

Rules as Payoff Functions

Abstract

If rules are viewed in terms of a private or economic ethic, instead of a social ethic, they appear not as constraints on the opportunity set of individuals, but as payoff or cost functions. The violation of rules incurs a cost. Therefore, an economic decision involves choosing an alternative that provides maximum net benefit, after reckoning the cost of violation. In this framework, rules do not exclude any alternatives from the feasible set. They merely render some alternatives more or less attractive than others by attaching a reward or cost to them. A large enough cost of violation induces all agents to shun the proscribed alternatives, and has the same ultimate effect *as if* these alternatives were excluded from the feasible set of actions.

Economic analysis of the law proceeds from the assumption that laws alter the payoffs associated with various courses of action. For example, the law does not prohibit murder. If one commits murder, the law specifies that certain consequences are likely to follow. In economic terms, the problem of legislation is to analyze the consequences of various penalty schedules for behavior and then select the schedule that yields the most desirable pattern of behavior by rational agents subjected to these schedules. Economists can only identify the kinds of behavior people will engage in under various penalty schedules. Which of the many possible patterns of behavior is preferred by the society is a value judgment that lies outside the purview of economics.

Penalty schedules consist of two parts; one part is directly legislated, the other is not. Law defines the penalty on violations, conditional on the violation being identified. Because of uncertainties inherent in the enforcement and judicial system, some guilty persons go free and some innocent persons are punished. The expected reward or penalty associated with each course of action depends not only on the law, but also on the enforcement and judicial system. Both affect the choices made by individuals.

From an individual's point of view, enforcement and adjudication uncertainty makes each course of action appear as a bundle of risk and return. The chances of being prosecuted and found guilty of a violation and the magnitude of penalty specified by the law for those who are found guilty vary, depending on the violation. Rules are important to a person only in the sense that they alter risk-return bundles attached to various actions, not in the sense that they exclude some actions from being considered at all.

This intrusion of economics into social ethics may offend some. Society may be better off if individuals treated rules and laws as absolute prohibitions, and not as costs and benefits associated with their actions. In economics, absolute prohibition means that the cost of violation is large. Due to the uncertainties of enforcement and adjudication, it may not be socially desirable to impose large costs on those few who happen to get caught in the enforcement net. Unless enforcement of the law is perfect and automatic, the imposition of large penalties on vio-

lators induces those who are charged with violations to spend more resources on their defense.

Voluntary and Mandatory Behavior

A choice among accounting methods is labeled mandatory if it follows the issuance of a new rule or standard from an authoritative body such as the FASB or the SEC. Otherwise, it is called voluntary. The distinction between voluntary and mandatory behavior has no economic substance. We discuss this general problem before returning to their relevance to accounting standards and practice.

When a person is prevented from choosing an action by a legal constraint, the choice is called *involuntary* or mandated by the law in the sense that, in the absence of the law, that person would have chosen a different action. In economics, laws and rules are seen as incentives and costs, and the distinction between voluntary and involuntary behavior is less useful. Consider a simple example of economic decision making. One day you find that the price of eggs has increased, while the price of milk has remained unchanged since your previous visit to the grocery store. Given the new prices, your inability to alter them in any significant way, and a fixed budget, you may decide to buy more milk and fewer eggs. Your taste for eggs and milk, combined with the change in your economic environment (prices), induces you to alter your actions.

Second, consider a change in the legal speed limit from 60 to 55 miles per hour. The new law does not render it impossible to drive above 60 mph; it simply makes it more costly, depending on the level of enforcement efforts (police patrol cars, radar equipment, etc.), the judicial system, and the penalties. Given your inability to change the law in any significant fashion and considering the new cost-benefit ratio, you might be inclined to drive slower. Fast driving may no longer be worth the added cost.

What is the difference between these two examples? Since the change in the price of eggs is beyond the immediate control of the economic agent, as long as the agent is driven by personal preferences, this change can be said to have forced or mandated the agent to alter grocery decisions. In this sense, not only the change in road speed is mandatory, but all economic actions, driven by wants and environment, are mandatory, and nothing is voluntary.

However, the lack of free will is offensive to our self-image. We may define the grocery decision to be voluntary in the sense that the consumption of milk and eggs is freely or voluntarily chosen, both before and after the change in prices, and preference is nothing but an expression of free will. The same argument applies equally well to the choice of driving speed. According to this view, all human behavior is voluntary and nothing is mandatory.

Fortunately, classification of behavior as voluntary or mandatory is irrelevant to economic analysis. In the economic context, the terms *voluntary* and *mandatory* are mere rhetorical devices or emotional responses that imply value judgments.

Those who benefit from an increase in egg prices may find it advantageous to argue that the consumer still makes a voluntary choice after prices are raised. Those who are hurt by the lower speed limits (e.g., truckers) might decry the new law as coercive. In public debate among opposing interests, labels of *voluntary* and *mandatory* may be convenient weapons of attacking adversaries. They contribute little to scientific analysis.

Accounting standards, like other rules or laws, alter the costs and benefits of various courses of action. The labels *voluntary* and *mandatory* are frequently used in accounting contexts, but their use diverts attention from the economic nature of accounting choices. If a change in the interest capitalization policy of a firm, following the publication of FASB *Statement No. 34*, is labeled involuntary or mandated, shouldn't we also call a switch to LIFO during periods of high inflation mandatory? If external imposition is the essence of mandatory change, the FASB • or the SEC are no more external than inflation is. Perhaps the essence of mandatory change is that they help avert the consequences of not responding to changes in accounting standards, such as audit qualification. But then decisions about LIFO, too, would qualify as mandatory, because the costs of not using LIFO in the environment of inflation must be paid to the tax collector in hard cash.

It is tempting to argue that accounting standards impose high costs on violators with such certainty that, for all practical purposes, standards are constraints on the feasible set of accounting choices. However, standards that appear to be mandatory in this sense rarely are. This has been demonstrated in the adjustments firms have made in response to *Statement No. 2* (which costs are classified as research and development, and in-house research versus contracting-out research work), *Statement No. 13* (redesign of lease covenants), and *Statement Nos. 8 and 52* (hedging of foreign exchange risk).

Classifying standard-induced accounting changes as mandatory obfuscates the economic nature of accounting decisions. It may be more fruitful simply to examine the effects of standards on the behavior of firms and agents.

Economics of Rules and Standards

Why have rules and standards? Why not be free to do what we want? What are the consequences of operating under rules? Standardization is widely practiced in all economic systems. Pieces of gold were cast into standardized pellets to serve as a medium of exchange millennia ago. All 110-volt electrical outlets take the same adapter. Appetites vary, but canned soup can be bought in only two or three different sizes at the supermarket. There are hundreds of standard-setting organizations in the United States, and thousands worldwide. Why is standardization so common?

Benefits of Standards

Standards save transaction and search costs. Without such costs, it might be optimal to use a 156-watt incandescent lamp in my living room and a 62-watt flo-

rescent lamp in the study. However, the costs of manufacturing, distributing, and retailing increase with the number of different sizes and types. Restricting our choice to, say, 25-, 40-, 60-, 100-, and 250-watt lamps carries the benefit of the lower price at which fewer sizes can be produced and sold. Consequently, standardization is widely practiced in manufacturing and construction industries.

Standardization applies to procedures, information, and news as much as it does to physical products. The standardized format of a newspaper makes it easier for the readers to locate the items of interest to them—stock quotation tables, exchange rates, and opinion pieces. A standard bus fare, unrelated to distance traveled, is cheaper to collect.

Costs of Standards

Although the benefits of standardization are shared by all, its cost must be borne by those persons whose preferred option is not chosen as the standard. The standardization of electric lamps to, say, five sizes increases the cost of nonstandard sizes. Those who are not adequately compensated for accepting a "suboptimal" solution to their problems oppose standardization.

Standardization affects innovation. The economic savings of standardization attract further development efforts to areas within the boundaries defined by the standards and help speed up innovation within these bounds. However, standardization raises the cost of radical innovation outside the standardized boundaries, and discourages it. Persistence of the inefficient QWERTY keyboard for roman-script typewriters is a good example of the conflict between standardization and innovation. More efficient keyboard layouts such as DVORAK are available now, but QWERTY standard is too deeply entrenched to be replaced easily.

Distribution and Equity

The immediate distributional effects of standardization can be quite inequitable. Those agents whose current products or practices are similar or close to the newly adopted standard earn a windfall, while others bear the cost of adjusting their products and practices to the new standard. Agents exert pressure to obtain standards so that their own adjustment costs are minimized.

Standards of quality specify the minimum acceptable level of quality. For example, Underwriters Laboratories issues standards for appliances, and the AICPA issues standards for accounting. The optimal standard from the point of view of each producer is equal to the quality of that producer's product, because such a standard maximizes the positive difference between the average quality of products that meet the standard and the quality of the producer's product.

Adjustment to New Standards

Introduction of standards induces agents to adjust their behavior. Ignoring this adjustment results in overestimating its effects. Windfall gains from the new standard dwindle as other agents change their behavior. Similarly, windfall losses

cause agents to find new ways of avoiding the harm inflicted on them by a new standard. Predictions of perpetual windfalls and dire consequences, frequently made during debates on accounting standards, are rarely realized.

Adjustments to change are neither quick nor costless. Agents need time to learn the new environment and to search for and select new rules of thumb. Frequent changes in standards impose the costs of adjustment. Once agents have adjusted their behavior to a new environment, they do not look favorably on moves to disturb the status quo. It is not surprising that managers oppose virtually all proposals for new accounting standards.

Economic Theories of Standards

Each set of consequences of standardization forms the basis for an economic theory of standardization. Briefly, standards can be seen either as a means of limiting competition, or as a means of supplying industry-wide public goods. What are these theories, and to what extent are they applicable to accounting standards?

Monopoly and Limiting Competition

Organizations that set standards can limit competition in two ways. First, independent of the specific standards they choose, such organizations provide forums that can be used to conspire in restraint of trade in the industry. Public accountants who play a prominent role in setting standards could have used the Accounting Principles Board or the Committee on Accounting Procedure for this purpose. However, their professional association, the AICPA, provides a more convenient forum for collusion to restrain trade in the audit industry. Several provisions in the AICPA's *Code of Ethics* limited competition through restraints on advertising and on the solicitation of clients and employees of competitors. Many of these provisions were dropped under pressure from the Federal Trade Commission and the U.S. Department of Justice. The FASB, consisting of more diverse elements, is unsuitable for this purpose.

Second, standards themselves can be designed to limit competition. The most important threat to the stability of a cartel is hard-to-detect cheating by its own members. Setting standards for the minimum as well as the maximum limit on product quality is an attempt, not always successful, to cut the cost of monitoring by eliminating one dimension of non-price competition. Product compatibility and interchangeability standards (e.g., for cassette tapes) have this anticompetitive potential.

Accounting standards on disclosure have been limited to the minimum level of disclosure and do not specify a maximum level. Therefore, disclosure standards are free from anticompetitive potential on this account. However, emphasis on uniformity and comparability of accounting methods is similar to interchangeability standards in the manufacturing industry. We must evaluate their anticompetitive effect in the capital markets, because they may prevent individual firms

from trying to devise financial reporting methods that investors may find more attractive than the extant standards.

Provision of Public Goods

Product compatibility and interchangeability standards are pure public goods because (1) anyone can use the standard, without reducing the opportunity for others to use it, and (2) no one can be excluded from using the standards. Most accounting measurement and disclosure standards are public goods. Their promulgation and enforcement promote social welfare by reducing the resources that must be expended by the readers of financial reports to understand that data. This public good is produced through social coordination of choices made in individual firms.

For the sake of coordination, states must choose whether drivers should keep to the left or the right on the road. Accounting standards for measurement and disclosure involve more complex choices among options whose costs and benefits to various agents are neither identical nor obviously known. While coordination is one of its important elements, the standardization of accounting is not a pure coordination game, which Hardin discusses.¹ Setting accounting standards also requires judgments about their relative efficiency.

Accounting Standards

Edey and Baxter identify four types of accounting standards: (1) standards of disclosure and explanation of accounting policies, (2) standards of uniformity of layout and presentation of financial statements, (3) standards of disclosure of specific facts and uncertainties, and (4) standards of accounting measurement.²

The first type of standard is a higher-level standard. It concerns the *disclosure* of what accountants do. The last three types concern what accountants *do* to prepare the financial statements. The difference between the first and the latter three types is analogous to the difference between standards for *labeling canned food* and standards for the *canned food* itself. Higher-level standards are easier to defend. Even if standards for contents cannot be agreed upon, it might be possible to justify standards for labeling. Standards on disclosure and explanation of accounting policies have been less controversial than those on accounting policies themselves, as evidenced by the history of accounting for the investment tax credit, depreciation, inventory, oil and gas exploration outlays, and stock-based employee compensation.

Enforceability of Standards

Useful standards themselves must be enforceable, either implicitly or explicitly. If we cannot know, either before or after the fact, whether a firm complied with a standard, it has little effect. Two attempts by the SEC illustrate the point. The SEC encouraged firms to disclose their earnings forecasts and their underground re-