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GENERAL THEORIES OF REGULATION

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Abstract

This chapter makes a distinction between three types of theories of regulation: public interest theories, the Chicago theory of regulation and the public choice theories. The Chicago theory is mainly directed at the explanation of economic regulation; public interest theories and public choice theories envisage in addition to that an account of social regulation. The core of the diverse theories is discussed as well as the criticisms that have been leveled at them. It can be derived from the theories in what sectors regulation can be expected and what form the regulation will take. The extent to which these theories are also able to account for deregulation, and the expectations for the future, are discussed.

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1. Introduction

In legal and economic literature, there is no fixed definition of the term 'regulation'. Some researchers devote considerable attention to the various definitions and attempt through systematization to make the term amenable to further analysis (Mitnick, 1980). Other researchers, however, entirely abstain from a further definition of regulation (Joskow and Noll, 1981). In order to delineate the subject and because of the limited space, a further definition of regulation is nevertheless necessary. In this article, *regulation* will be taken to mean the employment of legal instruments for the implementation of social-economic policy objectives. A characteristic of legal instruments is that individuals or organizations can be compelled by government to comply with prescribed behavior under penalty of sanctions. Corporations can be forced, for example, to observe certain prices, to supply certain goods, to stay out of certain markets, to apply particular techniques in the production process or to pay the legal minimum wage. Sanctions can include fines, the publicizing of violations, imprisonment, an order to make specific arrangements, an injunction against withholding certain actions, or closing down the business.

A distinction is often made between *economic* and *social* regulation, for example Viscusi, Vernon and Harrington (1996). Economic regulation consists of two types of regulations: structural regulation and conduct regulation (Kay and Vickers, 1990). 'Structural regulation' is used for regulating market structure. Examples are restrictions on entry and exit and rules against individuals supplying professional services in the absence of recognized qualifications. 'Conduct regulation' is used for regulating behavior in the market. Examples are price control, rules against advertising and minimum quality standards. Economic regulation is mainly exercised on natural monopolies and market structures with limited or excessive competition.

Social regulation comprises regulation in the area of the environment, labor conditions (occupational health and safety), consumer protection and labor (equal opportunities and so on) Instruments applied here include regulation dealing with the discharge of environmentally harmful substances, safety regulations in factories and workplaces, the obligation to include information on the packaging of goods or on labels, the prohibition of the supply of certain goods or services unless in the possession of a permit and banning discrimination on race, skin color, religion, sex, or nationality in the recruitment of personnel.

In the theories of economic regulation, a distinction can be made between *positive* and *normative* theories. The positive variant is directed to the economic explanation of regulation and deriving the consequences of regulation. The normative variant investigates which type of regulation is the most efficient. The latter variant is called normative because there is usually an implicit assumption that efficient regulation would also be desirable; for the distinction between positive and normative theories, see the discussion between Blaug (1993) and Hennipman (1992). In the rest of this chapter, theories will be discussed which are directed to the economic explanation of regulation. These theories can be divided into public interest (Sections 2-8) and private interest (Sections 9-14) theories of regulation, see for example Ogus (1994). The normative theories will not be discussed further in this overview, except in a number of literature references below. The inefficiencies of *natural monopolies* can be eliminated by government bodies, regulated private bodies, or by means of franchising; for a comparison see Viscusi, Vernon and Harrington (1996). Public and private bodies are compared by Boardman and Vining (1989), Borchering, Pommerehne and Schneider (1982), Daves and Christensen (1980) and Davies (1971, 1977). *External effects* such as pollution and accidents can be opposed by taxes, regulation, or systems of liability (see Shavel, 1984a, 1984b; Weitzman, 1974; White and Wittman, 1983 and Wittman, 1977). Various instruments for solving *information problems*, such as information regulation, prior approval, target standards, specification standards and performance standards are compared in Ogus (1994). Normative theories of regulation make a cost-benefit analysis of various regulatory

instruments. The following costs can be distinguished in this:

1. the costs of formulating and implementing regulation;
2. the costs of maintaining regulation;
3. the costs of compliance with the rules for industry;
4. the dead weight costs resulting from distortive changes in connection with 1-3.

The benefits consist of improvements in the static and dynamic efficiency in the application of scarce resources. The static efficiency comprises productive and allocative efficiency. In productive efficiency, production takes place at minimum cost, whereas allocative efficiency means that the correct range of goods is produced. Dynamic efficiency refers to future improvements in the application of scarce resources. Through such means as organizational or technological innovations, fewer resources are necessary in the production of certain goods. New products and product varieties can also be developed that better serve the preferences. Finally, dynamic efficiency refers to the speed at which markets clear and economies stabilize.

2. Public Interest Theories of Regulation

The first group of regulation theories account for regulation from the point of view of aiming for public interest. This public interest can be further described as the best possible allocation of scarce resources for individual and collective goods. In western economies, the allocation of scarce resources is to a significant extent coordinated by the market mechanism. In theory, it can even be demonstrated that, under certain circumstances, the allocation of resources by means of the market mechanism is optimal (Arrow, 1985). Because these conditions are frequently not adhered to in practice, the allocation of resources is not optimal and a demand for methods for improving the allocation arises (Bator, 1958). One of the methods of achieving efficiency in the allocation of resources is government regulation (Arrow, 1970; Shubik, 1970). According to public interest theory, government regulation is the instrument for overcoming the disadvantages of *imperfect competition*, *unbalanced market operation*, *missing markets* and *undesirable market results*.

In the first place, regulation can improve the allocation by facilitating, maintaining, or imitating market operation. The exchange of goods and production factors in markets assumes the definition, allocation and assertion of individual property rights and freedom to contract (Pejovich, 1979). The guarantee of property rights and any necessary enforcement of contract compliance can be more efficiently organized collectively than individually.

Furthermore, the costs of market transactions are reduced by property and contract law.

The freedom to contract can, however, also be used to achieve cooperation between parties opposed to market operation. Agreements between producers give rise to prices deviating from the marginal costs and an inefficient quantity of goods is put on the market. *Antimonopoly legislation* is aimed at maintaining the market operation through monitoring the creation of positions of economic power and by prohibiting competition limiting agreements or punishing the misuse thereof. Imperfect competition can also result from the special characteristics of the production process in relation to the magnitude of the demand in the market. At a given magnitude of demand average total costs would be minimized if the production were to be concentrated in one company. In that case a *natural monopoly* exists. If several companies produce the same total quantity of goods, the unit costs of production rise. An example of how such a situation arises is when the production process requires a great deal of capital. In that case, the fixed costs can continue to decline as production increases. Especially in the case of modest marginal costs that hardly rise, if at all, average total costs may persistently fall (Baumol, 1977). In such cases it is desirable, from the point of view of productive efficiency, to concentrate the production in a single company. A monopolist striving for maximization of profits will, however, set a price that deviates from the marginal costs. The stimulation of productive efficiency in the production process then acts to the detriment of the aim for allocative efficiency. Natural monopolies are then either put under control of the state, as happens in many European countries, or highly regulated, as for example in the United States. In the latter case, regulation consists of barring entry to the market and the enforcement of price rules that promote efficient allocation (Braeutigam, 1989). In this way, the market results of perfect competition are simulated. Examples of companies assumed at some time to have possessed the characteristics of a natural monopoly are railways, electricity distribution, gas and oil pipelines, telecommunication networks and drinking water distribution.

3. Unbalanced Market Operation

In the second place, regulation is capable of contributing to the stabilization of market operation and the earlier achievement of market equilibrium. Imbalances within an economy occur at the level of separate markets and on a macro level. In separate markets, what is known as destructive or *excessive competition* can arise, often as a result of long-term over-capacity. The development of a new equilibrium can take a long time if the individual participants are in a prisoner's dilemma. For all market parties jointly,

efficiency is achieved if the existing over-capacity can be rationalized. For an individual producer, however, the 'sunk costs' can mean that it is rational to wait until other suppliers have sorted out the capacity. Because this consideration applies to all producers, the over-capacity can persist for a considerable time. Over-capacity situations can also arise when the production capacity is adjusted to the demand during peak moments or peak periods. Examples are peak loads in the rush-hour (busses, underground railways and trains), during the harvest in agriculture (trucks) and during the tourist high season (touring cars, aircraft). Excessive or ruinous competition can finally also arise in a natural oligopoly. In that case efficiency is achieved if only a few companies supply the market. The small number of companies allows them to react to each other's market strategies, so that among other things, price wars can be waged.

A consequence of excessive competition is not only that the price level sinks below the average total costs, but also that the price level fluctuates more widely. This causes insecurity and inefficient decision making on the part of both producers and consumers. Finally, excessive competition can be at the expense of safety and reliability when consumers are not in a position to assess the quality of goods (Kahn, 1988, pp. 172-178). In the past it was assumed that the situation of excessive competition applied to sectors such as air travel and passenger or goods transport by road or water. For these sectors, business licensing restrictions were devised and the capacity was pruned, sometimes in combination with minimum price regulation. However, modern regulatory theory considers the collection of excessive competition-rationales of government intervention to be 'an empty box' (see Breyer, 1982, pp. 29-32).

Except at the level of the individual sectors, imbalances can also occur on a macro economic level. Market economies are characterized by a *trade cycle*, the regular alternation of periods of increasing and declining economic activity. In the course of the trade-cycle, a self-sustaining process comes about in the goods market that is not compensated by adjustments in the labor market. This arises partly because of lack of information, long-term labor contracts and efficiency wages. Trade-cycle policies can be desirable to prevent temporary disturbances to the equilibrium having permanent effects. For example, capital goods of limited usefulness in other market segments can be lost forever in a recession. Furthermore, structural unemployment can arise when unemployed workers lose their skill and motivation. Finally, stabilization of the trade cycle can be desirable to prevent the decline of production and employment such that different social groups are unequally affected by the economic rise and fall. Traditionally, trade-cycle policies are put into effect together with instruments of budgetary and monetary policy; for an overview of the significance of these instruments and the underlying theories, see Snowdon, Vane and Wynarczyk (1994). Because these instruments are not directed to specific sectors and only take effect after some time, wage and price regulation have been developed in

some market economies. To combat a wage-price spiral, governments have for example developed the means to freeze wages and prices for a period of between a half to one year, possibly in designated sectors (Ogus, 1994, pp. 300ff. and Breyer, 1982, pp. 60ff.).

4. Information Problems

Public interest theory explains regulation from viewpoints not restricted to imperfect competition and unbalanced market operation. For a number of reasons, markets may not exist for some goods for which the utility or the 'willingness to pay' exceeds the production costs. Markets might not exist as a result of information problems and transaction costs in the case of external effects and public goods. In these cases, regulation can improve the allocative efficiency of the economy.

In the first place, missing markets can be accounted for by *hidden information* or an *asymmetric distribution of information* with respect to prices, quantities or quality of goods (Hirshleifer and Riley, 1979). In this connection, it is useful to make a distinction between 'search goods', for which the quality of a product can be determined prior to purchase, 'experience goods', for which quality only becomes apparent after consumption of the good and 'credence goods', for which the quality cannot even be established after consumption (Nelson, 1970; Darby and Karni, 1973). Examples of each are the purchase of flowers, second-hand cars and medical advice, respectively. When it is not possible to establish the quality of goods or services in advance, purchasers will be prepared to pay an average price corresponding with the expected quality. Sellers of goods of high quality will not be prepared to offer the goods at that asking price, and will withdraw from the market. The consequence is that the quality of goods traded on the market will decline, as will the price buyers are prepared to pay (Akerlof, 1970). In this process of *adverse selection*, high-quality goods are driven out of the market by low-quality goods. In addition, the asymmetric distribution of information can also give rise to *moral hazard* in the enforcement of contracts, which means that parties misuse their information advantage. Examples are painters who use poor quality paint and lawyers who give unfounded advice. The problems of adverse selection and moral hazard may explain the existence of, for example, certificates, licenses and other trading regulations for professional groups such as building contractors, hairdressers and plasterers. By means of these rules, minimum requirements can be set on the commercial knowledge, professional skill and creditworthiness, so that the transaction costs decline and the information problems are reduced (Leland, 1979). Because of the nature of credence goods, it is difficult to set minimum quality standards precisely in those cases where the risks of moral hazard are high. In such circumstances, legally sanctioned

self regulation can combat the problems of adverse selection and moral hazard (Van den Bergh and Faure, 1991; Den Hertog, 1993). Not only do those involved have a vested interest in the maintenance of the minimum quality, they are also better able to formulate and maintain quality rules (Gehrig and Jost, 1995).

Problems of adverse selection and moral hazard arise particularly in insurance markets (Rothschild and Stiglitz, 1976). Insured parties have superior information available with respect to the incidence of risks but they lack information regarding the quality and independence of intermediaries. In many countries, social legislation is introduced as a reaction to these problems, and rules are established for intermediaries.

Shrinking markets can also arise as a result of *search costs* incurred by consumers when relevant information is not available to them. Because in their purchases consumers compare the utility of goods with the effective prices, search costs give rise to shrinking markets. Search costs can be kept to a minimum through rules related to price and quantity marking, and in the case of credence goods, also for example a ban on advertising (Barzel, 1982, 1985). Finally, under certain circumstances transaction costs can be kept to a minimum by rules relating to misleading information (Beales, Craswell and Salop, 1981; Schwartz and Wilde, 1979).

5. External Effects and Public Goods

In addition to information failures, prohibitively high transaction costs can also result in missing markets. Transaction costs can impede, for example, the coming into existence of a market for efficient use of the environment. In a market economy, resources are efficiently used when the production of goods is increased until the marginal costs equal the marginal benefits of production. In a market with perfect competition, an individual producer aiming for maximization of profit will increase his production until his marginal costs equal his market price. However, an inefficient allocation of resources can arise in the presence of *external effects* (Meade, 1973). External effects are influences of economic action having consequences for the conditions of production or the level of utility of third parties and which come into being outside the market. An often cited example concerns the discharge of waste material by a factory such that downstream drinking water companies must incur costs of water purification. Because the private costs for the discharging manufacturer differ from the social costs, production will be increased further than would be desirable from the point of view of efficient allocation. According to the Coase theorem, an efficient allocation of resources can nonetheless result from a process of negotiation in the case of clearly described property rights and in the absence of transaction costs (Coase, 1960). The

transaction costs of negotiation can, however, be prohibitively high if several parties are involved in the negotiating process and an element of strategic behavior exists (Veljanovski, 1982a). In such cases, the government can attempt to internalize the external effects by means of regulation (Gruenspecht and Lave, 1989). Examples are safety regulations for items such as automobiles and food, noise levels for aircraft, the obligation to use catalytic converters in automobiles and limits for the emission of hazardous substances in permits.

Missing markets may result in the third place with goods having specific characteristics, the so-called *public goods* (Samuelson, 1954). These types of goods have two special characteristics. For the supplier of these types of goods it is first of all either impossible or too expensive to exclude people from consumption who fail to pay for the good; the technical term for this is non-excludability. In the second place, consumption of these types of goods by one person is not at the expense of another person; the technical term for this is non-rivalness (Musgrave, 1969). Classical examples of these types of goods are lighthouses, public order, defense, street lighting and sea defenses, and television and radio signals. Public goods are either not produced at all or not in the optimum quantity by a market because of free-rider problems and problems with establishing the 'willingness to pay' for these goods (Bohm, 1987). If a supplier has already produced the goods, consumers can be tempted to take a free ride on the willingness to pay of others: after all, they can no longer be excluded from consumption of the good. To establish the optimum quantity of the collective good, the marginal utility of single increments of this good must be known from all the consumers involved. Because of its non-rival character, the aggregate willingness to pay for marginal units is compared against the marginal costs. When consumers are asked to reveal this willingness to pay for extra units, they will exaggerate or minimize this for strategic reasons. Exaggeration will occur when the willingness to pay for extra units is not linked with actual payment for extra units of the good. Minimization will occur when the financing of the public good is linked to the willingness to pay that was indicated. Because consumers cannot be excluded, there will be a tendency to hitch a ride on others' willingness to pay, and for strategic reasons they will indicate a modest willingness to pay for themselves. For these reasons, a market economy will not be able to produce these goods in optimum quantities, if at all. Government regulation is necessary for establishing the optimum quantity of the goods concerned, and for enforcing the payment of these goods. Many goods, such as education, health care, parks and roads have a public good dimension. In such cases also, government regulation can theoretically contribute to an efficient use of resources in an economy.

6. Undesirable Market Results

According to public interest theory, regulation can be explained not only by imperfect competition, unbalanced market operation and missing markets, but finally also by the need to prevent or correct undesirable market results. In a competitive market economy, participants in the economic process are rewarded according to their marginal productive contribution. This result of the market process can be undesirable for economic and other reasons. In the first place it is possible that an efficient redistribution will increase the general level of economic welfare situations effects such as the prisoner's dilemma impede voluntary transfers (Hochman and Rogers, 1969, 1970). An efficient redistribution could also occur where marginal utility of income diminishes and satisfaction capacity does not differ widely among people. However, in economics it is customary to assume the unfeasibility of cardinal measurement of utility and interpersonal utility comparison, so that this last form of efficient redistribution cannot theoretically be justified from an economic point of view (Robbins, 1932).

The correction of undesirable market results can furthermore also be considered desirable for other than economic reasons, such as considerations of justice, paternalistic motives or ethical principles. In that case, tradeoffs can arise between, for example, *economic efficiency* and equality: incentive effects of redistribution can result in a decline in the level of individual utility (Okun, 1975). Public interest theory is usually applied to explain regulation as an aim for economic efficiency (Joskow and Noll, 1981, p. 36). In other cases, public interest theory is more broadly interpreted and regulation is accounted for as aiming to correct inefficient or inequitable market practices (Posner, 1974). According to this last view, regulation can be accounted for as aiming for a *socially efficient* use of scarce resources. Examples of laws and rules intended to prevent or ameliorate undesirable market results are a legal minimum wage, maximum rents, cross-subsidies in postal delivery, telephone calls and passenger transport, rules enhancing the accessibility of health care, rules guaranteeing an income in the event of sickness, unemployment, disablement, old-age and so on.

7. Criticism of Public Interest Theory

The theory that regulation can be explained as an answer to market failures has been criticized from several points of view.

(a) In the first place, criticism has been directed at the *theory of market failure* underlying the explanation of government regulation (Cowen, 1988). In practice it appears that the market mechanism itself is often able to compensate for any inefficiencies. In that way problems of adverse selection are

solved by companies themselves by, for example, the issue of guarantees, the use of brand names and extensive advertising campaigns as a signal of quality (Nelson, 1974). The market sector also appears able to avail itself of goods traditionally characterized as typical public goods, such as lighthouses (Coase, 1974). The conclusion that monopoly power or external effects give rise to an inefficient allocation of resources can only be understood by assuming a model in which transaction costs are absent. The allocation of resources appears efficient if transaction costs are included in the analysis (Dahlman, 1979) and (Toumanoff, 1984). The assumption of market failure in the case that only one or a few companies are responsible for the production of goods is similarly criticized (Demsetz, 1976). Any significant returns could be a result of superior efficiency of these companies and furthermore, account must be taken of the possibility of competition for the market (Baumol, Panzar and Willig, 1982) as opposed to competition in the market. A more general criticism of the theory of market failure is its limited explanatory power. An economist generally needs only 10 minutes to rationalize government intervention by constructing a form of market failure (Peltzman, 1989).

(b) In the second place, the original theory assumes that *government regulation is effective* and can be implemented without great cost (Posner, 1974). So precisely the transaction costs and information costs, which underlie market failure, are assumed to be absent in the case of government regulation. This assumption has been criticized in both empirical and theoretical research.

Theoretical research, the theory of the second best, has demonstrated that the partial aim for efficient allocation does not make the economy as a whole more efficient if unavoidable inefficiencies persist elsewhere in the economy (Ng, 1990). An unavoidable inefficiency such as imperfect competition in the commodity market distorts allocation in the whole economy. Not only is the good concerned produced in insufficient quantity, but also too many resources are devoted to other goods in the economy. These distortions also mean that the allocation in the factor market is suboptimal. Consider the case that the government wishes to aim for allocative efficiency in an economy in which allocation is suboptimal. In that case, it is of little use to aim for allocative efficiency through, for example, price regulation of electricity production. A 'second best' solution would be to supply electricity to the competition limited sector on prices higher than marginal costs. In reality however, a great many of these unavoidable inefficiencies exist. These inefficiencies are a consequence of such things as external effects, taxation, imperfect competition and flawed information. That renders the achievement of a *second-best optimum* unfeasible in practice (Utton, 1986). Other theoretical research points to the *flawed information* available to regulators, both in the drawing up of the rules and in their enforcement (Sappington and Stiglitz, 1987). A consequence is, for example, that regulated businesses select inefficient combinations of production

factors, so that they are unable to produce to minimal costs (Baumol and Klevorick, 1970). Furthermore, x-inefficiencies arise so that production to minimal costs no longer takes place (Leibenstein, 1966). Another consequence is that inefficient safety standards are applied by regulators, see for example Viscusi (1985).

Empirical research into the effectiveness and efficiency of government regulation also gives rise to criticism of the public interest theory. For a general overview of the effects of economic regulation, see Joskow and Rose (1989). The research into economic regulation was started with the famous article by Stigler and Friedland (1962) about the effects of price regulation on electricity producers. An earlier synthesis of this type of research showed firstly that the influence of regulation on natural monopolies was slight if not non-existent (Jordan, 1972). In the second place, it appeared that regulating potentially competing sectors such as air traffic and freight resulted in an increase in prices and a restricted number of competitors. Empirical research further demonstrates that regulation prescribed an inefficient price structure in which mainly consumer groups received cross subsidies (Posner, 1971). Research into the effects of economic deregulation demonstrated furthermore that mainly consumers, but to some extent also producers, derived a benefit on balance from less government regulation (Winston, 1993). Social regulation appeared to keep costs and benefits more or less in balance (Hahn and Hird, 1991) although there is also empirical evidence suggesting that much social regulation is poorly targeted or is over-stringent (Sunstein, 1990; Hahn, 1996). A qualifying remark can be made pertaining to social regulation, that it is hardly if at all possible to quantify many of the benefits. For example, how can a value be put on the preservation of a variety of life forms and how can the preferences of future generations be determined? Finally, there are arguments for assuming that even competition legislation is misused as an instrument of monopolization (Baumol and Ordovery, 1985).

The points of criticism given under (a) and (b) make clear that at the root of the public interest theory lies what is known as the *Nirvana approach* (Demsetz, 1968). Regulation can be explained by assuming that a theoretically efficient institution is able to replace or correct imperfect real institutions.

It is no longer the case that transaction costs and administrative costs under regulatory systems tend to be ignored; see the work of what has variously been referred to as the 'New Haven' or 'Progressive School' of Law and Economics (for example, Rose-Ackerman, 1988, 1992).

(c) Public interest theory usually assumes that regulation can be accounted for as aiming for economic efficiency. Interpreted in this way, the theory is unable to explain why on occasions other objectives such as procedural fairness or redistribution are aimed for at the expense of economic efficiency (Joskow and Noll, 1981, p. 36). On the other hand, when it is assumed that regulation can be accounted for as aiming for social efficiency, another problem is

encountered. Where there is conflict between efficiency and equity, it is impossible for at least two reasons to establish the social efficiency of regulation (Sen, 1979a, 1979b). In contrast to the case of economic considerations, where the criteria of Pareto and Kaldor-Hicks are generally applied, in the case of considerations of justice there are no generally applicable standards of justice available. No agreement exists regarding the definition of justice in concrete situations (Dworkin, 1981).

Secondly, the establishment of social efficiency of regulation requires that economic efficiency and justice be weighed against each other. The theoretically justified and practically usable scale of values that this calls for is not available (Ng, 1985). The absence of generally applicable standards of justice and the lack of insight into the relationship between justice and efficiency renders empirical testing of the public interest theory as an explanatory theory of regulation impossible. A key problem of the public interest theory is that the evaluating, *normative theory of economic welfare* is using a *positive explanatory theory* of regulation (Joskow and Noll, 1981).

(d) A final point of criticism is that public interest theory is *incomplete*. In the first place, the theory does not indicate how a given view on the public interest translates into legislative actions that maximize economic welfare (Posner, 1974). The political decision-making process consists of various participants who will aim for their own objectives under different constraints. In contrast to the market economy, it is unclear in the political decision-making process how the interaction of the participants will lead to maximum economic welfare.

Secondly, a theory of regulation should be able to predict which branches of industry or sectors should be regulated, and to whom the advantages and disadvantages are to accrue. The theory should also be able to predict *what form* regulation is to take, such as subsidies, restricted entry, or price regulations (Stigler, 1971). Of course, much *normative* public interest analysis has been undertaken on the forms of regulation, and not only of economic regulation. There is the well-known literature on standards versus prices for pollution and other externalities. On consumer safety, see Asch (1988). Other valuable studies include Stewart (1981), Dewees (1983) and Trebilcock and Hartle (1982).

Public interest theory does not appear able to come up with relevant predictions that are amenable to testing by empirical economic science. Furthermore, facts are observed in social reality which are not well accounted for by public interest theory. Why should companies support and even aim for regulation intended to cream off excess profits?

8. A More Sophisticated Version of Public Interest Theory

Criticism of the public interest theory has led to a more serious public interest theory (see Noll, 1983, 1989a). According to the naïve public interest theory,

regulation can be accounted for by market failure under conformance to the conditions of the Coase theorem. This implies the assumption of absence of transaction costs and freely available, conveniently processed information in the political process. By letting go of these assumptions, a more sophisticated version of the public interest theory comes about. Is it possible to see regulation as an answer to market failure when account is taken of transaction costs and information costs? In the presence of transaction costs, regulation can form a more efficient solution to market failure than private negotiations between the parties involved. Costs of organization can also be avoided when for example in the case of environmental pollution, politicians bundle the preferences of those negatively affected. In the case of flawed information, political entrepreneurs can detect the causes of market failure and report them to those involved. In this way, knowledge about, for example, accidents can be picked up through safety regulations in factories. Regulation may be more efficient in this case because the government can obtain information less expensively. On the one hand, the government can enforce the provision of information about accidents, for example, on the other hand information is often a byproduct of other government activities. This sophisticated version of the public interest theory does not therefore require regulation to be perfect. It does, however, assume that market failure exists, that regulation is the most effective means of combating it and that regulation does not continue to exist once the costs exceed the benefits. This theory also assumes that politicians support open decision-making processes and spread information widely about the effects of market results and regulation. According to this theory, then, regulation can be accounted for as the *efficient* solution to market failure. The problems stated under Section 7(b) and (c) are not, however, solved with this version.

9. Private Interest Theories of Regulation

After the public interest theory had fallen into disrepute through empirical and theoretical research, the *capture theory* was developed mainly by political scientists; for a discussion see Posner (1974). This theory assumes that in the course of time, regulation will come to serve the interests of the branch of industry involved. For example, it is assumed that legislators subject the branch to additional regulation by an agency if misuse of the economic position of power is detected. In the course of time, other political priorities arrive on the agenda and the monitoring of the regulatory agency by legislators is relaxed. The agency will tend to avoid conflicts with the regulated company because it is dependent on this company for its information. Furthermore, there are career opportunities for the regulators in the regulated companies. This leads in time to the regulatory agency coming to represent the interests of the branch

involved. For an overview of the various strategies available to be applied by agencies and regulated companies, see Owen and Braeutigam (1978). The capture theory is unsatisfactory in a number of respects. In the first place there is insufficient distinction from the public interest theory, because the capture theory also assumes that the public interest underlies the start of regulation. In the second place, it is not clear why a branch can succeed in subjecting an agency to its interests but cannot prevent its coming into existence. In the third place, regulation often appears to serve the interests of groups of consumers rather than the interests of the branch. Regulated companies are often obliged to extend their services beyond the voluntarily chosen level of service. Examples are transport services, the supply of gas, water and electricity and telecommunication services to consumers living in widely scattered geographical locations. In the fourth place, much regulation, such as environmental regulation, regulation of product safety and labor conditions are opposed by companies because of the negative effect on profitability. Finally, the capture theory is more of a hypothesis than a theory. It does not explain why a branch is able to 'take over' a regulatory agency and why, for example, consumer groups fail to prevent this takeover.

10. The Chicago Theory of Regulation

In 1971 a start was made on the development of a theory of regulation called by some *the economic theory of regulation* (Posner, 1974) and by others *the Chicago theory of government* (Noll, 1989a). 'The Theory of Economic Regulation' by George Stigler (1971) appeared in that year. His central proposition was that 'as a rule, regulation is acquired by the industry and is designed and operated primarily for its benefit'. The benefits of regulation for a branch of industry are obvious. The government can grant subsidies or ban the entry of competitors to the branch directly so that the level of prices rise. In the second place, the government can maintain minimum prices more easily than a cartel. In the third place, the government can suppress the use of substitutes and support complements. An example of support to complements is the subsidizing of airports for the benefit of airlines. A demand will therefore arise on the one hand for government regulation. The political decision-making process on the other hand makes it possible for branches of industry to exploit politics for its own ends. For this proposition, Stigler makes use of the insights of Downs (1957) and Olson (1965). In the political decision-making process, interest groups will exercise political influence, as opposed to individuals. Individuals will not participate because forming an opinion about political questions is expensive in terms of time, energy and money, while the benefits in terms of political influence will be negligible. A representative democracy

would more readily honor the strongly felt preferences of majorities and minorities than the less passionately expressed preferences. This is related to the costs of organization of such minority and majority groups. Some groups can organize themselves less expensively than others. Small groups have the advantage because the transaction costs are lower and the 'free-rider' problem is smaller than is the case with large groups. Furthermore, in small groups the preferences will be more homogeneous than in large groups. Small groups also have the advantage in that for the same total yield, the yield per member of the group is greater. The fact that apparently large branches can still be well organized is explained by Stigler through concentration and asymmetry (Stigler, 1974). The large companies in a concentrated branch will see themselves as a small group. In the case of asymmetry in the branch, for example as a result of product diversity or widely varying production techniques, separate companies will wish to prevent unfavorable regulation and will participate in the organization.

The result of variation in the costs of organization is that producers organize more readily than consumers. Not only are the costs more modest for producers, but also the burden of regulation in the form of such things as higher prices per consumer is too slight to justify organization. Politicians aim for re-election. Organized branches can contribute to re-election in two ways: by supplying votes and other resources. Examples of these resources are campaign contributions, chairing fundraising committees and the offer of employment to party members. The larger branches have an advantage in this over smaller branches, unless the smaller branches have something in their favor such as a strong geographical concentration. Politicians will honor the demand for regulation by branches because it is not worth the while of the majority of opponents to gather the information and organize. The conclusion is that regulation is not directed at the correction of market failures, but at setting up income transfers in favor of the industries in exchange for political support.

11. Extensions to the Chicago Theory of Regulation

In the same issue of the *Bell Journal of Economics* in which Stigler put forward his theory of economic regulation, Posner (1971) implicitly supplied the first criticism. He observed that in many cases regulation strongly advantaged certain consumer groups. For instance, uniform prices were prescribed for such things as rail transport, the supply of gas, water and electricity, telecommunications traffic and mail distribution. The costs of the services supplied differ considerably between consumer groups, however, depending on their geographical spread, among other factors. Other examples are the supply of drinking water to households, schools and fire services, either free of charge or at a price lower than the marginal costs; free rail travel for government

workers and military personnel; the supply of electricity to hospitals at less than marginal costs and so on. This phenomenon of *internal or cross-subsidization* does not fit in with Stigler's theory of regulation. Even if other consumer groups are obliged to pay higher than marginal costs for their goods and services to compensate, cross-subsidization works against the aim of maximum profit. An explanation of cross-subsidization is provided in an extension to the theory of regulation by Peltzman (1976). He assumes that politicians will choose their policy of regulation such that political support is maximized. It is not likely that regulation will benefit industry exclusively. Some consumer groups will also be able to organize themselves effectively. Moreover, organization and information costs are an obstacle to the immediate and total withdrawal of political support in the event of a small decrease in cartel profit. Lower prices are favorable to consumers, higher prices generate more political support from industry. According to Peltzman, the core problem for regulators is *efficient regulation*: what price level should be settled on such that the gain in votes resulting from the income transfer just balances the loss of votes resulting from the rise in prices. This extended theory explains not only the phenomenon of cross-subsidization, but also predicts which branches will be regulated. These are the relatively competitive branches and the monopolistic branches. In the first case, the branches have a keen interest in regulation and, in the second case, consumers have a great interest in regulation. It can be expected of intermediate branches that any regulated price level will not deviate widely from the actually existing price level. In that case it is not worthwhile for consumers or producers to organize to acquire favorable regulation. The practice of regulation appears to confirm this prediction. Regulated branches are either monopolistic, such as rail transport and telecommunications, or highly competitive, such as freight, agriculture, independent professions and cab companies.

As well as the types of branches, the theory of regulation also predicts the form the benefits as allocated will take. In principle, transfers can come about directly through *subsidies* or indirectly through *price or quantity regulation* or restriction to market entry. Stigler originally assumed that branches would choose indirect support. The granting of subsidies would result in entry, so that the subsidy per producer would be dissipated. In an extension to the theory of regulation, Migué (1977) has shown that the form of the transfers is partly dependent on the elasticity of supply of the production factors in the branch concerned. In the political market, the public are both consumers and suppliers of production factors. Suppliers of production factors will give preference to subsidies when the supply is inelastic. The taxation necessitated by the subsidy is distributed over many taxpayers, while the subsidy accrues to a limited group of suppliers of production factors. This extension to the theory of regulation explains why subsidies are granted in sectors such as education, health care,

domestic housing and city transport, and why quota systems and price regulation can be found in sectors such as agriculture, airlines, road transport and railways. Similar reasoning explains why polluting companies give preference to prescribed limitation of production (quotas) above taxation (Buchanan and Tullock, 1975).

Another extension to the theory of regulation is from McChesney (1987, 1991). He sees politicians not as neutral agents between competing private interests directed to obtaining transfers of income. In his view, politicians also try to gain advantages by putting private parties under pressure. He gives examples in which Congress, under the threat of price reductions or cost increases, forces concessions from private parties. To make such rent extractions possible, politicians encourage private parties to organize. Organization not only enhances the probability of gaining transfers of income, it also increases the risk of having one's own surplus threatened and expropriated.

Finally, Keeler (1984) has supplemented Peltzman's model with public interest considerations. In his model, politicians gain not only political support through transfers of income between interest groups. Through an increase in economic efficiency, for example with economies of scale and external effects, resources are acquired which can be distributed among producers and consumers. Rational politicians will not omit to make use of this possibility.

12. The Competition Between Pressure Groups: Becker

A further contribution to the Chicago theory of regulation was made by Becker (1983, 1985a, 1985b). He concentrated on the consequences of the *competition between interest groups*, which he calls pressure groups. As the political pressure increases, political influence also increases and the financial yield from the pressure exerted rises. Some groups are more efficient in the exertion of political pressure than others. This can be a consequence of the economies of scale in the production of pressure, more effective combating of free-riding, better access to the media and other matters. In this way, transfers of income occur from less efficient to more efficient groups, in the form of subsidies, but also through such things as price regulation. A limit exists for these transfers, however. The transfers are associated with loss of economic welfare, which are known as the *deadweight costs*. As a result of this loss of welfare the loss of the least efficient pressure group is larger than the gain of the more efficient pressure group. As the welfare losses become greater, the pressure of the more efficient group will decline because the yield of the pressure is lower. At the same time, the pressure of the less efficient group increases with the scale of the loss of welfare because the potential yield of pressure increases. This countervailing pressure limits the possibility of transfers to the more efficient

pressure group. It can be deduced from this analysis that politically successful groups are small in proportion to the group bearing the burden of the transfers. The larger the burdened group, the smaller the levy per member of the group and the smaller the deadweight costs. This diminishes the countervailing pressure. The smaller the receiving group, the larger the potential yield per member of the group, which serves to increase the pressure exerted. The analysis explains, for instance, why in countries where the agriculture sector is small it is subsidized, while large agriculture sectors elsewhere are heavily taxed.

In Stigler's and Peltzman's view, competing branches have information and organization advantages through which advantageous regulation can be predicted. In practice, such regulation of competitive sectors is rarely seen. The explanation is found in Becker's theory. Loss of welfare is greater where the elasticity of supply is greater. In competitive sectors, these elasticities are large. The transfers of income and the welfare losses associated with regulation are so large that the countervailing pressure invoked eliminates the investment in political influence.

It can be further deduced from the analysis that regulation is more likely in branches exhibiting *market failures*, a result in agreement with the public interest theory of regulation. In monopolistic branches, for example, consumers can obtain transfers larger than the losses of the producers. In competing branches, on the other hand, the gain of the winners is smaller than the loss of the losers. All other things being equal, more pressure will be exerted in monopolistic branches by the potential winners and less pressure by the potential losers than in competing branches. Market failure is therefore not a sufficient condition for regulation, such as in the public interest theory of regulation; regulation is also dependent on the relative efficiency of pressure groups in exerting political pressure. In contrast to Olson (1982), the competition between pressure groups will not have any negative effects on the growth of the national product and productivity, at least provided pressure groups of equal size and efficiency are involved in producing the pressure. The competition between pressure groups will also lead to the most efficient form of regulation.

Even if under certain circumstances the results of competition among pressure groups is efficient, Becker claims that the production of pressure is not. All pressure groups would be better off if they decreased their expenditure on pressure by equal amounts. Various laws and rules directed to limiting the influence of pressure groups can be explained as instruments for opposing wasteful expenditure on political pressure.

The Chicago theory of regulation seems primarily suited to the explanation of so-called economic regulation. Social regulation, the regulation in the area of safety, environment and health, seems at first sight to be less amenable to explanation by this theory. There are diseconomies in the area of organization, the advantages are divided among many involved parties and the costs of

regulation are allocated to concentrated groups. Nonetheless, private interest explanations are also put forward for social regulation (see for example Bartel and Thomas, 1985, 1987; Pashigian, 1984a, 1984b). In this the application of rules and standards is in the interests of those companies already complying with the standard. Furthermore, large companies have an advantage when it is necessary to comply with administrative obligations or costly measures. Small companies are driven out of the market, so that the competition is limited. Legal requirements are above all often differentiated into existing producers and new producers. By setting higher standards on new producers, entry to the market is impeded and competition is limited.

13. Criticism of the Chicago Theory of Regulation

A weak point of the Chicago theory of regulation is the risk of tautology (Noll, 1989a). Redistribution is seen as the cause of regulation. In practice, however, regulation is always associated with redistribution. Investigating who derives benefit from regulation and who carries the costs, has not established the cause of regulation. Another weak point is that it cannot be predicted which groups will be the most effective politically and who will collect the income transfers. Research has shown that it was workers who enjoyed the main advantage of regulation rather than producers. This result can possibly be rationalized but cannot be predicted with the Chicago theory. Furthermore, the Chicago theory is incomplete. The Chicago theory of regulation assumes that interest groups determine the outcomes of elections, that legislators honor uncurtailed the wishes of the interest groups and that legislators are able to control regulators. In this theory of regulation there is therefore little or no attention to the following three subjects:

- a. the motivation and behavior of the various political actors, such as voters, congressmen, legislators, government workers and agencies;
- b. the interactions between the various actors in the regulation process;
- c. the mechanism through which legislators and regulators conform to the wishes of the organized partial interests.

In fact it is assumed that the operation of the political process of legislation and regulation has hardly any independent influence on the pattern and form of regulation, if at all. This assumption has been criticized from several quarters and several attempts have been made in the literature to fill in the three gaps. The theory of regulation partly overlaps with the public choice theory; overviews from the literature are given by Romer and Rosenthal (1987), Noll (1989a), Levine and Forrence (1990) and, specifically for the area of public choice, Mueller (1989), Frey (1978, 1983) and Frey and Ramser (1986).

For the interests of bureaucrats in regulatory systems see Dunleavy (1991).

The idea that only organized interest groups have their wishes honored uncurtailed by legislators has been criticized by the likes of Wilson (1974, 1980). The origin of regulatory legislation can, according to Wilson, be explained by analyzing the *concentration and spread of costs and benefits*. Majoritarian politics in Congress is to be expected with distributed costs and benefits; antimonopoly legislation is one example. Interest group politics arise with concentrated costs and benefits; labor legislation and railway regulation are examples of this. Client politics is the result of concentrated advantages and distributed costs; examples of this are the protection of professional groups by means of licensing and the subsidizing of companies and branches. A final form of policy is what is known as entrepreneurial politics, in which the costs are concentrated and the benefits distributed; examples are protection of the environment, of consumers against unsafe products and of workers against industrial accidents and occupational illnesses. This last form of regulation is difficult or impossible to explain with the Chicago theory. According to Wilson, interest groups are therefore not the only origin of regulation. Wilson goes on to criticize the assumption of Chicago that legislators are able to control regulators unimpaired. In his view, the behavior of the agencies can be better accounted for through an analysis of the motivations of those involved internally. He distinguishes careerists, professionals and politicians and uses this to account for various types of regulation policy. Price regulation, for example, will be simple in structure if set up by careerists and more complex if it is developed by professionals.

Contrary to Wilson, Derthick and Quirk (1985) assume that the regulation policy of agencies is actually heavily influenced by surrounding forces. They show that agencies honored diffuse interests at the expense of the concentrated interests of the regulated branch. They account for this deregulation with the *intellectual climate* in combination with the pressure exerted by the president, Congress and the legal powers on the agencies. In agreement with the Chicago theory of regulation, Weingast (1981) also sees no independent role for agencies. Changes in the regulatory behavior of agencies are a consequence of changes in the preferences of Congress or its commissions. Contrary to Chicago, Weingast shows how a *structure-induced equilibrium* of policy choice arises as a reaction to the instability of majority rule voting. In an equilibrium of congressional committees, the agencies and the interest groups have divergent but comparable goals. Weingast's model describes why the wishes of interest groups are honored and how diffuse single-issue groups such as environmental groups and consumer organizations are able to acquire political power at the expense of traditional interest groups such as industry, employees and agriculture.

The assumption that legislators honor the wishes of interest groups uncurtailed comes in for particular criticism from the point of view of the *principal-agent theory*. The acquisition of information about the behavior of legislators and regulators is expensive. Because of this, legislators and regulators get the room to escape the attention of voters and interest groups and to act in their own interests or ideological preferences (Kalt and Zupan, 1984, 1990). In this connection, Levine and Forrence (1990) distinguish two types of motivation and two types of political dominance. Depending on what a political actor is aiming for, private and public interests can be distinguished. *Private interests* are preferences of political actors with respect to their self-interest. *Public interests* are preferences related to the interests of others. The private and public interests indicate what a political actor will maximize when there is room to aim for their own preferences. *General-interest* policy is a policy that should be ratified in the absence of information, organization, transaction and monitoring costs. *Special-interest* policies should not be ratified by the general polity in the absence of monitoring costs and so on. Because of the existence of monitoring cost, a 'slack' or policy drift arises, in other words agents' room to maneuver to pursue their own objectives. On the one hand this policy can allow discretion to be used to favor special interest groups, on the other hand, it can be used to promote the interests of others. Here again there are two possibilities. In the absence of monitoring costs and so on, this policy slack would either not be ratified by the general polity or it would be. The capture debate is concerned with the question who dominates the political process and is therefore concerned less with private or public interests than with general and special interests. According to Levine and Forrence, general interests will prevail to the extent that the slack is reduced. The amount of slack decreases drastically when issues come up on the public agenda. Favorable conditions for this are: political competition, special interest organizations, public policy intelligentsia and the news media. A general-interest policy does not otherwise imply that the policy is also efficient. When, for example, the rented sector is a substantial part of the housing market, a policy of rent control will achieve ready approval without any guarantee of efficiency.

14. Rent Seeking

A completely different criticism of the Chicago theory of regulation comes from the *Virginia School of Public Choice* (Rowley, Tullock, Tollison, McCormick et al.). For an overview of the work of the Virginia School, see Tullock (1993), Buchanan, Tollison and Tullock (1980) and Rowley, Tollison and Tullock (1988). In their theories, the term coined by Ann Krueger (1974), *rent seeking*, is a central feature. Rent seeking means the political activity of individuals and

groups to devote scarce resources to the pursuit of monopoly rights granted by governments. The Virginia School criticizes the Chicago theoreticians for their disregard of the inefficiencies of regulation. With their emphasis on the inefficiencies of rent seeking, the Virginia School practices mainly normative economic theory; behavior and institutions are judged according to the degree of efficiency in the allocation of scarce resources. In what has become a classic contribution, Tullock (1967) has shown that the inefficiency of monopoly consists not only of what is known as the *Harberger triangle*, but that through the competition between potential monopolists for monopoly rights the inefficiencies can increase with the *Tullock rectangle*. Furthermore, the potentially disadvantaged consumers will apply scarce resources to prevent the creation of a monopoly if possible. After the creation of a monopoly, scarce resources will be wasted because the monopolist will protect his monopoly rights against possible threats, from potential competitors and disadvantaged consumers. Finally, monopoly rights can cause x-inefficiencies: the monopolist does not produce a given level of production at minimal costs (Leibenstein, 1966; see, however, Stigler, 1976).

In Stigler's and Peltzman's view a non-contestable monopolist will not aim for regulation because with regulation no higher income can be achieved. However, according to the Virginians, the incentives for regulation remain, though now from the side of bureaucracy and politics. The interests of bureaucrats and politicians can be served through giving certain groups of consumers the privilege of cross-subsidies in a disguised form (Crew and Roley, 1988). Furthermore, in the view of Chicago, redistributive instruments such as taxation, subsidies or regulation are equivalent either to respect of efficiency or to the precise nature of political equilibrium. The Virginians point, however, to the visibility of taxes and subsidies and the waste of scarce resources through the reactions provoked by such instruments. Regulation gives more room to politicians and bureaucrats to put their own objectives into effect. Between regulation and taxation there are also large differences concerning the degree of inefficiency. Traditionally, account is taken only of the Harberger triangle, which is actually smaller with taxation under certain circumstances than with regulation. It is to be expected, however, that the Tullock rectangle inefficiencies will be larger with taxation than with regulation.

The rent-seeking theorems have been criticized for the overestimation of the assumed losses of welfare. It is not likely that monopolists are forced to use the entire Tullock rectangle in order to acquire their monopoly and, furthermore, rent-seeking outgoings have positive effects on welfare (Varian, 1989). A fundamental criticism is given by Samuels and Mercurio (1984), who judge that the limiting assumptions lead to misleading conclusions and that the normative analyses are too selective and limited to serve as a basis for policy.

15. Regulation and Deregulation

Once the Chicago theory of regulation had been developed, social developments seemed to refute it. While this theory explained regulation as aiming for transfers of income, at the end of the 1970s and the beginning of the 1980s, many complexes of rules were dispensed with in a process of deregulation. This deregulation was mainly concerned with economic regulation of sectors such as transport (airlines and freight), telecommunications, energy and the financial sector. The social regulation increased in scale, even though the nature of this regulation changed (more cost-benefit analyses, more risk analyses, more performance standards, fewer specification standards) (Winston and Crandall, 1994). For a description of this process of deregulation and re-regulation see for example Bailey (1986), Hahn (1990) and Kahn (1990) for the USA, and Vickers (1991) for the UK.

From the theories of regulation discussed here, various explanations can be derived for this process of deregulation (see Den Hertog, 1996; Peltzman, 1989; Keeler, 1984). From *public interest* theory two explanations of deregulation can be derived. In the first place, it is possible that the cause of market failure is removed by technological or demand factors. Through a strongly increasing demand for, for example, transport facilities, a natural monopoly can change into a competitive market. Furthermore, technological developments such as communication via satellite instead of by cable can undermine natural monopolies. A second explanation for deregulation is that there are more efficient alternatives to regulation for solving the problem of market failure. New instruments may have been developed such as franchising or yardstick competition (Kay and Vickers, 1990). It is also possible that better insight exists into the envisaged and non-envisaged effects of regulations; see the literature cited under point (b) in Section 7 as well as Baldwin (1990), Stewart (1985), Wilson (1984) and Wolf (1979). Finally, it is possible that theoretical developments, such as, for example, contestable markets, inspire more confidence in the operation of the market mechanism (Bailey and Baumol, 1984).

At least four causes of deregulation can be derived from the *Chicago theory of regulation*. In the first place, shifts can come about in the relative political power of pressure groups, for example, as a result of the more efficient combating of free-riding, the more efficient use of media or as a result of special entrepreneurship (Ralph Nader). In the second place, deregulation can arise when politically effective groups believe that they can better promote their economic interests in an unregulated market, for example by self regulation. In the third place, deregulation can be the result of declining profits, so that the political yield of regulation declines. The fixing of prices or the introduction of entry restrictions in sectors consisting of multiple companies, such as airlines or freight, will result in competition taking place in other dimensions of the

product. Competition in the area of service, such as the frequency of transport, will result in a decline in profits. In Becker's view, that leads to a decreased pressure from the branch involved and an increased pressure from consumers for price reduction. In Peltzman, politics will seek more fruitful regulation yields. Finally, deregulation can be accounted for by increasing deadweight costs. These costs increase in the course of time because substitutes for regulated products are developed and because costly methods of evading and avoiding particular regulations are discovered. The deregulation of sectors such as transport, telecommunications and banking, can then be seen as an echo of the regulation movement of the 1930s. Increasing deadweight costs are in the second place a result of the increasing marginal tax rates in the 1960s and 1970s. According to Becker, this stimulated the pressure on tax payers who were able to collect more political support than the groups who had the benefit of social security programs.

According to the *public choice theories of regulation*, deregulation can first of all be accounted for by a changed balance of power of pressure groups. In the second place, structure-induced equilibrium can be disturbed by the actions of political entrepreneurs, such as the chairpersons of regulatory commissions. In the third place, politicians can seek political support for deregulation by providing voters with information about the inefficiencies of regulation. Alternatively, politicians could try to use the complexities of regulatory issues by claiming that economic deregulation would greatly advance economic and social welfare.

A general comparison of deregulation practice and the various theories gives a mixed picture (see Peltzman, 1989; Noll, 1989b). If the public interest theory were generally applicable, deregulation would have taken place sooner. On the other hand, events such as the deregulation of freight are once again difficult to account for with the Chicago theory: in this sector profit was being made and the employees also had much to lose from deregulation. Various circumstances including political entrepreneurship were considered to be applicable and have also played a role in practice. In other cases, Congress has played no role and the legislation was changed after deregulation was already a fact.

Also the expectations with respect to the future development of regulation and deregulation are mixed. On the one hand there are researchers such as Kahn (1990) and Hahn (1990) who are convinced of the relative efficiency of the market mechanism and of regulation mechanisms that support and sustain the market. They see a greater role for government in the area of competition politics and in setting constraints to the functioning of markets, such as in the area of safety. On the other hand, there are voices, such as that of Cudahy (1993), who assumes that the process of deregulation will be followed in the downward phase of the business cycle by a phase of renewed regulation. The disadvantages of deregulation, such as predatory pricing, fluctuating prices and

discriminatory prices, insufficient service, increased lack of safety, job insecurity and redundancy for large groups of employees will ring in a new age of regulation.

16. Summary

This article makes a distinction between three types of theories of regulation: public interest theories, the Chicago theory of regulation and the public choice theories. The Chicago theory is mainly directed at the explanation of economic regulation; public interest theories and public choice theories envisage in addition to that an account of social regulation. The core of the diverse theories is discussed as well as the criticisms that have been leveled at them. It can be derived from the theories in what sectors regulation can be expected and what form the regulation will take. The extent to which these theories are also able to account for deregulation, and the expectations for the future, are discussed.

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