Government Regulation of Business
In a Federal State:
Allocation of Power Under Deregulation

by

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I. Introduction

The reduction in federal controls of business activities, generally
described by the term "deregulation", has been the policy of three successive
U.S. Administrations. While the economic impact of this policy has been
closely watched, its effects on the federal/state structure of government has
received scant attention. Yet in a federal state, deregulation affects the
division of responsibility among different levels of government, and
consequently regulation itself, in unanticipated ways.

Consider the following two examples: To almost everybody's surprise,
Senator Goldwater, a veteran foe of government regulation, recently led a
Senate fight to protect the ability of local governments to regulate cable
television operators. To him, federal interference with local autonomy was
a more important issue than deregulation. On the other side of the political
spectrum, liberal legislators were at nearly the same time fighting a bill
that would force cities, in the name of deregulation, to suspend rent-control
ordinances. One of the most liberal members of Congress, a Democrat from
Brooklyn, was quoted declaring "I never expected to end up an advocate of
states' rights; but this provision is a clear violation of the principle of
home rule."3

Federal deregulation has led to a great deal of turmoil at the state
level. As reported by Business Week: "It's clear the battlegrounds are

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shifting from Washington to the state capitols,' says Winston W. Borden, President of the Minnesota Association of Commerce & Industry. 'The spending interests know they have no clout in Washington, so they are focusing on state legislatures... where they think they can be most productive.' Says Ronald O. Kael, Director of Environmental Quality for Dow Chemical U.S.A.: 'We perceived after the election that environmentalists were deactivating themselves in Washington and moving to the states. There was a conscious decision that we had to be more active in state affairs.'

As these examples illustrate, regulatory policy in the federal sector of government has secondary effects at all levels of a federal state. It is the purpose of this paper to discuss some of these interactions. To do so, the paper investigates first the regulatory policies that can be expected to flow from alternative jurisdictional arrangements. It analyzes five different distributions of regulatory power, by way of a formal model of regulation, and shows that the allocation of regulatory power has an important impact on policy outcomes, suggesting that the choice of regulatory jurisdiction is not merely procedural, but policy determinative.

If the allocation of regulatory power affects regulatory policy, one would expect an interest group to support regulation by that level of government whose policy is more likely to be favorable to its interests. An empirical section of the paper confirms this. Furthermore, the abolition of a federal regulation does not abolish the regulation itself, since the losing interest groups are likely to have state or local regulation passed in those jurisdictions where they have some power, as the above quotation suggests. The result may be, as we shall see, an equilibrium of state regulation at a higher strictness than before, or a highly non-uniform regulation across the country. Even to the proponents of federal deregulation, neither outcome may be preferable to the previous federal policy. Hence, over time, preference
for a central solution may increase again, and the pendulum may swing back to a federal regulation. Federal regulatory policy is hence an important variable in the allocation of governmental authority, and its dynamic fluctuations affect the nature of a federal state.

II. Literature

Although much has been written on intergovernmental relations, there are surprisingly few studies that deal with regulation in a federal setting, and no body of research exists that is comparable to the models of fiscal federalism (Oates 1972, Thurow 1966, Scott and Breton 1978, and Breton 1965). Of related areas, perhaps most useful is the literature of the "theory of clubs" (Buchanan 1965, McGuire 1972, Pauly 1970). Other authors discuss the rivalry between jurisdictions (Stigler 1970, Ostrom 1972, Peltzman and Tideman 1972) and inter-jurisdictional mobility (Tibout 1956, Mills and deFerranti 1968, Rothenberg 1970). Recent contributions are Rose-Ackerman's public choice analysis (1981) and Oster's (1979) study of diffusion of legislation.

The legal literature of regulatory federalism is of little help, being primarily focused on constitutional issues. Most useful are discussion of federal pre-emption (Bowder 1971, Freeman 1972), of uniform laws (Schnader 1963) and of industry studies such as banking and corporate charters (Redford 1966, Scott 1977, and Cary 1974). There is some discussion by political scientists of the determinants of the regulating level of government (Elazar 1956, Grodzins 1960, Riker 1964). But an extensive bibliography of federalism (Bacheider and Shaw 1964) concludes that...

...There are weaknesses in the literature on federalism. These include an overabundance of historical summaries and descriptive works, undertaken without relation to a stated theory... Yet to be done is a more empirical comparison of centralized unitary systems and federal systems... Too few studies now exist which pair careful observation with explicitly stated hypotheses derived from theory.
One basic question which has not been satisfactorily answered is why economic activities are regulated by different levels of government. There are, broadly speaking, two kinds of conventional explanations for the existence of a particular jurisdictional arrangement. The first is traditionalist in outlook and historical-constitutional in methodology. Each level of jurisdiction, it is said, has a traditional role, specified by constitution or custom (Corwin 1937). In the United States, those of the federal government are specified in its constitution, though they have expanded over time; local governments' regulatory powers are those vested by the states, either explicitly or through traditional police powers; and the states occupy much of the rest. It is characteristic of this historical view to see the determination of the governmental level of regulation as a product of political agreements, periodically modified if necessary. One learns how allocations of power among governments came about, but not necessarily why they did so. For the latter, a more analytical second broad set of explanations exists which may be called "functionalist" (McGuire 1973). Functionalists observe that there are economies of scale in the provision of regulation, just as there are for many services, at least over some range of production. Some regulatory activities, for example zoning, are handled most efficiently on a small scale, close to the object of regulation; others, like airline regulation, are undertaken most efficiently on a large scale, by formulating nationwide rules. The choice of jurisdictional level therefore requires finding the scale economy of a regulating activity (Tullock 1973) and vesting the most efficient size of jurisdiction with authority over it. A related version of the functional explanation, favored by many economists, uses externalities as a criterion (Zerbe 1974). The logical jurisdictional level is said to encompass the area within which regulatory policies have externalities, i.e., where regulation,
to use a common phrase, internalizes the externalities. Implicit in the
functionalist explanation is the belief that the regulatory level is determined
by "objective" economic criteria. In this view it is an extension of the
wider public benefit theory of regulation.

This paper, in contrast, argues that the determination of the regulatory
level is not primarily a question of historical tradition, functional
efficiency, or externalities, but rather of variations in interest group power
at different levels of government. It shows that the determination of the
regulatory level is in itself a decision about the strictness of regulation
that will prevail. Interest groups pragmatically desire the regulatory level
whose outcome they like best, and the relation of group strengths and benefits
on the different governmental levels determines the preferred governmental
levels of regulation.

III. The Model

Let \( A \) be a jurisdiction with two interest groups \( L \) and \( F \) (which may be
imagined as labor unions and firms) and let there by a type of regulation that
affects these two groups and only them and which can be set by a regulating
agency at some variable degree of restrictiveness \( R \). This regulation will
affect each member of group \( L \) positively and each member of group \( L \) negatively,
according to the restrictiveness of the regulation, such that benefits \( w_i \) from
the regulation are, for each group member,

\[
\begin{align*}
  w_L &= -a_0 + a_1 R^{a_2} \\
  w_F &= b_0 - b_1 R^{b_2}
\end{align*}
\]

(1)  

(2)

with

\[
\frac{d w_L}{d R} > 1
\]

(3)
\[ \frac{d w}{d R} < 1 \quad (4) \]

The constants \( a_0 \) and \( b_0 \) show the benefits to members of a group when there is no regulation. The exponents are assumed to be positive such that\(^6\)

\[ 0 < a_2 < 1 \quad (5) \]

\[ 1 < b_2 \quad (6) \]

Both interest groups exert pressures on the regulating agency by granting or withdrawing support to the regulator according to the state that they have, as a group, in a regulatory strictness. This stake is the aggregate benefit due to regulation \( R \), which is the product of average member benefit \( w \) times the number of group members \( N \). Total benefits from regulation are hence

\[ W = w_L N_L + w_F N_F = (-a_0 + a_1 R^{a_2}) N_L + (b_0 - b_1 R^{b_2}) N_F. \quad (7) \]

Regulation is set by the agency according to some optimization criterion. This criterion is, of course, the subject of some debate.\(^7\) To those who hold the "public benefit" view of regulation, the agency's objective is to maximize the benefits to society; to others, such as Niskanen (1971), it is to maximize the agency's self-interest. These two criteria are, however, not necessarily inconsistent if we assume that an agency, whether state or federal, sets the restrictiveness of regulation to maximize its total support \( S \), and that such support is a monotonously increasing function of aggregate benefits \( W \).

\[ S = F(W); \text{ where } F_W > 0. \quad (8) \]

The optimizing restrictiveness of regulation \( R^* \) is then found by setting

\[ \frac{d W}{d R} = 0 \quad \text{such that} \]
\[ R^* = \left( \frac{b_1 b_2 N_F}{a_1 a_2 N_L} \right)^{\frac{1}{a_2-b_2}} \]  

(9)

We now introduce a second jurisdiction, B, making identical assumptions (1) - (8) about the effects of regulation on each member of B's interest groups \( L_B \) and \( F_B \), and about the decision rule of its regulator. The size of the two groups—denoted by \( M_L \) and \( M_F \)—may be different in B than it is in A. B's regulatory restrictiveness is then analogous to that of State A. We assume at this point that the regulation of one state does not affect the other state, i.e., there are no spill-over effects. This assumption will be relaxed soon.

Suppose now that the two states agree that the regulation be centrally set at a common national strictness \( R_N \) and that a central regulating agency be established. National (i.e., federal) regulation, it is assumed, is set by the federal regulator at its support maximizing level, which is determined by the size of combined groups and influences, aggregated nationally. It is given, analogously to (9), by the expression

\[ R^*_N = \left( \frac{b_1 b_2 (N+M)_F}{a_1 a_2 (N+M)_L} \right)^{\frac{1}{a_2-b_2}} \]  

(10)

National regulation is less strict than state regulation for state A if \( R^*_N < R^*_9 \). Comparing (10) with (9) one can see that this is the case when

\[ \frac{(N+M)_F}{(N+M)_L} > \frac{N_F}{N_L} \]  

(11)

i.e., when, on the state level, the ratio of group sizes (which we term the "power ratio") is more favorable to the pro-regulation group \( L \) than it is on
the national level. This is quite intuitive. Hence, one can expect the antiregulation group F in state A to be in favor of regulation on the national level, because on that level its influence is greater and regulation is lower, while group L will be opposed because of the dilution of its position on the national level. In state B, the exact opposite position will be taken by the two interest groups.

For a state's predominant interest group to support a national form of regulation, the condition must hence be fulfilled that the power ratio on the national level must amplify that ratio which exists within the state. National regulation is not sought where states are heavily dominated by one of the interest groups—and it is immaterial which one it is—because this predominant group will normally not want its influence diluted on the national level. Most favorable for a state's opting for national regulation is a situation where one group has slight majority which it can leverage into a larger majority by joining a national regulatory scheme.

We now expand the model so that the regulation in one state affects the interest groups in the other state, too. For example, environmental regulations in state B will improve A's air quality, and hence the well-being of its group LA. Group F in state A is also benefitted from B's regulation if, for example, it has competitors in state B which must contend with the added costs from regulation. This can be described by benefit equations of the form

\[
w_{LA} = -a_0 + a_1 R_A^{a_2} R_B^{a_3} \tag{12}
\]

\[
w_{FA} = b_0 - b_1 R_A^{b_2} R_B^{b_3} \tag{13}
\]

where \(a_3\) and \(b_3\) are the cross-elasticities. Given the benefit functions, the optimal regulation \(R\) for the support minimizing regulator in state A is
therefore found to be

\[ R^*_A = \left[ \frac{b_1 b_2}{a_1 a_2} \frac{N_F}{N_L} \frac{1}{R_B^{b_3-a_3}} \right]^{2-b_2} \]

(14)

Thus we have a regulatory strictness in A which is, among others, a function of state B's regulation

\[ R^*_A = m R_B^t \]

(15)

where \( m \) and \( t \) are a short notation for the remaining parameters of (14). The analogous relations hold for \( R_B \), so that \( R^*_B = n R_A^t \). Thus we have a Cournot-type reaction model in which each state adjusts its regulation in response to the other state's. This is shown in Figure 1. Given an initial \( R_{A1}, R_{B1} \) is determined by B's reaction, which in turn generates \( R_{A2} \), and so on. This process leads either to an equilibrium or to corner solutions. The latter means that states drive each other into total deregulation or into total prohibition. An example for such a competitive deregulatory trend is the increasing liberalization of state corporation statutes in the United States, a process which has been described by a former Chairman of the U.S. Securities and Exchange Commission as a "race to the bottom" (Cary 1974). An example for a "race to the top", in which each state attempts to shift undesirable activities to its neighbors, or at least tries to avoid becoming the recipient of their undesirable exports, is the regulation of nuclear reactors and of radio-active waste.

The point of intersection of the two reaction functions is at

\[ R_A = (m^t)^{1-t^2} \]

(16)
Figure 1

Reaction Functions of State Regulations

\[ R_B = f(R_A) \]
\[ R_A = g(R_B) \]
A stable equilibrium exists when \( R_B = f(R_A) \) is steeper than the inverse of \( R_A = g(R_B) \) at the point of intersection. It can be shown that this holds when

\[
a_2 - b_2 > b_3 - a_3
\]

(17)
i.e., when the difference in the own-regulation elasticities exceeds that of the cross-elasticities. When this condition is met, the strictness of regulation for \( A \) in such an interactive setting is, from (16), after substitutions

\[
R^*_A = \left[ \frac{1}{b_1 b_2 + a_3 (N_F - N_L)} \right] \left( \frac{1}{(a_2 - b_2)^2 - (b_3 - a_3)^2} \right)
\]

(18)

Suppose, however, that the reactions of both states are such that no equilibrium is reached, but rather a "race to the bottom" takes place to the detriment of both states. In this situation several remedies are possible. The first of the possibilities is federal regulation; the second is agreement among the states on common regulatory strictness. These arrangements are close relatives of mergers and price fixing in their private sector. With federal regulation, the expected national regulatory strictness \( R_N \) is found by maximizing the support function to a federal regulator by the interest groups. This occurs at

\[
R^*_N = \left[ \frac{b_1 (b_2 + b_3) (F_A + F_B)}{a_1 (a_2 + a_3) (L_A + L_B)} \right] \left( \frac{1}{a_2 + a_3} \right)
\]

(19)

Other jurisdictional arrangements are also possible. Thus, states can agree directly among themselves on regulatory policy. Most frequently, the procedure is to mutually pass pre-written acts of legislation known as uniform laws. Such agreements share the problem of private cartel agreements, since each state holds some veto power if uniformity is sought. Just as a convoy travels at the speed of its slowest ship, so does regulation by uniform law not go
beyond the point where each state is at least as well off as before, assuming that no interstate compensation exists, and that unanimity is required. This occurs at

\[ R^*_u = \frac{1}{b_1(b_2+b_3) F_G \left( \frac{a_2+a_3}{a_1(a_2+a_3)} \right) - (b_2+b_3)} \]

where \( \frac{F_G}{L_G} \) is the larger of \( \frac{F_A}{L_A} \) and \( \frac{F_B}{L_B} \).

It is also possible that regulation is not uniform but discriminatory, where discrimination is defined as the imposition of different measures of strictness in different jurisdictions by one government. This can occur either by one state imposing some regulation on another, or by the federal government treating states differently. In the first situation the regulatory agency of state A can impose regulations not only on its own state, but it can also set state B's regulations, with the sole goal of benefitting A. This arrangement may be called "colonialism". An example is Britain's regulation of the opium trade in China and of textile spinning in India in the nineteenth century. Analytically, \( R_A \) and \( R_B \) are set to maximize \( (W_L + W_F)_A \) where both \( R_A \) and \( R_B \) are variable.\textsuperscript{10} The second form of discrimination involves the federal regulator's setting of different degrees of strictness in states, either by an outright fixing of different regulatory rules, or by setting floors or ceilings of regulatory restrictiveness in such a way that they effectively constrain only one state. Discriminatory regulation can improve the combined benefits of the regulated groups; its strictness is given by the solutions to the equation.

\[ R_B^{a_2-b_2} R_A^{a_3-b_3} = \frac{b_1 (F_A+F_B) (b_2 R_B^2+b_3 R_A)}{a_1 (L_A^2+L_B) (a_2 R_B^2+a_3 R_A)} \]
Let us now take stock. We have found analytical results for a variety of jurisdictional arrangements: state regulation; federal regulation; uniform laws; colonialism; discrimination in federal regulation. Only in unusual circumstances will any such strictness be identical to another. Because the regulatory strictness depends in each case on the size and direction of the parameters, it is impossible to assert that any one level of government or intergovernmental arrangement is "invariably" stricter than another. Figure 2 is a schematic illustration for a hypothetical regulation. Corresponding to each jurisdictional distribution is a pair of regulatory strictness \( R_A \) and \( R_B \), all of which are different from each other. Thus, the question which level of government is endowed with regulatory authority, seemingly a procedural issue, can in fact be seen to be, in part at least, a substantive determination of the strictness of the regulation itself.

One would expect that rational interest groups seek that level of government whose regulatory outcome is most favorable to them, regardless of their official ideology or tradition. Historical examples come to mind, such as the U.S. railroads' support for a national railroad commission in the 1880's, after state regulation began to be onerous, or the establishment of federal occupational safety and health regulations in the response to union pressure. Both instances are "upward" shifts of regulation from the state to the federal level at the urging of interest groups that are otherwise philosophically and economically in conflict. The unifying principle is that they expected national regulation to be more advantageous to their interest than state regulation. The preferences for national regulation over local regulation by a group will depend on the outcomes that it can expect at each level. This conclusion is tested empirically in the appendix to this paper.

Let us concentrate in the following on the difference between regulation by the federal government and by the states. For both the pro- and
FIGURE 2
(Schematic)

- Colonialism
- Federal Discrimination
- Federal Regulation
- State Regulation

Uniform Laws
anti-regulatory interest groups the important question is which of the two
levels of government supplies a stricter regulation. The underlying assumption
of advocates of federal deregulation is that their policy eliminates or reduces
regulation as such. But this may well be incorrect. As long as federal rules
exist, states are prevented, under the Supremacy Clause of the U.S. Constitu-
tion, to enact concurrent regulations that are in conflict with the federal
ones. Furthermore, the existence of a national regulatory mechanism focuses
the efforts of interest groups on the activities of the central agency. But
if such an agency --or its rules--is abolished, state regulation cannot be
expected to remain the same as before. The problems that federal rules were
originally enacted to remedy usually still exist, and there is no dearth of
support for state regulations to replace the abolished federal laws.

The first consequence of this development is that a multitude of state
standards are likely to emerge whose non-uniformity may often be expensive to
comply with. If, for example, each state enacted its own automobile emission
rules, as California did, the results could make car production extremely
inefficient and costly. Even where uniformity is not a problem, the strictness
of the state regulation which may emerge may not please the advocates of
deregulation. Although they may predominate in many of the states, the
spill-over effects of other states' regulation may force a reaction in the
way the Cournot model in Graph 1 suggests. This is easy to see in a "race to
the top" situation, where the states drive each other to higher and higher
strictness as they try to shift undesirable activities to their neighbors.
But even within a stable equilibrium situation, the emerging regulation in a
state may be higher than the federal one had been before. This will be the
case, generally speaking if (a) one interest group experiences substantial
positive externalities from the regulation in another state, or (b) when all
interest groups experience at least some positive spill-overs, or (c) when the anti-regulation group is particularly sensitive to changes in its own states' regulation.

It is helpful to refer again to Graph 1. Contrasted with state regulation, federal rules are stricter when federal regulation is at a point like $P_3$ on the graph, and $P_1$ is the state regulatory equilibrium. On the other hand, if the federal regulation had been at $P_2$, state regulation will actually be higher. Or, where federal regulation is at $P_3$ and its removal triggers a "race to the top" in state regulation, a federal ceiling is lower than the decentralized outcome. The common assumption of federal deregulation is that of a $P_3$ type of situation. However, this is only one of several possibilities. It may be objected that federal regulation would not have been abolished in the first place if this results in a stricter state regulation, since to do so would be counterproductive. Yet for this objection to be true one must presuppose a political decision process of considerable foresight. When the abolition of federal regulation is sought there are only limited concurrent state regulations in existence. Yet once federal regulation is abolished, the interest group pressures may generate regulation in some state, and the other states may have to adjust to it, too.

It is interesting to speculate what sets this process in motion. One explanation is that a previously existing point of equilibrium that determined federal regulation has been disturbed by a shift in the relative influence of the interest groups. But it is also possible that no shift in interest group powers has occurred but that a slow and cyclical process of oscillation between federal and state regulation exists even in its absence. These cycles are based on quite stable preference with the body politic for the regulatory strictness. The level of government that will be vested with regulatory
authority is the one whose regulatory strictness most resembles the preferences of the interest group body-politic. This choice would be different at different times, because the states’ regulation and hence attractiveness changes. For example, state regulation may be, at an initial point \( P_1 \), too high relative to expected national regulation \( P_2 \), given the prevailing influence of interest groups L and F. The results is a decision for national regulation, which eliminates most state regulation by federal pre-emption. At that point national regulation may become unfavorably high in comparison to the state alternative; hence federal deregulation occurs. But now the state’s regulation increase and their strictness moves towards equilibrium in \( P_1 \). From there, the cycle can start anew.

One way to deal with unanticipated state responses is to forbid them. States may thus be "pre-empted" from regulating on their own, and this is indeed the trend that has accompanied the recent U.S. experience with deregulation. This, however, implies an increase in the powers of central government, the opposite result from the one desired by many proponents of deregulation.

**Summary**

Proponents of deregulation usually assume that their actions lessen the interference of government with business and that they also reduce the powers of central government. Yet, as we have seen, neither of these expectations may be fulfilled, because of the way in which state and local regulation can offset Federal deregulation. Deregulation may thus lead to the emergence of state laws that are more onerous to business than the previous Federal rules, or, alternatively, may result in the strengthening of Federal powers over states. Instead of the states gaining more powers, they may end up
subject to new regulations. Deregulation of private business can thus lead to an increased regulation of another form: that of the Federal government against other governments. One may therefore have at times to choose between deregulation and decentralization, rather than be able to achieve them both, and advocates of deregulation must consider this trade-off.
Appendix

The final section of the paper reports an empirical test for the impact of interest groups on the choice between two levels of regulation.

Empirical Investigation

We have asserted that the choice of jurisdictional level is a way of obtaining interest groups' most preferred regulatory outcome. It is difficult to empirically prove this hypothesis because there is normally no observable choice of jurisdictional level. The regulatory arrangement simply exists, and one cannot measure a preference for the alternative. However, there are some instances where a choice of regulatory levels is observable. In the United States, banks can choose whether they want to be chartered and supervised federally or by state. (SCOTT 1977) . In other instances, firms can choose to avoid certain regulations of the U.S. Federal Government by reducing the scope of their activities to intrastate commerce, thus exempting themselves from federal jurisdiction. Airlines, for example, can free themselves from Washington's regulations by flying only within one state, and a number of carriers have done so in California and Texas. In all of these instances, however, we deal primarily with management choice rather than with a political decision about which level of government should be in charge of controlling a particular economic activity. For an empirical analysis of how the political
process determines which governmental level should have regulatory powers, an investigation of American building codes provides a unique source of data. Building codes are the technical standards for the construction of residential and commercial buildings. They deal with the thickness of walls, the materials permissible for plumbing, the insulation of electrical wiring, etc. In the United States, these codes are set in an essentially dual form. The first possibility is a code that is written locally and is known as a "local code." The second major form is a "national code" which is set by an outside national body of which a city or town is a member. Such a national "code association" is not the federal government with its powers, but this actually makes for better data since national standards are not mandated, and their adoption is a revealed choice. A national code association is in effect a single-issue national level, whereas the federal government is a package of institutions and policies.

Building code standards are of great importance to the interest groups involved in construction, particularly where codes involve the approval of labor saving construction methods such as pre-fabrication. American construction unions have traditionally advocated codes that restricted labor saving techniques, because of their fear of a reduction in the demand for skilled craftsmen. Builders, on the other hand, prefer unrestrictive codes, because new building techniques reduce the cost of construction and the importance of unionized skilled labor. The interest of the general public in building codes is much more limited due to their low visibility and great technicality. Therefore, the relevant interest groups A and B of the model can be identified as construction firms and construction unions.
Data for the building codes of over 1,100 American cities and towns is available from a 1970 survey by the International City Manager Association (ICMA), and is described in FIELD and VENTRE (1971). Additional data on housing, construction firms, and demographics originated with the U.S. CENSUS SURVEY OF HOUSING, (1960,1970), the U.S. DEPARTMENT OF LABOR (1972,1975), and OSTER and QUIGLEY (1977).

The question for empirical analysis is how the choice for a national vs a local code can be explained. The 'functionalist' hypothesis for the regulatory level, based as it is on economy of scale considerations, would predict that the size of the jurisdiction or the workload of an agency are explanatory variables. The second hypothesis, which we termed the historical-legal explanation, would predict that political ideology, history, or tradition are determinative. Finally, the interest group hypothesis that was developed in this paper predicts the choice to be dependent on interest group strengths on the local level relative to the ones on the national level.

The validity of these different hypothesis can be tested by an analysis of the factors that explain the probability of the adoption of a national code by a community. They are expressed by the PROBIT function of the form

\[
\text{NATCODE} = b_0 + b_1 \text{POP} + b_2 \text{BUILDPERM} + b_3 \text{EMP} + b_4 \text{LAND} + b_5 \text{CONSERV} + \\
  b_6 \text{REGI} + b_7 \text{TOWN} + b_8 \text{CODEAGE} + b_9 \text{CITYMAN} + b_{10} \text{PN - SUNION} + b_{11} \text{SFIRM}
\]
Where:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NATCODE</td>
<td>Adoption of a national code in a local community</td>
</tr>
<tr>
<td>POP</td>
<td>Population in jurisdiction</td>
</tr>
<tr>
<td>BUILPERM</td>
<td>Number of building permits issued per year</td>
</tr>
<tr>
<td>EMP</td>
<td>Number of employees in building department</td>
</tr>
<tr>
<td>LAND</td>
<td>Land area of jurisdiction</td>
</tr>
<tr>
<td>CONSERV</td>
<td>Conservative voting in jurisdiction</td>
</tr>
<tr>
<td>REGI</td>
<td>Geographical regions of country</td>
</tr>
<tr>
<td>TOWN</td>
<td>Town (vs. suburb or city)</td>
</tr>
<tr>
<td>CODEAGE</td>
<td>Length of existence of code in jurisdiction</td>
</tr>
<tr>
<td>CITYMAN</td>
<td>City manager form of government</td>
</tr>
<tr>
<td>UNION</td>
<td>Strength of construction unions</td>
</tr>
<tr>
<td>SFIRM</td>
<td>Strength of construction firms</td>
</tr>
<tr>
<td>PN</td>
<td>Ratio of national strength of unions to firms</td>
</tr>
</tbody>
</table>

Note the last variable of the equation above. It shows the difference between the national ratio of interest group strengths \( P_N \) to the locally existing ones. According to our hypothesis, the preference for national regulation should be smaller, the larger the absolute difference is.

IV. Results

The results are given in Table 1. Let us first look at the factors that would support the functional, i.e., efficiency, hypothesis of the determination of the jurisdictional level. For example, one expects that the larger a town and the greater the activity level of its building department, the more likely it will regulate locally if there are economies of scale. We find
TABLE 1

DETERMINANTS OF THE PROBABILITY FOR NATIONAL CODE ADOPTION

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>t-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>POP</td>
<td>-0.00025</td>
<td>1.9261</td>
</tr>
<tr>
<td>BUILDPERM</td>
<td>-0.00024</td>
<td>0.5377</td>
</tr>
<tr>
<td>EMP</td>
<td>0.0038</td>
<td>0.4926</td>
</tr>
<tr>
<td>LAND</td>
<td>0.00012</td>
<td>1.5219</td>
</tr>
<tr>
<td>CONSERV</td>
<td>0.0261</td>
<td>1.3217</td>
</tr>
<tr>
<td>REG 1 (South)</td>
<td>0.2629</td>
<td>1.2910</td>
</tr>
<tr>
<td>REG 2 (West)</td>
<td>0.1412</td>
<td>0.4896</td>
</tr>
<tr>
<td>TOWN</td>
<td>-0.0026</td>
<td>0.3661</td>
</tr>
<tr>
<td>CODEAGE</td>
<td>-0.0041</td>
<td>3.9487</td>
</tr>
<tr>
<td>CITYMAN</td>
<td>0.0803</td>
<td>0.2295</td>
</tr>
<tr>
<td>PN / SFIRM</td>
<td>-0.3499</td>
<td>2.2641</td>
</tr>
</tbody>
</table>

\[ \text{R}^2 = 0.3126 \]

\( t \) - statistics in parenthesis
TABLE 2

DETERMINANTS OF THE PROBABILITY FOR NATIONAL CODE ADOPTION

Coefficients of Union and Firm Preference for National Regulation

<table>
<thead>
<tr>
<th>Localities with Union Predominance</th>
<th>Localities with Firm Predominance</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUNION</td>
<td>.3338</td>
</tr>
<tr>
<td></td>
<td>(3.1519)</td>
</tr>
<tr>
<td>SFIRM</td>
<td>3.0852</td>
</tr>
<tr>
<td></td>
<td>(3.1566)</td>
</tr>
</tbody>
</table>
indeed a statistically significant negative relationship of national regulation with population size, but it is of an extremely small size. Secondly, using the number of building permits that are processed by an agency as a measure for its activity level, we find a coefficient that is both small and insignificant. Thirdly, for the number of employees (as a measure for the size of the department), and for the land area of the community (as a measure of geographical scale) the coefficients are small, insignificant, and with a counter-intuitive sign. In short, no evidence is found for an economies of scale explanation of jurisdictional choice.

The historical-ideological hypothesis ought to be reflected in the determination of the jurisdictional level by political, regional, or historical variables. Yet the empirical analysis does not support this theory. First, no effect of political ideology can be found. Whereas the conservative ideology in the United States normally favors localism, it is here actually associated with a greater likelihood of national standards. Similarly, neither the Southern nor the Western regions of the U.S. despite their historical tradition of anti-centralism, show a preference for local regulation. In fact, towns and cities of these areas are more likely to be regulated by national code than those of the North and Midwest.

The "political constitution" of a locality seems to make no difference, either. There are two major forms of administration in U.S. municipalities. The first is the mayor-city council
system, in which the elected officials wield administrative powers. The alternative is for the elected bodies to appoint a professional "city-manager" who is in charge of the administrative affairs of local government. One may expect that under the more professional city-manager system, building codes are less affected by politics. However, when a variable for a city manager form of government is introduced as a measure for a separation of building codes from politics, it is found to have only little explanatory power. On the other hand, it seems to make a difference how old and established a building code is, judging from the high significance of the factor CODEAGE. But the magnitude of the coefficient is very small.

If functional and ideological-historical factors are found to have only little effect on the choice of local regulation, the relative strength of interest groups is a strong explanation. This coefficient is of fairly good size and statistical significance ($t=2.2641$). With its negative sign and its size it confirms that where relative extremes exist in the local power relation between the two affected interest groups, the likelihood for national regulation is small, since the locally dominant group will not wish to dilute its influence on the national level.

These results are even more strongly confirmed when we split the set of observations into two groups, those where unions are predominant and those where firms are. Using the same PROBIT analysis over these sets, we find that both interest groups reverse their preference, depending on whether they are predominant or not, as can be seen from the results in Table 2. Thus, where unions are strong locally, they prefer local regulation, while firms want national regulation. Yet when it is the firms that dominate locally, the opposite is true. Now it is the unions who want national regulation, with the firms preferring local regulation.
What are the implication of these findings? It seems that locally weak interest groups, regardless of their attitude towards regulation as such, seek national regulation to overcome their local lack of strength. Locally dominant groups, similarly without regard to their general attitude towards regulation, do not want their influence to be diluted on the national level. Hence, we see that preferences are result-oriented, with groups switching their position according to the regulatory results that they can expect locally or nationally. Their preference for regulatory level is pragmatic and outcome-oriented, not ideological or absolute.
12. The empirical section of the paper is given, in greater detail, in Noam (1982).


14. Data made available by J. Quigley and gratefully acknowledged.

15. Unless otherwise noted the data are from the above mentioned ICMA figures (see note 13).


17. Percent unionization in building crafts times number of construction workers, normalized for national average. Data from U.S. Department of Labor (1972,74), and provided by J. Quigley (1977).

18. Construction volume times concentration ration of building firms, normalized for national average. Data U.S. Department of Commerce (1972), and provided by J. Quigley.

19. Some caution must be used in interpreting $R^2$ in PROBIT estimation since it is only an estimate of true measure. The reason is that deviations about the dependent variable and its means are not observed; instead one estimates values of the underlying dependent variables. One must be careful about inferences about the true $R^2$, since the sampling distribution of $R^2$ is not known. In this situation the likelihood ratio $\lambda$ can test the significance of $R^2$, and is significant in this model.

20. To do so we separate those observations where union strength--normalized relative to the national average--is higher than that of firms--also normalized --, from those where it is lower.


