RATIONAL INDIVIDUAL BEHAVIOR AND COLLECTIVE IRRATIONALITY: THE LEGISLATIVE CHOICE OF REGULATORY FORM

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ABSTRACT

Studies of regulatory choice have focussed primarily upon the origins and impacts of regulation. Though the form of the regulatory legislation influences the magnitude and distribution of the costs and benefits from the implementation of the regulation, few of the studies of regulatory choice have addressed the choice of regulatory form. The form of regulatory legislation can be thought to consist of the legislature's choice of regulatory policies and instruments and the degree of substantive and procedural discretion afforded the administering agency by the legislature.

The purpose of this dissertation is to suggest and justify a three-sector model of the choice of regulatory form, wherein a representative legislature, an administrative bureaucracy, and participating interest groups interact to define public policy. The model will be developed formally and hypotheses as to the choice of regulatory form will be derived, largely through partial equilibrium analysis. These hypotheses will suggest that the structure of the regulated industry and the aggregate nature of the preferences of the interest groups involved in the decision process will determine, in large part, the form of the regulatory legislation.

The hypotheses will be operationalized to facilitate the application of empirical data. Empirical data will be of the form of

legislative case-studies of various federal regulatory statutes. In these case-studies I shall examine the Toxic Substances Control Act, the Consumer Product Safety Act, the Federal Food, Drug and Cosmetics Act, and the Civil Aeronautics Act among others. Evidence from these case-studies will be focussed to support the operational hypotheses derived and the model from which they were developed.

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Chapter 1. Introduction.

Government regulation is often bemoaned as one of the premier evils of our time, responsible for everything from a decline in economic growth to an increase in the price of gasoline. Two presidential candidates have run successfully on campaign platforms which included as principal elements promises to drastically reduce the intrusiveness of federal regulation.

What are the origins of regulation? What are the processes by which regulation is chosen and administered? Why does regulation take the form it does?

Economists have explored the choice of regulation from a perspective of rational individual decision-making. Regulation, according to such a view, is a result of private-interest politics, and its form results from the interplay of these interests.[1] The processes and institutions of choice, however, are rarely considered. This area has instead been the domain of political science. Political scientists have examined the pathways of regulatory decisions and have specified the influence that the structure of political institutions has upon the choice of regulation.

To be sure, the problem in answering such questions is partly definitional -- what do we mean by regulation? Some economists define regulation as a method of redistributing wealth or rights between competing segments of society. Indeed, regulation, according to this definition, can be viewed strictly as a tax. We need not know the

goals of regulation but only the winners in the struggle for wealth redistribution.

Alternatively, regulation can be seen as two-dimensional, consisting of a policy and an instrument. Regulatory policies are the objectives of the governmental action. Such objectives may range from achieving price stability for domestic crops to the protection of public health from an unreasonable risk associated with toxic substances. Regulatory instruments are the tools or techniques associated with the regulatory policy, employed to implement the policy. Instruments commonly observed to carry out policy objectives are taxes, tariffs, zoning, and licensing.[2] Regulatory choice is then the governmental choice of regulatory policy and instrument. With such a definition in mind we can seek the answers to some of the questions suggested earlier. In particular, why does regulation take the form it does? What are the keys to understanding instrument choice?

An understanding of instrument choice is important for more than just the scientific interest inherent in understanding the world about us. Economic theory provides us with a battery of efficient and welfare-maximizing techniques for the implementation of regulatory policy. But these incentive-based instruments are rarely the alternatives considered by Congress for implementing regulatory policy. A comprehensive study of instrument choice may suggest the reasons for such non-welfare maximizing choices, and can suggest conditions under which economically efficient choices will be made.

Indeed, the derivation of economically efficient instruments for the implementation of policy objectives is a sterile intellectual enterprise if we do not understand the preconditions in public organizations necessary for their acceptance.

The core of the American national regulatory process is, of course, the Congress, the President and the bureaucracy. Any model of regulatory choice should capture the interaction of these two institutional actors. Further, the behavior of each of these actors is influenced by the politics of American democracy wherein interest groups wield considerable influence. The approach I undertake herein is to examine the choices of these three actors and the influence of each upon the other to pursue the study of regulatory instrument choice.

In the model to be developed legislators are assumed to pursue their own ends by their (and the legislature's) choice of regulatory policy and instrument. A legislator's activity consists of choosing a position on the regulatory choice and a voting strategy relative to the legislature which will best attain his/her chosen position. Legislators pursue two principal goals through their choice of position on regulatory issues. First, they seek their continued tenure in office and second, they seek policies which satisfy their perceptions of 'good public policy'.[3] The pursuit of each goal is influenced by the unique structure of the legislative institution. The institutional structure induces certain behavior in the pursuit of these legislative goals which establish a stable network of

interactions and procedures and ultimately influence the outcome of the regulatory choice.

The most important structural influence upon the Congressional policy process is that it is shaped by the history of the American republic. The framers, in an attempt to guard against the tyranny of the majority, created a Congress in which 'interests' have a major impact upon the policy process. There are two sets of 'interests' of primary importance to the legislator as a result of incentives and constraints enforced by the legislative institution. The first is the legislator's electoral constituency. By requiring the legislator to seek frequent re-election from distinct, single-member constituencies, the institutional structure defined in the Constitution influences the legislator to seek satisfaction of his/her constituent's preferences for regulatory policy. The second is organized interest groups with a stake in the regulatory choice. Interest groups, through the highly decentralized decision process evident in the committee system of Congress, possess numerous access points with which to influence the decisions at each stage of the regulatory choice.

Therefore, in taking a position on a regulatory choice (policy or instrument) the critical considerations for the model congressman are which position will first, maximize the approval of his/her home district, second, which position will maximize the campaign resources acquired from organized interest groups and, third, which position fulfills his/her perceptions of 'good public policy'. An additional consideration as well for instrument choice is which instrument, for

the given policy choice, will provide a maximum of political opportunities (e.g. casework) for the legislator.[4] Casework is a non-controversial technique for the congressman to provide 'representation' and service to constituents and interest groups and through which the congressman can enhance his/her electoral fate. Each legislator will make trade-offs between these considerations in choosing his/her regulatory position. The proper choice of policy and instrument positions on regulatory questions, and the proper choice of voting strategy associated with this regulatory position, will maximize the legislator's benefit from the regulatory choice.

Interest groups in the model are assumed to pursue their own ends through regulation and do so through their lobbying activity. Interest groups lobby their 'friends' within the decentralized decision network of the committee system toward this benefit. Such lobbying activity by groups consists primarily of the provision of campaign resources to these friendly legislators. Of particular interest are interest groups which are business associations. Business interests represent an important influence upon the regulatory choice process, as the members of such associations, generally profit-maximizing firms, are the frequent targets of federal regulation. Of importance here is the impact of a particular instrument choice upon the net profitability of a firm. Profitability may vary with the stage at which the proposed regulatory policy affects the choices of the regulated firm, and with the market structure of the industry to be regulated. Consequently, the firm

possesses preferences over the instrument choice which are translated into lobbying activities. The impact of the instrument choice upon the profitability of the firm, and hence, more generally, upon the market structure of the industry, determines in large part the acceptability of such choices to the legislature.

The bureaucracy, responding to the mandate and incentives of the Congress, chooses specific regulatory policies and instruments to administer subject to binding legal and procedural constraints imposed by the Congress and the courts. The agency will make such choices with deliberate caution and will seek to minimize the conflict arising from the economic and social environment in which it operates.

As is true of Congress, the most important features of the agency's economic and social environment are those imposed by the American Constitution Agencies are created and given legislatively-defined missions through normal legislative processes, and they must return to Congress for reauthorization and appropriations at periodic intervals. Since the Congress, as indicated earlier, is designed to be fairly sensitive to organized interests, the groups inside and outside the government which may be adversely affected by the proposed activities of an agency will generally have access to, and influence with, various congressional bodies which can influence the operation of the agency. That the agency is therefore sensitive to the preferences of important groups in its environment should come as no surprise. As described by Ferejohn (1981),

> The general point is that every agency is located in a context that permits the appeal of specific agency decisions by a variety of parties and that, in some cases, the very existence of the agency itself can be called into question by certain groups. For this reason if an agency head wishes to achieve programmatic or personal goals he or she must be aware of the necessity of maintaining the capacity to make effective decisions.[5]

The head of the administrative agency is thus modelled as an expected utility maximizer choosing regulatory policies and instruments so as to jointly maximize his/her benefit from the regulatory choice and minimize the conflict anticipated from such choice.

The choices of legislators, bureaucrats and interest groups, and the influence of the choices of each on the other are modelled, as outlined above, in chapter 3. From this analysis we can begin to confront the questions of regulatory form and instrument choice.

In chapter 4 we derive from the model hypotheses which address the question of regulatory instrument choice. The hypotheses suggest that Congress will be sensitive to changes in the preferences of interest groups involved in the regulatory choice and will tend to choose the instruments preferred by such groups. Moreover, Congress is proportionately more sensitive to the preferences of wealthy groups. Similar hypotheses are found to be true of the instrument choice of administrative agencies.

Furthermore, it will be shown to follow from the model that Congress will generally prefer to regulate the productive choices of firm behavior via a command and control instrument when the structure of the industry is such that the firms possess differing (heterogeneous) production technologies. When the regulation applies

to other than the productive choices of the firm or when the group(s) to be regulated is not of the form of a business association, the aggregated preferences of the interested groups determines the instrument choice. In such a case Congress is much more likely to choose a command and control instrument when the preferences, over the regulatory choice, of the interest groups involved are homogeneous. Congress will also seek to divide issues into sub-issues over which the interest groups with a stake in the sub-issues have homogeneous preferences for the choice of instrument (and indeed policy). Further, it will be argued that Congress will be more likely to delegate the choice of instrument to the bureaucracy when the preferences over the instrument choice of the groups to be regulated are heterogeneous. Similarly, procedural guarantees will be delegated to the agency when the preferences of the groups involved are homogeneous.

In chapter 5 a mirroring principle of agency structure will be deduced and discussed. The impact of the process of regulatory choice in general upon American politics and society will be discussed as well. Also, the hypotheses of chapter 4 will be employed to offer a systematic explanation for the failure of federal environmental, health and safety programs.

Chapters 6 thru 10 present evidence for the model of the regulatory process and its propositions in the form of case studies of a variety of federal regulatory programs. The case studies will focus largely upon federal environmental, health and safety programs

established in the legislative acts listed in Table 1. Chapter 10 will specifically employ evidence drawn from the regulatory case studies of chapters 6 thru 9 to test the hypotheses developed in chapters 4 and 5 and to test a number of alternative hypotheses.

Chapter 2, to which we now turn, summarizes and compares the literature on regulatory choice and sets the stage for our exploration of instrument choice.

TABLE 1

Survey of Regulatory Instruments

	Primary Regulatory Instrument		
Federal Regulation	Informational	Command and Control	Incentive-Based
Clean Air Act		X	
Water Pollution Control Act		X	
Safe Drinking Water Act		X	
Toxic Substances Control Act	X	X	
Federal Insecticide, Fungicide and Rodenticide Act	X	X	
Federal Food, Drug And Cosmetic Act	X	X	
Consumer Product Safety Act	X	X	
Federal Hazardous Substances Act	X		
Federal Cigarette Labeling and Advertising Act	X		
Occupational Safety and Health Act		X	
Agricultural Adjustment Act		X	X
Civil Aeronautics Act		X	
Federal Communications Act		X	

Footnotes to Chapter 1

1. The literature on regulatory choice will be reviewed and summarized in chapter 2.

2. Briefly, instruments in this framework may be categorized into four general categories for analysis:

   a) command and control instruments - individualized instruments which regulate behavior through constraints on the choice sets of actors (for example; price limits, route setting, quotas and effluent emission levels),

   b) informational instruments - instruments which regulate behavior through a recharacterization of the good or service in transaction (examples are warning labels, formula disclosures, advertising controls and ingredients disclosures),

   c) incentive-based instruments - universal instruments which regulate behavior through an alteration of incentives for action (examples are taxes, subsidies, marketable permits, marketable ration coupons),

   d) public provision - instruments which regulate behavior through competition from non-market provision of goods and/or services (an example is the regulation, through competition, of electrical power pricing by the TVA.

3. See Fenno (1973) for a discussion of legislative goals.

4. Casework is taken here broadly to mean both constituent and interest group service.

5. From Ferejohn (1981).

Chapter 2. Theories of Regulatory Choice.

2.1 Introduction

Theories of regulatory choice have generally been theories of interest aggregation, modelling the choice of regulation as the result of the influence various groups have upon the decision-making body; as these theories focus upon different participants in the regulatory process, and upon particular stages of the regulatory process, so do the explanations they offer for the choice of regulation. Rarely do these theories extend their analysis to encompass all stages or all participants.

Not surprisingly, the literature on regulation centers much of its attention upon the behavior of the regulatory agency and its relationship with the regulated group and the public (a notable exception is the new public choice literature to be discussed). In this chapter we shall review some of the more important theories of regulatory choice, compare and contrast their conceptual frameworks, and probe for weaknesses which we can hopefully address in later chapters.

2.2 Theories of Regulatory Origin

Looking first at the origin of regulation, we can identify two traditional interest theories. These theories differ as to whether the impetus for the regulation was derived from public or private

interests and whether public or private interests were served. Though these theories of regulatory origin do not distinguish the origins of regulation from ongoing regulatory decision-making, we can employ the public vs. private interest framework for our analysis of the literature.

Public Interest Theories

Public interest theories of regulatory origin presuppose that "regulation operates to cure market failures by substituting the expert planning decisions of an administrative agency for the defective allocations of the failed market" (Levine 1981: 1). Regulation is a result, then, of Downsian political entrepreneurs or entrepreneurial public interest groups which advocate, defend and manage regulatory issues in the public interest (Posner 1974).[1]

We can derive a public interest model of regulatory origin from the literature embracing the public interest approach. Such an exercise will allow us to more easily describe the assumptions implicit in this approach and will enable us to enumerate the problems entailed in these assumptions.

In order to explicitly develop a public interest theory we need to assume that regulatory issues are supported by electoral-minded politicians seeking to maximize their votes on election day. Such politicians choose policy platforms, from the universe of policy issues, with which to obtain votes from an attentive, though

unorganized, electorate. Alternatively the model can be couched in terms of public interest groups seeking power within the decision-making apparatus, bringing regulatory issues favored by the public to the attention of our vote-maximizing politician. In either case, the newly elected politician seeks to implement his policy platform upon taking office.

In this view public officals are not primarily concerned with public matters, but rather are private individuals trying to maximize their own utility. Politicians therefore compete with each other for electoral support which keeps them in office. From this it follows that legislators will attempt to assemble electoral coalitions of support. Thus, in the public interest view, the number of votes a politician receives is strictly a function of the net welfare gain he delivers (or promises to deliver) to his constituency. Public officials then seek to maximize the net welfare of their constituents through their choice of public policy,

$$V = V(W)$$

where V is the number of votes accorded the politician and W is the welfare of the politician's constituency. The politician chooses the regulatory policies which maximize W and thus, in turn, maximize V.

This simple model implicitly makes four rather stringent assumptions: first and foremost, that there exists a public interest (that each voter possesses well defined preferences over regulatory issues); second, that the social choice problems associated with the

aggregation of voters' preferences are solved (i.e. that vote-maximizing platforms exist); third, that the politicians, voters and interest groups are maximizing in a world of certainty and of complete information; and fourth, that the social choice problems of the legislature are solved.

Regulation in the public interest is thus a result of the operation of the "invisible hand" in the political marketplace. Voters cast their ballots for policy platforms which are transformed into government policies in their interest.

Harbeson (1967), acknowledging that some members of society may benefit more from regulation than do others, sugggests that "the important fact is that the public interest was served by ... regulation" (pp. 242). The group public interest approach of Harbeson, though similar in its basic premises to the private interest theories to be discussed, assumes that the debate over the regulatory legislation is characterized by a struggle between a diffuse majority favoring regulation and a powerful minority resisting regulation (see also Bernstein 1955: 81). The origin of regulation is still seen to be the public interest (and the model and assumptions given above are still generally applicable) but it is now discussed in terms of group conflict (see also Fainsod, 1940; Fainsod and Gordon, 1941; Leiserson, 1942; Herring, 1936; Wilson, 1974).[2]

Friedlaender (1969) and Martin (1974) present a twist on the group public interest theory by arguing (as do proponents of the private interest approach) that the intent of the Interstate Commerce

Act of 1887 was "to cartelize the railroads" (Martin 1974: 370) as this practice would contribute to national development goals and would thus serve the public interest, broadly construed (Friedlaender 1969: 12-16 see also Harbeson 1972).

Early regulatory studies, though implicitly taking the group public interest origin perspective, focused largely on the formal organizational and operating structure of administrative agencies (Cushman, 1941; Blachly and Oatman, 1940). Regulation in response to major economic problems was an experiment to be corrected through trial and error. Administrative efficiency and due process matters were therefore paramount, as administrative regulation's primary mission was to equitably settle conflicts between groups (on this point see Wilson, 1974; Schultze, 1977; Owen and Braeutigam, 1978).

Private Interest Theories

In a revisionist account of the origins of regulation Kolko (1965) posits a private interest model of regulation in many ways similar to the group public interest model described. Kolko argues that regulation is not conceived in the public interest, but rather is born from a desire by capitalists to establish and preserve monopoly positions. In order to seize control of the apparatus of government, the capitalists exploit populist sentiment which favors controlling monopolies thereby eliminating market forces which reduce their profits.[3]

Hilton (1966), Hoogenboom and Hoogenboom (1976), MacAvoy (1965) and Spann and Erickson (1970) each argue that railway regulation stabilized an unstable cartel situation and thus benefited the industry. Interestingly, such arguments are quite similar to the discussions of Friedlaender (1969) and Martin (1974) but take, of course, a much more cynical outlook.

Group private interest theories, not accepting the premises of the public interest theories, present a view of the legislative process much more in line with political science studies of legislative-group interaction (Bauer, Pool and Dexter, 1963; Bentley, 1908, 1967; Dexter, 1969; Schattschneider, 1960 and Truman, 1971). However, the behavioral models implicit in the group private interest arguments and the assumptions maintained by such are virtually identical to the implicit model and assumptions of the group public interest approach. Indeed, it could be argued that the public interest theories can be viewed as special cases of private interest theories. Further, despite differences in outlook, each of the group theories predict a similar outcome for the regulatory process: that the process will ultimately be dominated by the interests of the regulated group.[4]

By focusing only upon the origins and effects of regulation the group theories of regulatory origin fail to adequately consider many other aspects of the regulatory process. They also fail to adequately describe the behavior and influence of each major actor in the process. The group theories generally confine attention to the

legislator (or regulator) and to the conflicting interest groups, ignoring the influence of the bureaucracy, state and local governments, and the president. Further, such a focus ignores the choice of regulatory form, the topic to which this manuscript is addressed.

The concept of interest in such theories is also quite often vague and indeterminate. Even relatively small and well-organized groups possess a wide diversity of interests and few group theorists consider adequately the mechanisms necessary to insure translation of these interests into some regulatory form (for a notable exception see Mitnick, 1975). As a result of such indeterminacy group theorists do not, in general, offer a comprehensive theory adequate to explain regulatory origin and the regulatory process.

Moreover, by assuming away the preference aggregation problems for the public, interest groups, and regulatory decision-making bodies the group theories of regulatory origin ignore problems thought to be quite severe by the literature on social choice. The role of the political institutions which serve, in part, to provide a mechanism whereby preferences are aggregated are frequently not considered.

The model of regulatory choice developed in subsequent chapters, though taking neither the public nor private interest perspective, makes an attempt at modelling the three major participants in the regulatory choice process (the legislature, groups and bureaucracy) in an institutional framework. Through such a framework we will address the preference aggregation problems of the

legislature and seek a more precise definition of interest. Most importantly, the model to be presented focuses primarily upon the choice of regulatory form, its impacts and origins.

2.3 Economic Theories of Regulation

Economic Theories

The perspective that regulation is sought by industry for its own protection and, not surprisingly, that it subsequently serves this purpose is the general conclusion of the economic approach to regulation. Economic theories of regulation are different, however, from the group theories of regulation just discussed, in that they set out specific assumptions about the nature of the incentives and goals of regulators and argue that these goals are pursued rationally by providing benefits to selected private groups (Abrams and Settle, 1978; Jordan, 1972; Moore, 1961; Plott, 1965; Posner, 1971, 1974; Rainey, Backoff and Levine, 1976; Stigler, 1971).

Stigler (1971), in perhaps the most famous of these approaches, introduces the economic framework of supply and demand to the study of regulation by suggesting that

> The potential uses of public resources and powers to improve the economic status of economic groups ... provide a scheme of the demand for regulation. The characteristics of the political process which allow relatively small groups to obtain such regulation provide(s) a theory of supply of regulation (p. 3).

Economic groups, in Stigler's view, will seek to employ the coercive powers of government to obtain protection from the rigors of competition (this, as we have seen, is not a novel view). The principal thesis of the economic theories is then identical to the results of the private interest theories from which the approach was spawned, in "that, as a rule, regulation is acquired by the industry and is designed and operated primarily for its benefit" (Stigler, 1971: 3). Regulation is a commodity supplied by government to private groups.

The essential commodity being transacted in the political marketplace is a transfer of wealth, which can take the form of "direct subsidy of money ... control over entry by new rivals ... affect(ing) substitutes and complements ... (or) price-fixing" (Stigler, 1971: 4-6). Constituents and groups comprise the demand side of the market and their political representatives comprise the supply side. Economic theories, though, tend to focus upon the characteristics of the groups on the demand side.

By explicitly considering the differential costs of information and organization between small compact groups and a diffuse public, the economic theories hypothesize a diminishing return to group size in politics. Such a hypothesis asserts that beyond some point, it becomes counterproductive to further dilute the per capita transfer to the group. As a result it is expected that the regulatory process will be dominated by small (usually producer) groups.

Posner (1974) builds upon Stigler's use of supply and demand

analysis to the origins of regulation, modifing it to encompass the economic theory of cartels into the political process (pp. 344-346). Regulation is thus equivalent to cartelization, in that each provides enforceable rules of behavior on the industry. Similarly, Jordan (1972) argues that the actual effect of regulation is to cartelize an industry or to "sustain the economic power of an industry" (p. 153).

Economic theories generally have little to say about the supply side. They ignore the influence and structure that the political institutions of choice offer to the choice of regulation (Joskow and Noll, 1978; Mitnick, 1980). The political institutions of choice - the Congress, the President, the bureaucracy, the judiciary, and state and local governments - are each responsible to different electorates, and thus possess different incentives and serve different interests. Each institution interacts with the other institutions of choice in a unique and well-defined fashion to develop public policy. Each political institution has specific and limited powers over the choice of regulation, and each suffers from preference aggregation problems unique to that institution.

Regulatory organizations in the economic theories, however, are not complex structures. Regulation in this view is rather a commodity to be auctioned off to the highest bidder(s) and is not seen as the result of collective action (Joskow, 1977). The simplistic approach adopted by the economic theories, although it is their primary attraction, is also their greatest defect. By ignoring the intricacy of the political institutions of choice, and thereby

ignoring the many and varied incentives born of this intricacy, the economic theories do not supply us with a coherent predictive theory and thus do not yield refutable hypotheses (Joskow and Noll, 1978; Mitnick, 1980).

Similar in many of their basic premises to the interest theories surveyed in the previous section, the economic theories are also similar to the interest theories in that they are largely concerned with regulatory origin and the impact of regulation. Interestingly, regulation in the economic approach, as stated, is just a means of supplying benefits to a particular group. However, by ignoring the structure and influence of the political institutions of choice the economic theories cannot address the central issue of this study -- the choice of regulatory form, which may, indeed, have a great impact on the incidence and magnitude of the benefits attainable from regulation.

Public Choice Theories

Public choice theories of regulation, while explicitly modelling the behavior and incentives of the various actors involved consider in much greater detail than did the economic theories the structure of the political institutions. The decision-makers in these theories are, moreover, explicitly political, and rationally pursue their own self-interest by their choice of public policy (Buchanan and Tullock, 1962; Downs, 1957; Ferejohn and Fiorina, 1975; Fiorina,

1977a, 1981, 1982; Fiorina and Noll, 1978, 1979b; Hayes, 1978; Lowi, 1964; Mayhew, 1974; McKie, 1970; Niskanen, 1975; Peltzman, 1976; Riker and Ordeshook, 1973; Ripley and Franklin, 1976; Russell and Shelton, 1974; Salisbury, 1969; Shepsle and Weingast, 1980; Weingast, 1978a, 1978b, Weingast and Moran, 1981; Weingast, Shepsle and Johnsen, 1981).

Peltzman (1976) formalized and significantly extended the arguments of the economic theories of regulation; unlike in the economic theories, however, Peltzman's regulator is explicitly political and is central to his model. Peltzman posits a simple model, that the aim of politicians is to maximize votes,

$$V = V(\Pi, D)$$

where V is the number of votes, Π is the net-benefit to those favored, and D is the dead weight loss associated with a particular policy (Becker, 1976: 245-246). Interest groups seeking regulation are net-benefit maximizers,

$$\Pi = (T-K-C(n))/n$$

where:

T = total dollar amount transferred to the beneficiary group.

K = dollars spent by beneficiaries in campaign funds and lobbying to mitigate opposition.

C(n) = cost of organizing both direct support of beneficiaries and efforts to mitigate opposition. This organization cost

increases with n.

n = number of potential voters in the beneficiary group (Peltzman, 1976: 214-215).

The regulator, in Peltzman's model, chooses K as well as T, and the interest group is merely modelled as the reaction function above.

Peltzman then employs a partial-equilibrium analysis of the politician's maximization problem to derive a series of empirical implications, most notable of which is that "regulation will tend to be more heavily weighted toward 'producer protection' in depressions and toward 'consumer protection' in expansions" (p. 227).

Peltzman's work provided the bridge between the group interest and economic theories of regulation and the public choice theories of regulation by its attention to a political rather than an economic actor. Niskanen (1975) and Weingast (1978) model the choice of regulation as a collective choice by a representative legislature. Weingast postulates that a legislator attempts to maximize his probability of reelection, which is assumed to be a monotonically increasing function of his district's net benefits function (Shepsle and Weingast, 1980; see also Fiorina, 1981 and Weingast, Shepsle and Johnsen, 1981):

$$Pr_j(N_j(x))$$

$$N_j(x) = b_j(x) + c_j(x) - k_j(x) - t_jT(x)$$

where:

Pr_j = legislator j's probability of reelection.

$N_j(x)$ = the net benefits to district j from a government activity.

x = vector of characteristics describing the government activity.

$b_j(x)$ = benefits of the government activity to district j.

$c_j(x)$ = direct program expenditures in district j.

$k_j(x)$ = external or indirect costs of a program.

t_j = tax share of total tax bill which district j pays.

T(x) = total tax bill for governmental activities.

This framework is a simple extension of Peltzman's analysis: the legislative district is the interest group to which benefits will accrue and is modelled, again, not as an independent actor (or collection of actors), but as a reaction function.

Elsewhere, Weingast (1978a), like Niskanen (1975), has offered several descriptive assumptions about the legislature which constrain and influence the behavior of the legislator assumed above:

> Following their electoral success, representatives are designated as members of the legislature. Public policies for the political economy result from representatives pursuing their induced goals within the confines of the legislative rules. The committee system, which dominates policy development, is the main feature of the legislature (p. 11).

Weingast sets up a formal model of the institutional rules governing the committee system: representatives are generally assigned to the committee they desire, legislation must come from the proper

substantive committee and is subject to majority rule, and oversight is delegated to the appropriate committee (pp. 12-13). Weingast then employs this framework to discuss his "political cycles" theory of regulation.

The public choice theories, though extending the analysis of the economic theories by considering some of the features of the political institutions of choice, are still largely concerned with the origins and impacts of regulation. Fiorina (1981, 1982) provides an interesting departure by examining the delegation of regulatory policy authority by the legislature to the bureaucracy: "Under what conditions do legislators adopt specific mandates (e.g. parts of the Clean Air and Clean Water Acts) rather than vague and platitudinous wish lists (e.g. The Communications Act of 1934)?" (p. 2).

In addressing the delegation question Fiorina builds upon Shepsle's and Weingast's (1980) model of legislative behavior and relates the incidence of costs and benefits of regulation to the delegation of substantive authority by the legislature. "...other things equal, delegation preferences (for the legislator) are less likely in the CB/DC (concentrated benefits and diffused costs) case than in the opposite DB/CC (diffused benefits and concentrated costs) case" (p. 26).

The Peltzman-Weingast-Fiorina approach, of modelling the choice of regulation as exclusively a legislative choice, however, excludes the influence of the actions and choices of other important actors in the choice process — largely interest groups and the

bureaucracy (Mitnick, 1980). The choice of regulation could be conceived of as the result of a multi-institutional game wherein each institution interacts with the others (choosing stragies vis-a-vis the other institutions) to make policy, and where within each institution the individual members of the institution interact to solve the institution's collective choice. The public choice models take into account the actions of interest groups only as a reaction to legislative policies and altogether ignore the choices and influence of the bureaucracy.

Bureaucratic Theories

Bureaucratic theories of regulatory choice, naturally enough, model the choice of regulation as the output of administrative agencies, but invariably focus only upon the top administrative officials. The 'administrator' pursues his goals rationally and his behavior is structured by the constraints of the administrative organization and by the incentives of the institutional setting.

Downs (1967), Niskanen (1971, 1975) and Tullock (1965) have applied the rational choice framework to bureaucratic behavior. Bureaucrats are assumed to be rational, taking action consistent with their goals and constraints. Variations of the bureaucratic approach have been developed by DeAlessi (1974), Eckert (1973), Hilton (1972), Mitnick and Weiss (1974), Noll (1971a, b, c), Noll, Peck and McGowan (1973) and Russell and Shelton (1974). Their theories of bureaucratic choice of regulatory policy have primarily sought to identify the

goals which bureaucrats pursue and their behavioral incentives, and from these predict the outcomes of the regulatory policy. Bureaucrats have been assumed to seek to develop policies which will not be reversed by the Congress or the courts (Noll, 1971a); to preserve the regulated interest (Noll, 1971a); to achieve status in the federal bureaucracy or ease of working conditions; to expand their future reward opportunities (Eckert, 1973); or to fulfill the interest of the regulated industry (Mitnick and Weiss, 1974) or the interests of the public (Eckert, 1973).

Regulatory officials are thus viewed as utility maximizers. Their "utility is a function of numerous items," (Eckert, 1973: 83) many of which we outlined above:

$$U_k = U_k(GOALS_k(x))$$

where:

U_k = utility of the regulatory official

$GOALS_k$ = a vector of relevant goals which the regulatory officials aspires to

x = regulatory policy chosen by the regulatory official.

There are many problems with the rational-choice bureaucratic approach, many of which are similar to the problems associated with the other kinds of models we have discussed. The bureaucratic theories do not incorporate the complexity of organizational behavior and do not address the problems of preference and policy aggregation

in an organizational setting. Moreover, the bureaucratic theories model the regulatory process as the choice of some idealized regulatory administrator, and do not capture well the nature of the legislative or interest group input to the process (Joskow and Noll, 1978: 59).

The economic approaches to modelling regulation discussed in this section all suffer from similar shortcomings. The structure and influence of the political institutions of choice is either largely ignored, as in the economic theories, or is only partially embraced, as in the public choice and bureaucratic approaches. The influence and impact of the choices and strategies of the major institutional actors acting in concert to create regulatory policy is thus not addressable in these models. Further, the problems associated with the aggregation of preferences within and between the political institutions is, for the most part, not considered.

2.4 Evolution Theories

Life Cycle Theories

Bernstein (1955) introduced the life-cycle theory of regulatory agencies in an attempt to explain how regulation, which was originated in the public interest, could cease to be effectively implemented or, indeed, could be transformed to serve the interests of the regulated industry. "The history of commissions reveals a general pattern of evolution more or less characteristics of all," and each

undergoes "roughly similar periods of growth, maturity and decline" (Bernstein, 1955: 74). Variations of the life-cycle theory have been presented by Cary (1967), Downs (1967), Friendly (1962), Jaffe (1954), McConnell (1966), Moore (1972), Redford (1952), Shepherd (1974) and Tullock (1965).

Bernstein specified four general periods of development: gestation, youth, maturity, and old age. Gestation involves the issue formation, access and decision stages of policy formation in a fashion similar to the group public interest models described in section 2.2. During its "youth" the agency energetically crusades to fulfill its legislative mandate in a highly charged conflictual environment. As the agency approaches "maturity" its energy is abated and it increasingly relies on precedent and routine, the agency seeks to avoid trouble and as congressional and public support for its mandate wanes the agency "finally becomes a captive of the regulated groups" (pp. 86-91). Finally, in "old age" the agency develops a working agreement with the regulated groups to maintain the status quo in their interest.

Weingast (1978a) has offered a revision to the life cycle theory. In what he terms a "political cycles" model of regulation Weingast argues that changes in the outlook of regulatory agencies (whether they are pro-consumer or pro-industry) correspond to changes in the attention and direction the legislature gives to these agencies as a result of changes in the preferences of the electorate.

The life-cycle theories generally suffer from a lack of

clarity of purpose. The lack of clear definitions and explicit modelling hinder any empirical support for such theories (Joskow and Noll, 1978: 61). Indeed, the major shortcoming of these theories is that they fail to be supported by empirical evidence (Mitnick, 1980).

Incrementalist Theories

Ackerman and Hassler (1981), Krier and Ursin (1977), Stewart (1975), and Wilson (1980) have advanced another evolutionary theory of congressional choice of regulation. Regulation, in their view, is an experiment to be perfected by trial and error. The result is that the form of the regulatory mandates passed by Congress changes incrementally over time.

Congress, upon observing the defects inherent in the New Deal regulatory agencies, sought to correct such defects by prescribing specific and narrowly defined regulatory mandates for the new regulatory agencies of the 1970's. However, as with the life cycle theories just discussed, the major problem with these theories is their lack of empirical support. We shall return to this point in chapter 10.

With the exception of Weingast (1978a) the evolutionary theories are not developed from explicit and well formulated models of individual behavior. This is not to say that such theories could not be derived from models such as those outlined in previous sections; models such as described for the group public interest and

bureaucratic theories implicitly underlie these stories. However, the evolutionary theories therefore suffer from a lack of clarity and coherency and do not, as a result, yield unambiguous refutable hypotheses.

2.5 Organizational Approaches

Behavioral Theories

Variations of the behavioral approach of Cyert and March (1963) in the context of the regulatory agencies have been developed by Altshuler and Thomas (1977), Baldwin (1975), Evans and Pinkett (1975), Joskow (1972, 1973, 1974), and Pugh (1971). These approaches assume that the regulator (administrator) will be a rational utility maximizer, as in the bureaucratic theories. However, these approaches focus primarily upon the relational, procedural, and organizational factors so often ignored by the bureaucratic theories.

Joskow has applied the behavioral approach to the interaction of regulatory agencies and regulated firms (1974), to the decision by regulated firms to petition the regulatory agency for a rate change (1973), and to the rate-making decision processes of regulatory agencies (1972). Agencies, in Joskow's view, seek to minimize the conflict encountered from other organizations in their environment (see also Hilton, 1972). The agency establishes its organizational structure, regulatory instruments and decision procedures so as to minimize this conflict. By minimizing conflict the agency achieves an

equilibrium "which satisfactorily balances the conflicting pressures from the external environment" (p. 297).

Joskow is primarily concerned with administration of regulation and ignores issues of regulatory creation. The legislature in defining the regulatory mandate for the agency often specifies, in fair detail, the regulatory instruments, decision-making procedures and organizational structure of the agency. Thus, though Joskow did develop and test a number of propositions regarding the interaction of the regulatory agency and the regulated firm, by not considering the role of the legislature he did not develop testable hypotheses regarding the choice of regulatory form.

Baldwin (1975), on the other hand, employs a principal-agent approach to modelling the relationship between the legislature and the agency. The regulatory agency is an agent established by the legislature to effect bargains between competing groups. Baldwin describes the agency as sitting in the hot seat and as a result the agency seeks survival as its primary goal.

It is not immediately apparent in the organizational approach how individual preferences are transformed into an agency's goals (Mitnick, 1980). The organizational models, by stressing the procedural and structural factors of bureaucratic behavior, and by identifying the role such structures play in solving the collective action dilemmas involved in regulatory decision-making, suggest that a melding of approaches may be fruitful to the study of regulation. In isolation, however, the organizational approaches do not provide us

with a comprehensive theory of the choice of regulatory form.

2.6 Conclusion

Though encompassing a wide range of approaches and methodologies the existing literature on regulatory choices does not provide us with a theory producing unambiguous and testable propositions concerning the choice of regulatory form: substantive and procedural authority and regulatory instruments.

Existing theories generally focus upon a particular stage of the regulatory process or examine the behavior of a focal decision-maker. Often these theories disregard the relevence of the structure of the political institutions of choice and ignore the problems associated with the aggregation of preferences in policy formation.

In subsequent chapters we will develop a three-sector model of regulatory choice integrating several of the approaches discussed herein. The legislative model of the public choice theorists and the interest group model of the economic theorists will be incorporated with a bureaucratic-organizational model of administrative agency behavior to yield testable hypotheses on the choice of regulatory form. The approach will pay careful attention to the social choice problems involved in the aggregation of preferences within the legislature.

Footnotes to Chapter 2

1. See also Berry 1977; Curry and Wade 1968.

2. Wilson developed a typology of regulatory environments and predicted that regulatory behavior is likely to differ in various interest group contexts. Wilson argues that the extent to which costs and benefits associated with a regulatory issue are concentrated determines the nature of the groups activity. Thus Wilson's typology is in a sense a private interest approach as well.

3. In an argument similar to Kolko's, Edelman (1964) argues that the unorganized public often is satisfied with a symbolic reassurance. This symbolic reassurance takes the form of the enactment of legislation creating a regulatory commission and including strong written assurances that the threat to the public interest will be averted. However, it is argued, the ultimate impact of commission policy is to distribute tangible (not symbolic) benefits to the regulated group (for a more recent application see Ackerman and Hassler, 1981).

4. The mechanism by which public spirited regulation is perverted to private return will be discussed in a separate section.

Chapter 3. A Three-Sector Model of Policy Choice.

3.1 Introduction

The purpose of this chapter is to propose and examine a model of government regulatory policy and instrument choice.[1] The model is based upon the behavior of institutional actors in the decision process — legislators, bureaucrats and interest groups. Each actor is goal-directed and each pursues his goals rationally within the confines established by institutions. The model is primarily concerned with how the interactions of these actors influence policy and instrument choice.

We will first turn to the discussions of the original framers of the Constitution to provide a glimpse of the intended functionings of the institutions of choice. How the legislature has built its choice process upon the foundations provided in the Constitution will lay the groundwork for a formal development of the institutional structure of legislative choice. This formal development will allow us to establish the existence of a choice equilibrium for the legislature and to examine the impact of institutions on policy.

Our attention will then turn to developing a behavioral model of a single legislator acting within a specified institutional structure. We will also examine behavioral models of interest groups and administrative agencies and discuss how the three institutional sectors interact to define policy choice. Testable propositions resulting from the analysis will be examined rigorously in subsequent

chapters. Implications for the conduct of government in America will be drawn and discussed later as well.

THE MODEL

The Institutions of Choice

We shall be mainly concerned herein with choices of policy and instrument derived in part from the decision calculus of legislators. We shall first turn our attention to the historical origins of institutional arrangements. Institutional structure, often ignored by economic theorists of regulation, confines and influences the choices of legislators and hence has a dramatic impact on the legislature's choice of policy. We shall therefore examine the institutions of choice to define the ways in which the structure influences policy, a path which will lead to the very foundations of our political system.

As was observed in chapter 2 theories of policy choice have almost universally been theories of interest group aggregation. Theoretical structures as diverse as Stigler's theory of economic regulation and Bauer, Pool and Dexter's conjectures on tariff policy development[2] characterize policy choice as interest aggregation. This fact should not be surprising.

The original intentions of the framers of the Constitution in defining the powers, the limits of such powers, and their intuition relating the exercise of legislature power to the institutional framework of Congress are best revealed in the Federalist papers[3]. We

shall return periodically to these papers in order to develop some insight into the operation of the federal system. Of those papers, numbers 10 and 51 are especially worth our notice as a prelude to understanding the constitutional convention's perceptions (and indeed the ultimate realization) of the role of Congress. An examination of these insights will enable us to account more explicitly for the impact of the institutions of choice on the development of policy. Such an exercise will relate the importance and uniqueness of the effects of the institutional structure on policy choice, which has generally been taken for granted or ignored entirely.

In Federalist 10, James Madison outlined the dangers of what he termed "faction" and sought a cure:

> Among the numerous advantages promised by a well-constructed Union, none deserves to be more accurately developed than its tendency to break and control the violence of faction...
>
> By a faction, I understand a number of citizens, whether amounting to a majority or minority of the whole, who are united and actuated by some common impulse of passion, or of interest, adverse to the rights of other citizens, or to the permanent and aggregate interests of the community.
>
> There are two methods of curing the mischiefs of faction: the one, by removing its causes; the other, by controlling its effects...
>
> The inference to which we are brought is, that the causes of faction cannot be removed, and that relief is only to be sought in the means of controlling its effects.

Madison argues that the proposed government will allow control of the evils of faction and will prevent what he termed the tyranny of the majority, in Federalist 51 he makes explicit the guarantees of the new Constitution against tyranny of the majority:

> To what expedient, then, shall we resort, for maintaining in practice the necessary partition of power among the several departments, as laid down in the Constitution? The only answer that can be given is, that as all these exterior provisions are found to be inadequate, the defect must be supplied, by so contriving the interior structure of the government as that its several constituent parts may, be their mutual relations, be the means of keeping each other in their proper places...
>
> But it is not possible to give each department an equal power of self-defence. In republican government, the legislative authority necessarily predominates. The remedy for this inconveniency is to divide the legislature into different branches; and render them, by different modes of election and different principles of action, as little connected with each other as the nature of their common functions and their common dependence on the society will admit...
>
> It is of great importance in a republic not only to guard the society against the injustice of its rulers, but to guard one part of the society against the injustice of the other part. Different interests necessarily exist in different classes of citizens. If a majority be united by a common interest, the rights of the minority will be insecure. There are but two methods of providing against this evil: the one by creating a will in the community independent of the majority — that is, of society itself; the other, by comprehending in the society so many separate descriptions of citizens as will render an unjust combination of majority of the whole very improbable, if not impracticable. The first method prevails in all governments possessing an hereditary or self-appointed authority. This, at best, is but a precarious security; because a power independent of the society may as well espouse the unjust views of the major, as the rightful interests of the minor party, and may possibly be turned against both parties. The second method will be exemplified in the federal republic of the United States. Whilst all authority in it will be derived from and dependent on the society, the society itself will be broken into so many parts, interests and classes of citizens, that the rights of individuals, or of the minority, will be in little danger from interested combinations of the majority.

These passages elaborate the framers' intentions to create a powerful legislature within which factions interested in public policy have access to decision processes. The institution of Congress was therefore carefully designed to enhance interest group participation and power in the policy process. It is not surprising therefore that

scholars studying the policy process characterize the choice of policy in terms of interest group politics.[4] Indeed many legislative studies have since borne witness to the fruition of the framers intentions for a Congress of interests.[5]

Madison recognized that the policy process is framed by the institutions of choice. By designing an institution which offers legislators incentives to reconcile various conflicting interests, primarily by requiring frequent elections from distinct single member constituencies, the framers developed an institution wherein policy is developed through interest aggregation.

The broad Congressional response to the institutional environment created by the original framers has been characterized and catalogued by many legislative scholars.[6] The primary response identified has been the establishment of formal and informal arrangements within the structure defined by the framers which aid in the attainment of the member's goals as they create public policy. Fiorina has posed a question and answer encompassing the general congressional response to their own institution:

> What should we expect from a legislative body composed of individuals whose first priority is their continued tenure in office? We should expect, first, that the normal activities of its members are those calculated to enhance their chances of re-election. And we should expect, second, that the members would devise and maintain institutional arrangements which facilitate their electoral activities.[7]

For the twentieth century at least, Fiorina's electoral activities have been characterized by Fenno as goals consisting of the attainment

of "Re-election, (of) influence within the House, and (of) good public policy."[8]

The professionalization of Congress in the twentieth century[9] is in part responsible for the primacy of the electoral motive. The Congress has sought institutional arrangements which serve to enhance the electoral activities of Congressmen. What is important to note is that such institutional arrangements can serve to facilitate the influence of actors external to Congress which are important to the electoral fate of Congressmen.

Virtually since the beginning of the Union Congress has conducted its business through committees. The modern Congress is characterized by a stable system of standing committees with fixed jurisdictions and relatively unchanging memberships. This committee structure is at the heart of all congressional activities and it embodies the principle congressional response to the institutional incentives given by the Constitution.[10]

Most congressional committees employ subcommittees to process their work, and in fact the substantive work of Congress is largely done in subcommittees. This fact serves to increase the number of access points available to interest groups to the policy process. Furthermore the devolution of power inherent in the present subcommittee system and the new rules requiring that the key positions of power in the subcommittees be spread among different members has created a Congress wherein substantive power over policy making is greatly diffused and the corresponding access points for interest

group representation are multiplied even beyond the perceptions and intentions of the framers. Congress has further adopted informal rules of behavior, norms, and formal rules of procedure and process which heighten this devolution of power and insures each member a prominent influence in the direction of policy in some substantive area.[11]

That the standing committees and subcommittees of Congress are critical in determining the substantive impact of Congress on policy (and also in determining which interests will have the most access to the policy process) is readily evident. Representatives of bureaus and interest groups know this and cultivate their contacts with individual members and staff members on committees and subcommittees important to them (Dodd and Oppenheimer, 1977; Fenno, 1966, 1973a, 1973b; Goodwin, 1970; Ornstein, 1975; Ripley, 1969; Huitt, 1973; Matthews, 1960; Ripley and Franklin, 1976).

The structure of the legislative decision process is an important element in the attainment of the re-election, influence, or good public policy goals of each legislator. The reorganization of the House and Senate's committee structure and the new rules of assignment adopted in the seventies guaranteed a broader base of power throughout each chamber and gave each member a greater ability to influence policy in some substantive area. This devolution of power facilitates the ability of members to achieve the goals suggested by Fenno as important to legislators. The choice of institutional arrangements and the impact of such arrangements are carefully

selected by legislators to their own benefit, and, naturally enough in association with such ends, have an impact on the choice of policy and instrument.

Thus, by examining the seeds of the legislative institution and the fruits of such planting today we have been able to briefly describe how a complex institutional framework for policy decision and the actions of goal-directed legislators acting within this framework lead to a decision process which outwardly resembles a forum for interest group aggregation. What has further been examined is that the process (and therefore the policy outcomes) is institution specific and is not robust to changing institutional frameworks. The framers intended the choice of policy to be influenced by interests, the course of legislative development has been to heighten this effect and add to the influence of interest groups over policy development.

A theory of policy and instrument choice should capture, at least, the important aspects of the institutions of choice and the interactions of institutional actors. It has been asserted here that these factors have a dramatic impact upon the course of policy. It will in turn be shown that these factors are not static nor untouchable in a theoretical framework.

3.2 A Model Of Legislative Choice

Turning first to Congress, we will be concerned only with the re-election and policy goals described by Fenno; it will also be assumed that the institutional structure defined by the Constitution

and the congressional response to such are parameters (taken as given) to the individual legislator. The attainment of the member's goals will therefore be a function only of his/her policy and instrument choices (though strictly speaking the choice of structure is endogenous as well for the legislature, but on any given policy choice for the individual legislator the choice of institutional structure is exogenous).

The legislative decision structure outlined above[12] can be captured formally in the following framework. This framework reflects the centrality of the committee system in the legislative decision process, the rules of legislative behavior, and vote aggregation.

Shepsle[13] develops a framework for legislative choice which, by its very structure, avoids the aggregation problems of the Arrow paradox.[14] Shepsle termed such an equilibrium, naturally enough, a structurally induced equilibrium.

As does Shepsle, let $N = \{1,2,\ldots,I\}$ be a finite set of legislators and X a compact, convex subset of R^m, where X is the policy choice set.

Also define finite coverings on N, the set of legislators, and on the basis vectors of X, $E = \{e_1,\ldots,e_m\}$, where e_i is the unit vector in the i^{th} direction.

Definition: Call the family of sets $C = \{C_j\}$ a committee system if and only if it covers N. Each $C_j \in C$ is called a committee.

Definition: Call the family of sets $J = \{J_k\}$ a jurisdictional arrangement if and only if it covers E. Each $J_k \varepsilon J$ is a subset of basis vectors called a jurisdiction.

These two definitions capture the fragmentary nature of congressional decision-making to which Fenno referred[15] and will enable us to capture the impact of such structural arrangements in the decisions on policy and instrument. These definitions describe how the committee system divides up labor within the legislature over substantive policy areas. Each committee consists of members in the set C_j and exclusively processess policies in its jurisdiction.

Shepsle notes almost in passing that jurisdictional arrangements decentralize "decision-making by limiting the social comparisons that are permitted."[16] What should be noted however is that this limitation of comparisons is the key ingredient to his proof of the existence of a structure-induced-equilibria.

For a given status quo, $p^0 \varepsilon X$, and for any jurisdictional arrangement, $J_k \varepsilon J$, say $J_k = \{e_1, \ldots, e_k\}$, p^0 may be compared with any (and only) $p = p^0 + \sum_{(e_i \varepsilon J_k)} \lambda_i e_i \varepsilon X$ for some λ_i.

More specifically,

Definition: The set of feasible proposals is

$$p' = \{p_i : p = p^0 + \sum_{(p_i \varepsilon J_k)} \lambda_i e_i \ , \ J_k \subseteq J \text{ for some } J_k \varepsilon J\} \subseteq X.$$

That is, proposed perturbations in the status quo are feasible if and only if the changes are contained within a single jurisdiction. Thus, members may submit legislation for the agenda only if it is a feasible proposal before the member's chamber, and committees deal only with legislation within their jurisdiction.

For a given committee system C and jurisdictional arrangement J, define the mapping $f:C\rightarrow J$. In general, f is a correspondence, associating with each committee $C_j \varepsilon C$ a set of jurisdictions in J. It will be assumed here as in Shepsle[17] that f is a single-valued function. Define also the correspondence $g:CxX\rightarrow X$. The correspondence g associates with each committee $C_j \varepsilon C$ and status quo $p^0 \varepsilon X$ the set $g(C_j,p^0) = \{p\varepsilon X: p=p^0+\sum \lambda_i e_i, e_i \varepsilon f(C_j)\}$. Thus for each status quo point p^0, $g(C_j,p^0)$ defines the set of changes falling within C_j's jurisdiction.

Thus, constraints on the choices available to each committee, $g(C_j,p^0)$ for a given status quo and jurisdiction limit the comparisons with which the committee as a decision-making unit must contend. Further, the parent chamber frequently retains authority to monitor and modify committee proposals. Suppose a $C_j \varepsilon C$ proposes some $p\varepsilon g(C_j,p^0)$,

Definition: For any proposal $p\varepsilon g(C_j,p^0)$, the set $M(p)\subseteq X$ consists of the modifications the parent chamber (N) may make in p. M(p) is said to be an amendment control rule.[18]

It should be noted here that committees acting in their

oversight capacity are governed by a closed rule, $M(p^{b'})=0$ (where p^b is the agency's choice of policy), as long as $p^{b'} \varepsilon g^b(C_j, p_0^b)$, that is the committee is not required to seek a majority approval of its actions in its oversight capacity.

Such a system of congressional oversight enables committee members to wield great influence over the course of policy chosen by agencies within their oversight jurisdiction. This fact adds greatly to the ability of committee members, especially chairmen, to pursue their personal goals, and similarly adds to the influence of groups interested in the choice of policy.

Shepsle provided an analysis of alternative amendment control rules and several existence proofs of equilibrium for structures as defined above. Shepsle utilized the following assumptions in the existence proofs:[19]

1. The preferences of each $i \varepsilon N$ on the alternative set X are represented by a strictly quasi-concave, continuous real-valued function.
2. The committee system $C = \{C_1, \ldots, C_t\}$ is arbitrary except that $t \leq m$
3. The jurisdictional arrangement is simple, so that $J = \{\{e_1\}, \{e_2\}, \ldots, \{e_m\}\}$, and is nonoverlapping— $f(C_i) \cap f(C_j) = 0$ for all $C_i, C_j \varepsilon C$.
4. The amendment control rule is a (not necessarily proper) subset of germaneness.

As noted by Shepsle, these assumptions define an arbitrary

committee system consisting of committees with nonoverlapping simple jurisdictions. These assumptions may, in fact, be very strenuous as together they define a very specific and unique committee system. Assumptions 2 and 3 may be especially hard to support as the committee system in the legislature is not arbitrary and committee jurisdictions do, in general, overlap. However, we will make these assumptions for simplicity as they do not influence the results of the model to which this thesis is addressed.

The existence of a structurally induced equilibrium (SIE) was resolved with a theorem wherein Shepsle employs a fixed-point argument found in Shepsle (1979) and Kramer (1972) to establish the result.[20]

The above formalization of the institutional structure of Congress establishes the existence of an equilibrium to the policy process and defines the structure of Congress in such a fashion as to enable us to parameterize the central characteristics of the decision process in a model of legislative choice.

That such a structurally induced equilibrium can exist with a more specific bicameral legislature, representing more precisely the structure of Congress, can be readily displayed upon the proper definition of the informal, though enforceable, norms of behavior for co-operation between chambers.[21]

The theorem of Shepsle establishes the existence of a correspondence mapping legislative preferences to legislative outcomes, i.e.

$$S:\Gamma \rightarrow p$$

where S is the correspondence which maps the preferences of the members, Γ, to the legislative choice, p. We shall return to this functional characterization in the formalization of the legislative choice problem. It should be noted, however, that the function S may not be unique valued.

What we have shown in the previous twelve pages is that the Constitution established a legislative decision structure which serves as a forum for interest group influence in policy decision-making. Also, we have traced the congressional response to the Constitutional structure which has primarily consisted of adopting a committee format for processing decisions along with formal and informal rules of procedure and behavior to facilitate such processing. It has been suggested that these institutional arrangements are derived from the goals of congressmen and are designed to serve their purposes. Lastly we borrowed an organizational format from Shepsle through which we can formalize the institutional structure and its impact on policy. Such a formalization has enabled us to define a functional form for the impact of the institutional structure which we can now employ in a model of how individual legislators behave within this institution.

This is the important contribution of the discussion of institutional structure. By defining how policy is to be developed the institutions define the outcomes of the choice process. We can employ (in functional form) this inherent predictability of legislative outcomes, arising from the institutional constraints, in

our discussion of legislative behavior (though at present the functional form developed is not unique- valued). Indeed, without such predictability the individual legislator would be at a loss to predict the influence of his/her actions on the policy outcome, and as such would not be in a position to choose a course of action.

It should be remembered that the choice of policy and instrument are inexorably linked; we cannot describe the process by which one is chosen without also describing the process by which both are chosen. In the discussions herein the joint choice of policy and instrument will often be referred to as the choice of policy. This is for the sake of brevity, not for the exclusion of the choice of instrument. I will return to the choice of instrument explicitly in chapter 4.

Legislative Behavior

The model of policy choice being developed here has, as its premise, that the primary beneficiaries of the choice of policy and instrument are the members of the legislature. The legislature will define institutional arrangements which facilitate the attainment of their personal goals. The legislature will also provide strict incentives for other institutional actors who have a choice in policy — mainly the bureaucracy (as we will see) — which enhances the smooth and easy pursuit of member goals.

Legislators are assumed to pursue their own continued tenure in office and are assumed to have preferences over the outcomes of the

decision process. They seek to enhance their re-election chances by satisfying interested factions and their local district constituents through their choice of policy and instrument. Interest groups and constituents possess resources the legislator can employ in his/her re-election bid. Interest groups can supply votes, campaign workers and campaign funds, while constituents supply votes in accordance with their policy preferences.

More specifically, legislators acting within the confines of the institutional structure make policy and instrument choices so as to achieve their personal goals which we assume, as suggested by Fenno, are primarily their continued tenure in office and the attainment of good public policy. The choice of policy and instrument affects the attainment of such goals through different mechanisms, and we will examine a few.

The paramount concerns for the legislator in achieving re-election are first, the characteristics of his/her district and how his/her choice of policy matches the aspirations and preferences of his/her constituents back home. Assuming we can apply the median voter hypothesis[22] and ignoring the voters' aggregation problems,[23] the legislator could increase his/her electoral chances if his/her choice of policy more closely matched the preferences of the median voter for his/her district.

Second, the characteristics and preferences of groups active in the policy debate influence our legislator's chances of achieving re-election. As we discussed, the framers established and Congress

embraced institutional structures which enhanced the influence of interest groups and in so doing magnified these interest groups' influence in the electoral chances of the legislators. The committee assignments, and committee jurisdictions for the legislature along with the preferences of the interest groups determine which groups are relevant to which legislators' electoral chances and vice-versa. That the preferences of these groups and their corresponding promises of electoral reward or punishment weigh heavily in the legislator's decision calculus should not, therefore, be surprising.

Third, as has been argued most powerfully by Fiorina,[24] other activities of our legislator which are related to the choices of policy and instrument have a strong impact on his/her electoral fate. Such activities as casework — intervening on the behalf of a constituent or interest group in the decision process of an administrative agency -- provide generally non-controversial techniques for increasing popularity. Instruments employed to implement policy choices vary in the degree to which they allow congressional intervention in the decision processes of the agency. Inasmuch , such 'flexible' regulatory instruments will be cherished over other, less 'flexible', instruments.

This casework component of legislative policy making has been examined only recently, with a primary focus on the electoral connection (Cain, Ferejohn, and Fiorina, 1979a, 1979b; Fenno, 1978; Fiorina, 1977a; Mayhew, 1974; Parker and Davidson, 1979) and with a secondary focus on policy consequences (see mainly Fiorina, 1977a,

1982; and Fiorina and Noll, 1978, 1979a, 1979b). However, it is this secondary focus which is of concern here. Casework on the behalf of interest groups adversely affected by the actions of an administrative agency can enhance the electoral chances of the diligent congressman. The importance of such casework is reflected in the amount of personal time devoted by the congressman to such activity. Constituent casework may be the primary mission of the congressman's staff but the grievences of organized and important interests are the personal concern of the congressman. We shall construe casework or facilitation, then, to be with regard to interest groups herewith.

The flexibility, or rather the accessibility for intervention, of the instrument is, therefore, of concern to the legislator. Command and control instruments implement the policy choice of the legislature on a case-by-case basis[25] (see Stewart, 1975 and Breyer, 1982). Each source of pollution is regulated independently, each new chemical is tested independently, each trucking route is assigned individually and prices set on a case-by-case basis. Thus, of the instruments categorized in chapter 1, the casework (facilitation) opportunities are generally greatest (all else equal) for command and control instruments which require the largest administrative machinery and are, in general, applied on a case by case basis which allows for numerous case by case interventions on the behalf of injured parties by the congressman. Other policy implementation techniques such as market incentives and information provisions are generally applied non-discriminately and often do not enhance the casework activity of

the legislator to as great a degree. The warning labels on cigarette packages are uniform for all cigarettes and not set individually by brand or manufacturer, the requirements of ingredient disclosure on packaged foods and over-the-counter drugs is applied uniformly for all such commodities and not individually for each.

Therefore the facilitation opportunities for the congressman are maximized if the policy choice is implemented through a command and control instrument. The congressman's choice of instrument is influenced as well by the preferences of the interest groups involved and the electoral reward forthcoming from pleasing such interests. Other factors such as Constitutional feasibility and the structure of the group environment serve to mitigate this ceterus parabis preference for command and control instruments.

The legislator is therefore assumed to pursue two substantive goals through his/her choice of policy guidelines and instrument for a given policy debate, his/her continued tenure in office and good public policy. The pursuit of these goals is influenced by the actions of other legislators, interest groups, and administrative agencies, and is subject to constraints defined by resources, constituency characteristics, and the institutional structure and arrangements of the legislature.

The legislature chooses policy guidelines p and instrument guidelines q from the space of policy attributes $X \subseteq R^m$ and from the space of instrument levels $Y \subseteq R^I$. These represent the boundaries of action on each attribute or issue in the policy space for the

bureaucracy in its administration of the program mandated in the choice of p.

It should be noted, to provide a context for the legislative choice, that the agency may choose any combination of attributes and issues of the mandated policy, p, for which to act upon, p_b (thus, X^b the policy space for the agency is a subset of X). The choice of policy by the agency is therefore constrained by the guidelines chosen by the legislature; however, the agency does have a latitude of action within the boundaries established by the mandate of Congress.

We are now in a position to pursue the development of the legislative sector of the 3 sector equilibrium model. Assume our legislator has a well defined utility function, U^i, over his/her probability of being re-elected, $PROB^i$, and over the legislature choice of policy, $POLICY^i$ (i.e. U^i is continuous and twice differentiable in probability of re-election and policy as well as being strictly concave in each argument). This utility will be maximized for a given policy debate, as described in the above discussion, over choices of policy guidelines, p_i, and instruments to implement the chosen policy q_i.

An implicit functional form for the probability of re-election for legislator i, given his/her choices of policy and instrument, p_i and q_i, which captures the three influences; his/her district's preferences, facilitation opportunities (casework) available prior to next election, and campaign assistance forthcoming from interest groups (these 'rents' acquired from lobbying groups can be positive or

negative) — can be characterized in the following fashion:

$$PROB^i(p_i,q_i) = PROB^i(RENTS^i(p_i,q_i),FO^i(q_i),d(p_i,p_i^m))$$

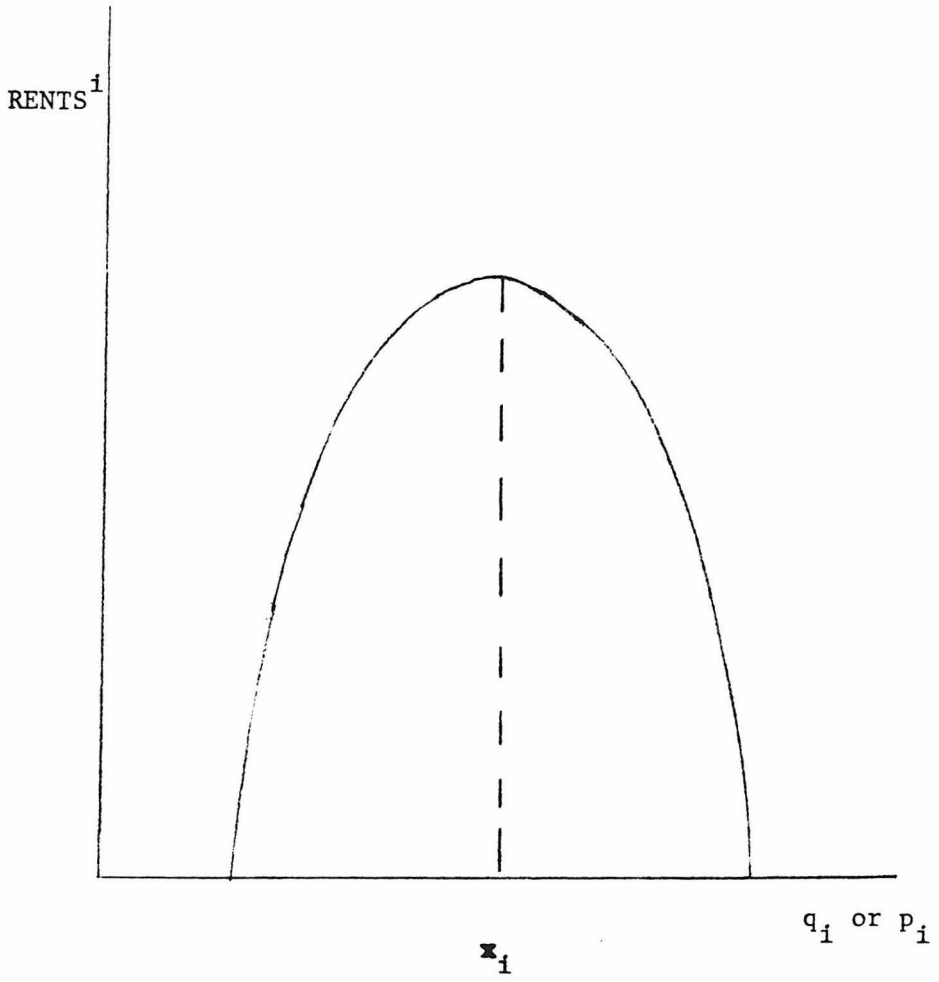
where $RENTS^i(p_i,q_i)$ represents the general resources which interest groups promise the legislator corresponding to the legislator's choices of policy, p_i, and instrument, q_i. $RENTS^i$ can be defined more explicitly as the sum of rents collected from all groups j for choices of p_i and q_i by legislator i,

$$RENTS^i = \sum_{j=1}^{J} L_{ji}.$$

As will be detailed shortly $RENTS^i$ is concave downward, continuous and twice differentiable in p_i and q_i (as well as β_{ji} the interest groups cost of providing one unit of lobbying L_{ji} to legislator i). Graphically $RENTS^i$ appears as a sectioned parabola in p or q (or B) space,

Figure 1

Legislator RENTS Function



In figure 1 the rents collected by legislator i are maximized at x_i. The characterization of $RENTS^i$ as concave downward[26] implicitly assumes a unique x_i for each choice of p_i. The existence and characteristics of this function are determined from the aggregation of individual lobbying functions, L_{ji}, which will be discussed in the section on interest groups.

Returning to the characterization of $PROB^i$, FO^i represents legislator i's perception of his/her anticipated future rents from casework activities (facilitation opportunities), for a given policy, given the instrument chosen to implement the policy, q. Recall that it is assumed that command and control variety instruments provide the maximum opportunities for such activity reflecting the case-by-case nature of the instrument.

The relevant preferences of the legislator's home electoral district are captured (again assuming the median voter hypothesis and assuming that an equilibrium to the district's voting game exist) by the term, $d(p_i, p_i^m)$ where $d(-)$ represents the Euclidean distance between the legislator's choice of policy, p_i, and the median voter's preferences, p_i^m, for his/her district.

Constituency impact on the behavior of legislators has been suggested to fall into two broad categories. First, there are those instances in which the interests of the district are explicitly articulated (or, more likely, a few specific individual or corporate constituents) to the legislator, in which instance this articulation has strong influence on the legislator's policy stance (LeLoup, 1977).

The second concerns instances where the district's interests are not explicitly articulated and reside principally in the legislator's mind. The legislator thinks that representing constituents is important and therefore attempts, usually by intuition rather than by data collection, to reflect the opinion of the constituency on a given issue or to hypothesize what the constituency would favor if it were asked to voice an opinion (Clapp, 1963; Cnudde and McCrone, 1966; Fiorina, 1975; Davidson, 1969). In either case, as discussed above, the legislator will be assumed to know the preferences of his electoral constituency and to know more specifically the ideal point of the median voter p_i^m, for his constituency.

The probability of re-election, $PROB^i$, is strictly concave, continuous and twice differentiable in $RENTS^i$, FO^i and d(-). This captures the implicit tradeoffs available to the legislator between pleasing interested lobbying groups and his/her electoral constituency through choice of policy. The formulation further captures the implicit tradeoffs available to the legislator between satisfaction of interest group preferences and the availability of facilitation rents derived through choice of particular instruments.

Recalling the discussion of the institutional constraints upon choice of policy and instrument by the legislature, the characterization of the institutional structure and arrangements by Shepsle, as outlined previously, enables us to define a constraint set for the choice of policy by our legislator. Define the set P as this constraint set, where P is a function of the committee assignments C,

the jurisdictional arrangement for such committees, J, and the amendment control rules for legislative action, A. The choice of p_i for legislator i is therefore confined to P,

$$p_i \varepsilon P(C,J,A).$$

The earlier discussion established the existence of $S:\Gamma\rightarrow p$. We would like, however, to define the properties of S in order that we can employ this functional relationship in the development of our legislative model. If we view the legislature as defining an I-person voting game then an application of Kramer's sophisticated voting theorem[27] can enable us to establish the properties of S.

There is a set, A, of bills on the legislative agenda each of which has m-many opportunities to appear on the floor in some manifestation (this is constrained, of course, by the institutional structure, as discussed earlier). We can therefore define a set B = {1,2,...,b} of bills which will at some time arise before the legislature.

We have already made explicit that each legislator is assumed to have well-defined preferences for various outcomes that can be represented by an ordinal utility function U^i (assumption I in the definition of S). The I-person game suggested above can be represented in extensive form by a tree, each of whose nodes represents the divisions on a particular bill, given result of earlier votes. A strategy for legislator i is a prescription of how to vote in each of the possible divisions (nodes) in order to achieve his

preferred outcome.

Kramer (1972) defines a 'sophisticated' voting strategy in the following manner. First, by defining an admissible strategy, "formally, a strategy is admissible if there is no other strategy providing

(i) in all contingencies an outcome at least as good;

(ii) in some contingency a better outcome, where a contingency is "some combination of strategies of all voters but one".

Kramer goes on to define,

> "A strategy is primarily admissible if there is no other strategy which produces at least as good a result in every contingency, and a better result in some contingency.
>
> A strategy is secondarily admissible if, on the assumption that all other players use only "m-arily" admissible strategies, it produces at least as good a result in every contingency, and a better result in some contingency.
>
> In general, a strategy is m-arily admissible on the assumption that all other players use only (m-1)-arily admissible strategies."[28]

A sophisticated strategy is then an m-arily admissible strategy for all $m<\infty$.

We need to also make the following assumptions on voter preferences[29]:

Assumption I. Each voter's utility function is quasi-concave on A. That is, if $U^i(x) \geq U^i(y)$ then $U^i(tx+(1-t)y) > U^i(y)$ for all 0

$< t < 1$.

Assumption II. Each voter's utility function is additive. That is, for each U^i there exist functions $U^i_1,\ldots,U^i_m$ such that at any feasible point $x = (x_1,x_2,\ldots,x_m)$,

$$U^i(x) = U^i(x_1) + U^i(x_2) + \cdots + U^i(x_m).$$

As noted by Kramer this assumes that the legislator's preferences with respect to the various issues are separable from one another (we will make a similar assumption with regard to group and agency preferences). It should be noted that this assumes that the functions (to be defined later) which define the legislators' decision-calculi, POLICY and PROB, are therefore seperable as well.

Given that the policy process described above satisfies Farquharson's axioms (see Farquharson, 1969 or Kramer, 1972), and the alternative space (as shown earlier) is compact, strictly convex and non-empty, then by a proof in Kramer (1972) we know that a sophisticated voting equilibrium exists for the process described. Lastly, we will assume that legislators are not indifferent between outcomes, as this will insure that the equilibrium not only exists but is unique (Kramer, 1972). More to the point, the characterization of the equilibrium as developed by Kramer is that the equilibrium point, x, will be the multi-dimensional median of the preferences of the legislators.

As characterized, since we know that a unique equilibrium exists and is characterized as the multi-dimensional median, it is

easily established that the function S is therefore continuous (and of course trivially strictly convex).

Proof: Suppose that S is not continuous. Then there exists a set of preferences such that a change in preferences by a member causes a discontinuous jump in the equilibrium (median), i.e. that for $\varepsilon>0$ there is not a $\delta>0$ satisfying (c).

Define S as follows:

$$S: X \varepsilon R^n \rightarrow X^*$$

$$S(x^* \varepsilon R^n : num(x_i \geq x^*)) = num(x_i \leq x^*_i) \text{ for all } i = 1,\ldots,n.$$

If a change from x to p is such that the median f(p) = f(x) then the function f is trivially continuous for such moves, i.e.

$$d(x,p) < \delta \rightarrow d(f(x),f(p)) = 0 < \varepsilon, \text{ for all } \varepsilon.$$

If a change from x to p changes the median then, by definition of the median

$$d(x,p) < \delta \rightarrow d(f(x),f(p)) < \delta$$

and since this is true for all $\delta>0$ then for all $\varepsilon>0(\varepsilon=\delta)$ there exists $\delta>0$ such that

$$d(f(x),f(p)) < \varepsilon = \delta \text{ whenever } d(x,p) < \delta.$$

Therefore no change in x(preferences) generates a discontinuity in S(x), the equilibrium. QED.[30]

It has therefore been established that there exists a unique, continuous and strictly convex valued function S which maps induced legislative preferences to legislative outcomes for a given institutional structure:

$$S(\Gamma': C, J, A) = p.$$

The derivation and characterization of the function S which maps induced preferences to legislative outcomes was a necessary step in defining the objective functions of each actor in the three sector model. Each actor must possess a knowledge of how his/her actions will affect the outcome of the policy debate, as each actor is assumed to possess preferences over such outcomes. Deriving and defining the mapping from induced legislative preferences to legislative outcomes is a necessary first step to the construction of a function which maps initial preferences of legislators and the lobbying strategies of interest groups to the policy outcome of the legislature.

Define a function, L, which maps the initial preferences of the legislature, Γ^0, to the lobby-induced preferences (policy choices) of the legislature, Γ'. An argument similar to the sophisticated voting equilibrium just discussed can be given wherein lobbying groups choose m-arily admissible lobbying strategies given their knowledge of S and define a sophisticated lobbying equilibrium from which we could establish the existence of L and derive its characteristics. However, such an argument, at this juncture, would indeed stray us too far afield from defining the model of legislative behavior. We need merely to outline the impact of lobbying behavior here and we will return to the problem of lobbying choice by interest groups in the next section. And thus without loss of generality, L will be assumed to exist and to be continuous and strictly convex.

A composite function, POLICY, which maps initial preferences of the legislature to the policy outcome for the policy debate, can be constructed as a composition of L, the function which maps the initial preferences of the legislature, Γ^0, to the lobby-induced preferences, Γ' and S, the function constructed earlier which maps legislative preferences, Γ', to a legislative outcome, p,

$$S:\Gamma' \rightarrow p \cdot L:\Gamma^0 \rightarrow \Gamma' = \text{POLICY}:\Gamma^0 \rightarrow p.$$

Assuming that the legislator possesses knowledge of the reaction functions of his/her collegues in the legislature, and of the implicit lobbying supply functions of groups, we can employ POLICY to examine how changes in a legislator's choice will affect the aggregate policy choice. Each legislator (and indeed each interest group) can therefore predict the effects of his/her actions on the behavior of all other actors and in aggregate on the policy (and instrument) choice of the legislature.

Having thus assumed that each legislator possesses knowledge of the reaction functions for all other legislators and all interest groups, we can rewrite the equation for RENTS more explicitly,

$$\text{RENTS}^i = \sum_j L_{ji}(\Gamma', \beta_{ji}, B_j,]L[)$$

where,

Γ' is the matrix of initial preferences

β_{ji} is the cost of providing one unit of lobbying activity to legislator i by group j

B_j is the budget for lobbying activity for group j

(β_{ji} and B_j will be discussed in the section on group behavior), and

$]L[$ is the matrix of lobbying activity of all other groups k, $k \neq j$.

The function POLICY can be written as an implicit function of institutional parameters and the policy and lobbying choices which define it,

$$POLICY^i = POLICY^i(p_i :]\Pi'[, L, J, C, A)$$

where

$]\Pi'[$ is the matrix of policy choices of all legislators k, $k \neq j$, and

L is the matrix of lobbying strategies for all groups j.

The problem for the legislator can now be written explicitly. Each legislator i is assumed to be acting as if he/she were

$$\underset{p_i \text{ and } q_i}{\text{MAXIMIZING}} \; U^i(PROB, POLICY)$$

with

$p_i \varepsilon P(C,J,A)$

$q_i \varepsilon Q(p_i)$

where P is the constraint set for the choice of policy, as defined earlier, and Q is the constraint set for the choice of instrument for a given policy, p_i. This constraint set is defined by the characteristics of p_i and the feasible (Constitutional, etc.) methods of implementing p_i.

This formulation captures the image of legislative behavior as depicted by Fenno and the institutional influences as described earlier. The model constructed is of "smart" legislators, i.e they choose policies and instruments in accordance with their goals and with knowledge of how their choices influence the legislative outcome. An equilibrium for the policy choice game in the legislature was characterized to enable us to not only define the legislative objective function(s) but to account for the impact of the institutional structure on policy.

In sum, the individual legislator's choice of policy was described as being influenced by the preferences of the individual legislator for the policy outcome of the legislature and by how such a policy position affects his/her probability of achieving re-election. The legislator's probability of being re-elected (for the choice of policy) reflects the influence of organized interest groups and his/her electoral constituency on his/her electoral chances. The choice of instrument was described as being determined only by its

impact on the individual legislator's probability of achieving re-election. This probability (for instrument choice) reflects the electoral benefits obtained from interest groups and the potential electoral benefits of casework activity for the given choice of instrument for the individual legislator.

We shall turn our attention now to constructing models of interest group and administrative agency behavior before discussing the equilibrium of the three sector game, or the propositions on choice derivable from such a framework.

3.3 Interest Group Choice Model

The literature on interest group behavior is quite diverse in approach and widely varied in both content and focus (Bacheller, 1977; Bailey, 1950; Barber, 1965; Bauer, Pool and Dexter, 1963; Bernstein, 1955; Berry, 1977; Buchanen and Tullock, 1962; Cochran, 1974; Cobb and Elder, 1972; Davidson, 1969; Dexter, 1969; Frolich, Oppenheimer and Young, 1971; Froman, 1963; Key, 1964; Kingdon, 1973; Lowi, 1969; Oppenheimer, 1974; Riker, 1962; Riker and Ordeshook, 1973; Rourke, 1969; Schattschneider, 1960 and Wilson, 1973, 1980).[31] However, each study reflects the common premise originally discussed by Madison (with the possible exception of Bentley, 1967), that interest groups are inevitably selfish and narrow, and that the emergence of interests resulted from human nature.

Bentley (1967) perceived that government and policy were merely the result of the interactions of groups within the government

and outside government and that society was nothing more than as aggregation of groups.

Truman (1971) in this tradition described the institutions of government and society as aggregations of groups, and saw individual citizens in terms of their group identification and membership. He pointed out that an individual is normally a member of several groups, and that this overlapping membership helps to control what Madison termed the "mischiefs of faction". In his political analysis of interest groups in the policy process, he focused on the importance of groups and of their access to political decision making.

Schattschneider's study on tariff policy [32] returned to the premise of Madison, that the effects of faction were indeed evil. In his study of the tariff, he observed that groups able to afford and to maintain full-time experienced lobbyists in Washington had great advantages in influencing Congress. He noted that groups achieved access (a notion similar to Truman) through campaign contributions and "inside" connections. Schattschneider felt this pattern of influence badly distorted the process of representation, and attacked the operation of groups in the American political process on the basis of what he regarded as a profound upper-class bias and a distortion by groups of the public interest.

Olson (1965) developed a theory concerned with the decisions of individuals about whether or not to join a given interest group. The free-rider problems discussed by Olson preclude successful collective action except by very small and single-minded groups such

as trade associations. Although the problem of collective action has since been elaborated upon and is of general interest, I shall henceforth ignore the problems associated with the rise of groups and simply assume the groups exist and possess appropriate characteristics (to be discussed).[33]

A few general conclusions can be garnered from the literature outlined briefly above which will enable us to develop a model of group behavior for our discussion of policy and instrument choice. As suggested by Schattschneider, and reaffirmed by Olson, most of the active organized groups that lobby the government represent very narrow segments of society with highly focused interests. The few groups that represent more general interests tend to have memberships that encompass only a small portion of their theoretically potential constituencies.

There exist many different types of interest groups -- ranging from the large and well-financed to the miniscule and impoverished -- employing many types of lobbyists -- ranging from full-time professionals to occasional amateurs. This collection of interest groups is not static. As issues and social and economic conditions change, the configuration of active and influential groups also changes. Further, the characteristics of each group change with the change in exogenous conditions and in response to changes in the legislature (as we suggested earlier).

Table 2 summarizes the number, types and changes of lobbying organizations registered with the Clerk of the House to lobby in

Congress in 1951, 1961, 1971 and 1981. This captures the dynamic nature of the group environment, the variety of lobbying groups and the numerical predominance of business interests.

TABLE 2

Lobbying Group Registrations: 1970-1980

	Number of Registrations by Year	
Type of Group	1970	1980
Business Groups	223	1053
Citizens Groups	96	143
Employee and Labor Groups	18	51
Farm Groups	6	--
Foreign Groups	8	27
Military and Veterens Groups	3	4
Miscellaneous Groups	19	114

Source Congressional Quarterly Almanac 1970 and 1980.

There are several general features that characterize almost all lobbying activity. First, it should be stressed that the lobbyists' major task, according to Bauer, Pool and Dexter (1963), is mobilization of those who already believe rather than conversion of the infidels. Lobbyists seek out legislators whom they have identified as supporters and work to reinforce their views.

As suggested by Schattschneider, interest groups may find that a particularly successful lobbying technique is to provide members of Congress the large amounts of funds necessary to retain a seat. In 1974 interest groups gave $12.5 million to congressional campaigns, and in 1976 they gave $22.5 million. Though the provision of money for campaigns is the most important election-time service rendered by groups to friendly legislators, they can also be helpful by conducting registration drives and by providing campaign workers and campaign literature.

Formally, we capture the essence of the literature on group behavior by assuming interest groups seek to maximize their own selfish net benefit[34] from public policy. The groups achieve this maximization by choosing a lobbying strategy in the legislature subject to their budget constraint for such activity and the influence of the institutional structure. Such a characterization of interest groups, naturally enough, implicitly assumes that constituent members belong to one and only one group.

We have constructed the function POLICY for each legislator and we can do so in a similar fashion for each interest group.

Similarly, we can construct a function INSTRUMENT for each group which is a well-behaved function of lobbying activity as well. This, again, implicitly assumes that the group is a 'smart' group possessing knowledge of each other actors reaction functions.

As will be discussed shortly, the policy and instrument equilibrium for the agency (and the associated mapping functions) are readily characterized. The composition of these functions with the POLICY and INSTRUMENT functions defined above yield the mapping functions we shall employ in the specification of group behavior. For expository ease let us call these mappings $POLICY^j$ and $INSTRUMENT^j$ for each group j.

Interest groups, as indicated above, possess various points of access to the legislative policy process. These access points are a function of the institutional arrangements of the legislature (the committee assignments and jurisdictions) and the characteristics of the group (its size, wealth, scope, homogeneity of preferences, and its preferences). Each access point, according to its position within the institutional structure, provides a differing level of influence to the policy process and also defines the costs of lobbying for the group.

It will be assumed that the cost of lobbying for a group at its access point is lower than at any other point(s) (i.e. the cost of providing one unit of lobbying is lower there than elsewhere). The influence provided to the group through its access in the policy process is implicitly accounted for in the equilibrium mapping

functions POLICY and INSTRUMENT.

Define β_{ji} as the cost to group j of providing one unit of lobbying to legislator i. β_{ji} is a function of the access of the group. Define B_j as the groups lobbying budget, and L_j as the vector of lobbying provided. Let L_{ji} be the specific amount of lobbying provided legislator i by group j.

Let NB^j be the implicit net benefit for the group of public policy as represented by the functions $POLICY^j$ and $INSTRUMENT^j$. Therefore each group j, $j \varepsilon [0,\ldots,J]$, is assumed to be acting as if it were

$$\text{MAXIMIZING } NB^j(POLICY^j(L_j:\Gamma, C, J, A), INSTRUMENT^j(L_j:\Gamma, C, J, A))$$

$$L_j$$

$$\text{SUBJECT TO } \beta_j L_j \leq B_j.$$

Assume further that NB^j is strictly concave in L_j, continuous and twice differentiable. Also assume that the budget constraint is convex in L_j, continuous and twice differentiable. It should be noted that tha assumption that NB^j is strictly concave is a mathematical convenience. We could in fact consider single dimension interest groups which adopt corner (all-or-nothing) solutions as policy objectives in the context of the model, however, for expository ease we shall assume that all groups are willing to make tradeoffs between policy preferences.

It should be noted that these assumptions imply that RENTS are convex in β and twice differentiable, and that it can be shown that

RENTS are strictly concave and well-behaved in B. Lastly the assumptions imply unique maximizing points L'_j, exist (and we will assume that groups have bliss points p_j^* and q_j^* over policy and instrument).

Of particular interest to the development of a model of regulatory instrument choice are interest groups in the form of business associations. Such associations represent an important influence upon the regulatory choice, as the members of such associations, generally profit-maximizing firms, are the frequent targets of federal regulation. Because constituent firms possess a readily identifiable stake in the regulatory choice profitability, the impacts of regulation are therefore more easily discernible and open to analysis.

The activities of a firm which are subject to regulation can be categorized into four stages; pre-production and development, production, distribution, marketing and sales. The scope of such regulation may be industry- specific, or may extend beyond the parameters of a specific industry and affect the behavior of all firms in the economy.

Business associations are generally composed of loosely affiliated firms which are engaged in similar economic pursuits and thus share similar interests with regard to governmental regulation. Trade associations such as the National Association of Manufacturers, the National Coal Policy Conference, and the American Farm Bureau Federation seek their members' joint benefit through their lobbying

activity in Congress.

Firms, through their choices of lobbying activity, seek to maximize their net profits (benefits) from the governmental choice of regulation subject to their production technology and lobbying budget. If the regulation affects the production choices of the firm and there does not exist perfect homogeneity of production technologies for firms in the regulated industry, the regulatory instrument used to implement the regulatory policy may induce changes in the relative prices for firms in the industry. A redistribution of wealth may therefore result. Further, general equilibrium price distortions may result because the relative prices between industries (and their constituent firms) may be changed, thereby increasing further the redistribution of wealth. On the other hand, if all firms within an industry possess a uniform production technology then regulation of the firms' production choices may indeed be price distortion free.

The market structure of the industry to be regulated and the stage(s) of firm behavior to be regulated therefore induce preferences for the firm over the instrument choice. Such preferences influence the legislative choice of regulatory instruments.

Regulation can therefore be preceived as altering the profitability of the firms in the industry and may induce changes in demand and factor employment in a similar manner. It should be noted here that regulation can affect such changes in profitability and factor employment without affecting relative prices.

In sum, interest groups are assumed to possess preferences

over policy and instrument choices and lobby to their benefit to attain their preferences. Business associations, representing affiliated firms, are an important variety of interest group in the regulatory choice. The net profitability for such firms from a regulation, and thus the firms' preferences over instrument choices, is shaped by the stage of firm activity to be regulated and the structure of the market within which the firm competes.

3.4 A Model of Administrative Agency Choice Under Uncertainty

Joskow suggests a model of administrative agency behavior wherein agencies operating under a considerable degree of flexibility of discretion, "seek to minimize conflict and criticism appearing as 'signals' from the economic and social environment in which they operate, subject to binding legal and procedural constraints imposed by the legislature and the courts. The agencies' organizational structure, regulatory instruments, and operating procedures are chosen so as to achieve this goal".[35]

These "signals", according to Joskow, come from actors such as consumers, public interest groups, and politicians pursuing their interests. In minimizing conflict, the agency achieves an equilibrium "which satisfactorily balances the conflicting pressures from the external environment" and exhibits "a well established organizational structure and regulatory procedures and instruments that are well defined and used repetitively and predictability".[36]

As indicated earlier, models of administrative agency behavior typically assume the regulator to be the top official in a regulatory organization (the administrator or commissioner), who in his/her basic preferences is similar to other bureaucrats. The behavior of the regulator is then determined by the constraints of the organizational setting and his/her reward opportunities, which he/she pursues rationally. We will continue in this tradition, modelling the administrator/commissioner in a fashion similar to Joskow (see also Dodd and Schott, 1979). However, the approach we employ has implications for the organization of administrative agencies as well.

General models of bureaucratic behavior with a similar focus have been developed by Downs(1967), Tullock(1965) and Niskanen(1971, 1975) which we discussed earlier, and variations of this general framework have been applied to the study of regulatory structure and/or choice (DeAlessi, 1974; Eckert, 1973; Hilton, 1972; Noll, 1971; Noll, Peck and McGowan, 1973)

Congress' domination of the bureaucracy can be summarized through an examination of the Constitutional powers granted Congress (Dodd and Schott, 1979). Congress may create or destroy agencies, and it determines whether the agency is to be located in the executive branch or is to be independent of it. The latter is one of the key powers of Congress regarding administrative organization, for it enables it to create a highly autonomous bureaucracy. In addition, Congress has the power of the purse, and in this way it exercises its main control over the administrative branch. Congress has the power

to define exactly what the agency may or may not do. Finally, the Constitution gives Congress the power to assist in certain presidential appointments. Thus Congress has virtually complete authority to structure the administrative branch and determine where formal lines of accountability shall be placed.

Much of the time however, most members of Congress have strong incentives to get along with the various parts of the federal bureaucracy. But conflict does occur. When conflict occurs the harshest punishment Congress can administer in settling the problem is to dismantle an existing program. For example, Congress dismantled the Area Redevelopment Administration (ARA) in 1963, even though it had only been authorized in 1961. The ARA was encouraging industries to relocate in redevelopment areas despite clear provisions in the law to the contrary. In the eyes of those congressmen from districts losing such industries, the ARA was engaging in "piracy" (Ripley, 1972). Congress can also redefine the jurisdictional authority of a regulatory agency so that it no longer has the power to make annoying decisions in a particular area. This was the case with the Federal Trade Commission when it first sought to regulate cigarette advertising, children's television, and funeral homes.

Returning to our model of agency behavior, agency personnel, whether political appointees or civil servants, are assumed to be goal-directed people choosing courses of action under a substantial amount of uncertainty. The agency is surrounded by other organizations-- the Congress, groups, the executive and the courts--

that can affect the abilities of agency members to attain their goals. Agency members and, collectively, the agency itself will therefore engage in activities designed to reduce the conflict generated by its policy decisions.

As described by Ferejohn,

> The most important characteristic of agency environments is that they are structured by the nature of American constitutional government. Agencies are assembled and given legislatively defined missions through the normal legislative processes and they must return to Congress, the OMB and the President for reauthorization and appropriations at periodic intervals. And since the Congress, in particular, is designed to be fairly sensitive to organized interests those groups inside or outside the government which may be adversely affected by the proposed activities of an agency will generally have access to various congressional bodies which can affect the operation of the agency...
>
> The general point is that every agency is located in a context that permits the appeal of specific agency decisions by a variety of parties and that, in some cases, the very existence of the agency itself can be called into question by certain groups. For this reason if an agency head wishes to achieve programmatic or personal goals he or she must be aware or the necessity of maintaining the capacity to make effective decisions."[37]

The administrator is assumed to align his/her preferences with those of the agency. The administrator seeks to formulate policy but with a realization that groups external to the agency will be affected by such actions and will seek a redress of such effects in Congress. Influential groups in the agency's environment are those with a voice in the agency's oversight committee, but other groups possess influence as well. The administrator recognizes the power of such groups and takes their preferences into account.

The administrator's preferences over agency policy, p_b, are assumed to be representable by a utility function, U^b. The administrator is further assumed to know the preferences of the groups in his/her environment (and their bliss points p_j^*) and assigns weights, w_j, to each in accordance with their potential influence over agency policy.

Ferejohn, in discussing the structural/organization responses of administrative agencies [38], proposes a relation between the external influences to the agency, discussed above, and the informational responses of the agency. Ferejohn hypothesizes that the agency will structure its decision making process so as to encourage the access of groups interested in the policy in question. This structure will enable the administrator to define accurately the groups' preferences, p_j^* and the weights to assign to each, w_j. This informational structure enables the administrator to anticipate the amount of potential conflict to the agency's policy and instrument choices and thus enables the administrator to reduce such conflict and its adverse effects on the agency's fortune.

Define the conflict, V, anticipated by the administrator over a choice of agency policy, p_b, and instrument, q_b, as a function of the sum of the weighted differences of the changes in net benefits for each group in the agency's environment,

$$V = V\left(\sum_j w_j[NB^j(p_b, q_b) - NB^j(p_0, q_0)]\right)$$

where

V is the conflict anticipated for each choice of p_b and q_b and

p_0, q_0 is the status quo before agency action.

The anticipated conflict function, V, is assumed to be increasing and well-behaved so that the function is increasing in the weighted sum of differences of the groups' net benefits.

Define the probability that the agency's choice of policy and instrument will not be nullified as

$$pr^b = pr^b(V, \theta).$$

The probability pr is increasing and well-behaved in V and is a function of the actions of the courts, taken as the random variable, θ. This probability is determined, in part, by the policy and instrument status quo, p_0 and q_0. These status quo points reflect the most recent choices of the agency and the legislature over policy and instrument.

The administrator is constrained in his/her policy and instrument choice by the guidelines imposed in the legislative mandate. Formally,

$$p_b \in P^b(p)$$
$$q_b \in Q^b(q)$$

where p and q are the policy and instrument choices of the legislature. P^b is the constraint set for the agency choice over

policy, similar to the constraint set defined earlier for the legislative choice. The agency's choice of policy is constrained by the policy mandate, p, chosen by the legislature. Q^b is similarly the constraint set on the agency's choice of instrument.[39]

That the ability of an agency to choose one or the other method of implementing policy may be tightly circumscribed by its statutory authorization and by the law governing the area is well understood. Changes in the interpretation of the authorizing legislation or in more general areas of law by the courts have indeed changed the ability of agencies to select certain instruments to implement policy.

The administrator is further constrained in the choice of policy and instrument in that the cost of administering the choice pair, $COST^b(p_b, q_b)$, must not exceed the budget for administration granted the agency by Congress, $BUDGET^b$. This budget is a function of how well the agency averts conflict relative to its choice pair:

$$BUDGET^b = BUDGET^b(V).$$

The power of the purse is the primary resource Congress possesses for the oversight of bureaucratic behavior. Groups antagonized by an agency's actions will seek a redress of grievances with the proper oversight committee. As such, the amount of conflict generated from an agency's decisions will influence the determination of the agency's budget.

The agency administrator is therefore assumed to act as if he/she were an expected utility maximizer where the expectation is

over the actions of courts,

$$\text{MAXIMIZE } EU^b = pr^b(V,\Theta)U^b(p_b,q_b) + [1 - pr^{b(V,\Theta)}]. \; U^b(p_0,q_0)$$

$$\text{SUBJECT TO } COST^b(p_b,q_b) \leq BUDGET^b.$$

$$\text{SUBJECT TO } p_b \varepsilon P^b(p) \text{ and } q_b \varepsilon Q^b(p).$$

The above model of agency behavior captures the influence of the agency's environment on its choice of policy and instrument. This expected-utility model of agency behavior will enable us to define refutable hypotheses concerning instrument choice by agencies and complete the three sector equilibrium model of policy and instrument choice.

3.5 Summary

We have sought to develop a model which captures the important elements of instrument and policy choice in a workable framework for discussion. The three sector model provides such a framework. It was presented in such a fashion as to coordinate the often loosely associated current trends of thought on policy choice and to provide a description of the policy process. The description provided a behavioral framework with which to examine instrument choice, though as suggested, the model necessarily captures the choice of policy as well.

In that the presentation and development of the model organized and summarized the diverse literature on policy choice and explicitly identified the often ignored relationships between the

various organizations and actors which influence policy choice, the modelling was a worthwhile task. That the model provides an explanation of such choice, in a fashion which addresses several diverse literatures, and that the model provides predictive hypotheses which are readily testable on observed data of such choice, leads me to provide the model as a central facet of the discussion of instrument choice about which we are concerned.

As discussed in the previous chapter the theoretical literature on regulatory choice does not address the problem of instrument choice and too simplistically addresses the problem of policy choice to be applied to such a subtle problem. The three sector model of policy and instrument choice, summarized formally below, captures the relationship between utility maximizing legislators, net benefit maximizing groups and, expected utility maximizing bureaucrats, as well as the impact of the institutions of choice on the outcome of the process. To summarize,

for legislator i;

$$\text{MAXIMIZES} \quad U^i(PROB^i, POLICY^i)$$

$$p_i \in P(C,J,A)$$

$$q_i \in Q(p_i)$$

for group j;

$$\text{MAXIMIZES} \quad NB^j(POLICY^j, INSTRUMENT^j)$$

$$L_j$$

$$\text{SUBJECT TO} \quad \beta_j L_j < B_j$$

for agency b;

$$\text{MAXIMIZES} \quad pr^b(V,\theta)U^b(p_b) + [1 - pr^b(V,\theta)]U^b(p_0)$$

$$p_b \; \varepsilon \; P^b(p)$$

$$q_b \; \varepsilon \; Q^b(q)$$

$$\text{SUBJECT TO} \quad COST^b(p_b, q_b) \leq BUDGET^b.$$

This formulation explicitly considers the influence of interest group lobbying upon the choice of policy and instrument by the legislature and the administrative agency and the influence of each governmental branch's actions upon the other. The formulation further allows us to capture and identify the institutional structures and arrangements which have an impact on policy outcomes. Indeed, much institutional structure is implicitly built into the behavioral assertions of the model.

The legislative choice of regulatory instrument has been suggested to be a tradeoff between the instrument which maximizes the interest group casework opportunities for the congressman (command and control) and the instrument which maximizes the rents available from satisfying the preferences of involved interest groups. The level of such rents is in turn (for business interests) influenced by the stage at which the regulation is effective and the market structure of the industry being regulated.

The bureaucratic choice of regulatory instrument is one which simultaneously satisfies the mandate and guidelines of the Congress and the courts and minimizes the conflict in its external environment surrounding the choice of such instrument. We shall explore these

conditions in the next chapter.

Footnotes to Chapter 3

1. Recall I define policy as the goal or objective of the governmental action and the instrument as the technique or method used to implement the chosen policy. The instrument may be a command and control, informational, incentive-based, or public provision variety. See chapter 1 for examples and a general discussion.

2. Stigler (1971) and Bauer, Pool and Dexter (1963).

3. Alexander Hamilton, John Jay, and James Madison, The Federalist (New York: Random House).

4. For good bibliographic references to this extensive literature see Harmon (1978) or Ornstein and Elder (1978)

5. For a good bibliography see Harmon (1978).

6. See mainly; Clapp (1963), Fenno (1966, 1973), Hinckley (1971), and Matthews (1960).

7. Fiorina (1977) p. 41.

8. Fenno (1973). pp. 1.

9. On the professionalization of Congress see Fiorina, Rhode, and Wissel (1975) and Price (1975).

10. See Fenno (1973).

11. For a good summary of norms of behavior see Ripley (1978). For an excellent discussion of the formal rules of behavior see Oleszek (1978).

12. The process through which policy passes before the legislature can be characterized as a three stage process. The first stage, agenda formation, establishes which issues and in what order such issues will appear before the legislature. In the second stage, the decision stage, the legislature considers for enactment the various policy alternatives on the agenda; in the third, the legislature, almost exclusively through the committee system, implements and manages ongoing policies and programs which were previously enacted. For an excellent survey see Oleszek (1978).

13. See Shepsle (1979).

14. Arrow (1963).

15. Fenno (1973).

16. Shepsle (1979) p. 31.

17. ibid pp. 33-34

18. ibid pp. 35

19. ibid p. 38

20. ibid pp. 47

21. See appendix B for a proof and discussion of equilibria with conference committees.

22. For a general discussion of the median voter hypothesis see Downs (1957) or Buchanen and Tullock (1962).

23. Such problems would include the Arrow paradox. However, I shall assume, for simplicity, that there does exist an equilibrium to the electoral voting game.

24. See Fiorina (1977),see also Clapp (1963), or Fenno (1977, 1978).

25. The usage of the terms case-by-case and universal/generic in this manuscript do not conform with the conventional usages of these terms. Case-by-case herein will be used to describe instruments which are applied a case at a time, i.e. by firm, by chemical, by product, whereas the conventional terminology describes case-by-case as regulation by firm only. The usage we employ reflects the fact that a case may extend beyond firm boundaries.

26. An equivalent statement concerning the concavity of $RENTS^i$ in p_i or q_i, that I will employ later, is that RENTS is strictly concave in $d(p_i,x)$ and $d(q_i,y)$, where $d(-)$ is the Euclidean distance between the arguments and x and y are the maxima of the functions.

27. Kramer (1972).

28. ibid pp. 171.

29. ibid pp. 173.

30. The proof follows trivially from the definition of the median.

31. See Harmon (1978) or Ornstein and Elder (1978) for extensive bibliographic references.

32. Schattschneider (1960).

33. On this line see Salisbury (1969).

34. Net Benefit = BENEFITS(POLICY, INSTRUMENT) - COSTS(POLICY, INSTRUMENT)

35. Joskow (1974) p. 297.

36. ibid.

37. Ferejohn (1981).

38. ibid.

39. We could just as soon let the Congress choose P^b and Q^b instead of having the Congress choosing p and q and assuming the agency constraint set is fixed about p and q. This could be modelled by changing the relevant choices for the legislator from

p_i and q_i to p_{iu} (upper policy choice) and p_{id} (lower policy choice) (both elements in R^m and q_{iu} and q_{id} εI. We would then be able to define the social choice functions $POLICY_u$, $POLICY_d$, $INSTRUMENT_u$, and $INSTRUMENT_d$ in the same manner as before for the functions POLICY and INSTRUMENT (follows if we assume, as we have already, that the issue dimensions, in this case p_u, and p_d, are separable).

The choices q_{iu}, and q_{id} would then define the acceptable range of choices for agency action, Q^b, similarly p_{iu} and p_{id} would define $P^b \varepsilon R^{2m}$.

We could then define the functions,

$$POLICY = POLICY_u \times POLICY_d \quad \text{and}$$

$$INSTRUMENT = INSTRUMENT_u \times INSTRUMENT_d,$$

and examine interest group behavior. We will examine such a simple addition to the model in chapter 4.

Chapter 4. Instrument Choice

4.1 Introduction

The development of a formal model of policy and instrument choice provides us the logical rigor for deriving refutable hypotheses through standard comparative statics techniques. The comparative statics of the model are outlined in appendix A. The relationships implied by these comparative statics are employed in this chapter to define hypotheses about instrument choice.

The formal development of the policy process in the previous chapter is revealed here to provide us with a handle for capturing the institutional impact on policy and instrument choice. The description of the legislative choice equilibrium and its functional relationship to the institutional structure and arrangements is captured, through the choice functions and constraint sets constructed in the model, as a set of parameters describing the impact of such institutions on the choice of instrument.

Several aggregate/summary parameters will also be introduced in order to describe more readily the "system" changes in parameters which influence policy and instrument choice.

4.2 Instrument Choice

A number of the propositions suggested by the analysis are derived directly from the partial derivatives from the comparative

statics in appendix A. Most of these propositions are straightforward and need little explanation, and so we will offer them in summary form and dispense with the individual discussions of each hypothesis. We will however discuss them collectively after presenting them.

These propositions are admittedly fairly obvious hypotheses. That the model predicts such obvious propositions in such a straightforward manner is encouraging and adds to the general acceptability of the model developed in chapter 3. On the other hand, we hope to offer a series of powerful and non-obvious propositions, derivable from the model, in the pages to follow.

H1. (Interest Group Preference Effects).[1]

A change in an interest group's preferences (ideal point) over instruments, for a given policy choice, generates a like-directional change in the legislative instrument choice (ceteris paribus). Proof: Recall q is the legislature's instrument choice and q_i is legislator i's instrument choice, and q^*_j is group j's ideal point. Groups have preferences over outcomes, POLICY x INSTRUMENT, and by separability have preferences over INSTRUMENT. We know,

$\partial q/\partial q_i > 0$

(this follows from the definition of the function INSTRUMENT) and

$\partial q_i/\partial q^*_j > 0$ (see A.14)

thus, by continuity,

$\partial q/\partial q^*_j > 0$. QED.

H2. (Interest Group Wealth Effects).

An increase in the budget of an interest group (c.p.) generates a change in the legislative instrument choice, for a given policy choice, so as to decrease the distance between the legislative choice and the group's ideal point. Proof: Recall L_j is the matrix of lobbying rents paid by group j, B_j is the groups budget constraint, and L_{ji} are the rents paid by group j to legislator i.

$\partial L_j/\partial B_j > 0$ (see A.17)

$\partial d(q_i, q^*_j)/\partial L_{ji} < 0$ (see A.13)

$\partial q/\partial q_i > 0$

by continuity,

$\partial d(q, q^*_j)/\partial B_j < 0$. QED.

Similar hypotheses concerning agency choice will be offered without proof (as the proofs are similar and can be discerned from appendix A):

H3. (Agency-Group Preference Effects).

A change in an interest groups' preferences (ideal point) over instruments (policy) generates a like-directional change in the agency's instrument choice (c.p.)

H4. (Agency-Group Wealth Effects).

An increase in the budget of an interest group (c.p.) generates a change in the agency instrument (policy) choice, so as to decrease the distance between the agency choice and the group's ideal point.

Each of these hypotheses, though intuitively familiar, offer

explicit and important relationships between observable phenomena and the choice of instrument to implement a chosen policy. Each hypothesis offers us at least a partial explanation of instrument choice and enables us to predict changes in instrument choice when offered evidence of a change in a parameter related to such choice.

These hypotheses suggest the influence of group preferences on the choice of instrument (and policy) for both the legislature and bureaucracy. The wealthier groups, through a greater ability to lobby, have a proportionately greater influence on policy than their poorer brethren. Lowi (1969), implicitly observing these very same relationships, suggested that this "interest group liberalism" observed in the above hypotheses was a great danger to American democracy. Government, according to Lowi, had systematically abdicated to private groups its power over the direction of public policies. He sought a solution to this problem which he felt necessitated a return to more local authority over policy choices and to unambiguous and definite delegations of authority to agencies (as opposed to broad mandates).

What the modelling has bought us here, in this regard, is an explicit account of the root of "interest group liberalism" from which we may be able to conjecture upon remedies to this perceived problem. The roots of "interest group liberalism" according to Lowi is the broad delegation of authority granted agencies by the legislature. This combined with the perception that non-elected officials hold no public interest leads Lowi to the conclusion that the choice of policy

has been abdicated to private interests.

Indeed, however, as the present model indicates, the roots lay primarily in the legislature. Interest group liberalism is alive and well in our legislature, and in response to such liberalism in the legislature it is alive and well in the bureaucracy. The problem is more a result of the professionalization of the legislature in the twentieth century with its associated premium on the continued tenure of office for the legislators, and the design of the Constitution, with its focus on interest group access rather than of the inherent narrow-mindedness of the objectives of bureaucrats.

That agencies are primarily responsive to the preferences of the groups in their environment for their choice of instrument is a direct result of the formulation of agency behavior. Simplifying the model of agency behavior, we observe that the administrator will choose instruments which minimize the weighted sum,

$$\sum_j w_j[NB^j(q_b) - NB^j(q_0)].$$

This however, is not a result of the preferences of the administrator or the venality or incompetence of such as suggested by others, but rather, according to this model, is a response to pressures from Congress. Thus the path of interest group liberalism lead directly to the legislature and the objectives of legislators. With this observation, the suggestions by Lowi for correcting the perceived problem of "interest group liberalism" miss their mark.

It is also the case that the 'interest group liberalism' hypotheses (H3 and H4) for administrative agencies imply the capture

hypothesis discussed in chapter 2. If we assume that there exists only one important interest in the agency's environment (i.e. $w_j > 0$ and $w_k = 0$ for all $j \neq k$) then it is clear from the "interest group liberalism" hypotheses that the choice of policy and instrument will closely approximate the preferences of the interest group.

The capture hypothesis is seen here to be a function of the behavioral incentives given agencies (assumed here) by Congress. The influences within Congress which leads that institution to be captured thus lay the groundwork for the incentives given agencies to be captured. That we observe capture in administrative agencies is therefore not the driving point, for we should observe capture in both the agency and the appropriate subcommittee(s) of Congress as well.

Recall from chapter 3 that command and control instruments generally provide the greatest interest group casework opportunities for the congressman. It is easily derivable therefore that, all else equal, the legislature will prefer to implement policies through command and control instruments. Though the first four hypotheses and this result begin to explain the predominance of command and control instruments observed for federal regulation, a complete picture is not yet available.

Indeed, the first four hypotheses captured the intuition of the previous literature on the choice of policy and instrument. The next five hypotheses, concerning (respectively) the influence of the market structure of the industry to be regulated, the stage of the firm's activity which is to be regulated on the instrument choice, the

effects of group preferences in aggregate on instrument choice, the choice of the definition of policy by the legislature, and the choice to delegate (both substantive and procedural) by the legislature, will present powerful explanatory and predictive tools for our examination of instrument choice. The latter three hypotheses in particular tie together some of the loose ends of previous work on legislative choice which we discussed in chapter 2.

When the group(s) to be regulated take the form of a business association, it was suggested in chapter 3 that the stage(s) at which the regulation is to affect the firms' activity and the market structure of the industry to be regulated are of primary influence to the instrument choice. The impacts on the net profits (and therefore on the lobbying rents for the legislator) of each firm are shaped by such forces. Thus, under specific market structures one particular instrument may generate greater rents for the legislator than others, as the preferences of the regulated firms will be better served.

H5. (Stages of Firm Activity).

Assuming the group(s) to be regulated is composed of profit maximizing firms and that the market structure of the industry to be regulated is such that the production technologies of the constituent firms differ, then the instrument employed to implement regulations at the pre-production or production stages will be a command and control instrument. Proof:

In this proof we will construct a set of individualized taxes to meet a specific policy goal and to not redistribute profits in the industry. It will then be shown that such taxes

can be approximated by a command and control mechanism (again by construction) and that such a mechanism is preferred by the industry (and thus by the legislature) to a universal tax (i.e. lump sum, etc.). The proof is fairly robust to most (but admittedly not all) changes in the assumed policy goals.

Let us examine the form of an individualized tax scheme based upon the characteristics of each firm in the regulated industry. We want such a tax to <u>not</u> redistribute profits between the firms and to achieve some overall goal. Assume each firm produces two commodities: good X and bad Y. Assume also that each firm has a production technology different from any other,

$$f^i(L_i,K_i) = X^i \neq f^j(L_j,K_j) = X^j$$
$$g^i(K_i) = Y^i \neq g^j(K_j) = Y^j \quad \text{for all } i,j.$$

Assume also that the production function for good X, f, is a function of capital, K, and labor, L, while the function g, representing the production of Y the bad, for simplicity is a function of capital only, K.

Assume the profits of each firm can be written as

$pX - wL - rK = pf(L,K) - wL - rK.$

Assume there are only two firms. The problem can be set up as follows:

$$\text{Maximize} \quad \Pi_1$$

$$\text{subject} \quad \Pi_2 = B\Pi_1$$
$$Y_1 + Y_2 = Y$$

Assume also that there is a limit to the amount of bads which the industry can produce (N) in a given time period. If so we can effectively limit the commodity (goods and bads) space to a feasible region. If $Y < N$ then all sets are convex in the region of feasibility (see Starrett, 1972).

We are therefore maximizing the profits of firm 1 subject to the constraints that the maximizing does not alter the ratio of profits before regulation, B, $0 < B < 1$, and subject to an overall goal of limiting industry bads to Y. It should be stated that the proof is not robust to all changes in the characterization of the problem, and/or to all changes in the goals to be accomplished, but there is a very wide range of such

characterizations and goals to which the proof is robust. The robustness follows in that the proof is one of construction and thus we can construct such individualized tax schemes for a very wide variety of characterizations.

The first-order conditions for a constrained maximum are,

$$\partial\Pi_1/\partial K_1 - \lambda B \partial\bar{\Pi}_1/\partial K_1 + \varphi\partial Y_1/\partial K_1 = 0 \qquad 1$$

$$\partial\Pi_2/\partial K_2 - \lambda\partial\bar{\Pi}_2/\partial K_2 + \varphi\partial Y_2/\partial K_2 = 0 \qquad 2$$

$$\partial\Pi_1/\partial L_1 - \lambda B \partial\bar{\Pi}_1/\partial L_1 = 0 \qquad 3$$

$$\partial\Pi_2/\partial L_2 - \lambda\partial\bar{\Pi}_2/\partial L_2 = 0 \qquad 4$$

$$\Pi_2 - B\bar{\Pi}_1 = 0 \qquad 5$$

$$Y_1 + Y_2 - Y = 0 \qquad 6$$

However, solving the maximization of profits problem individually for each firm results in the following first-order-conditions,

$$\partial\Pi_1/\partial K_1 = p\partial f^1/\partial K_1 - r = 0 \qquad 7$$

$$\partial\Pi_1/\partial L_1 = 0 \qquad 8$$

$$\partial\Pi_2/\partial K_2 = 0 \qquad 9$$

$$\partial\Pi_2/\partial L_2 = 0 \qquad 10$$

It is evident that we must tax both labor and capital for both firms in order to satisfy the first-order-conditions of the joint problem. The taxes would look like,

$$t_{1k} = \lambda B(\partial f^1/\partial K_1 - r) - \varphi\partial g^1/\partial K_1 \qquad 12$$

$$t_{2k} = -\lambda(\partial f^2/\partial K_2 - r) - \varphi\partial g^2/\partial K_2$$

$$t_{11} = \lambda B(\partial f^1/\partial L_1 - w)$$

$$t_{21} = -\lambda(\partial f^2/\partial L_2 - w)$$

where t_{1k} is the tax on the capital inputs of firm 1, etc.

The tax formulas expressed in (12) show that there exists an individualized tax scheme which will accomplish any overall goal (of the type assumed) and will not distort the profit shares

in the industry. Also (12) implies that there does not exist universal taxes which will accomplish the stated goals and not redistribute profit shares.

Universal taxes are the only variety of tax mechanisms which are Constitutional and given the imperfections of information facing real-life regulators are the only variety of tax mechanisms which are feasible. Examples of universal taxes are lump sum taxes or head taxes.

This result is generalizable to n firms, and as stated previously to a very wide variety of goals in that the proof is by construction and thus we can construct taxes, t, for any such goal.

Claim: Any individual tax scheme can be approximated by a command and control scheme.

The proof is again by construction and would be constructed in the following manner: The application of the tax scheme would change the input decisions of the regulated firms from their initial values (L_{10}, L_{20}, K_{10}, and K_{20}) to the new regulated values (L_{1r}, L_{2r}, K_{1r}, and K_{2r}). The command and control regulation could thus accomplish the stated goal and not redistribute profits by restricting the input decisions of the firms to be the regulated input decisions of the firms after application of the taxes defined above.

Thus, there exist command and control mechanisms, for any goal, which do not distort wealth (profits) in the regulated industry. The following two assumptions provide the framework for the proof of the proposition:

Assumption 1 - The firms in the regulated industry possess differing production technologies (we already assumed this above),

Assumption 2 - All the firms in the regulated industry possess equal profit shares (indeed this can be weakened to disallow the case of an industry composed of one monopolist and an assortment of atomic firms).

We can exclude the use of informational mechanisms and public provision mechanisms for the regulation of the production activities of firms. By the proof above a majority of firms in the industry (indeed, all but one firm in the industry) will oppose any universal mechanism proposed; however, there exists an infinite number of individually based command and control mechanisms which will be prefered by this majority to any universal tax. By hypothesis H1, and hypothesis H6 (to be proven) the legislative choice will therefore approach a command and control mechanism. QED.

This is a non-obvious and useful result of the model of regulatory choice developed in chapter 3. It should be noted that the

instrument choice for regulating the sales activity of a firm, without further assumptions, can take any form.

The result follows directly from the assumptions as stated and the comparative statics of the model as described in appendix A. Intuitively, the proof is as follows. First, we can exclude public provision and informational instruments as being non-applicable to the problem of regulating production. Public provision regulates firm behavior through competition from the public sector and therefore will not influence a competitive firm's choice of productive inputs. Informational mechanisms regulate behavior by recharacterizing the inputs to production but do not change relative prices. However, an incentive-based (tax) mechanism is applicable but, by virtue of the heterogeneity of production technologies of firms in the industry, such a mechanism will create price distortions and redistribute wealth between regulated firms. Those firms suffering a net loss in profitability will lobby Congress against such an instrument choice and will negate the lobbying rents acquired by the congressman from those firms who are gaining profitability (and favor the choice).

On the other hand, command and control mechanisms applied case-by-case do not necessarily impart such distortions. The losing firms will therefore prefer a command and control instrument to each incentive-based instrument proposed. Indeed, all firms are potential gainers, as no a priori losers are a necessary consequence of a command and control instrument choice and the lobbying rents to the congressman are strictly positive from all firms. The lobbying rents

to each legislator will thus be correspondingly higher for a command and control instrument inducing the legislature's preferences for command and control to implement production regulations.

Of course an exception to H5 is when the incentive-based instruments employed to regulate production induce cross-industry (or cross-sectional) subsidies which outweigh the losses due to price distortions (if any) for a substantial majority of firms (this results from establishing a different maximization problem with different objectives then the one assumed). It can be argued that such is the case in much of agricultural price regulation. Farmers participating in the USDA's programs are subsidized according to the levels of production for their various crops. Though the price distortions adversely affect the small farmer the program is generally well received by farm groups and is maintained by both the Congress and the USDA.

Similarly, if the firms in the regulated industry possess similar production technologies (i.e. we violate assumption 1) then Congress may indeed impose an incentive-based mechanism for the implementation of regulatory policies toward such firms. Under such circumstances an incentive-based mechanism would not induce a redistribution of wealth between firms in the industry and such a mechanism could therefore be preferred by all firms in the industry to an equivalent command and control mechanism. Indeed, an incentive-based mechanism in such a case may induce cross-industry (or cross-sectional) subsidies which greatly benefit the regulated industry.

In order to develop hypothesis H6 we need to first define a few aggregate parameters. Let x_i be the rent maximizing choice of instrument for legislator i (i.e. x_i maximizes $RENTS^i$). Define also q'_i as the a priori preferred instrument for legislator i (i.e. q'_i maximizes FO^i -- as suggested in chapter 3 this will be, if feasible, a command and control variety method).

With these definitions in hand we can establish the hypotheses relating the aggregate characteristics of groups to the choice of instrument.

H6. (Legislative Responsiveness to Groups' Homogeneity of Preferences Over Instruments).

A change in a group's ideal point over instruments which increases the homogeneity of the preferences of the groups involved in the decision process generates a change in the instrument, for a given policy, towards a command and control mechanism. Proof.

The terms homogeniety and heterogeneity reflect the degree of cooperation or conflict between groups interested in the instrument choice. We could imagine that groups, given their decision-calculi, have rank orderings over instrument, for a given policy. Greater homogeneity would therefore reflect a greater agreement between these rank orderings for interested groups. Let us define a measure of homogeneity,

$$H = \sum_J d(q', q^*_j) \qquad (1)$$

(The assumption of separability enables us to construct this function) where q' is the median of the ideal points, q^*_j, for the involved groups. Notice x_i can therefore be interpreted as a weighted median of group preferences for legislator i (i.e. his rent maximizing choice).

Second, note that a change in a group's ideal point q^*_j from

q^*_j to $q^{*\prime}_j$ which increases homogeneity implies H decreases, H' < H.

Note that

$$\partial x_i/\partial q^*_j < |q^*_j - q^{*\prime}_j| \tag{2}$$

(i.e. change x_i < change q^*_j)

for x_i in the Pareto set defined by the groups' ideal points (see A.--).

Note also that

$$\text{RENTS}^i(x'_i) > \text{RENTS}^i(x_i) \tag{3}$$

This follows from the definition of x_i and the result that

$$\partial L_{ji}/\partial d(q_i, q^*_j) < 0 \quad \text{(see A.19)} \tag{4}$$

This reflects an implicit assumption that interest groups in this model are myopic and do not see the effects of a change in group heterogeneity.

Now there exists a personal "contract curve" between x_i and q'_i for legislator i. Legislator i's choice of q_i will always be an element of this curve.

Thus the change in q^*_j to $q^{*\prime}_j$ implies a change in x_i to x'_i which entails a change in this personal contract curve.

Now

$$\text{RENTS}^i(x'_i) > \text{RENTS}^i(x_i) \tag{3}$$

and

$$\partial \text{RENTS}^i/\partial d(q_i, x_i) < 0 \tag{5}$$

(see A.15) implies

$$\partial \text{RENTS}^i/\partial q_i|x'_i < \partial \text{RENTS}^i/\partial q_i|x_i \tag{6}$$

Thus

$$\partial \text{RENTS}^i/\partial q_i = \gamma \partial \text{FO}^i/\partial q_i \tag{7}$$

(see A.15) implies the legislator's choice of q_i will slide up his/her personal contract curve towards q'_i (i.e. $\partial d(q'_i, q_i)/\partial d(q', q^*_j) > 0$).

By

$$\partial q/\partial q_i > 0$$

we have the result. QED.

In other words, the less the diversity of interest groups active in the decision process the greater the likelihood the legislature will choose a command and control instrument. This result is a non-obvious and powerful implication of the framework established in chapter 3. Command and control instruments will be chosen when the interest group preferences over the choice are homogeneous. Interest groups under such conditions do not see the choice of instrument, for a given policy, as a zero-sum game. Legislators, then, can have continued risk-free influence over the distribution of benefits, given the general case-by-case nature of command and control instruments, and can thus continue to be benefited electorally for their influence.

On the other hand, when interest group preferences over instruments are heterogeneous, the legislator will prefer to not be as closely associated with the continued choices of the agency (as such choices will draw a great deal of opposition at all times) and will therefore prefer a universal instrument be employed. The legislator, in such an instance, trades off the potential influence (and thus potential rents) he might still hold over regulatory outcomes, through a case-by-case method, against the potential electoral loses such choices might bring in such a highly charged interest group environment. The legislator collects what rents he can at the time of passage and then disassociates himself with the choices of the agency. The legislator thus passes the "hot potato" of regulatory choice to the agency.

The following hypothesis captures the universalistic component

of legislative choice as described by Fiorina (1981) and the observed tendency of legislatures to divide or fragment policy choices so as to define a distributive/logrolling choice process (Fenno, 1966, 1973; Ferejohn, 1974; Ferejohn and Fiorina, 1975; Fiorina, 1975, 1977, 1981; Lowi, 1964; Ripley, 1978; Ripley and Franklin, 1976).

H7. (Political Entrepreneurship).

The legislature will seek to define the policy debate in a fashion so as to divide the policy into disjoint issue spaces over which the groups involved in the new choices of policies and instruments have more homogeneous preferences relative to the old larger policy choice. Proof: trivial.

The implications for instrument choice of this hypothesis are clear. The definition of policies into fragmented subsets over which group preferences are more homogeneous leads to a greater application of command and control instruments by the mechanism discussed in hypothesis H6.

A major consequence of this ability and the incentives to divide issues in a legislature already characterized by a high degree of fragmentation on policy choice (Fenno ,1966, 1969; Ferejohn, 1974; Lowi, 1964, 1972; Ripley and Franklin, 1976) is that most policies are either initially defined as distributive or, even if the initial definition places it in some other category, it is redefined over time as distributive. The division of policy in "homogeneous hunks" enhances this process and thus enables policies to be acted upon in a

universalistic fashion (Fiorina, 1981) wherein policies are logrolled for the various interests involved.

Another consequence of this is the creation and maintenance of an ever expanding federal bureaucracy, as discussed by Fiorina (1977). Each set of groups is therefore represented by a different program office or agency in the federal bureaucracy. This enables benefits to be logrolled and casework to be easy and non-controversial.

The choice of the legislature to delegate authority over policy choice has been studied by Fiorina (1981, 1982). Fiorina concluded that the legislature will delegate the choice of policy to the bureaucracy when the benefits from the policy are diffusely felt on groups in society while the costs are incident in a more concentrated fashion (the driving factor). That the choice to delegate instrument choice should concern us presently is implied by the "interest group liberalism" result for agencies discussed earlier. Agency choice of instrument is purely an aggregation of private interest preferences, and so a complete delegation of such choice by the legislature implies the potential for the dangers to which Lowi referred.

H8. (Delegation of Substantive Authority).

> The greater the level of heterogeneity of group preferences for groups involved in the decision process the greater the delegation of substantive regulatory authority by the legislature to the agency. Proof:

Recall footnote 39 in chapter 3. Assume legislators are now choosing Q_i^b and P_i^b. Assume also that interest groups are now maximizing anticipated net benefits,

$$\alpha^j(\text{POLICY}^j, \text{INSTRUMENT}^j)\text{NB}^j.$$

Assume,

$$\alpha^j = \alpha^j(D_1(\text{POLICY}^j), D_2(\text{INSTRUMENT}^j))$$

with $0 < \alpha^j < 1$ and α^j is decreasing in D_1 and D_2, and where D_1 is the distance between p_1 and p_2 the boundary points defining POLICY, etc.

We know from appendix A that (and the result follows from this simple comparative static)

$$\partial L_{ji}/\partial d(Q_i^b, q^*_j) < 0 \qquad \text{(see A.18)} \qquad 1$$

We also know, by the definition of α^j that

$$\partial \alpha^j \text{NB}^j/\partial \alpha^j * \partial \alpha^j/\partial D_2 = \partial \alpha^j \text{NB}^j/\partial D_2 < 0 \qquad 2$$

Thus, there are trade-offs to the legislator between making Q_i^b large to satisfy (1) and making Q_i^b small to satisfy (2). Thus, if H is small then Q^b can be small and satisfy both (1) and (2), but if H is large Q^b will be larger to trade-off in favor of (1). QED.

More simply, the legislature will delegate the choice of instrument (policy) to the agency when the groups to be regulated possess heterogeneous preferences. That the groups to be regulated possess heterogeneous preferences over the choice of instrument implies that the incidence of the costs of the regulation depend upon the instrument chosen and thus the hypothesis aligns with Fiorina's suggestions on delegation, i.e. blame shirking. This hypothesis also

suggests the legislature will delegate the choice of instrument to the agency when the choice cannot be divided (in a fashion as suggested in H7) and when the groups involved make the choice "too hot to handle".

It should be noted that the delegation of substantive authority is constrained by Constitutionally and court defined limits on such ability for the legislature. These constraints defined the constrained choice sets for the legislature, P and Q, in the legislators' decision-calculi described in chapter 3.

Delegation can also take the form of procedural delegation. Hypothesis H8 suggests a "hot potato theory" of substantive delegation (i.e. the delegation of policy and instrument choice). The delegation of operating procedures and due-process requirements are important to the efforts of the agency in fulfilling its substantive mandate. As such, procedural delegation is of concern here relative to the impact that procedural and due-process restrictions have on the structure of the agency and therefore on the choice of the agency. Furthermore, Congress can give an agency vast discretion over the choice of policy and level of instruments while simultaneously shackling it with strict and extensive procedural requirements which effectively thwart implementation. That the level of procedural delegation can influence the implementation of the regulatory policy irrespective of the instrument chosen makes an examination of such delegation relevant to the choice of instrument. It should be noted again that the ability of the legislature to delegate procedural authority is constrained by limites defined in the Constitution, the Administrative Procedures Act

and various court decisions.

H9. (Procedural Delegation).

The greater the heterogeneity of preferences for the groups interested in the regulatory choice then the greater the level of procedural and due- process requirements mandated. Proof:

The result follows from the general model of chapter 3 though I need to make the following 2 specific assumptions:
Assumption 1 - In the general model let

$$RENTS^i = RENTS^i(p_i, q_i, g_i),$$

$$FO^i = FO^i(q_i, g_i),$$

$$NB^j = NB^j(POLICY^j, INSTRUMENT^j, PROCEDURE^j),$$

where g_i is the extent of procedural guidelines mandated, $g_i \varepsilon R^+$. $PROCEDURE^j$ is the social choice function similar to $POLICY^j$ for procedural guidelines.

The variable g_i can be thought of as the monotonic number of constraints the legislature is to impose on agency decision-making. We can think of g_i in the following fashion: assume there exists a procedures space in R^g, from which the legislature will choose a point z. We can define a mapping on R^g which maps each point in R^g to the number of constraints on the positive axis imposed by such a point, i.e. a specific g_i. Note, this mapping need not necessarily be unique-valued.

Assumption 2 - Also, let FO^i be an increasing function of g_i, and let $g^*_j = g^*_j(\Gamma^*)$ or equivalently $g^*_j = g^*_j(H)$ with g^* being a monotonically increasing function of H, where g^* is the group's ideal level of procedures, and Γ^* is the matrix of policy ideal points, p^*_j, for all groups, and H is the measure of homogeneity defined in the proof to hypothesis H6.

Assumptions 1 and 2 just allow us to examine procedural guidelines as a decision variable for legislators. Assumption 2 derives the result. We can easily deduce, through comparative static techniques similar to those in appendix A that,

$$\partial g / \partial g^*_j > 0$$

(as in hypothesis H1 for q and p) where g is the legislative choice of procedures.

By assumption 2 we know

$$\partial g^*_j / \partial H > 0$$

Thus, by continuity,

$$\partial g / \partial H > 0. \quad \text{QED.}$$

In other words, the legislature will <u>not</u> delegate the choice of operating procedures and due-process requirements to the agency when the groups involved in the choice possess heterogeneous preferences. For the case of economic regulation, the concordance of interests for the groups involved enables the legislator to work closely with such groups in the development of the agency's policy under the act and thus flexible regulatory procedures serve to enhance the oversight committee members' influence on policy in this area. For the case of environmental, health and safety regulation, the large diversity of interests for the groups involved prohibits the legislator from profitably working closely with any one group and thus strict and lengthy regulatory procedures enable the oversight committee members to let the agency take the heat from representing the diversity of groups interested in the agency's policy choices.

We can now suggest a comprehensive framework for the analysis of instrument choice. This framework, suggested primarily by hypotheses H5 to H9, is derivable from the model of regulatory choice as developed, and provides us with a powerful analytic tool for the

analysis of regulatory instrument choice.

In regulating the production choices of firms in an industry characterized by heterogeneous production technologies we should generally observe the Congress employing a command and control instrument. However, if the production technologies of the firms in the regulated industry are very similar, or if the Congress subsidizes the industry through the general revenue fund and such subsidies are large relative to the losses due to the price distortions of the incentive mechanism, then the Congress may indeed implement the regulatory policy, at a production stage, through an incentive mechanism.

In considering the regulation of other organizations or in considering the regulation of firm activity at other than the production stages the Congress will attempt to divide the regulatory policy, if the groups interested in such policy do not possess homogeneous preferences over the regulatory choice, into sub-policies over which the groups interested in the policy possess more homogeneous preferences. Such a definition of issues by the Congress will serve to reduce controversy and will enable the Congress to distribute benefits to a larger number of groups which will in turn increase the electoral benefits (lobbying rents) showered by such groups upon the congressman.

If the regulatory policy under debate induces an interest group environment wherein the groups interested in the policy possess homogeneous preferences over the regulatory choice, or if the

regulatory policy can be divided to create such an environment, then the Congress is more likely to choose a command and control instrument to implement the policy. On the other hand if the environment is charged with interests each with conflicting preferences over the regulatory choice and the policy cannot be divided, then the Congress will generally choose an incentive-based or informational mechanism with which to implement the regulatory policy.

Further, if the interest groups involved in the decision have conflicting preferences then Congress is more likely to delegate substantive authority to the agency while prescribing procedural and due-process requirements which restrict the agency's substantive choices than if the interest groups were characterized by a greater concordance of preferences.

Recalling the pattern of instrument choice in Table 1, the regulation of the productive stages of firm behavior in both the environmental regulatory acts (Clean Air Act and the Water Pollution Control Act) and the health and safety regulations (Safe Drinking Water Act, Toxic Substances Control Act, Federal Insecticide, Fungicide, and Rodenticide Act, Federal Food, Drug and Cosmetic Act, Consumer Product Safety Act, Federal Hazardous Substances Act, and Occupational Safety and Health Act) are indeed implemented via a command and control mechanism, as suggested by H5.[3] Further, the regulation of marketing and sales in the highly controversial health and safety area is implemented exclusively through informational mechanisms.

Economic regulation on the other hand is generally not characterized by the controversy evident in environmental and health and safety regulation. The private interest origins of economic regulation (e.g. Civil Aeronautics Act and the Federal Communications Act), and the single sided nature of the interest group environment induces Congress to favor command and control instruments for regulating the behavior of firms as indicated in H6, and as observed in Table 1.

Further, upon closer examination the 'new' regulation (environmental, health and safety) is generally much more detailed then the 'old' (economic) regulation. This detail is a proscription of operating procedures and due-process requirements by Congress. The hypotheses developed suggest the proscription of such detail is a result of the multi-sided interest group environment coincident with the new regulation. We shall examine many of the programs of the new regulation in much greater detail in chapters 6, 7 and 8.

4.3 Discussion

What has been developed in this chapter is a series of propositions which, in sum, capture the influence of interest groups and institutions on instrument choice. That interest groups and institutions have an impact on instrument choice is not surprising. That they have an impact which is generalizable is indeed powerful.

We have suggested in chapter 3 that changes in the institutional structure induce changes in the instrument choice. What

we would presently like to do is map out the paths through which such changes occur. That the changes in the institutional structure induce changes in the admissible choice set for the legislature and the agency was suggested in chapter 3. Further, that such changes in the admissible set induce changes in the legislative choice is readily acceptable. However, a change in institutions, as should be suspected given the insights of Madison, induces changes in the behavior and composition of the interest groups involved in lobbying Congress. A change in institutions changes the access points for group lobbying pressure and changes the costs of lobbying for the groups. These changes may affect groups differentially and as such will affect the outcomes of the policy process differentially.

This fact does not escape the attention of legislators and interest groups. Changes in the institutional structure of Congress are often hotly debated (Davidson and Oleszek, 1977) as groups with a stake in the proposed changes lobby vehemently their point before Congress. In 1973 the House created a Select Committee on Committees to study the House committee structure and to make recommendations. The report of the Committee proposed some substantial changes. But then members whose own personal position or, in some instances, whose policy positions seemed threatened, mobilized to oppose a number of specific clauses in the plan. Lobbyists for various organizations and interests felt that change would jeopardize their close and productive relationships with existing committees also began to push against specific sections of the bill. Consequently, a much watered-down

version was adopted by the House in late 1974.[4]

A similar experience was repeated in the Senate two years later.[5] The end result was more a devolution of authority in both cases than a reorganization of jurisdiction. Limits were placed on the number of assignments and chairs any member could hold, though some shifts of jurisdiction did occur. Though not formally a part of the model developed in chapter 3, the choice of structure by the legislature can be generally discussed given the framework of discussion presented. That the choice of structural arrangements is made so as to satisfy the legislative goals presented by Fenno has been argued strongly (and naturally so) by Fenno (1973) and to an extent by Ferejohn (1974).

The rise and fall of group pressures in the life cycle models of regulatory choice may indeed be explained (in-part) by changes in the institutional structure. Changes in the institutional structure precipitate changes in the access of the groups involved (and vice-versa) which, together with the induced changes in the choice set of the legislature and the agencies, induce changes in the policy outcomes. We shall examine empirically this possibility in later chapters.

It is interesting to consider that the formulation here implies the predictions of the political cycles model of Weingast (1978) and the life cycle models of Bernstein (1955), Cary (1967), Jaffe (1954), Redford (1952) and Downs (1967). The similarity to Wiengast's political cycles hypothesis can be easily discerned.

Wiengast modelled the policy choice as a legislative choice wherein legislators choose policy in accordance with the preferences of their electoral constituency and interested factions. As the electoral potential of a topic (policy) cycles, the influence of the interest groups waxes and wanes. For this reason the policy chosen by the legislature can fluctuate between the wishes of the electorate (consumers) and of the interest groups (producers).

The mechanism of the political cycles hypothesis here however is different. Though indeed the preferences of the legislator's electoral constituencies influences the determination of policy for the legislator, other factors are more important. As has been suggested, the legislature has a full chest of tools with which to take advantage of political cycles. The legislature can formally change the policy which is newly topical (as suggested by Weingast) or it may, more subtly, change the structure of the oversight or decision processes in the legislature, and/or (as we will see in chapter 5) induce the bureaucracy to change its structure to accommodate these new groups. As has been (or will be in chapter 5) suggested, such changes in structure will influence the course of policy and may be obtained with very little effort on the part of the legislature and with very little adverse publicity which could lead to a falling out of interest groups. The changes in policy however would be real and the impacts felt by the new groups.

Further, a change in the structure of the decision process in the legislature and bureaucracy would indeed amount to a form of group

entrepreneurship by the legislature in that changes in the structure, as discussed, change the costs of lobbying for various interest groups. By lowering the costs of lobbying for a topical group (or raising it later) the legislature can include the new groups into the decision process and induce a political cycle.

The similarity to the life cycle hypotheses follows in a similar manner, if we assume political cycles are linear and not circular. Indeed, the capture hypothesis discussed earlier captures the essence of the life cycle literature upon assuming linear cycles. The entrance and exit of new groups will induce the agency's capture or revival.

Thus we can catalog the impact of institutional change on policy and instrument choice, or rather the paths by which changes in the institutions influence policy outcomes. Such a cataloging can give us some empirical leverage in the analysis of instrument choice. First, a change in institutions will affect policy by altering the choices available to the legislature and the bureaucracy. Changes in committee assignments or jurisdiction can exclude choices of action for the legislature (and subsequently for the agency) or can expand the substantive areas over which policy can be debated.

Second, changes in the institutions change the access and costs of lobbying for groups interested in public policy. Such changes often redistribute or intensify the influence of various groups before the legislature. The clearest examples of such institutional changes are the regulations of lobbying activity. The

central pieces of legislation in this area is the Federal Regulation of Lobbying Act of 1946, passed as a part of the general Legislative Reorganization Act of 1946 (Title III) (Ornstein and Elder; 1978).

With the knowledge that the institutions of choice were designed to aggregate the preferences of groups, it is no mystery that the preferences of groups should matter in the choice of policy. What I have sought is a set of generalizations about the influence of groups which are derivable from first principles of behavior for the actors involved in the choice of policy. What we have observed is that the goals of the various actors in the policy process and the incentives and constraints imposed by the institutions of choice lead to predictable "system" behavior which enables us to simplify our view of the world and focusses our attention on a few key aspects of the process.

Interest group preferences matter, changes in their preferences lead to predictable changes in the policy outcome. This is not a sinister result, though the consequences as suggested by Schattschnieder (1960) may be sinister. That groups with better access to the policy process, or wealthier groups, have their interests served much more precisely is an accepted consequence of the formulation of the problem, and is in line with the previous examinations of the lobbyist problem, as discussed.

This is where the traditional literature left off. The fact that interest groups influence policy in proportion to their "power" does not answer the question of why the government chooses any

particular policy instrument (or for that matter why the government chooses the policy it does). As we have seen, the answer to this question is complex and involves a series of relationships between goals of institutional actors and the institutional structure and consequent incentives and constraints for behavior.

The key to instrument choice is the influence of groups, in aggregate, upon the decision process. Whether Congress is facing a homogeneous set of preferences for the groups involved in the decision or not, is a powerful implication of the framework developed. Indeed this suggests we need only ascertain a preference ordering over instruments for the groups involved and we can predict the instrument to be chosen. That we can explain why this should be the case, in a model of individual decision-making by the institutional actors, makes these implications all the more compelling.

It is interesting to note here that the problem of policy choice is similar in many respects to the problem of instrument choice. As indicated in many of the hypotheses presented here, groups will influence the policy outcomes of the legislature and the bureaucracy differentially according to their wealth, power, or access. The legislature will seek to redefine policies in order to logroll specific benefits to more groups and will delegate the policy choice to the bureaucracy when the policy cannot be redefined and when there exist too many non-complementary preferences exhibited by the groups involved. Changes in the institutions will affect the choice sets of legislators and bureaucrats and will alter the relationships

between groups relative to the policy decision process.

Footnotes to Chapter 4

1. The propositions developed herein which relate group preferences to the policy and/or instrument choice are concerned only with groups with positive access. That is, the number of access points for the group in not null. This caveat is a result of the assumption that the cost to lobbying for groups without access is infinite.

2. The movements characterized are relative to the origin of the instrument space R^I.

3. On this point see Dorfman, et. al. (1980), also see "Decision Making for Regulating Chemicals in the Environment," National Academy of Sciences (1975) and "Decision Making in the Environmental Protection Agency," National Academy of Sciences (1977). Further, the case studies in chapters 6 through 10 will illustrate this point as well.

4. See "Hansen Reorganization Plan Adopted," Congressional Quarterly Weekly Report (October 12, 1974);2896-2898.

5. See Southwick (1977).

Chapter 5. Operational Hypotheses.

5.1 Introduction

The discussion in chapter 2 revealed that the diverse literature on regulatory choice did not have much to say about the choice of regulatory instruments. The model drawn out in chapter 3 and the analysis in chapter 4 have sought to provide a theory of instrument choice, as well as policy choice.

However, several subsidiary questions concerning the choice of policy and instrument remain which the literature described in chapter 2 also does not satisfactorily examine. We would like to address, briefly, two of the more important questions here. First, can we make generalizations about the organization and structure of administrative agencies and about the impact that such structural choices have on policy? Second, what are the effects of policy and instrument choices and the process by which they are chosen upon American society?

But first, the model of chapter 3 and the analysis of chapter 4 will be employed to seek systematic reasons for the failure of federal environmental, health and safety regulatory programs. Along the way we will define a set of operational hypotheses and discuss the techniques to be employed to test these operational hypotheses.

5.2 Operational Hypotheses

Various pieces of federal legislation attempt to regulate

hazards associated with chemicals, food additives, drugs, consumer products, pesticides, airborne and waterborne pollutants. This legislation spans many decades and varies in the kinds of regulatory mechanisms created and in the degree of discretionary authority granted to regulatory officials. The stated goals of this legislation are to identify and prevent significant health and environmental hazards before they become widely dispersed throughout our society and economy. Despite their seemingly broad and straightforward congressional mandates, however, most such laws have not been effectively implemented.

The track record of federal programs in this area speaks for itself. The Consumer Product Safety Commission (CPSC) developed only 3 mandatory safety standards in its first 5 years. The Occupational Safety and Health Administration (OSHA) has issued approximately 10 workplace exposure standards in its 11 year history. The Food and Drug Administration (FDA) has sought to ban only 3 food additives as carcinogens in 20 years. And the Environmental Protection Agency (EPA) has issued very few airborne carcinogen standards and banned only 9 pesticides in its 10 year history. EPA's Toxic Substances Control Act (TOSCA), intended to be a "gap-filler" and improve on this dismal federal record, has been especially disappointing; EPA has issued only 6 regulations significantly controlling a toxic hazard under TOSCA.

Despite wide differences in the statutory authority, program history, bureaucratic structure, political clientele, and political

origins of these programs, they share an apparent inability to develop an effective strategy for controlling even known hazards, let alone preventing new ones.

Conventional explanations of these failures are as varied as the programs themselves. The Clean Air Act, as amended, has not been implementable because the act prohibits the use of cost-benefit analysis for such determination. The regulation of pesticides under the Federal Insecticide, Fungicide and Rodenticide Act is stalemated because the agricultural committees in each chamber of Congress, who have jurisdiction over EPA's Office of Pesticides Programs, are generally opposed to the regulation of important pesticides by EPA. On the other hand, it is argued that the Office of Toxic Substances (OTS) has failed to implement TOSCA because the cost-benefit analyses necessary to promulgate a regulation under TOSCA are too strenuous, lengthy, and expensive. Though there exists some evidence to support each of these contentions, no satisfactory explanation exists which systematically explains the failure of the entire class of environmental, health and safety regulatory programs.

The model developed in chapter 3 relates the incentives and influences of American governmental institutions to the choice of regulatory instruments and levels of substantive and procedural delegation by the legislature. The form of the legislation and the subsequent style of implementation and administration are a necessary consequence of the structure of these institutions of choice.

The model of chapter 3 and the hypotheses of chapter 4 can

therefore present us with a possible explanation for this failure to regulate. We will need to make two assumptions concerning factors relative to an "as if" generalized environmental, health and safety issue. First, there is a great diversity of interest groups with a stake in the resolution of the issue. More specifically, there is a great diversity of preferences among interest groups with a stake in the issue (see Ripley and Franklin, 1976). Second, the firms to be regulated under the legislation possess a great diversity of production technologies (we will examine evidence on the structure of the regulated industries in the case-studies).

The hypotheses derived in chapter 4 suggest the type of regulatory instruments, and the procedural and substantive discretion which we might expect given the conditions assumed above. We would expect Congress to delegate broad substantive authority to the agency and to specify the imposition of command and control instruments for the implementation of regulations at the production stages of the regulated firms, and to impose incentive-based or informational mechanisms for the implementation of regulations at other stages of the regulated firms' activities.

Further, we would expect Congress to specify in great detail the procedures necessary for the promulgation of regulations under the agency's broad authority; the agency will be granted little discretionary authority over its own procedural requirements.

Given the general validity of the assumptions above, the model of regulatory choice suggests a systematic explanation for the general

failure of environmental, health and safety regulatory programs. The politics and institutions of the American democracy provide incentives to legislators and bureaucrats for an over-reliance on command and control mechanisms for the implementation of environmental, health and safety policies. Such mechanisms are generally employed on a case-by-case basis which in itself magnifies the costs and length of regulatory procedures and limits the scope of regulatory programs (Breyer, 1982 and Stewart, 1975). Further, incentives for a broad delegation of substantive authority are coupled with incentives for mandating specific, detailed and lengthy regulatory procedures for the promulgation of regulations in these programs.

The requirements that regulations be implemented via command and control mechanisms developed through extended and convoluted decison procedures sufficiently stifle the regulatory activities mandated under this class of problems. Few regulations will be forthcoming under such conditions.

The reliance on command and control mechanisms together with the lack of procedural discretion are not necessary conditions for the failure to regulate, and neither is sufficient by itself to precipitate the failure of such programs. Lack of procedural discretion combined with an incentive-based mechanism, which can be broadly applied to the production stages of firm activity, can provide significant regulation of the agency's jurisdiction. Though the development of the regulation will be expensive in terms of time and money, once in place it can provide expansive and complete regulation

of the agency's jurisdiction. Likewise, complete procedural discretion combined with command and control mechanisms can swiftly lead to the promulgation of vast numbers of regulations.

It should be noted that if we violate the first assumption above the characteristics of the problem resemble the characteristics often ascribed to economic regulation; Wherein a narrow set of interests seek redress from market competition through government regulation. The hypotheses in chapter 4 suggest that under such assumptions, Congress will uniformly mandate command and control instruments for the implementation of regulatory policies at all stages of firm activity. Further, though the substantive discretion of the agency in such a case will be narrow, the procedural discretion granted the agency will be relatively wide. Such a situation, as suggested, could lead to a great amount of regulatory activity.

The failure of environmental, health and safety regulatory programs can therefore be attributed to the politics and institutions of the American democracy and to how these institutions influence the form and content of the authorizing legislation in this area. In the next five chapters we will examine evidence from a variety of federal regulatory programs and will focus such evidence on the hypotheses of chapter 4 and on the argument as to the failure of environmental regulation just discussed.

The operational hypotheses to which the case studies will be addressed are exhibited in Table 3. Column One of Table 3 outlines the expectations we just established concerning the form of

environmental, health and safety regulatory legislation, i.e. Congress will delegate broad substantive authority and will specify the imposition of command and control mechanisms for the implementation of regulations at the production stages and incentive-based or informational instruments for the implementation of regulations at other stages of the regulated firm's activities. Further, Congress is expected to specify extensive and detailed regulatory decision procedures for the promulgation of regulations under this authority. Column Two outlines the expectations established for the form that economic regulation should take: Congress will delegate narrow substantive authority, command and control instruments, and broad procedural discretion.

TABLE 3

Operational Hypotheses

	Type of Regulation	
Form of Regulation	Environmental, Health and Safety	Economic
Regulatory Instruments:		
Production Stages	command and control	command and control
Non-production Stages	incentive or informational	command and control
Policy Discretion	wide	narrow
Procedural Discretion	narrow	wide

As mentioned, the evidence to be employed to test the operational hypotheses is drawn from federal legislative case studies. We will examine the Toxic Substances Control Act, the Consumer Product Safety Act, the Federal Food, Drug and Cosmetic Act, the Civil Aeronautics Act, and briefly, the Commodity Futures Trading Commission Act and the Federal Energy Administration Act. Two of these acts, the aeronautics and drug acts, were passed in 1938, while, the remaining sample is drawn from legislation of the 1970's.

The evidence available from such case studies is suitable to test the operational hypotheses (derivable from the general hypotheses of chapter 4) established in this section. The evidence available is not, however, suitable to test the hypotheses of chapter 4 directly in all instances. Though evidence will be given to justify the underlying assumptions (as to the diversity of interest group preferences and homogeneity of production technologies) made to translate the hypotheses of chapter 4 to the operational hypotheses here, such evidence is admittedly circumstantial and does not capture the full richness of the model's predictions.

In order to test the hypotheses of chapter 4 in a rigorous manner it would be necessary to examine qualitatively information regarding the truthful rank-ordering of preferences for interest groups, legislators, voters and bureaucrats. Further information as to the level of campaign contributions forthcoming from lobbying groups and with regard to the changing electoral fate of each legislator would be important as well. An examination of agency

budgetary line-items as well as extensive evidence on the structure of the regulated industries are necessary as well in order to fully examine the hypotheses of chapter 4. However, such evidence is either impossible to attain or exists for only a few recent years and thus complete time-series on such evidence would not be available for any of the regulatory legislations examined herein.

However, the evidence available in the legislative case-studies will enable us to examine the operational hypotheses developed here in a systematic fashion. The legislative case-studies will present evidence on the course of regulatory legislation and will map the contours and boundaries of preferences for legislators, groups and bureaucrats over the proposed legislation. Such evidence together with evidence reflecting the nature of the interest group environment (homogeneous or heterogeneous) will be employed as proxies (instruments) for the preferences of legislators, groups and bureaucrats over the proposed legislation. This evidence will reflect the amount of conflict between groups over the choice of legislation and will therefore accurately reflect the underlying variables which we cannot observe.

Extensive evidence on the form of the regulatory legislation enacted will be examined in order to test the predictions of the model, and the operational hypotheses established here. The legislative case-studies employed herein can therefore provide a substantial test of the operational hypotheses and the model of regulatory choice.

5.3 Administrative Agency Structure

The purpose of this section is to suggest and justify some simple extensions and relaxations of the model of administrative agency behavior presented in section 3.4 and to show the implications of such an exercise for the development of policies and instruments by administrative agencies. Specifically, we shall be relaxing the assumption that the administrator has perfect knowledge of all groups' preferences.

The expected utility maximizing model developed in section 3.4 implies a general caution towards action by administrative agencies. But how will agencies structure themselves in order to satisfy their environment and produce 'good public policy' given their mandate from Congress?

The administrator, in order to satisfy these often contradictory goals, must define a decision structure which produces a division of labor, rules of procedure and process, and proper incentives for behavior for agency personnel which will, in aggregate, lead to the maximization of his/her expected utility.

The tightknit subgovernmental interactions between agencies, interest groups, and congressional subcommittees have been well documented (Cater, 1964; Davidson, 1977; Dodd and Oppenheimer, 1977; Fenno, 1966, 1973a; Ferejohn, 1974; Goodwin, 1970; Griffith, 1961; Lowi, 1973; Ripley and Franklin, 1976) However, the interaction can often become quite charged if the agency pursues a controversial course of action (Ripley, 1972, 1978; Fritschler, 1969). The agency

must structure its decision process in such a fashion as to avoid antagonizing important elements in its environment, such as powerful interest groups with access to Congress. That Congress is willing and able to act if the agency commits an impropriety is made clear by the recent examples of congressional intervention in FTC regulatory decisions concerning the regulation of children's television.

Congress holds the power of life or death in the most elemental terms throughout the existence of any agency. The power to terminate, either by refusal to renew authorization or refusal to appropriate funds, is firmly lodged in Congress and nowhere else. That agencies are thus structured in the image of their creators is not an unexpected consequence of the relationship between Congress and the bureaucracy. The agency must structure its decision process in order to allow access to potentially affected groups who, if adversely affected by the agency's actions, may appeal the agency's decisions to Congress. The agency therefore would like to develop a decision process which accounts for the preferences of important groups in its environment and which allows easy access for such groups to the decision process so as to facilitate expression of their preferences.

Indeed, a very sensible strategy for our administrator in his/her choice of structure can be shown to be to divide labor within the agency in accordance with the major interest groups in its environment. This 'mirroring' proposition suggests, in general, that the administrator will structure the agency in such a fashion as to mirror the major influences in its external environment. Each set of

major influences within the agency's environment will therefore be represented by a program office within the agency.

Each program office will decide upon policy taking into account the impact of its decisions on its environmental jurisdiction. As to the decision process internal to the program offices, two general propositions have been suggested by Ferejohn (1981) which are similar to the mirroring proposition above. Ferejohn suggests that the agency will design its decision review process so that it will locate potentially controversial decisions in such a way as to permit them to be modified to take account of opposition. He further suggests that the agency will choose policies which narrow the scope of impact on such decisions. The mirroring proposition insures an abundance of access points for groups interested in the agency's decisions and thus provides the agency with a number of locations wherein it can determine the preferences of the interested groups and thereby locate potentially controversial policies.

Thus the joint impact of the jurisdictional mirroring proposition here and Ferejohn's informational structuring principle is to identify, through multiple access points to interested groups, the preferences of groups in the agency's environment. Through such, agencies can identify policies within the agency's mandate which are not likely to create significant conflict from external organizations.

The impact of all this on policy and instrument choice is that we will have large bureaucratic agencies, wherein the decision review process is extremely slow paced and the eventual decisions are almost

always non-controversial. Indeed, controversial actions will in all likelihood be deferred indefinitely.

One interesting impact of such structuring is that the development of the individual jurisdictional fiefdoms within the agency will insure a great deal of conflict within the agency as it battles out choices in a mirror of its environment. Such a situation can only serve to lengthen the decision process and exclude controversial policy choices. Agencies with large substantive mandates which involve a large number of interest groups will, by implication, be larger bureaucracies and slower decision makers than agencies with smaller substantive mandates.

The impact on policy and instrument choice is clear. Controversial policies will rarely, if ever, be chosen by the agency. In general, the structuring propositions discussed above serve to heighten the influence of the powerful interest groups in the decision process and to insure them a better distribution of benefits from the actions taken.

5.4 Impacts and Effects

What are the distributional effects of the policy and instrument choice process described here? In simpliest terms, interest groups, especially wealthy, powerful, or well-connected groups, possess a disproportionate share of influence over the policy process. We have discussed how the institutions of choice and the incentives of actors working within these institutions serve to

heighten the influence of groups. Above all the structure of the legislature and of the bureaucracy serve to reinforce the intentions of the framers for government by minorities. That the legislature redefines controversial policies in order to make them more particularized and thus more easily palatable serves the interests of the legislature and also serves the interests of organized interest groups. The incentives induced to agency behavior from Congress lead agencies to structure themselves and choose policies which do not antagonize important groups in their environment. That agencies are de facto 'captured' by the groups they regulate is a necessary consequence of the incentives Congress gives them.

Thus, from beginning to end, from origins to administration, the effect of the policy process is to distribute benefits to organized interest groups. This does not exclude the possibility of public interest representation. It merely suggests that organized private interests generally hold the key to policy decision. That the impact and effect of the decision process is to provide disproportionate influence and distribute disproportionate benefits to organized and powerful interest groups is not surprising given the intentions of the framers to establish a government of the minority. What is surprising is the subtle ways in which the influence of interests groups has been extended over time through conscious choices of Congress. Congress has structured its decision processes and has given incentives to the bureaucracy which induces the bureaucracy to structure its decision processes to enhance the access of organized

interest groups in the development of policy. Indeed, the choice of policy and particularly the choice of instrument, together with the influences on agency structure and decisions, have insured that Congress is the primary beneficiary of the system of choice.

The devolution of power to the subcommittees and laterally to an ever larger number of members in each chamber, along with the continued expansion of the federal bureaucracy has been linked to the longevity of congressional careers in the twentieth century by Fiorina (1978). It has been suggested here that the choice of policy and instrument, and the structure of the congressional decision processes and agency decision processes have served to influence the tenure of congressional careers as well.

Chapter 6. The Toxic Substances Control Act

6.1 Introduction

In chapter 5 we established operational hypotheses regarding the form of environmental, health, safety and economic regulatory legislation (see table 3). In this chapter we will examine the legislative history of the Toxic Substances Control Act (TOSCA). The evidence uncovered by this case study will address the assumptions and expectations of these operational hypotheses. In particular, we will evidence the diversity of interest group preferences surrounding the choice of regulatory form and the diversity of production technologies endogenous to the chemical industry. We will further show that the form of the toxic substances legislation is indeed consistent with the expectations derived from the model of regulatory choice: that is, that EPA will be delegated broad substantive and narrow procedural discretion; that EPA will be mandated specific instrumentality to implement policies under TOSCA; and that these instruments will be command and control mechanisms at the production stages and incentive-based or information mechanisms at the non-production stages.

6.2 The Origins of TOSCA

The list of substances causing cancer or serious health problems was long and growing longer by 1970. But with the exception

of drugs, food additives, and pesticides, the federal government had no power to regulate chemical compounds before they were introduced into commerce. Indeed, it seemed that federal agencies could do little more than react to the damage already inflicted by heretofore unknown toxic chemical hazards.

It was clear to Russell Train, new chairman of the Council on Environmental Quality (CEQ), that the government needed to gain authority to require manufacturers to test their new chemical substances for potential adverse health effects before manufacture and distribution commenced. Authority to regulate such chemicals, if such tests indicated a potential risk to health or the environment, was the only solution to the growing danger from uncontrolled chemical use. In the spring of 1970 the Council therefore, began drafting a bill to accomplish these purposes. It would not be until the fall of 1976, however, that a Toxic Substances Control Act would finally be signed into law. The entire 6-year history of the act, the final composition of the legislative enactment, and the eventual problems of implementation serve to illustrate how the nature and institutions of the American democracy influence the course of legislation.

The first CEQ draft, begun in early 1970, was completed and circulated for comment by December of that year. The proposed bill was intended to fill the existing gap in federal regulatory authority over chemicals, and the draft vested in the EPA an authority over chemicals similar to the FDA's authority over new drugs.[1] EPA, in the bill, was to be given the authority to require notification and

testing of chemicals before they were to be marketed, and to regulate chemical substances which were potentially hazardous to health and the environment.

The toxics bill was to be included with a wide range of environmental proposals to be sent to Congress as part of President Nixon's environmental message. But the struggle to develop an administration bill to send to Congress would prove to be tortuous and costly for CEQ. The newly resurgent Department of Commerce, fulfilling its function to represent the interests of business, immediately registered its adamant opposition to the premarket notification and testing provisions of the CEQ draft.

It is interesting to note that the formal structure for determining industry preferences was already in place. An advisory group called the National Industrial Pollution Control Council, established by President Nixon earlier that year, convened corporate chairmen and presidents to "advise" the administration on matters related to industrial pollution. The Council quickly conveyed their "advice" on the CEQ bill to Maurice Stans and James Lynn in Commerce. Commerce then dutifully echoed the concerns of the chemical industry that the premarket notification and testing provisions of the draft bill might adversely affect the technological growth of the chemical industry in much the same way that the Federal Food, Drug and Cosmetic Act has (it was claimed) inhibited technological growth in the drug industry.[2]

It is of further interest to note that the electoral

requirements specified in the Constitution have similar impacts on both the executive and congressional decision structures. The formal structure of executive decision making, wherein all concerned federal agencies must read a proposed bill and submit comments to the Office of Management and Budget (which then arbitrates disagreements between these concerned agencies) serves to decentralize decision-making and provides access and influence to organized interest groups (in this case largely to the chemical industry).[3] It was argued in Chapter 3 that the decentralization of congressional decision-making has largely these same consequences.

The negotiations that winter between EPA, CEQ and Commerce were long and heated and led to several concessions by CEQ and to a series of new and substantially weakened CEQ draft bills. But the central issue of premarket notification and testing could not be resolved at the OMB level. The issue was to be resolved in the Oval Office, by Nixon, who eventually sided with Stans and Commerce against the premarket notice and testing provisions. However, the new draft bill, without these provisions, was not completed in time for the President's environmental message of February 8, 1971 but was sent to Congress 3 days later.

6.3 Two Years of Neglect

The first two years of congressional debate on the toxic substances legislation were characterized by the quiet of neglect. As we discussed in chapter 3, the framers of the Constitution intended

the legislative decision structure to serve as a forum for interest group preference aggregation for the development of policy. The congressional response to the Constitutional structure was to heighten the decentralization and fragmentation suggested therein, principally through the development of a system of standing committees and subcommittees and through rules of procedure and behavior developed to facilitate the smooth functioning of the system. It was further suggested that these institutional arrangements are derived from the goals of congressmen and are designed to serve their purposes.

Within this decentralized decision framework inventive and conscientious members can construct a network of procedural roadblocks to detour and delay almost any proposed legislation. Such was to be the glory of Congressman Harley O. Staggers (D.-W.Va.), chairman of the House Interstate and Foreign Commerce Committee. Staggers introduced the freshly gutted administration bill to the House in March, 1971, and the bill was referred to his committee for consideration (HR5276). There, with the aid of a massive organized lobbying effort by the chemical industry and an all but absent administration forestalled by other pressing matters, the bill laid idle in committee while Staggers refused to assign it to a subcommittee for consideration. Staggers instead allowed two of his subcommittee chairmen, John Moss (D.-Ca.) and Paul Rogers (D.-Fla.), to squabble over jurisdiction. It was not until eight months later that Staggers finally gave jurisdiction to Moss's Consumer Protection and Finance Subcommittee, and it would not be until May, 1972 that

hearings on the bill were finally held in the House.

In the Senate the influence of Constitutional requirements is not as strong as in the House. The longer term in office for Senators and the smaller size of the Senate offer different incentives for the establishment of institutional arrangements and decision structures. The dance of legislation (and the outcomes of the process) in the Senate is often much different than in the House. In the upper chamber, Senator Philip Hart (D.-Mich.) introduced the administration bill in April, 1971 (S1478). The bill was unceremoniously referred to the Senate Commerce Committee wherein it was immediately revised. The result was re-introduced by Senator William Spong (D.-Va.) in July that same year. The Spong bill was much like the original CEQ draft, resurrecting the premarket notification and testing provisions and adding language to make the act a Federal Food, Drug and Cosmetic Act (FFDCA) for chemicals. Provisions of the Spong bill further allowed for citizen petitions and civil suits of the EPA and other alleged violators of the act, and gave EPA powers to protect against imminent hazards.

But opposition to the bill was increasingly strong in contradiction to public support which was all but absent. In the manner of the classic legislative debates described by Schattschnieder (1960), the business lobbying organizations, principally the Manufacturing Chemists Associations (MCA) and the Synthetic Organic Chemical Manufacturers Association (SOCMA), committed their immense resources to the legislative battle against feeble and unorganized

opposition.[4] Environmental interest groups, though supportive, had chosen to invest their scarce lobbying resources in the fight for other legislation, leaving TOSCA to its own course. Indeed, the major environmental support forthcoming during the early years of TOSCA was quiet pressure circuitously applied from the EPA, the CEQ, and a number of Senate environmental subcommittee staffers. None the less, a great divergence of preferences were represented before Congress in the debate over toxic substances legislation, as was assumed in the preconditions for the operational hypotheses.

TABLE 4

Major Lobbying Groups: TOSCA

Major Business Lobbyist Organizations	Major Environmentalist Organizations
Air Transport Association of America	American Forestry Association
American Farm Bureau Association	Sierra Club
American Gas Association	National Audobon Society
American Iron and Steel Institute	Nature Conservancy
American Mining Congress	National Parks and Conservation Association
American Paper Institute	Izaak Walton League of America
American Petroleum Institute	Wilderness Society
American Public Power Association	National Wildlife Federation
American Public Works Association	Wildlife Society
American Water Works Association	Natural Resources Council of America
Association of Metropolitan Sewerage Agencies	Wildlife Management Institute
Atomic Industrial Forum	Conservation Foundation
Automobile Manufacturers Association	Sport Fishing Institute
Edison Electric Institute	Resources for the Future, Inc.
Electric Power Council	Citizens Committee on Natural Resources
Independent Petroleum Association	National Recreation and Parks Association
Lead Industries Association	Environmental Action
Manufacturing Chemists Association	Friends of the Earth
National Agricultural Chemical Association	Zero Population Growth
National Association of Electrical Companies	AFL-CIO
National Association of Manufacturers	
National Association of Secondary Materials Industries	
National Coal Association	
National Coal Policy Conference	
National Farmers Union	
National Grange	
National Petroleum Refiners Association	
U.S. Chamber of Commerce	
Waste and Wastewater Equipment Manufacturers Association	
National Solid Waste Management Association	
Synthetic Organic Chemical Manufacturers Association	

Spong had little hope but for a compromise bill. Out of the bill came the certification provision, replaced by a section allowing the production and distribution of a new chemical to go forward unless, during the notification period, EPA moved to promulgate a test rule or to ban or restrict the chemical.

This compromise, a small change in language, had immense implications for the implementation of the act. The certification provisions of the FFDCA allow the FDA to virtually 'sit' on new drug applications, many times for a number of years, without appproving the manufacturer's application, and thus by law the marketing of the drug could not proceed. The new language inserted into TOSCA was designed to specifically avoid just this problem, by allowing the chemical manufacturing to begin if the EPA has not taken action against the chemical during a well specified period of time.

"The certification provision died," claims Michael Brownlee, a Senate Environment Subcommittee staffer working with Senator Spong,

> because the environmental and organized labor groups weren't there to counterbalance the heavy industry pressure. 'We couldn't live with certification,' he says, 'it was a strategic retreat. That provision was just absolutely crapped on by everybody around except the environmental groups. But they were never tuned in at that point. The environmental groups hadn't done much lobbying on this bill. Or the organized labor groups either. They weren't geared up like they are now. It could have made a difference, but there was nobody around lobbying the senators who might have gone that way (favored certification). It was rather lonely around here then.[5]

The compromised bill was sent to the floor of the Senate in May, 1972 with William Spong acting as the floor manager. Events did not proceed smoothly on the floor either. On the floor, Senator

Howard Baker, Jr. (R.-Tenn.) proposed an important weakening amendment much favored by the chemical industry. EPA, in the Spong bill, had authority to require the testing of all new chemicals except those which posed no unreasonable environmental or public health threat. The Baker amendment proposed the testing of only those chemicals that EPA specifically found may pose an unreasonable threat to health and the environment. Such a change in language would severely restrict the testing authority of EPA and thus similarly constrict the regulatory authority granted EPA under the Spong bill. After much arm-twisting by Spong, the Senate narrowly rejected the Baker amendment. The compromised Spong bill then breezed to passage, 77-0.

Meanwhile, as the Spong bill was being passed in the Senate, the Moss subcommittee had just started hearings on the administration's bill in the House. Moss proposed a new draft which attempted to move the administration bill closer to the newly passed Spong bill, by including a very restricted premarket screening provision. The industry banner was then energetically taken up by Congressmen John McCollister (R.-Neb.) and James Broyhill (R.-N.C.). The two conservative representatives, with the full support of the chemical industry and Staggers, proceeded to keep the subcommittee in session by proposing a series of weakening amendments to the Moss bill. It was hoped that the bill would be tied up in the subcommittee long enough that no action could be forthcoming in this session of Congress.

The bill eventually reached the House floor on October 13,

1972. With only 5 days left until Congress adjourned, Staggers, the floor manager for the bill, declared with a great deal of satisfaction that there was not enough time for a compromise to be struck with the Senate, and "that at this late hour, if this bill passes this House today, that there will not be any conference with the Senate."[6] In the rush before adjournment Staggers brought the amended Moss bill to the floor under a closed rule prohibiting amendments. The bill then passed the House, and the fate of TOSCA was sealed for this session, as the House bill, without the possibility of amendment, differed too widely from the Senate bill for a compromise to be reached in the short time available. Staggers' strategy had worked perfectly.

Through the creative use of procedural contrivances, Staggers had successfully forestalled the toxics bill for the 92nd Congress. However, looking back, we can notice that the future of the bill was beginning to take shape. The Senate, responding to its broader based constituencies, allowed greater access to environmental, health and safety interests and the bills developed therein reflected these groups' greater influence. The House, restricted by the shorter tenure of office and its more narrowly defined constituencies, reflected much more closely the preferences of the chemical industry in its proposals. The next four years of legislative debate would reinforce these differences, and the strategies of the chemical industry during this period would play heavily upon this fact.

6.4 Another Defeat

The 93rd Congress convened with the administration still immersed in a heated debate over the specific provisions of the new toxics legislation to be sent to Congress. The new administration bill, though somewhat tougher than the administration bill sent to the 92nd Congress, was still without any premarked notification and testing provision.

Senator Robert Byrd (D.-W.Va.) introduced the new administration bill to the Senate in February, 1973 (S426). Stronger backing by EPA personnel in testimony before the Senate Environment Subcommittee brought about a slight change in the administration's perceived position on premarket screening. Although the premarket screening provision advocated by the White House was weaker than even the House version in the Moss bill, the 93rd Congress marked the first time the administration and both chambers of Congress were seeking some form of premarket screening (the new House bill was similar to the old Moss-Broyhill-McCollister bill and contained a weak premarket screening provision (HR5087)).

The swing towards a stronger toxics bill did not long escape the attention of the chemical industry. The industry echoed its desires that the legislation apply to only the use and distribution of chemicals and not to their manufacture, and did not strenuously seek a compromise. Instead, the industry worked hard in the ensuing months to weaken an already soft House version in the hope that, by creating a wide divergence between the House and Senate bills, it would be impossible to reconcile the House and Senate bills in conference.

John Tunney (D.-Ca.), the new sponser of the bill, recognized the jeopardy occasioned by the new industry strategy and scrambled for a compromise. The old dead Baker amendment[7] was given new life and the premarket screening provision was amended. The earlier Spong bill, and the bill advocated by the EPA and the CEQ, had given the EPA broad categorical authority to require testing (and therefore possible regulation) of all new chemical substances before the chemical could be marketed — this so-called certification provision was similar in-effect to the FDA's authority over new drugs. The compromise worked out by Tunney is similar to the final bill to be passed in 1976. This new compromise language allowed for EPA to a priori require testing only of new chemical substances which are on the EPA's inventory list of dangerous chemicals (the clairvoyance provision), and to require testing of other new chemicals on a case-by-case basis.

EPA could therefore not, a priori, require testing of the hundreds of thousands of new chemicals produced each year over which EPA had little or no information about their health and environmental effects. EPA could only proceed against these chemicals on a case-by-case basis, something which would eventually emerge as one of the largest stumbling blocks to EPA in its efforts to regulate toxic substances.

With this new language the Tunney bill was passed by the Senate in July, 1973. At about the same time in the House, Broyhill, McCollister and newcomer Samuel Young (R.-Ill.) pushed through a series of amendments weakening the House version and widening the gulf

between the two chambers' respective bills. The most important of these amendments, strongly supported by industry, was a provision prohibiting EPA from taking action under TOSCA if a remedy was available under any other federal law, an approach relegating TOSCA to a backseat position and guaranteeing that virtually any action taken under the act could be tied up in court for years. This provision, in substantially the same form, found its way into the final version of the act passed in 1976.

The story of the toxics legislation in the 93rd Congress is thus all over but for the crying. The House bill was passed in July, 1973 (HR5356), and a conference was called to reconcile the differences between the House and Senate versions. The industry strategy had worked well however, as the two versions differed by substantial margins and compromise would prove difficult. However, time was more than adequate for a compromise to be reached; the conferees had a full eighteen months to reach a compromise on the two bills before the 93rd Congress adjourned. The conference committee met three times in 1973 without success. Staggers, who held the key vote on the House committee missed several meetings, thus hopelessly deadlocking the committee throughout these sessions. As chairman of the conference, Staggers then refused to call another meeting for almost a year. Without the support of the administration, and with only the passing support of environmental and health groups, TOSCA died again in 1974.

6.5 Toxics Legislation

Like the change of seasons, the winter and spring of 1975 saw both the industry and the Ford administration soften and then retrench their positions on the toxics legislation. But the once solid front of the industry hard-line was dissolving. Several smaller firms began to seek some form of mild regulation in preference to the uncertainty associated with the increasing number of court suits relative to their unabated toxic hazards. Further, labor groups were becoming more active and vocal in their support of the toxics legislation. These labor groups employing their extensive resources "educated" a number of legislators and helped to balance the influence of the chemical interests in the toxics debate.

The prospects for passage of a toxics bill in the 94th Congress thus appeared somewhat brighter. In the summer of 1975, the Senate Commerce Committee began considering Tunney's new offering (S776). However, opposition to the bill by committee member Vance Hartke (D.-Ind.) forced a deadlock on the committee. Tunney, in order to get the bill voted out of committee, then drafted a new compromise bill with Hartke, moving the Senate bill closer to the House version. The redrafted Tunney bill then easily passed the committee and the Senate in March, 1976.

Meanwhile, William Brodhead (D.-Mt.) introduced toxics legislation similar to the Tunney bill to the House. In committee the Brodhead bill was to incorporate a number of weaker provisions contained in a bill sponsored by Robert Eckhardt (D.-Tx.). The

Brodhead-Eckhardt bill would fare, well being approved by the House subcommittee in December, 1975. Much of the success of the toxics legislation this session was due, in part, to the elections of 1974, which had dramatically altered the profile of the subcommittee, increasing the 5-4 Democratic majority to 6-2, and ousting conservative Democrats and Republicans alike in favor of new, younger liberals.

However, Staggers, again, using his position as chairman of the House Interstate and Foreign Commerce Committee, delayed action on the bill by refusing to schedule committee review of the bill before May 15, 1976. This strategy not only bought time for industry to retrench and focus its efforts on the House, but also allowed the important deadline for which new legislation authorizing spending must be reported to the floor to pass without action on TOSCA.

Finally, after the drafting of yet another compromise, the House bill was passed and for the first time the House-Senate conference met with House and Senate toxics bills similar enough in content and language for a compromise to be reached. The recent kepone disaster and the perception that Jimmy Carter, who was suspected to favor a strong toxics bill, seemed destined for the White House, brought the industry to a more compromising stance. President Ford signed the bill into law on October 11, 1976.

The final compromise which precipitated the bill's passage was a new provision requiring that EPA seek a district court order when it desired a chemical firm to conduct more extensive testing of a new

chemical substance. This new requirement assuaged the industry's fears that EPA would capriciously require more extensive testing and guaranteed EPA would not easily require the testing of new chemicals.

The history of the toxics legislation indeed tells the story of the American legislative system and serves to illustrate the model developed in Chapter 3. The emphasis on interest group representation, the institutional incentives which differentially influence Congressmen and Senators to seek the fulfillment of these represented groups' preferences, and the institutional decision structures of each chamber borne from these differing incentives each colored and metamorphized the form of the toxics legislation.

6.6 Noble Language and False Teeth

EPA inherited broad substantive discretionary authority to regulate toxic hazards, but the implementation of such authority has proved to be next to impossible. In seeking to exercise the authority granted EPA under TOSCA the agency has been stymied by a seemingly endless maze of procedures specified in the act for the promulgation of a regulation. In this section we will take a closer look at TOSCA and will attempt to draw evidence in support of the hypotheses developed in chapter 4 and the contentions discussed in chapter 5.

Given the diversity of interest group preferences advanced before Congress in the debate over TOSCA and given the wide range of production technologies in the chemical industry (see Backman, 1964) the operational hypotheses established in chapter 5 offer clear

expectations for the form of the toxics legislation. Briefly, TOSCA should grant broad regulatory authority and narrow procedural authority to EPA, and should specify command and control instruments for the implementation of regulations at the production stages and either incentive-based or informational mechanisms for the implementation of regulations at other stages of the chemical firm's activities. In this section we shall closely examine the Toxic Substances Control Act to identify the substantive and procedural authority defined therein and the regulatory instruments specified.

The policy of Congress in legislating authority to EPA is described, in quite noble language, in subsection 2(a)(2) of the act,

> Adequate authority should exist to regulate chemical substances and mixtures which present an unreasonable risk of injury to health or the environment, and to take action with respect to chemical substances and mixtures which are imminent hazards.

The scope of regulatory authority granted EPA was broadly defined in subsection 6(a) of the act,

> If the Administrator finds that there is a reasonable basis to conclude that the manufacture, processing, distribution in commerce, use, or disposal of a chemical substance or mixture or that any combination of such activities, presents, or will present an unreasonable risk of injury to health or the environment, the Administrator shall by rule apply one or more of the following requirements to such substance or mixture to the extent necessary to protect adequately against such risk using the least burdensome requirements.

Broad regulatory discretion was granted EPA under TOSCA in three other sections as well: Section 4 establishes and sets forth

EPA's authority to require testing of new chemicals; Section 5 establishes and sets forth EPA's authority to require premanufacturing notices for new chemicals; and Section 7 sets forth the provisions and authority that EPA has to control imminent hazards.

This broad delegation of regulatory authority was coupled with broad discretion over the choice of regulatory instruments. The act mandates a broad set of regulatory mechanisms employable to carry through the policy goals of the act. A major set of these instruments is defined in subsection 6(a),

> Section 6(a)
>
> (1) A requirement (A) prohibiting the manufacturing, processing, or distribution in commerce of such substance or mixture, or (B) limiting the amount of such substance or mixture which may be manufactured, processed, or distributed in commerce.
>
> (2) A requirement -- (A) prohibiting the manufacture, processing or distribution in commerce of such substance or mixture for (i) a particular use or (ii) a particular use in a concentration in excess of a level specified by the Administrator in rule imposing the requirement, or (B) limiting the amount of such substance or mixture which may be manufactured, processed, or distributed in commerce for (i) a particular use of (ii) a particular use in a concentration in excess of a level specified by the Administrator in the rule imposing the requirement.
>
> (3) A requirement that such substance or mixture or any article containing such substance or mixture be marked with or accompanied by clear and adequate warnings and instructions with respect to its use, distribution in commerce, or disposal or with respect to any combination of such activities. The form and content of such warnings and instructions shall be prescribed by the Administrator.
>
> (4) A requirement that manufacturers and processors of such substance or mixture make or retain records of the processes used to manufacture or process such substance or mixture and monitor or conduct tests which are reasonable and necessary to assure compliance with the requirements of any rule applicable under this subsection.
>
> (5) A requirement prohibiting or otherwise regulating any manner or method of commercial use of such substance or mixture.

> (6) (A) A requirement prohibiting or otherwise regulating any manner or method of disposal of such substance or mixture, or of any article containing such substance or mixture, by its manufacturer or processor or by any other person who uses, or disposes of, it for commercial purposes. (B) A requirement under subparagraph (A) may not require any person to take any action which would be in violation of any law or requirement of, or in effect for, a State or political subdivision, and shall require each person subject to it to notify each State and political subdivision in which a required disposal may occur of such disposal.
>
> (7) A requirement directing manufacturers of processors of such a substance or mixture (A) to give notice of such unreasonable risk of injury to distributors in commerce of such substance or mixture and, to the extent reasonably ascertainable, to other persons in possession of such substance or mixture or exposed to such substance or mixture, (B) to give public notice of such risk of injury, and (C) to replace or repurchase such substance or mixture as elected by the person to which the requirement is directed.

As suggested by this excerpt from subsection 6(a), Congress was very specific with regard to the regulatory instruments EPA could employ to implement policies under TOSCA. EPA can implement regulations pertaining to the production activities (manufacture, processing and distribution) of chemical manufacturers only through command and control mechanisms (prohibitions and limitations), as specified in subsections 6(a)(1), 6(a)(2), 6(a)(5), and 6(a)(6). Congress also clearly mandated largely informational mechanisms for the regulation of other activities as detailed in subsections 6(a)(3) and 6(a)(7) (warnings and instructions and public notice).

This specificity with regard to regulatory instruments was an attempt by Congress to require EPA to take substantial action on toxic hazards. It was felt that by specifically mandating such a broad range of instruments EPA could approach a wide range of problems using

methods which would not only lead to swift resolution but would also pass tests of validity in court. In any case the pattern of instruments specified fits precisely with the predictions of the model.

Along with these predominantly command and control mechanisms, extensive procedural and due process requirements were detailed (in sections 4, 5, 6, 9, 19, 20 and 21) for the exercise of the broad regulatory authority granted EPA under the act. Sections 4, 5, 6 and 9 of the statute, though defining who has what rights before EPA, are primarily concerned with defining EPA regulatory decision-making procedures. Figure 2 details the lengthy procedures specified in the act that EPA is required to follow for the promulgation of a regulation under sections 4, 5 or 6.

Figure 2

TOSCA Procedures
Part 1

PREMANUFACTURING NOTIFICATION

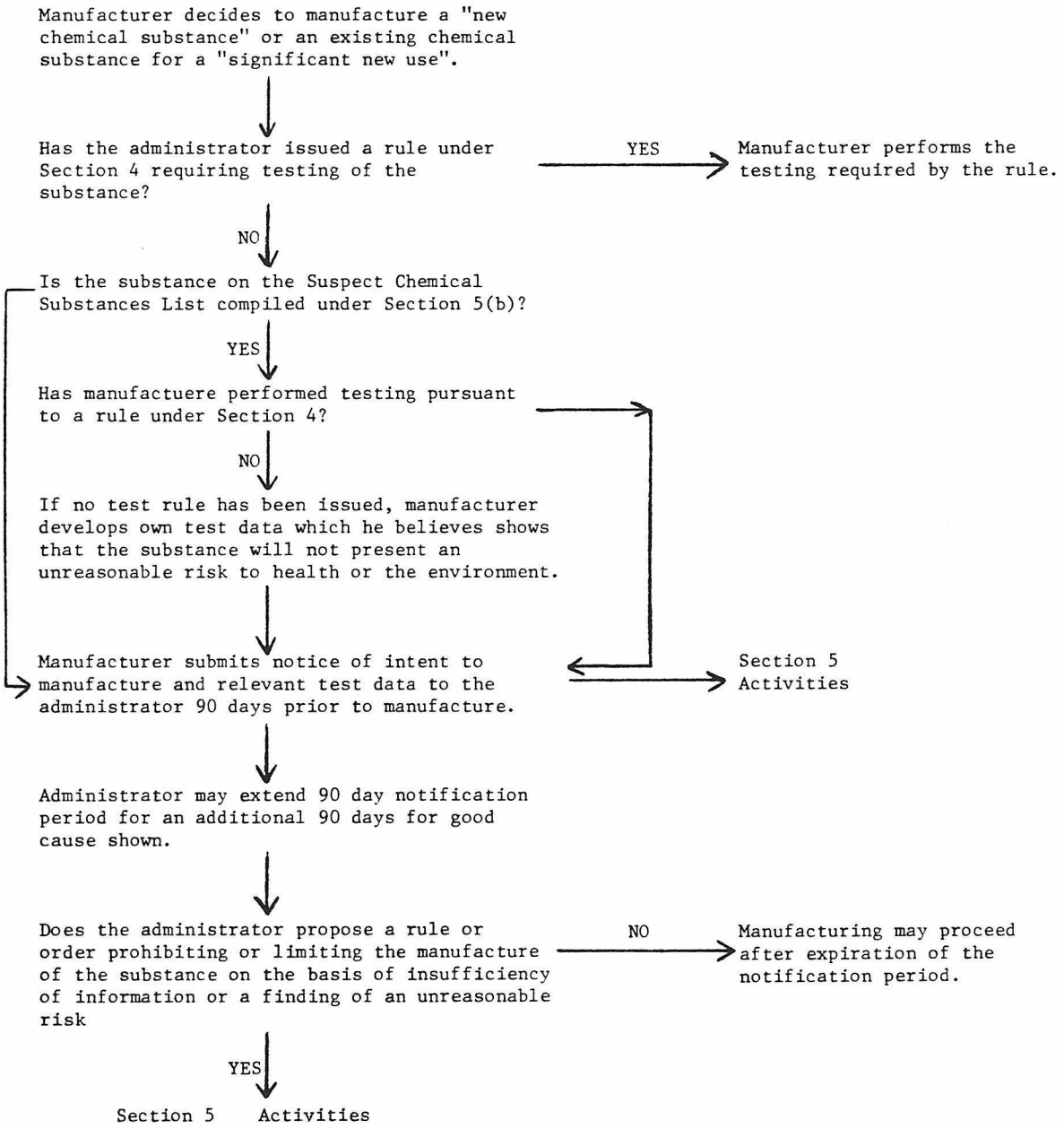


Figure 2
Part 2
Section 5 Activities

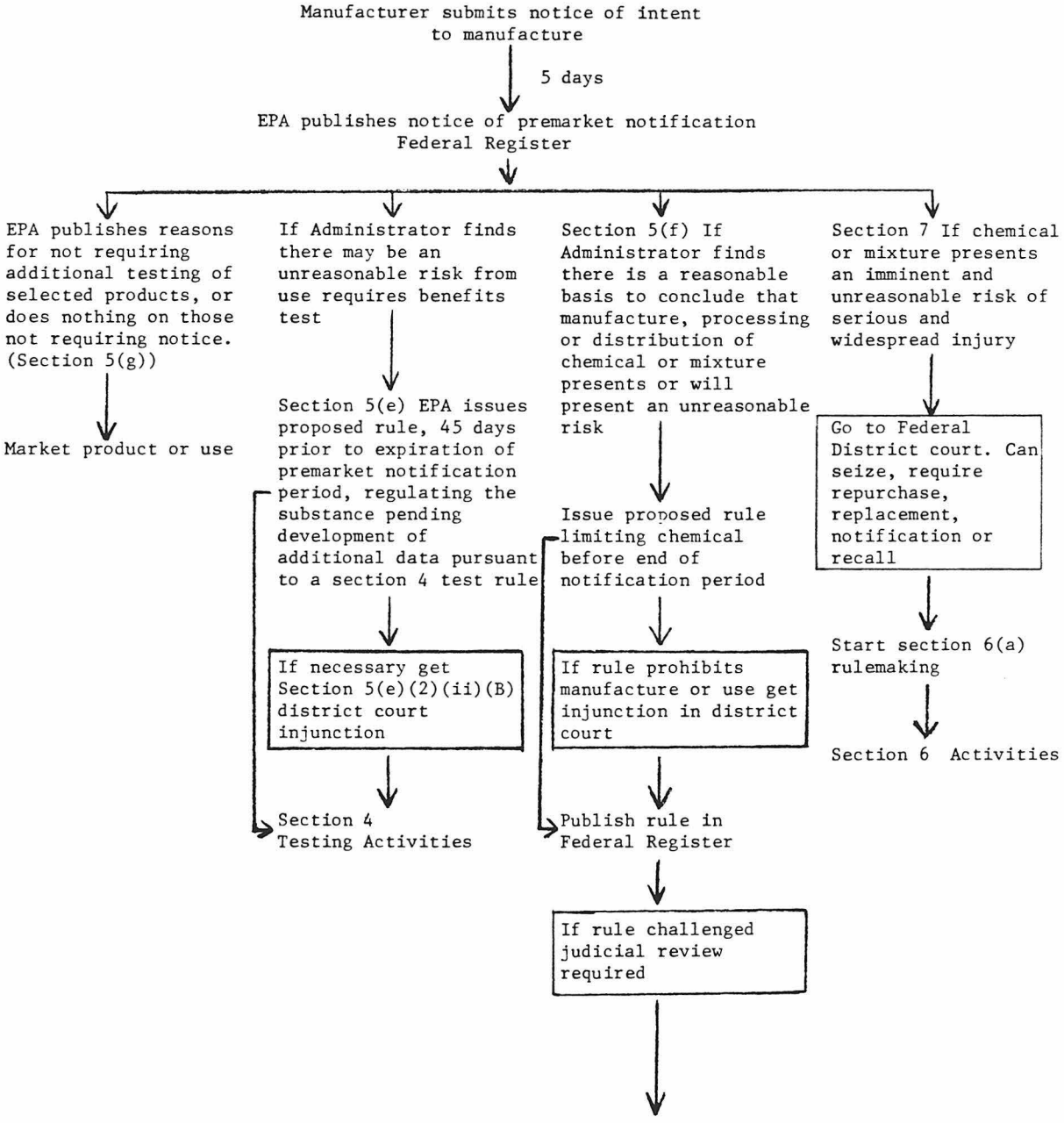


Figure 2
Part 3

Section 5 Activities
Continued

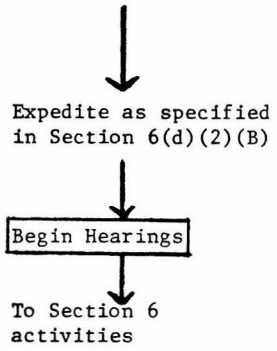


Figure 2
Part 4

SECTION 4 TESTING ACTIVITIES

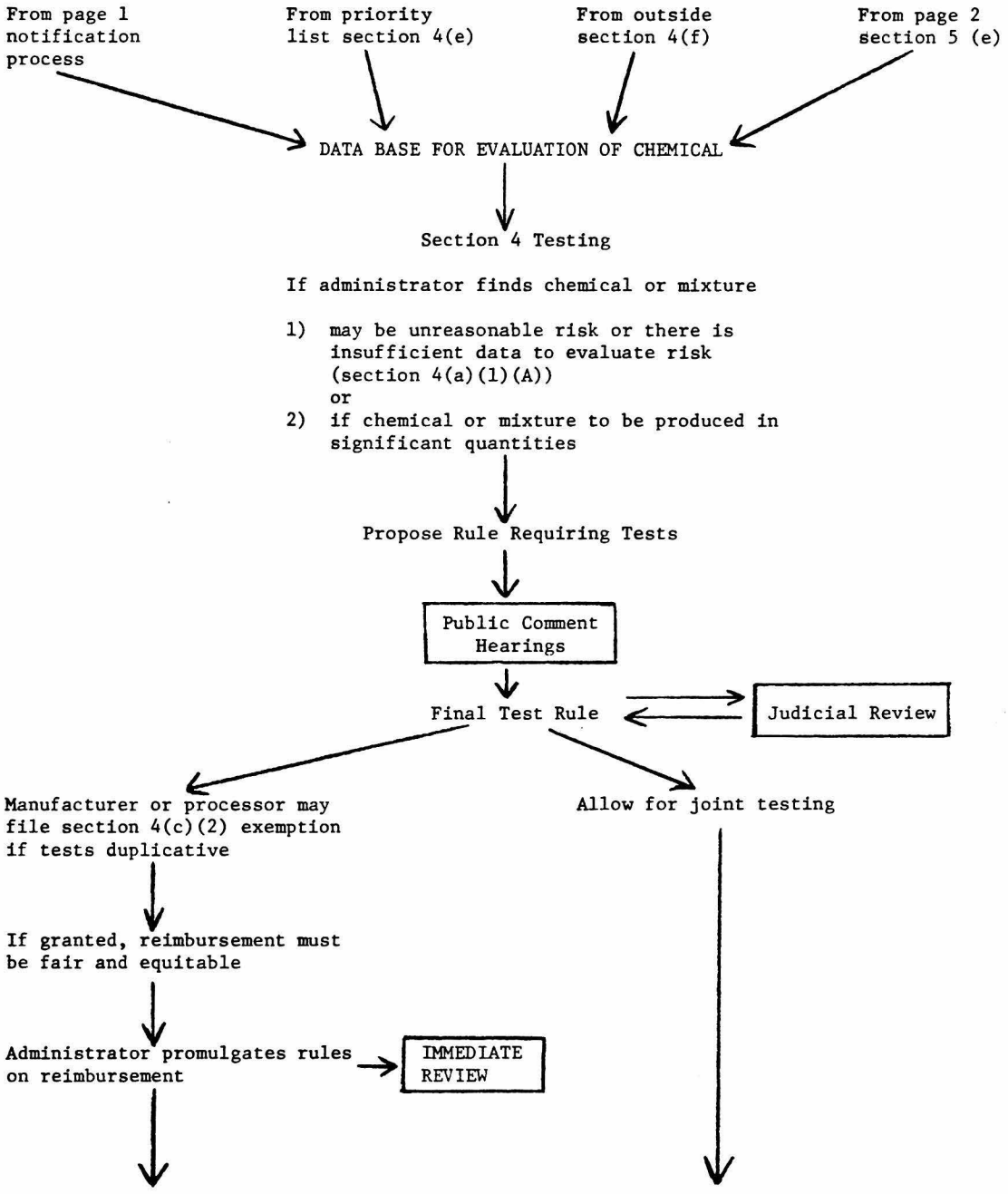


Figure 2
Part 5

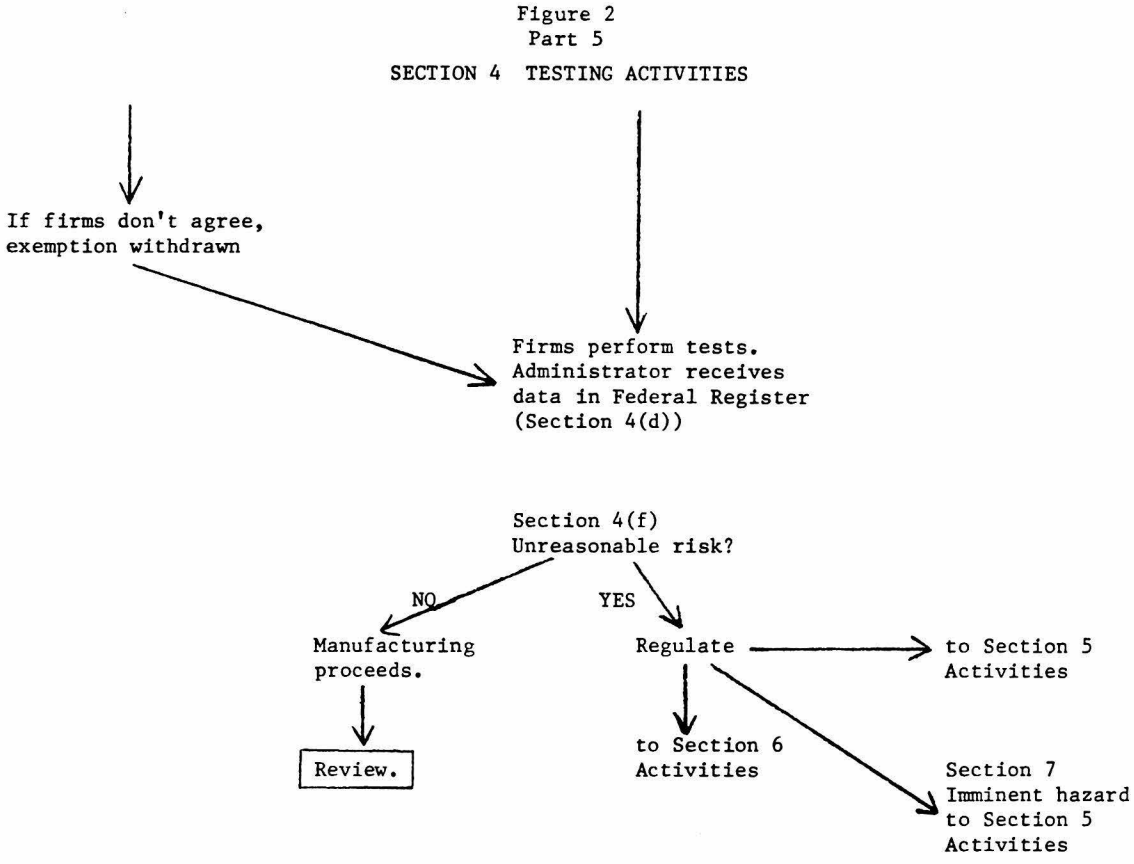
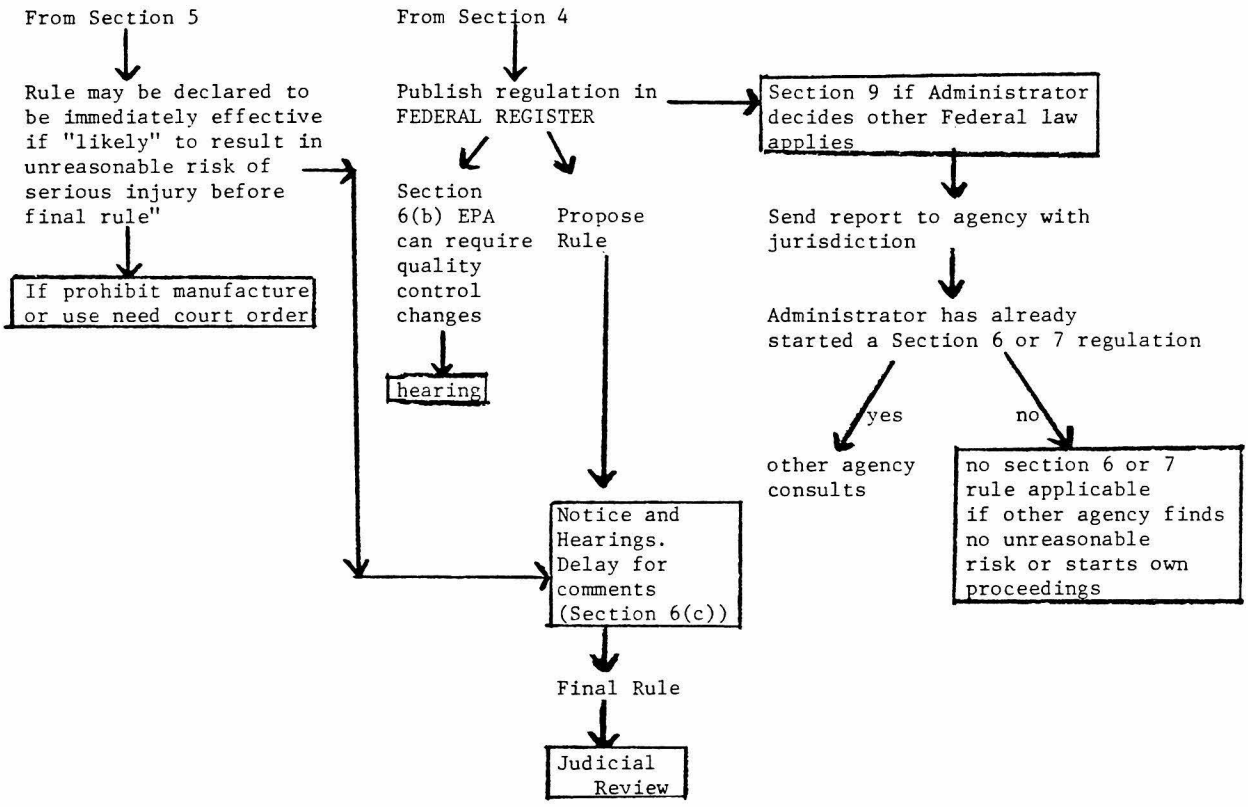


Figure 2
Part 6

Section 6 Activities



Under the regulatory procedure defined in sections 4, 5 and 6, a manufacturer must submit notice of intent to manufacture a new chemical substance 90 days prior to manufacture, and upon such notice, and within the time frame specified in the act, EPA can take one of four courses of action: EPA can allow the manufacturing processing and distribution in commerce of the new chemical to proceed without further testing; EPA can obtain a court order to require more testing pursuant to a test rule developed in section 4 (notice the procedures necessary to develop a test rule, outlined in parts 4 and 5 of figure 2, are very extensive in their own right); EPA can propose a regulation for the chemical which, if challenged, is subject to court review and necessitates the fulfillment of the numerous due process requirements of section 6 (part 6 figure 2), or finally, if the chemical presents an imminent risk of serious and widespread injury, EPA can obtain a court order to seize the chemical and then begin its rule-making activity.

This lengthy and tortuous procedure, outlined in Figure 2, guarantees that all interested parties will have numerous points of access and influence in EPA decision-making under TOSCA. Such access points are boxed in Figure 2. This extensive and labyrinthine procedure detailed by Congress for the promulgation of a regulation under TOSCA has two otherwise noteworthy ingredients. First is the explicit time limit for taking action under the act (90 days). Second is the requirement that a test rule be developed for each new chemical substance submitted for manufacture. The effect of the time limit is

to insure that action will not be taken in a vast majority of cases. In less than a dozen instances has it been necessary for EPA to abide by the procedures specified in the act, as it can rarely respond in time. Manufacturing and distribution of chemicals are allowed to proceed without EPA action.

The test rule requirement reinforces the mandated ineptitude of the Office of Toxic Substances (OTS). EPA, under Section 4, must devise a test rule requiring and specifying tests of each new chemical substance. Such tests are used to generate information about the health and environmental effects of the new chemical. Each test rule is in itself voluminous and requires many months, even years, to develop. The costs in time and resources to the agency are enormous. Few chemicals can be tested and therefore few chemicals will be subject to eventual EPA regulation.

As was seen in Figure 2, even if EPA goes to the time and expense of devising a test rule to require testing, has the tests done, evaluates the test results and finally proposes a regulation, there is still little guarantee that the regulation will ever have the force of law. All decisions by EPA under TOSCA are subject to an almost endless round of hearings and court appeals. If this were not enough, these are not the only obstacles presented by the act. Sections 20 and 21 enfranchise all citizens, through the use of citizen petitions or civil suits, to require enforcement of TOSCA by EPA (or reversal of action). Section 19 further specifies that all actions by EPA under TOSCA are subject to judicial review in a federal

district court. Though it is quite possible that all actions taken by EPA under TOSCA would be subject to court review without section 19 it is noteworthy here that Congress specifically enfranchised all interested parties (not just those adversely affected by a ruling) to have the right of bringing a court review. Further, unlike many other regulatory acts, court review of EPA decision-making is possible at may junctures before a final ruling is made.

EPA is further required to closely coordinate its activities with other federal health and safety programs. As each of these programs has its own legislative mandate, decision-making structure, congressional oversight committees and clientele groups, each interaction required of EPA magnifies the decision-making procedures and the number of interested parties involved in any rule-making under TOSCA.

In subsection 4(e) EPA is required to develop a priority list of chemicals for the promulgation of test rules under section 4 (this is in essence the Tunney-Baker compromise).[8] However, the membership of the committee is not EPA's sole domain, only one member of the eight member committee is appointed by EPA, as specified in subsection 4(e)(2)(A),

> Section 4(e)(2)(A)
> (2)(A) The committee established by paragraph (1)(1) shall consist of eight members as follows:
> (i) One member appointed by the Administrator from the Environmental Protection Agency.
> (ii) One member appointed by the Secretary of Labor from officers or employees of the Department of Labor engaged in the Secretary's activities under the Occupational Safety and Health Act on 1970.

(iii) One member appointed by the Chairman of the Council on Environmental Quality from the Council or its officers or employees.

(iv) One member appointed by the Director of the National Institute for Occupational Safety and Health from officers or employees of the Institute.

(v) One member appointed by the Director of the National Institute of Environmental Health Sciences from officers or employees of the Institute.

(vi) One member appointed by the Director of the National Cancer Institute from officers of employees of the Institute.

(vii) One member appointed by the Director of the National Science Foundation from officers or employees of the Foundation.

(viii) One member appointed by the Secretary of Commerce from officers or employees of the Department of Commerce.

Much of the language and intent of the McCollister amendments was also carried through to the final bill[9], as evidenced in subsections 9(a) and 9(b) which clearly puts TOSCA in a back-seat position relative to other federal programs for enforcement:

Section 9(a)

(a) Laws Not Administered By the Administrator -- (1) If the Administrator has reasonable basis to conclude that the manufacture, processing, distribution in commerce, use, or disposal of a chemical substance or mixture, or that any combination of such activities, presents or will present an unreasonable risk of injury to health or the environment and determines, in the Administrator's discretion, that such risk may be prevented or reduced to a sufficient extent by action taken under a federal law not administered by the Administrator, the Administrator shall submit to the agency which Administers such law a report which describes such risk and includes in such description a specification of the activity or combination of activities which the Administrator has reason to believe so presents such risk.

Section 9(b)

(b) Laws Administered By the Administrator -- The Administrator shall coordinate actions taken under this Act with actions taken under other federal laws administered in whole or in part by the Administrator. If the Administrator determines that a risk to health or the environment associated with a chemical substance or mixture could be eliminated or reduced to a

> sufficient extent by actors taken under the authorities contained in such other federal laws, the Administrator shall use such authorities to protect against such risk unless the Administrator determines, in the Administrator's discretion, that it is in the public interest to protect against such risk by actions taken under this Act.

Together the procedural specifications, due process guarantees, and inter-agency cooperation provisions serve to extend the decision-making process in the Office of Toxic Substances and to enlarge the set of interest groups enfranchised to have a voice in agency decision-making. This ultimately precludes EPA from exercising the broad regulatory authority granted under TOSCA.

In response to these extensive procedural requirements EPA has itself, as hypothesized in chapter 5, created a labyrinthine structure for the development of regulations under the act. The procedural requirements for action under TOSCA, as devised by EPA, take a full 6400 pages in the Code of Federal Regulations (CFR). In contrast, as will be examined in chapter 10, the procedural requirements for the CAB to approve a new airline tariff are described in only 800 pages in the CFR and consist primarily of filing requirements.

This evidence, then, strongly supports the operational hypotheses established in chapter 5 and thus serves to support the model of regulatory choice posited earlier. The specification that command and control instruments be employed to implement production regulations and that informational mechanisms are required to implement policies at other than the production stages of the regulated firm under TOSCA (subsection 6a) strongly support hypotheses H5 and H6 (as well as table 3). Further, the broad substantive

authority granted EPA (subsections 2a and 6a) and the extensive procedural guidelines required of EPA in TOSCA (especially sections 4, 5 and 6) are quite in line with hypotheses H8 and H9.

It should be noted, before we conclude our discussion of TOSCA, that an alternative explanation exists for the procedural specificity by Congress in TOSCA. It has been argued that Congress had originally written TOSCA in a manner so as to facilitate its implementation. The extensive procedural specificity in the act was a means of insuring that EPA would indeed implement the intent of Congress and was also an effort by Congress to preempt the courts from defining the due-process procedures necessary for promulgating a regulation under TOSCA (in order to reduce uncertainty and ease implementation).[10] Such an argument can explain the specification of due-process enfranchisements in sections 19, 20 and 21 and also many (though not all) of the requirements of public hearings and comments in sections 4, 5, 6 and 7. However, such an argument cannot explain the specification of a priority list in sections 4(e) nor the specification of a test rule in section 4, as neither is required (neither by the courts nor by Congress) in similar rule-making procedures for the FDA (as we will see in chapter 8). Further, post-hoc evidence on the dismal record of EPA's implementation of TOSCA generally refutes the underlying argument that Congress wished TOSCA to be implemented.

However, it is generally true that the model of regulatory choice developed herein ignores the role of the courts and the

influence that the courts wield in legislative decision-making. An examination of congressional strategies vis-a-vis the courts, though outside the scope of the present analysis, might prove fruitful in the explanation of various aspects of the choice of regulatory form.

Thus, though the final verdict on toxic substances regulation in the U.S. has yet to be passed down, the jury is in on TOSCA. The dysfunctional regulatory instruments and decision-making procedures specified in the act for the development and implementation of toxic chemical regulation renders EPA inert and inefficacious in the pursuit of such regulation. Inasmuch, toxic chemicals will continue to pose a serious and widespread health problem for which relief is under existing law unattainable.

Footnotes to Chapter 6

1. Briefly, FDA has certification authority over new drugs, as no new drug may be marketed without FDA certification. We will discuss this further in chapter 8.

2. On the decline in technological growth see Peltzman (1973).

3. For similar (electoral coalition building) reasons to the legislature, the executive possesses a decentralized decision structure to allow access to interested groups to executive decision-making.

4. Backman (1964) in examining the structure of the chemical industry found that "the structure of the chemical industry, in one respect, is similar to that found in many other mass production industries; namely several large companies and a number of smaller ones... (and further that) the development of such large companies often reflects the technology of an industry" (p. 18). The high concentration of capital assets in the largest firms, together with the small size of the numerous yearly new entrants (p. 9) reflects a wide diversity of production capabilities and technologies in the chemical industry.

5. Randall and Solomon (1978).

6. ibid p. 121.

7. The Baker amendment requires manufacturers to test automatically only those chemicals that EPA had listed in advance as likely to pose unreasonable risks.

8. Baker had twice previously attempted to amended the toxics legislation with an amendment that requires manufacturers to test automatically only those chemicals that EPA had listed in advance as likely to pose unreasonable risks. The compromise was to establish the priority list for testing; thus EPA was to give priority consideration to the chemicals on the list but the list was not to be the limit of EPA testing authority.

9. McCollister had previously attempted to pass amendments to the toxics legislation to put enforcement of TOSCA in a backseat to other health and safety legislation; the compromise struck was to do so at the administrator's discretion.

10. See "Decision Making in the Environmental Protection Agency," National Academy of Sciences, 1977, and Aidala (1979).

Chapter 7. The Consumer Product Safety Act

7.1 Introduction

The Consumer Product Safety Act (CPSA), enacted quickly and quietly in 1972, established the five-member Consumer Product Safety Commission (CPSC). Much like the Office of Toxic Substances within the Environmental Protection Agency, the CPSC has had difficulty developing regulations under its mandated authority; in its first 5 years of existence it issued only 3 mandatory safety standards. As a consequence the CPSC thus regularly comes under attack from Congress, consumer groups and the OMB for its failures to develop regulations. Why the CPSC has failed to significantly regulate consumer product hazards is intimately related to the history and form of its enabling legislation. As will be seen, the story is much the same as TOSCA.

We will employ the analysis of this chapter to consider again the assumptions and expectations of the operational hypothesis as to the regulatory form of environmental, health and safety legislation. Such an effort will again enable us to probe the validity of the model of regulatory choice developed earlier.

7.2 Legislative History

In June, 1970 the National Commission of Product Safety, an advisory commission to the President created by Congress in 1967, recommended the creation of an independent consumer product safety

agency. The new agency would be vested with broad discretionary authority over the entire range of consumer products, and all existing consumer legislation would be transferred to the agency. In 1971, President Nixon (recommendations aside) proposed legislation to establish a new division within the Department of Health, Education and Welfare to set standards for products, and to regulate consumer products not otherwise already covered by specific federal laws. Nixon, articulating the mood of manufacturers, sought to establish an agency which was subject to direct executive and, therefore, industry influence. Throughout the year the Senate Commerce Committee held extensive hearings on the Admininstration bill (S1797), from which a new draft, developed and sponsored by Chairman Warren Magnuson (D.-Wa.) and Frank Moss (D.-Ut.) (S983) emerged. The Magnuson-Moss bill restored a great many of the recommendations made by the advisory committee, including the creation of a strong independent consumer agency.

As was the case in the development of TOSCA, the influences of differing Constitutional requirements and institutional structures differentially affected the form and substance of the consumer bills emerging from the Executive, the Senate, and the House. The Nixon administration advocated a weak version of the Commission's report and sent such proposed legislation to Congress. In Congress, the differential impact of the Constitutional requirements on each chamber again left an indelible mark on the legislation developed. The Senate would again seek stronger legislation, while the House would seek a

much milder regulatory authority.

In the Senate however, three different committees -- Commerce, Labor and Public Welfare, and Government Operations -- claimed jurisdiction over various titles of the bill. The Senate Commerce Committee subsequently reported the Product Safety Commission bill (S3419) to the floor in April, 1972. As reported, the bill contained three titles. Title 1 established the CPSC and defined the duties of the commissioners. Title II transferred into the commission the functions of several existing product safety laws (including those administered by the FDA). Title III specified the extensive procedures by which the CPSC would promulgate safety standards. The measure was then referred by the Senate to the other two committees claiming jurisdiction. In June an amended version of the Magnuson-Moss consumer bill passed the Senate by a vote of 69-10.

Upon passage of the Senate bill, the House Interstate and Foreign Commerce Committee reported its version of the Product Safety Act (HR15003) to the floor. The House draft, as was also the case in the toxics legislation, was much narrower in scope than the Magnuson-Moss bill and did not provide for the transfer of functions to the CPSC by the FDA. It was not until September, however, that the House finally passed the CPSA.

Interest group lobbying was not intense. Opponents of the bill, such as the Chamber of Commerce of the United States, General Mills, American Cyanamid, Procter and Gamble, and the Grocery Manufacturers of America, sought merely to limit the proposed agency's

scope and to assign its jurisdiction to the Secretary of HEW (as represented in the Nixon administration's draft). Sponsers of the bill, largely an array of local consumer groups and Nader organizations sought strong regulatory authority vested in an independent agency.

The House-Senate conference acted quickly, reaching a compromise which was adopted by both chambers in mid-October. The conferees agreed on a compromise that was much closer in substance to the narrower House version than to the measure passed by the Senate. In this respect the history of the Consumer Product Safety Act is much unlike the history of the Toxic Substances Control Act, as the CPSA moved quickly to resolution in Congress. However, the form of the enabling legislation is very much similar to TOSCA, specifying inflexible regulatory instruments and procedures for the implementation of the act. The Commission thus shares with EPA a similar history of failure to fulfill its legislative mandate.

7.3 The Consumer Product Safety Act

The Consumer Product Safety Act (CPSA) transferred authority for a number of federal consumer programs to the CPSC: The Federal Hazardous Substances Act of 1960, as amended; the Poison Prevention Packaging Act of 1970; the Flammable Fabrics Act of 1953, as amended; and the Radiation Control for Health and Safety Act of 1968.

In this section we will examine the provisions of the Consumer Product Safety Act in order to identify the substantive and procedural

authority defined and the regulatory instruments specified therein. The operational hypotheses of chapter 5 clearly define the form the CPSA should take: broad regulatory authority in conjunction with narrowly prescribed procedural authority to be implemented through command and control mechanisms for production regulations, and incentive-based or informational mechanisms for non-production regulations.

The act established an independent five-member commission authorized to collect injury information and to promulgate mandatory safety standards for consumer products. The regulatory authority granted the CPSC under the act is largely detailed in section 7:

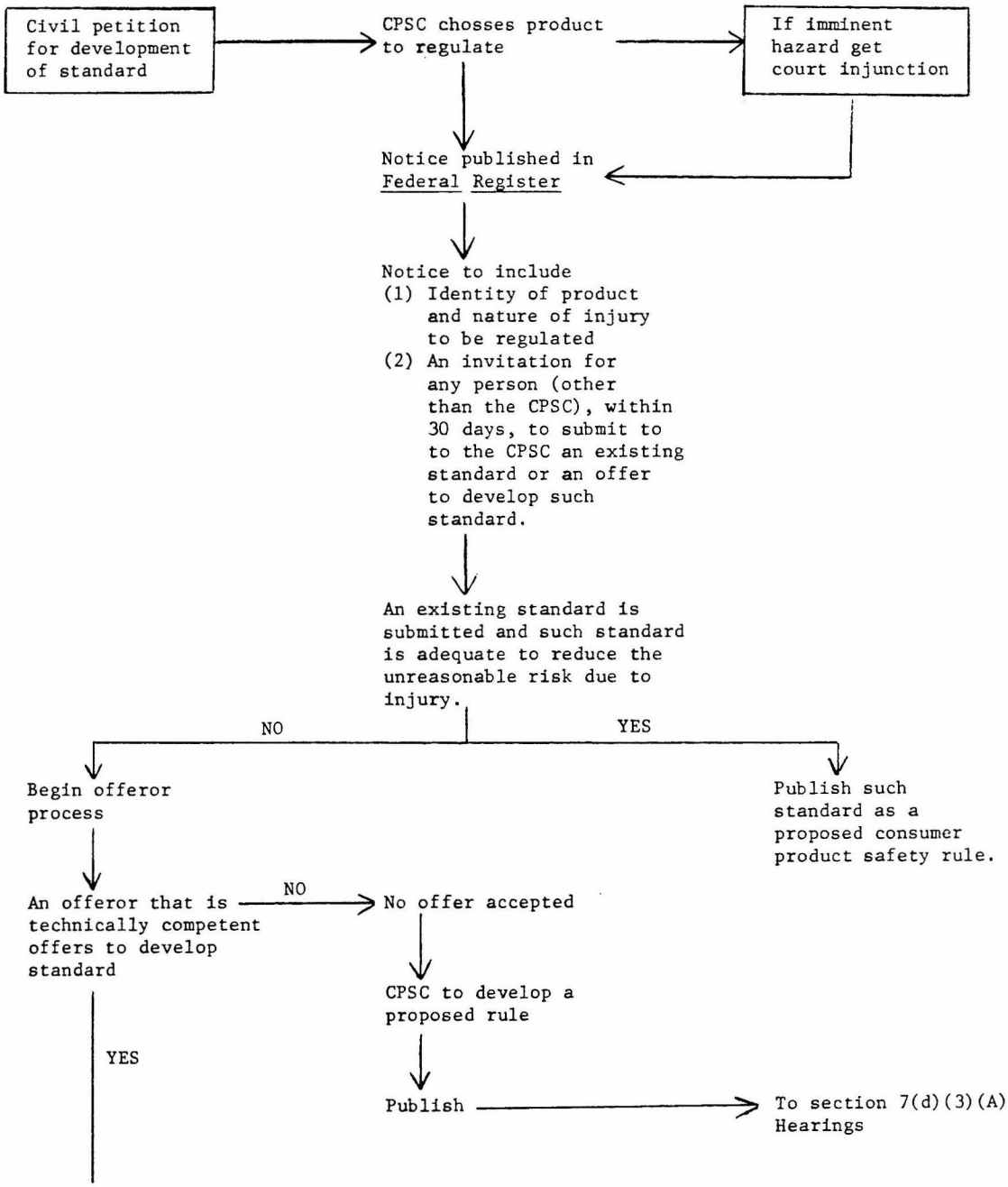
> Section 7. (a) The Commission may by rule, in accordance with this section and section 9, promulgate consumer product safety standards. A consumer product safety standard shall consist of one or more of the following types of requirements: (1) Requirements as to performance, composition, contents, design, construction, finish, or packaging of a consumer product. (2) Requirements that a consumer product be marked with or accompanied by clear and adequate warnings or instructions, or requirements respecting the form of warnings or instructions. Any requirement of such a standard shall be reasonably necessary to prevent or reduce an unreasonable risk of injury associated with such product. The requirements of such a standard (other than requirements relating to labeling, warnings, or instructions) shall, whenever feasible, be expressed in terms of performance requirements.

Subsection 7(a)(1) describes the Commission's authority to regulate, through command and control mechanisms, the production of consumer products under the jurisdiction of the act. Subsection 7(a)(2) describes the Commission's authority to regulate, through informational means, the sale and use of consumer products. This

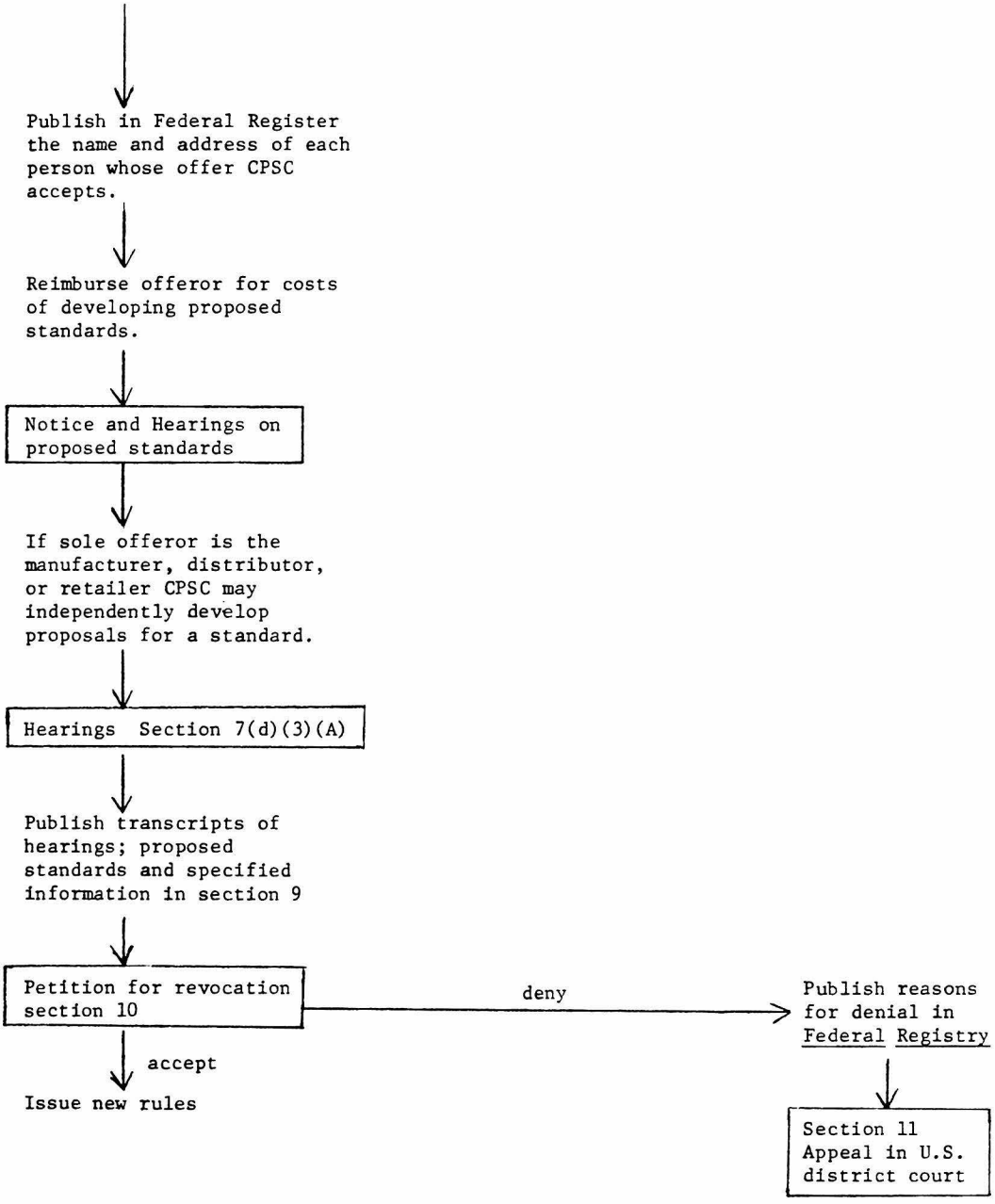
simple, though broad, discretionary authority over the wide range of consumer goods produced in (or imported into) the United States is obstructed with extensive and convoluted procedures explicitly designed to maximize the participation of public and industry groups in the Commission's decision-processes. Section 7 of the CPSA particularizes the offeror process which is at the heart of the decision procedures for the CPSC rule-making. The procedures defined in Section 7, which contain the offeror process, are outlined in figure 3.

FIGURE 3

CPSA Procedures
CONSUMER PRODUCT SAFETY STANDARDS
specified in section 7 (b) and
elsewhere CPSA PL 92-573; 10/27/72



CPSA
continued



There are several important features of the procedures specified for CPSC rule-making. Most notable is the fact that the CPSC can take little independent action (an unusual situation for an 'independent' regulatory commission) and is virtually dependent upon organized interest groups to take the initiative to offer to write safety standards on proposed product hazards. Under the act the CPSC merely identifies which products should be considered for mandatory standards, and which hazards associated with these products are to be addressed. The writing of the standards is solicited to outside contractors (usually the industry to be regulated itself) through the offeror process (CPSC can undertake the development of the standards only if no qualified offeror is forthcoming). The CPSC merely acts as a broker in the regulatory process, assigning priorities and publishing notices.

The inflexibility and case-by-case nature of the regulatory instruments prescribed and the labyrinthine and debilitating nature of the regulatory procedures specified leave the CPSC with a great amount of regulatory authority but no way to exercise it. Indeed, as previously mentioned, in its first 5 years the CPSC issued only 3 mandatory safety standards: for swimming pool slides, architectural glass, and matchbook covers. Another of the effects of the procedural guidelines mandated by Congress has been to expand the length of time necessary for the development of safety standards. Although by law an offeror was to take only 330 days to develop a proposed standard, the average for the 3 standards developed prior to 1978 was 834 days.[1]

Neither the number of standards developed nor the length of time to develop them is indicative of regulatory success.

The evidence relating the legislative choice of regulatory form to characteristics of the interest group environment for the case of the Consumer Product Safety Act clearly favors the operational hypotheses of chapter 5 and thus supports the model developed in Chapter 3. The CPSC's broad substantive authority together with its extensive regulatory procedural requirements, as detailed in section 7, along with the specification that command and control instruments be employed to regulate the production, and that informational instruments be employed to regulate the sale of consumer goods strongly support the operational hypotheses of chapter 5 as outlined in Table 3.

The inability of the CPSC to fulfill its legislative mandate has led to an unrelenting stream of criticism for the Commission by consumer groups, business groups, Congress and the OMB. But the procedures specified for rule-making in Section 7 guarantee the CPSC will not soon improve upon its dismal record.

Footnotes to Chapter 7

1. From the Federal Regulatory Directory 1981-1982.

Chapter 8. The Federal Food, Drug and Cosmetic Act.

8.1 Introduction

Federal regulation of food quality and drugs has spanned nearly eight decades and has its roots in the Progressive Movement. Each of the major pieces of legislation pertaining to the regulation of food and drugs were enacted well before the health and safety acts examined in the previous chapters; the Food and Drug Administration's primary authority with respect to the regulation of new drugs was drafted and enacted during the New Deal era. Regulation of this period, such as the Civil Aeronautics Act of 1938 to be discussed in chapter 9, was principally economic in scope. the implementation of the food and drug act suffers from maladies similar to those evidenced in TOSCA and in the CPSA. The similarities in scope, form, and substance of health and safety acts as such TOSCA and the FFDCA, passed nearly 40 years apart, offers compelling evidence for the model and hypotheses developed earlier.

8.2 The History of the Federal Food, Drug and Cosmetic Act

Federal jurisdiction over foods, drugs and cosmetics rests on three major pieces of legislation: the Pure Food and Drugs Act of 1906; the Federal Food, Drug and Cosmetic Act of 1938; and the Kefauver Drug Amendments of 1962.

The Progressive Era reform movement responsible for the 1906

act was orchestrated and championed by the head of the Department of Agriculture's Bureau of Chemistry, Harvey W. Wiley. As early as 1897 Wiley was lobbying Congress, arranging hearings and soliciting grass-roots support for the regulation of foods and patent medicines. In support of his cause, Wiley worked in close association with many of the popular muckraking journalists of the time, providing them information, and using the popular response to such journalism as leverage in the legislative process.

A wide assortment of interest groups, borne to this era, led the fight for the act of 1906. Professional associations such as the American Medical Association and the American Pharmaceutical Association joined with progressive reform groups, including the Grange and Consumer's Union, and with a variety of women's organizations, such as the National League of Women Voters, to lobby for the passage of the food and drug legislation.[1] The opposition to the act was similarly diverse in membership. Grocers, bakers, confectioners, retail druggists, packers, advertisers, and farmers each opposed certain provisions of the act. On the forefront of the opposition, however, were the patent medicine manufacturers represented by the Proprietary Association. The Proprietary Association would later re-emerge as FDA's nemesis in the struggle for the 1938 act.

TABLE 5

Major Lobbying Groups: FFDCA

Major Business Lobbyist Organizations	Major Health Lobbyist Organizations
Advertising Federation of America	American Association of Colleges of Pharmacy
American Bakers' Association	American Association of University Women
American Drug Manufacturers Association	American Home Economics Association
American League of Medical Freedom	American Medical Association
American Newspaper Publishers Association	American Pharmaceutical Association
American Pharmaceutical Manufacturers	Consumers' Research
Associated Grocery Manufacturers of America	Consumers Union
Associated Manufacturers of Toilet Articles	General Federation of Women's Clubs
Association of National Advertisers	National Association of Boards of Pharmacy
Drug Institute of America	National Congress of the Parent-Teachers Association
Heinz Company	National League of Women Voters
Institute of Medicine Manufacturers	People's Lobby
International Apple Association	Pure Food League
Joint Committee for Sound and Democratic Consumer Legislation	Grange
National Advisory Council of Consumers and Producers	
National Association of Retail Druggists	
National Broadcasting Company	
National Drug Trade Conference	
National Liberties Association	
National Publishers Association	
National Wholesale Druggists Association	
Proprietary Association	
United Medicine Manufacturers of America	

The 1906 act was primarily concerned with the misbranding of drug products and the adulteration of packaged foods. Indeed, the Food and Drug Administration's authority over drugs extended only so far as to insure that the labelling of drugs not be "false and fraudulent." FDA was granted no authority to regulate the manufacture or distribution of drug products. Furthermore, FDA's authority with respect to the labelling of drugs did not extend to other promotional materials. Thus, the deceptive promotion and production of worthless and often hazardous drugs remained largely unchecked.

By 1933 the serious shortcomings of the 1906 act had long been in evidence. The law did not cover cosmetics, a new and booming business. It did not provide for adequate control over patent medicines. It was vague and ambiguous in its language regarding the adulteration of food, and did not provide for remedies against false advertising. At this time Walter Campbell, Chief of the Food and Drug Administration and Rexford Tugwell, the new Assistant Secretary of Agriculture, decided to seek revisions to the old food and drug law. However, food and drug legislation was still a political hot potato. No active congressional sponsor of the bill was readily forthcoming. As would be the case almost 40 years later for TOSCA, a man of strong conviction, Senator Royal Copeland, was needed to come forward and volunteer to take sponsorship of the bill. The ensuing legislative debate would occupy much of his time during the last six years of his life.

The groups lobbying over the New Deal legislation were much

the same as those involved in the 1906 legislation. As at the turn of the century, muckraking exposes, such as Arthur Kallet's and F.J. Schlink's 100,000,000 Guinea Pigs[2], turned the stomachs of millions of readers and generated some amount of public awareness for the problems associated with the 1906 act. But the FDA did not underestimate the degree of public apathy for the new legislation: Apathy was the keyword, not only at the grass-roots level but also in the halls of Congress. Until Copeland stepped forward to take sponsorship of the Tugwell bill in May, 1933, the new legislation drafted in the FDA was a lonely orphan. With the strong trade associations lobbying hard against the legislation, prospects for enactment appeared bleak to Copeland and his compatriots at FDA.

Copeland introduced the Tugwell bill to the Senate in June, 1933. The new bill was much stronger than the 1906 act, and proposed greatly expanded government control of patent medicines. New labelling requirements, calling for the disclosure of all medicinal ingredients and directions for use, were coupled with authority to regulate advertising. The Tugwell bill also granted the FDA the authority to regulate and/or prohibit the manufacture and distribution of drugs and allowed for FDA inspection of drug manufacturing facilities.

The food industry also came in for new regulation, as the Tugwell bill required that

> (food) labels must disclose all ingredients in order of predominance by weight. The government would gain the right to establish identity standards for quality and fill of containers.

> A product was misbranded if it failed to meet those standards. The definition of adulteration was broadened to apply to products containing poisonous substances in excess of tolerance levels set by the Secretary of Agriculture. Inspectors were authorized to make checks of establishments in which food, as well as drugs and cosmetics, was manufactured or held. Where this "privilege" was denied, injunctions might be sought by the government to deny a company the right to engage in interstate shipment of goods. Provision was further made for a system of voluntary factory inspection services at the owner's expense, but under such conditions that manufacturers would almost be forced to accept it.[3]

As expected, the food industry was not pleased by the new Tugwell bill. The mildest reaction came from the food industry, which though hardly happy with the Tugwell bill, concentrated on severing the food provisions from the remainder of the act. Many in agriculture and food processing agreed with the need (naturally enough) for stricter regulation of the drug and cosmetic industry, as long as the stricter provisions did not apply to food products.

In the long fight for the 1906 law support came from articles in popular magazines and newspapers. But in the midst of the Great Depression, such was not to be the case for the Tugwell bill. The bill was attacked as being anti-recovery and anti-NRA, and never received the full support of either the public or President Roosevelt. The Tugwell bill died a quiet and expected death in 1933, never reaching the floor for debate. The early efforts of women's and consumer groups, though supportive, were not terribly effective. Without strong public support the trade associations could quietly keep the bill pigeonholed in committee.

In January, 1934, however, Royal Copeland introduced a new, revised bill to the Senate (S2000). The Senate's response was

underwhelming. Copeland redrafted the bill and introduced the new draft one month later (S2800). This new Copeland bill won tacit non-disapproval from periodical publishers and the food packers, as the concessions made by Copeland in S2800 mollified their most strenuous objections. The proprietary industry, though, was more than able to meet the challenge represented by the new Copeland draft. The leadership of Congress in the 1930's was no less adept in the use of congressional procedures to stifle new controversial legislation than Harley O. Staggers was to be forty years later. A number of congressmen brought to the attention of President Roosevelt and Secretary of Agriculture Henry Wallace that the FDA's travelling chamber of horrors was in violation of the Deficiency Appropriations Act of 1919 (even though the act had not been so enforced for the previous 14 years) as the Congress had not appropriated funds for the exhibit. Wallace, in response, ordered Tugwell to keep the exhibit on display only at the FDA in Washington.

FDA had employed the chamber of horrors to great advantage, "educating" the public in the problems of the 1906 act. With the sidelining of the travelling show FDA was relegated to be more or less a spectator for much of the rest of the congressional debate. The FDA had provided the major support for the new food and drug legislation, and thus without either the FDA or a strong undercurrent of popular support, Copeland was left to his own resources.

Several new offerings, in competition to the Copeland bill, were proposed by each side of the debate. Most notable was the

McCarran-Jenckes bill in the House, which was

> in many ways not unlike Copeland's offering. The "ringer" was that enforcement was highly complicated and provisions existed for an almost endless round of appeals.[4]

The trades sought, in the McCarran-Jenckes bill, to bury the FDA under a legislated mountain of red tape. The opponents to a strong food and drug bill recognized early that the impact of such ponderous and exaggerated decision-making requirements would successfully prohibit the FDA from fulfilling any legislative mandate. Again in 1934, the decision-making institutions, designed to fulfill the needs of the legislator, did so, by again squelching the food and drug legislation quietly in committee.

Copeland introduced another revised version of the act in January, 1935. He had again made concessions in his draft to the trades:

> Previous provisions for voluntary factory inspection were gone. The list of diseases for which advertising claims were prohibited had been shortened. Labelling demands on proprietary medicines were more lenient. No longer did the labels have to bear the designation as pallative rather than cure. Manufacturers could file formulas with the Secretary of Agriculture and thereby escape the label disclosure of contents. By court order FDA could be restricted in misbranding seizures to three actions on a single product. The Senator had also resisted consumer pressure to reestablish multiple grading standards for food products.[5]

The new proposal also contained many of the extensive procedural specifications of the McCarran-Jenckes bill. It thus had the effect of mollifying still more of the opposition. Advertisers, cosmetic manufacturers, druggists and grocers were now lukewarm to the proposed legislation. Each new draft, by making concessions to organized

groups with access in the congressional decision structure, had decreased the size of the opposing coalition. Indeed, the decision institutions of Congress were fashioning a compromise path for the legislation which, in three years time, would lead to eventual passage.

A number of differing acts, each different from the other and also vastly dissimilar to Copeland's bill, were introduced to the House in 1935. The strategy, as we have seen many times before, was to cause a rift so large between the House and Senate versions that compromise could not be reached.

In March, 1935 the bill was reported out of the Senate committee, a milestone for Copeland. However, the new found tacit non-disapproval by the now numerous groups lukewarm to the new bill did not translate into much lobbying strength or support in Congress. To make matters worse, the militant consumer organizations were now divided over their support of the bill, some contending that it was now too weak. Neither strong grass-roots support nor, not surprisingly, support for the bill on the floor was to be found. The trades then attempted an end run, trying to strip the FDA of its advertising authority under the proposed act by instead granting such authority to the Federal Trade Commission. Jurisdictional fights are in fact usually fights over policy; here the much beleagured FTC was seen by the trades as being more responsive to industry preferences then was "Terrible Rex" (Tugwell) and the FDA. In fact the FDA did eventually lose its authority over advertising entirely.

When finally brought to the floor in April, 1935 the Copeland bill was subjected to a series of weakening amendments. Majority leader Joe Robinson, in order to prevent the stripping of the advertising control provisions entirely, brought up the District of Columbia appropriations bill. Having right of way on the floor, it thus allowed a still fairly intact Copeland bill (S5) to return to the calendar later. Including a provision which greatly weakened FDA's power to seize imminently dangerous products, the Senate bill reached the floor in late May and was passed without opposition. The indefatigable Copeland had won his first victory.

With more than a year to go before adjournment the attention over a new food and drug bill turned to the House. There the bill languished in committee for over ten months while each side sought unsuccessfully to solicit the support of Roosevelt and the public. The trade, however, was by now divided over the bill, as many felt the new Copeland bill was now tolerable and feared that state and local action on the matter might be forthcoming. With women's organizations pressing hard and with a new corp of journalists raking of the muck, there was indeed much in terms of local action for the trades to fear. During 1935 and 1936, 92 laws pertaining to drugs were passed in 39 states. The handwriting was on the wall. State legislatures, wherein consumer groups and women's organizations had more immediate influence, were ready to develop comprehensive legislation governing the whole drug field within each state. Many nostrum manufacturers were ready to accept federal regulation.

As a result, while the bill sat in the House committee Virgil Chapman, the bill's House sponsor, sought and received several amendments which served to strengthen the House version. However, as the bill went to the floor in June, 1936, the consumer groups, now jubilant over their newfound power, were divided on passage. Many did not want the much weakened Copeland bill to become law and were instead looking to the next year in the belief that a stronger bill could emerge in 1937.

The Chapman bill eventually passed the House and compromises were struck in conference between the Copeland and Chapman provisions. The major compromise was to authorize the FDA to regulate all advertising matter relative to health and to authorize material related to food and cosmetics to be regulated by the FTC. Few groups on either side of the issue were pleased by this arrangement, however, and the House voted down the compromise. Again, no food and drug legislation would be forthcoming in this session of Congress.

Upon the heels of this defeat both Copeland and Chapman introduced similar new proposals of the food and drug legislation (S5 and HR300) respectively.

> Reaction of those concerned with food and drug matters centered immediately on three points. First was the advertising provisions. Here there was a difference between S. 5 and H.R 300. Both placed regulatory powers with FDA, but Copeland's bill stipulated that control would be handled by injunction while Chapman's version provided for civil and criminal judicial penalties. The second point of interest was seizure provisions. H.R. 300 allowed multiple seizure where goods were deemed "imminently dangerous to heath" and so perpetuated the old Bailey-Copeland compromise. In S. 5 there had been a modification. The word "imminently" had been dropped from the

> phrase. The third point of concern was the variation clause in both bills which allowed strength variations from official standards. Proprietary goods were not subject to adulteration charges so long as strength conformed to any standard printed on the label. For both foods and drugs, however, full disclosure of formulas was demanded.[6]

With the propitious aid of President Roosevelt and Majority Leader Robinson, the new Copeland bill quickly passed the Senate in March, 1937, and was sent to the House. In the House action was as swift. With the Copeland-Chapman bill still bottled up in the House Commerce Committee as summer faded into autumn, disturbing revelations of the nation's worst drug disaster emerged to give new emotion to the debate. Elixir Sulfanilamide-Massengill had caused 73 painful and prolonged deaths by October, 1937. The total reached 107 before the drug could be completely recalled. Public attention thus focused upon the House, where the American version of representation had served to defeat the drug legislation for the last 4 years.

> It was the function of Royal Copeland and his House colleague Virgil Chapman, however, to bring the elixir disaster in an official way to the floor of their respective chambers. On November 16 and 17 the two legislators pressed resolutions calling for a report to the Congress on the drug tragedy by the Department of Agriculture. The resolutions passed each house unanimously. The USDA report was presented to the Congress on November 26. In thirty-four pages of text and documents it laid bare the whole shocking story, from the failure of Massengill to test his elixir for toxicity to the technicality under which the FDA was able to enter the case. By the time of the report the women's organizations and other proponents of a new drug law were publicly emphasizing the fact that even if S. 5 had passed into law the sulfanilamide tragedy would still have taken place. S. 5 had no provisions to control new drugs entering the market. Equally shocking, though less publicized, was the fact that the original 1933 bill, S. 1944, would have prevented the disaster.[7]

By December, 1937 Copeland and Chapman introduced new, stronger bills, S3073 and HR9341, to the Congress. Each bill contained drug certification provisions, a requirement whereby new drugs must be certified as safe by the FDA before marketing would be allowed to proceed.

The patent medicine lobbists fought diligently to get concessions from Copeland and Chapman and managed to strike a few compromises. The new bill then breezed to passage in the Senate. However, even in the midst of the Elixir Sulfanilamide episode the House failed to pass the Chapman bill in early spring, 1938. Opponents of the bill representing the interests of the trades, such as Congressman Clarence Lea, Chairman of the House Commerce Committee, still sought to vest all authority to regulate advertising in the FTC. Indeed, such eventually was the case, as the House moved to adopt the Lea measure in March.

With the advertising issue resolved compromises concerning judicial review were easily struck and the Federal Food, Drug and Cosmetics Act emerged from the nether world of congressional politics to be signed into law in June, 1938.

8.2 The 1962 Amendments

Senator Estes Kefauver, after conducting hearings before his Subcommitte on Antitrust and Monopoly of the Senate Judiciary Committee, drafted amendments to the FFDCA designed to lower drug prices and improve drug safety, efficacy, and advertising. The

provisions aimed at lowering drug prices by reducing the length of patent protection for drugs were vociferously opposed by the industry, the AMA, and President Kennedy, and so were quickly and quietly deleted. The efficacy provisions aimed at formally authorizing the FDA to carry out practices that had been in effect for the previous two decades however, found little opposition.

Kefauver introduced the bill in April, 1961 and by skillful exploitation of the thalidomide disaster he managed the efficacy amendments to enactment by October, 1962.

8.3 The Federal Food, Drug and Cosmetic Act

From the operational hypothesis concerning health and safety regulation we would expect, under the interest group environment identified in the case history, that Congress would grant the FDA broad substantive authority and narrowly prescribed procedural authority in the FFDCA. Further, we would expect the FDA to be mandated command and control instruments for implementation of regulations at the production stages and incentive-based or informational instruments for the implementation of regulations at other stages of the regulated firm's activities. In this section we will examine this act to see how well our expectations are borne out.

The Federal Food, Drug and Cosmetic Act, as amended, provides the Food and Drug Administration and the Secretary of Health, Education and Welfare with broad discretionary authority over the regulation of foods, food additives, pesticide residues, drugs,

devices, animal drugs and cosmetics. The authority of the FDA, beyond its authority to prohibit the adulteration and misbranding of foods, drugs and cosmetics is outlined in Table 6.

TABLE 6

Summary of the
Regulatory Mandate of the
Federal Food, Drug and Cosmetic Act

1.	(Sec. 401)	Establish common name for food products.
2.	(Sec. 401)	Establish a standard of identity for food products.
3.	(Sec. 401)	Establish standards of quality for foods.
4.	(Sec. 401)	Establish standards of fill of container.
5.	(Sec. 406)	Establish regulations limiting the quantity of poisonous or deleterious substances in food.
6.	(Sec. 408)	Establish tolerance levels for pesticides in or on raw agricultural commodities.
7.	(Sec. 409)	Establish regulations limiting the quantity of food additives in foods.
8.	(Sec. 409)	Establish regulations limiting the varities of foods in which a food additive may be used.
9.	(Sec. 409)	Set the manner in which a food additive may be added to or used in or on foods.
10.	(Sec. 409)	Establish directions or other labeling or packaging requirements for food additives.
11.	(Sec. 505)	Certify new drugs as safe for use.
12.	(Sec. 506)	Certify batches of drugs containing insulin as safe for use.
13.	(Sec. 507)	Certify batches of drugs containing antibiotics as safe for use.
14.	(Sec. 508)	Designate an official name for any drug.
15.	(Sec. 512)	Certify new animal drugs as safe for use.
16.	(Sec. 706)	Establish tolerance limitations for color additives in foods, drugs or cosmetics.

TABLE 6
continued

17. (Sec. 706) Establish specifications as to the manner in which a color additive may be added.

18. (Sec. 706) Establish directions or other labeling or packaging requirements for a color additive.

As Table 6 indicates, FDA can establish standards of quality and fill of container for food products, and can establish regulations limiting the quantity of poisonous or deleterious substances in food. Thus the FDA can establish 'filth levels' for hot dogs, 'rodent excrement levels' for flour, and mercury levels for swordfish. FDA can similarly regulate the levels of pesticides in raw agricultural commodities, and the quantity of food additives, such as cyclemates, in foods.

New drugs must be certified as safe and efficacious for use prior to manufacture, as must new animal drugs. FDA further has the mandated authority to regulate color additives, such as red dye number 2.

With the exception of section 407, the authority of the FDA over foods, drugs and cosmetics is limited to the regulation of the production activities of firms producing such commodities, having had its authority over marketing transferred to the FTC prior to the 1938 act. The broad discretionary authority the FDA has under the statute to regulate the production of foods, drugs, and cosmetics is also outlined in Table 6. It is noteworthy that the instruments explicitly mandated to the FDA to implement this authority are largely varieties of command and control mechanisms (certification, tolerance levels and limits, specifications, quantity limits). The authority outlined in items 10 and 18, however is explicitly informational.

Interestingly, section 407 explicitly mandates FDA's authority over, of all things, the sale of oleomargine, largely through

informational mechanisms,

> Section 407
>
> (b) No person shall sell, or offer for sale, colored oleomargarine or colored margarine unless -- (1) such oleomargarine or margarine is packaged, (2) the new weight of the contents of any package sold in a retail establishment is one pound or less, (3) there appears on the label of the package (A) the word "oleomargarine" or "margarine" in type or lettering at least as large as any other type or lettering on such label, and (B) a full and accurate statement of all the ingredients contained in such oleomargarine, or margarine, and (4) each part of the contents of the package is contained in a wrapper which bears the word "oleomargarine" or "margarine" in type or lettering not smaller than 20 point type...
>
> (c) No person shall possess in a form ready for serving colored oleomargarine or colored margarine at a pubic eating place unless a notice that oleomargarine or margarine is served is displayed prominently and conspicuously in such place and in such manner as to render it to likely to be read and understood by the ordinary individual being served in such eating place or is printed or is otherwise set forth on the menu in type or lettering not smaller than that normally used to designate the serving of other food items. No person shall serve colored oleomargarine or colored margarine at a public eating place, whether or not any charge is made therefor, unless (1) each separate serving bears or is accompanied by labeling identifying it as oleomargarine or margarine, or (2) each separate serving thereof is triangular in shape.

However, this broad discretionary authority over the production of foods, drugs and cosmetics, as in the case of the Toxic Substances Control Act and the Consumer Product Safety Act, is coupled with a great amount of procedural and due process specificity. The complex and convoluted procedures specified for the regulation of pesticide residues, food additives, and new drugs are readily evident in figures 4, 5 and 6, and need little elaboration. That the FDA is indeed encumbered by these regulatory procedures and due process requirements should, by now, come as no surprise.

Figure 4

FFDCA PROCEDURES FOR
ESTABLISHING TOLERANCE LIMITS FOR
PESTICIDES

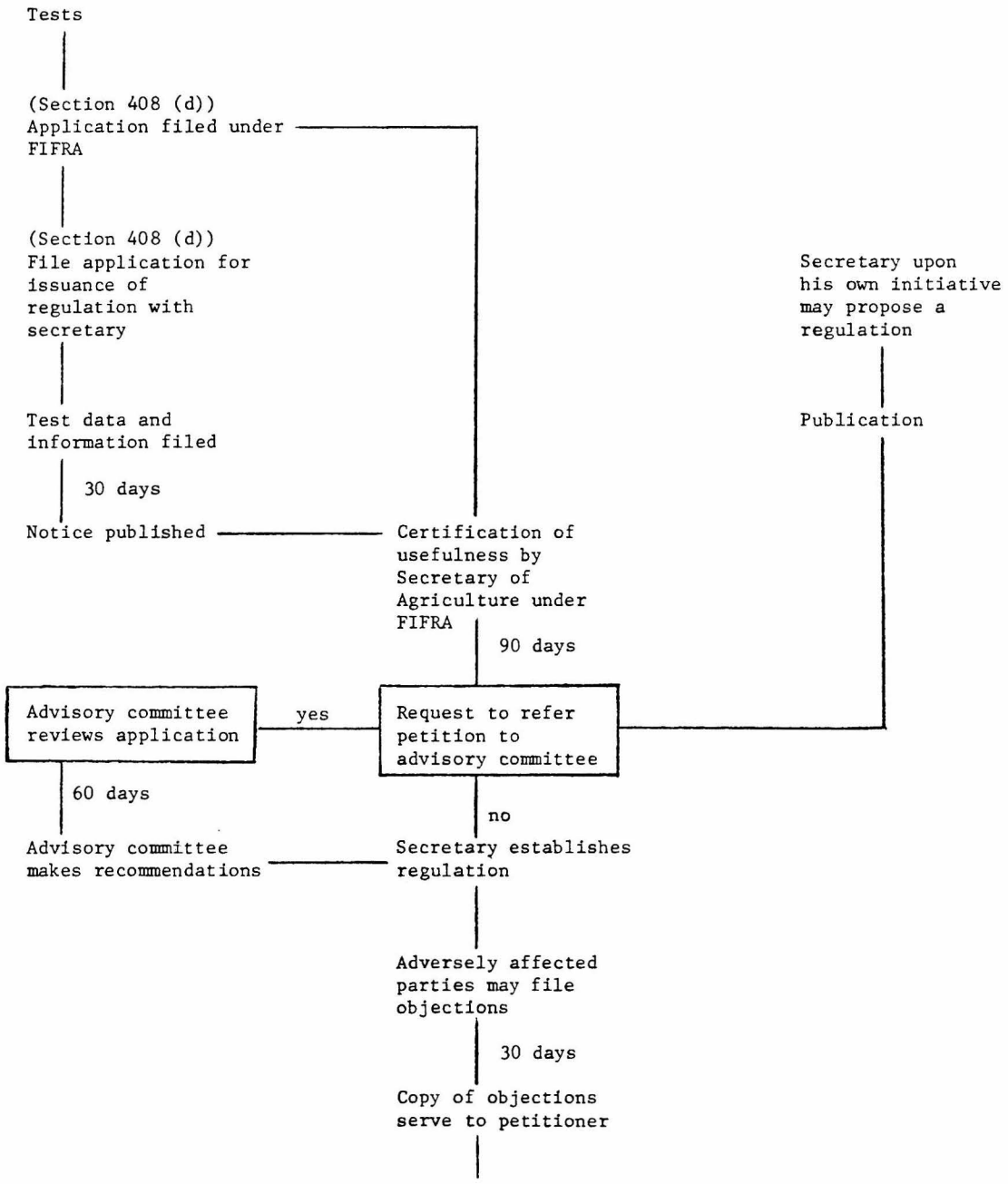


Figure 4
continued

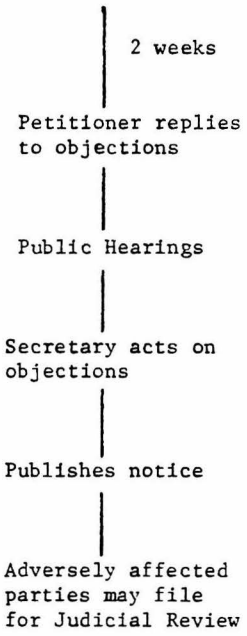


Figure 5

FFDCA PROCEDURES FOR
REGULATION OF FOOD ADDITIVES

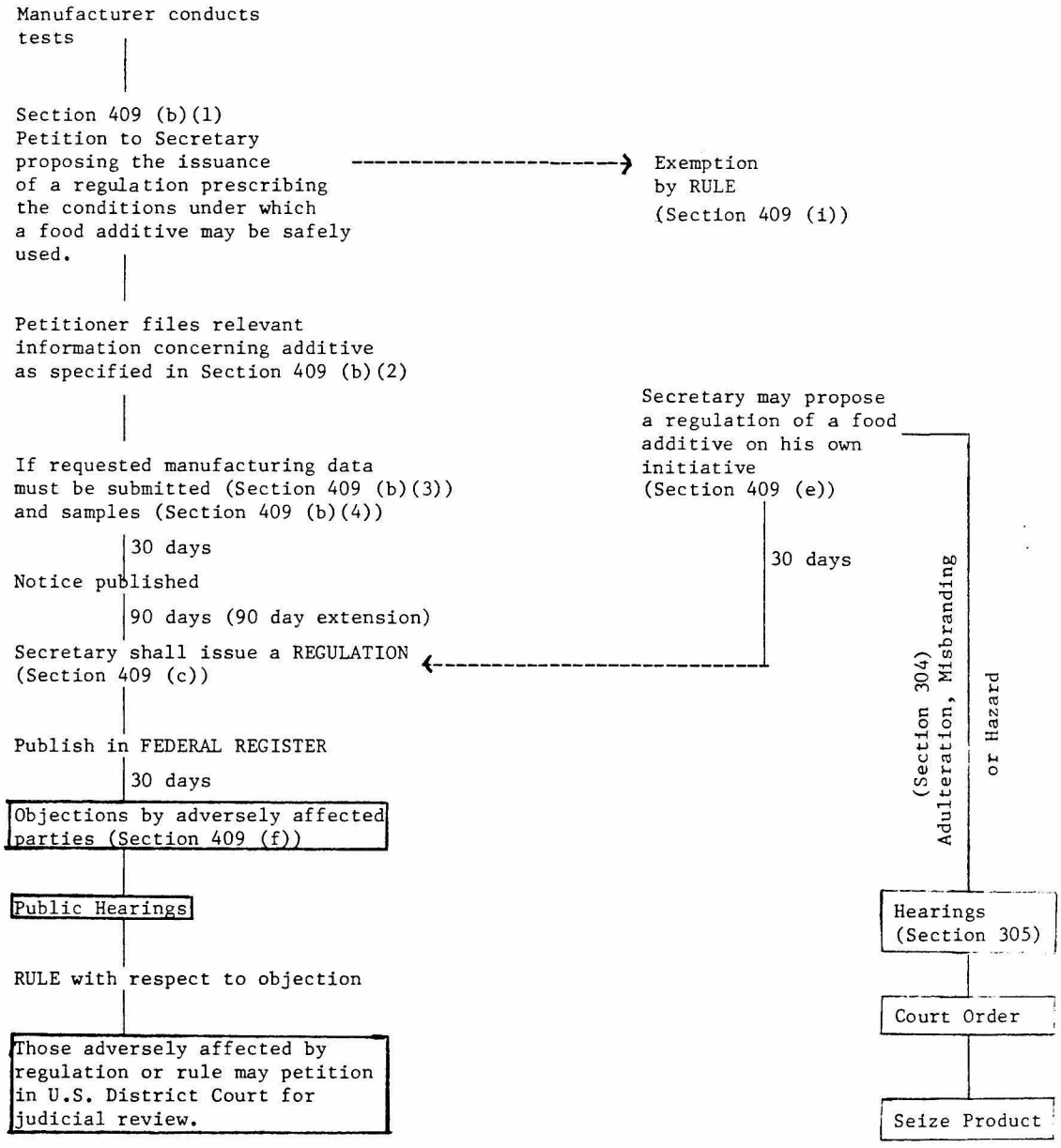
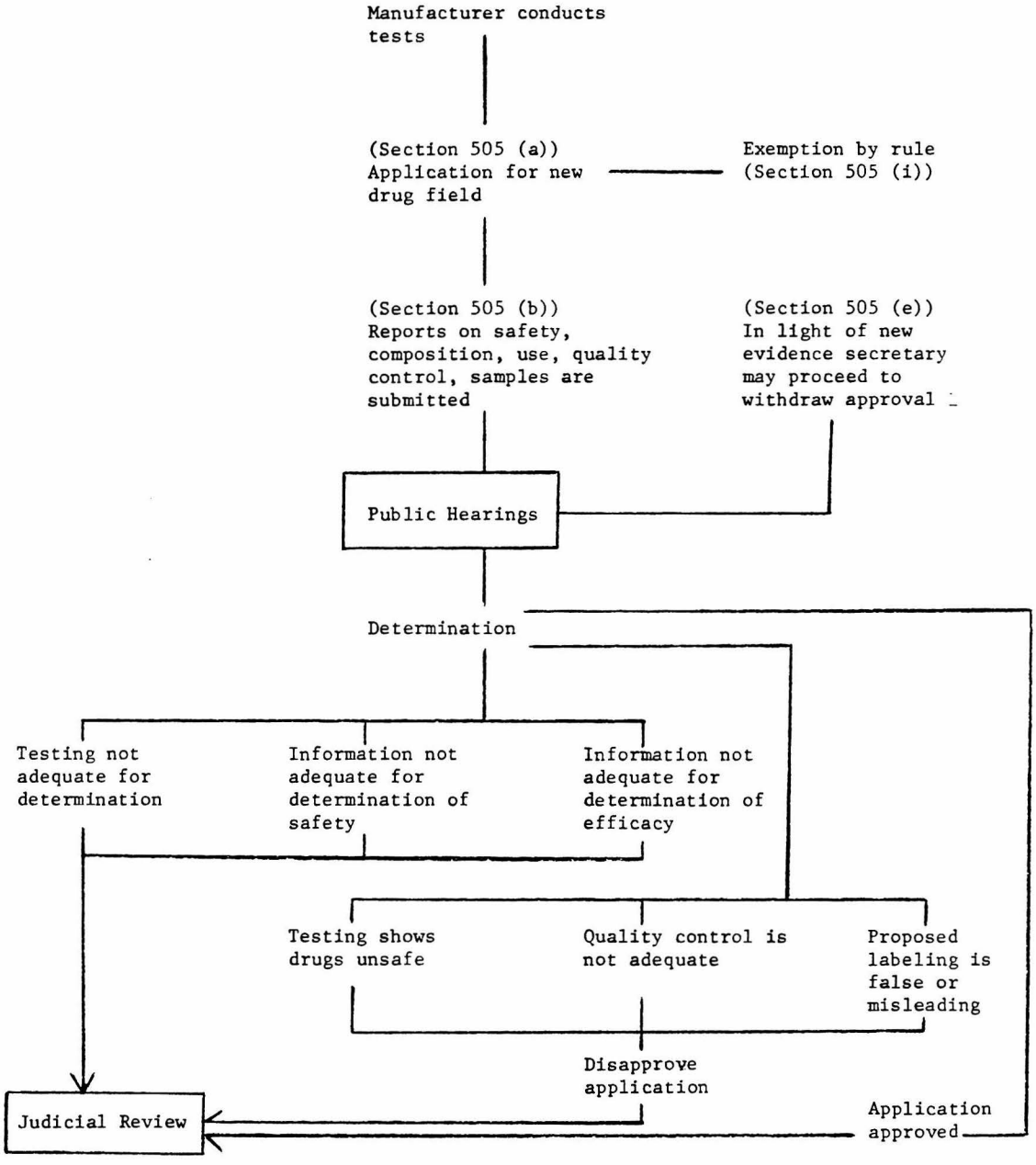


Figure 6

FFDCA PROCEDURES FOR
REGULATION OF NEW DRUGS



However, the failure to regulate in the case of the Federal Food, Drug and Cosmetic Act has had different consequences than similar failures under the Toxic Substances Control Act or the Consumer Product Safety. In the case of TOSCA the inelastic regulatory instruments and labyrinthine regulatory procedures serve to restrict EPA's regulatory activities; as a result few chemicals of the hundreds of thousands developed each year are subject to regulation. On the other hand, a similar set of regulatory instruments and procedures for the regulation of new drugs under the FFDCA, though similarly restricting the FDA's regulatory activities, have a much different market outcome. Without the test rule requirements and explicit time limits for action as specified for EPA decision-making in TOSCA, the FDA can "sit on" new drug applications indefinitely without taking action, and thus few new drugs are certified for production and use.

Society is thus forced to forgo the potential benefits associated with many of these new drugs which cannot find their way out of the legislated FDA procedural maze. Similarly, the catacombs of EPA's legislated regulatory procedures insure that few of the potentially dangerous chemicals developed each year are subject to EPA regulation. Neither situation is an optimum as each presents a relative all-or-nothing corner solution to the introduction of new products.

The evidence presented in this section as to the form of the Federal Food, Drug and Cosmetic Act fits well with the expectations of

the operational hypotheses of chapter 5. The inflexible regulatory instruments and regulatory procedures of the Federal Food, Drug and Cosmetic Act encumber the FDA in a similar fashion to the encumberance of EPA under TOSCA and the CPSC under the CPSA. Thus, though enacted during the heyday of economic regulatory activity the FFDCA suffers maladies similar to the present day environmental, health and safety legislations. That the model of regulatory choice predicted the form of health and safety regulation across two generations of American regulatory history is indeed impressive.

Footnotes to Chapter 8

1. Cooper (1966) in analyzing the structure of the pharmaceutical industries of England, the United States and several other countries gave evidence to the effect that the structure of the industry is characterized by a wide assortment of firms of varying sizes and profitability producing a wide range of products, and that the market positions of such firms is relatively unstable. As was the case for the chemical industry "in the U.S.A ... the (drug) firms number over 1000. The Bureau of the Census in 1958 found the top four firms held 27 per cent of the market, the top eight 45 per cent, and the top fifty 87 per cent" (pp. 62-63), again indicating a wide diversity of production capabilities and technologies.

2. Kallet and Schlink (1933).

3. Jackson (1970) p. 28.

4. ibid p. 68.

5. ibid p. 76.

6. ibid p. 135.

7. ibid p. 167.

Chapter 9. The Civil Aeronautics Act

9.1 Introduction

The Civil Aeronautics Act of 1938 established the Civil Aeronautics Authority and provided the Authority with jurisdiction over the economic and safety regulation of the airline industry. The Federal Aviation Act of 1958 continued the functions of the Civil Aeronautics Board (the successor to the Authority), but created a seperate agency, the Federal Aviation Agency, to administer and establish safety standards for airline manufacture and operation.

The Civil Aeronautics Act was drafted and enacted during the same period of time as was the Federal Food, Drug and Cosmetic Act and fell under the jurisdiction of the same congressional committees. The form and substance of the act, however, differs in a systematic fashion from that of the FFDCA. An examination of the act will serve to underscore these differences.

In this examination we will employ evidence from the legislative history to consider the operational hypotheses as to the regulatory form of economic legislation. Unlike the regulatory forms expected and witnessed in the previous 3 case studies, we would expect Congress to delegate narrow substantive and broad procedural authority to the administering agency, and to specify command and control mechanisms for the implementation of such authority under conditions of uniform interest group preferences.

9.2 Legislative History

The Civil Aeronautics Act of 1938 had its roots in several prior acts, e.g., the Air Commerce Act of 1926, which provided the Secretary of Commerce authority to regulate air safety, and the Air Mail Act of 1925, which provided the Postmaster General the authority to let contracts to private companies for the carrying of mail. First proposed in 1934, the Civil Aeronautics Act was drafted to aid the development of air transportation through entry restrictions and mail subsidies and for the development of federal air safety standards. The legislative history of the act is unique in that most of the major controversies arose on matters of administrative organization. Indeed, the debate over the bill centered largely around who was to have jurisdiction over air traffic; the Interstate Commerce Commission, the Department of Commerce, or a new commission.

The major source of opposition to the bill was the Department of Commerce and the Postmaster General, who disfavored provisions for the establishment of an independent commission for the regulation of air traffic. Proponents of the bill, largely air carriers and airplane manufacturers (though both industries were in their infancy), worked unopposed with congressional sponsors in seeking the New Deal for the recovery of the airlines.

The bill was signed into law in June 23, 1938, establishing (temporarily) an independent commission to oversee the regulation of air traffic. After 4 years of debate and study the bill was passed quietly in the shadow of the debate on the food and drug legislation.

The development of the bill and its subsequent oversight reflects the coming of age of the congressional subgovernmental triangle. The bill originated in the bureaucracy and was designed to serve its purposes. It provided subsidies to the airlines through entry restrictions. It offerred congressmen on the specific oversight committees in Congress expanded influence over the policy in this area. In short, no one was left wanting.

9.3 The Federal Aviation Act

The Federal Aviation Act of 1958 continued the existence and the economic regulatory functions of the Civil Aeronautics Board. In the act the Civil Aeronautics Board (CAB) was granted authority to issue certificates of public convenience and necessity (i.e. to restrict entry), to issue permits to foreign air carriers, to approve tariffs (i.e. to set prices), to fix minimum mail loads, to establish rates of return for the transportation of mail, and to approve airline mergers.

Thus, unlike the authority granted the health and safety agencies, wherein each agency has broad regulatory authority over a wide range of activities for a great many industries and segments of society, the CAB was granted a fairly narrow authority to regulate the economic activities of a specific industry -- the airlines. The authority of the CAB to carry out its functions is granted largely in Title IV through a variety of command and control mechanisms. Section 401 specifies the CAB's authority over entry,

> Section 401. (a) No air carrier shall engage in any air transportation unless there is in force a certificate issued by the Board authorizing such air carrier to engage in such transportation.

Section 403 defines the CAB's price setting powers,

> Section 403. (a) Every air carrier and every foreign air carrier shall file with the Board, and print, and keep open to public inspection, tariffs showing all rates, fares, and charges for air transportation between points served by it, and between points served by it and points served by any other air carrier or foreign air carrier when through service and through rates shall have been established, and showing to the extent required by regulations of the Board, all classifications, rules, regulations, practices, and services in connection with such air transportation. Tariffs shall be filed, posted, and published in such form and manner, and shall contain such information, as the Board shall by regulation prescribe; and the Board is empowered to reject any tariff so filed which is not consistent with this section and such regulations. Any tariff so rejected shall be void. The rates, fares, and charges shown in any tariff shall be stated in terms of lawful money of the United States, but such tariffs may also state rates, fares, and charges in terms of currencies other than lawful money of the United States, and may, in the case of foreign air transportation, contain such information as may be required under the laws of any country in or to which an air carrier or foreign air carrier is authorized to operate.

And, Section 406 describes the CAB's power to set prices for the transportation of mail,

> Section 406. (a) The Board is empowered and directed, upon its own initiative or upon petition of the Postmaster General or an air carrier, (1) to fix and determine from time to time, after notice and hearing, the fair and reasonable rates of compensation for the transportation of mail by aircraft, the facilities used and useful therefore, and the services connected therewith (including the transportation of mail by an air carrier by other means than aircraft whenever such transportation is incidental to the transportation of mail by aircraft or is made necessary by conditions of emergency arising from aircraft operation)...

The authority granted the CAB is very similar in scope and in language to the authority granted the Interstate Commerce Commission

in the Transportation Act of 1920 and the Motor Carriers Act of 1935. Such economic regulatory acts, born in similar interest group environments, share a similarity of purpose and statute. The specific authority vested in such acts enables Congress, in a quiet fashion, to deliver particularized benefits to specific industries, for the benefit of all concerned.

Unlike TOSCA, FFDCA, and CPSA, however, the Federal Aviation Act and the Civil Aeronautics Act specified few procedural guidelines for the exercise of the CAB's rule-making authority. This flexibility of procedure enabled the CAB to respond quickly and easily to applications filed by air carriers and to approve thousands of such applications each year. The striking difference in the level of procedural discretion granted the CAB under the act, in relation to the health and safety acts, is evidenced in the following subsections and in figure 7; for the application for a certificate of public convenience,

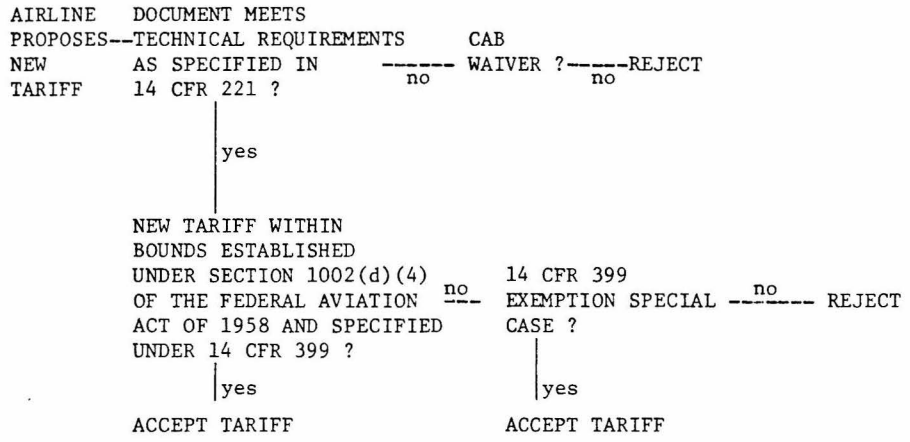
> Section 401. (b) Application for a certificate shall be made in writing to the Board and shall be so verified, shall be in such form and contain such information, and shall be accompanied by such proof of service upon such interested persons, as the Board shall by regulation require, (emphasis mine)

and for an application for a permit,

> Section 402 (c) Application for a permit shall be made in writing to the Board, shall be so verified, shall be in such form and contain such information, and shall be accompained by such proof of service upon such interested persons, as the Board shall by regulation require, (emphasis mine).

Figure 7

CAB Tariff Procedure



The simplicity of the regulatory procedures specified in the act for the establishment of airline tariffs is quite apparent in the above passage and in figure 7. The procedural requirements of the act largely specify that the application must be filed 30 days prior to enforcement and that the document must meet the technical requirements as determined by the Board. As developed in chapter 4, such procedural flexibility for the case of economic regulatory issues serves to enhance the influence of congressional oversight committee members in an area of policy that is vitally important to them. Another striking difference from the environmental, health, and safety programs is that the procedures, as established by the CAB, for the filing of tariff applications fill only 800 pages in the Code of Federal Regulations[1]. Furthermore, these specifications pertain almost entirely to the technical requirements of the application document.

The Civil Aeronautics Act and the Federal Aviation Act present examples of regulatory legislation which do not mandate rigid and extensive regulatory procedures for rule-making. The history and form of these economic regulatory acts, though vastly different from the three environmental, health and safety acts examined previously, is quite consistent with the model and hypotheses of earlier chapters. The quiet interest group environment described in the legislative history, together with the narrow substantive authority, broad procedural discretion, and command and control regulatory mechanisms specified in the act support the operational hypotheses of chapter 5.

Furthermore, these characteristics serve to enhance the ability of the CAB to carry out its mandated regulatory authority and insure a smoothly functioning subgovernmental triangle in this policy area. The economic regulation of the airlines is allowed to proceed quietly and unencumbered to the mutual benefit of the airlines, the bureaucracy and, of course, the Congress.

Footnotes to Chapter 9

1. Section 14 of the CFR.

Chapter 10. Conclusion.

10.1 Introduction

We have developed a model of regulatory choice and have derived a set of refutable hypotheses which are well supported by the empirical evidence of the last 4 chapters. In this last chapter we will employ evidence from the legislative case studies, together with pieces of evidence from a number of other regulatory programs, to consider an alternative hypothesis to the model of regulatory choice developed herein. We will then summarize and apply the evidence obtained from the legislative case studies (and other sources) in an overall consideration of the model of regulatory choice.

10.2 Alternative Hypothesis

In chapter 2 we discussed a number of theories of regulatory choice. Few of the theories discussed therein addressed themselves to the choice of regulatory form. Two approaches to the choice of regulatory form were identified: the public choice approach (of which this study is one) and the incrementalist approach. In this section we will re-evaluate the incrementalist approach.

In examining EPA's implementation of the Clean Air Act amendments, Ackerman and Hassler (1981) tender an incrementalist theory of congressional regulatory choice.[1] The incrementalist theory, in its most general form, seeks to explain the differences

between the scope, form, and the targets of regulatory legislation enacted in the 1930's and the 1970's.

As have several others, Ackerman and Hassler observed that the regulatory legislation born of the New Deal, centering largely upon the regulation of market activities, possessed simple, yet vague, regulatory mandates and granted broad procedural discretion to the independent regulatory agencies established. In contrast, the regulatory legislation of the 1970's concerned more generally with non-market activities, was exceedingly complex, providing very specific policy mandates and extensive procedural requirements for the exercise of the authority granted. Incrementalist theory suggests that the differences in regulatory form between the 1930's and 1970's is due, naturally enough, to the incremental approach Congress pursues in choosing regulatory form. Indeed, Ackerman and Hassler posit that Congress, upon observing the defects inherent in the New Deal agencies, sought, when establishing the regulatory agencies of the 1970's, to prescribe against such defects by specifically legislating detailed and specific regulatory authority.

That the incrementalist theory enjoys wide acceptance is understandable. However, it will be suggested here that the stylized facts which the incrementalist theory sought to explain do not reflect the actual history of American regulation.

Indeed, as we have seen in the previous 4 chapters a number of regulatory acts in each period do not fit the pattern expected by the theory. The Federal Food, Drug and Cosmetic Act of 1938, the

Commodity Futures Trading Commission Act of 1974, the Federal Energy Administration Act of 1974, the Rail Passenger Service Act of 1970, the Railroad Revitalization and Regulatory Reform Act of 1976, the Motor Carrier Act of 1980, the Staggers Rail Act of 1980, and the Securities Acts Amendments of 1975 (Table 7 indicates the extent to which the actual pattern is incongrous with the incremental theory's expectations) present anachronisms not explainable by the theory.

TABLE 7

Regulatory Legislation

Legislation	year enacted	classification*	incongrous with incrementalist theory**
Hepburn Act	1906	E	
Pure Food and Drug Act	1906	H	y
Mann-Elkins Act	1910	E	
Federal Reserve Act	1913	E	
Federal Trade Commission Act	1914	E	
Clayton Act	1914	E	
Shipping Act	1916	E	
Export Trade Act	1918	E	
Transportation Act	1920	E	
Merchant Marine Act	1920	E	
Mineral Lands Leasing Act	1920	E	
Federal Water Power Act	1920	E	
Packers and Stockyards Act	1920	E	
Filled Milk Act	1923	E	
Securities Act	1933	E	
Intercoastal Shipping Act	1933	E	
Banking Act	1933	E	
Securities Exchange Act	1934	E	
Taylor Grazing Act	1934	E	
Communications Act	1934	E	
Motor Carrier Act	1935	E	
Banking Act	1935	E	

TABLE 7 cont'd

Federal Power Act	1935	E	
Commodity Exchange Act	1936	E	
Agricultural Marketing Agreement Act	1937	E	
Northern Pacific Halibut Act	1937	E	
Civil Aeronautics Act	1938	E	
Natural Gas Act	1938	E	
Wheeler-Lea Act	1938	E	
Federal Food, Drug and Cosmetic Act	1938	H	y
Federal Seed Act	1939	E	
Transportation Act	1940	E	
Wool Products Labeling Act	1940	E	
Public Health Service Act	1944	H	y
Atomic Energy Act	1946	E	
Agricultural Marketing Act	1946	E	
Lanham Trademark Act	1946	E	
Sockeye Salmon or Pink Salmon Fishery Act	1947	E	
Reed-Bulwinkle Act	1948	E	
Whaling Convention Act	1949	E	
Cooperative Forest Management Act	1950	E	
Tuna Convention Acts	1950	E	
Fur Products Labeling Act	1951	E	
Federal Deposit Insurance Act	1951	E	
Flammable Fabrics Act	1954	E	
Atomic Energy Act	1954	E	
North Pacific Fisheries Act	1954	E	

TABLE 7 cont'd

Bank Holding Company Act	1954	E	
Refrigerator Safety Act	1954	H	
Federal Aviation Act	1958	E	
Transportation Act	1958	E	
Textile Fiber Products Identification Act	1958	E	
Food Additives Amendment	1958	H	y
Federal Hazardous Substances Act	1960	H	y
Bank Merger Act	1960	E	
Color Additive Amendments	1960	H	y
Drug Amendments	1962	H	y
Communications Satellite Act	1962	E	
Bank Service Corporation Act	1962	E	
Fair Packaging and Labeling Act	1966	E	
National Traffic and Motor Vehicle Safety Act	1966	H	
Radiation Control for Health and Safety Act	1968	H	
Highway Safety Act	1968	H	
Natural Gas Pipeline Safety Act	1968	H	
Bank Protection Act	1968	E	
Construction Safety Act	1969	H	
National Environmental Policy Act	1969	H	
Rail Passenger Service Act	1970	E	y
Occupational Safety and Health Act	1970	H	
Geothermal Steam Act	1970	E	y
Highway Safety Act	1970	H	
Water Quality Improvement Act	1970	H	

TABLE 7 cont'd

Currency and Foreign Transactions Reporting Act	1970	E	
Poison Prevention Packaging Act	1970	H	
Clean Air Act Amendments	1970	H	
Drug Listing Act	1972	H	
Marine Mammal Protection Act	1972	H	
Marine Protection, Research and Sanctuaries Act	1972	E	y
Consumer Product Safety Act	1972	H	
Federal Water Pollution Control Act Amendments	1972	H	
Noise Control Act	1972	H	
Emergency Petroleum Allocation Act	1973	E	y
Commodity Futures Trading Commission Act	1974	E	y
Federal Energy Administration Act	1974	E	y
Deepwater Port Act	1974	E	
Safe Drinkwater Act	1974	H	
Securities Acts Amendments	1975	E	y
Independent Safety Board Act	1975	H	
Hazardous Materials Transportation Act	1975	H	
Magnuson-Moss Warranty-Federal Trade Commission Improvement Act	1975	E	
Railroad Revitalization and Regulatory Reform Act	1976	E	y
Federal Land Policy and Management Act	1976	E	y
National Forest Management Act	1976	E	y
Hart-Scott-Rodino Antitrust Improvement Act	1976	E	
Medical Device Amendments	1976	H	

TABLE 7 cont'd

Toxic Substances Control Act	1976	H	
Consumer Product Safety Commission Improvements Act	1976	H	
Resource Conservation and Recovery Act	1976	H	
Food and Agriculture Act	1977	E	y
Federal Mine Safety and Health Act	1977	H	
Clean Water Act	1977	H	
Airline Deregulation Act	1978	E	y
Power Plant and Industrial Fuel Use Act	1978	E	y
Ocean Shipping Act	1978	E	y
Public Rangelands Improvement Act	1978	-	
Natural Gas Policy Act	1978	E	y
Electronic Fund Transfer Act	1978	E	y
Financial Institutions Regulatory and Interest Rate Control Act	1978	E	y
International Banking Act	1978	E	y
Shipping Act Amendments	1979	E	y
Pipeline Safety Act	1979	H	
Infant Formula Act	1980	H	
Household Goods Transportation Act	1980	E	y
Motor Carrier Act	1980	E	y
Staggers Rail Act	1980	E	y
Deep Seabed Hard Minerals Resource Act	1980	E	y
Ocean Thermal Energy Conversion Act	1980	E	y
Federal Trade Commission Improvement Act	1980	E	y
Depository Institutions and Monetary Control Act	1980	E	y

TABLE 7 cont'd

Aviation Safety and Noise Abatement Act	1980	H
Comprehensive Environmental Response, Compensation and Liability Act	1980	E

* E indicates the act is an economic regulatory or resource management act.

H indicates the act is an environmental, health or safety act.

\- indicates no classification.

** y indicates the form of the legislation does not agree with the speculations of the incrementalist view.

Though the regulatory legislation enacted during the 1930's generally was of the form of the economic regulation exemplified by the Civil Aeronautics Act (chapter 9), the Federal Food, Drug and Cosmetic Act of 1938 offers an important exception. The complex regulatory authority and the extensive decision-making procedures mandated by the act (as were detailed in chapter 8) suggest that the health and safety regulation of the 1930's is, contrary to the incremental theory, similar in scope and form to the health and safety regulation enacted in the 1970's.

Similarly, the economic regulatory legislation enacted in the 1970's is much the same as the economic regulatory legislation of the 1930's. The Commodity Futures Trading Commission Act of 1974 created a New Deal type independent agency to replace the Department of Agriculture's Commodity Exchange Authority established by the Commodity Exchange Act of 1936. The Commodity Futures Trading Commission (CFTC) was mandated simple but narrow regulatory authority by the 1974 act to regulate futures exchanges, approve futures contracts, and to establish requirements for the licensing of futures traders. Reminiscent of the economic regulatory agencies establised in the 1930's, the CFTC was granted broad procedural discretion, as exemplified in Section 204 for the licensing of futures traders:

> Section 204
> (2) Any such person desiring to be registered shall make application to the Commission in the form and manner prescribed by the Commission, giving such information and facts as the Commission may deem necessary concerning the applicant...

> (6) The Commission is authorized, without hearing, to deny registration to any person as a commodity trading advisor or commodity pool operator if such person is subject to an outstanding order under this Act denying to such person trading privileges on any contract market...
>
> (4p) The Commission may specify by rules and regulations appropriate standards with respect to training, experience, and such other qualifications as the Commission finds necessary or desirable to insure the fitness of futures commission merchants, floor brokers, and those persons associated with futures commission merchants or floor brokers.

On this same point, the Federal Energy Administration Act of 1974 reorganized and consolidated a number of federal programs into the new Federal Energy Administration (FEA). The scope of FEA activity was defined in section 5 of the act in a straightforward manner:

> Section 5.(a) ...the Administrator shall be responsible for such actions as are taken to assure that adequate provision is made to meet the energy needs of the Nation. To that end, he shall make such plans and direct and conduct such programs related to the production, conservation, use, control, distribution, rationing, and allocation of all forms of energy as are appropriate in connection with only those authorities or functions...

The administrative provisions of the act, though allowing for public hearings, comments and judicial review of agency rulemaking by adversely affected parties, are relatively straightforward and simple and delegate a great deal of procedural discretion to the administrator. Section 7 on administrative provisions exemplifies the procedural discretion granted the agency,

> Section 7.(c) The Administrator may promulgate such rules, regulations, and procedures as may be necessary to carry out the functions vested in him...

Originally enacted in 1887, the Interstate Commerce Acts provide a unique test of the incrementalist theory in that the basic authority of the ICC was subject to revision during both the 1930's and 1970's. The legislation of the New Deal extended ICC jurisdiction to motor carriers and inland water carriers (The Motor Carrier Act of 1935 and The Transportation Act of 1940 respectively) and delegated broad procedural discretion to the ICC for decision-making in these new jurisdictions. The Rail Passenger Service Act of 1970 extended ICC authority to rail passenger service in a manner similar to the amendments of the 1930's. The Railroad Revitalization and Regulatory Reform Act of 1976, the Motor Carrier Act of 1980 and the Staggers Rail Act of 1980 reduced the regulatory authority of the ICC and streamlined and expedited ICC procedures for rail-related regulation.

Similarly, as previously discussed, the basic authority of the Commodity Futures Trading Commission was defined in the Commodity Exchange Act of 1936 and amended by the Commodity Futures Trading Commission Act of 1974. It is interesting to note here that the 1974 act created an agency reminiscent of the independent regulatory agencies of the New Deal, and granted the agency authority similar in form to the New Deal agencies.

A number of other counterexamples to the observations of the incrementalist theory come readily to mind. The Securities Act Amendments of 1975 amended the authority of the Securities and Exchange Commission (SEC) as originally detailed in the Securities and Exchange Act of 1934. The act of 1975 enlarged SEC oversight over

stock exchanges without similarly enlarging the SEC's decision-making procedures. The Food and Agriculture Act of 1977 extended, expanded and revised the subsidies, allotment and set aside programs established by earlier legislation without incorporating lengthy and detailed sections on administrative procedure. The anachronistic regulatory forms apparent in many of the regulatory laws enacted during both the 1930's and 1970's are in general discord with the basic observations that the incrementalist theory sought to explain. Thus, it would seem that only the most casual of examinations of the history of American regulation serves to find credibility in the incrementalist theory of congressional regulatory choice.

10.3 Conclusion

As was shown in chapter 2 the literature on regulatory choice all but ignored the choice of regulatory form. In Chapters 3 through 5 we developed a public choice model, centered largely upon the legislature, which addressed the choice of regulatory form. In later chapters we considered the insights and hypotheses of the model in light of empirical evidence of the form of legislative case studies. The model developed explained evidence generated by the case studies extremely well.

Given the diversity of regulatory forms exhibited in the case studies, it might be interesting to consider how accurately the model of regulatory choice devised herein fits the pattern of regulatory forms established by Congress in this century: to address this

question, in this section, we shall briefly examine the hypotheses of chapter 4 in light of the overall picture of evidence painted by the case studies of the previous section and the last four chapters.

Recall the hypotheses derived in chapter 4, which suggest the type of regulatory instruments, and procedural and substantive discretion, we might expect for environmental, health and safety regulatory legislation. We would expect Congress to specify in great detail the regulatory procedures necessary for promulgation of regulations under the agency's broad regulatory authority. We would also expect the agency to be mandated command and control instruments for the implementation of regulations at the production stages and incentive-based or informational mechanisms for the implementation of regulations at other stages of the regulated firm's activities.

Similarly, the propositions developed in chapter 4 suggest that for economic regulatory legislation, Congress will uniformly mandate command and control instruments for the implementation of regulatory policies for all stages of firm activity. Further, though the substantive discretion of the agency in such a case will be narrow, we would expect that the procedural discretion granted will be relatively wide.

The command and control and informational instrumentality and the interminable regulatory decision procedures of the toxics substances, product safety, and food and drug legislations (as discussed in chapters 6, 7 and 8) fulfill the expectations deducible from the model of regulatory choice for the case of environmental,

health and safety legislation. Interestingly, a number of other scholars examining environmental, health and safety regulations have borne witness to similar such forms of regulation as authorized under different enactments. Dorfman et.al. in studying EPA's Office of Pesticide Programs (OPP) administration of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) (as amended), document well the regulatory instrument specified by the act and the labyrinthine decision-making procedures drawn by OPP from the act for the exercise of authority under the act (see also Aidala, 1979). Cornell, Noll and Weingast (1976)[2] described the convoluted processes by which the Occupational Safety and Health Administration develop safety and health regulations under its authority granted in the Occupational Safety and Health Act (OSH Act). Thus, the form of the regulatory legislation of both FIFRA and OSH Act, as described in these studies, serve to offer further evidence for the model of regulatory choice developed herein.

The specification of command and control instrumentality for the implementaion of narrow substantive authority and the delegation of broad precedural authority in the Civil Aeronautics Act (as discussed in chapter 9), the Commodity Futures Trading Commission Act, and the Federal Energy Administration Act (as discussed briefly in the previous section) (for a detailed analysis of the Federal Energy Administration see Montgomery, 1977) fulfill the expectations deducible from the model for economic regulatory legislation.

Thus, evidence drawn from a diversity of legislative case

studies, spanning the entire history of the American regulatory experience, offers an overall feeling of support for the model of regulatory choice proffered here. Though the evidence and techniques employed to test the propositions of the model are more casual in nature than might be hoped for (case studies), the evidence from such investigations strongly supports the model and its propostions.

In sum then, we have developed a model of regulatory choice from which we can derive general hypotheses about regulatory instrument choice and legislative delegation of substantive and procedural discretion. These hypotheses are supported empirically by a series of case studies of federal regulatory legislation.

We have, along the way, addressed a series of other questions aside from those we set out to discuss. We have suggested a model of agency structuring which, though simple, fits the available evidence provided in the legislative case studies. Most recently we examined a widely held alternative hypothesis and suggested that empirical support for this theory is available at only the most casual of levels.

Probably the most important side issue discussed, at least the most interesting, is the failure of environmental, health and safety regulation. We discovered (or re-discovered) that the politics and institutions of the American democracy provide incentives to legislators and bureaucrats for an overreliance on command and control mechanisms for the implementation of this class of regulatory policies. Such mechanisms, by their very nature, are employed on a

case-by-case basis which, in itself, magnifies the costs and length of regulatory procedures. Further, incentives for a broad delegation of substantive authority are coupled with incentives for the mandating of very specific, lengthy and detailed procedural requirements for decision-making. The result, as we have witnessed for TOSCA, CPSA and the FFDCA, is slow suffocation by red-tape.

So, where does this all leave us? We have, by this effort, acquired an initial understanding of the choice of regulatory form, what factors influence these choices, and what implications such choices have for policy implementation. Such a start should open new avenues of research and exploration and should enrich our understanding of the processes by which regulation is chosen.

Footnotes to Chapter 10

1. See also Wilson (1980) and Stewart (1975) among others.

2. See also Weingast (1978a).

Appendix A. Comparative Statics

The technique of comparative statics allows us to define a functional form for each decision-maker's decision variable and to determine the sign of changes in these variables with respect to a change in a parameter, all else constant. First order conditions define the necessary conditions for a maximum of decision-maker's objective function.

From chapter 3, recall the legislator's decision calculus:

$$\underset{p_i, q_i}{\text{Maximize}} \quad U^i(PROB^i, POLICY^i)$$

with,

$$POLICY^i = POLICY^i(p_i :]\Gamma[, L, J, C, A, p_i^m)$$

$$PROB^i(p_i, q_i) = PROB^i(RENTS^i(p_i, q_i), FO^i(q_i), d(p_i, p)$$

$$RENTS^i = \sum_j L_{ji}(\Gamma, \beta_{ji}, B]L[, p_j^*, q_j^*).$$

First-order-conditions for a maximum are:

$$\partial U^i/\partial p_i = \partial U^i/\partial PROB^i [\partial PROB^i/\partial RENTS^i \partial RENTS^i/\partial p_i + \partial PROB^i/\partial d \partial d/\partial p_i] + \partial U^i/\partial POLICY^i \partial POLICY^i/\partial p_i = 0 \tag{A.1}$$

$$\partial U^i/\partial q_i = \partial U^i/\partial PROB^i [\partial PROB^i/\partial RENTS^i \partial RENTS^i/\partial q_i + \partial U^i/\partial PROB^i/\partial FO^i \partial TO^i/\partial q_i] = 0 \tag{A.2}$$

Totally differentiating is differentiation with respect to all variables and all parameters in an equation. By totally differentiating

the necessary (first order) conditions we can trace the influence of each parameter in each partial derivative and function in the necessary conditions. This will allow us to determine how changes in these parameters affect changes in the decision-variables. This will be done by solving the totally differentiated equations for the differential of the decision-variables (in this case dp_i and dq_i) and then examining the sign of the differentials with respect to the parameters of the model, all else constant.

Totally differentiating A.1 and A.2 and then simplifying yields,

$$\begin{aligned}&\partial^2U^i/\partial p_i^2 dp_i + \partial^2U^i/\partial p_i\partial\Gamma d\Gamma + \partial^2U^i/\partial p_i\partial L dL + \partial^2U^i/\partial p_i\partial q_i dq_i\\&+ \partial^2U^i/\partial p_i\partial J dJ + \partial^2U^i/\partial p_i\partial C dC + \partial^2U^i/\partial p_i\partial A dA\\&+ \partial^2U^i/\partial p_i\partial\beta_{ji} d\beta_{ji} + \partial^2U^i/\partial p_i\partial B dB + \partial^2U^i/\partial p_i\partial p_i^m dp_i^m = 0\end{aligned} \tag{A.3}$$

$$\begin{aligned}&\partial^2U^i/\partial q_i^2 dq_i + \partial^2U^i/\partial q_i\partial\Gamma d\Gamma + \partial^2U^i/\partial q_i\partial\beta_{ji} d\beta_{ji}\\&+\partial^2U^i/\partial q_i\partial B dB + \partial^2U^i/\partial q_i\partial L dL + \partial^2U^i/\partial q_i\partial p_i dp_i = 0\end{aligned} \tag{A.4}$$

Let

$$\begin{aligned}D_1 &= \partial^2U^i/\partial p_i\partial\Gamma d\Gamma + \partial^2U^i/\partial p_i\partial L dL + \partial^2U^i/\partial p_i\partial J dJ\\&+ \partial^2U^i/\partial p_i\partial C dC + \partial^2U^i/\partial p_i\partial A dA + \partial^2U^i/\partial p_i\partial\beta_{ji} d\beta_{ji}\\&+ \partial^2U^i/\partial p_i\partial B dB + \partial^2U^i/\partial p_i\partial p_i^m dp_i^m\end{aligned}$$

$$\begin{aligned}D_2 &= \partial^2U^i/\partial q_i\partial\Gamma d\Gamma + \partial^2U^i/\partial q_i\partial\beta_{ji} d\beta_{ji} + \partial^2U^i/\partial q_i\partial B dB\\&+ \partial^2U^i/\partial q_i\partial L dL\end{aligned}$$

Then, we can write A.3 and A.4 as,

$$\begin{bmatrix} \partial^2 U^i/\partial p_i^2 & \partial^2 U^i/\partial p_i \partial q_i \\ \partial^2 U^i/\partial q_i \partial p_i & \partial^2 U^i/\partial q_i^2 \end{bmatrix} \begin{bmatrix} dp_i \\ dq_i \end{bmatrix} = \begin{bmatrix} -D_1 \\ -D_2 \end{bmatrix}$$

Solving

$$\begin{bmatrix} dp_i \\ dq_i \end{bmatrix} = \frac{1}{d} \begin{bmatrix} \partial^2 U^i/\partial q_i^2 & -\partial^2 U^i/\partial p_i \partial q_i \\ -\partial^2 U^i/\partial q_i \partial p_i & \partial^2 U^i/\partial p_i^2 \end{bmatrix} \begin{bmatrix} -D_1 \\ -D_2 \end{bmatrix}$$

where d is the determinate of the left-hand-side matrix of second order conditions, d is assume to be negative.

Solving through Cramer's rule,

$$\frac{dp_i}{dp_i^m} = -\frac{1}{d} [\partial^2 U^i/\partial q_i^2 \partial^2 U^i/\partial p_i \partial p_i^m] > 0 \qquad (A.5)$$

We thus set all changes in parameters, dX, where X is a parameter, to zero (i.e., all else constant) except for changes in p_i^m, i.e. dp_i^m.

Similarly,

$$\frac{dp_i}{dC} > 0, \quad \frac{dp_i}{dJ} > 0, \quad \frac{dp_i}{dA} > 0. \qquad (A.6)$$

Recalling the characterization of the function $RENTS^i$ in chapter 3, for simplicity, $RENTS^i$ is strictly concave in $d(p_i,x)$ and $d(q_i,y)$, where $d(-)$ is the Euclidean distance between the arguments and x and y are the maxima of the function, we can thus determine that:

$$\partial p_i/\partial \beta_{ji} < 0 \quad \underline{\text{relative}} \text{ to } p^{max},$$

or more concisely then, we can conclude, from our assumptions concerning the form of the function $RENTS^i$, that

$$\partial d(p_i,p^{max})/\partial \beta_{ji} < 0 \tag{A.7}$$

For this and the relationship for β_j described in section 3.3 and the fact that

$$\partial p^{max}/\partial p_j^* > 0$$

we can derive $\partial p_i/\partial p_j^* > 0$. (A.8)

Also,

$$\partial d(p_i,p_j^*)/\partial \beta_{ji} < 0 \tag{A.9}$$

and $\partial d(p_i,p_j^*)/\partial B > 0$ (A.10)

(since $\partial B/\partial B_j > 0 \rightarrow \partial d(p_i,p_j^*)/\partial B_j > 0$).

Also, from the characterization of $RENTS^i$ we know

$$\partial p_i/\partial]\Gamma[> 0.$$

Similarly for q_i,

$$\frac{dq_i}{dJ} = \frac{1}{d}[(-\partial^2 U^i/\partial q_i \partial p_i)(\partial^2 U^i/\partial p_i \partial J)]$$

Since U^i is continuous, twice differentiable, positive and monotone, and quasi-concave we know that

$$\partial U^i/\partial p_i \geq 0 \qquad \text{for all } p_i$$

indeed, it is also evident that, given J is a matrix defining the committee jurisdiction, we can define the derivative of this matrix with-respect-to the function U^i (i.e. each element of the matrix):

$$\partial (\partial U^i/\partial p_i)/\partial J \geq 0 \qquad \text{for all } p_i, J$$

Thus,

$$\partial q_i/\partial J \geq 0. \tag{A.11}$$

Similarly we can deduce

$$\partial q_i/\partial C \geq 0 \text{ and } \partial q_i/\partial A \geq 0. \tag{A.12}$$

Again, recall the characterization of the function $RENTS^i$ from chapter 3, from this we know that there exists a q^{max} which maximizes $RENTS^i$.

Since

$$RENTS^i = \sum_j L_{ji}$$

then

$$\partial \text{RENTS}^i / \partial L_{ji} > 0.$$

Similarly, since RENTS^i is just the sum of the lobbying rents

$$\partial q^{max} / \partial L_{ji} < 0 \qquad \underline{\text{relative}} \text{ to } q_j^*.$$

More concisely,

$$\partial d(q^{max}, q_j^*) / \partial L^{ji} < 0.$$

Since

$$\partial q^i / \partial q^{max} > 0.$$

by continuity of q^i, L_{ji} we can deduce that

$$\partial d(q_i, q_j^*) / \partial L_{ji} < 0 \tag{A.13}$$

Also, by

$$\partial q^{max} / \partial q_j^* > 0$$

then

$$\partial q_i / \partial q_j^* > 0 \quad \text{by continuity} \tag{A.14}$$

From our characterization of the function $RENTS^i$ it is directly obvious that

$$\partial RENTS^i / \partial d(q_i, q^{max}) < 0.$$

From our characterization of $PROB^i$ and from the fact that q_i is not an argument in the function $POLICY^i$ we can deduce

$$\partial RENTS^i / \partial q_i = -\left(\frac{\partial PROB^i / \partial FO^i}{\partial PROB^i / \partial RENTS^i} \right) \partial FO^i / \partial q_i \qquad (A.15)$$

Lastly, in a similar fashion as for dp_i, we can conclude that

$$dq_i / d\beta_{ji} > 0, \; dq_i / \partial B_j > 0, \; \underline{\text{relative}} \text{ to } q_j^* \qquad (A.16)$$

Recall the interest group's calculus:

$$\underset{L_j}{\text{Maximize}} \; NB^j(POLICY^j(L_j), \; INSTRUMENT^j(L_j)).$$

subject to $\beta_j L_j \leq B_j$.

with $POLICY(L_j: \Gamma,]L_j[, J, C, A)$, and $INSTRUMENT^j(L_j: \; ,]L_j[, J, C, A)$

$\beta_j(Access(J, C, p_j^*, q_j^*, \Gamma, \Gamma_q))$

First-order-conditions for a maximum are:

$$\partial NB^j/\partial L_j - \lambda\beta_j = 0$$

$$B_j - \beta_j L_j = 0$$

totally differentiating:

$$\partial^2 NB^j/\partial L_j^2 dL_j + \partial^2 NB^j/\partial L_j \partial \Gamma d\Gamma + \partial^2 NB^j/\partial L_j \partial]L_j \cdot dL_j$$
$$+ \partial^2 NB^j/\partial L_j \partial J dJ + \partial^2 NB^j/\partial L_j \partial C dC + \partial^2 NB^j \partial L_j \partial A dA$$
$$+ \beta_j d\lambda + \lambda d\beta_j + \partial^2 NB^j/\partial L_j \partial \Gamma_q d\Gamma_q = 0$$

$$dB_j - L_j d\beta_j - \beta_j dL_j = 0$$

Define D_1 and D_2 in a similar fashion as was done for the legislator's problem.

Then, rewriting yields

$$\begin{bmatrix} \partial^2 NB^j/\partial L_j^2 & -\beta_j \\ -\beta_j & 0 \end{bmatrix} \begin{bmatrix} dL_j \\ d\lambda \end{bmatrix} = \begin{bmatrix} -D_1 \\ -D_2 \end{bmatrix},$$

with

$$d = -\beta_j^2 < 0$$

solving,

$$\begin{bmatrix} dL_j \\ d\lambda \end{bmatrix} = \frac{1}{d} \begin{bmatrix} 0 & \beta_j \\ \beta_j & {}^2NB^j/\partial L_j^2 \end{bmatrix} \begin{bmatrix} -D_1 \\ -D_2 \end{bmatrix}$$

Thus,

$$dL_j = \frac{1}{d}(\beta_j)[L_j d\beta_j - dB_j] \rightarrow \frac{dL_j}{d\beta_j} < 0 \quad , \quad \frac{dL_j}{dB_j} > 0 \qquad \text{(A.17)}$$

Assuming $\partial \beta_j / \partial \text{Access} < 0$ (as in chapter 3)

$\rightarrow \partial L_j / \partial \text{Access} > 0$ (A.18)

$$\partial L_j / \partial q_i = \frac{1}{d}(\beta_j)[(L_j)\partial \beta_j / \partial \Gamma_q \partial \Gamma_q / \partial q_i]$$

We can see

$\partial \beta_j / \partial \Gamma_q < 0$ relative to q_j^* by assumption and therefore

$\partial L_j / \partial q_i < 0$ relative to q_j^* or $\partial L_j / \partial d(q_i, q_j^*)$. (A.19)

Recall the administrative agency's calculus

Maximize $EU^b = pr^b U^b(p_b, q_b) + [1-pr^b]U^b(p_0, q_0)$

s.t. $COST^b(p_b, q_b) \leq BUDGET^b$

with $BUDGET^b(C)$

pr^b

$C(\sum_j W_j [NB^j(p_b q_b) - NB^j(p_0, q_0 0]$

First-order-conditions are

$$\partial EU^b / \partial p_b - \lambda \partial COST^b / \partial p_b = 0$$
$$\partial EU^b / \partial q_b - \lambda \partial COST^b / \partial q_b = 0$$
$$BUDGET^b - COST^b = 0$$

Let r_b be the vector $r_b = (p_b, q_b) \in R^{n+4}$

Then we can rewrite the agency's calculus as

Maximize $EU^b = pr^b U^b(r_b) + [1-pr^b]U^b(r_0)$

s.t. $COST^b(r_b) \leq BUDGET^b$

and the first-order conditions will become

$$\partial EU^b/\partial r_b - \lambda \partial COST^b/\partial r_b = 0$$

$$BUDGET^b - COST^b = 0$$

Totally differentiating,

$$\partial^2 EU^b/\partial r_b^2 dr_b + \partial^2 EU^b/\partial r_b \partial r_0 dr_0 - \partial^2 COST_b/\partial r_b \partial \lambda d\lambda$$
$$- \lambda \partial^2 COST^b/\partial r_b^2 dr_b = 0$$

$$\partial BUDGET^b/\partial C[\partial C/\partial W_j dW_j + \partial C/\partial r_b dr_b + \partial C/\partial r_0 dr_0]$$
$$- \partial COST^b/\partial r_b dr_b = 0$$

rewriting

$$\begin{bmatrix} \partial^2 EU^b/\partial r_b^2 - \lambda \partial^2 COST^b/\partial r_b^2 & -\partial^2 COST^b/\partial r_b \partial \lambda \\ \partial BUDGET^b/\partial C \partial C/\partial r_b - \partial COST^b/\partial r_b & 0 \end{bmatrix} \begin{bmatrix} dr_b \\ d\lambda \end{bmatrix} = \begin{bmatrix} -D_1 \\ -D_2 \end{bmatrix}$$

where

$$D_1 = \partial^2 EU^b/\partial r_b \partial r_0 dr_0$$

$$D_2 = \partial^2 BUDGET^b/\partial C[\partial C/\partial W_j dW_j + \partial C/\partial r_0 dr_0]$$

solving

$$dr_b = -\frac{1}{d}[(\partial^2 COST^b/\partial r_b \partial \lambda) D_2]$$

thus

$$\frac{dr_b}{dr_0} > 0 \quad \text{and} \quad \frac{dr_b}{dW_j} > 0 \qquad \text{(relative to } r_j^*\text{)}$$

By continuity then

$$\partial r_b / \partial r_j^* > 0$$

or rather

$$\partial q_b / \partial q_j^* > 0 \qquad \text{(A.20)}$$

$$\partial p_b / \partial p_j^* > 0 \qquad \text{(A.21)}$$

By continuity

$$\partial r_b / \partial r_0 \partial r_0 / \partial I \gtrless 0$$

and

$$\partial r_b / \partial W_j \partial W_j / \partial B_j > 0 \qquad \text{relative to } r_j^*$$

then

$$\partial r_b / \partial I \gtrless 0$$

and

$$\partial r_b / \partial B_j > 0$$

Thus

$$\partial q_b / \partial I \gtrless 0 \qquad \text{(A.22)}$$

$$\partial p_b / \partial I \gtrless 0$$

$$\partial q_b / \partial B_j > 0 \qquad \text{relative to } q_j^* \qquad \text{(A.23)}$$

$$\partial p_b / \partial B_j > 0 \qquad \text{relative to } p_j^* \qquad \text{(A.24)}$$

Appendix B

The institution of the conference committee was designed to correct the decision-making predicament designed into the Constitution that identical legislation must pass each chamber before such policy can be enacted into law. Without such institutional strategies the policy process promises to be disequilibrating.

Without further assumptions, or considerations of the institutionalized norms of behavior the existence of equilibria for the conference committee suffers the same unsatisfying characteristics of general two-person co-operative games.

Shepsle's theorem on the existence of SIE for each chamber and the following assumptions are utilized for the general proof:

V. The conference committee, as all other committees, is bound by jurisdictional constraints defined by the characteristics of the particular bill under consideration. The intersection of both chambers defined jurisdiction is non-null.

VI. Let S_t^i be the set of feasible alternatives for chamber i at times t defined by the chambers policy stand p^i, given their jurisdictional constraints. Define S_t as the intersection of S^i for all i;

$$S_t = \bigcap S^i. \tag{1}$$

S_t is the set of feasible policy choices for the conference committee. The conference committee is required by each chamber to

reach a compromise and as such their jurisdiction is constrained beyong S_t forcing compromise. Only points $p \varepsilon C_t(S_t) \subseteq \text{int } S_t$ are feasible such that

$$\text{diam } C_t \leq \tfrac{1}{2} \text{ diam } S_t. \tag{2}$$

VII. The choice process by the committee, where each chamber's representatives (as a unit choose a $p \varepsilon C_t$, is repetitive, with successive diminutions of C_t. At each time t each chamber choses a point

$$p_t \varepsilon C_t \subseteq \text{int } S_t \tag{3}$$

such that

$$\text{diam } C_t \leq \tfrac{1}{2} \text{ diam } S_t$$

Where S_t is defined by the intersection $\cap S_t^i$ which are a function of p_{t-1}^i. Thus each successive set policy choice (p_t) defines a new feasible set, VIII. $M(p^t) = 0$ (i.e. closed amendment rule) for each chamber i when $(p^h = p^s = p^c)$ the chambers both agree in conference. This assumption is along the lines of axiom R6 above. Proof: Existence of SIE for Conference Committee. p_0^h and p_0^s are known to exist (see Shepsle (1979)). Assumption V and VI imply that p_t^s will exist for each t (proof follows from Shepsle's proof). Since $C_0(S_0) \subseteq C_1(S_1) \cdots C_t(S_t)$ for all $t > 2$ and since $\lim_{t \to \infty} \text{diam } C_t(S_t) = 0$ then $\bigcap_t^{\infty} C_t(S_t)$ consists of exactly one point , call it p^c (Rudin

(1974)).

Thus with assumption VII (closed rule) the equilibrium set for the legislature will consist of (p^c, SQ) where p^c is the conference committee's choice and is an element of S^h S^s, and SQ is the status quo. QED.

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