

**VG 2014 – US Handout for Panel on Quality Adjustment  
24 September 2014**

In light of the framework expressed by Mick Silver and endorsed by Erwin Diewert, here are two concrete examples of how quality adjustment would differ under the user preference approach vs. the input cost approach from the US PPI perspective.

**Example 1**

For the leasing of retail property, renters typically pay both fixed rents and percentage rents, which are calculated based on the nominal monetary value of sales transacted at the leased space. For example, the rent for a particular store within a shopping center may be as follows:

Month 1

Base rent:	\$ 100
Percentage rent rate:	10%
Total sales:	\$1,000
Percentage rent:	\$ 100
Total rent:	\$ 200

If in the subsequent month, twice as many shoppers come to the shopping center and each purchases the same amount as in the prior month, more sales will take place and the percentage rents will rise.

Month 2

Base rent:	\$ 100
Percentage rent rate:	10%
Total sales:	\$2,000
Percentage rent:	\$ 200
Total rent:	\$ 300

Under the input cost approach, no quality adjustment is applied since there has been no change to the output produced with fixed inputs. The lessor is still providing the same physical space, and the costs to maintain it are unchanged. However, since there are more shoppers at the site in Month 2, the user receives greater utility from their rented property. With a user preference approach, it could be argued that the increased sales from the higher number of shoppers reflects a higher quality of service provided by the lessor and should be quality adjusted.

The U.S. currently uses the input cost approach for these cases, and as a result the price index changes as the total value of sales at retail properties change. Any increased turnover observed accruing to retail lessors as a result of increased sales are not shown as productivity changes. If quality adjustment were to be applied under the user preference approach, the price index would not change with the total value of sales, and productivity measures for the leasing of retail space would be very volatile.

## **Example 2**

A software publisher may alter their licensing terms to add the right for purchasers to resell the software in the future. Under the input cost approach, quality adjustment would be applied with the change in input costs represented by the value of the foregone sales that the producer would have been able to make to resale buyers if the original buyers had not made those sales. If the cost of these foregone sales is estimated to be 5% of the sales price, this would be the value of the quality adjustment. If, however, a user value approach were used to assign a quality adjustment value, it would be based on the amount the buyer projects that they could resell the item for. This value may be different than the value that the producer projects they could make from these sales. Practically it would be very difficult, if not impossible, to gather reliable information about the user value in this case since the respondent for the US PPI is the seller of the service and not the buyer.