Aims

• Develop an alternative method of quality adjustment, which is more applicable to a service sector price index.

• Illustrate the proposed concepts with a test of concept index.
Background

• Usual approach to creating a price index assumes the quality of product/service remains constant over the time period.

• Where quality is varying methods have been developed for quality adjustment of products e.g. Hedonic Methods.

• Quality adjustment for services however remains an issue.
The Cost of Time Approach

• Deals with services which involves customers saving or using time.

• The key issue is the valuation of time.
Testing the Concept for Rail Fares

• Rail was chosen as it gives us measurable and objective quality indicators, (timetabled duration, actual duration etc).

• A sample of 50 routes that were the highest revenue routes in 2001 was selected.

• One journey per route was selected.
Data Collection

• On a monthly basis the following was collected:
  – Fare for the Journey
  – Timetabled Duration
  – Quality Data:
    • Actual Duration
    • Cancellations
    • Changes in Frequency
Valuing the Cost of Time

• Three types of travel time relevant to the study were identified. (working, non-working and waiting time)

• Each was given a valuation (1998 prices)

• The valuations were increased to 2003 prices in-line with the rise in household gross disposable income per head
Valuing the Cost of Time

• On average over a whole week 94% of journeys are work related and 6% are not.

• Using these weights give us the valuation of £7.47 per hour for delays.

• For changes in frequency, and delays from cancellations, the waiting time value of £11.73 per hour is used.
Results

- Once the quality data has been valued it is added to the fare for the journey to obtain the quality adjusted fare.
- The quality adjusted index is then produced.
- The adjusted and unadjusted indices produced are comparable.
- On this basis there is little evidence of a potential bias in rail fares, e.g. quality of service has increased in-line with price increases.
Results

Index, Jan 04 = 100

Adjusted
Unadjusted

95 97 99 101 103 105 107 109

Limitations

• The sample taken was not random.
• The quality of service experienced on the selected high revenue routes may not reflect the quality of service on all routes.
• Collecting quality data only once a month is unlikely to represent the entire month accurately.
• Valuing the cost of time is a difficult concept and in-depth research would be required before deciding on a valuation.
Conclusion

• In principal this idea seems a feasible method to adjust for changes in quality of service.

• Valuing the cost of time however, may prove to be a difficult task.

• Deciding which quality measures are included and excluded will require extensive research as it will effect the adjusted price.

• Many quality measures will be difficult to quantify in terms of time.
Conclusion

• How are improvements in quality dealt with? Will this reduce the adjusted price?
• Much more data would be required for the quality measures to ensure you are getting a truly representative sample.
• Producing a method for possible trade-off between different quality measures would be necessary but probably difficult to implement.
Questions

Any Questions?