Regulation: Empirical Analysis

The economic regulation of firms and industries constitutes an extreme form of government intervention in markets. Government antitrust, competition, tax, and trade policies, as well as environmental, health, safety, and information regulations, shape but do not replace the market, although the most severe of these policies may blur that distinction. Economic regulation stands in sharp contrast. In industries subject to economic regulation, government agencies or departments exercise considerable control over firms’ entry, pricing, investment, and product choice decisions, and administrative decisions replace market outcomes. Intervention may go as far as replacing private ownership with government-owned and -operated enterprises.

The modern field of empirical regulatory economics developed during the 1960s and early 1970s, as economists began ‘to apply the familiar principles of microeconomics in comprehensive fashion to the subject’ (Kahn 1988, p. xv). George Stigler, whose contributions to the field were recognized in his 1982 Economics Nobel prize citation, sparked much of this growth. Through the 1980s, economists focused on quantifying the effect of regulation on firm behavior, industry outcomes, and consumer welfare. The diversity of regulatory forms and industry characteristics across the transportation, energy, utility, financial, and communication sectors provided a rich set of institutions for investigation. Significant policy reforms, even deregulation, in structurally competitive sectors during the 1970s and 1980s provided new sources of variation in the regulatory environment and invigorated empirical regulatory research. More recent attention has turned to the traditional ‘public utility’ sector, particularly the telecommunication and electric utility industries. Market-based institutions have begun to replace state-ownership and regulation, as technological change called into question the natural monopoly assumption in many of these industries and policy interest in privatization raised questions of how best to restructure and sell-off vertically-integrated monopolies. Analyzing the operation of these redesigned markets has become a main focus of empirical regulatory research.

This article focuses on empirical analysis of the effects and reform of economic regulation. Section 1 describes the dominant empirical methodologies. Section 2 sketches the evidence on the effects of traditional economic regulation. Section 3 discusses recent analyses of market design and regulatory scope. To keep the reference list manageable, readers are referred to surveys and collective volumes wherever possible. These guide readers interested in delving more deeply into particular issues to a wealth of primary studies.

1. Empirical Methodologies

Measuring the effect of economic regulation requires the establishment of a counterfactual benchmark: what would firm or industry performance look like in the absence of regulation? A variety of approaches to this have been used. The most compelling lesson of the existing literature is that the impact of economic regulation depends critically upon its particular institutional form and the characteristics of the industry under study. Measuring the impact of regulation requires as much attention to the details of how regulators operate in practice as to the prescribed legal form of the regulation. Paul Joskow’s (1974) study of electric utility regulation in the US provides a persuasive exposition of this argument.

The most common methodology used to measure regulatory effects compares outcomes in regulated markets with those in unregulated markets. Time series variation may facilitate this comparison; the wave of US deregulation in the late 1970s and early 1980s generated numerous ‘before-and-after’ studies of regulation. Differences across political jurisdictions, e.g., across states within a country or across countries, may provide another source of variation in regulatory regimes. Empirical studies also may use differences in the intensity or form of regulation to infer its effects, particularly if regulation is likely to bind only under certain well-defined circumstances.

Two conditions limit the usefulness of this approach. First, unregulated comparisons may not exist. Industries that are regulated in one political jurisdiction tend to be regulated or government-owned in other political jurisdictions. Regulation may be so
long-lived that comparing current regulated performance with historical unregulated performance is meaningless. Second, this method implicitly assumes that differences in regulatory regimes are exogenous to firm or market performance. This is often false. If, for example, jurisdictions impose electricity regulation in response to high or rapidly increasing local electricity rates, comparing price levels in regulated and unregulated locales might suggest no effect even if regulation does, in fact, constrain prices. Using panel data to estimate effects from ‘differences in differences’ econometric models may be useful in some cases, as may developing more complete models of the determinants of regulation.

A second methodology estimates a structural model of the market, forms assumptions about behavior in the absence of regulation, and compares simulated unregulated outcomes with those observed under regulation. This technique may be useful even in the absence of regulatory variation. It is most appropriate when regulatory constraints can be clearly specified. Suppose regulators constrain prices but do not influence investment or factor use decisions. Structural estimates of underlying demand and cost functions permit one to predict unregulated profit-maximizing prices and compare these with current regulated prices. If regulated firms do not minimize costs, however, or if regulatory intervention alters investment decisions in a systematic way, then the regulated cost function may be a poor estimate of the unregulated long-run cost function, and the implied price comparison will be misleading.

A third approach uses experimental data to measure regulatory effects. Field experiments, such as the time-of-use electricity pricing studies conducted in the US during the early 1970s, can reveal responses to alternative regulatory or market designs. In the best of circumstances, these can provide information on how market outcomes respond to exogenous variation in regulatory mechanisms, holding other economic conditions constant. Their cost limits their widespread use, however, and their temporary nature may preclude an assessment of long-run equilibrium responses to alternative policies. Laboratory experiments, which present volunteers (often students) with a set of objectives, operating guidelines, and payoffs, also have been used in a limited way to simulate responses to alternative regulatory designs.

2. The Effects of Traditional Economic Regulation

It is impossible to describe succinctly the full effects of economic regulation across industries, over time, and through space. Regulation may influence prices, costs, and the pace of technological change in an industry. This may lead to the creation or suppression of economic rents, and change the distribution of rents across various stakeholders or interests in the industry. These effects are likely to vary considerably across markets and regulatory forms, and preclude simple generalizations. This article highlights some illustrative results. Further detail is provided in the many reviews referenced at the end of this article and the primary sources they cite.

2.1 Empirical Analysis of Natural Monopoly Regulation

Industries such as electricity supply, telecommunications, natural gas transmission and distribution, water and sewer service, cable television service, and to some extent railroads have historically been considered ‘natural monopolies.’ This applies when total production costs are minimized by providing service to all customers in a given market through a single firm. As economists since Adam Smith have recognized, minimizing production cost may not minimize price, since monopolies use their market power to mark up price above competitive levels and earn monopoly rents. This historically engendered one of two policy responses. Government ownership in natural monopoly sectors was typical outside the USA, and was used frequently in the USA for water and sewer service, but less so for electric utilities and cable television service. Government regulation of privately-owned firms was the dominant US response in most other cases. In this scheme, regulators typically grant a legal, ‘franchise’ monopoly to a single provider in a geographic market, but retain control over price to mitigate the monopoly mark-ups that an unconstrained legal monopolist would choose. Prices are determined generally by commissions that review costs, and often investment decisions, and set prices to cover allowable costs and a ‘fair rate of return’ on ‘prudent’ capital investments.

Early economic research on the regulated public utility sector was generally theoretical and focused on how to perfect regulatory pricing, treating as given the desirability and general effectiveness of government regulation. Optimal pricing questions also arose for state-owned utility enterprises, and French and British economists were in the vanguard of research in this area (Kahn 1988, Laffont 1994, and Poverty: Measurement and Analysis). Stigler and Friedland’s (1962) study of the early electricity industry was one of the first empirical analyses of the actual effect of utility regulation, and concluded that regulation did little to reduce prices below unregulated monopoly levels. While the particulars of this research generated controversy at the time, and subsequent work suggests that electricity prices in the Friedland-Stigler sample were, in fact, lower for regulated firms (Peltzman 1993), the notion that regulation might not improve
upon market outcomes even in those sectors with the strongest public interest rationale stimulated considerable additional research.

The literature subsequent to Stigler and Friedland (1962) suggests generally that price regulation, particularly in the electricity and cable television industries, has constrained average prices below the level an unconstrained legal monopolist would choose. Analysis of average price levels masks the effect of regulation on price structures, however. Price structure analyses in electricity and telephone industries suggest redistributive rather than Ramsey-like efficient pricing objectives, often with considerable transfers from customers with relatively elastic demands to those with relatively inelastic demands. For example, regulatory cross-subsidies from long-distance telephone rates to basic residential telephone service and from urban to rural telephone customers were a major force driving new entry into the US long-distance sector, leading ultimately to the 1984 divestiture of AT&T and the regulatory reform of the telephone industry. The tenacity of these cross-subsidies more than 15 years later testifies to the strength of political interests supporting these policies. Some economists have estimated the social welfare cost of the residential service cross-subsidy to be as high as $7.0 billion per year (in Peltzman and Winston 2000, p. 78).

The effect of natural monopoly regulation on static production costs is less well-measured. One of the most developed theoretical and empirical literatures on incentives for excessive capital investment in rate-of-return regulated industries proved largely unconvincing (Averch and Johnson 1962, Joskow and Rose 1989). There is some evidence of higher wages in firms that expect regulators to flow increased labor costs through to higher consumer prices, though wages do not tend to be higher overall in regulated sectors (Hendricks 1975, Peoples 1998). In the railroad industry, low regulated profit rates led to underinvestment in track maintenance and repair on many lines, reducing efficiency and increasing average transit time over the track.

Of particular concern is the effect of regulation on the pace of technological innovation. This may occur from direct regulatory constraints on new process or product introductions, such as the Federal Communications Commission’s delay in allocating radio spectrum to wireless telephone systems in the USA and its restrictions on enhanced telephone service offerings. Indirect regulatory effects may also influence the pace of technological change by altering expected payoffs to investment in new technology. While often difficult to measure, these costs can be enormous. For example, Hausman estimated lost surplus from the delayed introduction of wireless phone service in the USA at more than $30 billion annually (in Peltzman and Winston 2000, p. 80).

The ambiguity of cost and innovation effects may arise from the difficulty of establishing an appropriate empirical counterfactual benchmark to regulation, an essential prerequisite to measuring either static or dynamic efficiency effects. Nevertheless, ongoing policy concerns about the efficiency of production, investment incentives, and the pace of technological change in natural monopoly sectors have fueled much of the recent movement toward market-based reforms, discussed in Sect. 3.

2.2 Empirical Analysis of Regulation in Multifirm Industries

A substantial portion of the regulatory apparatus built during the twentieth century involved multifirm industries, such as trucking, airlines, natural gas and oil production, property and liability insurance, and banking. Regulation in many of these was rationalized by the deleterious effects of excessive, rather than insufficient, competition, particularly during the depression of the 1930s. In others, such as airlines, regulation was advocated to promote the orderly development of an emerging commercial industry. Many of these regulatory systems were dismantled or reformed substantially between 1975 and 1985, reflecting a broad consensus on its social costs.

Multifirm price regulation usually requires all firms serving a given market to adhere to a standard tariff. In some industries, this tariff was set by the regulatory commission, as the Civil Aeronautics Board did for the US airline industry. In others, tariffs were set collectively by the firms and ratified by the regulatory commission, as the Interstate Commerce Commission did for trucking rate bureau filings. Regulation generally discourages entry or market extension. By eliminating the ability of existing firms to discount rates and the ability of new firms to enter the market, regulation limits competition and tends to raise prices significantly. For example, economists estimate that regulated prices in the late 1970s were at least 15—20 percent above competitive levels in the trucking industry and 25—30 percent above unregulated prices in the airline industry.

High prices generate significant potential rents. The value of these rents is embodied frequently in the market value of regulatory assets, such as taxicab medallions, operating certificates for regulated trucking firms, or state liquor licenses. Asset values may reflect only a portion of the rents generated by regulation, however. In some sectors, organized labor was able to garnish a substantial share of regulatory rents (Rose 1987, Peoples 1998). Members of the Teamsters Union, for example, were a major beneficiary of trucking regulation, with wages 50 percent above those for nonunion truck drivers and drivers outside the regulated industry. In other industries, regulatory rents were dissipated through various rent-seeking behaviors. This seems to have been particularly
acute in the airline industry, where nonprice competition repeatedly eroded load factors and profit margins despite increasing regulated prices. In the rare situations in which regulatory policy effectively constrains maximum prices and exit from markets, rents may be negative. In the short-run, this can transfer quasi-rents from owners of regulated capital to consumers of their products. Over the longer-run, its adverse effect on investment tends to erode both the quantity and quality of service provided. The rash of bankruptcies in the U.S. railroad industry during the 1970s and early 1980s, and natural gas shortages during periods of below-market ceiling prices in the 1960s and 1970s, were consequences of this type of policy.

As in the natural monopoly sectors, regulation influences the structure of prices as well as the average price level. Economic regulation often leads to a more uniform price structure than in unregulated markets. Prices tend to be less responsive to cost differences across consumers or over time, due in part to cross-subsidies for favored higher-cost consumer groups and to aversion to congestion-based or peak-load pricing. This distorts both capacity utilization and firms’ investment incentives. These effects have been analyzed in the context of traffic mix distortions between railroads and trucking firms, provision of air service to small communities, and excessive pooling in insurance markets.

Postderegulation experience suggests that regulation often suppressed variation due to price discrimination, relative to the unregulated market. Airlines are perhaps the best example of this. It is important to recognize that price discrimination, while controversial, may enhance overall welfare relative to a uniform price structure; see the literature on Ramsey–Boiteaux pricing (Kahn 1988). In airline markets, for example, the pervasive use of low discount fares to fill seats that would otherwise depart vacant increases substantially the population for whom air travel is viable, and raises airline revenue per available seat-mile. The net welfare effect of current levels of price discrimination is difficult to measure, and has not been directly calculated for any deregulated market.

Economic regulation in multimarket industries has been associated with both direct and indirect cost effects. Regulatory restrictions and rigidities may prevent firms from optimizing production in both static and dynamic contexts. For example, entry restrictions in the trucking industry led to high rates of partial or empty backhauls and circuitous routings, raising the cost of transporting a given commodity flow. Unit banking regulations, which restrict a firm to a single physical location in one state, both limit realizations of economies of scale in provision of service and insulate less efficient banks from takeovers by more efficient competitors. Inefficiencies such as these generate potentially huge regulatory deadweight losses (Winston 1998).

The welfare effects of cost increases may be difficult to quantify when associated with offsetting changes in the product provided to consumers. For example, the suppression of price competition may encourage nonprice competition, increasing both costs and quality relative to outcomes in unregulated markets. In the regulated airline industry, increased flight frequency and rapid adoption of new aircraft increased both costs and value to passengers. Measuring cost or productivity effects without controlling for the value of higher service quality leads one to overstate the adverse welfare effects of regulation in situations like this. Recent advances in structural demand estimation may help to quantify the value of particular quality attributes, though both data and modeling limitations continue to make this one of the weaker empirical links in most assessments of the overall effects of regulation.

3. The Effects of Restructuring Regulated Natural Monopolies

The focus of regulatory policy and research changed sharply in the late 1980s and 1990s, with the ascendance of market-based institutions over state-ownership and regulation in even traditional ‘natural monopoly’ sectors. Restructuring, requiring firms to divest along vertical segment lines, has become common. Segments viewed as structurally competitive, such as electricity generation, have been increasingly deregulated. Network segments that continue to operate under natural monopoly cost conditions, such as electricity transmission grids or distribution systems, generally are required to provide access to competitive suppliers, often at terms subject to continued regulatory oversight. Where economic regulation has been retained, it has become more market-oriented. This reflects both dissatisfaction with recent performance under regulation and a response to theoretical research emphasizing attractive properties of incentive-based regulatory schemes (see Poverty: Measurement and Analysis).

These changes raise new questions about market design and regulatory interfaces. The emerging empirical literature has focused on three main issues: the impact of privatization, the performance of restructured sectors, and the effects of incentive-based regulation. Policy in this area is very much in flux, as the initial wave of enthusiasm for market solutions confronts unanticipated consequences from their implementation.

3.1 The Impact of Privatization

Privatization has been motivated by a range of concerns including the cost of service, pace of technological innovation, and impact of continuing subsidies on government budget deficits. A review of the
voluminous literature on privatization is beyond the scope of the present article; see Vickers and Yarrow (1991), La Porta and López-de-Silanes (1999), and their references. Because privatization has been so closely linked with restructuring and regulatory reform initiatives over the past quarter-century, however, it is useful to highlight key empirical results.

One of the most robust empirical results from this literature is the dramatic impact privatization typically has on cost reduction. This is particularly evident in labor costs. Substantial labor shedding has accompanied privatization almost everywhere, with labor force reductions of 50 percent or more a common result. Where comparisons with privately-owned firms are feasible, studies suggest that postprivatization labor rates approach those at firms that were never government-owned. This suggests considerable excess labor in state-owned enterprises. This may reflect the use of state-owned enterprise to promote certain social policies as well as direct operating inefficiencies, suggesting that excess labor costs may include both transfers as well as social dead-weight loss.

Privatization often leads to both price and output increases. Rising output despite higher prices suggests the elimination of artificial constraints, such as rationing, or higher quality service for which consumers are willing to pay more. In numerous studies of utility sectors, waiting time for service falls and investment and service quality increase following privatization. This seems most common in sectors that were capital-starved or in which service was underpriced under state-ownership. Even in countries where state-owned utilities were perceived to be functioning relatively well, however, increased investment and innovation may be important benefits of privatization.

One caveat is in order: the frequent concurrence of privatization with changes in the competitive environment can make it difficult to empirically disentangle the relative contributions of ownership change, hard budget constraints, and increased competition to improved performance. Moreover, it appears that the benefits of privatization may be greater when accompanied by increased competition or deregulation. Studies vary considerably in their recognition and successful treatment of this problem.

### 3.2 Performance in Restructured Natural Monopoly Sectors

Vertical restructuring has become common in natural monopoly industries worldwide. In telecommunication, equipment provision and long-distance service were among the first to be carved out of vertically-integrated telecommunications firms and opened to competitive suppliers. Power generation has been divested from transmission and distribution functions and opened to competition in many electricity systems. Much of this policy movement appears stimulated by concerns that prices charged by monopoly providers were too high, relative to those attainable by privately-owned firms operating in competitive sectors. In some cases, this reflects real operating inefficiencies and reduced innovation under monopoly. In other cases, apparently high prices may in part reflect perverse regulatory pricing schemes. Action on these concerns was facilitated by technological innovations that reduced scale economies at certain production stages and enabled decentralized operations to achieve many of the economies of scope previously attained by vertically integrated firms.

Economists have been especially interested in assessing the competitiveness of restructured markets. Empirical research suggests these markets have yet to converge to competitive ideals. In the US long-distance telephone market, for example, AT&T lost its sanctioned monopoly provider status in 1984, following the earlier technological erosion of its ‘natural monopoly.’ While long-distance prices have declined, the convergence to competitive norms has been relatively slow, with average per-minute prices more than double estimated long-run incremental costs as late as 1998 (Peltzman and Winston 2000, p. 77). Some economists have suggested that this reflects relatively weak competition among the small and decreasing number of existing long-distance providers.

Analyses of electricity markets echo this theme. In most restructured electricity markets, unregulated generators bid to supply electricity to the system operator, which determines the dispatch order of generators to supply the electricity demanded at each moment in time. There is considerable evidence of generator market power in many markets, with generators bidding above their marginal generation costs and strategically withholding capacity from the market to increase prices (see Wolfram 1999, Borenstein et al. 2000, Joskow in Peltzman and Winston 2000, and Joskow and Kahn 2001).

While many restructured markets have been prone to supracompetitive prices, the extent to which price exceeds cost varies tremendously across different settings. There is growing evidence that performance variations are heavily dependent upon the institutional details of the market’s design. These include the way the competitive sector is structured, the terms on which suppliers interface with their customers and the network, and the management of network investments. In electricity markets, for example, the relative sizes of different suppliers, their inframarginal capacity, the use of long-term hedging contracts between generators and their customers, and the degree to which customers see and can respond to real-time price variation have all been demonstrated to influence the exercise of market power.

While competition may enhance cost efficiency in the deregulated sector, restructuring may increase other costs. For example, substitution of market mechanisms for internal decision-making or ‘com-
mand and control’ by a vertically integrated firm may increase coordination costs in electricity markets (Joskow in Peltman and Winston 2000). In California, for example, reserve margins and hence system operating costs have increased as a result of moving to a dispatch market. Local distribution companies may face difficulties when their requirement to serve, which was imposed in exchange for franchise monopoly in many utility sectors, is maintained, but restructuring eliminates their direct control over electricity supplies, as evidenced by California utilities in 2000–2001.

In telecommunications, access issues focus on pricing and interconnection requirements for the ‘local loop,’ the set of wires connecting individual subscribers to the local network. These problems are magnified by the potential for local exchange carriers to compete with other firms for services beyond the local loop. The determination of access terms has substantial effects for investment incentives by incumbent exchange companies and potential competitors, entry into local, long-distance, and enhanced services, and the performance of competitive markets where entry occurs. This is the focus of much current regulatory policy and some empirical analysis (Crandall and Hausman in Peltzman and Winston 2000).

3.3 Effects of Incentive-based Regulation

While regulatory reform over the past two decades has been substantial, economic regulation continues to play an important role in many sectors. Economic regulation in the new millennium is more market-based than its counterpart of 1970, but less market-driven than current rhetoric would suggest. Policy innovation has been particularly notable outside the USA, perhaps because these systems were being designed de novo rather than patched on to existing regulatory practices. Regulation has moved away from traditional rate-of-return regulation, which determined prices through cost-based mark-up rules (Kahn 1988). More common are higher-powered incentive schemes such as price caps, which fix price levels or rates of change, and allow firms to keep the surplus generated from unanticipated improvements in efficiency, at least until the next review of the cap or its adjustment factor. The models behind these schemes are discussed elsewhere (see Poverty: Measurement and Analysis). It is important to recognize that implementation, however, generally deviates considerably from the theoretical construct.

Many researchers have attempted to measure the impact of incentive-based regulation, particularly in the telecommunications sector. This literature broadly suggests that incentive regulation is accompanied by lower prices. Kridel et al. (1996) suggest that these effects may reflect coincident policies that increase competition more than the incentive effects of incentive regulation itself, however. This interpretation is particularly suggested by the difficulty in finding consistent effects of incentive regulation on costs or productivity, although the short time span of many studies may impede detection of such effects. As earlier empirical work in regulation suggests, one should exercise great caution in affirming the superiority of incentive-based policies based on the theoretical properties of idealized schemes.

4. Conclusion

The reforms of the 1990s have created a vast new set of institutions and regulatory policies. This is an area in which empirical analysis greatly lags behind the theoretical literature, and the returns to additional careful work are likely to be significant. Empirical research in regulatory economics, argued by some in the 1980s to belong to the domain of economic history, remains vital to guiding, understanding, and evaluating policy initiatives today.

See also: Cost–Benefit Analysis; Law and Development; Policy Knowledge: Advocacy Organizations; Poverty: Measurement and Analysis; Regulation, Economic Theory of; Socialism

Bibliography

Regulation: Family and Gender

There are few more politically sensitive areas than the role the state should play in regard to the family. It is not easy for liberal democratic states to justify intervention in the private sphere of personal relationships. Yet, in the face of extreme examples of state intervention during the twentieth century, there is a widespread awareness of the need for nonintrusive, nonstigmatizing state intervention. The idea that state officials practice some kind of surveillance over the family also found favor with followers of Foucault, although Donzelot (1979) stressed the extent to which the professionals in emerging welfare states formed alliances with women understood as a fundamental organizing principle in society (Scott 1988), is crucial to the analysis of the relationship between the state and the family. The concept of 'gendered divisions,' particularly in respect of resources, labor, and investments, is key to understanding the development and impact of the public policies and family law that regulate the family.

1. Ideas about the Nature of State Regulation and the Family

The debate about state regulation, the family, and gender in the last quarter of the twentieth century has revolved around the extent to which states have propped up a particular family form, but the positions taken are complicated and do not follow a simple political division between Left and Right.

Feminists have argued that for governments, family policy all too often meant ways of bolstering the traditional two-parent family, with a male breadwinner and an economically dependent female carer, and that policies rarely impacted on different family members in the same way. For example, in the 1970s, Scandinavian feminist writers proposed that the modern welfare state amounted to a new form of 'public patriarchy,' the argument being that the dramatic increase in women's employment, which began in Sweden and Denmark in the 1970s, involved for the most part women leaving their homes to engage in similar caring work, often for children, in the service of the state. In the UK, Wilson (1977) suggested that the postwar welfare state amounted to nothing less than the state organization of domestic life, by which she meant that state policies, for example in respect of cash benefit entitlements, sought to reinforce the male breadwinner family model. A few years later, a similar kind of criticism was made from an entirely different quarter.

Arguing from a 1980s New Right position, Mount (1982) suggested that the family had been in 'permanent revolution' against the unwarranted intrusions of the state. In his view, even apparently helpful public visitors, such as home nurses, were essentially seeking to impose standardized modes of care on families and were able to invoke a wide range of powers if they deemed the family to have 'failed' in some respect. Mount's view keyed into the long-standing suspicions of working people, especially in the English-speaking countries, of officialdom. However, this does not mean that nonintrusive, nonstigmatizing state intervention has not been welcomed. The panoply of Swedish collective social provision has been referred to by the citizens of that country as 'the people's home.' The idea that state officials practice some kind of surveillance over the family also found favor with followers of Foucault, although Donzelot (1979) stressed the extent to which the professionals in emerging welfare states formed alliances with women.