Chapter 4
Economic Analysis and User Fees

Economic analysis can provide insight into several key choices when designing user-fee systems. We cover four issues: defining the goals of a user-fee program, the conditions under which user fees should be used rather than other financing mechanisms, designing an appropriate fee structure, and assessing the effect of fees on retail and supplier prices.

Should Fees Aim To Finance Operations or Change Behavior?

Most user-fee systems are designed to finance agency operations. For example, GIPSA, APHIS, and AMS fees are set to provide a steady and reliable source of funds to support those agencies' activities. But fees could be designed to change the behavior of feepayers. Excise taxes imposed on manufacturers' purchases of chlorofluorocarbon gases (CFC's), for example, are designed to change manufacturers' behavior by inducing them to substitute other materials for CFC's, thus reducing CFC emissions (Barthold, 1994). Similarly, FSIS user fees could be designed to finance inspection operations, as well as other FSIS activities, or their design could aim to reduce pathogens in meat and, more generally, to improve food safety.

The two goals often conflict. A system designed to change behavior is usually not well designed to finance activities. For that reason, decisionmakers must usually choose one of the goals; they cannot achieve each with the same fee system. Most agencies aim to finance operations because that goal has often provided the impetus for a shift to fees and because that is often a more feasible goal.

Agencies that have dual goals for charges will typically rely on dual systems of charges. For example, an agency might charge user fees to finance operations and might also administer a system of fines for noncompliance with agency rules. Usually, revenues from fines are not commingled with user-fee revenues, but instead are paid to the Treasury and become part of general Federal revenues. We describe the reasons for conflict below, using "financial" to refer to the goal of financing operations and "behavioral" to refer to the goal of changing behavior.

The Basis for Fees

Agencies must decide on some basis for setting charges. For example, GIPSA bases some charges on inspector hours, others on the typical cost of materials and equipment used in a test, and others on the volume of a firm's production. CFC excise taxes vary directly with the amount and type of CFC's purchased (gases with greater potential for ozone depletion get higher taxes).

Financial Targets

If the goal is financial, fees should usually have a broad basis to keep individual fee burdens small. Larger burdens lead firms to take steps, either politically or through the design of plant operations, to limit their exposure and, therefore, to lower the amount of revenue received. Fees should be based on factors whose use is relatively insensitive to the fee to provide a stable funding source. GIPSA overhead charges are based on a plant's volume of export grain, which is unlikely to be affected by the charge. FDA obtains two-thirds of its user-fee revenue from fixed charges on each existing manufacturing plant and each registered prescription drug. Because they are spread so widely, FDA user fees are not large enough to cause plants to close and drugs to be delisted. If the entire fee were placed on new drug applications, some research might not be done and some drugs might not be introduced.

Behavioral Targets

If the goal is behavioral, fees should be based on factors whose use is sensitive to the fees. The reason for choosing CFC charges is the view that high fees on their use will lead manufacturers to find substitutes and use less of them. These considerations argue for a narrow basis (a few precisely defined actions that will incur fees).

The Level of Fees and Information Needed To Set Them

Financial Targets

Fees must be set to recover the costs of agency operations. To design a fee structure, the agency will need detailed information on the agency's costs of carrying out various activities.

Behavioral Targets

Fees must be set high enough to stimulate payers to change their behavior. These could be considerably higher than fees set to realize financial targets. To design a proper fee structure, the agency will need detailed information on the likely responses of payers to different fee levels. The existing statutory framework treats fees that do not reflect costs as excise taxes. As a practical matter, then, policies aimed at providing incentives to improve food safety would have to be implemented through taxes instead of user fees.

The Temporal Stability of Fee Revenues

Financial Targets

Agency costs will change through time in response to inflation, productivity growth, and changes in workload. Agency revenues from a given fee structure will also change with changes in the volume of industry activity. Agencies will strive to match revenues to costs through time by changing the level and structure of fees.

Behavioral Targets

If fees are successful, then revenues will fall over time. If these fees are used to finance operations, then agencies will need to find another source of funding. If fees designed to change behavior have no effect, however, then revenues may rise over time along with the phenomena that they are supposed to deter, and agencies will need to find uses for the revenues.

When Should User Fees Be Chosen To Finance Operations?

OMB guidelines establish Federal policy regarding fees assessed for government services (OMB, 1993). The guidelines, as revised in 1993, state that a user charge should be assessed when a beneficiary of government services receives special benefits, which are defined to accrue when a government service does the following:

- enables a beneficiary to obtain more immediate or substantial gains than those that accrue to the general public; or
- provides business stability or contributes to public confidence in the business activity of the beneficiary; or
- is performed at the request of or for the convenience of the recipient and is beyond the services regularly received by other members of the industry or group or by the general public.[7]

These guidelines issued by OMB contain an important change from the original user-charge guidelines issued in 1959. The earlier version stated that "no charge should be made for services when the identification of the ultimate beneficiary is obscure and the service can be primarily considered as benefitting broadly the general public." The revised version relaxed that standard: fees can be charged as long as the benefits to the public are incidental to the special benefits provided to industry.

The 1959 guidelines are fairly close to standards from economic analysis (Fisher, 1988):

> User-charge financing is more desirable the greater is the share of benefits that accrue to direct recipients; and
> The efficiency case for user-charge financing of a government service is stronger the more responsive is demand for the service to its price.

Economic analysis suggests that user-fee financing of meat and poultry inspection is problematic if inspection provides public health benefits that primarily flow to the general public. Furthermore, economic analysis gives good reason to doubt the existence of special ben-

[7]OMB guidelines relate specifically to user charges assessed under the IOAA (rather than under specific authorizing legislation), and which, therefore, must be returned to the Treasury.

efits of any significant size under 1993 guidelines in OMB's Revised Circular No. 25. To the extent that Federal inspection leads to increased profits for the meat industry through increased demand or reduced costs, those profits should be quickly passed through to consumers as lower prices if the industry is competitive. Empirical studies find little evidence of monopoly power in the industry, and the best evidence suggests that the industry is competitive (GIPSA, 1996; Morrison, 1998).

Economic analysis suggests that user-fee financing may be inappropriate under certain circumstances, and that insight lies behind the original 1959 OMB guidance. At first glance, meat, poultry and egg products inspection activities appear to be activities for which user fees would be inappropriate. However, we believe that assessment of user fees would not impose substantial costs on the economy and could generate benefits. The economic guidelines cited above are concerned with the effects of pricing on demand for a service. But because Federal inspection is mandatory, the demand for inspection services should be unresponsive to the price of the service (the user fee) and, as a result, user fees would not change the quantity of inspection services used. As a result, the imposition of user fees will have no effect, positive or negative, in the context of the economic guidelines outlined above. To understand why, we next discuss the reasoning behind the two standards from economic analysis.

User Fees and Allocative Efficiency

Direct users are those who pay the fees: slaughter and processing establishments in the case of meat and poultry inspection. Meat consumers are indirect users of inspection services because they gain public health benefits from having their meats inspected but do not directly pay the user fees.

When a fee accurately reflects the costs of providing a service, direct users will purchase units of the service as long as the benefits to them exceed costs. If direct users obtain a large share of all the benefits from the service, then we can reasonably say that the public will receive the service as long as the benefits to the public exceed the costs and that it is, therefore, worthwhile for government to provide the amount of the service that is taken. But if direct users obtain only a small share of the benefits from a service, then we cannot say that the public is receiving services as long as benefits to the public exceed costs. Indeed, further expansion of the service could easily provide more benefits to the public that exceed the additional costs even if the additional costs outweigh the benefits to direct users.

Direct users and their share of benefits become an issue only if the demand for the service is sensitive to the size of the fee. If demand is sensitive, then general revenue financing (and a consequent zero price of using the service) could lead to a large expansion of the service, and impose substantial additional costs on the taxpayers, even though the expansion yields minimal additional benefits (direct users would use the service as long as the benefits exceeded price, set to zero). Alternatively, a user fee set at an inappropriately high level could choke off use of the service, even if the benefits from additional use substantially exceeded the costs to society of additional services. When demand is sensitive to the fee, user fees could serve a useful metering function, leading the government to provide additional units of the service only as long as the benefits to the public exceeded costs. Economists use the term allocative efficiency to refer to the proper amount of a good or service to provide. A price system induces people to use a service as long as their valuation of the service exceeds the price. If the price is also the cost of providing the service, then the price system will induce people to use a service as long as their valuation exceeds the cost of providing it.

However, because Federal inspection is mandatory for meat and poultry products shipped in interstate commerce, the demand for inspection services will not be sensitive to the fee. If imposition of a fee and variations in the fee do not cause changes in Federal inspection services, then the economic standards stated above are irrelevant. Fees can neither improve nor diminish allocative efficiency in inspection services if they do not affect the volume of services provided.

Some FSIS services (e.g., some testing and information provision) may indeed be voluntary and therefore potentially price sensitive. Those sorts of services would be subject to the economic standards: economic theory suggests that user fees should not be applied to those services if direct users gain a small share of benefits or if demand is price sensitive. Moreover, inspection user fees could affect allocative efficiency in the meat industry if the fees themselves (as distinct from the regulation that they finance) caused some establishments to close. However, it should be possible to design a fee structure that minimizes that possibility.

User Fees and Productive Efficiency

Economists frequently refer to concepts of efficiency: allocative efficiency, the subject of the previous section, refers to proper amount of a service to offer; productive efficiency refers to the costs incurred in providing a given quantity of a service. Economic analysis offers three guidelines for user fees that relate to productive efficiency:

- Direct users of a service must be identified, and it must be possible to exclude them, at reasonable cost, from consuming the service if they don't pay;
- User fees can create administrative costs for government providers and compliance costs for direct users. These costs should be small in relation to the benefits of a fee system;
- User fees can increase productive efficiency (reduce costs) of a service if the fee system generates new information on costs and production of program activities.

The first and second guidelines are clear. A government agency needs to identify direct users and get them to pay the fee. The process of collecting fees creates new costs for the agency and compliance costs for direct users because each must now make, record, and review payments. In general, these costs will substantially exceed any savings realized through reduced support from general revenues because the system for administering and paying for general revenues remains in place. Compliance and administrative costs are real costs to society because they represent labor, capital, and materials that could have been applied to other pursuits.

User fees do offer one relatively unexplored but important opportunity for efficiency gains. Administration of a fee system brings costs but also often generates new information relating detailed program costs to regulatory activities and sometimes to program outcomes. Improved information can allow program managers to operate more effectively by allocating resources to their most productive uses and by identifying reasons for unusual cost overruns. Economists use the term "productive efficiency" to refer to the provision of a given amount of services at the least cost.

Economic theory often proceeds under the simplifying assumption of productive efficiency—that firms and agencies already operate at least cost. As a result, theory summaries often cite only the other criteria, such as allocative efficiency and administrative costs. But the simplifying assumption can be misleading. Prior to the deregulation of transportation industries in the United States in 1975-84, most economic analyses of the effects of regulation emphasized allocative efficiency—whether regulation caused shifts in industry outputs. But retrospective evaluations of the effects of reform found that regulation often affected productive efficiency—regulation caused important increases in costs. The simplifying assumption limited good economic analysis in the pre-reform period.

The primary economic criteria framing the decision to impose user fees are not particularly relevant for meat inspection as long as the volume of services provided is unaffected by the fee. A fee system will generate administrative costs that exceed those imposed by reliance on general revenues. As a result, the economic case for user fees must rely on the possibility that user fees will lead to more efficient operation of the inspection system and on the uncertainties associated with obtaining general revenue financing.

How Should Fees Be Set?

Once the decision is made to fund a government-provided good or service with a user fee, the agency must decide on the amount and structure of the fee. Should the fee be a fixed charge to each direct user— a license fee? Or should it be based on units of use, such as $30 per inspector hour? The charge per unit could also vary with the number of units, as it does with GIPSA, which recovers administrative costs through a charge of 9 cents per ton for the first million tons of export grain, a charge that falls steadily to 0.2 cent for volumes over 7 million tons. User-fee systems could also contain combined fees that reflect combinations of license fees, specific service fees, service usage charges, and volume-based charges. In general, a variety of different fee structures could each raise the same amount of revenue. The appropriate fee structure depends upon the goal one is trying to reach with the user-fee system and the nature of the service provided.

Most user-fee systems are designed to finance the agency. They may also be aimed at helping the agency operate efficiently by producing services for which benefits to society are at least equal to costs and by producing services in the most cost-effective manner. The primary rule for setting fees is the same for each of these goals: fees for specific services should reflect the incremental cost associated with providing that service. The incremental cost is the additional cost the agency bears by providing an additional unit of service. In the case of inspection services, the incremental cost of inspection services provided to a plant includes the number of inspector hours included in a service, priced at the value of the wages and fringe benefits associated with those hours, plus the costs associated with supervising inspection hours.

Incremental inspection costs can vary, as they do with GIPSA, with the time at which services are used (evening, overtime, weekend or holiday), if those times impose higher wage costs on the agency. They can also vary with the quantity of services provided (irregular and low-volume services impose higher costs on an agency because they generate more travel time and inspector downtime), and with the types of services provided. Effectively run user-fee systems impose great demands on agencies to accurately measure costs if they are to be accurately priced.

Most agencies also carry fixed costs associated with management, standard setting, research, and compliance. These costs cannot be reliably attributed to the actions of particular payers, and there is no one best way to set those fees. Often, an effective way to recover fixed costs is through charges on bases that are insensitive to the fee. For example, GIPSA recovers overhead costs through a per-ton charge on inspected grain, while AMS recovers overhead costs for poultry grading through a fixed charge per carcass. Such charges are relatively small since they are imposed on a large base. They likely will be passed through as small increases in retail prices (again spread widely among all ultimate beneficiaries of the service). The charges are easy to administer since the agencies already monitor carcasses and export volumes through their activities.

User fees generate costs of administering the program, and an agency needs to be alert to these costs. In FY 1998, the NRC expects to collect about $94.6 million in fees for inspections and licensing services. Fees for 105 reactors account for about 89 percent of that amount, while fees from approximately 6,000 materials licensees account for less than 2 percent. NRC costs for determining the fee requirements and processing fee payments for the 6,000 entities amount to a substantial portion of the total costs of administering the fee program. The agency must invest significant resources compared to the small amount recovered from this class of licensees.

Incidence: Who Ultimately Pays for the User Fee?

The economic incidence of a user fee is the analysis of which individuals (or groups) bear the ultimate burden of the fee. The group that is legally required to pay a tax or fee to the government is not necessarily the group that ultimately bears the burden of that tax or fee because individuals and firms will change their behavior in response to the tax or fee in an attempt to shift the burden to others.

Take the case of a user fee levied on meatpackers. Meatpackers could try to pass on this increase in production costs to consumers in the form of higher prices. But consumers could react to higher prices by buying less meat. In general, if consumers are extremely sensitive to a price increase (that is, if they sharply reduce their purchases of meat in response to a price increase), then meatpackers will be able to pass little of their higher costs through in the form of a price increase. If consumers are quite insensitive to price increases, then much or all of the cost increase will ultimately be passed through to consumers in the form of a price increase.

If consumers were so price sensitive that demand fell sharply in response to an increase in meat prices, then meatpackers would also purchase fewer cattle, hogs, and poultry. Falling demand for livestock could then lead to lower livestock prices. If that should occur, meatpackers could attempt to shift the incidence of the fee back to livestock producers. The extent to which meatpackers could be successful in passing costs back to producers depends on how sensitive livestock production is to changes in livestock prices. If producers are insensitive to prices and do not change cattle numbers in response to changes in cattle prices, then much of the cost increase will be passed back to livestock producers in the form of lower animal prices. Alternatively, if cow-calf operations do produce markedly fewer animals in response to price declines, then meatpackers will not be able to pass back the cost increase.

What is likely to happen in response to meat, poultry, and egg products user fees? Because production costs for all meat and poultry products will be rising slightly because of the user fee, beef consumers will have little incentive to shift to pork or chicken. The retail price sensitivity that matters is the demand for all meat—not the demand for beef, or chicken, or pork—and the demand for all meat is rather insensitive to price changes.

ERS estimates that meat consumption falls by only 0.34 percent when meat prices rise by 1.0 percent. That estimate may overstate consumer price sensitivity because it is based on meat consumed at home; the retail demand for meat consumed away from home may be even less sensitive to changes in wholesale meat prices. In contrast, producer supply response is likely to be considerably more responsive to price changes, particularly over longer periods of time. As a result, most of the modest increases in production costs associated with imposition of user fees will likely be passed through as higher retail prices for meat.

The form of a fee also matters. For example, the user fee imposed by the FDA for new drug review is designed in such a way that pharmaceutical companies have little incentive to pass it forward to consumers or backward to suppliers. The burden falls on the companies and, ultimately, on their stockholders.[8] But it is highly unlikely that a similar fee could be designed for meatpacking plants.

The FDA designed fees that do not vary with plant output—a fixed registration charge on each existing drug and a fixed annual fee on each manufacturing facility. Economic theory suggests that such fees will not affect drug prices or drug research. They could cause a plant or product line to shut down if the fee caused total plant or product costs to exceed drug revenues; however, total manufacturing costs are such a small share of drug revenues that this is unlikely. In the drug industry, a large part of all costs is fixed. Research and development costs, and most costs of drug promotion, do not vary as sales of a particular drug change. The variable costs of making more units of a drug is a very small share of revenues and of total costs. The industry's cost and revenue structure allows for the imposition of fees that are borne by stockholders.

In contrast, the variable costs of livestock purchase and processing account for an overwhelming share of total meat and poultry slaughter and processing costs. Fixed costs are small shares of the total, and gross profit margins are low enough that FDA-like fees would likely cause some plants to shut down. As a result, feasible meat and poultry inspection fees will likely have to be based on factors that vary with output (such as meat production or inspector hours) and will, therefore, primarily fall elsewhere than on the firm's owners.

[8]The firms and their stockholders will also reap benefits from the faster reviews funded by the fee because faster reviews mean that a patented drug will get to the market sooner. By getting to market sooner, the drug will be under patent protection for a longer part of its commercial life, and commercially successful new drugs will, therefore, reap higher profits because of effectively greater patent protection. The public will also benefit by more rapid commercial introduction of effective drugs.