

Use of Function Points for PPIs



19th Voorburg Group, Ottawa 2004



Outline

- ABS approach
- Results from development
- Quarterly PPI?
- The future

Pricing to constant quality

- Assumptions underlying Function Point approach
 - Unit cost & Unit price
 - Labour definitions
 - Function points

Index methodology

- Specification pricing
 - Misses productivity gains
- Function point analysis

Unit Price \cong Unit Cost

$$\begin{aligned} &= \frac{\text{Total Cost}}{\text{Total Function Points}} \\ &= \frac{\text{Total Labour}}{\text{Total Function Points}} \times \frac{\text{Total Cost}}{\text{Total Labour}} \end{aligned}$$

Decomposition

- Labour Cost component
 - Approximate by Wage Cost Index
- Labour Productivity component
 - Determined through function points

Decomposed deflator

$$\text{Wage cost index} = \frac{\text{Wage costs}}{\text{Labour inputs}} = \frac{C_L}{L}$$

$$\text{Productivity index} = \frac{\text{Output}}{\text{Labour inputs}} = \frac{Q}{L}$$

$$\text{Deflator} = \frac{\text{Wage cost index}}{\text{Productivity index}}$$

$$= \frac{C_L}{L} \times \frac{L}{Q} = \frac{C_L}{Q} \approx \frac{C}{Q}$$

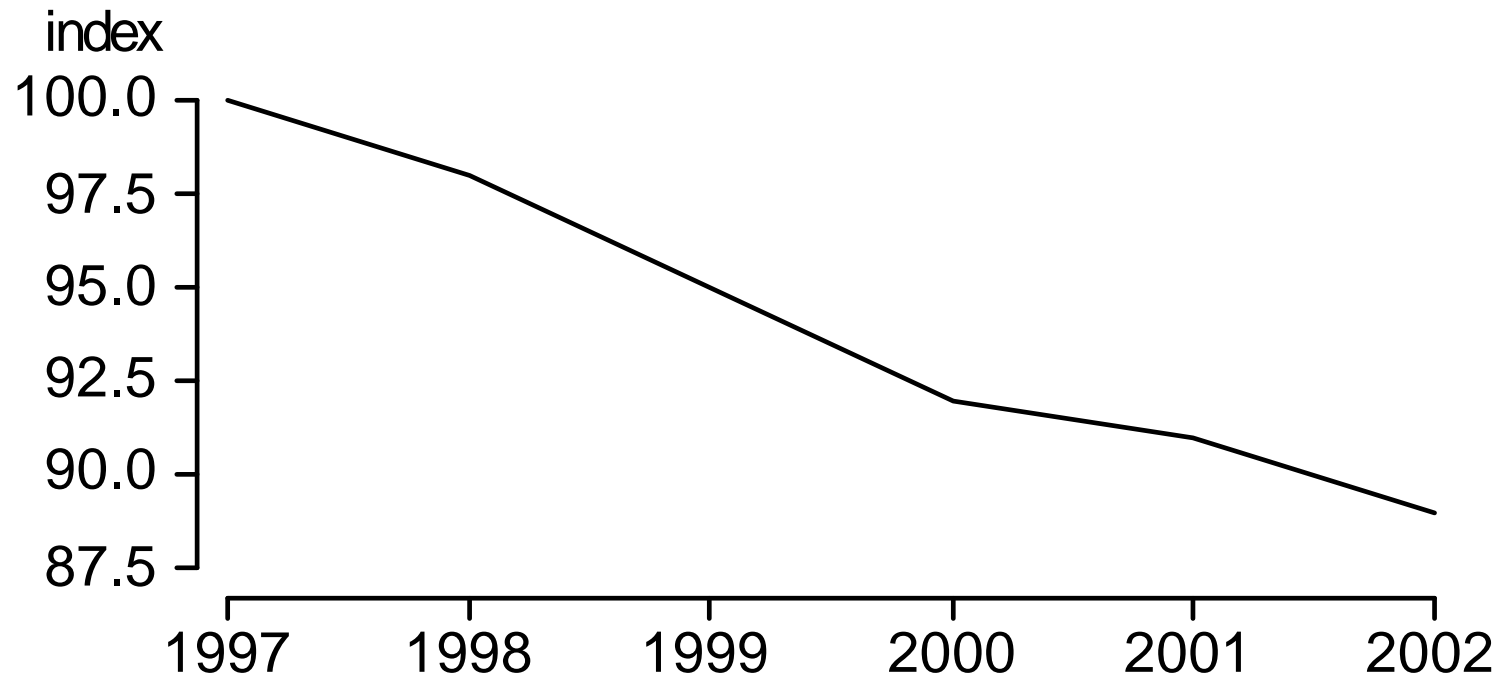
where C is Total Costs.

Underlying assumptions

- Unit cost vs. unit price
- Consistency of labour component in both measures
- Function points suitable for measuring output of the industry
- Wage cost vs. labour cost

Results

PRICE INDEX FOR OWN-ACCOUNT SOFTWARE DEVELOPMENT



Base 1997 = 100.0

Problems

- No contemporary function point data
 - Several years lagged (2001)
 - Annual not quarterly
- Y2K?
- Outsourcing?
- Future availability of data?

Current ABS Position:

- The -2.2% p.a. should not be ignored
 - Inclusion in the national accounts
 - Verifies existing practice of adjustment
- Not suitable for a quarterly PPI
 - Even lagged
- More work required
 - Especially on future of function point series