

7.3.1 Overview

In the previous sections we have characterized the properties that prices should possess if they are to be stable under competition. However, this has not provided us with a recipe for constructing prices. In practice, we do not know the complete cost function. That is, we do not know the cost of producing any arbitrary bundle of services. We know only the current cost of producing the bundle of services that is presently being sold. Another practical difficulty is that most of the cost may be common cost, which cannot be attributed to any particular service so far as the accounting records show. For example, accounting records may not show part of a maintenance crew's cost as attributed to providing a video- conferencing service. Usually only a small part of the total cost is comprised of factors that can be attributed to a single service. This is a major problem when trying to construct cost-based prices.

In practice, we can identify some key principles that are closely related to concepts of fairness. These include the principles of *cost causation* (the cost of a service should be related as much as possible to the cost of the factors that are consumed by the service), *objectivity* (the cost of the service should be related to the cost factors in an objective way), and *transparency* (the cost of a service should be related to the cost factors in a clear and formulaic manner, and so that it can be easily checked for possible inconsistencies).

The first two of these principles are difficult to implement since, as we have commented above, the accounting records usually attribute only a small part of the total cost to individual services, and so the greatest part of the cost, i.e., the common cost, may be unattributed. One solution is to make each service pay for part of the common cost. This is the Fully Distributed Cost (FDC) approach that we investigate in Section 7.3.3. Unfortunately, the division of the common cost amongst the services is rather *ad hoc*. Since common cost accounts for a large proportion of the cost, prices can be 'cooked' in many ways, making certain prices artificially large or small.

The definition of subsidy-free prices suggests that a reasonable way to construct the price of a service (actually a lower bound on the price) is to calculate the incremental cost of the service. This clearly includes the directly attributable cost from the accounting

records. Although the sum of the incremental costs of the services still leaves some common cost unaccounted for, this part of the common cost is much smaller than that which is left over after considering only the directly attributed costs. This restricts the range that possible prices may take if they are to avoid cross-subsidization. Let us see this through an example.

Suppose that a factory produces two tourist souvenirs, one of wood and one of bronze. The only factors that are directly attributed to the production of the souvenirs are the quantities of wood and bronze consumed, say W and B , with respective costs $c.W$ and $c.B$. Other factors that are used in producing the souvenirs are considered to be common cost. These are quantities of labour and electricity, say L and E , with costs $c.L$ and $c.E$. There is a single accounting record for each, and no information on how to attribute these costs to the production of the souvenirs. How should we split the overall cost so as to define the cost of each product?

If we use FDC, we must find a way to split the common cost, i.e, we must define the coefficients y_l and y_e , which in turn define the cost of production of wooden and bronze souvenirs to be

$$c^{FDC} = c.W/C + y_l c.L/C + y_e c.E/C$$