

## 1993 System of National Accounts, Chapter 16 Section G

### G. The treatment of differences and changes in quality

#### 1. Quality differences, price variation and price discrimination

- 16.105 In general, most types of goods or services, whether simple food products such as potatoes or high technology products such as computers, are available on the market in many different qualities whose physical characteristics differ from each other. For example, potatoes may be old or new, red or white, washed or unwashed, loose or prepacked, graded or ungraded, etc. Unwashed, loose, old red potatoes are clearly different qualities of potatoes from washed, prepacked, new white potatoes. Consumers recognize and appreciate the differences and are prepared to pay different prices.
- 16.106 The expression “different qualities” is used to cover sets of goods or services whose characteristics are sufficiently different to make them distinguishable from each other from an economic point of view but which are sufficiently similar to each other to be described by the same generic term, such as potato, computer or transportation. Different prices are charged for different qualities of the same kinds of goods or services in much the same way that different prices are charged for goods or services which are generically different from each other and described by different names. Different qualities have to be treated in exactly the same way as different kinds of goods or services.
- 16.107 Differences in quality that are attributable to differences in the physical characteristics of the goods or services concerned are easily recognized, but not all differences in quality are of this kind. There are other factors which can give rise to differences in quality. For example, goods or services delivered in different locations, or at different times, must be treated as different qualities even if they are otherwise physically identical. These differences stem from the fact that the marginal utility of a particular kind of good or service for purchasers or consumers situated in one location may be very different from that for purchasers in other locations, while the costs of delivering goods or services in different locations also vary. Transporting a good to a location in which it is in greater demand is a process of production in its own right in which the good is transformed into a higher quality good.
- 16.108 Similarly, goods or services provided at different times of the day or at different periods of the year must be treated as different qualities even if they are otherwise identical. For example, electricity or transport provided at peak times must be treated as being of higher quality than the same amount of electricity or transport provided at off-peak times. The fact that peaks exist shows that purchasers or users attach greater utility to the services at these times, while the marginal costs of production are usually higher at peak times. The different prices or rates charged at peak and off-peak times provide measures of these differences in quality. Similarly, fruit and vegetables supplied out of season must be treated as higher qualities than the same fruit and vegetables in season which are cheaper to produce and of which consumers may be satiated.

- 16.109 Apart from differences in location or timing there are other factors which may contribute to quality differences. For example, the conditions of sale, or circumstances or environment in which the goods or services are supplied or delivered can make an important contribution to differences in quality. A restaurant meal provided with more attentive service in more luxurious or pleasant surroundings is a higher quality meal than exactly the same food and drink provided with less service in a less pleasant environment. A durable good sold with a guarantee, or free after-sales service, is higher quality than the same good sold without guarantee or service. Thus, the same goods or services sold by different kinds of retailers, such as local shops, specialist shops, department stores or supermarkets may have to be treated as different qualities for these kinds of reasons. Alternatively, the goods may be envisaged as being parts of different composite products which incorporate different amounts, or kinds, of retail services. Purchasers in large supermarkets may have to find, select and transport their own purchases to check-outs, but they are also offered the advantage of greater choice and the opportunity to reduce the amount of time spent shopping by making purchases in bulk. All these kinds of factors introduce qualitative differences.
- 16.110 In general, therefore, it is necessary to pay attention to differences in the situation, or conditions, in which goods and services are supplied, as *prima facie* these may all be expected to introduce qualitative differences into the goods or services supplied. In economic theory it is generally assumed that whenever a difference in price is found between two goods and services which appear to be physically identical there must be some other factor, such as location, timing, conditions of sale, etc., which is introducing a difference in quality. Otherwise, it can be argued that the difference could not persist, as rational purchasers would always buy lower priced items and no sales would take place at higher prices. In most cases, therefore, differences in prices at the same moment of time must be taken as *prima facie* evidence that the goods or services concerned represent different qualities of the same general kind of good or service. As explained in the first section of this chapter, this implies that if there is a switch towards higher priced - i.e., higher quality - goods or services, this will be recorded as an increase in volume and not price.
- 16.111 Nevertheless, it must be questioned whether the existence of observed price differences always implies corresponding differences in quality. There are strong assumptions underlying the standard argument which are seldom made explicit and are often not satisfied in practice: for example, that purchasers are well informed and that they are free to choose between goods and services offered at different prices.
- 16.112 First, purchasers may not be properly informed about existing price differences and may therefore inadvertently buy at higher prices. While they may be expected to search out for the lowest prices, costs are incurred in the process. Given the uncertainty and lack of information, the potential costs incurred by searching for outlets in which there is only a possibility that the same goods and services may be sold at lower prices may be greater than the potential savings on expenditures, so that a rational purchaser may be prepared

to accept the risk that he or she may not be buying at the lowest price. Situations in which the individual buyers or sellers negotiate, or bargain over prices, provide further examples in which purchasers may inadvertently buy at a higher price than may be found elsewhere. On the other hand, the difference between the average price of a good purchased in a market or bazaar in which individual purchasers bargain over the price and the price of the same good sold in a different type of retail outlet, such as a department store, should normally be treated as reflecting differences in quality attributable to the differing conditions under which the goods are sold.

16.113 Secondly, purchasers may not be free to choose the price at which they purchase because the seller may be in a position to charge different prices to different categories of purchasers for identical goods and services sold under exactly the same circumstances - in other words, to practise price discrimination. Economic theory shows that sellers have an incentive to practise price discrimination as it enables them to increase their revenues and profits. However, it is difficult to discriminate when purchasers can retrade amongst themselves; i.e., when purchasers buying at the lowest prices can resell the goods to other purchasers. While most goods can be retraded, it is usually impossible to retrade services, and for this reason price discrimination is extensively practised in industries such as transportation, finance, business services, health, education, etc., in most countries. Lower prices are typically charged to purchasers with low incomes, or low average incomes, such as pensioners or students. When governments practise or encourage the practice of price discrimination it is usually justified on welfare grounds, but market producers also have reasons to discriminate in favour of households with low incomes as this may enable them to increase their profits. Thus, when different prices are charged to different consumers it is essential to establish whether or not there are in fact any quality differences associated with the lower prices. For example, if senior citizens, students or schoolchildren are charged lower fares for travelling on planes, trains or buses, at whatever time they choose to travel, this must be treated as pure price discrimination. However, if they are charged lower fares on condition that they travel only at certain times, typically off-peak times, they are being offered lower quality transportation.

16.114 Thirdly, buyers may be unable to buy as much as they would like at a lower price because there is insufficient supply available at that price. This situation typically occurs when there are two parallel markets. There may be a primary, or official, market in which the quantities sold, and the prices at which they are sold are subject to government or official control, while there may be a secondary market - a free market or unofficial market - whose existence may or may not be recognized officially. If the quantities available at the price set in the official market are limited there may be excess demand so that supplies have to be allocated by rationing or some form of queuing. As a result, the price on the secondary or unofficial market will tend to be higher. It is also possible, but less likely, that lower prices are charged on the secondary or unofficial market, perhaps because the payment of taxes on products can be evaded in such a market.

- 16.115 For the three reasons just given, i.e., lack of information, price discrimination or the existence of parallel markets, identical goods or services may sometimes be sold to different purchasers at different prices. Thus, the existence of different prices does not always reflect corresponding differences in the qualities of the goods or services sold.
- 16.116 When there is price variation for the same quality of good or service, the price relatives used for index number calculation should be defined as the ratio of the weighted average price of that good or service in the two periods, the weights being the relative quantities sold at each price. Suppose, for example, that a certain quantity of a particular good or service is sold at a lower price to a particular category of purchaser without any difference whatsoever in the nature of the good or service offered, location, timing or conditions of sale, or other factors. A subsequent decrease in the proportion sold at the lower price raises the average price paid by purchasers for quantities of a good or service whose quality is the same and remains unchanged, by assumption. It also raises the average price received by the seller without any change in quality. This must be recorded as a price and not a volume increase.
- 16.117 It may be difficult to distinguish genuine price discrimination from situations in which the different prices reflect differences in quality. Nevertheless, there may be situations in which large producers - especially large service producers in fields such as transportation, education or health - are able to make the distinction and provide the necessary information. If there is doubt as to whether the price differences constitute price discrimination, it seems preferable to assume that they reflect quality differences, as they have always been assumed to do so in the past