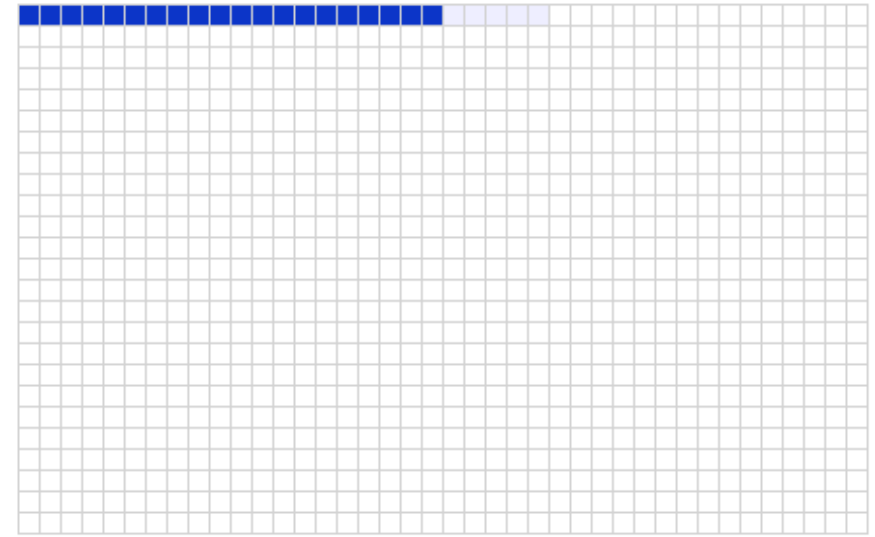
**£ 0**  
(in total £ 0 )

**£ 210**  
(in total  
**£ 1050**)

Which would you choose?

**The current situation**

**Option A (reduced risks)**



■ - 1 in 1000 over 5 years chance of getting cancer  
■ - reduced chance to get cancer

0% 60% 70% 100%



■ - 10% chance of 5-year survival  
■ - increased chance to survive