THE CHOICE OF GOVERNMENTAL LEVEL IN REGULATION

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I. THE PROBLEM

Although much has been written on intergovernmental relations in a federal state, there are surprisingly few economic studies that deal with the subject of regulation in a multi-governmental setting, and there is no body of research that can compare with the existing models of fiscal federalism (Oates [1972], Thurow [1966], McGuire [1972], and Breton [1965]). The legal and political science literature on federalism is also of little help, being primarily focused on constitutional issues. An extensive bibliography of federalism (Bachelder and Shaw [1971]) 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'.

There are important economic issues in the structure of a federal state which require understanding if public policies are to be successfully planned and implemented (Neumann [1971], Frey [1977]). Among these issues is the basic question why economic activities are regulated by different levels of government, i.e., what the ra-
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tionale is for the lodging of a regulation in a particular level of government.

To this question a first type of answer is traditionalist in outlook and historical-constitutional in methodology. Each level of jurisdiction, it is said, has a traditional role, typically specified by a national or state constitution (Corwin [1951]). It is characteristic of this view to see the determination of the governmental level of regulation as a product of political agreements, periodically modified if necessary. It explains how allocations of power among governments came about, but not necessarily why they did so. For the latter question, a second and more analytical set of explanations exists which may be called 'functionalist' (McGuire [1972]). Functionalists observe that there are economies of scale in the provision of regulation, just as there are for any service. Some regulatory activities, for example the zoning of land for residential or commercial uses, are handled most efficiently on a small scale, close to the object of regulation, i.e., locally. Others, like airline safety regulation, are undertaken more efficiently on a large scale, by formulating nationwide rules. The choice of jurisdictional level therefore requires the finding of the scale efficiency of a regulating activity (Tullock [1969]) 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 (Peltzman and Tideman [1972], Rothenberg [1970]). 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 (Posner [1974], Rose-Ackerman [1981]).

This paper, in contrast, argues that the determination of the regulatory level is not primarily a question of historical tradition or functional efficiency but rather one of variations in interest group power at different levels of government. Interest groups pragmatically desire the regulatory level whose outcome they like best, and the relation of group strengths on the local, state, and federal levels then determines the preferred levels of regulation. In the following,
this hypothesis will be formulized by a simple model and then investigated empirically.

II. THE MODEL

Let us assume a governmental system which consists of two levels of government, local and national; a regulation whose strictness \( R \) is a continuous variable; and two interest groups \( A \) and \( B \) which are defined such that the utility for group \( A \) increases with respect to \( R \), while that of \( B \) decreases, \textit{i.e.},

\[
\frac{dU_A}{dR} > 0 \text{ and } \frac{dU_B}{dR} < 0
\]  

(1)

The political system is responsive to the relative strengths of \( A \) and \( B \) such that in each jurisdiction a regulatory strictness \( R \) exists that is a function of the interest group strengths \( S_A \) and \( S_B \) in that jurisdiction

\[
R = f(S_A|S_B) = f(P)
\]  

(2)

with \( f_P' > 0 \)  

(3)

\( P \) is the ratio of interest groups, either that of local groups if regulation is set locally, or that of national groups if it is set on the national level of government. Interest group \( A \), preferring more regulation to less, prefers local over national regulation whenever the local 'power ratio' \( P_I \) is larger than the national one, \( P_N^1 \). On the other hand, where \( P_I < P_N \), the same group prefers the national regulation, since the latter's expected restrictiveness \( f(P_I) \) is greater than that of the local government \( f(P_N) \). For group \( B \) the opposite is true. We thus have, for group \( j \) in locality \( i \), a finite preference \( Q_{ij} \) for national regulation, expressed as a function \( g \) of the local and national power relations

\[
Q_{ij} = g_j(P_I, P_N)
\]  

(4)

with \( (g'_P)_A < 0 \) and \( (g'_P)_B > 0 \)  

(5)

This is depicted in \textit{Figure 1}, where the abscissa is the interest groups' power relations.

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1. It is assumed that there are no transfers of benefits between groups of different localities in the federation.
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Figure 1
Preferences for National Regulation

strength ratio \( P \), and the ordinate is the preference for national regulation \( Q^2 \). The two solid lines are the preference functions of groups \( A \) and \( B \), respectively. Where \( P_i = P_N \), indifference exists, i.e., \( Q_A = Q_B = 0 \).

2. A subsidiary and reasonable assumption is that there are diminishing changes in preference \( Q \) as \( P_i \) becomes increasingly different from \( P_N \). This can be expressed by

\[(g_{P_i})_A < 0, (g_{P_i})_B < 0\]
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Let there also be a community preference function $Q_i$, defined as the sum of each group's preference, weighted by the group's relative strength

$$Q_i = Q_{iA} \frac{S_A}{S_B} + Q_{iB} \frac{S_B}{S_A}$$

and thus

$$Q_i = g_A(P_i, P_N) P_i + g_B(P_i, P_N) \frac{1}{P_i}$$

This equation, depicted by the broken lines in Figure 1, has several properties: First, at both of the extreme values of the group-strength ratio, i.e., at $P_i = 0$ and $P_i = \infty$, it becomes negative and large, meaning that a very strong preference for national regulation exists. Secondly, where $P_i = P_N$, i.e., where the relative strength of the two groups is locally the same as nationally, $Q_i = 0$, i.e., indifference exists between national regulation and local regulation. Thirdly, $Q_i$ may become positive in some region immediately adjoining $P_i = P_N^3$. Thus the model shows a strong negative community preference for national regulation at the high and low values of the interest groups strength ratio (i.e., where one group is dominant), but a preference for national regulation may exist in some limited range near the national ratio of group strengths. This can be explained intuitively in that a locally predominant group does not want its influence over regulation to be diluted by being regulated nationally, where it has a lesser influence, and that it holds enough local power to make its preference for the jurisdictional level prevail.

According to the conditions

$$-g'(P_i) > \frac{g_B'(P_i)}{P_N^2}$$

then $Q_i$ is positive in some region to the right of $P_N$.

$$-g_A'(P_i) < \frac{g_B'(P_i)}{P_N^2}$$

then $Q_i$ is positive in some region to the left of $P_N$.

And if the two expressions are identical, $Q_i$ is tangent at $P_N$ but does not become positive.

It is possible, that the local preferences for a jurisdictional level will not be adopted by the federation. In that event the model can provide a measure for the dissatisfaction for the powers of the national government.
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This will be true regardless of whether the group is pro or anti-regulation. However, there may be some intermediate range at which the slightly less powerful group benefits from national regulation strongly enough relative to the more powerful group that the strength of its preference results in its choice being adopted.

This hypothesis must be distinguished from the simple assertion that one group is in favor of national regulation while the other is opposed, and that the dominant group gets its way. Instead, we find that either group, provided only that it is locally stronger than nationally, prefers local regulation, and that national regulation is preferred by the community, if at all, only where both groups are of relatively similar strength.

To investigate these observations empirically, the following section will look at the preference for local and national building code standards.

III. 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 [1971]). 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 primarly 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 1100 American cities and towns is available from a 1970 survey by the International City Manager Association (ICMA)$^6$, 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]$^6$.

5. Data made available by R. VENTRE, National Bureau of Standards, and gratefully acknowledged.

6. Data made available by J. QUIGLEY and gratefully acknowledged.
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The question for empirical analysis is how the choice for a national versus a local code can be explained. The 'functionalist' hypothesis for the regulatory level, based as it is on economics 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

\[
\text{NATCODE} = b_0 + b_1 \text{POP} + b_2 \text{BUILDPERM} + b_3 \text{EMP} + b_4 \text{LAND} + b_5 \text{CONSERV} + b_6 \text{REGI} + b_7 \text{TOWN} + b_8 \text{CODEAGE} + b_9 \text{CITYMAN} + b_{10} \left| \frac{PN - \text{SUNION}}{S\text{FIRM}} \right|
\]

Where:

- **NATCODE**: Adoption of a national code in a local community
- **POP**: Population in jurisdiction
- **BUILDPERM**: Number of building permits issued per year
- **EMP**: Number of employees in building department
- **LAND**: Land area of jurisdiction
- **CONSERV**: Conservative voting in jurisdiction
- **REGI**: Geographical regions of country
- **TOWN**: Town (versus suburb or city)
- **CODEAGE**: Length of existence of code in jurisdiction
- **CITYMAN**: City manager form of government

7. Unless otherwise noted the data are from the above mentioned ICMA figures (see note 5).
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 higher the activity level of its building department, the more likely it will regulate locally if there are economies of scale. We find 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


Table 1
Determinants of the Probability for National Code Adoption

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter Estimate</th>
<th>Standard Error</th>
<th>t-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>POP</td>
<td>-0.00025</td>
<td>(1.9261)</td>
<td></td>
</tr>
<tr>
<td>BUILDPERM</td>
<td>-0.00024</td>
<td>(0.5377)</td>
<td></td>
</tr>
<tr>
<td>EMP</td>
<td>0.0038</td>
<td>(0.4926)</td>
<td></td>
</tr>
<tr>
<td>LAND</td>
<td>0.00012</td>
<td>(1.5219)</td>
<td></td>
</tr>
<tr>
<td>CONSERV</td>
<td>0.0261</td>
<td>(1.3217)</td>
<td></td>
</tr>
<tr>
<td>REG 1 (South)</td>
<td>0.2629</td>
<td>(0.1291)</td>
<td></td>
</tr>
<tr>
<td>REG 2 (West)</td>
<td>0.1412</td>
<td>(0.4896)</td>
<td></td>
</tr>
<tr>
<td>TOWN</td>
<td>-0.0026</td>
<td>(0.8661)</td>
<td></td>
</tr>
<tr>
<td>CODEAGE</td>
<td>-0.0041</td>
<td>(3.9487)</td>
<td></td>
</tr>
<tr>
<td>CITYMAN</td>
<td>0.0803</td>
<td>(0.2295)</td>
<td></td>
</tr>
<tr>
<td>PN - UNION</td>
<td>-0.3499</td>
<td>(2.2641)</td>
<td></td>
</tr>
<tr>
<td>SFIRM</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

R² = 0.312611

* t-statistics in parenthesis

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

11. Some caution must be used in interpreting R² 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 R², since the sampling distribution of R² is not known. In this situation the likelihood ratio λ can test the significance of R², and is significant in this model.
**Determinants of the Probability for National Code Adoption. Coefficients of Union and Firm Preference for National Regulation**

<table>
<thead>
<tr>
<th></th>
<th>Localities with Union Predominance</th>
<th>Localities with Firm Predominance</th>
</tr>
</thead>
<tbody>
<tr>
<td>$SUNION$</td>
<td>-0.3338 (3.1519)</td>
<td>0.0715 (1.7271)</td>
</tr>
<tr>
<td>$SFIRM$</td>
<td>3.0852 (3.1566)</td>
<td>-0.1789 (1.9316)</td>
</tr>
</tbody>
</table>

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.

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

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12. 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.
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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 implications 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.

REFERENCES

FREY, RENÉ: 'Ansätze zu einer langfristigen Reform der bundesstaatlichen Aufgabenverteilung', in: SILVIO BORNER, WALTER WITTMANN and HANS WÜRG-
The paper analyzes the reasons for different governmental levels of regulation. Taking a different approach from the usual historical, constitutional, or efficiency explanations, the paper finds that the relative strength of interest groups at different levels of government is the primary factor. An empirical investigation of the building codes in 1100 U.S. cities and towns confirms that the choice of regulation by the national rather than local code is strongly affected by the relative power of interest groups instead of factors of efficiency of scale, ideology, or history. It is found that groups switch their preference, depending on whether they predominate locally or not.
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RÉSUMÉ

Cette étude examine les causes d'une réglementation à différents niveaux de gouvernement. Prenant une approche différente des traditionnelles approches historico-constitutionnelles et fonctionnelles, cette étude détermine que le pouvoir relatif de différents groupements d'intérêt à différents niveaux de gouvernements en est le principal facteur explicatif. Une étude empirique des codes de construction de 1100 villes et métropoles urbaines confirme que le choix de réglementation au niveau national plutôt qu'au niveau régional est fortement affecté par le pouvoir relatif de groupements d'intérêt à ces différents niveaux plutôt que par des facteurs d'économie d'échelle, idéologiques ou historiques. Il est démontré que les groupements d'intérêt déterminent leur préférence quant au niveau de réglementation en fonction de leur capacité à prévaloir localement.