POLITICAL STRUCTURE CENTRALIZATION AND SOCIAL POLICY:
A CROSS-NATIONAL STUDY

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ABSTRACT

POLITICAL STRUCTURE CENTRALIZATION AND SOCIAL POLICY:
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This thesis tests hypotheses concerning the impact of political
and economic variables on social policy. The research investigates the
role of political structure centralization and economic development in
affecting health, education and social welfare policies. Political
structure centralization is conceptualized utilizing three dimensions:
the constitutional status (federal or unitary) stipulating the number
of sovereign decision-making arenas, the degree of central government
control over taxation and spending -- fiscal centralization -- and the
degree of informal power sharing among groups (such as political parties
and interest groups) in society.

Earlier studies have suggested that centralized decision-making
structures lead to social policy development due to standardization of
procedures, efficiency in implementation and uniformity in efforts,
although there is debate whether the impact of federalism on policy is
conservative or expansionary. The literature fails to differentiate
among various aspects of centralization, however.

Modernization theorists and others suggest economic development
leads directly to advances in social policy. A generally accepted
hypothesis is that economic development has an independent positive
effect on policy expenditures and policy outcomes, or, short term
program results.

The empirical research based upon a cross-national sample of

sixty-seven countries shows that <u>federal/unitary status</u> has no impact
on such indicators as health expenditures, life expectancy, nurse
availability or nutrition levels. Nor does it affect education outcomes
such as gross enrollment ratios and the percent of the population en-
rolled in higher education. Formal legal status has no empirical
relationship to the social welfare policy area, but it does interact
with economic level to affect education expenditures: unitary structures
constrain the otherwise positive impact of economic development on
education spending.

Contrary to hypotheses in the literature, the research shows that
in most cases where <u>fiscal centralization</u> affects policy, the impact is
negative. Fiscal centralization has a direct negative effect on health
and social welfare expenditures and on the size of the public sector.
It has no effect, however, on health or social welfare outcomes, educa-
tion expenditures or gross enrollment ratios. The effect of fiscal
centralization on enrollments in higher education is dependent upon
economic level. Only in underdeveloped nations does fiscal centraliza-
tion have a positive effect on enrollments.

The impact of <u>informal political authority concentration</u> (measured
by levels of interest group activity and the percent of legislative
seats held by the majority party) is not easily generalized: the
effects of partisan dominance and of interest articulation change
depending upon the policy output or outcomes being considered and the
level of economic development. Moreover, in most cases where partisan
dominance effects social policy, it does so in interaction with economic
level. Partisan dominance and economic level constrain each others
effects. For example, whereas partisan dominance has a positive impact

on health expenditures in underdeveloped nations, at medium and high

levels of development, it has a negative impact.

While limiting interest articulation has a direct positive effect

on health expenditures, the impact of interest articulation on gross

enrollment ratios and relative income shares of the poorest forty

percent of households changes with economic level.

Finally, this research demonstrates that political structure

variables constrain or moderate the impact of economic development on

social policy. In a majority of the policy situations, the effects of

economic level are mediated by the political context.

Thus, the research demonstrates that the structure of decision-

making has implications for policy and that economic development is an

important contextual variable within which decision-makers must operate.

Yet, the structure of government in turn affects how economic resources

are translated into social development. The research, moreover, warns

against unilateral statements about the effects of structure and economic

level on policy.

For those national leaders and policy makers
who struggle to extend the grasp and horizon
of every citizen, and, who consider the pur-
suit of social equality a legitimate politi-
cal issue.

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as a polar dichotemy.

Several graduate colleagues took time to discuss ideas with me. I especially want to thank Ruth Hoogland DeHoog, Gary L. Crawley and J. Pat Willerton for their thoughtful suggestions.

My extended family encouraged my efforts. And finally, my husband, Al, who often became the victim of my bad moods and who suffered through my periods of doubt and uncertainty, never failed to provide emotional support in large amounts. I cannot forget, either, the long hours Al spent helping me code and transcribe data. His unconditional support saw me through this project.

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LIST OF ABBREVIATIONS

FU	Federal/Unitary Status
VPD	Vertical Power Distribution
PS	Party System, Number of Parties
LFV	Legislative Party Fractionalization in Votes Received
LFS	Legislative Party Fractionalization in Seat Share
IA	Interest Articulation by Associational Groups
EC	Electoral Competition
SUH	Selection of Upper Legislative House
SMP	Percent Legislative Seats Held by Majority Party
PDP	Power of Executive to Dissolve Parliament
CE	Central Government Share of General Government Current Public Expenditures
CR	Share of Total Public Revenues Collected by the Central Government
GC	Central Government Share in General Public Consumption Expenditures
CC	Central Government Share in General Government Civil Consumption Expenditures
FCI	Fiscal Centralization Index
SPS	Size of the Public Sector
HEXPOP	Health Expenditures Per Capita
IMR	Infant Mortality Rate
LE	Life Expectancy
DRS	Population Per Doctor

NRS	Population Per Nurse
BDS	Population Per Hospital Bed
CAL	Calorie Supply as Percent of Daily Requirement
PRT	Protein Supply Per Capita Per Diem
EDEXPOP	Education Expenditures Per Capita
GER	Gross Enrollment Ratios
SHE	Enrollment in Secondary and Higher Education
S1	Number Students at Primary and First Levels of Education
S2	Number Students at Second Level
S3	Number Students at Third Level
T1	Number Teachers Primary and First Levels of Education
T2	Number Teachers Second Level
T3	Number Teachers Third Level
YSP	Years Schooling Provided
SSEXPOP	Social Security Expenditures Per Capita
LOW INC	Income Share, Lowest 40% of Households
MID INC	Income Share of the Middle 40% of Households
TOP INC	Income Share of the Top 20% of Households
POP 50	Millions of Population with Per Cap Income Below $50, U.S.
POP 75	Millions of Population with Per Cap Income Below $75, U.S.
% 50	% Population with Per Cap Income Below $50
% 75	% Population with Per Cap Income Below $75
EPC	Electric Power Consumption

CHAPTER I

PERSPECTIVE: POLITICS AND POLICY

Introduction

A debate goes on among students of the Third World over the appli-
cability of traditional (Western) economic policy to the Third World
setting and specifically, the usefulness of the conceptual separation
between notions of optimum growth and distribution policies. The grow-
ing consensus among scholars is that aggregate growth as a social objec-
tive has been deficient; increased economic growth and higher gross
national products have not led to higher levels of living or to the
eradication of poverty, unemployment and concentrations of wealth in the
Third World. Instead, it is argued, nations must redirect growth
policies, outline redistributive goals and clearly state social objec-
tives in an effort to ultimately provide qualitative along with quanti-
tative growth. This debate over optimum growth versus redistribution
also goes on (but in slightly different terms) among scholars who focus
on the welfare state in post-industrial societies. Policy makers face
realities of poverty and malnutrition amidst affluence.

<div align="center">*   *   *</div>

This thesis attempts to shed some light on one issue area involved
in this debate -- it investigates variations among nations in the
effectiveness of national social policies (in areas of education, health,
and welfare) in affecting levels of living and redistribution.

<div align="center">1</div>

Specifically, it examines the relationship between political structure centralization and social policy commitment and outcomes.

While the research does not focus explicitly on economic growth policies as opposed to redistributive policies, it will allow initial answers to the questions "Have growth policies been stressed at the expense of social equality and the redistribution of highly concentrated wealth?" Or, "Has economic growth and development in turn affected social development?" Moreover, and very importantly, the research focuses on the role of government structure centralization and political factors in affecting social equality or qualitative growth. It has been this question -- on the role of political factors in shaping policy outputs and outcomes -- that has sparked a whole new literature in political science.

The Genesis of the Question

A major feature of political science literature in the last decade and a half has been its emphasis on the study of what governments do as evidenced by discussions of governmental performance, capacity, resiliency, stability, outputs and institutionalization. These discussions, which ultimately have emphasized the primacy of politics in affecting open, participatory societies, moreover, provided political science its raison d' etre. Almond and Powell, for example, have developed a paradigm around such concepts as system structures (observable activities which make up the political unit), functions, capabilities, inputs and outputs.[1] They suggest that political systems can be compared on "performance," or, how well various systems use their resources to meet the demands of their citizens. Similarly, David Easton has forwarded a systems model, arguing that all political

"systems" (or sets of related elements) involve inputs, conversion structures and outputs and that political systems can be clearly differentiated from social or economic systems for purposes of analysis.[2] In another vein, Samuel Huntington argues that political institutionalization and political organizations and procedures are necessary for the establishment of viable nation states, that is, states that are stable and orderly.[3] To Huntington, the primacy of politics, including the importance of establishing "legitimate" authority so that orderly change can occur, is unquestionable. Huntington praises Leninist Communism for its emphasis on organization and its seeming ability to create political institutions and authority after revolutionary periods.[4] Finally, other thinkers and scholars, among them V. O. Key and Duane Lockard, have held that political competition and participation ensures an equitable distribution of power in society and results in a more equitable distribution of goods among citizens, benefiting the lower strata. The implication of this literature, then, is that government structure and character colors and determines policy outcomes, affects the distribution of goods and opportunities, and ultimately, affects the stability and well-being of the larger society.

This emphasis in the literature on governments' performance and political outputs, however, seemed somewhat ironic when, in the late 1960s and early 1970s, the findings of empirical studies on determinants of policy and program expenditure levels -- studies growing out of this earlier literature -- began to appear. The consensus of this more recent literature focusing on the American states is that politics and political structures have little or no impact on policy. In separate articles, Dawson and Robinson, Dye, and Hofferbert and Sharkansky report

results that show no significant independent relationships among politi-
cal factors (such as party competitiveness in state legislatures and
governorships, tax structures, participation and voting turnout,
apportionment, divided control of state legislatures, and the character
of state legislative, executive and judicial branches) and policy out-
put.[5] The authors did find, however, that the wealth of the state or
its level of economic development and levels of education attainment
consistently and independently related to what policies are adopted and
how much money is allocated to resulting social programs. Maxwell and
Aaronson report, for example, that with some exceptions, "For every ten
percent increase in a state's per capita income, state-local expenditures
increase on the average, by approximately six percent."[6]

Quite naturally, these findings have increased the interest in a
study of governments' results or policy and political performance. They
encourage political scientists to take a careful look at the impact of
various political arrangements, to ask further questions about the
policy process and to develop new measurement techniques. They contri-
bute also to the initiation of a debate that goes on over the pre-
eminence of political influence over policy making, adoption and imple-
mentation. The "new" literature stemming from this debate includes
cross-national studies as well as further studies concentrating on the
American states. And findings of the literature have sometimes
supported and sometimes challenged the initial American states studies.

Some of the literature in the field of comparative politics and
several studies focusing on other nations have supported earlier
American states findings: political structure and the nature of the
regime have little to do with types of public policy adopted and

ultimately with conditions within society. (The study extended beyond
concern over policy expenditure levels.) Frederic Pryor, David Lane and
others argue that political systems in general are converging to new
"mixed" forms and that present differences between systems and politi-
cal structure in general have little effect on the nature of society.
Pryor finds that regime type, whether it be communist or capitalist,
plays little role in explaining public consumption expenditures.[7] Lane
argues that certain social forces and institutions associated with
economic and social change or endemic to industrial structure, such as
division of labor in the economic sphere (where some workers get creative
tasks and others get dull tasks), have similar effects wherever they
are present, whether in Western - capitalist states or in state -
socialist societies. Lane finds more similarities than differences
between capitalist and socialist societies in areas such as access to
education and occupational prestige, and he argues that there is in-
equality in both system types in control over wealth, political power
and income and status.[8]

Other scholars argue that the level of economic development of a
system, not the type of political structures present, determines the
quality of life a society enjoys. Phillips Cutright found in separate
works (1965, 1967) that economic development leads to greater equality
in the distribution of worker income among industrial sectors and that
the level of economic development is more important than regime type
(in this case, democracy) in determining policy activities in social
welfare areas.[9] Likewise, Robert Jackman found that economic develop-
ment relates to greater policy effort in the areas of social and economic
equality, whereas the degree of regime democraticness adds nothing to

this relationship.[10]

The findings of these studies, however, including those on the American states, do not stand unchallenged and the debate over the primacy of political factors and their influence on policy and expenditure levels (and ultimately on the quality of life in general) continues. Several studies have found political factors to be important determinants of American state policies. Edward Jennings' 1978 study of eight states suggests that in states whose electoral systems and partisan alignments are organized along lines of class cleavage, welfare policies will be more generous and welfare effort will be greater.[11] Strouse and Jones[12] and Sack and Harris[13] show that federal aid and intergovernmental transfers -- political variables in the sense that they are elements of political control and the products of multi-level decision-making -- are increasingly important in determining amounts spent on various social policy programs in the states. And, Jack Walker demonstrates that apportionment practices (whether urban areas are granted full representation in the legislature) affect the acceptance of new policy ideas and innovative programs.[14] Moreover, Cnudde and McCrone argue that the pre-eminence of political factors varies, depending on the issue at hand. They suggest that political factors such as degree of political competition, the party system and the openness of the system are important relevant variables in issues close to the have - have-not struggle.[15] Likewise, Fry and Winters argue from their 1970 study that political factors (political participation, Democratic vote, interparty competition, apportionment, legislative party cohesion, and others) are more important than socio-economic factors when benefit and burden allocation patterns (and overall redistribution) rather than levels of

public expenditures are studied.[16] Similarly, Hofferbert and

Sharkansky argue that "The distribution of benefits or sanctions is

perhaps the most important output dimension for political scientists...,"

and stress the difference between the level and distribution of benefits

of social policy.[17] Sharkansky, in a separate work, reasons that

political factors will affect the size of the increment of change in

spending more than they affect absolute levels of spending, due, in

part, to a feedback effect where the results of previous policies and

decisions are considered.[18] Finally, Andrew Cowart shows that past

experience with similar programs as well as political norms of involve-

ment established in previous programs greatly affect the levels of new

expenditures in the states.[19] There is evidence from recent American

state studies, then, that the nature of the political setting affects

the level and the impact of social policy.

Those interested in cross-national research, too, have continued

the study of the influence of politics on policy. Hogan suggests, after

studying Mexico and Canada, that the influence of politics on policies

may increase as a nation reaches a higher level of economic development.

In Canada, political factors were as important as socioeconomic factors

in explaining policy outputs.[20] In further support of Hogan's argument,

Peters finds a pattern of increasing importance of political variables

over economic development indicators in France, the United Kingdom and

Sweden since 1910.[21] Moreover, Peters, in conjunction with Doughtie

and McCulloch finds (in a study of twenty-one developed democracies)

that a nation's culture and type of decision-making structures in-

fluence the types of social policy adopted.[22] Cameron and Hofferbert,

arguing along similar lines that the structure and nature of

intergovernmental relations should affect political outcomes, find that within-system disparities in educational expenditures vary systematically between federal and unitary states.[23] And, the researchers involved in the International Study of Values in Politics found that the national political setting and macro-processes influence a government's activeness in areas of change and equality.[24]

In another vein, Harold Wilensky posits that several things interact to lessen a country's commitment to expanding welfare policies: local control and decentralization in government structures and in labor federations, social pluralism or heterogeneity and the degree of stability of the party system and in the revenue structure.[25] And finally, Noel Boaden and Douglas Hibbs, in separate works, show that current national policies are reflective of the ideological bent of the party in power. Boaden gives evidence from boroughs in England and Wales that party (which party is in control) affects the establishment of priorities among services; Labour councils were bigger spenders and generally more active in certain policy areas, especially those areas affecting the working and lower classes.[26] Hibbs concludes from his study of Western industrial nations that "...governments pursue macro-economic policies broadly in accordance with the objective economic interests and subjective preferences of their class-defined core political constituencies."[27]

After a reading of the literature, it becomes evident that there is little clear consensus among scholars on the impact of politics on policy or on policy results. Nor has the study progressed in a cumulative manner; different researchers use very different measures for their dependent and independent variables, and a wide range of political

factors has been considered in separate studies. Moreover, some researchers study expenditure levels while others look at impact variables and service levels, or at the distribution of benefits.

Several themes do emerge from the literature, however. First, it seems that the issue - area may determine whether or not political factors will play an important role in shaping policy outcome. The area of education policy typically becomes highly political and controversial. Hofferbert and Sharkansky note this in their later American states studies. Moreover, welfare policies can be politically controversial, especially where socio-economic class or ethnic divisions are salient. Jennings, Wilensky, Hibbs and Boaden all note this phenomenon. In the United States, this kind of phenomenon became evident in the 1960's in Congress (and in the states) when welfare as well as civil rights policies were being challenged by political elites from the South. Political factors may come into play in a special or more obvious way when certain issues are being addressed; education issues and issues related to the have - have-not struggle (or to the redistribution of society's goods) particularly seem to be affected by the structure of politics.

Second, then, is a corollary theme, that social and/or demographic conditions -- heterogeneity, economic division, the size of the "needy" population, et cetera -- may affect the role or impact of political factors on policy decisions. Such demographic factors as the percent of the population that is school-aged and the health of the population, moreover, determine "need" and thus partially determine policy responses. Ecological pressures are discussed by several researchers including Sharkansky, Wilensky and Peters.

Third, it seems clear that former program experience and norms of program involvement (i.e., earlier political decisions) affect present decisions about new policies. Walker, Jackman and Cutright find this relationship or control for it in looking for further determinants of policy and the role of politics.

Fourth, scholars generally acknowledge some role for economic development in determining policy expenditure levels, for example, although there is not widespread agreement about how far this relationship goes. Expenditure and general policy implementation require some amount of economic resource capacity, but Jackman[28] and others suggest a curvilinear relationship here, i.e., there is a point at which the rate of welfare state development begins to lag behind (continued) economic development. Others, like Hogan and Peters, posit that the importance of system wealth as a determinant of policy varies over time and that after reaching a certain level of development or growth, political factors play a more important role than economic factors in shaping policy.

Finally, it is generally recognized that a study of policy expenditure levels is not the same thing as a study of policy impact or results.[29] Sharkansky, Fry and Winters and others point out that there may be a gap in the translation from expenditure to services or from expenditure to equal distribution. Peters and Heisler note that

... converting laws, rules, decisions, regulations, and even authorized expenditures into real consequences for, or impacts upon, the society or any other target of policy (e.g., the environment or another policy), is neither a routine process nor one free of politics. Indeed, one of the

interesting developments over time in the <u>role of politics</u>

<u>in public policy</u> in highly developed societies is that it

<u>seems to have moved from that portion of the system in which</u>

<u>inputs are converted into outputs to that segment where out-</u>

<u>puts are converted into outcomes.</u>   (emphasis mine)[30]

Expenditures and actual service levels may better be considered part of

policy <u>output</u> whereas distribution patterns better indicate policy <u>out-</u>

<u>come</u> or short-run results. The question of what role politics plays,

then, must be considered in two parts.

The Impact of Political Structures on Social Policy Outputs and Outcomes

New research focusing on the influence of political factors on

policy or policy effectiveness can benefit from the relationships

uncovered by earlier researchers and go on to further specify the im-

pact of politics. Given the various findings and assertions in the

literature, we may try to specify under what conditions political

variables might affect policy, rather than continuing the rather sterile

debate between those who argue for and those who argue against the

importance of political factors. The framework of the investigation

should allow for the question "Which factors play a role under what

circumstances?" It seems reasonable to expect that depending on cir-

cumstances (the policy areas under study, the level of government

studied, the historical time period, the level of national wealth,

national demographics, et cetera) political factors may play a greater

or lesser role in affecting policy results. Peters and Hogan both seem

to suggest that such a developmental model may best explain policy;

that is, over time policy determinants change in importance.

In this study I shall investigate the variations among countries

in commitment to various social policies and the effectiveness of those policies in providing for the general well-being of citizens. In particular, I will investigate what influence political structure centralization has on social policy outputs and outcomes. I shall study three policy areas -- education, general welfare and health -- that directly affect the day to day well-being and quality of life of citizens and that are the concern of all governments whatever the regime ideology or level of political "development." That is, any viable nation-state must be concerned with providing for at least minimal levels of health, education and welfare for its populace if it is to survive as a legitimate political entity. No nation can long survive with a sick or disabled citizenry, nor can a state function politically, economically or socially if basic human needs are not being met. Economic change and growth, for example, requires healthy, literate workers. Moreover, pressure for increased activity in these policy areas (as opposed to other areas such as national defense or transportation), as well as debate over the correct role of government and the proper methods of implementation of social policies, are features of political life everywhere. It is also the case that these policy areas are ones in which we would especially expect to find a role for politics. Regarding education policy, for example, Cameron and Hofferbert state:

> Education policy lies at the crossroads of the economy and
> the polity. The education policy process involves inter-
> action of class, religion, ethnic and linguistic conflicts.
> No other arena of social policy more accurately reflects
> patterns of social distribution which have cumulated

through past resolution of these conflicts in favor of particular groups. And because educational outcomes structure the allocation of values within a society not only for the immediate period but also for future generations, no other arena of policy has been more politicized by those advocating or opposing fundamental social reform.[31]

In this study I will focus upon the impact of the degree of government centralization or authority concentration on social policy outputs and outcomes and the relationship of centralization to the extent to which various nations are committed to education, health and welfare policies. Further, I will focus on what that commitment means in terms of actual goods and services available to citizens. Is there an easy translation from outputs (and commitment) to outcomes?

One way to measure national commitment to social policy areas is to look at the level of expenditures appropriated to those areas in the total system. How do nations compare, for example, on amount of money allocated to health or to education on a per capita or per student basis? How do they compare on proportion of national wealth devoted to social policies? These figures would indicate a country's policy effort.

They would not indicate, however, actual short-term policy impact, services delivered or policy outcomes. That is, money allocated may "get lost" in implementation or otherwise fail to be translated into actual goods and services; money may not reach target groups. It is necessary, then, to look at the level of actual goods and services at the citizens' disposal if we wish to draw any conclusions about the effectiveness of policy and political performance or outcome. Data on

such things as educational attainment, literacy, infant mortality and the distribution of material goods (such as income) must be collected.

The Question of Distribution

Up to this point, the issue of the <u>distribution</u> of and access to goods and services provided by such social policies for the well-being of society has not been addressed, even though the "well-being of society" implies the well-being of all groups and "quality life" implies at least minimum levels of need satisfaction for all citizens. Yet, it is generally through social security or social welfare plans that nations typically try to improve the lot of the "have-nots" or the lower income groups in the society, or try to establish a program of risk-sharing, whether or not the stated goal of the program is a redistribution of the material goods society has to offer. Titmuss argues, for example, that in general, social security and service programs affect "equality" by affecting the distribution of income, command over resources and overall life chances.[32] And, Jackman states:

... while it is not necessarily the case that the intent

behind social security programs is to eliminate the variance

across individual incomes within societies, these programs

are typically designed to raise the incomes of those at

the lowest levels of income by protecting them against unem-

ployment, illness, and so on. If they do raise the income

of such groups in this manner, these plans may make the

distribution of material rewards more egalitarian.[33]

The implication is that with more social security spending, a nation inevitably becomes more egalitarian socially. Cutright finds similarly that the effect of large social security programs is to make

income distribution more equal even though such programs are not usually
designed to erode the privileges that the rich enjoy and give them over
to the poor. Nations with a large percentage of their gross national
product committed to social security plans do tend to transfer a large
amount of income to poorer groups in the system.[34]

It need not be the case, in other words, that social security or
social welfare policies are a result of altruism on the part of policy
makers.[35] Such programs may be implemented for very practical reasons.
But it does seem that such programs lead to some redistribution of valued
goods and services among groups in society.

This is not to argue that redistribution is easily accomplished or
that it is a necessary corollary to economic growth. It is clear that
in spite of their social welfare programs, the industrialized and
wealthy Western nations have not been successful at eliminating problems
of wealth concentration and poverty. Moreover, those who study the
Third World and processes of political and social change argue that
traditional (Western) economic theory -- which stresses the primary
importance of industrialization and steady growth of the gross national
product -- has failed in its implementation to redistribute benefits
of growth and thereby eliminate the disadvantages of the lower economic
strata. Third World societies -- even those that have experienced
greatly expanded per capita incomes -- have not experienced the
"trickle-down" of benefits from modernized to rural sectors which
theorists argued would result from industrial growth.[36] Instead, as
Hollis Chenery argues, it is clear now that in spite of years of growth
in the Third World, new wealth has been very unequally distributed and
major social problems have not been alleviated.[37] Distribution of goods

and services is an <u>important question to be addressed by social policy</u> in all nations.

In a study of the effects of political factors on social policy choices, level of commitment to the policies and policy outcomes, therefore, distribution patterns must be considered. The issue of social equality, or, "...the structural issue of the extent to which access to and the consumption of material goods are distributed in an egalitarian manner within societies,"[38] must be addressed. This is so especially when considering the outcome or short-term consequences of the "social welfare policy" dimension, since this dimension is generally recognized as redistributive. But we may argue that the other social policies -- health and education -- also are indicators of efforts to redistribute chances between the haves and the have-nots for attaining valued goals.

It is clear, however, that it is not enough to look at absolute levels of program expenditure. Rather, <u>distribution patterns present another dimension of policy results</u>. They allow us to generalize further about the <u>short-run impact</u> of policy choices on society; that is, how have those policy efforts affected the overall quality of life of all groups? (Only an historical or time-series analysis involving data covering a longer time span would allow generalizations about <u>ultimate</u> policy impact. This thesis investigates immediate policy outcomes, or results that are of immediate concern to policy makers.)

Education Policy - A Note

To say that national health policies and programs affect citizens' quality of life and indirectly indicate efforts at a redistribution of valued goods -- such as health -- sparks little controversy. The poor,

who cannot afford private health care, are subsidized by the national government through various health-care programs. But given recent literature on the failure of education to affect social or occupational equality in the United States, we must justify the use of education policy in this study as an indicator of efforts at redistribution of life chances.

My use of education policy in this study (as with the other policies) is twofold: 1) I am interested in the influence of political structure on education expenditures and service levels and on education policy outcomes and 2) I am assuming that education policy is at least an indirect indicator of efforts at assuring a quality life to all groups within society. It is this second usage that must be justified.

In his seminal study, Christopher Jencks argues that equalizing educational opportunities in the U.S. has not led to equalization of income or of occupational status between individuals -- education policy has not affected equality of opportunity or equality of results. Instead, Jencks argues, factors such as luck and on-the-job competence -- factors which are only moderately related to schooling, family background or standardized test scores -- result in unequal adult life chances. Therefore, Jencks calls for direct policy moves toward insuring equality of results where some insurance system can neutralize the effects of luck, redistribute income and "break the link between vocational success and living standards."[39]

Wilensky, in agreement with Jencks, posits that education is overwhelmingly meritocratic and vocational, especially in relatively affluent societies, and that it is not equalizing. He argues further that when a nation develops mass higher education it lags behind in

welfare program development. Whereas health and welfare contribute
directly to equality, according to Wilensky, education can provide no
more than a peripheral contribution to equality (of results).[40]

Moreover, Carl Weinberg points out that educational opportunities
in the U.S. have not contributed to social mobility and may, in fact,
reduce mobility chances for lower groups:

> Education is now considered almost exclusively the channel
> for social mobility in our society. When the school dif-
> ferentiates students early in their educational career, it
> is denying to those who are allocated to inferior status
> the only opportunity they have for social mobility....
> Mobility for the poor today is as doubtful as it was fifty
> years ago. Only one out of three persons improves his
> social position from one generation to the next and of per-
> sons in the lower or poverty classes, less than three out
> of 100, on the average, are able to claw their way to pro-
> fessional status. If it were not for the random fortunes
> of athletic scholarships, the figure would be even smaller.[41]

On the contrary, others argue that the impact of education has not
been slight and that education policy may have implications for redis-
tribution efforts, if not for movement toward equality of results.
Murray Milner writes that higher levels of education enable blacks and
other minorities to secure better jobs: in March, 1970, 65% of nonwhite
men with four or more years of college were professionals or technical
workers, while 4% of high school graduates in the nonwhite male cate-
gory had such jobs. Also, Milner notes a change between 1960 and 1970
in the differences in occupational status between groups with similar

levels of education. Whereas in 1966 his "index of dissimilarity" was
around 38, in 1970 it was around 28. Milner concludes by pointing out:
1) that there are still differences in educational attainment even
though job market discrimination seems to have decreased for those
with college training and 2) that however much Americans are committed
"tardily, reluctantly and hypocritically" to racial equality, they are
not committed to economic or social class equality.[42] Milner ultimately
argues for efforts to reduce economic inequality and to increase
equality of results or benefits.

Further, Becker and Chiswick posit a direct link between schooling
inequality and income inequality in U.S. states and within states, and
in several other countries. They state: "Evidence ... indicates that
schooling usually explains not a negligible part of the inequality in
earnings within a geographical area and a much larger part of differences
in inequality between areas."[43] They also give empirical evidence to
support the idea that additional expenditures on education may yield
higher returns in low income areas -- education policy may be used to
improve life chances of poorer groups. In further support of this view,
Jan Tinbergen argues that even though education has been expanded in
recent decades in the U.S., it has not expanded enough to meet demands
of the organizers of production or of modern society in general. There-
fore, he argues, income inequality remains unchanged from what it was
before expansions in education. Income inequality is a function of
(among other things) educational opportunity and attainment.[44]

Russell Harrison argues in his 1976 work that fiscal reform of
U.S. education systems would better ensure equality of benefits, pro-
mote equity and increase the efficiency of society's allocation process

for social, economic and political resources. (His most basic reform would entail disproportionately increasing expenditures in areas with the highest rate of returns from educational investments -- theoretically, the poorer areas.) According to Harrison, education (and fiscal reform) would equalize benefits because, among other things, education can raise the average level of political participation and thereby increase equality of political participation.[45]

Finally, Lawrence Joseph criticizes Jencks' work on philosophical and logical grounds. Joseph argues that Jencks did not make a convincing case (in showing conventional wisdom about the link between education and equality to be wrong) because he was not clear on his underlying assumptions about the nature of education, and the meaning of equality and equality of opportunity. In this view, Jencks fails to discredit the equality of opportunity concept as it relates to open education systems. Joseph argues:

> What Jencks fails to understand, then, is that the lack of
> relationship between equality of opportunity and equality
> of results is a logical, not an empirical one. The norma-
> tive implications of the meritocratic model are such that
> we should not expect equality of opportunity to lead to
> equality of results.... Thus, regardless of the validity
> of Jencks empirical analysis, his argument about the deter-
> minants of inequality in adulthood is essentially irrele-
> vant to his policy conclusion regarding income redistribu-
> tion. That is, his normative argument for equality of cir-
> cumstances in no way depends upon whether equality of
> opportunity leads, empirically, to equality of results....

The key point which Jencks fails to understand, of course,

is that equality of opportunity in its meritocratic form,

is not meant to lead to equality of results. Equality of

opportunity will be compatible with equality of results

only in a society which is already radically egalitarian.[46]

Providing education to one's citizens may be viewed as a condition

of equality or a concomitant of efforts toward equality of results (as

opposed to equality of opportunity or equality as based on a merito-

cratic notion). Education is something that is vitally important to

any effort at providing well-being for citizens in that it can open new

horizons and create new opportunities for them. Many scholars argue

that education plays a positive role in facilitating redistribution. But

if education is not a concomitant of social equality, it is also not

antithetical to it.

For several reasons outlined earlier, and given that there are

some indications that education may relate to income distributions (for

example) and improving life chances, education is an important policy

area for consideration. The limitations involved in considering educa-

tion as an indicator of social equality are recognized. It can only be

an indirect indicator of larger efforts at basic redistribution.

The Impact of Various Forms of Political Structure Centralization

The political factors under consideration in this study are

patterns of intergovernmental relations and the role of national govern-

ments vis-a-vis their subnational units in public policy authority and

command over resources. Specifically, the focus is on the role of the

national government in public policy authority (setting priorities,

choosing and writing policy, spending and taxing, implementing or

enforcing policy, controlling resources) and on the degree of policy
authority concentrated at the national level. Since patterns of
centralization and intergovernmental relations establish a framework
within which political, social and economic variables must operate, we
would expect the nature of center - periphery relations to be a critical
determinant of policy. The question under study here is: What is the
effect of political structure centralization on social policy?

Discussions in the literature on government centralization have
generally distinguished several types of centralization: financial or
fiscal, formal - legal (federal or unitary structure), and more general
political centralization, such as the degree of vertical power distri-
bution. Although some refer to structural centralization in loose terms
and without clearly defining the concept, other writers argue that
different types of centralization exist. Cameron and Hofferbert posit
that fiscal decentralization and constitutional federalism are not
necessarily identical and give England (unitary), Norway (unitary) and
Austria (federal) as examples of where the two aspects of "centralization"
diverge.[47] These authors state:

> ... The important difference in intergovernmental relations
> is not simply that between defacto centralized and decentral-
> ized but that between unitary and federal systems of govern-
> ment. Two federal (or unitary) systems may manifest differ-
> ent degrees of allocation of financial responsibility to the
> central government and yet the two may not differ in any
> measureable way in the structure of intergovernmental rela-
> tions.... On the other hand, two systems one of which is
> unitary and the other federal may have very different

structures of intergovernmental relations in spite of comparable levels of fiscal centralization (e.g., Norway and Austria).[48]

Samuel Beer, similarly, conceives of federalism as a special kind of decentralization,[49] while neither Werner Pommerehne nor Paulo Vieirra find a significant relationship between constitutional federalism and fiscal centralization in their multinational studies.[50] Moreover, Michael Reagan argues that even when the formal criteria of "federalism" are met, little has been learned about actual power distributions or political function distributions among levels of government. The formal (legal) meaning of federalism has little real significance politically, and several factors must be looked at to see where power lies.[51] Many other writers concur with Reagan that federal systems vary significantly in their level of more general political centralization and in their basic characteristics. Federalism in broad terms and as a formal - legal arrangement simply guarantees some decentralization of decision making and guarantees the formal autonomy of multiple decision points.[52] Divisions of functions between units, for example, differ among federal systems.

Given these observations from the literature, it may be useful to study the policy impact of political structural centralization in three separate parts, fiscal, formal - legal and political. Such a breakdown of political structure centralization into several types, and a consideration of the effects of each type on social service policies has not been evident in the literature to date.

Government Centralization In The Literature

Several writers conceive of national government centralization in more general terms in discussions of the effects of centralization on policy or society. I will consider these arguments about centralization first. Marion Levy argues that centralization of governmental control and authority (presumably including control over financial and all other matters) is quite necessary in changing ("developing") societies where a strong sense of policy direction is needed for the sake of stability. It is a strong, centralized political structure that has the coercive and financial capacity to handle the overwhelming problems encountered in "transitional" societies.[53] Centralization, then, provides policy direction and enforcement where weaker, subnational units could not. Hage and Hollingsworth forward similar arguments in their considerations of how structure might affect political performance. They hypothesize that governmental centralization (in economics and political power) leads to policy efficiency and standardization across regions within nations, promoting social equality across social classes and groups.[54] They encourage study of such hypotheses in attempts to integrate social theory and social policy.

In a study of the world's twenty-two richest nations, Wilensky uncovers some evidence for the hypothesis that centralization promotes an emphasis on welfare spending and equality. Defining "centralization" as a composite of indicators of constitutional form, financial centralization and political control by the center over local chief executives, Wilensky finds that more centralized nations have greater welfare state development or spend more money for welfare or equalization programs.[55] (He does not attempt, however, to refine or break down his

concept of centralization to consider whether different types of

centralization may have varying effects on policy.)

Morrison and Stevenson, on the other hand, discuss the national

centralization of politics and economics in African states and conclude

that such centralization has been less than effective in meeting communal

demands and daily needs through social policy -- centralization has led

instead to instability and violence.[56] Their empirical findings stand

in contrast to Levy's theory (which also considers the developing

countries) and run counter to Wilensky's findings. (The differences

between Wilensky's findings and Morrison and Stevenson's results may be

a function of several factors, including level of economic development

and their definitions of centralization. This study may illuminate some

of these problems.)

Uphoff and Esman present further evidence to support the idea that

centralization may have a negative impact on social welfare development.

In their studies, these scholars find a positive relationship between

local control and planning and attainments in the nutrition, health and

education areas even when controlling for national wealth. Development

in the social policy or human sphere, they argue, takes place where there

is local initiative and resource mobilization. Uphoff and Esman, how-

ever, qualify their findings by pointing out preconditions for the

success of social development at the local levels. Local organizations

cannot support programs for social equity on their own; they need

strong linkages with and political and resource support from the center

government. Moreover, the authors find that there must be "relative

equity in the ownership of assets, particularly land" before there can

be effective local organization. In other words, entrenched elites make

local social development impossible, and, some degree of social equality must exist prior to welfare development. (The fact that these pre-conditions are absent in many Third World nations seems to limit the applicability of Uphoff and Esman's strategy for development, and, implications for policy making are unclear.)

Fiscal Centralization

Several other writers address the question of the policy impact of fiscal centralization. According to Frederic Pryor, economic centrali-zation leads to a greater proportion of national wealth being devoted to education due to the unity of budgetary organs, greater comparability of programs within the nation and greater policy emulation across units. Pryor argues that centralization allows for hierarchical organ-ization, well-defined administrative links and standardization of tools and procedures, which in turn lead to a set of binding instructions on organs of government.[58] In a more decentralized setting, on the other hand, approved budgets may only represent an "upper limit" on spending and may in fact be reduced in various circumstances by local or lower-level administrators. Furthermore, Peacock and Wiseman seem to suggest that greater financial centralization leads to greater allocations of funds for social policy for three reasons: 1) centralization is both a product and a cause of uniform standards of policy being developed, 2) centralization enables the national government to overcome problems which transcend or are external to local units and, 3) it allows for a greater reliance on more efficient or wealth elastic revenue systems.[59] Given these works, then, we would expect fiscal centralization at the national level to lead to greater social services or public spending, for example, on education.

Pommerehne and Oates, in separate works, stress the importance of fiscal centralization in any <u>attempts to redistribute income</u>. Pommerehne argues that state and local governments do not have the necessary tax margins available to them to be able to enforce an aggressive redistribution policy (since national governments generally regulate the extent to which the locale can lay down tax rates) and that local units that enforce such redistribution may simply fail when mobile economic subjects "harmed" by such policy migrate to another state or locale more advantageous to them.[60] (One generalization from Pommerehne's six-nation study is that major differences in income encourage a stronger redistribution effort by the central government, which in turn spurs greater centralization.)

Oates concurs with Pommerehne when he concludes that higher degrees of mobility may make redistributive programs impossible to implement at the decentralized level and he predicts greater fiscal centralization in this policy area. It is reasonable to expect, Oates says, that a basic determinant of the proper level of government to handle the distribution of a service for the public is "the geographic pattern of the effects of the output." For example, due to the mobility of families and of workers in a modern society, all groups and locales are concerned about providing quality, sometimes standardized education. The whole of society feels the effects of educational policies in any given area within the nation. Or, pressures for improved levels of services for poorer areas -- areas that are a cause of concern or embarrassment to the more affluent of a nation -- may be a centralizing force. The benefits of improved services to poor areas serves the whole nation: the poor benefit from improved services, and the consciences of the rich

are relieved. The effects of the output are felt by all.

Oates also elaborates on factors or problems external to locales that may tend to increase the demand for fiscal centralization:

... the growing knowledge, mobility, and wealth that accompany economic development tend to reduce the scope for independent budgetary policies by decentralized levels of government. Local public officials find over time that they become less insulated from the policies adopted in other localities.... It is also possible that technical progress over time will permit more effective centralized provision of some public services so that previously nonexistent economies of scale will come into being....[61]

Problems external to locales, or ones too large or "too hot" to be handled by local politics, must be handled on a higher level where financial and administrative and coercive capabilities are greater. Oates and others point this out. The fact of "externalities" and their multidimensionality becomes clear, too, in U.S. national politics and, not surprisingly, also in writings on minority populations and their mistreatment at the hands of local politicians. For instance, on this aspect of externalities and redistribution efforts Daniel Moynihan writes:

The necessity for concentrating decision making at the national level will be enhanced if current trends in racial concentration persist. Between 1960 and 1966, the number of children under age fourteen in metropolitan areas increased by 3.3 million.... The average annual rate of increase of nonwhite children (2.4 percent) was three times the rate for

white children. Ninety-five percent of the nonwhite increase

was in central cities.... According to one estimate, by

1970 Negroes will constitute 40 percent or more of the popu-

lation in fourteen of the nation's major cities.... In

southern communities accustomed to taking collective measures

to prevent Negro accession to power, there may be movements

toward metropolitan governments in order to maintain Negroes

in a minority voting status; but, in general, continued and

possibly heightened racial tension is likely to inhibit

greatly the development of true metropolitan governments. A

fortiori the resolution of conflict between central cities

and suburbs will have to occur at the federal level save for

the few states with sufficient political and fiscal resources

to handle such matters at the level of state government.[62]

Where subnational units feel (or prove to be) inadequate to meet

social demands and situations, therefore, we may expect increased pres-

sures for national government involvement and centralization in fiscal

matters. The question then is, Is centralization a precondition for or

a spur to social equality and a more equitable distribution of society's

goods?

Oates does not agree with either Peacock and Wiseman or Pryor that

fiscal centralization leads to greater public spending. He finds that

after allowing for effects of the level of income on the size of the

public sector relative to the size of the economy as a whole (something

Peacock and Wiseman also consider when they discuss effects of

affluence), fiscal centralization has no independent effect on the size

of public spending.[63] (Nor did he find, in a quick look at federal or

unitary status, that that status accounted for variations in the size of the public sector.) However, Oates does not at any point break the "public spending" figure down into policy areas, nor does he consider variations in policy outcomes, something that this study will consider. Oates' concern is centered on the question of which level of government should perform which functions.

The literature, in review, provides no consensus on what impact fiscal centralization has on public spending, nor has more detailed study been undertaken to determine the effect of fiscal centralization on various policy areas and policy results (except for Pryor's look at education and Oates' and Pommerehne's theoretical consideration of redistributive policies). Important questions remain to be answered.

Federal/Unitary Status

The impact of _federalism_ on policy is a subject area that has received little attention from political scientists. Yet the question does not seem unimportant or irrelevant given that almost forty percent of the world's population lives under federal governments.[64] Many scholars have gone to great lengths explicating the meaning and history of federalism.[65] The explications in volumes and essays have noted few common principles among federal systems, however, and, after reading the literature on the nature of federalism and considering the world's federal systems, one is capable of saying little more than that federalism refers to a structural and legal form. Federalism constitutionally and structurally establishes the autonomy of multiple decision points (although it does not specify divisions of functions between those points) and an actual and areal division of power between a general government and several subnational governments. It ensures that a

citizen will be subject to two jurisdictions.[66]

This is not to diminish the significance of a nation's claiming federal (or unitary) status. The pattern of intergovernmental rela- tions -- whether or not there will be subnational jurisdictions and how centralized structures will be -- should have important consequences for policy and for the well-being of society as a whole if only because federal/unitary status stipulates the number of decision arenas (one or several). Given the attention paid to it by scholars and national leaders, moreover, we should expect federalism to make some difference (compared to politics in unitary systems) when implemented.

An initial consideration of federal systems in the world indicates that federal systems do differ in important respects, and this seems to justify a consideration of various aspects of centralization. Oates writes:

> As one examines the development of different countries and
> notes, for example, the sorts of considerations that led to
> the establishment of a particular federal government, it
> becomes clear that the unique historical experiences and
> circumstances of each country have led to a differentiation
> in governments that is difficult if not impossible to ex-
> plain in terms of a simple set of general principles.[67]

Switzerland's brand of federalism reflects the linguistic, reli- gious, and cultural differences that exist among her territorial regions. The cantons make up a loose federation and are concerned primarily with "cleavage engineering" and depoliticizing national issues. Cantonal governments handle most matters of importance to citizens and, relative to other federal situations, the national government is politically

weak.[68] The national government really can do little more than urge that policies be adopted. For example, on the matter of fiscal equalization among regions the Swiss Constitution says: "The Confederation encourages financial equalization among the cantons. In particular, when federal subventions are granted, the financial capacity of the canton and the mountainous regions must be considered in an appropriate fashion" (emphasis mine).[69] This language is mild, relative to that used in other nations concerned with fiscal equalization.

India, likewise, is an example of where a federal system has been imposed upon an expansive territory with regional, cultural, ethnic and language diversity. And, there are, in Indian politics, conflicts between the federal and state governments. National goals, duties and responsibilities of the various levels are points of contention rather than areas of national consensus. For instance, R. J. May points out that federal financial relations preceded the emergence of political federalism and that has led to disagreements over issues such as how revenues might be shared between the center and the states. While the Indian Planning Commission is concerned with broad national objectives for development, the Finance Commission is concerned with maintaining the autonomy of state governments.[70]

Canada and the Federal Republic of Germany may also be compared. Canada has a flexible federalism fiscally, where the provinces have asserted their rights and responsibilities vis-a-vis Ottawa (consider, for example, Rene' Levesque's Parti Quebecois and other provincial movements). This is so especially in the area of education where Canada out-performs many other nations: while provincial responsibilities are understood, there is strong emphasis on federal-provincial cooperation

on education policy and funding, and, there is at the same time, demand

for financial help (toward general equalization) from the center.[71]

Donald Smiley writes:

> ... the fundamental idea that Ottawa, through unconditional
>
> subsidies, should guarantee the revenues of the provinces
>
> to a national average has been an influencial standard in
>
> federal-provincial fiscal relations from the publication
>
> of the Rowell-Sirois Report (1940) onward.[72]

Germany, on the other hand, is fiscally more inflexible. The

responsibilities of municipalities and the Länder in funding higher

education, for instance, are minuscule. A Bund-Länder Commission for

Education Planning was not established until 1970; cooperation between

center and periphery has been lacking.[73] Note, too, the language of

Article 107, paragraph 2 of the Basic Law regarding fiscal equalization

among Länder. The federal government is, comparatively, powerful and

deals from a position of strength vis-a-vis Länder.

> A federal law requiring the consent of the Bundesrat shall
>
> ensure a reasonable financial equalization between finan-
>
> cially strong Lander and financially weak Lander, due
>
> account being taken of the financial capacity and require-
>
> ments of communes....[74]

Australia represents a socially homogeneous nation where federal

form was adopted due to sheer geographical size.[75] It is, moreover, a

case similar to Canada in that the viability of multiple decision points

has been maintained. But it is also a case where standardization and

uniformity among regions has occurred:

> Australia's experience in the sphere of federal finance has

generally been regarded as successful. Since the latter
part of the 1930s there has been no real evidence of small
states' discontent and the federation has been politically
stable, with strong emergence of national standards in fis-
cal and administrative fields; there has been a marked re-
distribution of revenue with the apparent concurrence of the
larger wealthier states. Some writers have expressed reser-
vations about the centripetal tendencies in Australian
federal finance, but an examination of the political forces
at work provides little evidence that the bargaining power
of states relative to the Commonwealth government has de-
clined.[76]

Michael Reagan argues that the United States is an example of a
new style of federalism where stress is on interdependence between
national and state governments and a sharing of political and fiscal
functions.[77] The political game is played under conditions of mutual
leverage where each level is able to exert influence and pressure on the
other. Each level needs the other level. The intergovernmental pattern
established, then, is one of continual change and adaptation in response
to social and economic forces. And the 'new federalism,' according to
Reagan, stands in contrast to a more static concept of constitutional
federalism.

This very brief view of six nations highlights varying characteris-
tics of federalism. Not only have nations adopted federal structure
for different reasons, but the models of federal politics they present
are different. At the same time, it may be argued that there is some-
thing inherent in federal structure (that is, providing several decision

arenas) that differentiates federal politics from politics in unitary nations; and this difference should have some significance for policy.

Federalism's Impact On Policy

Political scientists know little about the effect of federalism on policy outputs and outcomes. Nor have scholars been accustomed to thinking about federalism as a policy determinant, as something affecting day to day politics, or as a pattern or framework within which other political and socio-economic factors must operate. The information that can be drawn from the literature on this topic, moreover, answers few questions; there is little consensus among scholars.

How does federal structure affect aggregate spending for education or health or welfare? Cameron and Hofferbert hypothesize that the autonomy of several decision points guaranteed by federalism will have an overall conservative affect on aggregate educational spending. Unitary systems -- which have one decision making forum and which encourage uniformity -- should spend more for education. Their data from eighteen European and North American nations, however, shows no relationship between federal structure and aggregate educational expenditures.[78] In further support of this view, Wilensky found in his twenty-two nation study that centralization (one indicator of which was federal/unitary status) led to increased welfare spending and interest in redistribution. The United States, Wilensky writes, has no interest in general welfare state development or in redistribution and, instead, operates by the "success ideology."[79] Wilensky thus implies that federalism should have a negative impact on aggregate spending, since national elites will have lesser capacities for enforcing national programs.

Samuel Beer argues in the opposite direction. He postulates that American federalism has led to the creation of a "professional bureaucratic complex" (made up of professional administrative and technical specialists in government bureaucracy) and an "intergovernmental lobby" (made up of governors, mayors, county supervisors, city managers and other officeholders). Each of these centers of influence, although they are in contention with each other, work in the same direction toward greater government expansion and spending "...with no view to the overall direction of the nation."[80] The intergovernmental lobby, according to Beer, presses the case of its constituents before the President and Congress, while the professionals (who are fragmented into many areas of specialization) influence the same power centers for the implementation of their newly developed programs.

In sum, there is confusion about whether there inheres in federalism a conservatizing or an expansionary potential with regard to expenditures.

How does federal structure affect <u>social policy outcomes</u>? Again, there are various viewpoints. Ivo Duchacek argues that federalism is costly in that it produces uneven progress toward economic, educational and social development among provinces.[81] Cameron and Hofferbert support that idea with data from eight Western European nations (four federal and four unitary). They argue, in summary fashion, that federalism by its nature invites variation in policy performance between subnational units, that it does little to encourage redistribution within the nation, and that it fails to produce equality in distribution generally. They find that patterns of allocation of resources are affected by the structure of intergovernmental relations. Variations in

expenditures across units are more constrained by variations in re-
sources in federal than in unitary systems, i.e., education policy out-
puts in the federal systems favored the most advantaged areas, whereas
the unitary systems more successfully implemented equalization formulas
in educational expenditure allocation.[82]

Similarly, in a ten-nation study, John Echols finds that whereas
revenue equalization and equalization of social expenditures across sub-
national units is not a simple function of the communist - non-communist
distinction, federal/unitary status does have an effect. Unitary
states tend to produce greater equalization among units than do federal
states.[83] In contrast, Walker contends that American and Canadian
federal structures have affected the development of national standards
and expectations which pressure "lag" states and provinces to adopt new
programs. Because of this, presumably, there are fewer inter-unit dis-
parities in social policy. He does find evidence, though, that the well-
developed units adopt new programs more rapidly than do poorer, less
industrialized units.[84]

While there is some evidence at hand that federal/unitary status
has important consequences for within-nation distribution patterns and
social policy impact, this study will examine aggregate cross-national
patterns of the effects of federal (or unitary) status. That is, I may
find as Cameron and Hofferbert did in their eight-nation study, that the
answer to questions about the impact of federalism on policy outputs
and outcomes differs depending upon the level of analyses -- national or
subnational -- and the level of national resources. On the other hand,
I may find that a federal system of intergovernmental relations is an
important policy determinant, the impact of which is obvious at the

national level as well as at the local level, and in rich and poor nations.

Political Centralization

Reagan and others argue that federal or unitary status, although it establishes a framework within which politics must be played, tells little about the actual distribution of power or informal political authority within society. It is obvious that there are federal systems with "strong" national centers (e.g., Australia, Germany) and with politically "weak" national governments (as in Switzerland). This suggests that informal political authority concentration may be something different than unitary status. There may be varying levels of informal political power decentralization among federal systems.

In considering political authority centralization as a third dimension of political structure concentration, I am focusing on the variability in vertical and horizontal power diffusion and in opinion cleavage within and among nations. These aspects of the political system are informal in that they are not specified by law, but are results of a vying for power among groups in society. I term this variation in social power configurations informal political authority concentration and treat it as a third aspect of centralization. The degree of informal political centralization may vary depending upon such things as the number of political parties in the system (given that parties are not illegal), the degree of central control inherent in the structural organization of the parties and the legislature, the opportunity for various groups to articulate their interests, party or bloc representation in the legislature, et cetera. (William Riker argues, for instance, that the variation in the degree of party centralization in a

nation causes variation in the degree of government structural central-
ization.)[85]

It may be argued that in systems where there is only one party
(or where one party is clearly electorally dominant), informal political
authority is more centralized and opportunities for presenting opposing
points of view are limited. Opinion cleavage may be minimal. Rubin and
Weinstein characterize single-party states in the following way:

> In most single-party states the chief executive is also head
> of the party, symbolizing the identification of party with
> state and nation.... Cabinet members in a one-party state
> are high-ranking officials in the party. The highest organ
> in Guinea's PDG, the bureau politique, generally has seven or
> eight of its twelve members in the cabinet. The national
> executive of Tanzania's TANU has at least half of its mem-
> bers in cabinet posts. It has been practically impossible
> in most states for a man or woman to gain a high position in
> the civil service without being a member of the party. It
> is difficult to separate the party from the government,
> from the legislature and the administration, in a one-party
> state. Party officials become administrators or para-
> administrators.... There is a tendency to create a monolith
> in which everything is absorbed: youth movements, women's
> movements, trade unions, cooperatives.[86] (Introduction to
> African Politics)

In such cases -- and in the late 1960s just over one-third of the
world's polities could be classified as one-party[87] -- it should be
expected that this concentration of power will have some measureable

effect on social policy outputs and outcomes. (This is not to denigrate single-party systems. Many leaders of the Third World nations in the throes of political and social change have argued convincingly for the necessity of providing a structural organization united and strong enough to confront organized colonialist and imperialist forces. I postulate here, however, that such a centralization of authority should have some observable effect on health, education and social welfare policies and their implementation.)

On the other hand, where two or more parties are electorally viable and have opportunity to introduce policies, alternatives and dissenting opinions, there is relatively greater power diffusion and potentially greater opinion cleavage. This results in a lesser degree of centralization of command. This situation, too, should result in observable effects on the nature and level of social policies. Therefore, I will examine the viability of considering informal political authority concentration as an independent factor of or another side of governmental centralization.

The Special Case of the Heterogeneous Society

In a study focusing on the impact of political structure centralization on social policies, the case of social heterogeneity (i.e., ethnic, cultural, linguistic or religious fragmentation) becomes important for several reasons. First, ethnic identification and primordial attachments are important social phenomena that confront political systems everywhere. This leads one scholar to argue that homogeneous and heterogeneous policies differ from each other as much or more than do nations differentiated by levels of per capita GNP.[88] Others argue that ethnic identity is heightened by a variety of things: colonialism,

imperialism, social mobilization, economic development, integration attempts and issues of national concern such as education and the nature of the political system.[89] Joshua Fishman writes:

> Indeed just as newer plant and animal species are constantly coming into being, so newer cultural formations are constantly being formed, some of them larger and some of them smaller than others that came before them. The existence today of Indonesians and Israelis and Palestinians and Pakistanis (as well as Chicanos and blacks and Boricuas), none of whom were massive primary cultural groups a third of a century ago, is a tribute to the human need for meaningful and immediate groups of this kind. As certain groups disappear (coalesce, break up, assimilate), others rise to take their place.[90]

Moreover, as the expansive literature on national political integration and the more recent discussions of federalism make clear, cultural-ethnic diversity operates on or within the political sphere -- it <u>increases demands on the system</u>.[91] For example, Herbert Tingsten argues that a dangerous tension arises when a government in the plural society embarks on measures that might pit one group against another, such as in the provision of public goods and services. Each group strives for the competitive advantage.[92] Socio-cultural heterogeneity in short, has implications for social policy commitment and implementation.

Second, the issue of the heterogeneous society comes up in discussions of federalism because many see federal structure as a <u>political solution</u> to problems of national integration and political stability.

Duchacek argues, probably correctly, that unless minority groupings are guaranteed special rights and services, societal equality cannot be achieved and the groups may never emerge from a position of inferiority. He goes on to posit that the new federal formula is a means for allowing various groups a voice in national policies that will affect them while at the same time allowing subnational identities to exist without encroachment.[93] McWhinney, Livingston and Franck, in separate works, similarly argue that federalism can be a solution to cultural diversity or subnational allegiances within societies -- federalism presents a compromise solution among groups who agree to join for limited purposes.[94]

Another group of scholars sees federalism as a means to assure expression of local interests and ameliorate communal conflict over public goods. Melson and Wolpe consider the role federalism might play in a "modernizing," ethnically heterogeneous country. The authors contend that "modernization" or the process of change reinforces communalism through its stress on mass participation: political competition between groups is encouraged and leads to communal conflict. It becomes necessary in such a society to allow for local, geographic or ethnic autonomy so that minorities can be represented. Policy makers must consider communal needs. For Melson and Wolpe, federalism is a solution and tool for a heterogeneous, divided society whereby various communal groups can be respected and represented at the national center. Federalism might preempt secessionist movements and dissolution of the state since it allows for some minimal national integration. Melson and Wolpe hypothesize that if government institutions at the national and regional level become identified with one particular communal group

they lose their legitimacy for the larger society. However, if a greater number of equally strong communal groups operate to influence governmental institutions those institutions will retain their impartiality and legitimacy. The flaw in the Nigerian federal system, according to these authors, has been the result of not creating enough states to ensure minorities a modicum of self-determination.[95]

Anderson, von der Mehden and Young also address problems involved with coming to terms with diversity. These authors argue that ethnic or cultural subgroups should be recognized and given some "psychic assurance" that communal interests will be defended. They propose establishing governmental institutions and structures that guarantee subgroups some positions of authority. Moreover, they point to India's use of a federal structure to accommodate diverse groups.[96]

Morrison and Stevenson's studies of Sub-Saharan Africa seem to suggest a similar role for federalism. They find that centralization of authority -- measured by economic and political factors -- intensifies political conflict and especially communal instability (which reflects conflicts between groups holding incompatible views). This situation will continue, the authors say, as long as financial demands on national authorities exceed their responsiveness to local constituencies and as long as coercive centralization is the response to political demands from local units.[97]

Several writers, among them W. H. Ferry, have considered the role of federalism in the United States where a black minority has definite "communal" interests. Ferry contends that black identity, self-consciousness and pride can develop only if blacks are left to organize and administer their own affairs under a system of local political

autonomy. Such a system can work, however, only if white racism and
paternalism is eradicated and replaced with tolerance and respect for
cultural diversity.[98] Ferry's type of federalism is close to that
proposed by those concerned with diversity in the Third World.

On the other hand, some theorists see not federalism but centrali-
zation or <u>unitary government as the solution</u> to social heterogeneity and
providing social services in that context. They contest the notion
that federal structure is the best solution. Clifford Geertz ultimately
argues for a strong, overriding national center. Although Geertz
recognizes the culturally plural situations in many new states, he
argues that establishing federal systems of ethnic homelands in the
new states would exacerbate communal conflict. Ideally, an overriding
national identity and civil government should be established within
which ethnic groups can feel at home. Geertz calls for the aggregation
of narrow tribal ethnic and linguistic groups into generalized ethnic
blocs that can operate within a common social framework.[99]

Rabushka and Shepsle posit that democratic forms can never work in
plural societies, which they define as societies where incompatible
institutional systems coexist, where the practice of politics is almost
exclusively along ethnic lines and where coercive force and instability
will inevitably exist. A federal system of local autonomy, Rabushka
and Shepsle argue, has been attempted in several countries and has
failed. A major problem for the plural society involves the <u>ethnici-
zation</u> of collectively provided goods, i.e., difficulties arise when it
comes to governmental resource and services allocation and making policy
in those areas. That is, what may be good for one group may be a harm
for another -- a generalized public interest does not emerge in the plural

state so that making public policy is difficult.[100]

Rabushka and Shepsle forward some possible solutions for carrying on politics in the plural state: 1) deny independent decision-making authority to locales; 2) put restrictions on independent decision-making authority; 3) put restrictions on political competition; 4) restrict the scope of government; 5) create homogeneous societies and possibly new states; and 6) create a permanent external enemy which may motivate internal cooperation. Coercive centralization, they conclude, may be the only alternative for a plural nation or at least the best form of government if stability is desired.

Further, May argues that the 'federal solution' may lead in reality to weakening minority ethnic blocs and giving powerful ethnic groups protection:

> In some of the newer federations among former colonies, where the plurality of society has presented barriers to national integration, the acceptance of certain national norms has sometimes been included as part of the federal settlement.... In cases like this, though the professed motive is to promote the national entity, the acknowledged effect is to place limitations on groups with weak bargaining power (generally but not always minorities) in order to satisfy the interests of groups with stronger bargaining power (generally minorities). Moreover, such national forms often provide the basis for a nationalization of standards, and an extension of preferences to favored groups, in other fields.[101]

Wilensky presents another argument in favor of centralization in the case of the heterogeneous society. He posits that ethnic-linguistic

and religious diversities prohibit meaningful participation in less parochial voluntary associations and encourage separatist movements which make the development of a wider civic virtue impossible. Also, minority groups sometimes begin to create education and welfare services of their own, since they feel isolated and alienated from the larger society. For these reasons, and, when the heterogeneous society is governed by decentralized structures, programs committed to wider social welfare and social equality lose out. Social heterogeneity, given sharp expression by decentralization, slows down welfare state development. (Wilensky gives the U.S. as an example of this situation.) But a centralized government, according to Wilensky, can contain and dampen cleavages -- as in Belgium and the Netherlands. In such a context, the welfare state and a commitment to equality among groups and people can be developed.[102]

This literature, in sum, presents the common theme that deciding upon and delivering social services is complicated by socio-cultural heterogeneity; heterogeneity leads to communal conflict over and the possible ethnicization of public goods and services. The debate among writers, however, focuses upon how best to achieve political stability in the plural society. While one group feels that political stability and integration can best be served through the utilization of a federal structure, another group argues that centralized structures can create a wider civic virtue and minimize communal hostilities. But what remains clouded over is the issue of the impact of heterogeneity on social policy, and further, how that relationship affects the relationship between federal/unitary status and social policy. Does the constitutional form affect social policy decisions in a unique way in

plural societies? Is there a "federal solution" or a "unitary solution"
to problems of providing social services in plural societies? How do
heterogeneity and federal/unitary status interact, if at all, to affect
policy? This study may begin to clarify these issues.

Other Factors Affecting Social Policy

Although my interests focus on the impact of political centraliza-
tion on policy, any study attempting to shed light on the relationships
between these variables must consider the role of determinants other
than political centralization. Earlier studies, alluded to above, have
outlined several important social policy determinants or other factors
influencing social equality.

We cannot ignore the influence that the level of economic develop-
ment has on social policy output and outcomes. As mentioned previously,
Cutright and Jackman discuss the major role that the level of economic
development plays in producing social welfare and social equality or in
allowing for them. Furthermore, Wilensky argues that economic growth
(along with demographic and bureaucratic factors) is a root cause of
the general emergence of the welfare state. Economic development is
even more a factor than is the type of political system.[103] But
Wilensky also points out that after accounting for effects of economic
growth levels on welfare state development, there is still some way to
go in explaining policy outputs and outcomes.

Musgrave also finds evidence that with rising per capita income, a
country becomes more interested in social security and other transfer
systems. And, he argues, for a number of reasons, the optimal level of
fiscal centralization in a system will vary with the level of economic
development.[104]

Koropeckyj and Hogan, in separate works, write that the effect of economic factors vary over time or among systems, depending on the level of economic development attained.[105] Looking at socialist countries only, Koropeckyj finds that developed and underdeveloped countries show lower declines in inter-regional inequality than do countries at intermediate levels of development. Hogan finds that economic variables are of less importance in determining policy at middle-range levels of economic development (e.g., Canada) than they are in poor or affluent societies (e.g., Mexico and the U.S.).

The authors of Values and the Active Community, too, find that the impact of economic development in determining levels of social activity in the realm of social welfare varies among nations. They argue that in India, the resources of the locality have little bearing on activeness, whereas in the U.S., economic resources play a large role in determining social activeness among elites and in policy outcomes.[106] What does seem to be an important variable to consider, they find, is the broad ideological commitment of national leaders and of citizens toward change and national development.

In deciding what influence centralization has on policy then, the level of economic development must be considered as an important contextual variable. That is, level of development will be controlled for so that I can investigate what role other variables play in affecting policy.

Social characteristics must be considered as well. As Sharkansky, Wilensky, and Heisler and Peters make clear, social demographics such as the age structure of the population (the number of school age children, the number of people over age 65) and the geographical size of

the country must be taken into account. Moreover, Jackman discusses

the impact of several societal characteristics such as the rate of

growth of the population.[107]

Finally, taking into consideration the discussions of Walker,

Jackman and Wilensky, social welfare program experience and political

norms established in the past within the realm of social policy must be

given recognition for the role they play. It should be expected that

what things have been done in the past will affect policy outcomes of

the present (incrementalism).

<div align="center">*   *   *</div>

In this chapter I have taken care to outline and review the

literature that addresses the questions of political structure central-

ization, social policy, the heterogeneous society, and so on. In doing

so, I have pointed out the disagreement and dissensus among scholars on

these issues and, more importantly, have broadly outlined areas where

further study is necessary.

Chapter II accomplishes two tasks. First, a summary of the hypo-

theses (from the literature) to be investigated in this thesis is

presented. Second, the data, research design and operationalization and

measurement methods are discussed.

CHAPTER I

FOOTNOTES

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CHAPTER II

THE RESEARCH: HYPOTHESES, METHODS, DESIGN AND DATA

After reviewing the relevant literature, it becomes clear that

scholars have forwarded conflicting hypotheses concerning the nature of

the relationship between political structure centralization and social

policy. To the extent that conflicting views pervade the literature,

political scientists have only limited knowledge of the effects of

politics on policy. This research represents an attempt to test a series

of popular (or predominant) hypotheses about the impact of several types

of centralization on health, education and social welfare policies

using data from sixty-seven nations. In this section I will outline the

major hypotheses to be tested.

The first set of hypotheses pertain to the effects of various types

of centralization on commitment to social welfare:

> H1 : The greater the central government's financial respon-
> sibility for social policy, the greater will be the
> funds expended in that policy area in the total system.

Thus:

> H1a: Fiscal centralization leads to a larger public sector
> as a proportion of the whole economy.

> H1b: Fiscal centralization leads to greater allocations of
> funds to education in the total system.

> H1c: Fiscal centralization leads to greater allocations of
> funds to health in the total system.

> H1d: Fiscal centralization leads to greater allocations of
> funds to social welfare in the total system.

These hypotheses grow out of the discussions of Levy, Hage and Hollingsworth, Wilensky, Pryor, Peacock and Wiseman and Pommerehne, all of whom consider fiscal centralization directly or indirectly. Their works make up the bulk of the literature on this aspect of centralization, suggesting that centralization leads to standardization of procedures, efficiency in implementation, uniformity of policy efforts throughout a system, and, ultimately, greater redistributive efforts. (Oates, of course, is a dissenting voice here in that he argues centralization has no effect of the size of public spending.)

It may be added further, that fiscal centralization might logically lead to the integration of advocacy groups (political parties, interest groups), national policy makers and bureaucrats and promote policy effort and commitment, whereas decentralization might lead to effort fragmentation and local resistance.

The second set of hypotheses follows from the first:

H2 : The greater the central government's financial responsibility for social policy, the greater the policy outcomes.

Thus:

H2a: Fiscal centralization leads to greater education policy impact (outcomes).

H2b: Fiscal centralization leads to greater health policy impact.

H2c: Fiscal centralization leads to greater social welfare policy impact.

Here it is postulated that centralization, besides affecting policy outputs (expenditure levels, for example) affects the outcomes or the short - run impact of policy. As noted earlier, Jacob and Lipsky argue that political factors should have greater impact on distribution (or policy outcomes) than on actual expenditure levels, which may simply

reflect social-economic factors.

In considering the link between centralization and the outcomes of education, health and welfare policy I anticipate being able to draw some conclusions about the general effects of centralization on social well-being and social equality (Chapter VII). I am assuming that the outcomes of education, health and social welfare policies have implications for social well-being and social equality. The short-term impact of these policies affects social equality in that policy may either improve or harm the life chances of lower income groups. I contend with Titmuss, Jackman and Cutright, moreover, that social welfare policies should directly affect social equality.

Another area of concern is the effect of formal - legal centralization (federal/unitary status) on policy outputs and outcomes. The literature suggests that federal or unitary status has an independent effect on policy even after considering and controlling for other factors that affect policy, such as economic development. The literature provides no clear consensus on just what effect federalism has on policy. Beer and Wilensky present opposing arguments on federalism and expenditure levels while many others who discuss centralization and policy imply that federalism has a conservatizing nature. Therefore:

> H3 :   Federal systems, by guaranteeing the existence of multiple decision points with formal autonomy, allocate less money to social services in the total system than do unitary systems.

> H3a: Federalism leads to a smaller public sector as a proportion of the whole economy.

> H3b: Federalism leads to a smaller allocation of funds to education in the total system.

> H3c: Federalism leads to a smaller allocation of funds to health in the total system.

H3d: Federalism leads to a smaller allocation of funds to social welfare in the total system.

Also:

H4 : Federal structure, because it invites policy variation among units, leads to uneven policy results (or short-run impact) and greater concentrations of policy outputs in society. Federalism has a negative impact upon social equality.

H4a: Federalism leads to a lesser impact of education policy on society.

H4b: Federalism leads to a lesser impact of health policy on society.

H4c: Federalism leads to a lesser impact of social welfare policy on society.

Duchacek, Echols and Cameron and Hofferbert argue that federalism has direct negative consequences for distribution patterns and equalization attempts among subnational units. I will suggest here that there may be inherent in federalism a trade-off between local control and social equality and that local control arguments often are raised by groups interested in maintaining differentials and their own economic advantage. That is, equality may not be the most preferred goal of decision-makers or of those who influence them. Several writers have speculated on related ideas. For example, May states:

If a simple generalization can be made about financial relations in a federation it is that federations contain relatively poor units and relatively rich units and that the poor units favour a redistributive system of federal finance, and in order to achieve this generally support a central government with strong fiscal powers or a centralized scheme of revenue allocation subject to periodic independent review, while the rich units favour fiscal decentralization and

revenue transfers, if they are necessary, based on units'

relative contributions to the federal revenue.[1]

Jerome Rothenberg, in considering the best unit size for optimal
governmental performance, writes that a maximization of redistributive
efforts calls for centralized government, while concerns for "home
rule" generate units too small for efficient public output production.[2]
Wilensky infers that local control stands in the way of social welfare
program development by allowing for the expression of opinion of so
many conflicting communal groups.[3] Duchacek suggests that local control
and equality are a "pair of desireables" which in reality are often
conflicting.[4] And Richard Hill points out that in urban and metro-
politan governments, decentralization leads to inequality by maintain-
ing and perpetuating class and status privilege, by yielding differential
access to income and economic goods and services, and by reducing the
financial resources of central cities.[5] This literature, then, supports
the notion that local control inherent in federalism diminishes efforts
at promoting social equality through a redistribution of social goods,
services and income.

Moreover, Grant McConnell discusses the difference in results that
may be obtained, given the same distribution of interests, depending
upon whether the political context is centralized or decentralized with
local control.[6] To McConnell, local autonomy is a conservative prin-
ciple that protects the power of the status elites and ignores needs of
local minorities. The already weak are disadvantaged and unrepresented
in policy choices in the decentralized setting. Moreover, decentrali-
zation leads to a multiplicity of government agencies (with many becom-
ing obscure) and a lack of accountability. In this situation, organized

interests and not the general public influence policy outcomes. There-
fore, according to McConnell, centralization better allows for meeting
the need of the broad public:

> Policies generally adhering to maintenance of the status
> quo and favoring the concrete interests of existing elites
> will tend to be associated with organizations based on small
> units; alternatively, large units will more probably produce
> policies favoring change directed to the general, diffuse
> and widely shared interest of a broad segment of the popu-
> lation.[7]

Other scholars like Grodzins, Reagan and Weisbrod refute arguments
typically made in defense of local autonomy -- that decentralization
encourages creativity and innovation, that local government is closer
to the people it rules and that decentralization reflects variations in
preferences among units within a nation.[8] Local control may not produce
the benefits often ascribed to it in theory, and it may, in fact, be
harmful to the "good of all" in the sense that it detracts from social
equality. Therefore, given arguments in the literature we should ex-
pect that:

> H5 : There is a trade-off relationship between federalism
> (and local control) and social equality.

Cultural Heterogeneity

Another set of questions revolve around issues of cultural hetero-
geneity and consequences for social policy. Theorists tend to agree
that heterogeneity leads to greater demands for social services and
that demands spiral with communal competition, often outstripping govern-
ment capability. But they argue over which is the most efficient

constitutional form in the situation where commitment to citizen well-being is complicated by ethnic jealousies. The hypothesis from the literature that can be tested is:

H6 : Social heterogeneity has an independent negative effect
on social policy outputs and outcomes.

What is not clear from the literature is how ethnic pluralism affects the relationship between political structure centralization and social policy. Again, there is little consensus of opinion expressed in the literature. Watts contends that in the multicultural federalism there will be pressures for equalization policies and redistribution, since the existence of differentials in the range and quality of public services sparks tensions between groups and regions.[9] It has been argued, on the other hand, that federalism invites policy variation since local groups rule themselves and have varying levels of resources at their disposals, and that national standards and national programs are harder to implement in these circumstances, especially considering cleavages within society and the isolation of groups from one another. Moreover, some have argued that federalism may protect the privilege and status of richer, more powerful groups. Cameron and Hofferbert found that in federal systems social policy reinforces social disparities (see earlier discussion). And it seems reasonable that where heterogeneity has led to battles or animosities among communal groups, the various groups will be unwilling to give up some of their local autonomy to a national center which could then enforce equalization policies. Local ethnic groups may want to determine their own education, health and social welfare procedures and priorities, shunning attempts at uniformity.

It may well be the case that pressures for equalization among groups

(or regions) will be greatest in systems where the various cultural groupings are not given autonomy or local control and where each group must influence the central government for social services and public goods. In this situation where groups do not have their own (local) governments, they must compete with everyone else for attention from the one main decision-making forum -- the central government. Moreover, the centralized government may more easily impose universal standards and enforce uniform policy procedures. Nor can it justify huge disparities in social services among groups or regions. Heterogeneity in the unitary system, then, may increase pressures for social services due to competition among groups. These opposing arguments will be examined in the analytical chapters to follow.

Political Centralization

Finally, I have argued that political centralization (among other things, the degree of vertical power distribution) might constitute a separate dimension of government centralization (along with financial and formal - legal centralization). A concentration of informal political power at the national center could logically lead to uniformity of opinion, or at least a minimum of opinion cleavage, and to greater policy consensus among decision makers. National commitments to social policy may be strengthened by the fact of elite cooperation. And, the literature suggests that where there is a centralization of authority, implementation and standardization are enhanced. Local authorities cannot successfully oppose the national policy or squandor resources. These arguments will be considered by testing the following hypotheses:

H7 : In systems where informal political authority is concentrated at the center, more funds are allocated to social policy in the total system.

Thus:

H7a: Informal political authority concentration leads to a larger public sector as a proportion of the whole economy.

H7b: Informal political authority concentration leads to greater education policy outputs.

H7c: Informal political authority concentration leads to greater health policy outputs.

H7d: Informal political authority concentration leads to greater social welfare policy outputs.

Also:

H8 : Informal political authority concentration leads to more even policy results and lesser concentrations of social policy outputs in society. Social equality is enhanced.

H8a: Informal political authority concentration leads to greater education policy impact in the short run.

H8b: Informal political authority concentration leads to greater health policy outcomes in the short run.

H8c: Informal political authority concentration leads to greater social welfare policy outcomes in the short run.

Tests of the aforegoing hypotheses are presented in Chapters IV to VII.

Data, Design and Methods

In order to proceed to test hypotheses, the concepts and variables to be measured empirically must be operationalized. This is no simple matter. The data-gathering stage of this study has been arduous, but illuminating. Yet, although in some areas I am limited by data availability (such as in measures of fiscal centralization, and figures on governmental expenditures) there are great possibilities for the study of social policy and policy impact. In this section I will discuss the data sources utilized in the study.

Measuring Government Centralization - The Independent Variables

The causal variables of major importance to this study are fiscal centralization, federal/unitary status and what I shall term informal political authority concentration. I have argued that each of these represents a different aspect or dimension of government authority and the degree of concentration of that authority at the national center. Arguments from the literature that suggest and justify this three-dimensional consideration of government authority and its concentration have been presented earlier. In Chapter III I give a more detailed discussion of the scope and measurement of centralization. Here I will briefly discuss what data are available for use in operationalizing the independent variables.

Fiscal Centralization

To measure the degree of fiscal centralization of a nation information on revenues and expenditures must be relied upon, since that is all that is available for a large number of countries. These data for 1968, 1969, or 1970 are available from the International Bank for Reconstruction and Development (IBRD) in its publication, World Tables 1971 (revenue data) and World Tables 1976 (expenditure data). For purposes of this study, I need a measure of the amount of independent fiscal decision-making power in the granting of public services at various levels of government within the nation. A number of scholars have argued that the greater the central government's financial responsibility for social policy, the greater the funds expended in that policy area in the total system.

As Wallace Oates and others interested in financial centralization have argued, there are four different ways to operationalize fiscal

centralization given the data available from international, comparable sources such as the IBRD.[10] The following may be considered:

1. The percentage of total public revenues collected by the central government (these data are available for 59 nations for 1968 or 1969); and

2. The percentage share of the central government in current public expenditures (these data are available for 63 nations for 1970; the figure attributes grant funds to the share of decentralized levels of government but includes expenditures by all central government departments and agencies).

One possible problem with these two figures is that, for some nations, in their computation, contributions and expenditures for social security programs were excluded from the share of the central government while they were included in totals for the public sector. Therefore, these figures may actually underestimate the degree of fiscal centralization.

Further, the annual Yearbook of National Accounts Statistics published by the United Nations allows a consideration of two other possible indicators for fiscal centralization:

3. Central government consumption expenditures, or, the percent share of the central government in all public consumption expenditures (available for 41 nations and includes wages of public employees and current purchases of goods and services from private enterprise, including defense expenditures); and

4. The percent share of the central government in civil consumption expenditures (all expenditures for non-defense purposes; available for 29 nations).

This last indicator seems most appropriate to this research, given my focus on health, education and welfare policies. Moreover, defense figures are a real potential source of internation variation in expenditures, in that some nations spend much more on defense than others. However, these data are available for only twenty-nine nations and therefore may limit the consideration of fiscal centralization. The first indicator may not completely reflect fiscal centralization in that, in some nations, revenues are regularly collected by the center and then given over to subnational or administrative units to be spent for purposes the latter decide upon. Therefore, in an attempt to establish the relative significance of these four measures as indicators of fiscal centralization and to clarify how the data may best be used, I shall proceed by considering the inter-relationships among these indicators. This is done in Chapter III. It is interesting to note here that Oates found similar results in measuring fiscal centralization using each of the four indicators (singly) for a sample of fifty nations, while Break found little difference in results when using the central government share in total revenues and the central government share in total expenditures.[11]

Constitutional Status - Federal/Unitary

I have argued in Chapter I that we should expect constitutional status -- federal or unitary -- and resulting intergovernmental relations to have an effect on social policy. This is a second dimension of government authority concentration. The variable, obviously, can have only one of two "values" and in order to rank a nation as federal or unitary national constitutions can be consulted. Here I use Ivo Duchacek's discussion and classification of nations.[12] Of the

sixty-seven nations in this study, Duchacek lists the following as
federal: Argentina, Australia, Austria, Brazil, Burma, Cameroon,
Canada, West Germany, India, Libya, Malaysia, Nigeria, Pakistan,
Switzerland, the United States and Venezuela. Of these Duchacek indi-
cates uncertainty about the status of the federal structure in Burma and
Libya, given political turmoil in these states in the 1960's. After
reading case studies and other country source materials, moreover, I
decided not to classify these nations as federal for the purpose of
this study. Although the Burmese post-independence constitution es-
tablished a federal nation (where states had the right to secede), a
military coup in 1962 effectively replaced federalism with dictatorial
powers in the hands of a Revolutionary Council under General Ne Win.[13]
Similarly, in Libya the federal divisions of power (between three pro-
vincial units and the central government) were abolished in 1963 by
means of a constitutional change made by the Cabinet. This move to
stabilize a badly fragmented political system failed, however, and in
1969 Muammar Qaddafy and his cohorts seized power, cancelled the con-
stitution, and established a highly centralized military regime.[14]
Neither Burma nor Libya, then, were federal states after 1962 or 1963.

A more thorough examination of federal structure is given in
Chapter III.

Informal Political Authority Concentration

To operationalize the concept informal political authority con-
centration, indicators that demonstrate the degree of informal power
distribution and opinion cleavage within a system must be found. At the
same time it seems prudent to avoid stickier problems such as debates
over definitions and measurements of the term "power." One simpler way

to indicate the degree of informal political power centralization in a system would be to ask questions about its party and legislative systems, since these institutions presumably function to aggregate interests, represent various blocs of opinions, choose among alternate policies, play rule-making roles, and vary in their degree of centralization or hierarchical structure. Moreover, by looking at the number of viable parties in a system, party competition and the nature of legislative representation, it may be possible to "measure" the extent to which power to rule or initiate is informally shared among groups and thereby gain some insight into the process of opinion representation.

In this context it would seem appropriate to gather the following kinds of data: party nomination procedures and powers, the working organization of the parties, power relationships and influence between central and peripheral party organization, the timing of elections (whether local and central elections are held concurrently), and on party ideology. These kinds of data, however, are not available for more than a few countries. Data are available, though, on several other aspects of party and legislative structure that point to the degree of informal political authority centralization.

I have collected data on several aspects of national party and legislative structures. Using Jean Blondel's classifications, I have noted (for 1968) the party system and party strength (based upon the percentage of votes received) for each of sixty-seven nations.[15] A country may have no parties, a full single-party system, a forced coalition of several parties under the aegis of one dominant part, a dominant single-party system, a two party system (where two parties get over 90% of the vote), a two and a half party system (where two parties

get 75-80% of the votes), a multiparty system with a dominant party, or a multiparty system without a dominant party.

Characterizing party systems by the number of parties (to yield discrete categories) simplifies the process of studying parties and indicating degrees of informal political centralization and hierarchical control. Theoretically, political phenomena are continuous in nature. That is, differences among party systems are numerous, ranging from the nature of their support (whether they are mass parties, imposed organizations, traditional parties, etc.) to internal structure (variables such as internal democracy, leadership, centralization) to party ideology.[16] Yet, the number of parties in the system is a variable commonly used and it does seem to broadly reflect the degree of party centralization and strength. For preliminary purposes, I have noted the number of parties in each system according to Blondel's classifications. For purposes of this research, I will consider three classifications based on intuitive judgements about degree of party centralization and ability to impose the will of the party upon the system. I will consider no-party and single-party systems, two and two and a half party systems, and multiparty systems.

Second, I have computed the percentage of seats held by the major party in the lower house of the legislature. This figure is based upon election and legislative data recorded in The Europa Yearbook 1971: A World Survey, volumes I and II for one national election held usually between 1968 and 1970.[17] These data reflect the degree of opinion cleavage present in the rule-making body, but also indicate how concentrated legislative power is, i.e., if one party holds 80% of the seats in the body, it may be expected that any dissenting opinion can be

over-ruled and that agendas are controlled and priorities are established by the major party. If, on the other hand, the major party holds about 50% of the seats, fewer possibilities exist for easy predominance. The major party will have to negotiate and persuade.

Third, I have used Blondel's 1968 data on the right of dissolution of the parliament by the executive. Blondel reports, for a large sample of nations, whether the executive has all powers, limited powers or no power to dissolve the chamber. This information indicates the degree of power concentration at the center -- in this instance, the degree of power-sharing between executive and chamber.

Several other kinds of data have been collected as well. I have recorded for each nation the method of selection of persons to the upper legislative house: whether they are appointed, inherit the post, or are elected by constituencies (Blondel, 1968). This information tells us something about the concentration of power: if members are elected by national constituencies and are thus accountable to them, power is more diffused in the system than if members are appointed at the center. Finally, I have included some data from Textor and Banks' <u>A Cross-Policy Survey</u> reflecting subjective judgements on the part of the scholars on the degree of <u>electoral competition</u> and the <u>degree of interest articulation</u> by associational groups (or organized interest groups) all for 1963.[18] Ideally, it would be preferable to avoid "subjective" data of this nature and instead rely on "hard" data -- things that can be counted or directly observed. However, at this time the nature of available measures and the unavailability of information prevent the gathering of "hard" data. At times, honest judgements of trusted scholars must be relied upon instead of postponing study until such "hard" data

is within reach. (See Chapter III for a discussion of how the foregoing data are finally employed.)

Commitment to Social Policy and Policy Outcomes

The dependent variables in this study are the levels of policy outputs and outcomes in the policy areas of education, health and welfare. A few remarks about the terms outputs and outcomes are appropriate at this point. Following the usage established by Levy, Meltsner and Wildavsky,[19] I use outputs to refer to what governments do and the goods and services produced by government organizations. Examples of outputs are expenditures, taxation, regulation, court decisions, actual goods and services given, et cetera. Outcomes, on the other hand, refer to the effects of policies on the intended audience in the short run. Outcomes are what citizens see and they therefore involve evaluation according such things as citizen's normative judgements, and, often involve questions about the distribution of benefits. What this research cannot address is policy result, since results refer to ultimate, long range policy impact and final consequences. A study of policy results would require data coverning a long time span and would involve time series analyses.

Policy commitment as operationalized in this study, then, is indicated by expenditure levels and by actual service levels. In the education sphere, expenditures and such things as numbers of students served indicate commitment or output. Outcomes are indicated by literacy rates and educational attainment. Outcomes of social welfare policies, on the other hand, are indicated by the distribution of income and material goods within society.

The consideration of outcomes of social policies is important in

that it allows initial answers to questions about the effects of government structure centralization on policy impact and short-term results, daily levels of living of citizens and social equality. Moreover, the research should shed light on the process of translation from policy output to policy outcomes. Below, I will discuss the data used to study policy output and outcomes for each social policy area.

Education

The data on expenditures for education are usually for 1970 and were collected from the United Nations Statistical Yearbook 1973.[20] According to the source, data on public expenditures on education include recurring expenditures, teachers salaries, capital expenditures, and, where applicable, subsidized private education. The data reflect monies expended for education at every level of government. Although several publications give figures on education expenditures, the Statistical Yearbook presents them in the most consistent manner for the largest sample of nations.

Several other variables indicate the way the allocated money was spent and to what effect. First, I have collected data on the number of students and of teachers at each level of education -- pre-primary and primary, second and third levels -- for 1970 so that I may compute student-to-teacher ratios over the whole school-goer population and for each level of education. They also allow me to compute what percentages of the population are at the various levels of instruction. These figures were collected from UNESCO's Statistical Yearbook 1972 (not the same publication as above).[21] According to the compilers, the figures are those reported by each nation in response to UNESCO inquiries. Second, using the same source, I have recorded the gross enrollment

ratio for each nation. These data, expressed as a percentage, give the total enrollment of all ages divided by the population of the specific age group which corresponds to the ages of primary and secondary schooling. That is, they indicate the percentage of school-age children in school, taking into account the varying national school systems and age requirements. The data indicate how effectively education policy outputs have been in providing an education to young citizens.

Third, data on the average number of years of schooling offered at the first and second levels for 1970 were collected from the IBRD's World Tables 1976.[22] This figure varies among countries because duration of schooling varies from country to country and according to the level of instruction. And finally, the World Tables were also a source for the 1970 adult literacy rate. In the few cases where the Tables had no figures for a country, I used Taylor and Hudson's World Handbook of Political and Social Indicators figures for 1965.[23] "Adult" here generally refers to persons 15 years of age and older. Both years of schooling offered and literacy rate indicate results obtained from money expended in the area of education.

Health

Figures on health expenditures are not as readily available as those for education. The source of these data is the World Tables 1976 from which I collected current government health expenditure data for fifty-eight nations.[24] Compilers of the Tables define current health expenditures as including purchases of goods and services by the central government for health, hospitals, population control and the like.

Although indicators of the general health of the population, such

as deaths from communicable diseases, are not uniformly available for
a large sample of nations, we can get a picture of the outcomes of
health policy outputs by referring to other indicators. Using the
World Tables 1976 and the UNESCO Statistical Yearbook, I have collected
data for 1970 on the infant mortality rate per thousand live births,
life expectancy at birth, the number of citizens for every doctor,
nurse, and hospital bed in the nation, and, data on nutrition. Nutrition
data consist of two figures: calorie supply per capita, given as a
percentage of daily requirements, and protein supply (total grams)
per capita per diem and indicate the accessibility of good nutrition
sources to the population.

Social Welfare

I am interested in studying countries' efforts to improve the lot
of the "have-nots;" the disadvantaged, the unemployed, the sick or
disabled and, generally, lower income groups. By considering social
security program expenditures -- which typically establish a system of
risk-sharing, provide for the needy and affect the distribution of
resources with society -- I hope to be able to indicate national commit-
ment to providing for the well-being of all strata of society.

The International Labour Office publication, The Cost of Social
Security, provides data on social security expenditures.[25] These figures
include monies for medical care and benefits in cash and in kind, such
as family allowances, aid to the disabled, and pensions. These data,
usually for 1970, are available for fifty-two countries. I have also
recorded social security expenditures per capita and as a percentage of
gross domestic product in purchaser's value, 1970, from this source.
These figures reflect a nation's level of commitment to providing an

adequate level of living for all citizens.

Next, indicators of social welfare policy outcomes are needed. As I have argued in Chapter I, social security programs -- whether or not they were intended to -- do affect the distribution of income and, therefore, the command over resources within society. Income is transferred through social welfare programs to poorer groups in a system.[26] (Social welfare policy, then, also contributes to the level of social equality, or, the distribution of the consumption of and access to material goods in society. This will be more fully discussed in Chapter VII.)

In order to indicate social welfare policy outcomes (or, the immediate impact of welfare policy on the intended audience) I will use data reflecting income distribution. The data -- on the income shares of the lowest forty percent, the middle forty percent, and the top twenty percent of households -- indicate relative inequality by comparing income shares of groups of individuals (households) to their population share. The data allow an investigation of the immediate effectiveness of social welfare policies aimed, basically, at poorer, disadvantaged groups in society. Does centralization affect the income share, for example, of the lowest forty percent of households?

The income data come from Chenery, et al., and are available for forty-four of the nations included in this study.[27] (They indicate the distribution of income before taxes.) These data on income shares are sensitive to inequality in particular ranges and therefore allow a consideration of income shares at the lower income range. As Ahluwalia points out, this may be of special interest to policy makers who must consider varying needs of different policy target groups.[28]

(Other indices of inequality, on the other hand, such as the Gini coefficient, summarize measures of inequality over entire populations.) Distribution of income patterns within societies, moreover, reveal much about social equality. That is, income determines one's command over resources and one's ability to attain a certain level of living.

Due to the nature of income data in general, however, the process of generalizing and drawing conclusions about the impact of political structure on welfare policy outcomes, and later, on social equality will be limited. This is so because national income data are not strictly comparable across systems.[29] Nations differ in aggregating and reporting procedures, i.e., they may gather information on individuals, households or economic sectors and they may report figures reflecting distributions before or after taxes. Further, whereas some nations may report only money or wage income, others may report wages and income from other sources such as investments, property, transfers and other goods and services received. Where only wage income is reported, the relative position of those in entreprenurial and upper classes may be underestimated, thereby reducing the observed level of inequality. Finally, the data used here, aggregated by households wherever possible, reflects the assumption that income within a household unit is distributed equally, and it does not allow the researcher to control for household size and age structure, two variables that affect the distributional results of income.

Yet, the available data may be useful in highlighting trends in distribution patterns and in levels of equality of access to goods. Income data, such as they are, present social scientists with some insight into problems of unmet needs and policy effectiveness.

Other Variables Important to the Research

Social Heterogeneity

In Chapter I I discussed the importance of considering the effect of social heterogeneity or ethnic pluralism (as another independent variable) on relationships between types of centralization and social policy commitment and outcomes. However, since there are many different definitions of "ethnic groups" and given that social scientists do not generally agree upon which criteria to use in defining ethnic groups, operationalizing and measuring ethnic pluralism is not a straightforward task.[30] Again, I am also limited by data availability.

I will measure social heterogeneity using two types of information. First, Marie Haug has constructed a "pluralism" index based on Textor and Banks' data indicating language, race and religious heterogeneity, sectionalism feelings among groups within the nation and interest articulation by non-associational groups (informal ethnic, religious or similar groups).[31] This index uses a simple arithmetic summation of scores on these variables, allowing the researcher to estimate national pluralism as negligible, moderate, marked or extreme. According to Haug, the language, race and religion variables reflect cultural differences among groups, while the sectionalism variable may reflect regionalism or communalism. The interest articulation item, on the other hand, indicates the political saliency of ethnic (or other) groups. These data were recorded for sixty-seven nations.

Second, I have used The World Factbook 1974 to record the percentage of the population in the largest ethnic group.[32] These data indicate the presence or absence of a dominant ethnic group (i.e., a low score on this variable indicates an ethnically plural nation, or,

the absence of a dominant ethnic unit). In a recent study of African nations, Jackman argues that <u>ethnic dominance</u> rather than <u>ethnic heterogeneity</u> may be the factor to consider when studying the effects of ethnic politics.[33] When one ethnic group has numerical strength enough to impose its will, its politics may become tyrannical and elicit destabilizing reactions from other groups. Conflicts over allocations of public goods may increase. Competing power centers in an ethnically plural society, on the other hand, may produce more moderate politics and an atmosphere of compromise.

Economic Data

Besides the data outlined thus far, several other types of data will be employed. First, various economic data will be used to characterize the nature of the systems included in this research. In order to measure the "size of the public sector" I will use figures on tax revenue as a percent of national income. These data for 1970 are listed for most countries in the IBRD <u>World Tables 1976</u>, referred to earlier. The <u>Tables</u> also report gross domestic product for 1970 in United States dollars.

To indicate a country's level of economic development, industrialization and national affluence, another important characteristic of nations, either of two types of data may be used: gross national product per capita (I have data from the <u>World Tables 1971</u> and <u>1976</u> for GNP per capita, 1969 and 1973) and electric power consumption per capita, 1970 (<u>World Tables, 1976</u>). These two indicators have been shown in previous studies to be highly intercorrelated and empirically equal.

Finally, since all expenditure figures are given in national currency units, I have used the <u>World Tables 1976</u> to record the exchange

rates. This figure allows me to translate all expenditure figures into 1970 United States dollars for easy comparison. (Where this source gave no exchange rate, I used the National Basic Intelligence Factbook, published by the Central Intelligence Agency.[34] This source gives exchange rates for 1974 and 1975 and was used for ten nations out of sixty-seven in this study.)

Demographic Variables

Information about national populations, such as population in millions, population density, population growth rates and population age structure (ages 0-14, 15-64, and 65 and over) were collected from the Tables 1971 and 1976. These data become relevant at several points in the research.

The Sample and the Level and Methods of Study

The Sample

An attempt has been made to include as many nations as possible in this research, but this effort has been limited by data availability. Three groups of data, particularly, have limited the number of cases to be considered here: data on fiscal centralization, data on social security expenditures and data on income distribution and income shares. For a majority of the variables, however, I have data for sixty-seven nations. These countries include ten Southeast Asian nations, eighteen Latin American nations, nineteen African and Middle Eastern nations, and twenty Atlantic area or Western European nations. These countries are listed by geographical area on the following page. The sample, then, represents nations from all parts of the globe and at various levels of

COUNTRIES INCLUDED IN THE STUDY, BY GEOGRAPHICAL AREA

AFRICA AND MIDDLE EAST

```
      Botswana
# *   Cameroon
#     Chad
      Israel
#     Ivory Coast
      Libya
#     Malagasy Republic
#     Mali
      Mauritius
# *   Nigeria
      Rhodesia
#     Senegal
#     Sierre Leone
#     South Africa
#     Sudan
      Swaziland
      Tunisia
      Turkey
      Zambia
```

ATLANTIC AREA

```
  *   Australia
  *   Austria
#     Belgium
# *   Canada
      Finland
      France
  *   Germany, F. R.
      Greece
      Iceland
      Ireland
      Italy
      Luxembourg
      Netherlands
      New Zealand
      Norway
      Portugal
      Sweden
# *   Switzerland
      United Kingdom
  *   United States
```

LATIN AMERICA

```
  *   Argentina
#     Bolivia
# *   Brazil
      Chile
      Colombia
      Costa Rica
      Dominican Republic
#     Ecuador
#     Guatemala
      Honduras
      Jamaica
      Nicaragua
      Panama
      Paraguay
#     Peru
#     Trinidad & Tobago
      Uruguay
  *   Venezuela
```

SOUTH AND EAST ASIA

```
#     Burma
# *   India
      Japan
      Korea, Republic
# *   Malaysia
# *   Pakistan
#     Philippines
#     Sri Lanka
#     Thailand
      South Vietnam
```

* federal nations

marked or extreme pluralism (Haug's Index)

social and political change. It includes many regime-types.

There are obvious gaps here, however. The Communist nations are not represented in this research, for several reasons. First, much of the data I have collected for sixty-seven nations are not available in comparable form for the Communist states. Second, accounting practices vary between Communist and other nations. Often, annual expenditure data are not available for the Communist states and expenditure categories used by these nations are significantly different than those used by the non-Communist states. Figures from Five and Ten Year Plans which set goals to be reached, moreover, cannot be sutstituted for expenditure data. Also, it would have been desirable to include a greater number of Third World nations in this research, given the data, so that the sample could better reflect the great variations in national structure and political experience that exist among world's nations. This research, and generalizations made from it, therefore, are recognizably somewhat limited in applicability at this time.

The Problem of Missing Data

In choosing indicators for the variables and concepts of this research I followed two criteria: indicators should be theoretically relevant to the concept, and, should be available for a large sample of nations. In spite of this attempt to gather data for a large sample of nations, however, data are limited to some extent in areas of policy outputs and outcomes. For example, although for most variables data are available for all of the sixty-seven nations in the study,[35] health expenditure data were available for only fifty-eight nations, education expenditure data were available for sixty-one nations, social security expenditure data existed for fifty-two nations and income distribution

data were available for forty-four nations.

Gurr suggests several remedies for missing data: missing cases can be discarded, the mean value of the indicator can be used where that figure is missing for a country, interpolation can be used especially in time-series analyses, or values may be estimated using contextual information, information from relevant literature or cases similar to the missing case.[36]

Rather than inserting means, interpolating or estimating values (which may introduce more error into the sample), however, I have chosen to simply vary the number of cases (N) in the analysis depending upon the immediate topic of research. In other words, analyses involving social security expenditures will be based upon a sample of fifty-two nations, whereas analyses of the impact of structure on income distribution patterns will be based upon data from forty-four nations (through use of the pair-wise deletion options). This method allows for a consideration of the hypotheses with the available data (even the smallest N, 44, represents a reasonable sample of the world's nations) and does not introduce greater error into the research.

The Level of Study

This research poses questions at the aggregate or systems level. It relies on national-level data. I have hypothesized, moreover, that variations among nations in degree of governmental centralization will have an important, measureable impact upon public policy. And, I expect that relationships will be observable at the system level. The nation-state is an important social unit about which we can still learn a great deal.

Several scholars, however, have outlined possible problems inherent

in national level studies using aggregate data: the accuracy of aggre-
gate data may be limited or faulty, the degree of comparability of
measurements may be diminished -- especially when units provide infor-
mation by processes of self-enumeration, and, aggregate data may not
indicate much about real properties of the collective unit.[37] For
purposes of this research, I have attempted to minimize these problems.
Most of the data, for instance, have been taken from United Nations'
sources which have been carefully compiled in an attempt to maximize
comparability. Moreover, the intent of the research is to identify
national level trends in the data rather than to characterize or repre-
sent properties of the collective based upon aggregate data or averages.

It may well be that social change and policy change can more
clearly be seen at the intra-national level, as Merritt and Rokkan
suggest.[38] Moreover, there are problems involved in generalizing about
countries which are internally vast and diverse. Ideally, social units
studied should coincide with units perceived as "real" by inhabitants.[39]
However, subnational data are simply not available at this time.
Nations and data-gathering organizations such as the U.N. or IBRD have
not gone far beyond making national-level data available.

<p align="center">*   *   *</p>

The hypotheses presented earlier will be tested using regression
analysis and least squares estimation techniques. These analyses and
their results will be presented in Chapters IV, V and VI. Chapter III
presents a discussion of the principal independent variables and their
measurement.

CHAPTER II

FOOTNOTES

[1] May, R. J., _Federalism and Fiscal Adjustment_, Oxford, The Claredon Press, 1969, pp. 161-62.

[2] Rothenberg, Jerome, "Local Decentralization and the Theory of Optimal Government," in Julius Margolis, ed., _The Analysis of Public Output_, National Bureau of Economic Research, New York, Columbia University Press, 1970, pp. 33-35.

[3] Wilensky, Harold and C. N. Lebeaux, _Industrial Society and Social Welfare_, The Free Press, Glencoe, Illinois, 1965, p. xxii.

[4] Duchacek, Ivo, _Comparative Federalism_, Holt, Rinehart and Winston, New York, 1970, p. 348.

[5] Hill, Richard, "Separate and Unequal: Governmental Inequality," _APSR_ (December, 1974), p. 1557 ff.

[6] McConnell, Grant, _Private Power and American Democracy_, Vintage Books, New York, 1966.

[7] _Ibid._, p. 114.

[8] For arguments in defense of local control see: Oates, _Fiscal Federalism_, Harcourt, Brace, Jovanovich, Inc., 1972, pp. 11, 13; Richard M. Nixon quoted in Robert Inman, et. al., _Financing the New Federalism_, John Hopkins University Press, 1975; Jeffrey Pressman in Inman, et al., above; Walter Hiller, _New Dimensions of Political Economy_, Harvard University Press, 1966, p. 168. For a refutation of these arguments see: Michael Reagan, _The New Federalism_, Oxford University Press, New York, 1972, pp. 118-119; Morton Grodzins in Daniel Elazar, ed., _The American System_, Rand McNally, Chicago, 1966, pp. 210-211; Burton Weisbrod, _External Benefits of Public Education_, Princeton, N.J., 1964, p. 117, argues that most important issues are of nation-wide concern and local decision making becomes less isolated as nations unify.

[9] Watts, R., _Multicultural Societies and Federalism_, Studies of the Royal Commission on Bilingualism and Biculturalism, no. 8, Ottawa: The Queen's Printer, 1970, pp. 40-46.

[10] Oates, Wallace, _Fiscal Federalism_, op. cit., p. 196.

[11] Break, George, _Intergovernmental Fiscal Relations in the United States_, Brookings Institute, 1967.

[12] Duchacek, Ivo, op. cit.

[13] See Josef Silverstein, Burma: _Military Rule and the Politics of Stagnation_, Cornell University Press, Ithaca, 1977.

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[16] _Ibid._, chapters 9 and 10.

[17] _The Europa Yearbook 1971: A World Survey_, Europa Publications Limited, London, 1971.

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[23] Taylor, Charles and Michael Hudson, _World Handbook of Political and Social Indicators_, Second Edition, Yale University Press, New Haven, 1972.

[24] _World Tables 1976_, op. cit., Economic Data Sheet 2.

[25] International Labour Office, _The Cost of Social Security_, Geneva, 1972, 1976.

[26] See Chapter One.

[27] Chenery, Hollis, Montek Ahluwalia, C. L. G. Bell, John Duloy and Richard Jolly, _Redistribution with Growth_, Oxford University Press, London, 1974.

[28] _Ibid._, p. 7.

[29] See discussions about the problems of income data in Malcolm Sawyer, "Income Distribution in OECD Countries," _OECD Occasional_

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Studies, July, 1976, pp. 3-36; Chenery, et al., op. cit., chapters 1, 2.

[30] See the discussions of this topic in Robert W. Jackman, "The Predictability of Coups D' Etat, A Model with African Data," American Political Science Review (December, 1978), no. 4, p. 1262.

[31] Haug, Marie, "Social and Cultural Pluralism as a Concept in Social System Analysis," The American Journal of Sociology (November, 1967), pp. 294-304.

[32] The World Factbook, Publishing Sciences Group, Inc., Acton, Mass., 1974.

[33] Jackman, op. cit.

[34] Central Intelligence Agency, National Basic Intelligence Factbook, Office of Geographic and Cartographic Research.

[35] The number and variety of nations to be included in the research was initially dictated by the availability of data on fiscal centralization.

[36] Gurr, Ted R., Politimetrics, Prentice-Hall, Inc., Englewood Cliffs, N.J., 1972.

[37] See Erwin Scheuch, "Cross National Comparisons Using Aggregate Data: Some Substantive and Methodological Problems," in Richard Merritt and Stein Rokkan, eds., Comparing Nations, Yale University Press, New Haven, 1966.

[38] Merritt and Rokkan, op. cit., pp. 268-271.

[39] Linz de Miguel, in Merritt and Rokkan, op. cit., p. 275.

CHAPTER III

POLITICAL STRUCTURE CENTRALIZATION: ITS SCOPE AND MEASUREMENT

A major assumption underlying this research is that there are
several separate dimensions making up what is more generally referred
to as political structure centralization or government authority con-
centration, and further, that the various dimensions or types of
government centralization specified in Chapters I and II may have
differing effects on social policy. Are there in fact empirical grounds
for dissecting the concept government centralization into several dis-
tinct components? Or, as is often assumed in the political science
literature, do constitutional, economic and political aspects of cen-
tralization or concentration coincide?

In this chapter, the claim that there are several separate aspects
to the degree of regime centralization is tested using data from
sixty-seven nations. At the same time, I develop measures for my prin-
cipal independent variables: fiscal centralization, formal-legal status,
and informal political authority concentration.

Federal/Unitary Status: Formal-Legal Structure Centralization

In Chapter II, I have discussed the classification procedures used
to designate the nations included in this research as federal or unitary.
The "measurement" of this aspect of political structure centralization
is straightforward. That is, following Duchacek and Elazar, we may
rely on constitutional stipulations of the structure of intergovernmental

relations (when the constitution is, in fact, in force). The following nations in my sample are federal: Argentina, Australia, Austria, Brazil, Cameroon, Canada, West Germany, India, Malaysia, Nigeria, Pakistan, Switzerland, the United States and Venezuela.

According to Duchacek, some basic characteristics and operating principles of federal systems are: 1) the constitutional stipulation of federal structure, 2) a clear division of significant powers among substantially self-sustaining centers, each with independent rule-making power, and 3) an areal division of power.[1] Moreover, Duchacek and Elazar distinguish between federalism or non-centralization and decentralization in unitary states.[2] Whereas decentralization refers to a conditional diffusion of specific powers to subordinate local governments by a central government (these powers being, theoretically at least, subject to recall by a unilateral decision), federal constitutions stipulate sovereign powers for both the federal and provincial governments. As Beer points out, the unitary government often uses the local governments as agents for carrying out central government policies (decentralization), or it may use local offices to implement policies directly.[3] This kind of central government dominance and direction is usually absent in the federal system.

The nature of center-periphery or intergovernmental relations varies between unitary and federal systems. This aspect of political structure centralization is captured by ranking states as federal or unitary. However, even a brief consideration of the fourteen federal states in this study points out what my be significant differences in center-periphery relations among federal states. That is, it may prove useful to further classify federal systems into those with strong and

those with weak central governments.

Drawing from Duchacek's and Elazar's discussions of federal systems, several criteria for characterizing federal systems can be established: Can the center abolish states or otherwise enforce its will upon the states? Can the states destroy the union or secede? Can the center unilaterally change the constitutional division of powers between the center and subnational units? Can states unilaterally change the division of power? Do center and state governments each have significant sovereign powers?

To classify the federal systems according to these criteria, I have relied upon the advice of several area specialists and information from national case studies.[4] The results of this effort are depicted in the figure on the following page.

In sum, while the main objective in this research is to consider differences between unitary and federal systems in their impact on policy, it may be useful to examine the effects of different types of federal systems.

Fiscal Centralization

A second type of government centralization is fiscal centralization. How much control does the central government have over national spending and taxation? I have argued that formal-legal structure does not prescribe or predict either the level of fiscal centralization or of informal political authority concentration. The formal-legal status of a nation is but one dimension of its general level of government centralization. This phenomenon is supported by the data and will be commented on a little later.

Varying levels of fiscal centralization among national economies

CLASSIFICATION OF FEDERAL SYSTEMS ACCORDING TO THE NATURE OF POWER

DIVISIONS BETWEEN CENTER AND PERIPHERY GOVERNMENTS**

```
weak                                                              strong
federal                                                          federal
government                                                       government

         1       2    3    4    5   5.5   6     7    8    9    10
         |-------|---------|---------|-----|-----|---------|---------|----|
                                                          
    Switzerland   Canada   U.S.          India        Brazil      Argentina*
                                West Germany  Malaysia  Venezuela*  Nigeria
                                Austria              Cameroon
                                Australia            Pakistan*
```
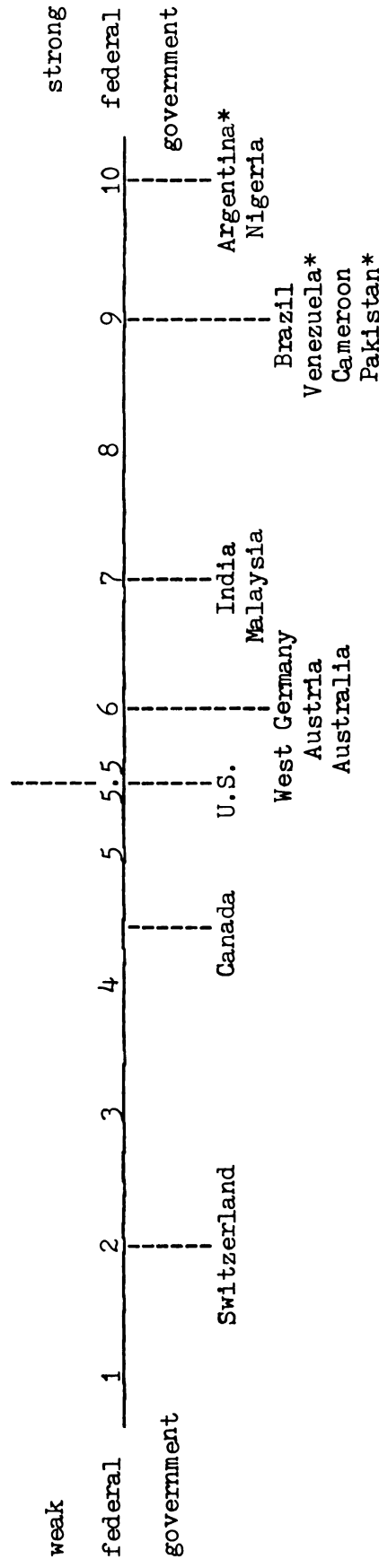
* ambiguous

** See note 4 for sources.

may be expected for several reasons. First, the <u>assignment of functions</u> between levels of government (center and locale) varies among nations. A function given to a regional, state or provincial unit in one country may be the duty of the national government in another country. Consider, for example, the varying patterns of educational finance among the world's nations. Whereas financing education is a largely local matter in the United States, in Italy, Great Britain and many Third World nations education funding is largely a concern of the central government. There are variations in inter-economy fiscal patterns in other policy areas as well, such as pensions and tax collection.

Second, even if several nations have very similar functional allocation patterns, i.e., the same responsibilities are assigned to the center and to the periphery in each nation, <u>expenditure patterns</u> may differ tremendously from nation to nation. Consider, for example, educational expenditures per capita in three nations where education administration and funding is almost exclusively the responsibility of the central government. Whereas Burma spent approximately $2.33 per person for education purposes in 1970, Honduras spent $8.74 and Italy spent $75.20.[5] These differences may be due to a number of factors that are important considerations in the decision-making process: level of economic development, national priorities, social needs, or ideological and value commitments.

Third, nations vary in their concern over and stress on even, balanced growth and intra-national regional fiscal equalization -- a concern which, if given high priority, would demand considerable fiscal direction from the center. Some differences among federal systems on this aspect of fiscal direction from the center were discussed earlier.

Whereas some nations such as the United States are only marginally concerned with fiscal equalization,[6] others, like West Germany, have national constitutional stipulations aimed at inter-regional equalization. In the United Kingdom, the minority nationalism in Scotland and Wales has been interpreted as a "creative response" to a lack of central government concern for even economic development and various aspects of inter-regional equality.[7] The differences among governments in handling issues of intra-national fiscal equalization, then, are another source of variation in fiscal centralization.

Finally, nations differ in the amounts of services such as health insurance that are provided by the private sector. Where social welfare and other services have traditionally been handled by individuals operating within the private sector, the role of the central government in financing these services is diminished. For these reasons, we can expect variations in the inter-economy degree of fiscal centralization, and can expect that this variation may have some impact on social policy.

National revenue and expenditure patterns are represented by four types of data from IBRD and U.N. sources, as outlined in Chapter II: the central government share of general government current public expenditures (all expenditures of central government agencies and bureaus) hereafter represented by the symbol CE; the share of total public revenues collected by the central government, CR; the central government share in general public consumption expenditures, GC; and the central government share in general government civil consumption expenditures (i.e., excluding defense expenditures), CC. These figures are given as percentages.

Distinctions between these four figures, however, are not clear, given their definitions in the sources. The differences between CE (from IBRD sources) and GC (a U.N. figure), for example, are not immediately obvious. Nor is it immediately clear which single figure best reflects a nation's level of financial centralization, although the fourth figure, CC, which excludes consideration of defense expenditures, seems appropriate given my theoretical concerns with social policy.

The relationships among these data become clearer when their Pearson's correlations with one another are examined (see Table 3-1).

Table 3-1

Pearson's r - Fiscal Data*

N		CE	CR	GC	CC
61	CE	--	.77	.73	.71
59	CR		--	.65	.67
41	GC			--	.96
29	CC				--

* All figures are significant at the .01 level.

First, that figures on central government share of general public consumption, GC, and central government share of general non-defense expenditures, CC, correlate so highly (r = .96) suggests that they represent virtually the same dimension of fiscal centralization and are, for purposes of empirical analysis, interchangeable. Using the CC figure,

then, would add little if any additional information to that provided by GC, but would greatly reduce the number of cases to be included in the analyses because of missing data. (There is a difference of twelve cases between GC and CC figures.) Of the two figures, GC is best suited to my purposes.

On the other hand, the CE, CR and GC figures correlate at .65 to .77, or, at slightly lower levels and seem to be representing slightly different dimensions of fiscal centralization or are bringing in different bits of information. That is, although CE, CR and GC are strongly intercorrelated, they do not correlate so highly as to be redundant. Fiscal information is being represented in different ways by the three figures. Choosing any one figure to indicate the level of fiscal centralization, then, would mean excluding some of the available information and would limit our ability to characterize the degree of central financial concentration present in nation-states.

In light of these findings, I have calculated a Fiscal Centralization Index (FCI) which uses all available information for each of the sixty-seven nations included in this study. The index figure for a country represents the average of that country's three scores or values for CE, CR and GC, i.e., $FCI = \dfrac{CE + CR + GC}{3}$. If one or two of the values are missing for a country, FCI is based on the remaining information. Where the GC value is missing (as is the case for twenty nations), for example, $FCI = \dfrac{CR + CR}{2}$ for those cases where these two scores are available, or FCI = CE (where both GC and CR are missing) or FCI = CR (where both GC and CE are missing).

Data are available for all three measures in thirty-eight cases, for only two measures in eighteen cases and for one measure (always

then, would add little if any additional information to that provided by GC, but would greatly reduce the number of cases to be included in the analyses because of missing data. (There is a difference of twelve cases between GC and CC figures.) Of the two figures, GC is best suited to my purposes.

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In light of these findings, I have calculated a Fiscal Centralization Index (FCI) which uses all available information for each of the sixty-seven nations included in this study. The index figure for a country represents the average of that country's three scores or values for CE, CR and GC, i.e., $FCI = \frac{CE + CR + GC}{3}$. If one or two of the values are missing for a country, FCI is based on the remaining information. Where the GC value is missing (as is the case for twenty nations), for example, $FCI = \frac{CR + CR}{2}$ for those cases where these two scores are available, or FCI = CE (where both GC and CR are missing) or FCI = CR (where both GC and CE are missing).

Data are available for all three measures in thirty-eight cases, for only two measures in eighteen cases and for one measure (always

either CE or CR) in eleven cases. By calculating FCI in this manner, I have maximized both the number of cases to be included in future analyses and the use of available fiscal information.[8]

Table 3-2

Pearson's r - Fiscal Data and FCI*

N's		CE	CR	GC	FCI
61	CE	--	.77	.73	.94
59	CR		--	.65	.90
41	GC			--	.88
67	FCI				--

* All figures are significant at the .01 level.

Finally, the fiscal centralization index just discussed represents a distinct dimension (along with federal/unitary status) of the more general structural centralization concept referred to in much of the political science literature. Using data from sixty-seven countries, for example, I find that federal/unitary status and FCI have a relatively low Pearson's r of -.38, or, only 14% common variance. The relative small-ness of the relationship will become even more clear when the total spectrum of centralization indicators is discussed at the end of this chapter.

Informal Political Authority Concentration

Whereas federal-unitary status represents the formal <u>constitutional</u> <u>structure</u> of government and establishes the pattern of formal inter-governmental relations, this dimension of government centralization does not necessarily prescribe or establish the more <u>informal power configura-tions</u> and distribution within society. A third distinguishable dimen-sion of political structure centralization, then, is what I term informal political authority concentration. Here I am interested in measuring the degree of authority or power concentration present among groups within society, such as political parties, that compete in the political arena and that influence government outputs and outcomes. For instance, how concentrated is the power within the political party system? How many electorally viable parties compete in each system? How strong is the majority party's influence in the legislature? How many seats does it control?

But, the opportunities that exist for influencing government must also be considered. These opportunities may be reflected by such things as the degree of electoral competition, whether interest articulation is permitted to flourish, or the manner in which law-makers are selected.

The data to be considered for measurement of informal political authority concentration have been discussed in Chapter II. The task here is to consider the aspects of political authority represented by the data and to weigh the relative strengths of the data as measures of informal power configurations. This will be accomplished by compar-ing the indicators' relationships to each other.

The presentation of the data in Tables 3-3 to 3-9 highlights several patterns. First, it becomes evident from Tables 3-3 and 3-4 that two

Table 3-3

Associations Among the Informal Political

Authority Concentration Indicators*

(tau)

	F/U	VPD	PS	LFV	LFS	IA	EC	SUH	SMP	PDP
F/U	--	-.635	.013	-.01	.03	.18	.16	.276	.04	-.023
VPD		--	.07	-.03	-.03	.24	.23	-.066	.07	.07
PS			--	.214	.36	-.35	-.57	.36	-.22	.017
LF-V				--	.50	-.30	-.40	-.07	-.34	-.18
LF-S					--	-.256	-.487	-.12	-.61	-.13
IA						--	.44	-.15	.215	.24
EC							--	-.13	.40	.23
SUH								--	-.04	.28
SMP									--	.045
PDP										--

* In order to facilitate comparison, LFV, LFS and SMP are recoded in
Tables 3-3 to 3-8 from interval level into ordinal categories as
follows: low (0 to 40%), medium (41 to 60%) and high (61 to 100%).

KEY:

F/U   Federal/Unitary Status

VPD   Vertical Power Distribution (Textor and Banks, 1963; 3 category
      subjective ranking of the effectiveness of federal or unitary
      structure; entered as a check on F/U.)

PS   Party System; single, two or multiparty system

LFV   Legislative Party Fractionalization in Votes received

Table 3-3 (continued)

LFS Legislative Party Fractionalization in Seat share (LFV and LFS indicate the likelihood that 2 randomly selected members of the legislature will belong to the same party; reflects party cleavage in seats and in original votes case.)

IA Interest Articulation by Associational Groups

EC Electoral Competition

SUH Selection Upper House - appointed or popularly elected

SMP Percent Seats Majority Party in Legislature

PDP Power of Executive to Dissolve Parliament

Table 3-4

Associations Among the Informal Political

Authority Concentration Indicators

(gamma)

	F/U	VPD	PS	LFV	LFS	IA	EC	SUH	SMP	PDP
F/U	--	-.99	.03	-.03	.08	-.40	-1.0	.43	-.10	-.06
VPD		--	.14	-.07	-.06	.44	1.0	-.11	.14	.15
PS			--	.40	.52	-.52	-1.0	.48	.31	.026
LFV				--	.76	-.58	- .70	-.14	-.615	-.32
LFS					--	.425	- .84	-.18	-.83	-.21
IA						--	1.0	-.195	.315	.40
EC							--	-.625	.77	.47
SUH								--	-.05	.40
SMP									--	.07
PDP										--

dimensions of political structure are represented by these data. That is, variables tapping the selection of the upper house and executive powers to dissolve parliament are more closely associated to the formal-legal political structure variables (F/U and VPD) than to the other political characteristics. They characterize the _formal_ rather than the informal structure of politics. This makes sense in that executive powers and procedures for the selection of representatives are topics that constitutions usually address. These variables reflect formal-legal power divisions within the system.

Moreover, the remaining variables (PS, LFV, LFS, IA, EC and SMP) correlate with each other at higher levels than do variables F/U, VPD, SUH and PDP.[9] (See Tables 3-5 to 3-8). Because SUH (Selection of Upper House) and PDP (Power of Executive to Dissolve Parliament) seem to reflect the formal rather than the informal aspects of authority concentration, therefore, they are dropped from further consideration of appropriate measures of informal power.

Table 3-5

Gamma - Indicators of Formal Structure

	F/U	VPD	SUH	PDP
F/U	--			
VPD	-.99	--		
SUH	.43	-.11	--	
PDP	-.06	.15	.40	--

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Table 3-6

Correlations Among Indicators of Formal Structure (Tau)

	F/U	VPD	SUH	PDP
F/U	--			
VPD	-.635	--		
SUH	.27	-.06	--	
PDP	-.023	.07	.28	--

Table 3-7

Gamma - Indicators of Informal Political Authority

	PS	LFV	LFS	IA	EC	SMP
PS	--					
LFV	.40	--				
LFS	.52	.76	--			
IA	-.52	-.58	.425	--		
EC	-1.0	-.70	-.84	1.0	--	
SMP	.31	-.615	-.83	.315	.77	--

Table 3-8

Tau - Indicators of Informal Political Authority

	PS	LFV	LFS	IA	EC	SMP
PS	--					
LFV	.214	--				
LFS	.36	.50	--			
IA	-.35	-.30	-.256	--		
EC	-.57	-.40	-.49	.44	--	
SMP	-.22	-.34	-.61	.215	.40	--

PS   Party System

LFV   Legislative Fractionalization, Votes Cast

LFS   Legislative Fractionalization, Seats Allowed

IA   Interest Articulation, 1 = negligible, 0 = significant or moderate

EC   Electoral Competition

SMP   Seats Majority Party, percentage

Second, Pearson r coefficients for the remaining informal political authority variables (Table 3-9) again show a relatively high level of intercorrelation. However, it also becomes apparent that the interest articulation variable (IA) correlates at lower levels with these variables than these variables do with one another. (At the same time it correlates more closely than the other variables to the fiscal centralization index FCI . This will be discussed below.)

It would be useful, therefore, to use at least two indicators for informal political authority concentration: a party-related variable

Table 3-9

Pearson's r - Correlations Among All Political Structure Centralization Indicators*

	F/U	VPD	CE	CR	GC	FCI	PS	LFV	LFS	EC	SMP	IA
F/U	--	.86	-.24	-.39	-.56	-.38	-.01	.13	.07	-.23	-.08	.17
VPD		--	-.23	-.36	-.55	-.36	.05	.07	.02	-.22	-.05	.26
CE			--	.77	.73	.94	.48	-.35	-.35	.34	.39	-.57
CR				--	.65	.90	.31	-.30	-.29	.27	.36	-.49
GC					--	.88	.42	-.30	-.50	.38	.52	-.56
FCI						--	.46	-.40	-.39	.37	.42	-.58
PS							--	-.73	-.70	.59	.59	-.41
LFV								--	.92	-.85	-.76	.56
LFS									--	-.77	-.90	.47
EC										--	.69	-.48
SMP											--	-.52
IA												--

* All figures are significant at the .01 level. PS and EC are considered interval level variables for pur-
poses of comparison. IA is recoded into a 2 category variable representing the presence or absence of

Table 3-2 (continued)

significant or moderate levels of interest articulation; 0 = significant or moderate IA, 1 = negligible IA.

FU   Federal, Unitary Status

VPD   Vertical Power Distribution

CE   Central Government Share Expenditures

CR   Central Government Share Revenues

GC   Government Consumption Expenditures

FCI   Fiscal Centralization Index

PS   Party System

LFV   Legislative Fractionalization, Votes

LFS   Legislative Fractionalization, Seats

EC   Electoral Competition

SMP   Seats Majority Party

IA   Interest Articulation

and the interest articulation variable. The party variables measure several things: the number of parties in the system (PS), the degree of electoral competition, EC, and the degree of opinion dominance in the legislature, LFV, LFS, and SMP. For my purposes, PS and SMP (% seats majority party) are most interesting theoretically. These variables indicate partisan strength within society and within the formal political arena within which they operate. LFV and LFS, on the other hand, differ from SMP in that they indicate the likelihood that two randomly selected legislators will be from the same party. SMP gives the percent of seats in the legislature held by the major party and gets at legislative fractionalization from another direction. Moreover, SMP represents 1969 to 1970 figures whereas the other two indicators reflect 1960 to 1965 party strengths. Of the two preferred measures of partisan control, SMP on average correlates more highly with the other party variables than does PS (.735, as opposed to .652). Moreover, SMP reflects partisan strength in a much clearer manner than PS (or the type of party system). SMP indicates party dominance or concentration in the legislature -- the law making and policy setting body. SMP should provide the clearer picture of the possible impact of informal political authority (i.e., how power has been divided in society and outside of the formal structures of government) on government outputs.

The interest articulation variable, IA, indicates the presence or absence of regular, active representation of interests within or from the larger society. (The variable is drawn from Banks and Textor who categorize interest group activity as significant, moderate or negligible. I have recoded the variable to create a dichotemous variable where 1 signifies negligible activity and where, presumably, there is a

concentration of interest activity in the hands of a few.) It points to the way in which influence is shared among groups in society. If there are substantial or moderate levels of interest articulation, we may assume that many different groups are vying for power or influence. IA also reflects existing opportunities to divide power and influence government policy decisions. Therefore, informal political authority concentration will be indicated in later analyses by both SMP and IA.

The Three Dimensions of Political Structure Centralization

The measures of association presented in the tables above seem to justify the claim that the political structure centralization concept reflects at least three distinct dimensions of centralization or authority concentration. They provide the basis for a study of the impact of different types of centralization on social policy. It may well be the case, in other words, that the several types of centralization work to influence social policy in different ways. This will be the topic of the following chapters. Here I will briefly discuss the relationships among the three types of centralization.

That F/U status is something quite different from fiscal centralization or informal political authority concentration becomes clear with inspections of Tables 3-3 and 3-9. In Table 3-3, F/U and VPD correlate very weakly with all other political characteristics (except, of course, with each other). In Table 3-9, again, it is evident that F/U status does not correlate at medium or high levels with FCI (common variance is 14%), with SMP (0.6% common variance) or with IA (3% common variance). That is, relative to the high levels of r _among the variables within each dimension_ (highlighted in Table 3-9), correlations _between dimensions_ are low.

The highest levels of association between dimensions of centralization are those between fiscal centralization and informal political authority concentration. Still, there is only 17% common variance between FCI and SMP. It is safe to argue that FCI and SMP do not lie along the same dimension of political structure centralization, and, in fact, represent different things. The amount of common variance between FCI and IA, however, is somewhat higher at 33%. In spite of this low to medium relationship between FCI and one aspect of informal political authority, IA, it still seems theoretically interesting to consider their separate impacts on social policy. Certainly, they are not close to representing the same dimension of centralization.

It is interesting that IA correlates with the fiscal variables in Table 3-9 at higher levels than do the other indicators of informal political authority and that IA correlates slightly higher with the fiscal variables than it does with the other informal political authority variables I have considered. This suggests that the degree of fiscal centralization and the level of interest articulation are related to each other to some extent, even though there is not a similar relationship between FCI and SMP (or the other party variables). Presumably, when interest articulation from competing groups is high and when each group clamors for its share of goods from government or its share of the national financial pie, this leads to _or_ reinforces fiscal decentralization. When interest articulation is high, there is incentive for fiscal _decentralization_, and vice versa, i.e., with fiscal _decen_-tralization comes an increase in lobbying access points and greater opportunity for more groups to organize for a share of the goods. The exact nature and strength of this relationship, in sum, is not clear.

In all, the consideration of the various indicators of political structure centralization has laid the groundwork for the analysis of the impact of several types of centralization on social policy.

CHAPTER III

FOOTNOTES

[1] Duchacek, Ivo, _Comparative Federalism: The Territorial Dimension of Politics_, Holt, Rinehart and Winston, Inc., New York, 1970, Chapter 5; Daniel Elazar, "Federalism," _International Encyclopedia of the Social Sciences_, Vol. 5, MacMillan, New York, 1968.

[2] _Ibid_.

[3] Beer, Samuel, _The British Political System_, Random House, New York, 1974, pp. 60, 61.

[4] I am grateful for the help of Professors O. C. Press and M. Bratten, of the Department of Political Science, and D. Bailey of the Department of History, Michigan State University; also see, James Dunn, "Consociational Democracy and Language Conflict: A Comparison of the Belgian and Swiss Experiences," _Comparative Political Studies_ (April, 1972), Vol. 5, pp. 3-40; Donald Smiley, _Canada in Question: Federalism in the Seventies_, McGraw-Hill, Ryerson, Toronto, 1976; Michael Reagan, _The New Federalism_, Oxford University Press, New York, 1972; R. J. May, _Federalism and Fiscal Adjustment_, Oxford: The Claredon Press, 1969; Jean Holmes and Campbell Sharman, _The Australian Federal System_, Allen and Unwin, Sydney, 1977; L. A. Sheridan and Harry Groves, _The Constitution of Malaysia_, Oceana Publishers, Inc., Dobbs Ferry, New York, 1967; Mushtaq Ahmad, _Government and Politics in Pakistan_, Space Publishers, Karachi, Pakistan, 1970; Herbert Feldman, _Revolution in Pakistan_, Oxford University Press, 1967.

[5] Computed from _World Survey of Education_, volume 5, UNESCO publication, New York, 1971; International Bank for Reconstruction and Development, _World Tables 1971_, Table 2; United Nations, _Statistical Yearbook 1973_, New York, 1974.

[6] See among others, James Buchanan, "Federalism and Fiscal Equity," _American Economic Review_, Vol. 40 (September, 1950), p. 583; Harold Wilensky, _The Welfare State and Equality_, University of California Press, Berkeley, 1975.

[7] Rawkins, Philip, "Outsiders as Insiders: The Implications of Minority Nationalism in Scotland and Wales," _Comparative Politics_, Vol. 10 (July, 1978), p. 519 ff.

[8] In order to check for possible biases created by the fact that there was some missing data in the calculation of FCI in 29 cases, or,

to check for possible differences in results when using the 38 cases where I had all the data for the FC index and the other 29 cases, I will regularly consider the separate effects of fiscal centralization using only the 38 cases where all pieces of information were available.

[9] Using the tau figures to calculate a variable's average correlation with all other variables in Table 3-3, we can again distinguish these two sets of characteristics:

F/U	.138	PS	.347
VPD	.097	LFV	.197
SUH	.174	LFS	.290
PDP	.122	IA	.280
		EC	.343
		SMP	.218

CHAPTER III

APPENDIX

Some Summary Statistics

Variable	Mean	Standard Deviation	N
CE	68.70	21.34	61
CR	73.14	18.92	59
GC	69.06	20.65	41
FCI	71.96	18.01	67
FU*	.21	.41	67
VPD	2.64	.68	62
SUH	2.73	1.44	34
PDP	1.8	.935	60
IA*	2.20	.898	60
SMP	60.64	21.27	56
LFV	.592	.212	44
LFS	.510	.244	58
PS	1.91	.753	67
EC	1.28	.640	67

* dichotemous variables

CHAPTER IV

THE IMPACT OF GOVERNMENT CENTRALIZATION ON HEALTH POLICY

In this chapter I will investigate the relationships between the
three aspects of political structure centralization and health policy
outputs and outcomes. In general, previous research posits that cen-
tralization has a positive effect on social policy outputs and outcomes.
In Chapters V and VI I will extend the analysis of the impact of cen-
tralization on social policy by considering, in turn, education and
social welfare outputs and outcomes.

Centralization and the Size of Public Spending

Before focusing on the separate social policy areas, there is a more
general hypothesis that should be tested, given our concern with the
effects of political structure on the size of public policy spending and
commitment: that political structure centralization, and financial
centralization especially, has a significant, positive effect on the size
of the public sector. This hypothesis was forwarded by several scholars
whose arguments were reviewed in Chapter I. For example, Peacock and
Wiseman argue that fiscal centralization leads to a larger public sec-
tor, or greater social policy spending, because centralization leads to,
among other things, a standardization of policy implementation.[1] Pryor
makes a similar argument for education spending.[2] Before considering
separate policy areas, then, we consider the larger picture of political
structure and the size of social policy spending generally. Does

political structure centralization affect the size of the public sector, or, overall national commitment to social programs?

There is some disagreement over the direction of the relationship, however. While Cameron and Hofferbert argue that <u>federalism</u> has a conservatizing effect on social policy allocation decisions, Beer contends that in federalism inheres an expansionary potential,[3] and Oates reports results that show that <u>fiscal</u> centralization has <u>no independent</u> <u>effect</u> on the size of public spending after controlling for national affluence.[4] (See Chapter I for further discussion.)

The hypothesis that centralization has a positive effect on the size of the public sector can be tested with regression analyses by plotting the size of the public sector (hereafter referred to as SPS) against the three aspects of centralization: FU status (federal/unitary), FCI (fiscal centralization index) and informal political authority concentration (SMP, percentage of legislative seats held by the majority party and IA, the degree of interest group articulation).

The impact of FU status on SPS can be tested using the following regression equation:

$$Y = a + b_1 X_1 + e \qquad \text{where}$$

Y = SPS, size of the public sector, 1970. (Following Oates, I use tax revenue as a percent of national income.)

X_1 = FU status, 1970. (A dummy variable is used where 0 = federal, 1 = unitary.)

e = stochastic disturbance or error term.

Results are shown in Table 4-1. After considering data from 65 nations, we must reject the hypothesis that federalism has an independent or important effect on the total size of public spending for social

policy. The R^2 is extremely small and the parameter estimate does not pass the simple test for inclusion as a causal variable (that is, it is less than twice the size of its standard error). National level data, then, support neither Cameron and Hofferbert's nor Beer's arguments. Federalism has neither a conservatizing nor an expansionary effect on the size of the public sector; empirically, FU status has no effect on SPS.

Table 4-1

Linear Regression of Size of the Public Sector on FU Status

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
F/U status	-2.11	4.48	-.068
constant	26.91	3.98	

R^2	$\bar{R}^2$	F
.005	.000	.220

The next step is to investigate the hypothesis that <u>fiscal central-ization</u> has a positive effect on SPS. It is not clear from the literature what form the relationship between fiscal centralization and SPS takes; should we expect a linear relationship? Or, is it possible that a curvilinear relationship exists (although the possibility is not raised in the earlier literature)? A curvilinear relationship in this context would suggest that as FCI increases, SPS increases and then, at some point, levels off or even begins to decrease. Figures 4-1 and 4-2 depict these curves:

SPS

FCI
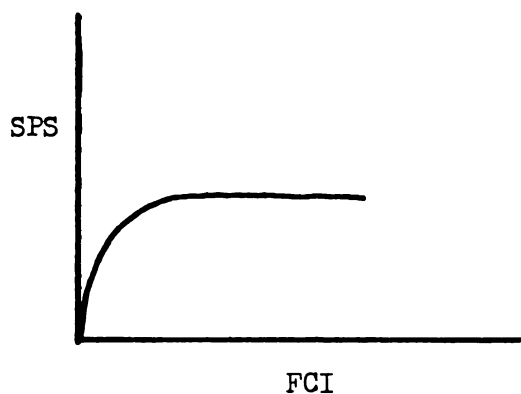
Figure 4-1

Logarithmic Relationship

SPS

FCI
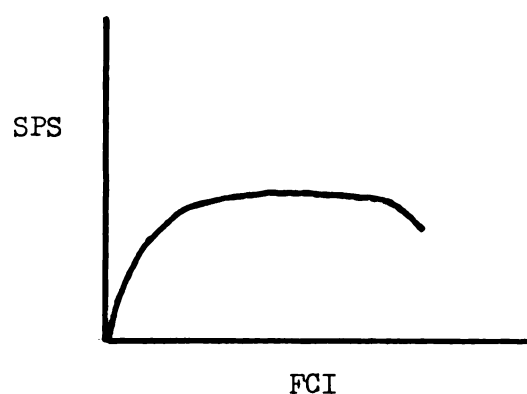
Figure 4-2

Polynomial Relationship

The impact of fiscal centralization can be tested using the following equations:

$$Y = a + b_1 X_2 + e$$

$$Y = a + b_1 X_3 + e \qquad \text{(logarithmic form)}$$

$$Y = a + b_1 X_1 - b_2 X_4 + e \qquad \text{(polynomial form)}$$

where

X_2 = FCI, 1970

X_3 = ln FCI

X_4 = FCI, squared.

Results are shown in Tables 4-2, 4-3 and 4-4. It appears that the linear equation best fits the data from 65 nations -- although the logarithmic form is close to the linear in fit -- and it is the simplest model. (The polynomial parameter estimates do not pass the test of being at least twice the size of their standard errors.) But what is most interesting is that these results show that the hypothesized effect of FCI on SPS is in error. In fact, these results show that FCI has a

linear <u>negative</u> effect on SPS. As fiscal centralization increases, the size of the public sector decreases. Peacock, Wiseman and Pryor's arguments do not stand when tested empirically.

Table 4-2

Linear Regression of Size of Public Sector on FCI

(N = 65)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
FCI, 1970	-.384*	.085	-.550
constant	52.87	6.34	

R^2	$\bar{R}^2$	F
.300	.285	20.17

* Starred estimates are at least twice the size of their standard errors.

Table 4-3

Logarithmic Regression of SPS on FCI (N = 65)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
ln FCI, 1970	-24.46*	5.46	-.547
constant	128.96	23.19	

R^2	$\bar{R}^2$	F
.299	.280	20.10

* Starred estimates are at least twice the size of their standard errors.

Table 4-4

Polynomial Regression of SPS on FCI (N = 65)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
FCI, 1970	-.650	.659	-.926
FCI, squared	.002	.005	.381
constant	61.29	21.76	

R^2	$\bar{R}^2$	F
.300	.270	9.99

Recall that Oates contends fiscal centralization has no effect on the size of the public sector after the level of national wealth is controlled for. This further hypothesis was tested using 1970 data for 65 nations based on the following equation:

$$Y = 1 + b_1 X_2 + b_2 X_5 + e \qquad \text{where}$$

X_5 = electric power consumption, EPC, per capita, 1970.

Results are reported in Table 4-5. Once again, the findings do not support the arguments in the fiscal centralization literature. Even after controlling for levels of national wealth, FCI has a significant negative impact on the size of the public sector. (As would be expected, the level of economic development has a positive effect on the size of public spending. Richer nations can afford to spend more on social policies than poorer nations. While there must be a national commitment to social policy spending to improve the day to day life of citizens and meet basic needs of citizens, there must also be resources to allocate before social well-being can be achieved.)

Table 4-5

Regression of SPS on FCI, Controlling for EPC

(N = 63)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
FCI, 1970	-.181*	.082	-.259
EPC, 1970	.0026*	.0005	.574
constant	33.66	6.57	

R^2	$\bar{R}^2$	F
.546	.523	26.50

* Starred estimates are at least twice the size of their standard errors.

To test the effects of a third aspect of government centralization -- informal political authority concentration -- on SPS we consider two independent variables: the percentage of parliamentary seats held by the majority party (SMP) and a dummy variable denoting the degree of centralized control over interest articulation by associational groups (0 = significant or moderate interest articulation, 1 = negligible interest articulation).[5]

In the case of the relationship between SMP and SPS, again, we are not sure what form of relationship to expect -- linear or curvilinear. The equations to be tested are of the same form as those discussed earlier (page 117).

Tables 4-6, 4-7 and 4-8 present results. The linear and logarithmic equations appear to fit the data from 56 nations equally well, i.e.,

the logarithmic equation does not improve upon our ability to predict SPS.[6] (The parameter estimates of the polynomial form are not significantly larger than their standard errors.) Again, the unexpected result is that SMP has a negative effect on SPS -- as the percentage of seats held by the majority party increases, the size of the public sector decreases (although the rate of that decrease may level off at high levels of SMP).

Table 4-6

Linear Regression of SPS on Seats Majority Party

$(N = 56)$

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
SMP, 1970	-.22*	.080	-.371
constant	38.59	5.16	

R^2	$\overline{R}^2$	F
.14	.12	7.5

* Starred parameter estimates are at least twice the size of their standard errors.

Table 4-7

Logarithmic Regression of SPS on SMP (N = 56)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
ln SMP	-12.94*	4.69	-.374
constant	77.54	18.98	

R^2	$\bar{R}^2$	F
.140	.120	7.65

* Starred estimates are at least twice the size of their standard errors.

Table 4-8

Polynomial Regression of SPS on SMP (N = 56)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
SMP	-.562	.453	-.947
SMP, squared	.0026	.0034	.585
constant	48.56	14.01	

R^2	$\bar{R}^2$	F
.148	.110	4.0

It is prudent here to consider whether or not this relationship based on a bivariate equation, is causal or if it is only a spurious result of the level of economic development or other features. Table 4-9 shows results obtained when regressing SPS on SMP while controlling for

economic development $(Y = a + b_1 X_6 + b_2 X_5 + e)$. When we control for national wealth, the effect of SMP on SPS becomes insignificant. That is, the earlier finding of an inverse relationship between SMP and SPS may well be due to the effects of the level of economic development on SMP. The percentage of legislative seats held by the majority party, then, as an aspect of informal political centralization, has no causal impact on the size of public spending.

Table 4-9

Regression of Size Public Sector on SMP, Controlling EPC

(N = 56)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
SMP, 1970	-.080	.067	-.135
EPC, 1970	.003*	.0005	.656
constant	24.84	4.65	

R^2	$\bar{R}^2$	F
.510	.490	23.12

* Starred estimates are at least twice the size of their standard errors.

Finally, I shall consider the effect of the degree of interest articulation (IA) on the size of the public sector. The hypotheses concerning the effects of centralization lead us to expect that as IA increases and informal political authority is centralized, the size of the public sector will increase. IA is represented here by a dummy variable where 0 = significant or moderate IA (signifying decentralized

informal political power) and 1 = negligible IA (centralized informal power). The equation is:

$$Y = a + b_1 X_9 + e \qquad \text{where}$$

X_9 = dummy variable IA, 1963.

Results in Table 4-10 show that there is a strong negative relationship between IA and SPS. Where informal political authority is centralized (where independent social groups do not have opportunity to articulate interests and otherwise attempt to influence politics) the size of the public sector tends to be small. Again, <u>decentralization</u>, not centralization, <u>leads to increased spending</u>.

Table 4-10

Regression of SPS on Interest Articulation

(N = 60)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
IA, dummy, 1963	-18.17*	2.51	-.725
constant	34.62	1.80	

R^2	$\overline{R}^2$	F
.526	.516	52.25

* Starred estimates are at least twice the size of their standard errors.

This finding of a significant relationship between the degree of interest articulation and SPS is further supported by the results shown in Table 4-11 where the level of economic development is controlled for. Even after adjusting for the varying levels of national wealth among

nations, the impact of low levels of IA (where informal political power is centralized) remains. Whatever the level of economic development of a nation, therefore, where a large number of social groups are allowed to articulate their interest and influence decision-makers, the amounts of money allocated to the public sector and social policy (among which is health, education and social welfare policy) increases.

Table 4-11

Regression of SPS on IA, Controlling EPC

(N = 60)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
IA, 1963	-11.75*	2.92	-.470
EPC, 1970	.002*	.0005	.414
constant	27.98	2.49	

R^2	$\overline{R}^2$	F
.632	.615	37.80

* Starred estimates are at least twice the size of their standard errors.

In summary, while FU status does not significantly affect the size of a nation's public sector (SPS), FCI has been shown to have a negative and linear effect on SPS, even after considering the level of national affluence. The results of the impact of informal political authority concentration on SPS are mixed; whereas the legislative strength of the majority party (SMP) has no independent effect on SPS after controlling for levels of economic development, the lack of open

interest group articulation (the presence of only negligible levels of interest group activity) has been shown to have a negative impact on public spending. A number of arguments in the literature have thus been shown empirically to be incorrect.

Indicators of Health Policy Outputs and Outcomes

Let us now investigate the impact of government centralization on health policy. We begin with a consideration of various indicators of health policy outputs and outcomes. (For a discussion of the health data and their sources, see Chapter II.) I concur with Levy, Meltsner and Wildavsky that several separate results of policy decisions must be considered: outputs and outcomes.[7] Because of imperfect implementation of outputs (for example, resources allocated) and because of such things as unanticipated consequences, there may not be a strong relationship between outputs and outcomes, or, immediate results and distributions of outputs. It seems justifiable to consider both health policy outputs (here, expenditure allocations) and outcomes, even though earlier studies have not separated the two dimensions.

Table 4-12 is presented to test the argument that outputs and outcomes are theoretically and empirically separate. Two kinds of data are reflected in the table. First, I have collected data on health expenditures (total expenditures for health, expenditures as a percent of the Gross Domestic Product, and expenditures per capita) to indicate outputs and levels of commitment to the health policy area. Of all possible output indicators, expenditure figures are the most readily available for a large sample of nations. Second, I have collected data on infant mortality rates, life expectancy, nutrition and numbers of doctors, nurses and hospital beds in proportion to the population to

Table 4-12

Pearson's Correlation Coefficients Among

the Health Policy Indicators

	IMR	LE	DRS	NRS	BDS	CAL	PRT	HEX	HEXGDP	HEXPOP
IMR										
LE	-.87									
DRS	.56	-.65								
NRS	.56	-.57	.43							
BDS	.61	-.58	.44	.58						
CAL	-.64	.71	-.46	-.53	-.46					
PRT	-.58	.68	-.25	-.51	-.50	.79				
HEX	-.38	.43	-.24	-.32	-.29	.47	.47			
HEXGDP	-.38	.48	-.25	-.40	-.47	.38	.41	.45		
HEXPOP	-.50	.56	-.31	-.42	-.40	.46	.56	.58	.87	

IMR   Infant Mortality Rate per 000 live births, 1970

LE   Life Expectancy, 1970

DRS   Population Per Doctor, 1970

NRS   Population Per Nurse, 1970

BDS   Population Per Hospital Bed, 1970

CAL   Calorie Supply/Cap as % of daily requirement, 1970

PRT   Protein Supply/Cap/Diem, 1970

Table 4-12 (continued)

HEX   Health Expenditures in U.S. dollars, 1970

HEXGDP   Health Expenditures as % of GDP, 1970

HEXPOP   Health Expenditures Per Capita, 1970

---

represent the immediate impact (outcomes) of health expenditures (and

commitments). That is, how are life chances, daily nutrition and medical

facilities affected by centralization? (See the Appendix to the chap-

ter for a summary of the various characteristics of these data.)

Table 4-12 reflects the fact that two dimensions of health policy

results are in fact inherent in these data. Whereas the average corre-

lation among the output (expenditure) variables is .63 and the average

correlation among the outcome variables is .57, the average correlation

of the output variables with the outcome variables is only .39. That

is, variables within each group correlate more highly with each other

than with variables of the other group.

To simplify the analysis of the health policy area I have chosen

to use one expenditure variable (per capita expenditures) and three

outcome variables (life expectancy, population per nurse and calories

per capita as a percent of daily requirement). Health expenditures per

capita will be used both because it is theoretically the most interest-

ing of the three expenditure variables, given my concern with the

quality of life and well-being of every citizen in the society, and

because it has the highest average correlation (.725) with the other

output variables. The outcome variables reflect three areas of health

policy -- what I will term Life-Nutrition-Medical Services. Each of

these aspects is represented by the indicator correlating most highly

with all the other outcome variables within each of the three concern areas. For example, calories per capita correlates on average at .60 with all other outcome variables; protein supply correlates at .55. Therefore, to indicate the nutrition aspect of health policy outcomes, I use calories per capita.[8]

Government Centralization and Health Policy

The cross-national analysis presented here represents the first scholarly attempt to study determinants of national health policies on a cross-system basis, and specifically, to consider the impact of political structure centralization on health outputs and outcomes. Moreover, the centralization and social policy literature has not focused on the health policy field. (That literature does investigate, to some extent at least, the eduation and social welfare areas.) Hypotheses from the literature do focus generally on social policy, however, of which health policy is a part. To that extent, we can test these hypotheses using health policy data in an attempt to increase our knowledge of health policy determinants (here, government centralization) and health policy outputs and outcomes.

I will begin this analysis by considering bivariate relationships and "partial theories" of the impact of several types of political structure centralization on commitment to and outcomes of health policies. Next, I will consider multivariate and non-additive relationships, thereby testing for spuriousness while specifying the more complex relationships between types of centralization and health policies. In general, the literature suggests that political structure centralization leads to greater efforts in social policy areas. We should expect unitary government, fiscal centralization and informal political power

concentration each to lead to greater health expenditures and higher levels of health policy outcomes.

The regression of health expenditures per capita (HEXPOP) on federal/unitary status (FU) allows us to address the question of federalism's impact on allocations for social policy -- whether it presents a conservative or an expansionary influence. There is little consensus in the literature on this point, and there is no empirical evidence supporting either argument. The equation I consider here is:

$Y = a + b_1X_1 + e$ where

Y = health expenditures per capita, 1970

X_1 = FU status, 1970.

Results in Table 4-13 appear to challenge both arguments. Using data from 57 nations, we find that the FU status of a nation -- its formal-legal character determining the number of sovereign units within the nation -- has no independent effect on a nation's level of health expenditures. It has neither an expansionary effect nor a conservative impact, and, instead appears to play a negligible role as policy determinant. This aspect of centralization, in short, carries little significance for per capita spending on health care, as evidenced by these data from 57 nations.

Fiscal Centralization

We may logically expect, on the other hand, that the level of fiscal centralization of a nation -- the degree to which the central government has responsibility over taxation and spending -- will have significant impact upon the level of health expenditures. It has been argued, for example, that fiscal centralization leads to the standardization of procedures, to greater efficiency in implementation and to

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Table 4-13

Regression of HEXPOP on Federal Unitary Status (N = 57)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
F/U status, 1970	-2.21	14.02	-.04
constant	21.59	12.46	

R^2	$\bar{R}^2$	F
.000	.000	.248

---

uniformity in policy efforts. For these reasons, Levy, Hage and Hollingsworth, Pommerehne, and Peacock and Wiseman hypothesize a positive effect of fiscal centralization on social policy expenditure levels.[9]

To determine empirically the nature of the relationship between FCI and HEXPOP, I test the linear, logarithmic and polynomial models. The results of the regression analyses are presented in Tables 4-14, 4-15 and 4-16. It is immediately clear that FCI has a significant negative impact on per capita health expenditures and that the hypothesized positive relationship is empirically invalid. Once again, arguments forwarded in the literature are found to be untenable when tested empirically with cross-national data.

What is not so clear is the form of the relationship -- whether it be linear, logarithmic or polynomial. That is, does the effect of FCI level off or even decrease at some level? Figure 4-3 depicts the graph of these relationships and the actual data points. From the graph it appears as though a few outlying data points may be distorting the true relationship between FCI and HEXPOP. In fact, when the Netherlands and

Table 4-14

Linear Regression of HEXPOP on FCI (N = 57)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
FCI, 1970	-1.02*	.276	-.502
constant	93.61	20.45	

R^2	$\bar{R}^2$	F
.252	.233	13.81

* Starred estimates are at least twice the size of their standard errors.

Table 4-15

Logarithmic Regression of HEXPOP on FCI (N = 57)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
ln FCI, 1970	-71.33*	17.03	-.547
constant	322.32	72.37	

R^2	$\bar{R}^2$	F
.299	.282	17.54

* Starred estimates are at least twice the size of their standard errors.

Table 4-16

Polynomial Regression of HEXPOP on FCI (N = 57)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
FCI, 1970	-5.73*	1.99	-2.81
FCI, squared	.034*	.014	2.32
constant	243.32	65.98	

R^2	$\bar{R}^2$	F
.344	.311	10.50

* Starred estimates are at least twice their standard errors.

Sweden are taken out of the regression analyses, the parameter estimates (the negative slopes) and the $\bar{R}^2$'s are reduced by half, although the sign of the parameter estimates stays the same and the linear and logarithmic estimates are still at least twice the size of their standard errors. (The significance of the polynomial regression disappears, while the logarithmic form continues to explain more of the variance in HEXPOP than does the linear form.) The strength of the relationship decreases, however, as FCI explains only a small portion of the variance in HEXPOP. Furthermore, when the eight Anglo-European countries that lie on the upper half of the graph (quite apart from the other data points) are removed from the analyses in an attempt to determine if outliers (exceptional cases) are unduly influencing the true relationship, FCI no longer has an independent impact on HEXPOP.[10] The independent effects of FCI are unclear at this point and will be further

Health Expenditures Per Cap, 1970

Fiscal Centralization Index, 1970
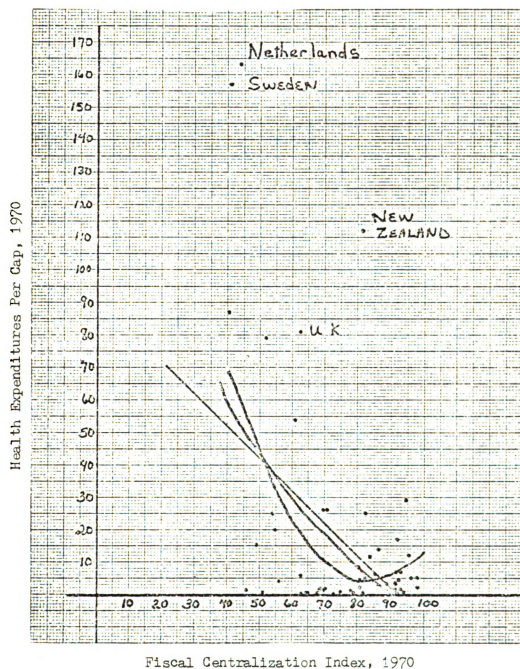
Figure 4-3

(N = 57)

investigated using multivariate regression techniques later in the
chapter. But FCI does not, at this point, appear to have the positive
relationship often predicted in the literature.

Informal Political Authority Concentration

Regression analyses testing equations of the forms discussed
earlier facilitate an examination of the effects of what I term informal
political authority concentration on per capita health expenditures.
The linear, logarithmic and polynomial models allow a test of whether
SMP and IA each has a significant independent effect on HEXPOP. The
effect of the percentage of seats held by the majority party on HEXPOP
is reflected in Tables 4-17, 4-18 and 4-19. As SMP increases, HEXPOP
decreases and then, at high levels of SMP, levels off. That is, a
logarithmic curvilinear form best fits data from 46 countries. (See
also, Figure 4-4. Note that the fit of the logarithmic curve to the
data points improves when the two outliers -- the Netherlands and
Sweden -- are excluded from the analyses.) Using simple bivariate
equations, then, we find that SMP has a negative effect on HEXPOP.[11]
Further aspects of this relationship remain to be explored later in the
chapter. It remains to be seen, for example, if SMP influences HEXPOP
once economic development is controlled.

When levels of interest articulation are negligible (signifying a
concentration of informal political authority at the center) health
expenditure levels decrease (see Table 4-20). As is the case with the
size of the public sector, when interest articulation is limited,
health care allocations are minimal.

Table 4-17

Linear Regression of HEXPOP on SMP

(N = 46)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
SMP, 1970	-.806*	.239	-.466
constant	68.74	15.34	

R^2	$\bar{R}^2$	F
.217	.198	11.38

* Starred estimates are at least twice the size of their standard errors.

Table 4-18

Logarithmic Regression of HEXPOP on SMP

(N = 46)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
ln SMP	-51.24*	13.59	-.508
constant	226.96	55.03	

R^2	$\bar{R}^2$	F
.258	.240	14.27

* Starred estimates are at least twice the size of their standard errors.

Table 4-19

Polynomial Regression of HEXPOP on SMP

(N = 46)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
SMP	-2.98*	1.31	-1.72
SMP, squared	.0166	.0098	1.28
constant	132.26	40.58	

R^2	$\bar{R}^2$	F
.269	.232	7.37

* Starred estimates are at least twice the size of their standard errors.

Table 4-20

Regression of HEXPOP on Interest Articulation

(N = 46)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
IA, dummy, 1963	-39.66*	9.57	-.543
constant	40.33	6.87	

R^2	$\bar{R}^2$	F
.295	.278	17.17

* Starred estimates are at least twice the size of their standard errors.

138

% Legislative Seats Held By Majority Party, 1970

Figure 4-4

(N = 46)

138

% Legislative Seats Held By Majority Party, 1970
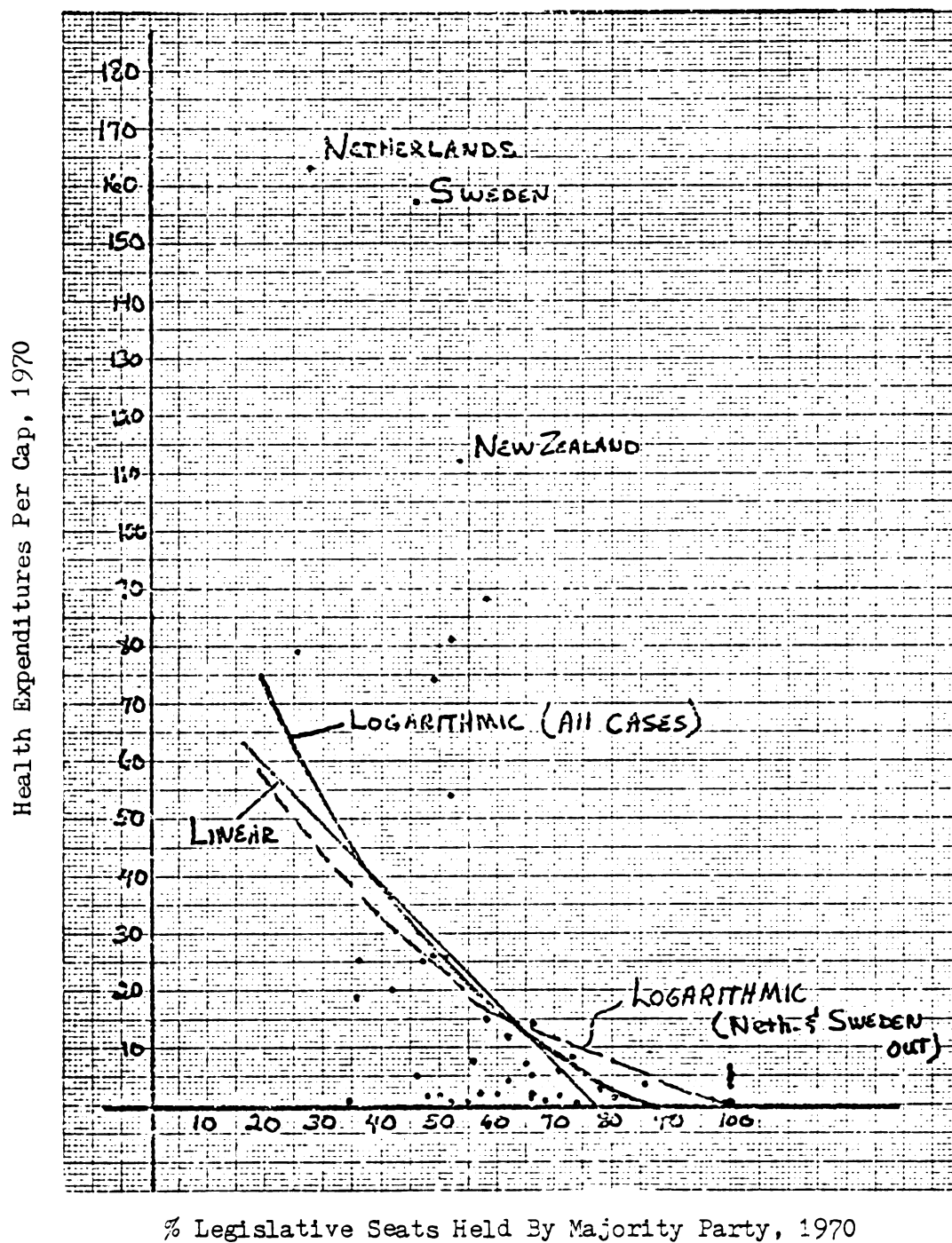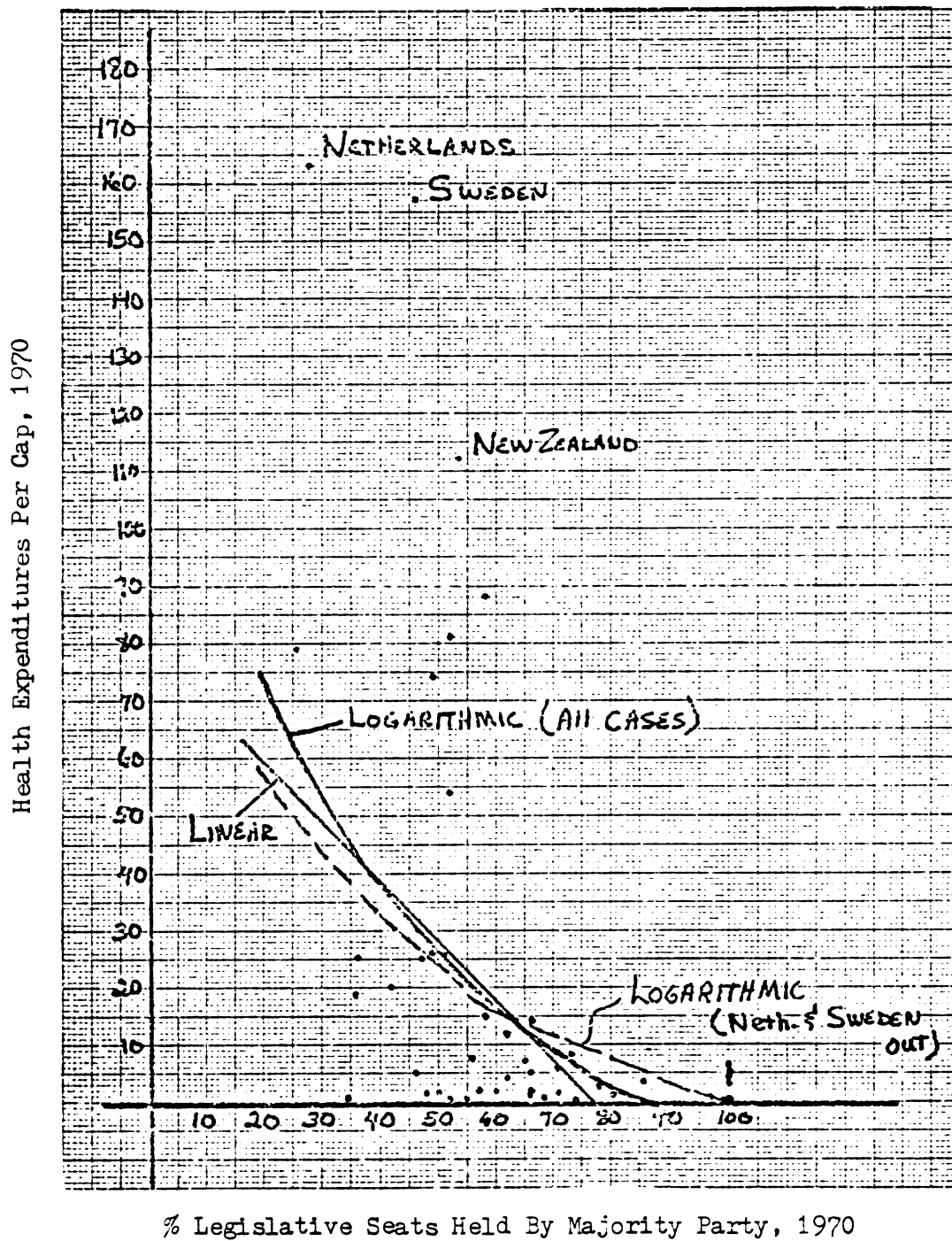
Figure 4-4

(N = 46)

The Role of Demographic Variables

We would logically expect that social characteristics such as population growth rate, the percent of population over age 65 and the degree of socio-cultural heterogeneity affect health care allocation patterns. Where populations are growing at a rapid pace (characteristic of many Third World nations) health care needs may be surpassing government capabilities to provide health care services. On the other hand, where a relatively large percentage of the population is over 65 (not often the case in Third World countries), governments may perceive and respond to greater health care needs. Moreover, it was hypothesized in Chapter II that social heterogeneity has a negative impact on social policy outputs.

Regression analyses indicate that demographic factors do in fact affect HEXPOP. The population growth rate and the percent of the population over age 65 both show significant relationships (the first a negative and the second a positive relationship) to HEXPOP when tested with simple bivariate equations ($\bar{R}^2$ = .240 and .431, respectively).

Moreover, while ethnic dominance appears to have no impact on HEXPOP (parameter estimates are not significant and the $\bar{R}^2$ is negligible), marked or extreme heterogeneity has, as hypothesized, a significant and negative impact on HEXPOP when tested using a simple bivariate equation. In order to explore these relationships more fully, multivariate analyses must be done, since it is quite plausible to suppose that the most highly fragmented societies are also the poorer ones. Put another way, the effects of heterogeneity may be a function of economic level.

The Role of Economic Development

Earlier research has suggested the importance of the level of economic development in positively affecting social policy. Again, using regression analyses, I consider the bivariate effects of level of economic development on HEXPOP.

Results are shown in Tables 4-21, 4-22 and 4-23 and in Figure 4-5.

Table 4-21

Linear Regression of HEXPOP on EPC (N = 54)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
EPC, 1970	.008*	.0017	.596
constant	5.87	5.425	

R^2	$\bar{R}^2$	F
.355	.339	22.58

with Norway and the U.S. taken out of the regression analysis:

EPC	.015	.0014	.844
constant	-2.21	3.55	

R^2	$\bar{R}^2$	F
.712	.706	116.27

* Starred estimates are at least twice the size of their standard errors.

Table 4-22

Logarithmic Regression of HEXPOP on EPC (N = 54)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
ln EPC	13.31*	2.41	.652
constant	-62.51	15.55	

R^2	$\bar{R}^2$	F
.425	.411	30.34

with Norway and the U.S. taken out of the regression analysis:

ln EPC	15.12*	2.23	.702
constant	-72.24	14.14	

R^2	$\bar{R}^2$	F
.493	.482	45.77

* Starred estimates are at least twice the size of their standard errors.

As becomes obvious from the tables and graph, two outliers -- Norway and the United States -- seem to be determining the form of the relationship between EPC and HEXPOP. When the outliers are removed from the analysis, the linear model best fits the data (see Figure 4-5). As was to be expected, the level of economic development has a strong positive effect on the level of health expenditures per capita ($\bar{R}^2$ = .340, all cases; $\bar{R}^2$ = .705, Norway and the United States excluded). Given what is known from this analysis and earlier studies, then, EPC will be treated here as an important contextual variable that must be

Electric Power Consumption, 1970
(Kilowatt hours per capita, in thousands)
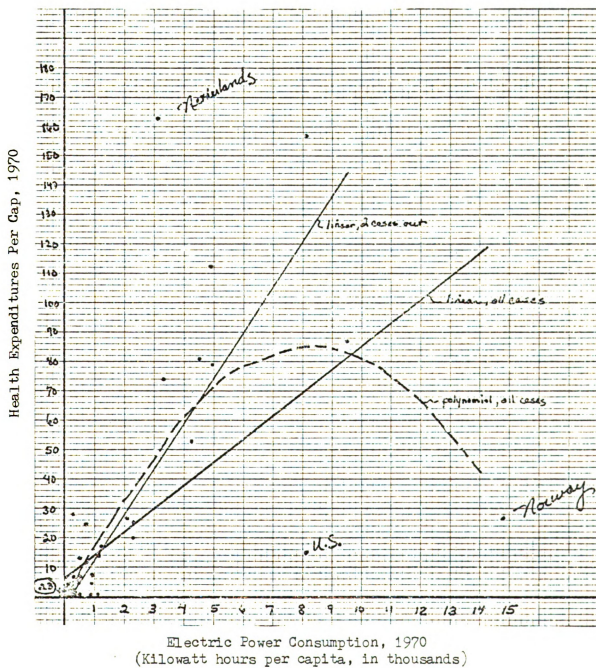
Figure 4-5

(N = 54)

Table 4-23

Polynomial Regression of HEXPOP on EPC (N = 54)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
EPC	.0215*	.0033	1.60
EPC, squared	-.000001*	.0000003	-1.10
constant	-3.97	5.00	

R^2	$\bar{R}^2$	F
.569	.548	26.46

with Norway and the U.S. taken out of the regression analysis:

EPC	.0226*	.0036	1.23
EPC, squared	-.000001*	.0000005	-4.24
constant	-5.91	3.82	

R^2	$\bar{R}^2$	F
.739	.727	65.08

* Starred estimates are at least twice the size of their standard errors.

taken into consideration when investigating the effects of the political variables.

The Joint Occurrence of Types of Centralization: Multivariate Analyses

In order to more toward a fuller specification of the relationship between the independent variables and commitment to health care we must move beyond bivariate analyses to consider multivariate effects. I

begin by considering the possibility of multiplicative or joint effects
among the centralization variables. That is, it seems logical to expect
that where several types of centralization occur together or jointly
we will observe results that go beyond the explanations rendered by
considering types of centralization independently or in an additive
model. For example, although both fiscal centralization(FCI) and low
levels of interest articulation (IA, where the dummy variable = 1) have
a negative impact on HEXPOP in bivariate analyses, it may be that when
they occur together they interact so as to effect _greater_ health expend-
itures (by the fact that together they present a greater push or influence
toward national standardization of expenditures and implementation of
policy). Or, the percentage of legislative seats held by the majority
party (SMP) may interact with IA to affect HEXPOP in a positive direc-
tion even though SMP, too, has an independent negative impact on HEXPOP.
We might find similar trends in the joint occurrence of the other
centralization types.

In order to test for the presence of interaction effects I create
new variables by multiplying two centralization variables together.
For instance, to test for multiplicative effects between SMP and IA, I
multiply the logged SMP variable (the form that best fit the SMP and
HEXPOP data) by IA (which is a dummy variable). Likewise, to test for
joint effects of federal/unitary status and majority party seats, I
multiply ln SMP by FU (also a dummy variable). (I will also test for
the presence of joint effects between FU status and other centraliza-
tion measures in spite of the fact that FU status displayed no bivariate
relationship to HEXPOP. It may be that when present with other types
of centralization, FU status affects health policy outputs.)

That several types of centralization may work _jointly_ to affect
health expenditures is discounted by multivariate regression analyses
where economic level is held constant. (See Appendix B for a presenta-
tion of results.) None of the interaction pairs among the four central-
ization measures is significant at the .05 level.

The discovery that there are no interaction effects among the
centralization measures seems to bolster further the argument underlying
this research that political structure centralization is best conceived
of as separate dimensions. It appears as though each type of central-
ization has its own impact on policy that is not tied in with effects
of other types of centralization. This suggests, moreover, that the
conceptualizations of centralization in the literature may be mislead-
ing. Wilensky, Levy, Hage and Hollingsworth, and Morrison and Stevenson
all conceive of or present centralization as an undifferentiated composite
of political and economic variables.

Other Interaction Effects

It is also important to consider the manner in which level of
economic development interacts with the other independent variables of
the study. For example, those who write about federalism often note
that such a decentralized structure is costly to implement because of
such things as duplication of offices and multiple agencies, legisla-
tures, and other governing structures. For this reason, federal struc-
tures are more often found in wealthier nations which can afford to try
to accommodate diversity.[12] It may also be that only where EPC is high
does federal status affect social spending.

Some scholars, such as Marion Levy, argue that centralization --
economic and political, presumably -- is most efficient for new and

poorer nations that need to aggregate power enough to command the situation.[13] For purposes of this research it is essential to consider the effect of the presence of both low levels of economic development and centralized structures on social policies and social well-being. In other words, we go beyond questions of political stability to stress questions of basic human needs and levels of living. Moreover, there is evidence to suggest that levels of interest articulation increase with social mobilization and industrialization; EPC may interact with IA in such a way to affect IA's impact on policy. For these reasons, I test for interaction effects between EPC and the centralization measures. We expect that levels of economic development affect the relationship between political structure centralization and HEXPOP and that the effect is more than additive -- it is multiplicative.

Table 4-24 shows the test of these relationships. EPC displays special interaction effects with two types of political structure centralization -- fiscal centralization and informal political power concentration (as indicated by SMP). However, the interaction effect differs depending upon the type of centralization present. First, where high levels of EPC and SMP occur together, the multiplicative effect on HEXPOP is negative. That is, although SMP becomes insignificant when controlling for EPC in an additive model, the joint effect of SMP and EPC on HEXPOP is negative. This suggests that where one-party dominance in the legislature exists in a country that is economically developed, commitment to health expenditures is moderated or lessened. Conversely, increasing party competition would increase health expenditures in the wealthier countries.

Second, where high levels of fiscal centralization and EPC occur

Table 4-24

Regression of HEXPOP on Political Structure Centralization and EPC, Interaction Models

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$
ln SMP, 1970	-4.55	14.32	-.045	
EPC, 1970	.093*	.026	6.91	.436
ln SMP * EPC	-.021*	.006	-6.34	.547
constant (N=53)	36.31	56.98		
IA, 1963	-23.12	12.88	.415	
EPC, 1970	.0056*	.0021	-.317	.375
IA * EPC	.0100	.0247	.059	.362
constant (N=57)	20.85	9.56		
ln FCI, 1970	-46.68*	17.16	-.358	
EPC, 1970	.0025	.0024	.186	.409
ln FCI * EPC	1.75*	.858	.325	.451
constant (N=54)	167.89	75.05		

Table 4-24 (continued)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\overline{R}^2$
F/U status, 1970	3.60	13.71	.04	
EPC, 1970	.007*	.003	.518	.335
FU * EPC	.0017	.0036	.111	.324
constant (N=54)	2.84	2.00		

* Starred estimates are at least twice the size of their standard errors.

together, the joint effect is to increase health expenditures in spite

of the fact that the independent effect of FCI on HEXPOP is negative and

that the effect of FCI controlling for EPC is negative. In other words,

when high levels of fiscal centralization exist in an affluent society,

commitment to health care expands, as indicated by greater levels of

health dollars per person. This finding seems to support hypotheses in

the literature, and to controvert our earlier observation of a negative

relationship between fiscal centralization and health expenditures.

But, it would be improper to consider these findings as more than

tentative until the relationships have been considered within the con-

text of a more complete model of the relationships between the independent

variables and HEXPOP, since some of the relationships that have been

uncovered may be spurious.

Another type of interaction may be significant as a causal factor.

The literature on federalism postulates that there is a "federal solu-

tion" for socio-cultural diversity and the problems that heterogeneity

poses for social policy implementation. Federal structure, it is argued,

can ameliorate communal conflict over social goods and services by

allowing local autonomy and control. Where federal structure and hetero-

geneity occur together, the otherwise negative effects of heterogeneity

should disappear. In contrast, where heterogeneity is high and govern-

ment (at the center) is controlled by ethnic interests -- assuming that

politics is ethnically based in the plural society as Rabushka and

Shepsle and others argue -- we would expect the effect on HEXPOP to be

negative. The argument is that where there is an ethnicization of

goods and services, the ruling ethnic groups are not concerned with

sharing benefits of health care with other groups.

It is clear that data from forty nations severely question the arguments in the literature: federal/unitary status does not interact with heterogeneity to affect the impact of socio-cultural heterogeneity on health policy. At the aggregate level, arguments about a federal or unitary "solution" are empirically invalid or unsupported. (See Table 4-25.)

Table 4-25

Regression of HEXPOP on Federal/Unitary Status and

Heterogeneity, Interaction Model (N = 40)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
Heterogeneity, dummy var.	-23.08	23.74	-.312
Federal/Unitary	-4.78	20.23	-.053
Hetero. * FU	-5.47	27.12	-.067
constant	34.88	18.66	

R^2	$\bar{R}^2$	F
.133	.063	1.90

Specifying a Final Model

At this point it is unclear what roles the independent variables play, if any, in explaining the level of health expenditures. That is, I have considered bivariate equations and interaction models separately; it is not clear from the analyses whether the variables that have been found to be significant in zero-order and interaction tests survive in multivariate tests.

In order to move closer to a final specification of the causal relationships between the independent variables and HEXPOP, I have regressed HEXPOP on the variables that survived earlier tests. When theoretically relevant independent variables are entered together in this manner, it should become apparent which relationships are spurious (or are functions of other variables) and become insignificant, and which stand the test of a more complex specification.

The multivariate regression analysis demonstrates that when considered in context with other important variables, socio-cultural heterogeneity, population growth rate and the interaction term of FCI and EPC are no longer significant at the .05 level. That is, they add little or nothing to an explanation of HEXPOP when other political, social and economic variables are considered. The presence of high levels of ethnic, linguistic and religious fragmentation has no direct effect on HEXPOP, nor, as shown earlier, does it interact with economic or political variables to affect HEXPOP. The rate of population growth, also, must be excluded from the final equation if we hold strictly to the .05 significance level: population growth rate is significant at the .08 level; it has a marginal impact on HEXPOP that is not as important a determinant as the other variables. But its presence adds only .003 to the overall $\bar{R}^2$.

It is interesting that the ln FCI * EPC interaction variable adds nothing to the explanation of HEXPOP when the main effects of ln FCI and EPC as well as the other variables are present. Apparently the interaction effects discovered earlier ($Y = a - b_1(\ln \text{FCI}) + b_2(\text{EPC}) + b_3(\ln \text{FCI} * \text{EPC})$) are spurious when several political variables are included in the regression. (The role of the ln SMP * EPC interaction

variable, on the other hand, proves to be very important to HEXPOP.)

Table 4-26 displays the regression of HEXPOP on the variables that survive multivariate analyses. The results confirm some arguments from the literature and discount others. It is clear, in any case, that the existing literature has not given an accurate account of relationships between politics and policy.

<div style="text-align:center">

Table 4-26

Regression of HEXPOP on the Independent Variables

(N = 40)

</div>

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
Pct Pop 65 +	3.28*	.593	.339
ln SMP	73.57*	6.44	.729
EPC	.240*	.012	17.80
ln SMP * EPC	-.057*	.003	-17.48
ln FCI	-132.11*	8.18	-1.01
IA	31.95*	4.25	.437
constant	269.71	37.08	

R^2	$\bar{R}^2$	F
.963	.957	148.67

* Starred estimates are at least twice their standard errors.

The notion that citizens' needs and demographic characteristics influence expenditure decisions is supported by this research. In the case of health expenditure levels, for example, as the proportion of

people aged 65 or older increases, allocations for health care likewise
increase, all other factors being equal. Also, as expected, the re-
search demonstrates that the level of <u>economic development</u> or national
wealth is an important determinant of expenditure levels. It deter-
mines the level of resources at decision-makers' disposal and therefore
constitutes an important contextual variable determining the environment
within which political factors will operate. But the results also indi-
cate that not only do political factors have independent effects on
health expenditures, they also <u>moderate the impact of economic level</u> of
health-care commitment. In other words, while economic level influences
politics, political variables also affect the relationship between
economic level and HEXPOP. This is discussed further below.

Some of the research results challenge or discount theories in the
literature. First, it is clear that the present study questions claims
from scholars of American state politics that the nature of politics
has no effect on social policy, and specifically, on expenditure levels.
In the case of health care, the level of interest group activity, the
degree of major party dominance in the legislature and the location of
fiscal decision making -- center or locale -- all play a role in deter-
mining spending. (The nature of their impact is discussed below.) This
role is independent of (but moderated to some extent by) the economic
environment.

Second, these research results refute several hypotheses concerning
the nature of the impact of political centralization on policy. While
Peacock and Wiseman, Wilensky, Hage and Hollingsworth, and others argue
that fiscal centralization leads to greater social spending, and while
Oates argues that fiscal centralization has no impact on social spending,

this research demonstrates that fiscal centralization has a <u>negative</u> <u>impact</u> on health expenditures, other factors being equal. Table 4-28 demonstrates that at each level of economic development considered, as the degree of fiscal centralization increases, the per capita health expenditure decreases. (All other significant variables are held constant at their means.) Regardless of the level of national affluence, then, centralization of fiscal activities -- spending and taxation -- will have a negative impact on commitment to health care.

Table 4-27

The Impact of EPC on HEXPOP: Expected Values of HEXPOP*

(adjusting for the effects of the other variables

by inserting mean values)

	Level EPC	Expected HEXPOP
(mean for Third World Nations)	329	23.58
(mean for total sample)	1742	37.18
(mean of Anglo-American, developed nations)	4557	64.52

* in U.S. dollars

Moreover, the relationship between informal political authority concentration and HEXPOP is more complicated than would have been expected given the centralization literature. While a concentration of <u>interest articulation</u> in the hands of a few has a positive effect on the level of health expenditures (all other things considered) the positive impact of majority party dominance in the lower house of

Table 4-28

The Impact of FCI at Various Levels of EPC: Expected Values of

HEXPOP* (adjusting for effects of other variables by

inserting mean values)@

		EPC	
FCI**	x̄ Third World 329	x̄ Total Sample 1742	x̄ Developed Nations 4557
54	61.58	75.33	102.67
72	21.58	35.33	62.67
90	-10.92	2.83	30.17

* in U.S. dollars

** The FCI values represent the mean value of FCI for the sample (72) and values at one standard deviation above and below the mean. I calculate HEXPOP figures using the log natural of the FCI value since the logged FCI variable has been used in regression analyses.

@ Cell entries are the predicted values of health expenditures per capita, 1970, at specified values of economic development and fiscal centralization, holding the effects of SMP, IA and the percent population aged 65 or over constant at their means.

the legislature is moderated by economic level. (This is clear from Table 4-26. The final equation is: HEXPOP = 269.70 + 3.28 (% population age 65+) + 73.57 (ln SMP) + .240 (EPC) - .057 (ln SMP * EPC) - 132.11 (ln FCI) + 31.95 (IA, dichotomous)). That is, although both EPC and ln SMP have an independent positive impact on HEXPOP, they interact to moderate each others' effects. The interaction variable (ln SMP * EPC) has a negative impact on HEXPOP. When both SMP and EPC are high, HEXPOP is lower than when, for example, EPC is high and SMP is

low. (See Table 4-29.) In other words, the effects of SMP differ

depending upon the level of economic development. When EPC is 329 (the

mean level of electric power consumption for Third World nations) higher

levels of majority party control lead to higher levels of health expend-

iture. At middle and high levels of EPC, however, increased majority

party control leads to decreased expenditures.

Table 4-29

The Impact of SMP at Various Levels of EPC: Expected Values of

HEXPOP* (adjusting for the effects of other variables)@

	EPC		
SMP**	x̄ Third World 329	x̄ Total Sample 1742	x̄ Developed Nations 4557
39.38	4.39	46.33	129.81
60.64	26.42	36.26	55.44
81.90	41.98	28.26	1.14

* in U.S. dollars

** The SMP values represent the mean value of SMP for the sample (60.64) and values at one standard deviation above and below the mean. I calculate HEXPOP figures using the log natural of the SMP values since the logged SMP variable has been used in regression analyses.

@ Cell entries are the predicted values of health expenditures per capita, 1970, at specified values of economic development and majority party strength in the legislature, holding the effects of fiscal centralization, interest articulation and the percent of population aged 65 or older constant at their means.

We may also consider this relationship in terms of the effect of

EPC on HEXPOP -- the positive effect is moderated by the political

situation. When the major party clearly dominates the legislature,

increased economic development and national wealth does not lead to pro-
portionately greater health spending. Health spending actually decreases.
This trend is evident, too, at the mean level of SMP for the nations in
the sample (60.6%). Although the level of expenditures increases al-
most threefold where SMP is near 40% and EPC jumps from 1742 to 4557
(the first line of Table 4-29), expenditures increase only one and a half
times where SMP is 60% and EPC increases from 1742 to 4557 (the second
line of the table).

In sum, the final model enlightens us as to the impact of political
structure centralization on HEXPOP: 1) federal/unitary status has no
impact on health spending, 2) fiscal centralization has a negative impact
on expenditures, 3) informal political authority concentration has a
more complicated impact on HEXPOP -- while low levels of interest articu-
lation positively influences commitment to health care, the impact of
party dominance depends upon national economic level. It is clear that
the nature of political organization and the structure of politics --
whether control is centralized or decentralized -- has importance to
health policy. But it is also clear that the nature of that impact
differs depending upon what aspect of political structure centralization
is being considered. Government centralization is not a unidimensional
concept in its structure or its results.

The final model also confirms the role of economic development;
although in general it has a positive effect on HEXPOP, those effects
may be moderated by the political situation. Both economic and political
factors must be considered in an explanation of commitment to health
care.

Finally, whereas one demographic variable -- the percent of the

population aged 65+ -- proved to have an impact on HEXPOP, other demo-graphic characteristics such as socio-cultural heterogeneity added nothing to the explanation. This array of political, economic and social variables (whose inclusions were justified by theory), then, appears to explain 96% of the variance in HEXPOP among nations.

Outcomes of Health Policy: The Life-Nutrition-Medical Services Dimensions

In this section I consider the effects of political structure centralization on health policy outcomes. Does centralization affect the actual outcomes of health policy decisions as experienced by citizens? As noted earlier, I operationalize "outcomes" by referring to life expectancy, calorie supply as a percentage of requirements and population per nurse.

The tables on the following pages show the bivariate relationships between the independent variables and the Life, Nutrition and Medical Services dimensions. Although several of the centralization measures appear to be significant in explaining the health outcomes, it becomes apparent that the level of economic development plays a relatively larger role in explaining the variance. In each case, a logarithmic form best fits the EPC and outcomes data. That is, as level of national wealth increases, life expectancy and calorie supply increases and the ratio of population to nurses decreases. But, this effect levels off as EPC increases. (See Figures 4-6 and 4-7.) EPC has a curvilinear impact on the Life-Nutrition-Medical Services dimension.

The next step involves testing for joint effects among the central-ization indicators and between EPC and the several aspects of political structure centralization. That is, we might expect that the centrali-zation indicators will work jointly to affect health outcomes or that

Table 4-30

Bivariate Relationships Between the Independent Variables and Life Expectancy, 1970

(N = 56)

Independent Variables	Parameter Estimates	Standard Error	Standardized Estimates	$\bar{R}^2$
F/U Status	-2.285	4.029	-.082	.000
constant	61.46	3.58		
FCI	-.2899*	.0816	-.460	.195
constant	80.51	6.05		
SMP	-.335*	.0605	-.628	.382
constant	79.99	3.88		
IA	-16.59*	2.22	-.736	.532
constant	68.21	1.60		
ln EPC	5.35*	.484	.850	.716
constant	26.53	3.12		

Table 4-30 (continued)

Independent Variables	Parameter Estimates	Standard Error	Standardized Estimates	$\overline{R}^2$
Heterogeneity	-13.63*	2.67	-.598	.343
constant	65.36	1.73		
Pop. Growth Rate	-6.64*	.147	-.549	.287
constant	73.62	3.39		

* Starred estimates are at least twice the size of their standard errors.

Table 4-31

Bivariate Relationships Between the Independent Variables and the Ratio of Population to Nurses (N = 56)

Independent Variables	Parameter Estimates	Standard Error	Standardized Estimates	$\bar{R}^2$
F/U Status	182.06	782.05	.034	.000
constant	1984.40	695.15		
FCI	16.61	17.62	.136	.000
constant	912.76	1306.88		
SMP	29.89*	14.42	.289	.064
constant	295.98	926.13		
IA	2191.65*	549.89	.502	.237
constant	976.06	394.89		
ln EPC	-807.54*	133.15	-.662	.427
constant	7106.4	857.67		

Table 4-31 (continued)

Independent Variables	Parameter Estimates	Standard Error	Standardized Estimates	$\bar{R}^2$
Heterogeneity	2344.19*	546.10	.530	.266
constant	1125.36	353.19		
Pop. Growth Rate	1007.81*	308.18	.430	.168
constant	-11.15	708.58		
Pct. Pop. Age 65+	-314.59*	65.75	-.545	.285
constant	4040.72	474.15		

* Starred estimates are at least twice the size of their standard errors.

Table 4-32

Bivariate Relationships Between the Independent Variables and Calorie Supply, 1970

(N = 56)

Independent Variables	Parameter Estimates	Standard Error	Standardized Estimates	$\bar{R}^2$
F/U Status	-4.80	4.61	-.150	.001
constant	109.83	4.10		
FCI	-.302*	.096	-.415	.154
constant	127.80	7.16		
SMP	-.250*	.082	-.405	.146
constant	121.18	5.28		
IA	-16.91*	2.88	-.649	.410
constant	114.77	2.07		
ln EPC	4.72*	.806	.649	.409
constant	78.80	5.19		

Table 4-32 (continued)

Independent Variables	Parameter Estimates	Standard Error	Standardized Estimates	$\bar{R}^2$
Heterogeneity	-12.11*	3.41	-.459	.194
constant	111.11	2.21		
Pop. Growth Rate	-7.90*	1.68	-.565	.305
constant	112.65	3.86		
Pct. Pop. Age 65+	2.55*	.367	.743	.540
constant	90.33	2.26		

* Starred estimates are at least twice the size of their standard errors.

Electric Power Consumption, 1970
(Kilowatt hours per capita)

Figure 4-6

(N = 63)

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Electric Power Consumption, 1970
(Kilowatt hours per capita)
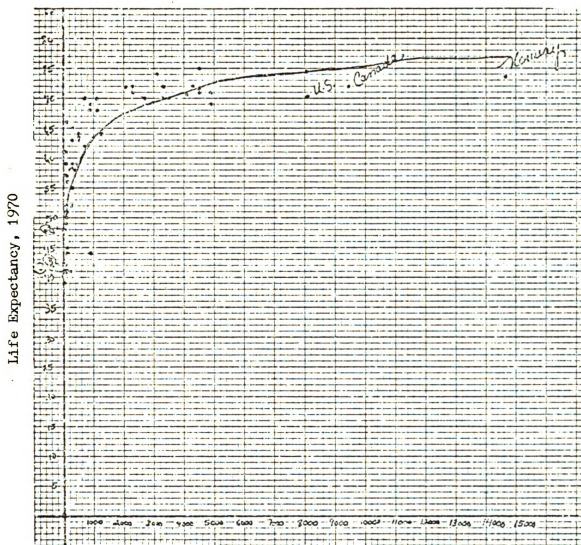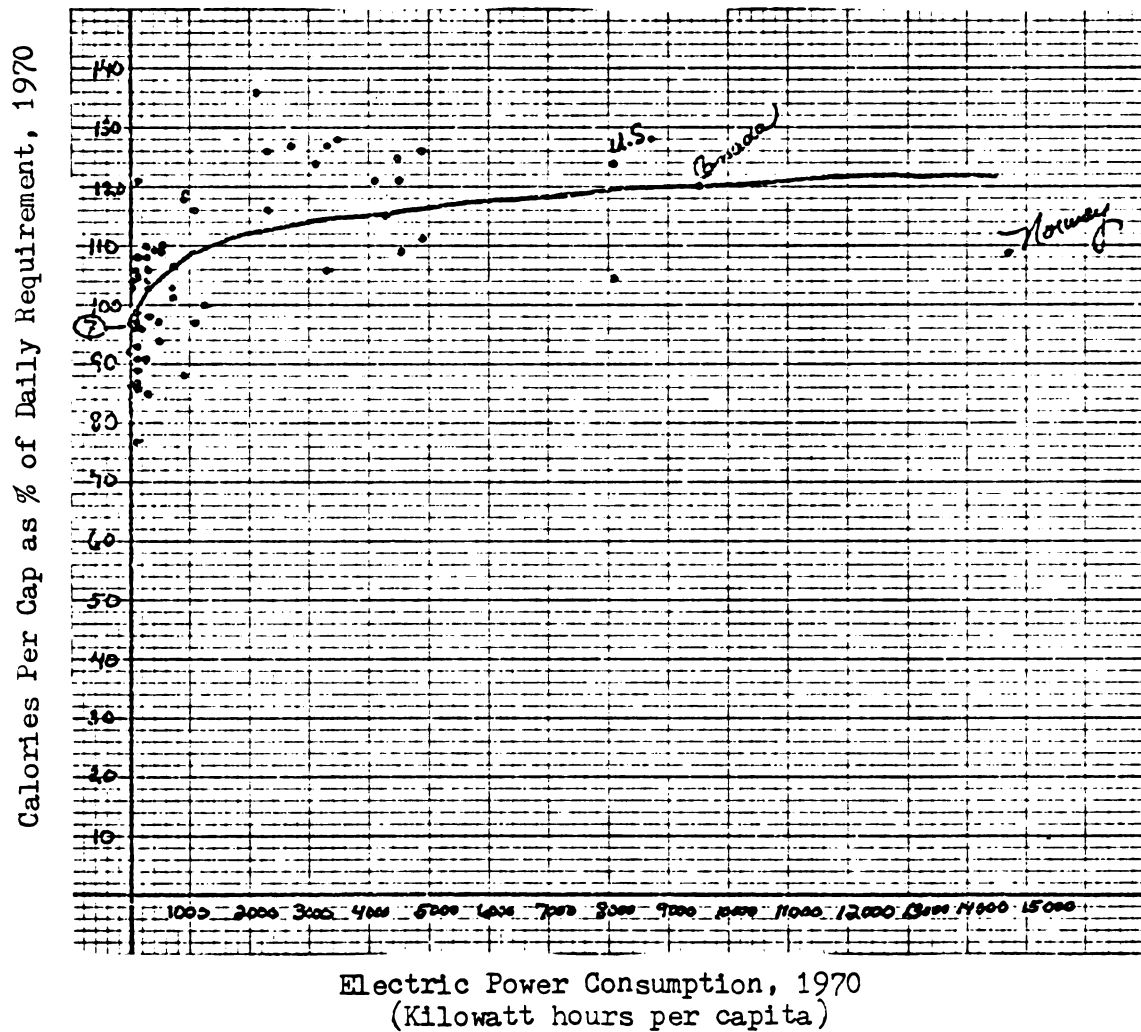
Figure 4-7

(N = 62)

EPC may interact with centralization dimensions to affect outcomes under special circumstances. I consider the possibility that the impact of centralization will vary with economic level (a known, important causal variable).

It is interesting that none of the interaction equations tested for the three outcome variables was significant at the .05 level (see Appendix C). The effects of the main independent variables -- centralization indicators -- seem to be direct and are not joint functions of economic level or other types of centralization.

What remains to be done, then, is to determine the role of the main independent variables in explaining health outcomes. Table 4-33 shows the results of regressing life expectancy on the variables that proved to be significant in bivariate analyses. That is, I consider the importance of each independent variable when other independent variables are also present. Given the presence of several centralization indicators, social demographic indicators and economic indicators, two of the main independent variables seem to be significant in explaining life expectancy: the level of economic development and the degree of major party dominance in the legislature. The effects of the other variables become statistically insignificant and appear to have been a function of EPC or SMP. Just over 75% of the variance among nations in life expectancy is explained by EPC and SMP. As expected, as level of economic development increases, so does national life expectancy. Resources are available, in other words, to implement programs and processes aimed at or resulting in prolonging life. (EPC alone explains over 71% of the variance in life expectancy.) The impact of major party dominance and concentrated power in the legislature, however, is

Table 4-33

Regression of Life Expectancy on the Main Independent Variables

(N = 50)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
FCI	.027	.061	.042
SMP	-.134	.049	-.251
IA	-1.38	3.03	-.061
ln EPC	3.32*	.848	.527
Heterogeneity	-3.71	2.03	-.162
Pop. Growth Rt.	-1.42	1.24	-.117
constant	50.57	8.85	

R^2	$\bar{R}^2$	F
.794	.763	25.64

* Starred estimates are at least twice their standard errors.

negative. As the percentage of seats held by the major party increases (and after adjusting for EPC), life expectancy tends to decrease. In this case, the concentration of informal political authority in the hands of a dominant political party has negative consequences for the national average length of life. This suggests that legislatures controlled by a predominant ruling group tend not to establish programs or pass laws designed to make life more comfortable or less hazardous. They are less willing, presumably, to commit resources to development in this area. This also suggests that centralized political control may

not be the best development strategy for Third World countries (as Levy suggests it is) if one priority is to increase average life expectancy. Instead, party competition and increased opinion representation could better be encouraged.

Table 4-34

Regression of Life Expectancy on EPC and SMP (N = 54)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
ln EPC	4.53*	.555	.720
SMP	-.128*	.047	-.240
constant	39.34	5.72	

R^2	$\bar{R}^2$	F
.763	.752	69.20

* Starred estimates are at least twice their standard errors.

The next step involves a consideration of the role of health expenditures (HEXPOP) in explaining life expectancy. Do health expenditure levels have an impact upon health outcomes? I argued earlier that there may not be a strong link between commitment (as measured by expenditure levels) and actual outcomes as experienced by citizens. Money, for instance, may never reach target groups or programs.

Table 4-35 shows what happens when HEXPOP is entered as an independent variable into the regression of life expectancy on EPC and SMP (the two variables found to be significant in multivariate analyses). HEXPOP is not significant in explaining life expectancy when the other

variables are present. This supports the earlier contention that since there is not necessarily a strong link between outputs and outcomes, the two must be considered separately when studying the impact of politics on policy.

Table 4-35

Regression of Life Expectancy on EPC, SMP and HEXPOP

(N = 50)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
ln EPC	4.70*	.665	.746
SMP	-.132*	.048	-.247
HEXPOP	-.0144	.031	-.047
constant	38.84	5.74	

R^2	$\bar{R}^2$	F
.764	.747	45.36

* Starred estimates are at least twice their standard errors.

The level of life expectancy, in sum, can be expressed as a function of EPC and SMP. The final equation from Table 4-34 is:

Life Expectancy = 39.34 + 4.53 (ln EPC) - .128 (SMP).

A second health outcome indicator is the ratio of citizens to nurses. This represents an attempt to tap the availability of medical services to the population. Table 4-36 shows results when the independent variables that survived bivariate analyses are entered into a multivariate regression. None of the political variables is empirically

Table 4-36

Regression of Population/Nurse on the Independent Variables

(N = 52)

Independent Variables	Parameter Estimate	Standard Error	Standardized Estimate
ln EPC	-737.8*	282.42	-.605
IA	-374.21	926.64	-.086
SMP	-8.32	14.54	-.081
Pct. Pop. 65+	14.38	176.02	.024
Pop. Growth Rt.	223.24	539.30	.095
Heterogeneity	1050.29	606.07	.238
constant	6374.56	2865.54	.095

R^2	$\bar{R}^2$	F
.488	.411	6.36

* Starred estimates are at least twice their standard errors.

significant in explaining the availability of nurses to the population. Nor are the social demographic variables significant. Instead, economic level alone explains over 42% of the variance in nurse availability among nations. (See Table 4-37.) As economic development increases, the ratio of people to nurses decreases. Medical services become more accessible.

When one considers the role of HEXPOP in accounting for nurse availability, HEXPOP shows no empirical relationship to the level of medical services as indicated by numbers of nurses. Table 4-38 shows

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Table 4-37

Regression of Nurses on the logged ECP Variable

(N = 60)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
ln EPC	-807.54*	136.08	-.662
constant	7106.41	876.50	

R^2	$\bar{R}^2$	F
.439	.426	35.21

* Starred estimates are at least twice their standard errors.

Table 4-38

Regression of Nurses on ln EPC and HEXPOP

(N = 57)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
ln EPC	-821.62*	183.61	-.674
HEXPOP	1.06	8.99	.018
constant	7172.51	1058.36	

R^2	$\bar{R}^2$	F
.439	.413	16.84

* Starred estimates are at least twice their standard errors.

results of entering HEXPOP along with ln EPC: the overall $\bar{R}^2$ is

reduced and the HEXPOP parameter estimate is much lower than its standard

error. Thus, health expenditures do not translate in any direct way to

an improvement of medical service availability.

The final equation from Table 4-37, then, is:

Population/nurse = 7106.41 - 807.54 (ln EPC).

The last health outcome considered in this research is level of

nutrition, or calorie supply as a percent of the daily requirement as

established by the United Nations. Table 4-39 presents results of

multivariate analyses where calorie supply is regressed on the indepen-

dent variables that survived bivariate analyses. It appears from the

table that the only significant variable is the demographic variable

giving the percent of the population over age 65. All other variables --

social, economic and political -- drop out. As the number of senior

citizens increases, so does the calorie supply available to citizens.

This relationship holds up, moreover, after controlling for level of

national wealth (ln EPC is not significant).

Although economic level is not significant to calorie supply in

the multivariate regression, it is interesting to note its relationship

to the demographic age variable. Regression analysis shows that 48%

of the variance in the age indicator is accounted for by level of

economic development (see Table 4-40). In other words, economic growth

and national affluence increase the life span of citizens. Wealthier

nations will have more people living to age 65 and older. Poor nations

will have relatively low life expectancies. Economic level, then, does

influence calorie supply indirectly through its effect on the age

variable. We may specify two relevant equations:

Table 4-39

Regression of Calorie Supply on the Independent Variables

(N = 50)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
ln EPC	.173	1.51	.024
FCI	.072	.102	.098
IA	-3.81	5.23	-.146
SMP	-.043	.083	-.069
Pct. Pop. 65+	2.73	.986	.793
Pop. Growth Rt.	2.51	3.02	.180
constant	82.32	16.07	

R^2	$\bar{R}^2$	F
.586	.519	8.72

* Starred estimates are at least twice their standard errors.

Percent Population Age 65+ = 4.44 + .0009 (EPC)   and

Calorie Supply = 90.33 + 2.56 (% population 65+).

The equations illuminate the developmental effects: EPC has a positive impact on life expectancy, which in turn has a positive impact on calorie supply.

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<center>Table 4-40</center>

<center>Regression of the Age Variable on EPC</center>

<center>(N = 63)</center>

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
EPC	.0009*	.00016	.702
constant	4.44	2.04	

R^2	$\bar{R}^2$	F
.493	.480	38.00

* Starred estimates are at least twice their standard errors.

<center>Table 4-41</center>

<center>Regression of Calorie Supply on ln EPC and the Age Variable</center>

<center>(N = 60)</center>

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
ln EPC	1.20	1.23	.165
Pct. 65+	2.11*	.581	.612
constant	85.65	5.42	

R^2	$\bar{R}^2$	F
.562	.540	26.31

* Starred estimates are at least twice their standard errors.

Table 4-42

Regression of Calorie Supply on the Age Variable

(N = 60)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
Pct. Pop. 65+	2.56*	.369	.742
constant	90.33	2.66	

$\bar{R}^2$	F
.540	48.03

* Starred estimates are at least twice their standard errors.

As was the case with the other two outcome variables, health expenditures play no direct role in influencing nutrition levels (see Table 4-43). Again, it appears that expenditures do not easily or directly translate into improving actual levels and distributions of health outcomes.

A Summary

Although the political centralization measures significantly affect levels of health spending, they are largely irrelevant to health outcomes (SMP does appear to have a slight negative impact on life expectancy, however). Instead outcomes are best understood as functions of economic development.

There seems to be little, if any, relationship between health expenditures and health outcomes as measured by life expectancy, availability of nurses to the population and calorie supply. Monies spent

Table 4-43

Regression of Calorie Supply on the Age Variable and HEXPOP

(N = 60)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
Pct. 65+	2.71*	.499	.787
HEXPOP	-.024	.052	-.067
constant	89.86	2.87	

R^2	$\bar{R}^2$	F
.554	.531	23.64

* Starred estimates are at least twice their standard errors.

for health are not reflected in these areas. Rather, allocations may "get lost" in the process of implementation. It may be, however, that this research has not tapped some important outcome or other dimension that would explain this phenomenon. It is not clear from this research, for example, where health expenditures go.

The findings of this chapter, moreover, demonstrate the difficulty in prescribing development strategies for Third World nations. Not only are the effects of centralized control complex, but there is also a significant gap between health spending and health outcomes. Finally, the effects of economic level differ according to the political situation and between health outputs and outcomes. With some qualifications, however, with economic development comes health policy development.

CHAPTER IV

FOOTNOTES

[1] Peacock, Alan and Jack Wiseman, The Growth of Public Expenditures in the United Kingdom, Princeton University Press, 1961.

[2] Pryor, Frederic, Public Expenditures in Communist and Capitalist Nations, Allen and Unwin, Ltd., London, 1968.

[3] See David Cameron and Richard Hofferbert, "The Impact of Federalism on Education Finance," in European Journal of Political Science (September, 1974), vol. 2; Samuel Beer, "Political Overload and Federalism," Policy (Fall, 1977), vol. 10, no. 1.

[4] Oates, Wallace, Fiscal Federalism, Harcourt, Brace, Jovanovich, Inc., 1972.

[5] The interest articulation variable was collapsed in this way to highlight the presence or absence of centralized control of interest articulation. Where the level of interest articulation by associational groups is negligible and the power or right to voice interests is not widely shared among social groups, we assume that the political elites at the center alone, have control over determining what "interests" or needs will be addressed. This aspect of politics, then, is centralized.

[6] Data on the percentage of seats in the legislature held by the majority party are available for 56 nations only. Here and in the following tables, results are based on all available data for the specific analysis being done. Therefore, N's vary from table to table.

[7] Levy, Frank, Arnold Meltsner and Aaron Wildavsky, Urban Outcomes, University of California Press, Berkeley, 1974, pp. 1-23.

[8] The average (absolute) correlations of the outcome variables with each other are:

IMR	.64	IMR and LE correlate with each other
LE	.68	at -.87.
DRS	.47	
NRS	.53	
BDS	.53	
CAL	.60	CAL and PRT correlate with each other
PRT	.55	at .79.

The average (absolute) correlations of the output variables with each other are:

HEX	.515	
HEXGDP	.66	HEXGDP and HEXPOP correlate at
HEXPOP	.725	.87.

[9] These arguments were reviewed in Chapter I. See, for example, Marion Levy, <u>Modernization and the Structure of Societies</u>, vol. II, Princeton, N.J., 1966; Jerald Hage and J. R. Hollingsworth in <u>The Annals</u> (November, 1977), vol. 434, p. 9 ff.

[10] The estimated regression equations when all data are included are as follows:

$$Y = 93.6 - 1.025 \text{ (FCI}$$
$$\text{st. e. } (.276)$$

$$Y = 322.32 - 71.34 \text{ (ln FCI)}$$
$$(17.03)$$

$$Y = 243.30 - 5.73 \text{ (FCI)} + .0343 \text{ (FCI)}^2$$
$$(1.99) \qquad (.0145)$$

When the Netherlands and Sweden are removed from the analyses the following equations are estimated:

$$Y = 53.33 - .530 \text{ (FCI)}$$
$$(.186)$$

$$Y = 169.67 - 36.41 \text{ (ln FCI)}$$
$$(11.77)$$

$$Y = 110.89 - 2.32 \text{ (FCI)} + .013 \text{ (FCI)}^2$$
$$(1.38) \qquad (.010)$$

When the Netherlands, Sweden, New Zealand, Canada, Finland, the U.K., Austria and Australia are removed from analyses the equations are:

$$Y = 8.28 - .023 \text{ (FCI)}$$
$$(.070)$$

$$Y = 14.30 - 1.81 \text{ (ln FCI)}$$
$$(4.51)$$

$$Y = 17.55 - .310 \text{ (FCI)} + .002 \text{ (FCI)}^2$$
$$(.517) \qquad (.0037)$$

[11] When the Netherlands and Sweden are excluded from the analyses, the estimated regression equations are:

$$Y = 53.57 - .567 \text{ (SMP)} \qquad \bar{R}^2 = .145$$
$$(.197)$$

$$Y = 168.30 - 36.73 \ (\ln \text{SMP}) \qquad \bar{R}^2 = .157$$
$$(12.23)$$

$$Y = 85.40 - 1.58 \ (\text{SMP}) + .007 \ (\text{SMP})^2 \qquad \bar{R}^2 = .140$$
$$(1.24) \qquad (.0089)$$

[12] See Martin O. Heisler in <u>Dialogue on Comparative Federalism</u>, edited by Ellis Katz and B. Schuster, Center for the Study of Federalism, Temple University, pp. 14-15.

[13] Levy, Marion, <u>Modernization and the Structure of Societies</u>, vol. II, Princeton, N.J., Princeton University Press, 1966.

CHAPTER IV

APPENDIX A

Summary Characteristics of the Dependent and Independent Variables

Variable	Mean	Standard Deviation	Cases
Infant Mortality Rate	68.2774	53.8209	62
Life Expectancy	59.6493	11.3522	67
Pop./Dr.	5769.8955	9963.5666	67
Pop./Nurse	2108.4127	2197.4885	63
Pop./Hos. Bed	430.2388	439.2370	67
Calorie Supply	106.0323	13.1136	62
Protein Supply	71.9677	18.7214	62
Health Expends. (millions)	306.1790	798.3979	62
Health Expends. (% of GDP)	.0154	.0143	54
Health Expends./ Capita	19.8446	36.7866	57
Fiscal Centralization Index	71.9597	18.0137	67
Seats Majority Party	60.6393	21.2662	56
Elec. Power Cons. per cap.	1741.7302	2733.2725	63
Interest Articulation	.5167	.5039	60
Federal/Unitary Status	.7910	.4096	67

CHAPTER IV

APPENDIX B

Regression of HEXPOP on Centralization Measures, Interaction Models

(N = 40)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
EPC	.006*	.002	.427
FU	111.46	152.28	1.24
ln FCI	-40.66	31.68	-.312
ln FCI * FU	-22.18	36.87	-1.07
constant	169.5	129.65	
EPC	.004	.002	.286
ln FCI	-65.29	25.04	-.501
IA	-338.06	171.39	-4.63
ln FCI * IA	75.98	39.92	4.55
constant	293.22	104.96	
EPC	.005	.002	.388
ln SMP	-27.91	13.64	-.277
ln FCI	-29.68	19.26	-.227
constant **	249.44	83.48	

** ln FCI * ln SMP does not enter the equation due to insufficient tolerance

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
EPC	.0067*	.002	.498
FU	-20.84	133.52	-.232
ln SMP	-40.88	29.60	-.405
ln SMP * FU	7.15	32.93	.333
constant	167.09	120.54	
EPC	.005*	.002	.410
ln SMP	-25.29	21.16	-.251
IA	28.27	119.03	.387
ln SMP * IA	-9.69	29.46	-.558
constant	116.09	89.31	
EPC	.0058*	.002	.435
FU	10.59	15.63	.117
IA	-19.29	22.69	-.264
IA * FU	-2.62	23.55	-.035
constant	12.36	16.11	

* Starred estimates are at least twice their standard errors.

CHAPTER IV

APPENDIX C

REGRESSION ANALYSES: FACTORS AFFECTING HEALTH OUTCOMES

Regression of Life Expectancy on EPC and Centralization

Indicators, Interaction Models

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
FCI	-.140	.226	-.222
ln EPC	3.97	2.37	.630
FCI * ln EPC	.018	.034	.202
constant	37.21	17.34	
IA	-2.74	11.01	-.121
ln EPC	4.62*	1.28	.734
IA * ln EPC	-.132	1.61	-.030
constant	32.77	9.87	
F/U Status	1.95	8.57	.070
ln EPC	5.44*	1.07	.860
F/U * ln EPC	.036	1.21	.009
constant	24.41	7.79	

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Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
SMP	-.344*	.158	-.644
ln EPC	2.46	1.55	.391
SMP * ln EPC	.037	.026	.374
constant	51.52	10.22	

* Starred estimates are at least twice the size of their standard errors.

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Regression of Population Per Nurse on EPC and Centralization

Indicators, Interaction Models

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
FCI	-109.32	58.12	-.896
ln EPC	-1770.48*	607.68	-1.45
FCI * ln EPC	11.24	8.44	.632
constant	16127.29	4442.09	
IA	1075.01	3068.33	.246
ln EPC	-747.41	358.05	-.613
IA * ln EPC	-210.13	449.77	-.247
constant	6713.30	2750.40	
SMP	16.91	47.85	.163
ln EPC	-613.28	469.42	-.503
SMP * ln EPC	-4.61	7.84	-.240
constant	6586.59	3088.72	
FU Status	-3323.76	2322.80	-.619
ln EPC	-1150.87*	290.65	-.944
FU * ln EPC	415.97	330.33	.560
constant	9916.01	2111.34	

* Starred estimates are at least twice the size of their standard errors.

Regression of Calorie Supply on EPC and Centralization

Indicators, Interaction Models

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
FCI	.276	.373	.380
ln EPC	8.03*	3.89	1.10
FCI * ln EPC	-.053	.054	-.502
constant	59.27	28.75	
IA	12.22	17.55	.469
ln EPC	4.63	2.04	.637
IA * ln EPC	-3.29	2.57	-.649
constant	79.42	15.73	
SMP	-.038	.292	-.062
ln EPC	4.51	2.86	.620
SMP * on EPC	-.002	.048	-.014
constant	81.05	18.84	
FU Status	13.58	14.25	.424
ln EPC	6.34	1.78	.871
FU * ln EPC	-2.14	2.02	-.483
constant	66.06	12.95	

* Starred estimates are at least twice their standard errors.

Regression of Life Expectancy on Centralization

Indicators, Interaction Models

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
ln EPC	5.16*	.673	.819
FCI	-.231	.149	-.367
SMP	-.482	.206	-.903
FCI * SMP	.005	.003	.960
constant	51.46	10.47	
ln EPC	5.26*	.587	.836
F/U Status	7.39	8.28	.267
FCI	.015	.115	.024
FU * FCI	-.074	.126	-.223
constant	24.52	9.01	
ln EPC	4.24*	.832	.673
FCI	-.098	.086	-.155
IA	-19.36*	9.61	-.859
FCI * IA	.210	.123	.774
constant	41.72	9.26	
ln EPC	4.10*	.807	.652
SMP	-.154	.084	-.288
IA	-5.00	6.19	-.222
SMP * IA	.051	.106	.168
constant	44.57	7.78	

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
ln EPC	4.64	.563	.737
FU	-.273	6.69	-.009
SMP	-.161	.102	-.301
FU * SMP	.041	.109	.115
constant	38.95	7.89	
ln EPC	4.52*	.819	.718
FU	.393	2.86	.014
IA	-7.57	4.63	-.336
FU * IA	4.56	4.32	.200
constant	33.29	6.97	

* Starred estimates are at least twice their standard errors.

Regression of Population/Nurse on Centralization

Indicators, Interaction Models

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
ln EPC	-978.96*	196.08	-.803
FCI	-46.82	43.62	-.384
SMP	-23.43	60.27	-.226
FCI * SMP	.265	.819	.268
constant	11762.70	3050.82	
ln EPC	-982.10*	154.43	-.806
FU	1855.08	2178.22	.346
FCI	-10.96	30.21	-.089
FCI * FU	-30.42	33.24	-.472
constant	9325.08	2370.94	
ln EPC	-872.43*	223.93	-.716
FCI	-17.44	23.20	-.143
IA	3134.64	2588.39	.718
FCI * IA	-38.24	33.12	-.725
constant	8728.29	2493.71	
ln EPC	-929.08	240.89	-.762
SMP	-.145	25.03	-.001
IA	524.27	1849.70	.120
SMP * IA	-14.13	31.68	-.243
constant	8037.43	2323.06	

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
ln PEC	-905.26	162.80	-.742
FU	2385.07	1936.64	.444
SMP	31.14	29.55	.301
SMP * FU	-49.62	31.55	-.724
constant	6337.88	2283.44	
ln EPC	-876.38	232.44	-.719
FU	-203.99	811.87	-.038
IA	289.26	1314.74	.066
FU * IA	-677.25	1224.76	-.154
constant	7837.86	1976.19	

* Starred estimates are at least twice their standard errors.

Regression of Calorie Supply on Centralization

Indicators, Interaction Models

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
ln EPC	4.06*	1.24	.558
FCI	-.044	.277	-.060
SMP	.002	.383	.003
FCI * SMP	-.0005	.005	-.090
constant	86.31	19.40	
ln EPC	4.27*	.975	.588
FU	-15.72	13.75	-.491
FCI	-.271	.191	-.372
FCI * FU	.252	.2099	.656
constant	96.47	14.97	
ln EPC	2.056	1.34	.282
FCI	-.197	.139	-.271
IA	-35.45*	15.57	-1.36
FCI * IA	.355	.199	1.13
constant	111.08	14.99	
ln EPC	2.59	1.41	.355
SMP	-.051	.146	-.082
IA	-11.65	10.81	-.448
SMP * IA	.047	.185	.135
constant	97.66	13.58	

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
ln EPC	4.42*	1.01	.608
FU	-12.72	12.04	-.397
SMP	-2.15	.184	-.349
SMP * FU	.201	.196	.492
constant	92.06	14.19	
ln EPC	2.444	1.22	.336
FU	-3.94	4.27	-.123
IA	-15.94	6.91	-.612
FU * IA	7.83	6.44	-.298
constant	98.86		

* Starred estimates are at least twice their standard errors.

CHAPTER V

THE IMPACT OF GOVERNMENT CENTRALIZATION ON EDUCATION POLICY

Let us turn now to a consideration of the impact of political

structure centralization on national education outputs and outcomes.

Given that education historically has been a controversial issue in many

nations (because, among other things, people tend to associate education

with their own social advancement and opportunities) we would expect

the structure of politics to have significance for education policies.[1]

Decisions about commitment and access to education, we expect, will be

highly controversial and political. Moreover, a predominant view in the

literature is that government centralization leads to greater education

policy outputs and outcomes.[2]

First I shall consider indicators of education policy development.

As in the case of health policy, one must distinguish between _outputs_

or level of commitment and _outcomes_, or, short-run results of the policy

outputs as experienced by citizens. Table 5-1 shows relationships among

the education variables that I consider potential indicators. Given

the Pearson's r correlations among these indicators, it is clear that

two dimensions of education policy are represented -- an expenditure

dimension (which I will use to indicate outputs) and an "impact" or

"result" dimension including such things as gross enrollment ratios,

literacy rate and the percent of the population in higher education.

The average correlation among the expenditure variables is .98 and the

Table 5-1

Pearson's Correlation Coefficients Among Some of the Education Policy Indicators

	LR	GER	SHE	S1	S2	S3	T1	T2	T3	YSP	EDEX	EDGDP	EDEXPOP
GER	.82												
SHE	.66	.62											
S1	.02	.26	.10										
S2	.22	.32	.40	.76									
S3	.17	.28	.35	.67	.94								
T1	.09	.30	.18	.98	.85	.77							
T2	.26	.36	.40	.74	.98	.90	.84						
T3	.19	.27	.37	.89	.93	.99	.91	.89					
YSP	.09	.21	-.04	.26	.09	.06	.23	.07	-.01				
EDEX	-.03	.31	-.05	.05	.13	.17	.08	.12	.99	-.10			
EDGDP	-.06	.49	-.12	-.04	-.05	-.03	-.05	-.05	.16	.08	.97		
EDEXPOP	.54	.63	.76	.14	.42	.45	.24	.48	.47	-.22	.97	.99	

Table 5-1 (continued)

LR Literacy Rate, 1970

GER Gross Enrollment Ratio, 1970

SHE % Population Enrolled in Higher Education, 1970

S1 Number Students, Primary and First Levels of Education, 1970

S2 Number of Students, Second Level, 1970

S3 Number of Students, Third Level, 1970

T1 Number Teachers, Primary and First Levels of Education, 1970

T2 Number of Teachers, Second Level, 1970

T3 Number of Teachers, Third Level, 1970

YSP Years Schooling Provided, 1970

EDEX Education Expenditures in Millions U.S. Dollars, 1970

EDGDP Education Expenditures as a % of GDP, 1970

EDEXPOP Education Expenditures Per Capita, 1970

---

average correlation for the outcome variable is .46. The average

correlation between the two groups of indicators, however, is only .25.

To simplify the analyses, I have chosen to use education expendi-

tures per capita (EDEXPOP) to indicate outputs. This seems justified

given my concern with the social well-being and opportunity structure

for individuals in society (rather than, for example, being concerned

with additional increments to the percent of GDP spent for education).

Choosing from among the outcome variables is somewhat more difficult.

But several indicators seem to be more interesting theoretically than

the others. The percent of the population enrolled in second and third

levels of education (SHE), for example, represents a cumulation of

educational achievements and successes over the several levels of

schooling. It indicates opportunities for higher education. <u>Gross</u> <u>enrollment ratios</u> (GER) on the other hand, indicate how well educational policies are implemented and whether outputs reach target groups. (The figure is the percent of children enrolled in first and second levels, given the total number of school-aged children.) These are important figures for characterizing national achievements in education. Moreover, literacy rate and the gross enrollment ratio correlate at .82. By using GER we are indirectly tapping this other important education feature. In sum, to indicate education outcomes, I use SHE and GER.

Bivariate Analyses -- Determinants of Education Expenditures

Following the strategy used in Chapter IV, I begin this analysis by considering bivariate relationships and "partial theories." Based on the writings of Pryor, Peacock and Wiseman, Cameron and Hofferbert and others, we expect that, in general, government centralization will encourage greater commitment to education and greater education outcomes. Yet, given our earlier findings, we might suspect that the relationship between centralization and education policy will be more complex than earlier literature has led us to expect. The impact of centralization may differ depending upon the aspect of structural centralization or of education policy under consideration.

First, I consider the role of constitutional status in determining education expenditures. The regression equation is:

$$Y = a + b_1X_1 + e$$

where X_1 = F/U status, 1970

  e = stochastic disturbance.

Using sub-national, <u>regional data</u>, Cameron and Hofferbert find that federalism ultimately reduces education spending. Similarly, Pryor

compared <u>nation states</u> and concluded that centralized structure has a positive impact on educational spending. On the other hand, Beer argues that federal structure has an <u>expansionary</u> effect on national spending. (These arguments were reviewed earlier.) Our findings are presented in Table 5-2. The FU variable is very close to the .05 level of significance and explains about 5% of the variance in EDEXPOP. That is, in the bivariate case, FU is marginally important to EDEXPOP. Specifically, unitary structure appears to have a slight <u>negative</u> impact on education expenditure levels (FU is a dichotemous variable where 0 = federal and 1 = unitary.) In other words, for the bivariate case, the Beer hypothesis is not clearly confirmed, but the Peacock and Wiseman, Pryor and Cameron and Hofferbert hypotheses are discounted. A clearer picture may emerge with multivariate analyses.

<u>Table 5-2</u>

Regression of EDEXPOP on Constitutional Status, 1970

(N = 59)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
F/U Status	-52.26*	26.73	-.274
constant	97.87	23.76	

R^2	$\bar{R}^2$	F
.075	.055	3.82

* Parameter estimate is significant at the .056 level.

Next, I consider the relationship between fiscal centralization and EDEXPOP. The equations are:

$$Y = a + b_1 X_2 + e \qquad \text{(linear form)}$$

$$Y = a + b_1 X_3 + e \qquad \text{(logarithmic form)}$$

$$Y = a + b_1 X_2 + b_2 X_4 + e \qquad \text{(polynomial form)}$$

where

X_2 = fiscal centralization index (FCI), 1970

X_3 = ln FCI

$X_4 = (FCI)^2$.

The equations allow us to determine not only the direction of the relationship and the impact of FCI, but also the form of the relationship, i.e., linear, logarithmic, or polynomial.

Tables 5-3 to 5-5 and Figure 5-1 show results of these regressions. Fiscal centralization, too, has a negative impact on EDEXPOP in the bivariate case. But, as becomes clear from Figure 5-1, the impact of FCI on EDEXPOP levels off at high levels of FCI. That is, the form of the relationship appears to be logarithmic. Once again, earlier hypotheses are not confirmed by bivariate analyses.

To test for the impact of informal political authority concentration on EDEXPOP, equations of the form employed above are considered. Once again, the literature leads us to expect that the more centralized the political control, the greater will be commitment to education.

Results from this research are reported in Tables 5-6 to 5-9. Bivariate analyses demonstrate that SMP has a slight negative impact on EDEXPOP and that the relationship is a linear one. (The curvilinear forms do not improve on the $\bar{R}^2$ of the linear form and the quadratic form is not significant.) Moreover, when interest articulation (IA) is

Table 5-3

Linear Regression of EDEXPOP on FCI, 1970

(N = 59)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
FCI, 1970	-2.45*	.521	-.565
constant	232.85	38.64	

R^2	$\bar{R}^2$	F
.320	.305	22.01

* Starred estimate is at least twice its standard error.

Table 5-4

Logarithmic Regression of EDEXPOP on FCI

(N = 59)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
ln FCI	-160.89*	32.80	-.582
constant	738.72	139.38	

R^2	$\bar{R}^2$	F
.338	.324	24.06

* Starred estimate is at least twice its standard error.
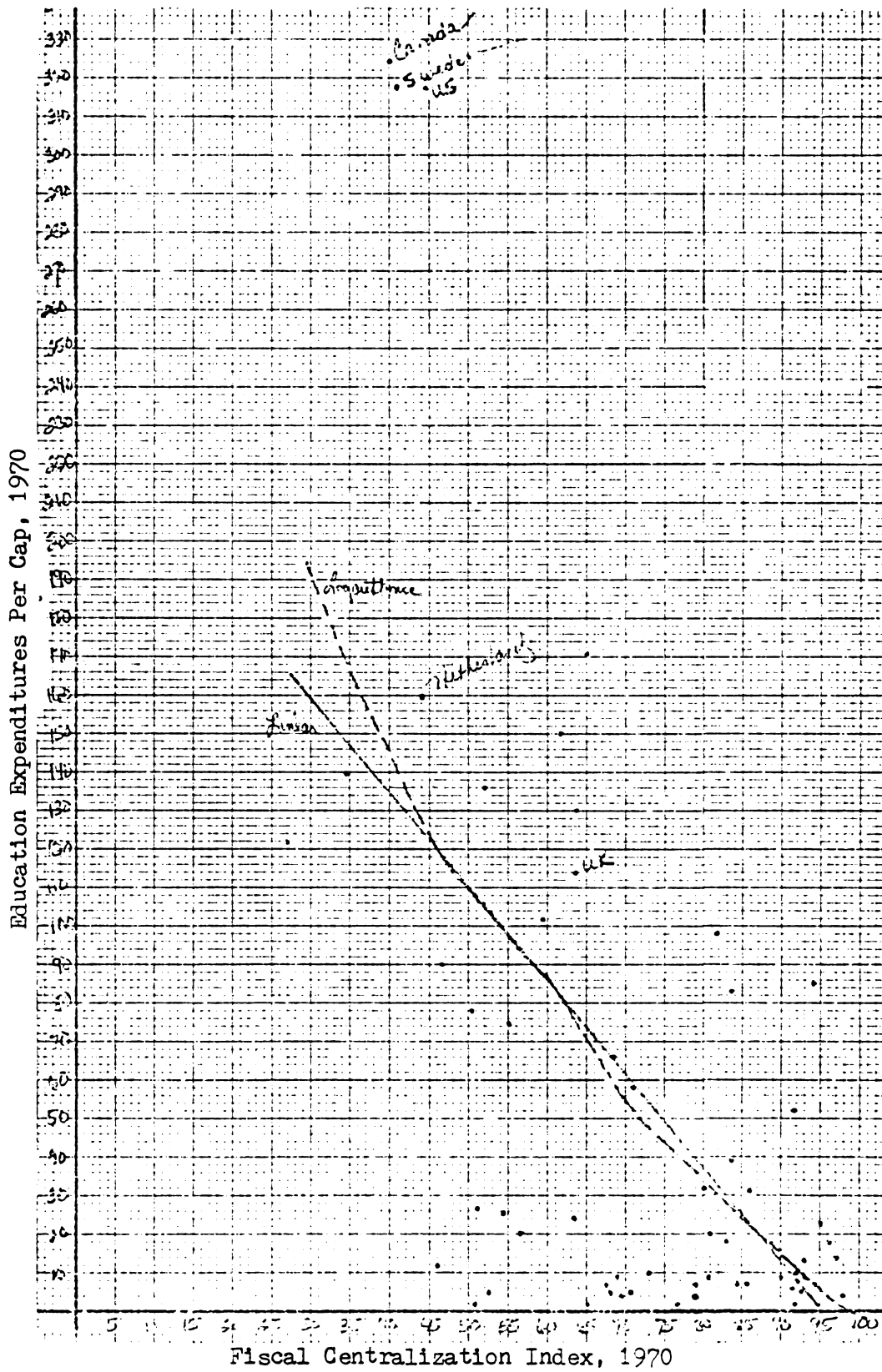
Figure 5-1 (N = 59)

Table 5-5

Polynomial Regression of EDEXPOP on FCI

(N = 59)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
FCI	-8.68*	3.92	-2.00
FCI, squared	.045	.028	1.45
constant	431.17	129.40	

R^2	$\bar{R}^2$	F
.355	.327	12.70

* Starred estimate is at least twice its standard error.

Table 5-6

Linear Regression of EDEXPOP on SMP

(N = 59)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
SMP	-1.25*	.503	-.304
constant	132.22	32.31	

R^2	$\bar{R}^2$	F
.115	.097	6.15

* Starred estimate is at least twice its standard error.

Table 5-7

Logarithmic Regression of EDEXPOP on SMP

(N = 59)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
ln SMP	-69.54*	29.51	-.325
constant	337.63	119.75	

R^2	$\overline{R}^2$	F
.105	.087	5.55

* Starred estimate is at least twice its standard error.

Table 5-8

Polynomial Regression of EDEXPOP on SMP

(N = 59)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
SMP	-.962	2.85	-.262
SMP, squared	-.002	.021	-.079
constant	123.88	88.31	

R^2	$\overline{R}^2$	F
.115	.077	3.00

Table 5-9

Regression of EDEXPOP on Interest Articulation

(N = 59)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
IA, dummy	-90.68*	18.31	-.585
constant	103.37	13.15	

R^2	$\bar{R}^2$	F
.343	.329	24.51

* Starred estimate is at least twice its standard error.

---

negligible and informal political control is centralized, education expenditures <u>decrease</u>. IA appears to account for about 33% of the variance in EDEXPOP among nations. These results shed further doubt on the earlier hypotheses. Based upon these analyses, we must argue that when informal political authority (of political parties and of interest groups) is concentrated at the center, commitment to education is lessened.

Bivariate analyses thus suggest that all types of political structure centralization tend to lessen education policy outputs. Relationships in each case are negative, although the strength of the relationships varies by the type of centralization under consideration. These findings are tentative, however, and must be tested in the light of other considerations.

It is also important to consider the roles of economic, social and

demographic variables in determining education policy. For instance,

because a nation must have resources and capacity to support education

programs, we expect that the level of economic development will be an

important determinant of EDEXPOP as well as a contextual factor affect-

ing the impact of political structure on education policy. Tables 5-10

to 5-12 and Figure 5-2 illuminate the bivariate relationship.

Table 5-10

Linear Regression of EDEXPOP on EPC, 1970

(N = 59)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
EPC	.024*	.002	.858
constant	13.84	8.88	

R^2	$\bar{R}^2$	F
.736	.730	131.35

* Starred estimate is at least twice its standard error.

In the linear form, EPC explains seventy-three percent of the

variance in EDEXPOP. The more wealthy a nation, the more it spends per

capita for education. In other words, we may consider EPC an important

variable defining the environment within which the political variables

operate and policy decisions are made.

(The logarithmic form does considerably worse than the linear form

in fitting the data and in explaining variance. It appears, moreover,

that one case -- Norway -- is strongly affecting the $\bar{R}^2$ and fit of the

Table 5-11

Logarithmic Regression of EDEXPOP on EPC

(N = 59)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
ln EPC	33.18*	4.05	.766
constant	-148.86	26.12	

R^2	$\bar{R}^2$	F
.587	.579	66.98

* Starred estimate is at least twice its standard error.

Table 5-12

Polynomial Regression of EDEXPOP on EPC

(N = 59)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
EPC	.043*	.004	1.52
EPC, squared	-.000002*	.0000004	-.726
constant	.114	6.24	

R^2	$\bar{R}^2$	F
.830	.821	111.57

* Starred estimates are at least twice their standard errors.

Electric Power Consumption, 1970
(Kilowatt hours per capita)
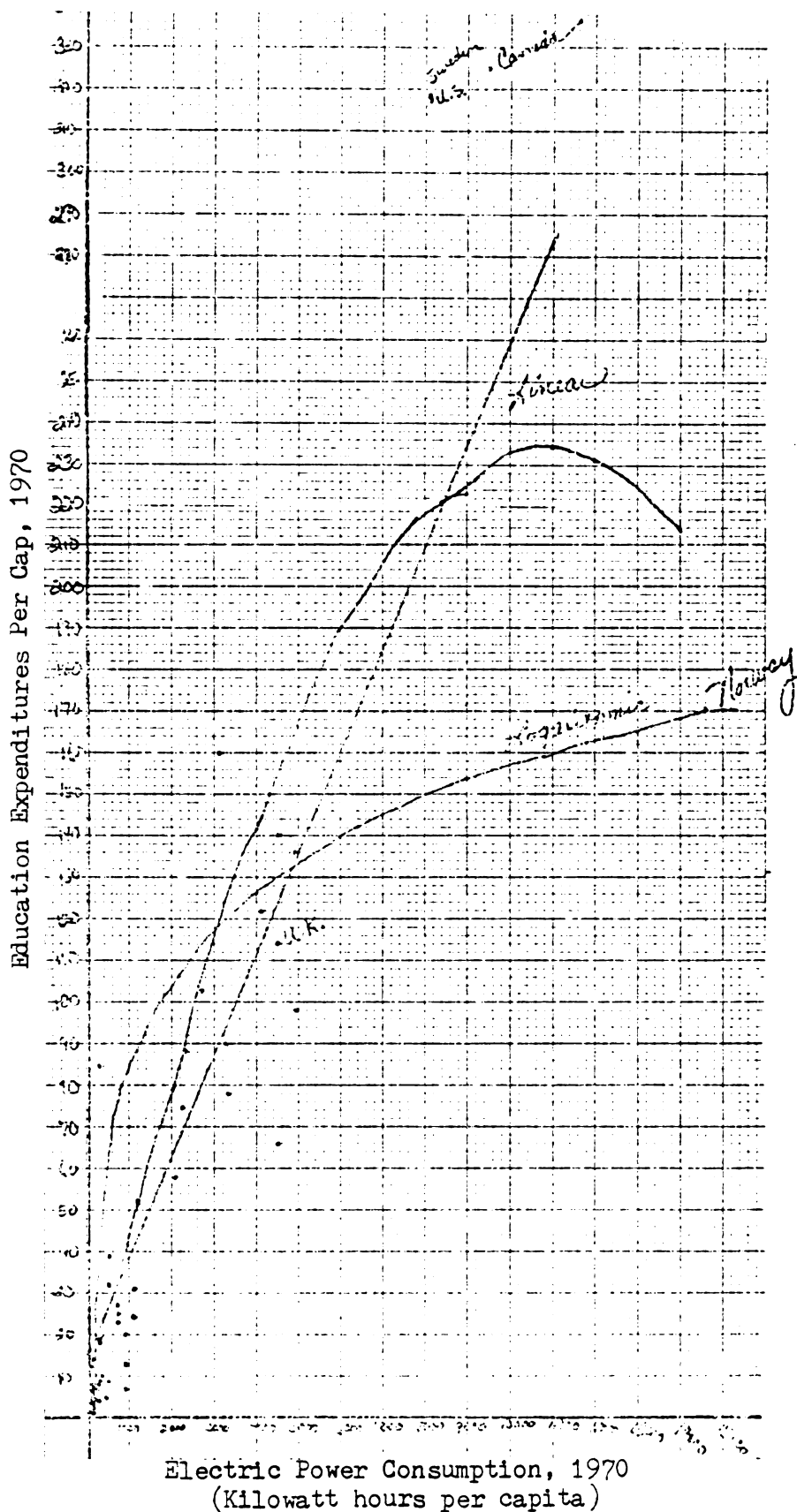
Figure 5-2 (N = 58)

quadratic model to the data. A linear model seems to best fit the EPC and EDEXPOP data.)

Next, let us consider bivariate relationships between social-demographic variables and EDEXPOP. That is, social characteristics such as ethno-cultural heterogeneity and population needs may well affect education policy decisions. Marked or extreme heterogeneity, for example, may affect allocations to education for reasons pointed to earlier. And the age structure of the population (the number of school aged children) as well as the population growth rate may affect EDEXPOP.

Bivariate regression analyses show that both population growth rate and the percent of the population age 14 or under have a negative effect on EDEXPOP ($\bar{R}^2$'s are .248 and .430, respectively). As the population and the number of school-aged children increases, education expenditures per capita decrease. In the bivariate case, then, the expanded need for educational services brought on by an increase in the population does not appear to increase allocations for education.

Moreover, social heterogeneity has no impact on levels of education expenditure. At the aggregate level, extreme cultural heterogeneity does not, on average, enter into or exacerbate the controversial politics of education decision-making. Again, the literature would have led us to different conclusions.

Multivariate Analyses -- Interaction Effects

There is reason to expect that the economic level may interact with the centralization measures to affect EDEXPOP. First, Cameron and Hofferbert found that economic development constrains the effects of federal status on education spending.[3] Moreover, the role of political structure centralization generally may vary with level of economic

development. (We know that economic level is an important contextual variable.) The impact of SMP, for example, may depend on the level of national affluence, as is the case in the health area.

Table 5-13 shows that two such interactions are significant at the .05 level. Both FU and FCI have joint effects with EPC on EDEXPOP. The effect of FU * EPC is to moderate the otherwise positive and strong relationship EPC has to EDEXPOP. Similarly, when both EPC and FCI are high, EDEXPOP decreases. What remains to be seen is whether or not these relationships are significant when a more complex model is tested, and, how these interaction effects change at various levels of economic development.

One may also test for joint effects among the centralization measures. It may be that special configurations of centralization types create different policy-making environments. For example, whereas fiscal centralization has an independent negative effect on EDEXPOP, it may be that when there is also a high degree of majority party control in the legislature, the effect of FCI may be moderated or changed.

Table 5-14 shows results of these analyses. Again, two interaction relationships prove to be significant. When both FCI and SMP are high, EDEXPOP decreases. But, when FCI is high and there is negligible interest articulation, EDEXPOP increases. The impact of FCI seems to be complicated. What these findings mean in the context of the larger model of determinants of EDEXPOP remains to be learned, however. These findings, like earlier ones, are tentative and possibly spurious since we have not considered a more fully specified model. This is the next task.

Table 5-13

Regression of EDEXPOP on EPC and Centralization,

Interaction Models

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	N
FU	17.78	16.52	.093	.808	59
EPC	.036*	.004	1.27		
FU * EPC	-.017*	.004	-.523		
constant	-.951	15.13			
FCI	.342	.356	.079	.853	59
EPC	.064	.008	2.24		
FCI * EPC	-.0007*	.00012	-1.40		
constant	-8.71	27.82			
SMP	-.310	.373	-.084	.723	56
EPC	.013	.012	.476		
SMP * EPC	.0002	.0002	.362		
constant	32.52	24.71			
IA	-11.35	18.0	-.073	.722	59
EPC	.023*	.003	.806		
IA * EPC	-.009	.035	-.024		
constant	23.33	13.55			

* Starred estimates are at least twice their standard errors.

Table 5-14

Regression of EDEXPOP on Centralization Variables,

Interaction Models

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	N
EPC	.022*	.022	.760	.749	59
FU	1.71	187.68	.008		
ln FCI	-44.5	39.05	-.161		
ln FCI * FU	-3.55	45.45	-.080		
constant	218.10	159.78			
EPC	.023*	.002	.824	.731	56
FU	-44.15	46.04	-.231		
SMP	-.424	.694	-.116		
SMP * FU	.357	.748	.147		
constant	58.92	43.42			
EPC	.022*	.003	.778	.738	59
FU	-37.64	19.96	-.197		
IA	-40.65	28.97	-.262		
FU * IA	35.75	30.07	.228		
constant	53.12	20.57			
EPC	.021*	.002	.759	.779	56
SMP	3.20*	1.26	.873		
ln FCI	148.87	84.12	.538		
ln FCI * SMP	-189.88*	74.41	-1.36		
constant	764.50	224.39			

Table 5-14 (continued)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	N
EPC	.020*	.003	.706	.773	59
ln FCI	-100.76*	32.36	-.364		
IA	-514.26*	221.51	-3.32		
ln FCI * IA	119.74*	51.60	3.38		
constant	444.16	135.66			
EPC	.023*	.003	.811	.720	56
SMP	.471	.636	.128		
IA	29.03	47.77	.187		
SMP * IA	-.752	.796	-.364		
constant	-3.95	38.14			

* Starred estimates are at least twice their standard errors.

Multivariate Analyses -- Specifying a More Complete Model

Thus far I have tested partial explanations for the level of education spending across nations. A number of variables -- political, economic and socio-demographic -- have been found to influence EDEXPOP in bivariate and interaction tests. Here I move beyond partial theoretical considerations to specify more fully the determinants of education policy commitment or outputs. To that end, I regress EDEXPOP on the full range of theoretically important variables that have been found to be significant in earlier analyses. These results are given in Table 5-15.

Table 5-15

Regression of EDEXPOP on All Surviving Variables

(N = 45)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
EPC	.028*	.005	1.02
FU	25.76	18.56	.135
SMP	.665	1.45	.145
Pop. Grow. Rt.	9.29	13.16	.106
IA	-67.84	294.29	-.396
ln FCI	3.23	96.11	.011
FU * EPC	-.017*	.005	-.530
ln FCI * EPC	2.14	2.11	.152
% Pop. 14 or under	-2.41	2.13	-.259
ln FCI * SMP	-33.84	78.50	-.210
ln FCI * IA	18.17	66.98	.466
constant	237.95	249.03	

R^2	$\bar{R}^2$	F
.859	.811	17.75

* Starred estimates are at least twice their standard errors.

It is interesting that after the level of economic development and the interaction term of FU and EPC are considered, all of the other variables fail to add significantly to the explanation of EDEXPOP. (see also Table 5-16.) Although population characteristics and the

centralization variables were significant in bivariate analyses, when a more fully specified model is tested with data from forty-five countries, these variables drop out of significance. In other words, their significance in the earlier tests was due to their relationship to and dependence upon EPC (or FU * EPC).

Table 5-16

Regression of EDEXPOP on EPC and FU * EPC**

(N = 59)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
EPC	.034*	.003	1.18
FU * EPC	-.014*	.003	-.435
constant	13.94	5.99	

R^2	$\bar{R}^2$	F
.817	.810	95.98

* Starred estimates are at least twice their standard errors.

** See note 4.

When the model is correctly specified (EDEXPOP = 13.94 + .034 (EPC) - .014 (FU * EPC)), $\bar{R}^2$ is .810. Clearly, the main explanatory variable is EPC ($\bar{R}^2$ = .730). But the interaction term of FU * EPC adds .08 to $\bar{R}^2$ to bring the overall $\bar{R}^2$ to .810. The effect of FU * EPC is to moderate the main effect of EPC on EDEXPOP. That is, in unitary political systems, the otherwise strong, positive effect of EPC on EDEXPOP is moderated. This is depicted in Table 5-17.

Table 5-17

The Impact of EPC on EDEXPOP* in Federal and Unitary Nations:

Expected Values of EDEXPOP**

(N = 59)

EPC

Constitutional Status	x̄ Third World 329	x̄ Total Sample 1742	x̄ Developed Nations 4557
Unitary	20.52	48.78	105.11
Federal	25.13	73.17	168.88

* In U.S. dollars, 1970.

** Cell entries are the predicted values of EDEXPOP in unitary and federal systems at various levels of economic development.

Several hypotheses from the literature have thus been shown to be empirically unfounded. First, it is clear that the degree of fiscal centralization of a nation is not important to an understanding of EDEXPOP. Nor is the degree of informal power concentration in the legislature or in interest articulation important in explaining education policy commitments. Cameron and Hofferbert's findings, moreover, are opposed to our findings. Our aggregate level data show that unitary status lessens the commitment to education spending and that this relationship is strongest at high levels of EPC. The negative impact becomes increasingly evident as EPC increases. Cameron and Hofferbert, on the other hand, found no relationship on the aggregate level using data from eighteen developed nations. When they analyzed subnational data, however, they found that federalism leads to reduced

expenditures.

Thus, Beer's argument that federalism has an expansionary potential is partially supported _in the area of education policy_. But our study suggests that the main determinant is national affluence and that FU's impact is contingent on the level of economic development.

Finally, our research gives no support to arguments concerning the role of population needs and of social heterogeneity in determining education policy expenditures. Although we expected that the education policy area would reflect political controversies, one potential major and salient source of controversy -- extreme ethnic heterogeneity -- bore no consistent relationship to education spending.

The Impact of Political Structure Centralization on Education Outcomes

Policy outcomes indicate actual results from policy decisions that reach or are experienced by citizens and specific target groups. When studying the impact of politics on policy, then, it is vital that the research move beyond a consideration of expenditure levels to a consideration of what things result from policy and how policy affects citizens' daily lives and opportunities. The question I address in this section is "Does political structure have implications for policy outcomes or results?" Aside from affecting levels of expenditures, in other words, does the degree of political structure centralization affect the way in which services are distributed?

To indicate education policy outcomes, I refer to gross enrollment ratios (GER, the percent of school-aged children in school) and the percent of the population enrolled in second and third levels of education (i.e., high school and college or technical school), SHE.

What role does political structure centralization (as well as

several other theoretically important variables) play in affecting education policy outcomes? Tables 5-18 and 5-19 display results of bivariate regression analyses. As becomes clear from the analyses, all of the political centralization variables except federal/unitary status are significant at the .05 level in affecting GER and SHE. In each case, moreover, the effects are negative: as political structure centralization and authority concentration increase, GER and SHE decrease. Decentralization and local control, not centralization, appears to expand education opportunities.

As expected, economic development plays a large positive role in explaining GER ($\bar{R}^2$ = .779) and an important role in determining SHE ($\bar{R}^2$ = .444). In both cases a logarithmic model best fits the data. (See also Figure 5-3.) That is, EPC has a positive impact on GER and SHE, but, at high levels of EPC, the impact levels off. At high levels of EPC, further increases in economic development add progressively smaller increments to educational opportunities.

Finally, social-demographic factors help explain enrollments. Extreme ethnic-cultural heterogeneity, a rapidly growing population and the presence of large numbers of children age 14 or below all negatively affect gross enrollment ratios and enrollment in higher education in bivariate analyses. Below, we consider these relationships in multivariate analyses.

Multivariate Analyses -- Interaction Models

The results from bivariate analyses are partial, incomplete and possibly spurious. Several questions remain. First, does the level of economic growth affect the impact of the several types of centralization so that the effects of centralization change by economic level? Or do

Table 5-18

Bivariate Relationships Between the Independent Variables and GER

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	N
FU	-4.61	8.43	-.079	.000	60
constant	71.55	7.50			
FCI	-.598*	.171	-.453	.189	60
constant	110.93	12.71			
ln FCI	-37.86*	10.96	-.450	.185	60
constant	228.44	46.60			
FCI	-1.05	1.32	-.800	.173	60
FCI, squared	.003	.009	.350		
constant	125.51	43.60			
IA	-34.93*	4.62	-.740	.539	60
constant	85.95	3.34			

Table 5-18 (continued)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	$\underline{N}$
SMP	-.480*	.147	-.429	.167	56
constant	97.00	9.45			
ln SMP	-24.51*	8.80	-.376	.123	56
constant	166.98	35.71			
SMP	.758	.814	.678	.190	56
SMP, squared	-.009	.006	-1.125		
constant	60.89	25.17			
EPC	.005*	.001	.594	.339	60
constant	58.90	3.28			
ln EPC	11.67*	.894	.885	.779	60
constant	-4.31	5.76			

Table 5-18 (continued)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	N
EPC	.012*	.002	1.42	.478	60
EPC, squared	-.0000007*	.0000002	-.913		
constant	53.65	3.25			
Heterogeneity	-29.75*	5.45	-.623	.375	60
constant	80.37	3.52			
Pop. Growth Rt.	-12.21*	3.23	-.482	.216	60
constant	93.58	7.43			
Pct. Pop. 14 or under	-1.83*	.298	-.696	.472	60
constant	136.42				

* Starred estimates are at least twice their standard errors.

Table 5-19

Bivariate Relationships Between the Independent Variables and SHE

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	N
FU	-.008	.012	-.101	.000	60
constant	.061	.011			
FCI	-.0009*	.0002	-.480	.214	60
constant	.121	.018			
ln FCI	-.058*	.016	-.469	.203	60
constant	.302	.068			
FCI	-.0006	.002	-.319	.198	60
FCI, squared	-.000002	.00001	-.162		
constant	.111	.064			
IA	-.047*	.007	-.680	.452	60
constant	.078	.005			

Table 5-19 (continued)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	N
SMP	-.0008*	.0002	-.509	.243	56
constant	.105	.013			
ln SMP	-.048*	.012	-.498	.232	56
constant	.248	.049			
SMP	-.0009	.001	-.570	.227	56
SMP, squared	.0000008	.000008	-.062		
constant	.108	.036			
EPC	.000008*	.000001	.664	.429	60
constant	.039	.0045			
ln EPC	.013	.002	.675	.444	60
constant	-.027	.0135			

Table 5-19 (continued)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	N
EPC	.00002*	.000003	1.57	.600	60
EPC, squared	-.000000001*	.0000000002	-1.00		
constant	.031	.004			
Heterogeneity	-.026*	.009	-.373	.121	60
constant	.065	.006			
Pop. Growth Rt.	-.022*	.004	-.600	.347	60
constant	.101	.010			
Pct. Pop. 14 or under	-.002*	.0004	-.673	.441	60
constant	.152	.8861			

* Starred estimates are at least twice their standard errors.

Electric Power Consumption, 1970
(Kilowatt hours per cap)
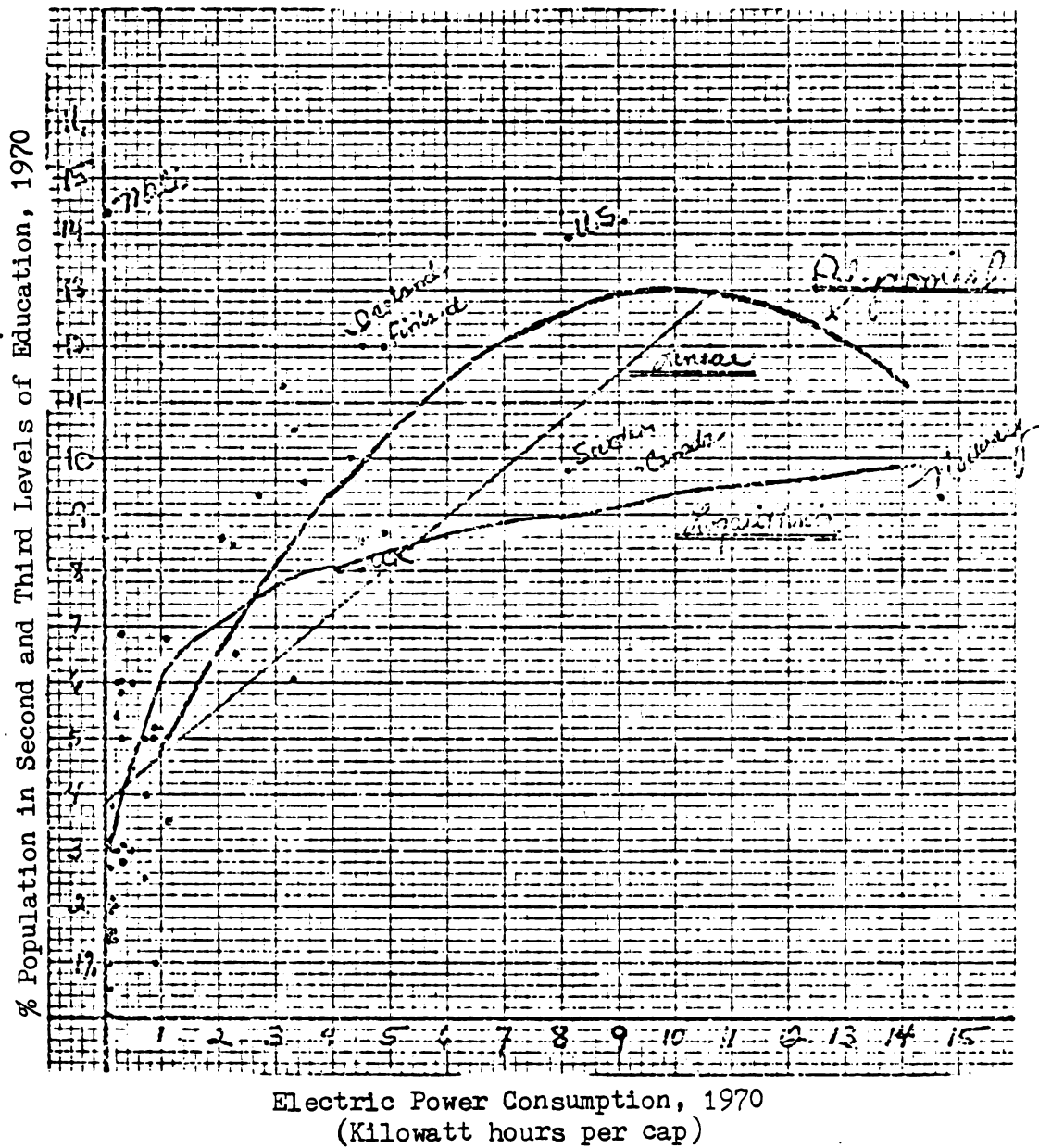
Figure 5-3

(N = 60)

the centralization measures interact in special ways to affect policy? For example, does the impact of SMP depend upon the degree of fiscal centralization (or, vice versa)? Bivariate analyses do not answer these questions.

Tables 5-20 to 5-23 report regression results. (See Appendix B.) A number of interaction terms appear to be empirically significant in explaining GER and SHE in these analyses. Taken alone, however, the implications of these findings are unclear. It does seem to be the case that the interaction terms often represent moderating influences on the main effects of the centralization and economic measures. That is, they qualify or add another dimension to the relationships between political and economic variables and education policy outcomes. An interaction term also may negate or change the nature of the relationship. For example, in the case of SHE, the interaction term ln EPC * IA (which carries a negative sign) overrides the otherwise main positive effects of economic level (adjusting for the effects of all other variables). Whereas both IA and ln EPC have independent positive effects on SHE, when high levels of EPC exist where IA is negligible, the effect of EPC is negated and IA's effect is moderated.

In order to interpret these results correctly, they must be placed within the context of a more complete model. I regress the enrollment indicators, then, on the full range of variables that have survived bivariate and partial analyses.

Multivariate Analyses -- Specifying a More Complete Model

Tables 5-24 to 5-27 bring us closer to an understanding of the effects of the independent variables on gross enrollment ratios. That is, we test for the significance of each variable in the presence of

Table 5-24

Regression of GER on All Surviving Significant Variables

(N = 40)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
FCI	1.175	.815	.916
Heterogeneity	-9.88*	4.11	-.208
SMP	.949*	.414	.834
ln EPC * IA	9.786*	4.41	1.05
ln EPC * FCI	-.085	.086	-.401
Pop. Grow. Rt.	-1.10	3.80	-.046
Pct. Pop. 14 +	.106	.641	.042
SMP * IA	.291	.2596	.464
ln EPC	10.24	5.94	.773
FCI * SMP	-.0134	.007	-1.19
IA	-86.05*	34.12	-1.80
constant	-30.25	58.64	

R^2	$\bar{R}^2$	F
.874	.824	17.61

* Starred estimates are at least twice their standard errors.

several political, economic and social variables. Three variables together explain over eighty percent of the variance among nations in GER: ethnic heterogeneity, level of interest articulation and the interaction term ln EPC * IA. The equation from Table 5-25 is:

Table 5-25

Regression of GER on Heterogeneity, ln EPC * IA and IA**

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
Heterogeneity	-12.37*	3.47	-.259
ln EPC * IA	11.7*	1.79	1.28
IA	-86.13*	9.59	-1.83
constant	87.79	2.26	

R^2	$\bar{R}^2$	F
.830	.818	68.54

* Starred estimates are at least twice their standard errors.

** When GER was regressed on the four variables that were significant in Table 5-24, (Heterogeneity, IA, ln EPC * IA, and SMP, SMP was no longer significant at the .05 level.

GER = 87.79 - 12.37 (Heterogeneity) + 11.72 (ln EPC * IA) - 86.13 (IA).

The presence of all the other variables included earlier adds nothing to an explanation of GER; their earlier significance was spurious.

There is one final relationship to be investigated -- that between education spending and education outcomes. Table 5-26 shows what happens when EDEXPOP is entered into the equation with the other variables. The $\bar{R}^2$ increases to .872 and the parameter estimate for EDEXPOP easily passes the test of significance. In this case, there appears to be a link between education expenditures and commitment and education policy impact. EDEXPOP is one predictor of GER along with the economic,

Table 5-26

Regression of GER on Final Surviving Variables and EDEXPOP

(N = 45)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
Heterogeneity	-12.89*	2.92	-.270
EDEXPOP	.0865*	.020	.284
ln EPC * IA	11.40*	1.50	1.24
IA	-76.56*	8.34	-1.62
constant	78.95	2.79	

R^2	$\bar{R}^2$	F
.883	.872	77.60

* Starred estimates are at least twice their standard errors.

social and political structure variables. Our final, revised equation is:

GER = 78.95 - 12.89 (Heterogeneity) + .0865 (EDEXPOP) + 11.40 (ln EPC * IA) - 76.56 (IA); ($\bar{R}^2$ = .872).

The interesting result is that several types of variables are important to an explanation of gross enrollment ratios -- political (structure of interest articulation), social (heterogeneity) and economic (in interaction with the political structure indicator). Heterogeneity has the hypothesized effect on policy: where there is extreme or marked ethno-cultural diversity, policy levels decrease, all other things being equal. Although a centralization of political

authority in the hands of a few (indicated by negligible levels of interest articulation, IA = 1) has a negative impact on GER, that impact is moderated by economic level. Hypotheses suggesting that centralized control leads to greater policy levels must be qualified in this case. Finally, adjusting for the effects of the other variables, as EDEXPOP increases, there is an increase in the number of school aged children who attend school.

Table 5-27 allows a consideration of several different tendencies resulting from the interplay of levels of economic growth, interest articulation and ethnic pluralism. First, it is apparent that at low levels of economic development (comparable to levels in most countries in the Third World) GER will be greatest if there is social homogeneity and moderate or significant levels of interest group activity and representation (IA = 0). No matter what the status of interest articulation, moreover, gross enrollment ratios decrease where there is extreme social heterogeneity. At low levels of EPC, then, the impact of IA is limited.

Second, at middle levels of EPC, GER is greatest where political authority is concentrated and society is more homogeneous. Again, heterogeneity decreases GER no matter what the level of IA.

Finally, at high levels of EPC, GER is greatest where informal political authority is concentrated (IA = 1) regardless of the degree of social pluralism. The impact of IA on this aspect of education policy outcome changes by level of national affluence.

The final equation for the second outcome variable is:

$$SHE = -.033 + .004 \ (FCI) + .0005 \ (\ln EPC * SMP) - .0004 \ (\ln ECP * FCI)$$
$$- .013 \ (pop. \ Growth \ Rt.) + .0001 \ (EDEXPOP) - .00002 \ (FCI * SMP)$$
$$- .0002 \ (SMP); \ \overline{R}^2 = .926).$$

Table 5-27

The Impact of Interest Articulation and Extreme Ethnic

Heterogeneity on GER at Various Levels of EPC,

Adjusting for EDEXPOP* (N = 45)

EPC

	$\bar{x}$ Third World 329	$\bar{x}$ Total Sample 1742	$\bar{x}$ Developed Nations 4557
IA = 1 Heterogeneity = 1	60.46	79.52	90.47
IA = 0 Heterogeneity = 1	70.96	70.96	70.96
IA = 1 Heterogeneity = 0	73.36	92.41	103.36
IA = 0 Heterogeneity = 0	83.85	83.85	83.85

* Cell entries are the predicted values of gross enrollment ratios at specified values of IA, ethnic heterogeneity, and EPC, holding constant the effects of EDEXPOP at its mean value.

Again, several types of variables are important in explaining educational opportunities (enrollment in higher education): political, social and economic. Moreover, once again it is clear that the political and economic indicators interact to influence policy levels. The economic and political situations influence each other. Finally, the analysis shows that there is a link between expenditures and policy impact in this issue area. (Recall that no such link appeared in the health area.) EDEXPOP is one predictor of SHE.

Most interesting to this research is the impact of political

Table 5-28

Regression of SHE on All Surviving Significant Variables**

(N = 46)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
FCI	.004*	.0004	2.25
ln EPC * SMP	.0006*	.00007	1.91
ln EPC * FCI	-.0004*	.00006	-1.44
Pop. Grow. Rt.	-.011	.004	-.305
ln EPC * IA	-.0015	.001	-.115
Pct. Pop. 14 +	-.0003*	.0006	-.078
FCI * SMP	-.00002*	.000006	-1.64
SMP	-.002*	.0007	-1.16
constant	-.031	.027	

R^2	$\overline{R}^2$	F
.915	.897	51.05

* Starred estimates are at least twice their standard errors.

** IA, SMP * IA, and ln EPC did not enter the regression due to insufficient tolerance. They appear to be highly correlated with other variables in the equation and thus add nothing more to the explanation of SHE.

Table 5-29

Regression of SHE on the Significant Variables

From Table 4-28

(N = 49)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
FCI	.004*	.0004	2.27
ln EPC * SMP	.0006*	.00006	1.92
ln EPC * FCI	-.0004*	.00005	-1.41
Pop. Grow. Rt.	-.015*	.0023	-.402
FCI * SMP	-.00003*	.000005	-1.81
SMP	-.002*	.0006	-1.07
constant	-.0417	.0206	

R^2	$\bar{R}^2$
.907	.894

* Starred estimates are at least twice their standard errors.

Table 5-30

Regression of SHE on Final Surviving Variables and EDEXPOP

(N = 49)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
FCI	.004*	.0003	2.07
ln EPC * SMP	.0005*	.00005	1.72
ln EPC * FCI	-.0004*	.00004	-1.34
Pop. Grow. Rt.	-.013*	.002	-.358
EDEXPOP	.0001*	.00003	.265
FCI * SMP	-.00002*	.000005	-1.40
SMP	-.002*	.0005	-1.158
constant	-.033	.017	

R^2	$\overline{R}^2$	F
.937	.926	89.01

* Starred estimates are at least twice their standard errors.

structure centralization on SHE. (See Tables 5-31 and 5-32.) First, hypotheses suggesting that fiscal centralization has a positive impact on social policy levels must be qualified. Only at low levels of economic development does fiscal centralization have such an effect. At middle and high levels of national wealth, FCI has a negative impact on opportunities for higher education. From our final equation we know that the effects of FCI are constrained by both SMP and EPC. That is, its effects are not straightforward and they change depending on economic

level and the degree of majority party control in the legislature.

Table 5-31

The Impact of FCI at Various Levels of EPC:

Expected Values of SHE**

(adjusting for the effects of other variables)@

(N = 49)

EPC

FCI*	x̄ Third World 329	x̄ Total Sample 1742	x̄ Developed Nations 4557
54	.026	.040	.048
72	.034	.036	.038
90	.043	.032	.027

* Values of FCI represent the mean of FCI for the entire sample and 1 standard deviation above and below the mean.

** In percentages.

@ Cell entries are the predicted values of enrollments in higher education (percent of the population enrolled) at specified values of fiscal centralization and economic development, holding population growth rate, EDEXPOP, SMP and the interaction term ln EPC * SMP constant at their mean values. The values of the other interaction terms change with changes in FCI and EPC.

Not only does EPC constrain FCI, it is also constrained by FCI. At low and middle levels of FCI, as EPC increases, so does SHE. The interaction terms, on other words, present important qualifications to earlier hypotheses about the impact of both FCI and EPC on policy.

The impact of informal political authority concentration (as indicated by SMP) on SHE differs from the impact of fiscal centralization

on SHE. Whereas at low levels of EPC, SMP is associated with a decline in SHE, at middle and high levels of EPC, as majority party control in the legislature increases, so does SHE. (This trend is most pronounced at high levels of EPC.) SMP and national wealth interact to affect SHE in varying ways.

Table 5-32

The Impact of SMP at Various Levels of EPC:

Expected Values of SHE**

(adjusting for the effects of other variables)@

(N = 49)

| | EPC | | |
SMP*	x̄ Third World	x̄ Total Sample	x̄ Developed Nations
39.38	.048	.033	.025
60.64	.035	.037	.039
81.90	.022	.042	.055

* Values of SMP represent the mean of SMP for the entire sample and values 1 standard deviation above and below the mean.

** In percentages.

@ Cell entries are the predicted values of enrollments in higher education (percent of the population enrolled) at specified values of SMP and EPC, holding FCI, population growth rate, EDEXPOP, and on EPC * FCI constant at their mean values. The values of the interaction terms change with changes in SMP and EPC.

SMP also constrains the impact of EPC on SHE. At low levels of majority party control, as EPC increases, SHE decreases. At middle and high levels of majority party control, on the other hand, increases in

SHE follow economic growth. This finding supports the notion that in Third World and poor nations, advances in social policy do not necessarily follow from increases in GNP and industrialization. The "trickle-down" theory is challenged in this case.

In both cases (in the impact of FCI and of SMP on SHE) it becomes apparent that the effects of politics (of political structures) on policy differ depending upon the economic status of the country. What is a "beneficial" form of political structure in Third World nations may be a "harmful" political situation in more advanced countries, and vice versa. This suggests, too, that development strategies cannot be universal, but must be chosen to fit (accommodate) the national situation.

A Summary

Results of this investigation of education policy differ from results reported for the health policy area (Chapter IV). The importance and role of political structure centralization and of economic level change by issue area and by focus of concern on policy outputs or policy outcomes.

Education spending per capita is largely a function of economic level. But, the formal-legal status of the nation -- federal or unitary -- qualifies that relationship: unitary structure moderates the otherwise positive effect of EPC on EDEXPOP. Education policy out-comes, on the other hand, appear to be more a function of political and social indicators. The role of EPC is contingent; it influences the percent of the population enrolled in secondary and higher education and gross enrollment ratios jointly with EDEXPOP, and, more importantly, through its interaction with political centralization indicators.

Finally, the nature of the relationship between centralization and education policy is much more complex than the earlier literature suggests. Moreover, our research in this policy area reinforces the early contention of this study: that political structure centralization is a multifaceted concept. Whereas unitary status (centralized structure) leads to a lesser commitment to education spending (through its impact with economic level), the impact of other kinds of structural centralization on education outcomes changes with economic level. In affluent nations, informal political authority concentration (IA) leads to higher gross enrollment ratios (adjusting for all other variables). Similarly, in wealthy countries, as the majority party control in the legislature increases, so does enrollment in higher education. In this situation, however, fiscal centralization has a negative impact on SHE.

In poor nations, these relationships change. At low levels of EPC, fiscal centralization has a positive impact on SHE, and SMP has a negative impact (all other things being equal). The effect of interest articulation on gross enrollment ratios, moreover, is diminished in poor nations and, in this situation, the presence or absence of extreme cultural diversity seems to be a more important determinant of GER. Heterogeneity (at low levels of EPC) leads to lower school enrollments.

Results from Chapters IV and V differ in another area as well. In the area of education policy there proves to be an empirical link between policy outputs and policy outcomes. In general, as EDEXPOP increases, so does GER and SHE (controlling for other causal factors). In the health policy area, however, such a link was absent. Apparently, it is more difficult in some issue areas than in others to turn expenditures into actual results and opportunities for citizens.

CHAPTER V

FOOTNOTES

[1] Cameron, David and Richard Hofferbert, "The Impact of Federalism on Education Finance: A Comparative Analysis," European Journal of Political Science (September, 1974), vol. 2.

[2] Ibid., and Frederic Pryor, Public Expenditures in Communist and Capitalist Nations, Allen and Unwin Ltd., London, 1968.

[3] Cameron and Hofferbert, op. cit.

[4] Federal/unitary status has no main or direct effect on EDEXPOP. When considered along with EPC and FU * EPC, FU is not significant.

CHAPTER V

APPENDIX A

Summary Characteristics of the Variables

Variable	Mean	Standard Deviation	Cases
GER	67.90	23.76	60
SHE	.0540	.0352	65
FCI	71.96	18.01	67
ln FCI	4.24	.2823	67
sq FCI	5497.85	2488.75	67
EPC	1741.73	2733.27	63
ln EPC	6.189	1.80	63
sq EPC	10385818.6	30863382.9	63
Heterogeneity	.4194	.4975	62
Pop. Grow. Rt.	2.10	.9388	64
Pct. Pop. 65 +	6.14	3.811	64
Pct. Pop. 14 -	37.50	9.056	64
SMP	60.64	21.27	56
ln SMP	4.04	.3650	56
sq SMP	4121.30	2830.56	56
IA	.5167	.5039	60

CHAPTER V

APPENDIX B

Table 5-20

Regression of Gross Enrollment Ratios on EPC and Centralization Indicators, Interaction Models

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\overline{R}^2$	N
FCI	-.845	.424	-.640	.790	60
ln EPC	2.75	4.43	.2085		
ln EPC * FCI	.1287*	.0616	.669		
constant	56.65	32.41			
FU	10.12	16.69	.174	.775	60
ln EPC	12.45*	2.08	.944		
ln EPC * FU	-7.278	2.37	-.091		
constant	-13.76	15.17			
SMP	-.222	.326	-.199	.775	56
ln EPC	9.29*	3.20	.704		
ln EPC * SMP	.0512	.0535	.246		
constant	4.918	21.08			

Table 5-20 (continued)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	N
IA	-50.75*	20.40	-1.07	.799	60
ln EPC	6.36*	2.38	.483		
ln EPC * IA	7.03*	2.99	.765		
constant	36.87	18.29			

* Starred estimates are at least twice their standard errors.

Table 5-21

Regression of Gross Enrollment Ratios on Centralization Measures, Interaction Models

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	N
ln EPC	9.64*	1.21	.732	.839	56
FCI	1.04*	.271	.7899		
SMP	1.59*	.374	1.42		
FCI * SMP	-.021*	.0051	-1.97		
constant	-68.14	18.96			
ln EPC	10.70*	1.70	.811	.764	59
FCI	.0375	.176	.028		
IA	-6.35	19.72	-.134		
FCI * IA	.0145	.252	.025		
constant	1.16	19.00			
ln EPC	11.67*	1.15	.886	.772	63
FU	-3.80	16.23	-.065		
FCI	-.156	.225	-.118		

Table 5-21 (continued)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\overline{R}^2$	N
FCI * FU	.151	.248	.217		
constant	.820	17.67			
ln EPC	10.34*	1.50	.785	.819	56
SMP	.505*	.1569	.452		
IA	27.61*	11.59	.585		
SMP * IA	-.636*	.198	-1.012		
constant	-21.14	14.56			
ln EPC	12.29*	1.13	.932	.791	56
FU	28.467*	13.49	.490		
SMP	.409	.205	.366		
SMP * FU	-.398*	.219	-.537		
constant	-36.21	15.91			
ln EPC	10.76*	1.63	.817	.773	55
FU	4.37	5.72	.075		

Table 5-21 (continued)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	$\underline{N}$
IA	-6.78	9.25	-.143		
IA * FU	2.29	8.62	.048		
constant	.3199	13.91			

* Starred estimates are at least twice their standard errors.

Table 5-22

Regression of Percent Population Enrolled in Second and Third Levels on EPC and

Centralization Indicators, Interaction Models

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	N
SMP	-.002*	.0006	-1.32	.544	56
ln EPC	-.007	.006	-.346		
ln EPC * SMP	.0003*	.0001	1.03		
constant	.111	.042			
IA	.170*	.033	2.43	.717	59
ln EPC	.025*	.004	1.30		
ln EPC * IA	-.030*	.005	-2.20		
constant	-.114	.030			
FCI	.002*	.0009	1.25	.554	63
ln EPC	.041*	.009	2.08		
ln EPC * FCI	-.0004*	.0001	-1.47		
constant	-.193	.070			

Table 5-22 (continued)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	N
FU	.0526	.0367	.613	.444	63
ln EPC	.019*	.0045	.975		
ln EPC * FU	-.007	.0052	-.625		
constant	-.071	.0333			

* Starred estimates are at least twice their standard errors.

Table 5-23

Regression of Percent Population Enrolled in Second and Third Levels on Centralization

Indicators, Interaction Models

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	N
ln EPC	.011*	.003	.560	.464	56
FU	.0486	.032	.567		
SMP	.0003	.0005	.199		
SMP * FU	-.0008	.0005	-.730		
constant	-.033	.038			
ln EPC	.006	.003	.306	.530	56
FCI	.001	.0007	.697		
SMP	.002*	.0009	1.26		
FCI * SMP	-.00003*	.00001	-2.09		
constant	-.058	.048			
ln EPC	.005	.003	.242	.558	50
SMP	.0005	.00036	.305		

Table 5-23 (continued)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	N
IA	.037	.0268	.533		
SMP * IA	-.001*	.00046	-1.28		
constant	.0119	.034			
ln EPC	.007	.004	.360	.462	56
FU	-.0002	.013	-.002		
IA	-.034	.021	-.490		
IA * FU	.008	.020	.114		
constant	.025	.032			
ln EPC	.006	.004	.294	.489	56
FCI	-.0005	.0004	-.282		
IA	-.078	.043	-1.11		
FCI * IA	.0007	.00055	.852		
constant	.068	.0414			

Table 5-23 (continued)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	N
ln EPC	.011*	.003	.584	.434	63
FU	.026	.038	.306		
FCI	-.0002	.0005	-.097		
FCI * FU	-.0003	.0006	-.288		
constant	.0058	.0411			

* Starred estimates are at least twice their standard errors.

CHAPTER VI

POLITICAL STRUCTURE CENTRALIZATION AND SOCIAL WELFARE POLICY

I shall now examine a third area of social policy: social security or social welfare. Social welfare policies are generally recognized as ultimately redistributive: such programs are designed to improve the lot of the "have-nots" whether out of altruistic concern or practical considerations. The main focus of this chapter is the impact of structural centralization on social welfare policy outputs and outcomes. The central question is: "Does political centralization affect levels of policy commitment and outcomes, and if so, what is the nature of the relationship?"

Wilensky's 1975 study leads us to expect that fiscal, formal-legal and political centralization has a positive impact on social welfare program development. (Recall from Chapter I that Wilensky uses a composite index to measure degree of centralization.) He finds, using data for 1966 from the 22 richest nations of the world, that "The greater the authority of the central government vis-a-vis regional and local units, the higher the welfare state spending and the greater the program emphasis on equality."[1] Similarly, Echols, Duchacek, and Cameron and Hofferbert argue that federalism lessens commitments to social policy, while Peacock and Wiseman, and Hage and Hollingsworth argue that centralized structure leads to an expansion of commitments.[2] In sum, the literature brings us to the conclusion that centralization,

not local control, enhances the development of the welfare state.

There is some evidence presented by other scholars, moreover, that the greater the social welfare expenditures, the more egalitarian the society (in terms of income distributions). These arguments will be considered in the second half of the chapter when policy results as experienced by citizens, or, outcomes are considered.

Indicators of Social Security Policy Outputs and Outcomes

In Chapter II I discussed the social security and income data that are available at this time. First, several expenditure figures for 1970 reflecting monies for medical care and benefits in cash and in kind are available for 52 countries and indicate commitment to social welfare programs. Again, the per capita figure stresses our concern for the well-being of individuals within society. Second, to indicate social security outcomes, I refer to data on income distribution and income levels. These data are used for several reasons. First, more specific data on the impact of social security programs -- such as figures on numbers of people served as a proportion of those in need, figures on unemployment and yearly changes in employment, numbers of "rehabilitated" citizens, etc. -- are simply not published. Second, it is through social security programs that countries attempt to improve the position of the lower socio-economic groups in society. Social security programs allow for risk-sharing among groups in society. In this way, the pro-grams provide movement toward affecting social equality by adjusting the distribution of income, and thereby, the command over resources.

Titmuss, Jackman and Cutright, moreover, each argue that, in effect, social security programs and expenditures lead to some redistribution of valued goods and services within society. We expect, then, that social

security expenditures per capita (hereafter referred to as SSEXPOP)
should have a positive impact on the income shares of lower groups in
society. There should be an empirical link between SSEXPOP and income
distribution figures.

The availability of income data will limit the research somewhat.
Data for 1970-1972 on income shares of the top, middle and low income
groups are available for only 44 of the 67 nations included in this
study. Data on absolute income levels (numbers of citizens earning
less than $50 and $75 per year, for example) are even more limited --
such data for 1969 are available for only 28 nations. These data indi-
cate, to some extent, poverty levels and the extent to which basic
human needs, such as housing, food, and clothing, are being met in each
nation.

Because employing the latter figures would limit the sample too
severely, and because I am particularly interested in the welfare of the
lowest income groups in society, how social security affects the plight
of the poorer citizens, and relative income shares, I will use one
figure to indicate outcomes -- the income share of the poorest 40% of
households in each nation.[3] The figure allows us to be sensitive to
inequality in particular ranges. It also indicates the distribution of
resources and therefore, often, of opportunities to satisfy needs and
wants. This income group, moreover, can be considered a primary target
group for policy makers concerned with improving the lot of the poorest.
(Table 6-1 reports Pearson's correlation coefficients among all the data
in this policy area. It is difficult to choose one "best" income indi-
cator from these figures. Therefore, I am guided by theoretical
interests and data availability alone.)

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Table 6-1

Pearson's Correlation Coefficients Among the

Social Welfare Indicators

	SOCSECEX	SSEXGDP	SSEXPOP	LII	LGI	LOW INC	MID INC	TOP INC	POP 50	% 50	POP 75	% 75
SOCSECEX	SOCSECEX											
SSEXGDP	.16	SSEXGDP										
SSEXPOP	.46	.61	SSEXPOP									
LII	.32	.28	.31	LII								
LGI	-.39	-.75	-.74	-.14	LGI							
LOW INC	.32	.35	.35	.91	-.25	LOW INC						
MID INC	.24	.46	.48	.43	-.39	.53	MID INC					
TOP INC	-.31	-.43	-.48	.79	.38	-.85	-.78	TOP INC				
POP 50	.38	-.17	-.27	.15	.16	.26	.03	-.18	POP 50			
% 50	.06	-.22	-.62	.30	.55	.26	-.02	-.13	.33	% 50		
POP 75	.37	-.18	-.29	.17	.18	.27	.03	-.20	.999	.33	POP 75	
% 75	.02	-.26	-.64	.39	.65	.34	.006	-.22	.33	.95	.34	% 75

<u>Table 6-1</u> (continued)

SOCSECEX   Social Security Expenditures, 1970

SSEXGDP   Social Security Expenditures as a % of GDP

SSEXPOP   Social Security Expenditures Per Capita

LII   Level of Income Inequality: low, medium, high*

LGI   Level of Income Group Inequality: low, medium, high**

LOW INC   Income Share of the Lowest 40% of Households

MID INC   Income Share of the Middle 40% of Households

TOP INC   Income Share of the Top 20% of Households

POP 50   Millions of Population with Per Cap Income below $50, U.S.

% 50   % Population with Per Cap Income below $50

POP 75   Millions of Population with Per Cap Income below $75, U.S.

% 75   % Population with Per Cap Income below $75

---

*   low = income share of lowest 40% households is 17% +; medium = income share of lowest 40% is between 12 and 17%; high = income share is less than 12% of national total income.

**   low = GNP/cap income is up to $300, U.S.; medium = GNP/cap is $300-750, U.S.; high = GNP/cap above $750, U.S.

In sum, I will investigate the impact of the independent variables -- political, economic and social -- on SSEXPOP and on the income share of the lowest 40% of households (hereafter referred to as LOW INC). Furthermore, I will consider the empirical link between social security expenditures and benefits <u>and</u> the share of income received by the poorest group in society.

The Impact of Political Structure Centralization on Social Security

Expenditures

I begin the analysis by testing bivariate relationships and

"partial theories." The first equation tests the role of constitutional

status in determining SSEXPOP:

$$Y = a + b_1 X_1 + e$$

where

X_1 = FU status, 1970

e = stochastic disturbance.

The literature reviewed above leads us to expect that federalism has a

negative impact on social security expenditures. Results from our data

reported in Table 6-2, however, challenge those arguments on empirical

grounds. Our results show that federal/unitary status plays no role in

determining SSEXPOP. Federalism has neither an expansionary effect (as

Beer argues) nor a conservatizing impact on expenditures (as many other

scholars argue). The $\bar{R}^2$ is negligible and the parameter estimate is

much smaller than its standard error. Based on aggregate data from 52

nations for 1970, in other words, this aspect of structural centraliza-

tion has no relationship to SSEXPOP.

To test the relationship between fiscal centralization and SSEXPOP

I employ the following equations:

$$Y = a + b_1 X_2 + e \qquad \text{(linear form)}$$

$$Y = a + b_1 X_3 + e \qquad \text{(logarithmic form)}$$

$$Y = a + b_1 X_2 + b_2 X_4 + e \qquad \text{(polynomial form)}$$

where

X_2 = FCI

X_3 = ln FCI

X_4 = FCI, squared.

Table 6-2

Regression of SSEXPOP on Federal/Unitary Status

(N = 52)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
FU status	-69.94	108.66	-.154
constant	191.16	96.25	

R^2	$\bar{R}^2$	F
.024	.000	.414

Recall that Wilensky found fiscal centralization (one aspect included in his composite index along with other characteristics of political structure centralization) to have a _positive_ impact on social security spending. Similarly, others have hypothesized that as fiscal centralization increases so does social spending.

Results from the present analysis clearly refute these arguments (see Table 6-3 and 6-4). FCI appears, in bivariate analyses, to have a strong negative impact on expenditures. As _FCI increases_, _SSEXPOP_ _decreases_ and then begins to level off at high levels of FCI. The logarithmic form of the equation, moreover, accounts for over 40% of the variance in SSEXPOP among nations. (The logarithmic form best fits the data we have, while the polynomial equation is not significant at the .05 level.) Beginning analyses, then, question earlier hypotheses.

Next, I consider the impact of informal political authority concentration -- the concentration of political party control in the legislature and the structure of interest articulation in society -- on

social security expenditures. The equations are of the same form as those tested above. Again, the literature suggests that the more centralized the political control, the greater the social expenditures.

Table 6-3

Linear Regression of SSEXPOP on FCI (N = 52)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
FCI	-6.67*	1.90	-.647
constant	616.05	141.20	

R^2	$\bar{R}^2$	F
.419	.384	12.25

* Starred estimates are at least twice their standard errors.

Table 6-4

Logarithmic Regression of SSEXPOP on FCI (N = 52)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
ln FCI	-436.35*	119.44	-.663
constant	1986.033	507.52	

R^2	$\bar{R}^2$	F
.440	.407	13.34

* Starred estimate is at least twice its standard error.

Table 6-5

Polynomial Regression of SSEXPOP on FCI (N = 52)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
FCI	-19.05	14.70	-1.84
FCI, squared	.090	.106	1.21
constant	1010.04	485.05	

R^2	$\bar{R}^2$	F
.444	.374	6.38

The data presented in Tables 6-6 to 6-9 indicate that the percentage of seats held by the majority party has no significant independent relationship to SSEXPOP. The parameter estimates are not significant and the $\bar{R}^2$'s are negligible. The level of interest articulation (indicating the extent to which power to voice interests is shared among groups in society), however, has a significant negative impact on expenditures. That is, where interest articulation is negligible, indicating that most groups in society are prohibited from voicing demands, social security expenditures are lessened. Where there is free and open discussion of needs and interests, on the other hand, SSEXPOP is higher. (IA accounts for almost 40% of the variance in SSEXPOP among nations in these bivariate analyses.)

While federal/unitary status and SMP show no independent relationship to the level of social security expenditures, both fiscal centralization and the degree of interest articulation negatively affect SSEXPOP. Earlier discussions in the literature about the impact of political

structure centralization on social welfare (or social policy generally) are refuted and qualified by this analysis. The aspects of centralization that do relate to SSEXPOP in our research, do so in an unexpected direction. Yet, these findings are tentative until multivariate analyses are performed.

Table 6-6

Linear Regression of SSEXPOP on SMP

(N = 43)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
SMP	-3.44	1.94	-.394
constant	344.41	124.76	

R^2	$\bar{R}^2$	F
.155	.105	3.12

Table 6-7

Logarithmic Regression of SSEXPOP on SMP (N = 43)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
ln SMP	-199.89	113.55	-.392
constant	943.84	460.76	

R^2	$\bar{R}^2$	F
.154	.104	3.10

Table 6-8

Polynomial Regression of SSEXPOP on SMP (N = 43)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
SMP	-7.78	11.21	-.891
SMP, squared	.0331	.084	.505
constant	471.07	346.58	

R^2	$\bar{R}^2$	F
.163	.058	1.56

Table 6-9

Regression of SSEXPOP on Interest Articulation

(N = 45)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
IA	-242.15*	67.39	-.657
constant	260.94	48.01	

| R^2	$\bar{R}^2$	F
.431	.398	12.91

* Starred estimate is at least twice its standard error.

Finally, I consider the role of economic and social demographic factors in explaining SSEXPOP. Wilensky, Jackman, Cutright and others have shown that economic level has a significant impact on social welfare

development.[4] Our data give further support to this claim. Energy consumption per capita, in bivariate analyses, explains over 60% of the variance in SSEXPOP (the logarithmic form best fits the plotted data points as shown in Figure 6-1). Yet, as Wilensky notes, there is still some way to go in explaining social welfare program development. Multi-variate analyses will take us further toward the explanation.

There is reason to believe that several social and demographic variables have an impact on social welfare expenditures. Several scholars have suggested, for instance, that population needs (indicated by population growth rate and age structure, for example) determine social policy expenditures to the extent that policy makers attempt to address needs by the policies they formulate. (Of course, population needs may outstrip the capacity to meet them.) Second, the literature on cultural pluralism suggests that extreme social heterogeneity leads to a lower commitment to social programs and expenditures due to communal conflicts and processes of ethnicization (of social policy out-puts).

In separate bivariate analyses the following relationships are un-covered: while population growth rate and the percent of the population aged 14 or under have a negative impact on SSEXPOP ($\bar{R}^2$'s are .406 and .618, respectively), the percent of the population aged 65 or older has a positive impact on SSEXPOP ($\bar{R}^2$ = .688). That is, social welfare policy makers seem to respond to the special needs of senior citizens. (But, a rapidly growing and largely youthful population makes it more difficult for policy makers to keep up with social needs and demands.) And presumably, pension and similar plans account for a large percentage of social security expenditures.

Electric Power Consumption, 1970
(Kilowatt hours per capita, in thousands)
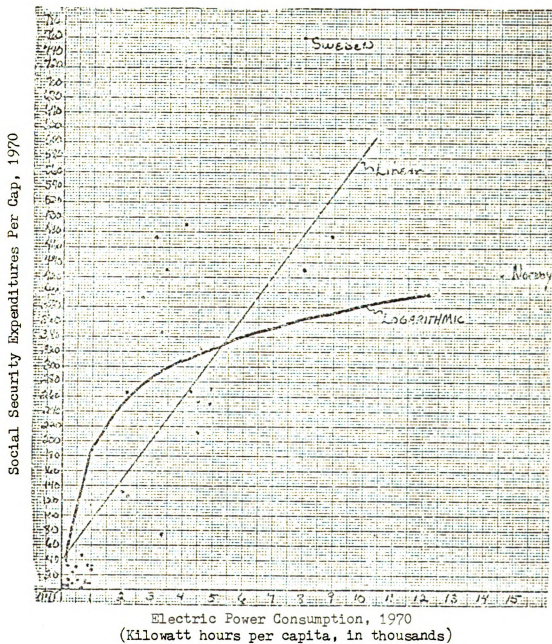
Figure 6-1

(N = 50)

Finally, extreme social division and ethnic heterogeneity bears no significant relationship to SSEXPOP ($\bar{R}^2$ = .000 and the parameter estimate is less than its standard error). In contrast to the hypothesis, heterogeneity appears to play no role in determining the level of welfare spending.

Table 6-10

Linear Regression of SSEXPOP on EPC (N = 50)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
EPC	.055*	.0096	.811
constant	39.78	30.63	

R^2	$\bar{R}^2$	F
.658	.638	32.77

* Starred estimate is at least twice its standard error.

Table 6-11

Logarithmic Regression of SSEXPOP on EPC (N = 50)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
ln EPC	81.61*	15.24	.792
constant	-369.29	98.08	

R^2	$\bar{R}^2$	F
.627	.605	28.65

* Starred estimate is at least twice its standard error.

Table 6-12

Polynomial Regression of SSEXPOP on EPC (N = 50)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
EPC	.108*	.018	1.60
EPC, squared	-.000005*	.000002	-.871
constant	.601	27.53	

R^2	$\bar{R}^2$	F
.792	.766	30.41

* Starred estimates are at least twice their standard errors.

Multivariate Analyses -- Interaction Relationships

Following procedures adopted in the preceding chapters, here I shall test for the presence of interaction effects between economic level and the centralization measures and among the centralization measures themselves. Such special effects appeared in earlier analyses of policy. For example, we may argue that the impact of SMP varies by level of EPC and is evident only in joint occurrence with EPC. (Recall that SMP had no significance in bivariate analyses.) Similar joint effects may occur in cases of other types of centralization as well. Or, several of the centralization variables may interact to present special effects on SSEXPOP. For example, the impact of interest articulation (IA) on SSEXPOP may vary depending upon the level of fiscal centralization.

Tables 6-13 and 6-14 report results of these multivariate regression

Table 6-13

Regression of SSEXPOP on EPC and Centralization Measures, Interaction Models

(N = 43)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	F
EPC	.069*	.012	1.01		
FU status	42.35	53.24	.093		
FU * EPC	-.019	.014	-.244		
constant	4.41	48.74		.649	27.56
EPC	.034*	.008	.496		
ln FCI	-234.10*	59.09	-.356		
ln FCI * EPC	5.24	2.95	.193		
constant	933.58	258.40		.745	42.86
EPC	.112*	.032	1.65		
SMP	-.034	.963	-.004		
SMP * EPC	-.001**	.00057	-.868		
constant	50.82	63.63		.676	30.87

Table 6-13 (continued)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	F
EPC	.045*	.007	.664		
IA	-72.37	46.01	-.196		
EPC * IA	-.080	.088	-.092		
constant	104.09	34.57		.681	31.59

* Starred estimates are at least twice their standard errors.

** Estimate is significant at .062.

Table 6-14

Regression of SSEXPOP on Centralization Measures, Interaction Models

(N = 43)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	F
EPC	.036*	.007	.525		
ln FCI	323.21*	79.62	-.491		
IA	-1458.75*	544.9	-3.95		
ln FCI * IA	329.23*	126.94	3.91		
constant	1454.99	333.74		.769	34.32
EPC	.0428*	.006	.630		
FU	-391.99	508.47	-.864		
ln FCI	-328.51*	105.80	-.499		
ln FCI * FU	108.36	123.13	1.03		
constant	1395.76*	432.88		.734	28.66
EPC	.044*	.008	.649		
FU	-20.05	54.85	-.044		

Table 6-14 (continued)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	F
IA	-138.89	79.60	-.377		
FU * IA	56.98	82.61	.153		
constant	121.94	56.52		.668	21.11
EPC	.044*	.008	.643		
SMP	-1.88	1.67	-.216		
IA	-214.77	125.50	-.583		
SMP * IA	2.31	2.09	.472		
constant	212.72	100.20		.676	21.84
EPC	.052*	.007	.768		
FU	-187.08	137.79	-.412		
SMP	-3.69	2.07	-.422		
SMP * FU	3.16	2.24	.546		
constant	263.68	129.95		.653	19.83

Table 6-14 (continued)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\overline{R}^2$	F
EPC	.037*	.005	.545		
SMP	49.74*	10.97	5.69		
ln FCI	360.82*	137.13	.548		
SMP * ln FCI	-11.63*	2.54	-6.19		
constant	-1459.43	580.90		.816	48.79

* Starred estimates are at least twice their standard errors.

analyses. Of the centralization interactions tested, two are significant. First, FCI (fiscal centralization index) and IA interact to affect SSEXPOP such that the impact of each is contingent on the level of the other; the impact of FCI depends on the level of IA and vice versa. Similarly, FCI and SMP (percent of legislative seats held by the majority party) act jointly upon SSEXPOP. The impact of SMP varies depending on the degree of fiscal centralization in the nation.

One other interaction term is very close to the .05 significance level and will be included in later analyses to test further its importance in explaining SSEXPOP. The SMP * EPC variable is significant at .062. That is, it appears to be the case that the impact of SMP on SSEXPOP varies depending on national economic level. This is an interesting finding in that SMP was found earlier to have no independent effect on the dependent variable. It may well be the case, then, that SMP works through EPC to determine SSEXPOP.

The ultimate importance of the interaction effects will be tested in the next section where we specify a more complete explanation of social security expenditures.

Multivariate Analyses: Specifying a More Complete Model

Up to this point, we have considered partial theories through bivariate analyses and have considered the possibility of joint effects of the main independent variables on SSEXPOP. I turn now to specifying a more complete picture of the explanation of social welfare spending. This is accomplished by entering all significant variables (from the bivariate and interaction regression models) into a single equation.

Results are reported in Table 6-15. When SSEXPOP is regressed upon a range of political, economic and social variables, five variables

Table 6-15

Regression of SSEXPOP on All Surviving Independent Variables

(N = 43)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
ln FCI	-272.41*	82.036	-.414
SMP * EPC	-.001*	.0004	-.869
SMP * ln FCI	.278	.187	.147
Pop. Grow. Rt.	30.74	26.36	.155
IA	-905.67	501.95	-2.45
Pct. Pop. 65 +	26.54*	10.07	.544
Pct. Pop. 14 -	1.06	4.90	.052
EPC	.089*	.0236	1.30
ln FCI * IA	215.12	113.86	2.55
constant	888.08	352.61	

R^2	$\bar{R}^2$	F
.868	.833	24.90

* Starred estimates are at least twice their standard errors.

that were significant in earlier analyses become insignificant. While population growth rate and the percent of the population 14 and under are not significant in multivariate analyses, the percent of the population 65 and older remains a significant, positive factor in explaining SSEXPOP. Moreover, while three of the political variables drop out of significance (IA, SMP * ln FCI, and ln FCI * IA), two others remain in

the equation (ln FCI, SMP * EPC). Fiscal centralization has direct

negative consequences for SSEXPOP, while the impact of SMP is contingent

upon the economic level. Finally, EPC also has a direct positive im-

pact on SSEXPOP.

Our final equation is obtained from Table 6-16.

$$SSEXPOP = 513.42 - 127.30 \text{ (ln FCI)} - .0008 \text{ (SMP * EPC)} +$$
$$(245) (54.21) (.0003)$$

$$18.93 \text{ (\% Pop. 65 +)} + .0705 \text{ (EPC)}.$$
$$(4.9) (.021)$$

This equation explains over 82% of the variance among nations in levels

of social welfare spending. It demonstrates that such expenditures are

a function of political, social and economic factors. Economic level

alone, in other words, will not accurately predict SSEXPOP. It is

clear, however, that in the case of SMP, the political and economic

variables each modify the impact of the other. As in other policy areas,

then, EPC proves to be an important contextual variable setting limits

within which political factors must operate.

Tables 6-17 and 6-18 yield a better picture of the impact of the

political structure centralization variables on SSEXPOP. First, it is

clear that at each level of EPC, FCI has a negative impact on social

welfare expenditures. As fiscal centralization increases, SSEXPOP

decreases, no matter the level of economic development. It is obvious,

at the same time, that at any level of FCI, as EPC increases, so does

SSEXPOP.

The impact of the percent of legislative seats held by the majority

party on SSEXPOP is indirect in that its impact is dependent on the

economic level of the country. SMP and EPC are mutually constrained.

While at each level of SMP SSEXPOP increases as EPC increases, the

Table 6-16

Regression of SSEXPOP on Final Survivors (N = 43)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
ln FCI	-127.30*	54.21	-.193
SMP * EPC	-.0008*	.00036	-.613
Pct. Pop. 65 +	18.93*	4.93	.388
EPC	.0705*	-.207	1.038
constant	513.42	245.10	

R^2	$\bar{R}^2$	F
.837	.821	50.27

* Starred estimates are at least twice their standard errors.

Table 6-17

The Impact of FCI* on SSEXPOP At Various Levels of EPC:

Expected Values of SSEXPOP**

(holding other variables at their mean)@ (N = 43)

FCI	EPC		
	x̄ Third World 329	x̄ Total Sample 1742	x̄ Developed Nations 4557
54	134.05	165.12	227.02
72	95.22	126.29	188.19
90	64.03	95.10	157.00

Table 6-17 (continued)

* The values of FCI are the mean for the entire sample and one standard deviation above and below the mean. I use the log natural for each value since the logarithmic model best fits the data.

** In U.S. dollars, 1970.

@ Cell entries are predicted values of social security expenditures per capita, 1970, at specified values of economic development and fiscal centralization, holding SMP and the percent of the population 65 or over constant at their means.

Table 6-18

The Impact of SMP* on SSEXPOP At Various Levels of EPC:

Expected Values of SSEXPOP**

(holding the other variables at their mean)@ (N = 43)

	EPC		
SMP	$\bar{x}$ Third World 329	$\bar{x}$ Total Sample 1742	$\bar{x}$ Developed Nations 4557
39.38	102.73	157.83	267.61
60.64	97.13	128.20	190.10
81.90	91.54	98.58	112.60

* The values of SMP are the mean for the entire sample and one standard deviation above and below the mean.

** In U.S. dollars, 1970.

@ Cell entries are predicted values of social security expenditures per capita, 1970, at specified values of economic development and majority party dominance in the legislature, holding fiscal centralization and the percent population aged 65 or older constant at their means.

increase in SSEXPOP is much less at high levels of SMP. SMP constrains the positive impact of EPC. Moreover, while at each level of EPC, SMP has a negative impact (as SMP increases, SSEXPOP decreases), that effect is much greater at high levels of economic development.

These results give solid evidence that economic and political factors influence each other and they warn us against relying on either factor exclusively as a predictor of policy.

Political Structure Centralization and Income Distribution

Several questions are addressed in this section. First, what role does centralization play in affecting the distribution of income (and therefore, the command over resources) in society? Do centralized or decentralized structures promote greater social equality? Here I am interested in the distribution and use of valued goods and services within society. To facilitate the investigation, then, I refer to the income share of the lowest 40% of households in each nation.

Second, I consider the link between social welfare expenditures and the income shares of the poorest sector of society. As discussed earlier, a number of scholars argue that the result of social security programs is a redistribution of goods within society. Our data allow us to test this hypothesis.

Toward An Explanation of the Income Share of the Poorest

Because income and economic status usually determine an individual's abilities (opportunities) to satisfy needs and wants, the concepts of social equality and income distribution are tied together. Basic to this research is the question of the impact of political structure centralization on income distribution (and, particularly, the income

portion of the poorest 40% of households). Does the structure of political power, authority and decision making affect the real income status or relative income share of the poor?

Tables 6-19 to 6-21 report the results of initial bivariate and multivariate regression analyses. Several relationships are suggested by these initial tests. In the bivariate tests, population growth rate (negative impact, $\bar{R}^2$ = .225) and the percent of the population 65 and older (positive impact, $\bar{R}^2$ = .149) are the only variables significant at the .05 level. None of the political variables appears to have independent effects on the income share of the lowest 40% of households. Nor, interestingly, does the level of economic development. There is no direct link, then, between centralized structure or decentralized structure and greater income equality; nor is there a direct link between economic growth and income equality. (The "trickle-down of benefits" theory is again challenged by our data.) The pattern of causation of LOW INC appears to be more complex than is generally assumed.

Although the effects of our main independent variables are not direct, we may consider whether the variables influence LOW INC jointly or through interaction relationships. In fact, three of the interaction variables are significant in multivariate analyses: SMP * IA, EPC * IA and SMP * EPC. This suggests that although they bear no direct or main relationships to LOW INC, SMP, IA, and EPC work through joint relationships to influence income distribution. The impact of EPC, for example, is a function of both the level of SMP and IA. The impact of SMP on LOW INC, moreover, varies depending upon economic level and interest articulation.

Table 6-19

Bivariate Relationships Between LOW INC and the Independent Variables

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\overline{R}^2$	$\underline{F}$	$\underline{N}$
FU	-2.86	2.49	-.268	.017	1.32	44
constant	15.58	2.20				
FCI	-.0824	.553	-.340	.064	2.22	44
constant	19.25	4.09				
ln FCI	-4.98	3.55	-.322	.051	1.97	44
constant	34.46	15.08				
FCI	.055	.434	.230	.011	1.10	44
FCI, squared	-.001	.003	-.576			
constant	14.85	14.33				
IA	-2.68	1.998	-.309	.042	1.79	40
constant	14.70	1.42				

Table 6-19 (continued)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	F	N
SMP	-.0145	.049	-.071	.000	.086	40
constant	14.20	3.18				
ln SMP	-.209	2.90	-.017	.010	.005	40
constant	14.17	11.77				
SMP	.215	.281	1.05	.000	.388	40
SMP, squared	-.002	.0021	-1.14			
constant	7.48	8.69				
EPC	.0006	.0004	.387	.0999	2.99	40
constant	12.25	1.13				
ln EPC	.629	.566	.260	.012	1.23	40
constant	9.42	3.65				
EPC	.001	.0008	.683	.064	1.62	40
EPC, squared	-.00000004	.00000007	-.325			

Table 6-19 (continued)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	F	N
constant	11.90	1.29				
Heterogeneity	-.963	2.11	-.120	.000	.207	40
constant	13.73	1.35				
Pop. Grow. Rt.	-2.41*	.964	-.518	.225	6.23	40
constant	18.39	2.21				
Pct. Pop. 65 +	.507*	.249	.443	.149	4.15	40
constant	10.21	1.78				

* Starred estimates are at least twice their standard errors.

Table 6-20

Regression of LOW INC on EPC and the Centralization Measures, Interaction Models

(N = 40)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	F	N
EPC	.0006	.0012	.386			
FCI	-.043	.0555	-.177			
FCI * EPC	-.000003	.00002	-.092			
constant	15.60	4.33		.099	2.24	40
EPC	.0008	.0005	.532			
FU	-1.22	2.22	-.115			
FU * EPC	-.0004	.0006	-.218			
constant	43.27	2.03		.126	2.63	40
EPC	.0006	.0003	.357			
IA	1.31	1.88	.151			
EPC * IA	-.009*	.0036	-.451			
constant	12.74	1.41		.236	4.50	40

Table 6-20 (continued)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\overline{R}^2$	$\underline{F}$	$\underline{N}$
EPC	-.0027*	.0013	-1.69			
SMP	-.039	.0389	-.1925			
SMP * EPC	.00006*	.00002	2.06			
constant	14.34	2.56		.247	4.72	35

* Starred estimates are at least twice their standard errors.

Table 6-21

Regression of LOW INC on Centralization Measures, Interaction Models

(N = 34)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	F
EPC	.0004	.0003	.273		
SMP	.211	.163	1.02		
FCI	.067	.120	.279		
FCI * SMP	-.0024	.002	-1.23		
constant	5.82	8.81		.125	2.21
EPC	.00035	.00035	.221		
FCI	-.096	.072	-.396		
IA	-7.53	7.51	-.869		
FCI * IA	.100	.100	.957		
constant	19.46	5.03		.099	1.93
EPC	.0004	.0003	.275		
FU	-5.94	6.42	-.557		

Table 6-21 (continued)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	$\underline{F}$
FCI	-.0835	.092	-.345		
FCI * FU	.066	.0996	.520		
constant	19.29	5.93		.108	2.03
EPC	.0006*	.0003	.379		
FU	-1.46	5.689	-.137		
SMP	.027	.0858	.135		
SMP * FU	-.013	.0924	-.093		
constant	12.35	5.36		.090	1.84
EPC	.0004	.0003	.284		
SMP	-.111	.0657	-.543		
IA	-13.27*	4.93	-1.53		
SMP * IA	.210*	.0822	1.82		
constant	19.60	3.94		.229	3.52

Table 6-21 (continued)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate	$\bar{R}^2$	F
EPC	.0005	.0003	.309		
FU	-1.069	2.29	-.100		
IA	1.21	3.33	.139		
IA * FU	-2.47	3.459	-.283		
constant	13.75	2.36		.103	1.98

* Starred estimates are at least twice their standard errors.

Multivariate Analyses -- Specifying a More Complete Model

All of these results are tentative, up to this point. That is, we have not regressed LOW INC on a more complete range of possible causal variables in an attempt to specify a more complete model. This is accomplished in this section.

Table 6-22 reports results of regressing LOW INC on the variables that have survived earlier analyses. Both of the population characteristic variables drop out of the equation when considered along with the political and economic variables as determinants of LOW INC. The simplest explanation for this would be that those variables are highly related to economic level. Less developed countries are often characterized by rapidly growing populations, while more highly developed nations usually have a greater percent of senior citizens than do poorer nations.

The interaction variables appear to be significant influencers of LOW INC. Although SMP * IA is just _slightly_ beyond the .05 level of significance (.053) and the SMP * EPC variable is significant at .06, they are too close to our accepted significance level to be dropped from consideration. Moreover, we suspect that there are several joint effects working to influence LOW INC and that the inclusion of two superfluous variables (the population variables) is constraining true effects.

Table 6-23, then, shows results of regressing LOW INC on the three interaction variables alone. In this case it is clear that EPC * IA and SMP * EPC are important determinants of LOW INC, while SMP * IA drops out of the equation. In other words, the impact of EPC on LOW INC is not direct, but is constrained by the levels of SMP and of IA. Similarly, the impact of the political centralization variables depends

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Table 6-22

Regression of LOW INC on All Surviving Variables (N = 34)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
Pop. Grow. Rt.	-1.70	1.21	-.366
EPC * IA	-.0088*	.003	-.431
SMP * EPC	.00001**	.000005	.344
SMP * IA	.046***	.0228	.3999
Pct. Pop. 65 +	.0296	.374	.025
constant	15.31	4.86	

R^2	$\overline{R}^2$	F
.496	.409	5.17

* Starred estimates are at least twice their standard errors.

** Significant at .06.

*** Significant at .053.

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on economic level.

Table 6-24 gives our final equation:

$$\text{LOW INC} = 13.15 - .0076 \,(\text{EPC} * \text{IA}) + .00001 \,(\text{SMP} * \text{EPC}).$$
$$\phantom{\text{LOW INC} = 13.15} (.894) \quad (.003) \phantom{(\text{EPC} * \text{IA}) + } (.000004)$$

This equation explains about 30% of the variance in the income shares of the lowest 40% of households across systems. That is, there is some distance to go in explaining income distribution. The political centralization, social and economic variables considered here bring us only part of the distance toward a full understanding of income equality.

What we do find is that EPC and IA, and EPC and SMP work jointly to

Table 6-23

Regression of LOW INC on Survivors of Table 6-22

(N = 34)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
EPC * IA	-.0097*	.00314	-.475
SMP * EPC	.000015*	.000005	.499
SMP * IA	.0349	.0202	.303
constant	11.91	1.11	

R^2	$\overline{R}^2$	F
.404	.346	6.99

* Starred estimates are at least twice their standard errors.

Table 6-24

Regression of LOW INC on EPC * IA and SMP * EPC (N = 34)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
EPC * IA	-.0076*	.003	-.376
SMP * EPC	.00001*	.000004	.367
constant	13.15	.894	

R^2	$\overline{R}^2$	F
.346	.304	8.20

* Starred estimates are at least twice their standard errors.

Table 6-25

Regression of LOW INC on EPC * IA, SMP * EPC and SSEXPOP

(N = 34)

Independent Variable	Parameter Estimate	Standard Error	Standardized Estimate
EPC * IA	-.008*	.003	-.407
SMP * EPC	.00001*	.000006	.474
SSEXPOP	-.0036	.0054	-.155
constant	13.41	.977	

R^2	$\bar{R}^2$	F
.356	.291	5.52

* Starred estimates are at least twice their standard errors.

effect LOW INC in special ways. Tables 6-26 and 6-27 demonstrate several patterns of influence. When the right to voice interests is limited and informal political power is concentrated at the center (IA = 1) the income share of the poorest group is lessened. This is especially evident at middle and high levels of EPC. When IA = 1, as EPC increases the income share of the poor greatly decreases. (The negative impact of IA is much greater in developed nations. Put another way, the limiting impact of centralized authority is much less evident at low levels of EPC.) When groups are free to articulate interests (IA = 0), on the other hand, not only is the income share of the poor larger, but the share increases with increases in economic development.

Clearly, the political variable constrains the impact of the

Table 6-26

The Impact of IA at Various Levels of EPC:

Expected Values of LOW INC*

(holding SMP at its mean value) (N = 33)

EPC

IA	x̄ Third World 329	x̄ Total Sample 1742	x̄ Developed Nations 4557
IA = 1	10.85	.98	-18.72
IA = 0	13.35	14.21	15.91

* percent of total national income.

Table 6-27

The Impact of SMP at Various Levels of EPC:

Expected Values of LOW INC**

(holding IA constant at its mean) (N = 33)

EPC

SMP*	x̄ Third World 329	x̄ Total Sample 1742	x̄ Developed Nations 4557
39.38	11.99	6.99	-2.95
60.64	12.06	7.37	-1.98
81.90	12.13	7.74	-1.01

* The values of SMP are the mean for the entire sample and one standard deviation above and below the mean.

** Percent of total national income.

economic variable, and vice versa.

Table 6-27 demonstrates the impact of SMP on LOW INC, when all other variables are held at their means. At each level of SMP, as EPC increases, the income share of the lowest socio-economic group in the nation decreases. Regardless of the level of EPC, moreover, as SMP increases so does LOW INC. In this case, centralized control leads to greater income shares for the poorest social group.[5]

The Role of SSEXPOP

Earlier studies have suggested that social security programs and expenditures have a redistributive impact and that they change the distribution structure of valued goods and services within society. To test this notion, I regress LOW INC on EPC * IA, SMP * EPC and SSEXPOP. Does SSEXPOP further add to our explanation of the income status of the poor?

Table 6-25 demonstrates that there is no evidence of an empirical link between SSEXPOP and LOW INC.[6] Our data do not support Cutright's argument, for example, that with greater social welfare spending, the income distribution becomes more egalitarian. We have no evidence to support the theory that social security expenditures affect the income status of the poor. (Recall that the income data reflect wage and non-wage income.)

These findings, however, are limited in several ways and can only be considered preliminary. First, the sample for this aspect of the research is small -- only 33 countries are represented. This is due to the dearth of reliable income data available on a cross-system, comparable basis. Second, again due to data limitations, we were not able to con-sider a broad range of social security outcome variables. We could

better have considered the link between social security outputs and outcomes if we had data on actual social security program allocations, distribution of services, numbers of needy groups reached, et cetera.

Summary

Results of this chapter further support earlier contentions that political structure centralization is a multidimensional concept and that different aspects of centralization -- say, fiscal centralization and centralization of legislative powers -- may have different effects on policy. By considering centralization as a single composite variable (including political and economic variables) we obfuscate important interactions and relationships among political, economic and policy variables. Moreover, such a conceptualization of regime centralization severely limits study of development strategies. We have uncovered evidence in the last three chapters of the futility of unilateral statements about the impact of centralization on policy (such as those statements made by early modernization theorists). The relationship between centralization and policy depends upon the type of centralization and the social policy area under consideration.

In the case of SSEXPOP, FCI has a direct negative effect, but the negative impact of SMP varies somewhat, depending upon the economic level. SMP has a strong negative impact on the level of social security expenditures in industrially developed nations. On the other hand, in the case of LOW INC, FCI and FU have no impact and the effects of IA and SMP are juxtaposed. While SMP has a positive impact on LOW INC (and modifies the impact of EPC), IA has a negative impact on LOW INC that is more evident at high levels of EPC. In other words, where groups are not able to voice interests, the income share of the lowest 40% of

households lessens. The magnitude of the negative impact is greatest in developed nations.

Finally, analyses presented here yield no support for arguments that social security programs improve the general socio-economic status of the poorest groups. Nor, interestingly, does increased industrial and economic development translate directly or easily into greater income equality. Theories of Western modernization philosophers are again challenged.

CHAPTER VI

FOOTNOTES

[1] Wilensky, Harold, The Welfare State and Equality, University of California Press, Berkeley, 1975, p. 52.

[2] It is appropriate to review these arguments as they are outlined in Chapter I.

[3] As pointed out in Chapter II, the income data reflect wage and non-wage income where that information was available. That is, "income" from non-wage sources, such as property income or government programs is included.

[4] See discussions in Chapter I on this point.

[5] For a discussion of the impact of another set of political variables on relative income shares, see Robert W. Jackman, "Socialist Parties and Income Inequality in Western Industrial Societies," in Journal of Politics (February, 1980), forthcoming.

[6] It could be argued here that even though SSEXPOP does not effect the income share of the poorest 40% of the population, it may affect the income share of the top 20% (presumably the class paying for social welfare programs), or, the income share of the middle 40% (based on the argument that redistribution may be occurring even though it is not evident in the income share of the poorest 40% -- income may be moving from top to middle). To test these ideas, I performed analyses paralleling those performed on LOW INC on the income share of the top 20% and the income share of the middle 40%. In each case, SSEXPOP was not significantly related to the income variables. My data give no support to the idea that social welfare spending affects the overall distribution of income in society. SSEXPOP bears no relationship to social equality as we have defined it.

CHAPTER VI

APPENDIX

Summary Characteristics of the Social Welfare and Other Variables

Variable	Mean	Standard Deviation	Cases
LOW INC	13.32	4.36	44
EPC	1741.73	2733.27	63
FCI	71.96	18.01	67
SMP	60.64	21.26	56
FCI * SMP	4500.12	22220.16	56
IA	.5167	.504	60
FCI * IA	41.45	41.70	60
FU	.7910	.4096	67
FCI * FU	59.72	34.13	67
SMP * FU	48.40	32.07	56
SMP * IA	31.20	37.82	49
FU * IA	.4333	.4997	60
FCI * EPC	100489.8	154935.89	63
FU * EPC	1150.38	2365.48	63
EPC * IA	118.65	214.35	57
SMP * EPC	99414.30	147271.68	53
Pop. Grow. Rt.	2.10	.940	64
Pct. Pop. 65 +	6.14	3.81	64
SSEXPOP	135.83	185.74	51

CHAPTER VII

POLITICAL STRUCTURE CENTRALIZATION AND SOCIAL WELL-BEING:

COMMENTS AND CONCLUSIONS

In the preceding chapters I have investigated the impact of political (and other) variables on three separate social policy areas. Two final tasks are to be accomplished in this chapter. First, I shall review the nature of the relationships between federalism, fiscal centralization and informal political power concentration and the social policy areas of health, education and social welfare. As part of this task, I also address the role of economic development and the implications of the findings for policy-making in various national settings.

Second, because the results of this study very often differ from and sometimes contradict hypotheses and earlier study results presented in the literature, I shall, in the interest of theory-building, consider this study within the broad context of previous literature. How and why do our findings differ from the earlier research and writings (reviewed in the first two chapters)? How do our findings "fit" with what we "know" about the effects of politics on policy? Finally, what further investigations of the relationships we have studied might be undertaken?

Centralization and Social Policy

Federal/Unitary Status

A large body of literature addresses the topics of intergovernmental relations, federalism and unitary structure. An assumption of the literature is that formal-legal structure, the location of decision-making (center or locale) and the networks of authority and government relationships make a policy difference. Our own research, on the contrary, leads us to question earlier claims. We have found, using aggregate data, that whether a country has a federal or unitary structure bears no significant relationship to the overall size of the public sector, to health policy outputs and outcomes, to education outcomes, and to social welfare outputs and outcomes. The one exception, of course, is the role of unitary status in affecting per capita education expenditures: unitary structures moderate the otherwise positive impact of economic level on education expenditures. Especially at high levels of economic development, commitment to education is lessened if a country has a unitary structure. This research, then, does not support the related notion of a trade-off between local control and social well-being; in the case of education expenditures, in fact, there is evidence that the opposite is true. Local control (federalism) leads to greater education policy commitment.

Nor have we uncovered evidence of a "federal solution" to the problem (referred to by some scholars) of the ethnicization of goods and providing social goods and services in extremely heterogeneous societies. On the average, heterogeneity has little or no impact on levels of policy outputs or outcomes and federalism displayed no special moderating role on the impact of heterogeneity on social spending.

More interestingly, our results suggest that if extreme socio-cultural or ethnic fragmentation leads to communal conflict (a popular theory which we cannot address directly here), that conflict does not arise because of <u>actual</u> limitations that are due to heterogeneity. In only one test did heterogeneity appear to affect social policy: extreme heterogeneity was found to have a negative impact on gross enrollment ratios for primary and first levels of education. (Of course, this does not preclude <u>perceptions</u> of discrimination or mismanagement.)

Fiscal Centralization

Our research indicates that the location of fiscal decision-making -- center or locale -- does make a difference in <u>some</u> policy situations. As fiscal centralization and central control over taxation and expenditures <u>increase</u>, the size of the public sector, health expenditures, and social welfare expenditures <u>decrease</u>, other factors being equal. (In the case of health and social welfare expenditures, however, the negative effect levels off at high levels of fiscal centralization.) In the case of secondary and higher education, the impact of fiscal centralization <u>varies with economic level</u>: at low levels of economic development, fiscal centralization positively affects the percentage of the population enrolled in higher education; at middle and high levels of economic development, centralized fiscal decision-making leads to lower enrollments.

Other policy situations are not significantly affected by the degree of fiscal centralization: fiscal centralization is not related to national life expectancy, nurse availability, nutrition levels, education expenditures, gross enrollment ratios or relative income shares of the poorest 40% of households.

Informal Political Authority Concentration

Although the legislative strength of the majority political party (SMP) has a direct negative impact on life expectancy, in every other situation where SMP affects policy, it does so in interaction with economic development (EPC). Yet the direction of that impact varies by policy. In the case of health expenditures, majority party dominance in the legislatures of underdeveloped nations leads to greater per capita health spending, other factors being equal. At middle and high levels of national affluence, however, majority party dominance decreases commitment to health spending.

In the case of secondary and higher education enrollments, on the other hand, majority party dominance in the legislature has a negative impact in underdeveloped countries and a positive impact in moderately and highly developed nations.

The role of partisan strength (SMP) in social welfare policy varies depending upon our focus: outputs or outcomes. Majority party control has a negative impact on social security expenditures and the strength of that impact increases with economic level. But, majority party dominance increases the relative income share of the poorest element of society. And, again, the strength of the effect increases with economic level, other factors being equal.

Finally, partisan strength is not significantly related to the size of the public sector, nurse availability, nutrition levels, education expenditures nor gross enrollment ratios.

The degree of interest articulation (IA) is related to three policy situations. First, negligible levels of interest articulation, where the power to voice interests is concentrated in the hands of a few,

lead to greater health spending. IA has a direct positive effect on per capita health expenditures. The impact of the degree of interest articulation on gross enrollment ratios, on the other hand, varies with the level of economic development. Although centralized control of interest representation has a negative impact on the percentage of school-aged children attending school in underdeveloped nations, in moderately and highly developed countries, it has the opposite effect. In these situations, negligible levels of interest representation or articulation lead to higher enrollments.

Finally, the relative income share of the poorest 40% of households is increasingly diminished as economic development increases when interest articulation is concentrated at the national center, controlling for effects of other causal factors. Income equality is best served by a free, unrestricted voicing of interests, needs and demands.

The Role of Economic Level

This thesis opened with reference to an ongoing debate among scholars over the role and importance of economic and industrial development in affecting social development, social well-being, and a redistribution of social goods in the underdeveloped nation. A growing consensus among students of the Third World is that economic and social development cannot be conceptually or theoretically separated; development strategies must simultaneously be quantitative (with concern for optimum industrial or technological development) and qualitative (with concern for population-wide social development, including moves to eradicate poverty and suffering).

This research addresses questions growing out of these concerns. For example, what role does economic level play in affecting social

policy? More importantly, does economic growth lead naturally to social development (as proponents of the "trickle-down theory" argue)? Our results indicate that although in a few policy situations such as nurse availability and nutrition levels, economic development has a positive (though curvilinear) impact, in most of the relationships that were significant, the impact of economic development is moderated or even negated by the political situation. An example of the latter phenomenon is in the area of health expenditures. Whereas at low levels of majority party dominance and, to a lesser extent, at middle levels of majority party dominance, economic development has a <u>positive effect</u> on per capita health expenditures (controlling for other variables), <u>where the majority party clearly controls the legislature</u>, health expenditures do not increase with economic growth. A similar situation exists with respect to gross enrollment ratios: the positive impact of economic development is moderated by the level of interest articulation. Where <u>interest articulation is centralized</u> (IA = 1), and, controlling for the effects of other factors, <u>economic development has a positive impact</u> on gross enrollment ratios. Where the right to voice interests is un-restricted, on the other hand, increases in enrollment ratios do not follow increases in economic growth.

Political variables moderate the impact of economic development on education and social welfare expenditures. While economic development has a positive impact on per capita education expenditures in both the federal and the unitary system, this impact is lessened by the unitary structure of intergovernmental relations. Likewise, while economic growth has a positive impact on per capita social security spending, this effect is more clearly seen where the degree of majority party

dominance in the legislature is low. At high levels of partisan control, the strength of the positive effect of economic development is diminished.

Finally, for two policy outcome variables -- secondary and higher education enrollments and the relative income share of the poorest 40% of households -- the impact of economic development is dependent upon the nature of two separate political variables. The impact of economic growth on the percent of the population enrolled in secondary and higher education depends on the levels of majority party strength and fiscal centralization. First, when majority party dominance is low, and, holding other effects constant, economic growth has a negative effect on enrollments; when partisan strength is at mean or high levels, economic development has a positive impact on enrollments. Second, when fiscal centralization is low and, to a lesser extent, when it is at the mean level for the sample, economic development has a positive effect on enrollments. But, where fiscal decision-making is highly centralized, economic level has a negative effect on enrollments in higher education.

The impact of economic development on the relative income share of the poorest 40% of households depends upon the degree of interest articulation and of majority party control of the legislature -- both indicators of informal power patterns. At each level of partisan strength, economic growth has a negative impact on the income share of the poor (the effect of economic growth occurs in interaction with partisan strength). When interest articulation is centralized, more-over, economic development again has a negative effect. But, when interest representation is open and unrestricted, economic growth has a positive effect on income equality, controlling for all other effects.

(In each case, we hold the other causal variables constant at their mean values.)

In sum, the role of economic development in affecting social policy is not straightforward. Instead, in each of the three policy areas examined, the role of economic growth is moderated or otherwise affected by the structure of politics. Moreover, not only do the effects of the three dimensions of structural centralization on economic development change by policy area, they also change by the type of centralization considered.

We can speculate on the causes of the changing impact of economic growth. First, the impact of economic growth on policy and the degree to which political factors affect that impact may depend on the level and type of controversy surrounding the social issues. Our study results indicate that in two issue areas often surrounded by controversy -- education outcomes (as indicated by secondary and higher education en- rollment levels) and income distribution -- the impact of economic growth was moderated by two separate political variables. Second, the relation- ships may depend on what political factors come into play or what political forces are employed by interested groups to press for desired results. It is interesting to note, for example, that patterns of power in national law-making bodies (SMP) frequently moderate the role that economic growth plays in social policy. Political elites in the legislature use their power and influence to control the way national resources will be used.

We can argue, at this point, that economic development does not easily translate into social development, and, that the structure of politics plays a very important role in determining just how economic

strides will affect social well-being. Political strategies and planning can determine how and whether economic development will benefit society.

Conclusions: Politics, Social Policy and Social Well-Being

The central focus of this study is the investigation of the role of political (and secondly, economic) variables in explaining social policy outputs and outcomes and, ultimately, social well-being or social equality. This research parallels efforts being made by the World Bank, the United Nations, the Aspen Institute for Humanistic Studies, the Bariloche Foundation of Argentina and many other international, public and private organizations that are focusing on development strategies designed to meet basic human needs (housing, food, clothing, health and education, for example).[1] Harland Cleveland writes:

> During three years of sudden conceptual change, from 1974 to 1977, national development strategies, international negotiations and global organizations have begun to be deeply affected by the simple notion that the purpose of economic development and international cooperation is to meet the human needs of the neediest. Combined with new attitudes toward economic growth and environmental damage, the appearance of 'basic human needs' at center stage begins a new act in the continuing drama of world development.[2]

It has become increasingly clear over the past two Development Decades, however, that meeting basic human needs, alleviating poverty and providing even a minimum level of social well-being will require both economic growth and massive changes in the distribution of income

and the opportunities, goods and services that income provides.[3] Social

development has not "trickled down" from rising GNP's and national

industrial growth.

In this context, the question of the role of politics (and

political structure specifically) in affecting social policy and distri-

bution patterns is especially relevant. Several broad generalizations

can be made, based on this research. First, unilateral statements about

the impact of government centralization on policy are grossly midlead-

ing. We have found that not only is governmental authority centraliza-

tion a multidimensional concept, but the effects of the several aspects

of centralization also differ from each other and differ by policy area

(as is evident in the effects of partisan strength and interest articu-

lation).[4] Second, in many policy situations economic and political

variables interact to moderate each other's effects. The impact of the

political variables on policy outputs and outcomes often depends upon

the level of economic development; similarly, the impact of economic

development is qualified by the political situation.

The research results warn against prescribing generalized develop-

ment strategies and point instead to the need for careful policy plan-

ning. Development strategies that move toward social well-being and

social equality must be chosen to fit the local (national) political

and economic environment. Most probably, these strategies will involve

some mixture of central and local decision-making and policy implemen-

tation.

Designing optimum development strategies that focus on quantitative

and qualitative aspects of growth, therefore, is a difficult task. This

task is made more difficult, moreover, because of the gap that often

exists between expenditures and policy outcomes. Our research demon-
strates that appropriations and commitments expressed by expenditure
levels are not easily translated into policy outcomes. Apparently,
there are breakdowns or other problems in the implementation process
that prevent target groups and programs from being reached. Red tape,
bureaucratic delay and multiple layers of bureaucrats and political
officials may all be factors figuring in this gap. (Isolating causes of
the gap between outputs and outcomes poses an interesting problem, but
it is beyond the scope of our study.)

The Research and Previous Literature

It became clear in Chapters IV, V and VI that our research results
diverge at several points from earlier study results. These differences
in results are noted in the text. The task here is to speculate briefly
on causes for varying findings. One obvious difference between this
study and earlier ones is the variation in research designs and samples.
First, this research goes somewhat beyond earlier studies of social
policy in that three separate policy areas are considered (where both
outputs and outcomes are investigated) based on a relatively large,
diversified sample of nations. In contrast, Wilensky studies social
welfare policy in 22 rich nations, Cameron and Hofferbert study educa-
tion finances in 8 Western European nations, Pommerehne studies fiscal
centralization in 6 Anglo-European countries, and Oates considers
fiscal functions in 58 countries. In addition, Peacock and Wiseman
investigate the increased central government responsibility for social
spending in Great Britain and Echols considers regional equalization
programs in 5 capitalist and 5 communist nations. Results from these
studies may be constrained by the nature of the sample used and the

questions asked.

The generalizations about fiscal centralization from Peacock and Wiseman's study are constrained by the fact that the relationships have not been tested in a variety of national situations. (The study of the United Kingdom is an historical one based from 1890 to 1955 and aimed at explaining why social spending has increasingly come under the domain of the central government.) Similarly, the applicability of Wilensky's results may be constrained by the sample he uses -- the 22 richest nations of the world. For example, the impact of political structure centralization is an important question often raised by Third World policy-makers who face very different problems of national integration and social and political development. We have found, in fact, that relationships among political and social policy variables often change depending upon the economic level.

Further, while recognizing the different starting point and focus of Oates' study, we can argue that his results may be constrained by the fact that he fails to move beyond a consideration of fiscal centralization's impact on the size of the public sector; results may have been different, for instance, if he had considered specific social policy programs. But, we must also point out that our measures of fiscal centralization differ to the extent that I have incorporated more fiscal information in my fiscal centralization index (see Chapter III).

Finally, the Echols and Cameron and Hofferbert studies are based on subnational data. (Recall that both studies report that unitary structure has a positive impact on regional equalization of social program expenditures and suggest that federalism has a conservative impact

on social program implementation.) Within-nation patterns and varia-
tions may thus become visible. Our study does not go beyond national-
level and broad generalizations about aggregate patterns.

Second, I have conceptualized political structure centralization as
consisting of at least three separate dimensions and have tested for
effects of each type of structural centralization on each of three
social policy areas. This approach allows for tests of a number of
relationships not considered earlier. For example, Wilensky employs a
composite index to measure degree of centralization; he combined infor-
mation on formal-legal status, centralization of fiscal decision making,
and central appointments of local political officials into a single
measure. Using this measure, it is impossible to discern what relation-
ships the several aspects of centralization have to social welfare.
Based upon his results, Wilensky argues that "centralization" leads to
social welfare program development.

Third, a number of hypotheses suggested by scholars (concerning
the nature and impact of federalism, the special case of the hetero-
geneous society, for example) are not supported in this research.
Samuel Beer postulates that federalism leads to increased public spend-
ing due to the influence of interest groups located at the several
levels of government (the "professional bureaucratic complex" and the
"intergovernmental lobby"). When the hypothesis is tested empirically
(as it is here), however, it is not supported. Federalism has no
direct or main effect on any of the policy areas analyzed (although
unitary status lessens the impact of economic development somewhat on
per capita education expenditures). Other hypotheses concerning a
"federal solution" to problems of providing services in the ethnically

heterogeneous society are, likewise, not supported. Again, these hypotheses had not been tested empirically in the earlier literature. (This lack of empirically based investigation is characteristic of the federalism literature; to that extent, political scientists have not gone far in showing what difference the structure of intergovernmental relations makes for policy.)

How does this research, then, "fit" with earlier research into the relationships among politics, society, economic growth and social policy? And, what further investigations might be undertaken?

This study, along with others, refutes earlier claims that social policy outputs are (exclusively) a function of economic or socio-economic growth, and that politics make little difference for policy. Our study suggests that determinants of policy may change by issue area and by level of economic development (Hofferbert, Hogan, Peters and others had suggested earlier that this might be the case). But more importantly, our research suggests that although economic growth is very important to social program development, the structure of politics moderates the impact of economic development. To state it more succinctly: political and economic factors interact to moderate each others' effects.

Further, in an attempt to clarify the relationships between authority centralization and policy, we have suggested that several types or aspects of structural centralization exist, and, that the impact on policy changes depending upon what aspect of centralization is being considered. Thus, we have addressed several broad questions posed in earlier writings.

Yet, this research seems to raise as many questions as it was

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intended to address. We may suggest several topics for future research.
First, are our results constrained by the <u>level</u> of study and the use of
aggregate data? Might we have found significant relationships between
the structure of intergovernmental relations (federal or unitary) and
policy if we had been able to observe local, regional and within-nation
data? Do aggregate data obscure important within-nation variations in
these relationships? Although this is an important question, social
scientists have been limited in efforts to study it, due to the paucity
of subnational data (especially for Third World countries).

Second, do relationships similar to those that appear in the
health, education and social welfare areas also exist in other policy
areas, such as transportation, defense, commerce, et cetera? Do
political, social and economic variables play different roles outside of
the human services area? Does the impact and role of political structure
centralization change significantly in other policy arenas?

Third, what roles do other political variables play in these (and
other) policy areas? For example, does political <u>ideology</u> make a
difference for the impact that the majority party and legislative power
patterns have on policy? Do these factors affect the type and degree
of influence exerted to affect policy? Similarly, do the natures and
types of interest groups active in society affect the role that interest
representation will have on policy? Does the type of political party in
control predict the level of interest articulation that will be tolerated?
In short, a variety of political variables may significantly affect
policy outputs and outcomes.

Fourth, our investigation of the roles played by political and
economic variables in affecting the distribution of income and the

income share of the poorest groups in society is limited by the availability and quality of the data. Our results in this area are constrained to the extent that they are based on information from only 44 nations and that there are discontinuities from nation to nation in how the data were gathered and recorded. Yet, the importance of understanding distribution patterns and how patterns might be changed to promote social development leads us to continue our study. Obviously, there is much that remains to be done in this area of research.

CHAPTER VII

FOOTNOTES

[1] The basic human needs approach considers education a basic human need (9 years of education are considered "basic") rather than a luxury. Education provides an important impetus toward the accumulation of human capital and potential. It presents an important, central stage in social development. At minimum, it opens new horizons to individuals. See McHale and McHale, Basic Human Needs, Transaction Books, New Brunswick, N.J., 1977; and Hopkins and Scholnick in the I.L.O. publication, "Tripartite World Conference on Employment, Income Distribution and Social Progress and the International Division of Labour," Background Papers, Vol. I.

[2] Harland Cleveland in McHale and McHale, op. cit., p. 3.

[3] See, for example, Hollis Chenery, et. al., Redistribution With Growth, Oxford University Press, London, 1974; and Hopkins and Scolnick, op. cit., p. 9.

[4] The role of some political variables seems clear. While FU status, in general, has little or no effect on social policy, fiscal centralization usually impedes social policy development. The role of informal authority concentration, however, is not so clear. The effects of SMP and IA are not easily generalized.

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