

THE GROWTH OF GOVERNMENT

Harold Demsetz

University of California, Los Angeles

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I. Theoretical Inadequacies.

The dominant political fact of Western Democracy has been the persistent growth of activity in the governmental sector, both absolutely and relative to any reasonable measure of nongovernment activity. Some evidence bearing on this growth is presented here, but my main purpose is to offer an explanation for the phenomenon.

So important a development has, of course, attracted explanations, but these are unsatisfactory for very basic reasons. Sometimes they are excessively mechanical, as when relative growth of government is based on ratchet effects; in these explanations a government is enlarged to cope with war or recession but is destined never to return to previous relative size; there is little explanation as to why voters who endorsed government growth cannot manage to bring about its shrinkage, except for the assertion that "once the rascals are in, they cannot be thrown out". Even though several Western nations have experienced large war time growth of government, there also has been fairly steady, if more moderate growth, during years of peace. Moreover, Western nations that have been more successful avoiding wars, such as Sweden, have also experienced rapid growth of the government sector.

Some explanations give large weight to the power of particular personalities, such as F.D. Roosevelt, or to the force of important ideas,

such as those of Keynes; one is inclined to ask why these men and these ideas succeeded rather than competitors and their ideas. In any case, it is difficult to use such an explanation for trends beginning as early as the turn of the century in England and but a decade or two later in the United States; continued success of men and ideas favoring centralization would be required. Nor will the Great Depression suffice to explain trends that began before and continued after the decade of the 1930s. Such theories are at best short-run, and as such they cannot convincingly rationalize what has been essentially a persistent phenomenon for six to eight decades.

Bureaucratic behavior is given center stage in still other explanations. These tend to stress the desire of bureaucracies to substitute growth for the profits prohibited them by political institutions. What is left unexplained is why the competition to get elected does not restrain growth unwanted by voters. Implicit in such a theory is the power of voters to prevent profit maximization from guiding political behavior, an extremely difficult task since profits are so easily disguised, yet these same voters are powerless to prevent behavior that causes bureaucracies to grow, a much easier task since bureaucratic growth is an easily observed phenomenon.

Finally, there are explanations of growth based on government's role as a redistributor of wealth. Such a role can hardly be denied, and it has been commonly recognized. But why this activity should expand persistently remains the essential unanswered question. One would need to assert the presence of underlying nongovernment forces that continue to create ever larger "maldistributions" in wealth that require evermore "corrective" action by government if the explanation for the growth of

government is to rest primarily on its role in seeking more or less inequality in the distribution of wealth. While the government surely does respond to pressure to redistribute wealth, I do not believe the prerequisite trends in wealth distribution that would be essential to such a theory exist, or, if they do, that they can be a very important cause of government growth.

All these explanations may explain government growth at particular times, and taken together their explanatory power may be improved. Nonetheless, we still do not possess a convincing explanation of the trend in government growth. Moreover, it would be desirable to have a theory of government growth during the 20th century that is not refuted by the experience of a quiescent government in the 19th century.

II. The Growth of Government.

That government has grown over the last four decades can be well documented from official statistics. Good data do not exist for many years prior to 1946, but the facts of this growth can be pieced together from a few historical studies of the phenomenon. Growth in the relative size of the government sector in the United Kingdom can be dated about 1900 (see Appendix Table 1), and in the United States about 1920 (see Appendix Table 2). Prior to those dates the relative size of government expenditures was held fairly persistently to less than 10% of the national incomes of the U. K. and the U. S., except for 1800-1831 in the U. K., a period that reflects the impact of the Napoleonic Wars.

Cross country measurement problems are forbidding. Insofar as inferences can be drawn from sketchy data it seems that the size of government spending relative to Gross National Product in the U. K. during the 1920s was about

23%, in the U. S. about 13%, and in Germany and Sweden less than 10%. The gap has been narrowed in recent years. The 1973 relative sizes of government sectors for the U. K., U. S., Germany, and Sweden, respectively, are 50%, 40%, 48% and 60%. In the U. S., the fraction of national income now spent by all levels of government is up more than three times its level prior to 1930. There is not much dispute that the relative size of government has increased in Western Democracies over the period comprising at least the last fifty years.

A significant fraction of that growth can be more surely traced for recent years. The recent pattern of the relative sizes of government sectors in the United States, Canada, and leading Western European nations, is shown in Appendix Table 3. In the twenty year period from 1953 to 1973, the relative sizes of governments have increased, on average, from 34% to 47% for these thirteen nations. That is roughly a 38% increase in relative size over twenty years. Only Japan and Switzerland seem to have atypically small government sectors. If defense expenditures are excluded from these totals (see Appendix Table 4), the average relative size of non-defense government sectors, excluding Switzerland, increased from 28% in 1953 to 45% in 1973, a 61% growth over twenty years.

Non-defense portions of government expenditures have grown relative to defense. This is especially true for the United States. Excluding Switzerland, for which defense outlays are not available after 1967, changes in government shares over five year periods averaged for the remaining twelve nations shown in Appendix Tables 1 and 2 are as follows:

Change in Percentage Share Accounted for by Government

	<u>Total</u>	<u>Non-Defense</u>
1953 to 1958	2.3	3.7
1958 to 1963	3.7	3.4
1963 to 1968	4.7	5.5
1968 to 1973	3.7	4.2

There also is a tendency for these changes to be greatest during the 1963 to 1968 period. However, a glance at Appendix Tables 1 and 2 reveals frequent exceptions to both these tendencies. No clearly dominant pattern of change emerges.

These growth rates are based on expenditures by governments uncorrected for relative price changes. Prices of government services, which are more labor intensive than nongovernment output, increased more rapidly than prices of nongovernment output. When corrections are made for differences in relative price changes, the "real" growth rate of government seems to have tapered off in recent years. Morris Beck, writing recently in the National Tax Journal,^{1/} attempted to correct for relative price changes. His conclusion is that

In real terms government's share of gross domestic product declined between 1950 and 1970 in a majority of thirteen developed countries studies...Allowing for data inadequacies, the study suggests that real [relative] size of the public sector may have peaked in many mature economies.

This may not imply much relief for taxpayers, who are paying government employees the higher salaries, but it does indicate that the number of persons employed by several of these governments is no longer an increasing fraction of the labor force.

These data indicate that growth in the relative size of governments is not just a recent phenomenon. Prior to the first decade of 1900, the

relative size of government remained rather constant although growth in the absolute size of government has even a longer history. Recent growth patterns, corrected for relative price changes, reveal a tendency to level off in recent years, but this seems attributable to a relative decline in defense expenditures; non-defense expenditures, in the U.S. primarily welfare-type expenditures, continue to grow relative to the economy. With two exceptions during the post World War II period, Japan and Switzerland, the pattern revealed by Western Democracies does not differ greatly. I will discuss these recent patterns toward the end of the article, but my primary concern is to explain the long-run tendency for government to grow.

III. The Political Market.

An understanding of the basic, durable forces that have moved Western Democracies toward larger government sectors requires that we turn away from mechanical explanations and those dependent on particular men and their ideas, and focus attention on the behavior of masses of people acting in their interests. The method by which behavior is analyzed in the market place must be applied to the polling place if political behavior is to be understood. The analogy was stated succinctly by Joseph Schumpeter.

...the social meaning or function of parliamentary activity is no doubt to turn out legislation and, in part, administrative measures. But in order to understand how democratic politics serve this social end, we must start from the competitive struggle for power and office and realize that the social function is fulfilled, as it were, incidentally -- in the same sense that production is incidental to the making of profits.^{2/}

To say that the polling place and market place are susceptible to the same mode of analysis is not to claim that these two markets work the same way. They do not. But neither moves independently of the demands placed upon them by their respective constituencies. The size of government has grown because effective demands found in the polling place have called for such growth.

Government action undoubtedly is motivated by many political pressures, some conflicting, some complementary. The difficulties faced by government in responding to these is revealed not only in recent energy policy but also in almost any arena of state action that has continuity over time. Thus, the English policy toward grain from 1550 to 1670 reflects alternating pressure from farmers and consumers as grain prices shift.

During the period, grain exports were periodically forbidden, allowed, permitted under license, allowed when the price was not above a specified figure, or otherwise regulated...After the relatively stagnant prices [of grain] of the 1560s, for example, the Justices of the Peace...were told to determine whether grain prices were sufficiently "reasonable and moderate" to permit export. In the 1580s and '90s, however, with the return of sharply rising prices, they were confronted with the "Book of Orders"...requiring them... to stop exports...After the 1650s...lower grain prices... and the fall in the rate of population increase all meant less anxiety about food supply and more about farmer's profits and landowner's rents. So in a society in which political power...was coming to rest more strongly in Parliament, it is not wholly surprising to find that body, dominated by landowner, as it was, voting agrarian encouragement and protection in the shape of the Corn Laws.^{3/}

Apparently short supplies of grain brought forth successful political pressures that prevented price from rising to market clearing levels and abundant supplies brought forth successful political pressures that blocked imports. Such behavior does not seem to reflect a unilateral power of

government, but a government more or less responsive to a largely independent constituency. This hardly means that political parties are perfectly competitive seekers of office, or that they do not exercise a degree of monopoly power when solidly in office. Indeed, there is much evidence that a government practices the equivalent of price discrimination in both the taxes it collects and the services it provides. Perhaps politics is most accurately viewed as very competitive periodically but with intervening periods during which the party in power exercises quasi monopoly control over political affairs; the strength of control during the intervening periods will reflect the party's relative strength at the polls. Even a monopolist, however, responds to shifts in the demand for his services. The size of the government sector is best explained by inquiring into the changing patterns of demand for its services.

Probably no single explanation of government growth is possible because government activities are not uniform with regard to purpose. Three categories of government activities useful for our purposes are market involvement, redistribution, and public supply. These categories can be stereotyped, respectively, by the tariff, the progressive income tax, and the maintenance of defense. By market involvement I mean government activity to aid or harm specific industries. Tariffs, subsidies, price supports, price ceilings, conditions of employment, restrictions on entry, and economic regulation narrowly interpreted are what I have in mind. These measures undoubtedly have a redistributive impact, that is their purpose, but they are not meant to alter the overall distribution of wealth to any significant degree. Redistribution refers to the attempt to realign the overall distribution of wealth, as through the use of progressive taxation or subsidies to the poor or the aged, the general purpose of which

is to alter wealth patterns for large groups of persons not necessarily employed in the same industry; a byproduct of such legislation may be anticompetitive, but its main purpose is to achieve a "more desirable" distribution of wealth per se. The politics of redistribution, nonetheless, is similar to that of protection, with the favored component of population in the redistribution scheme replacing the favored industry or union in the protection scheme.

Public supply designates those activities of the government, such as the provision of defense, highways, police, courts, money supply, postal services, and education, which, although they may have incidental protectionist and redistributive implications, are generally available to all or most citizens. However, the availability of such services may be restricted geographically. A public school located in one community, while provided to "all" in that community is not available to persons in other communities. Similarly, the provision of roads, police, and courts, may be uneven across geographic areas. Citizens may be foolish or wise in their assessment of the government's capacity to provide public supply goods efficiently; these goods may or may not be tinged with collective good characteristics; some who support their acquisition through government may be very much concerned with protectionist or distributive consequences; but the main reason for their provision by government is a belief by most people that this is a practical way to acquire such services.

I wish to explain the changing pattern of effective political demand for these categories in terms of certain developments in Western Society, beginning sometime in the 18th century and continuing to recent times. These developments are the industrial revolution, mass democracy, and mass

communications. There are some interdependencies linking these three, and they are not entirely exogenous to the growth of government, but for a rough and ready theoretical answer to questions about the size of government not too much injustice is done in assigning them the role of independent, causal variables. The basic pattern of growth in government that is to be explained by these variables is the following: The reduction in the degree of market involvement by government during the period between, say, 1750 and 1850, known as the period of a "laissez-faire" economy, the increase in market involvement from the end of the 19th century to the present, the increase in public supply over the same period, and the increasing emphasis given to redistribution since World War II. Of the three variables at work, by far the most important has been the industrial revolution, and I begin by considering its impact on market involvement.

IV. The Impact of the Industrial Revolution.

During most of the period from 1700 to 1900 Western nations created a social and political atmosphere that tolerated and protected the amassing of private wealth holdings. The response was the creation through private risk taking of great specialized industries and of important specialized skills. Specialization of activity became the hallmark not only of Adam Smith's Wealth of Nations but of the wealth of nations. Unlike earlier periods in which large numbers of persons were occupied at a few crafts and in self-sufficient farming or, at least, in farming for which there were no large external markets, the industrial revolution witnessed

the growth (and alteration) of identifiable, special interest groups, whether these be commercial farmers selling to others, especially to foreigners, the manufacturing industries, or the specialized skills of the steelworkers and miners. Substantial parts of the life-time earnings of a large fraction of the population became dependent on the success or failure of specialized industries and careers. The increasing specialization that characterized industry and agriculture during the 18th and 19th centuries is the single most important explanation of a growing government involvement in the operation of industries and markets. This involvement was pro competitive during the earlier part of the period, but toward the end of the 19th century the government's role was increasingly anti-competitive. The increase in government anticompetitive activity is readily explained by the increase in specialization that helped to define the industrial revolution. That revolution created relatively more special interests seeking protection. It also increased the number of potential targets available to others.

The political market place probably does tend to favor the specialized interest, whether an industry or a union, over the more diffuse interests of customers. In this respect the new economic theory of regulation is based on a correct insight. The gain to customers as a group from avoiding an increase in the tariff barrier generally exceeds the benefits to workers and shareholders in the industry to be protected through the tariff barrier. But the interest of the individual customer is usually small relative to that of the worker whose skill is specialized to the industry to be protected, so each customer in the political market may devote little effort to become informed about his interests or to actively pursue what interests he has.

But the political power of a group surely depends not only on the intensity of its interests, as measured by the fraction of income of each member's wealth to be affected by a government policy, but also on the breadth of interest in that policy, as measured by the number of persons likely to be affected. At times, breadth of interest can be so broad that it offsets the intensity of narrow interests. The Environmental Protection Agency and the Department of Health, Education, and Welfare adopt policies better calculated to raise jeers than cheers from affected industries.

The important industries that emerged during the industrial revolution offered an effective combination of narrowly focused interests and large labor forces. But whether narrow interests are protected or attacked through political processes, these processes depend on the existence of identifiable interest groups, and it is these that the industrial revolution supplied in increasing numbers. Specialization defined interests, but it did more than that. It subjected the well-being of these interests to external forces of supply and demand. The prices determined on these markets offered a controllable mechanism by which to respond to political pressures. As a larger fraction of the economy became specialized, the demand for market intervention grew at a pace that would have been impossible for a largely self sufficient economy.

Specialized interests do not always seek protection. The propensity to do so is related to the intensity of competition. The appeal for government intervention is enhanced if that competition finds its sources overseas. Early in the industrial revolution in England, the emerging

industries possessed clear competitive advantages over older methods of production, whether these were found at home or abroad. The appeal to government that was raised by these industries was not so much a cry for protection in this period as much as it was for a reduction of the barriers that prevented these industries from taking advantage of their competitive superiority. It is this demand for the removal of barriers protective of older specialized interests that made the period between 1750 and 1850 seem different from that which preceded and that which followed. It was different in effect, but not in cause, for the move to "laissez faire" was a response to the political demands of the new specialized interests.

It may be noted first that what limited measures of government size we possess fail to reveal a decline in resources channelled through government during the years prior to 1900. If the sample years occurring during and around the Napoleonic Wars are struck from the U. K. data in Appendix Table 1, say years 1800, 1814, 1822, and 1831, the remaining years reveal a rather stable relative size of government 1792 - 11%, 1841 - 11%, 1850 - 12%, 1860 - 11%, 1870 - 9%, 1880 - 10%, and 1890 - 9%. Scattered U.S. data also indicates a relatively constant share of resources being allocated through government during this period, approximate 6 to 7 percent of GNP. It must be recognized that constant shares during a period of very rapid growth in total and per capita incomes implies a rapidly growing absolute size of government. From a quantitative perspective, it is not true that the government sectors in the U.K. or U.S. shrank absolutely or even relatively during this 100 year period, and in Germany and France the relative size of the government sector during the late 1800s and early 1900s appears to have grown (Musgrave). But what government did during the earlier part of this period, the attack on old barriers to competition, was different than what is did during the

latter part of the period, the construction of new barriers to competition.

During the last years of the 18th century and the first third of the 19th, mobility in the labor markets was improved by striking down customs and laws that came into being prior to the industrial revolution. The middle third of the 19th century was characterized primarily by legislation that (1) removed still more older restraints on trade, in particular prohibitions on forestalling, regrating, and usuary, (2) increased the scope of free trade overseas, and (3) extended suffrage. The last third of that century was marked by increasing regulations of industry and by the granting to labor of the power to organize and strike.

This general pattern of political activity does fit a theory of increased government activity based on increasing specialization of economic activity once it is recognized that new special interests are served by sweeping aside protections previously won by old vested interests. While this is happening the relative size of government need not increase; it may even decrease. From this reduced size of government, the subsequent increase in size, fueled by the demands for protection from an ever growing specialized sector, will look large by comparison.

During the 16th and 17th centuries what specialization existed in England was largely identified by craft or by merchant, and sometimes these specializations were captured in the legislated distinctions maintained between towns and rural areas. The division of interests between these specialized groups and consumers provided foci in these earlier years for legislated intervention in private transactions.

This earlier species of government activity responded to the interests of a pre-industrial society, but was not in harmony with the interests of the great industries (nor, often, of their customers) that were to

rise during the 18th and 19th centuries in England. In particular, this earlier legislation created roadblocks to the free flow of labor and other inputs into these industries. Migration between towns and from rural areas into towns often was restricted by legislation that forced labor to remain occupied in rural industries and agriculture. Crafts and Guilds operated under protection of lengthy and legally enforced apprenticeship requirements, requirements that however reasonable they might seem from the viewpoint of the handcraft required to manufacture cloth, were unreasonable from the viewpoint of the labor requirements of power looms, for these could operate well with unskilled labor.

The emerging new mechanized industries that were to form the core of the industrial revolution in England did seek political help, but their interests then were served by a political policy that struck down the protective apparatus already in place to protect these older specialized interests of agriculture, crafts, and guilds. During the earlier periods of the industrial revolution increasing government help meant less overt government regulation, because what regulation existed catered to those older specialized interests being displaced by the new, more mechanized industries.

Protective legislation applicable to the trades and the guilds formed part of the legal environment in England even up to the beginning of the 19th century. The Statute of Artificers (1563) providing general protective constraints, although somewhat undermined by disobedience, was still in effect, both with regard to the setting of prices and the restriction on numbers of craftsmen allowed to work in the municipal trades and guilds. There were similar local restrictions in effect, particularly guild regulations

for specific towns and trades that operated as if they were the law of the land. Mantoux (1961) tells us

Both these sets of regulations, together with the rules dealing with industrial technique and with the provisions of the Poor Laws, were part and parcel of one whole, a characteristic monument of traditional legislation. In the middle of the eighteenth century this edifice was still standing, though much decayed and battered. But it was to be soon shattered, more by new interests than by new ideas, and the workers tried in vain to prop up its crumbling ruins.^{4/}

Under this body of traditional legislation the tenure of apprenticeship was long -- seven years -- and the number of apprentices limited by the number of adult workers; sometimes, as in the case of the Cutlers of Hallamshire, this limit was as low as one apprentice to one master. As employers became more specialized, ceasing to be merely one of the artisans, they sought from the government repeal of these restrictions on their managerial decisions and sources of labor supply. The Acts of Settlement (1662) prevented the free migration of labor, partly so as to retain a pool of labor services in rural England and partly to prevent the poor of one parish from becoming a burden on another.

Such regulations could not long persist in the face of industrial revolution. The new mechanized industries required more hands than the apprentice system and Acts of Settlement allowed. With the improvement in machinery and division of labor, long apprenticeships served no productive purpose, and the demand for unskilled labor increased in the towns. The interests of the manufacturers prevailed and early in the 19th century the provisions of these Acts were undermined, as were the poor laws which increasingly tended to discourage the seeking of employment. In similar manner the policy of freeing the capital markets, of eliminating

penalties on usuary, came to the fore on the English scene. The striking down of legislated imperfections in input markets is explainable by the interests of the new specialized industries. Attention was focused on eliminating older forms of protection, but even during these early years of the industrial revolution some positive protection was sought by emerging industries. The cotton cloth industry in England, for example, was protected against imports of printed cottons. But there was clear "net" movement toward freeing the English economy at home.

The move toward freer markets was echoed in international trade after the middle of the 19th century. This liberalization reflected in part the end of the Napoleonic wars and the beginning of reductions in international tensions. That trade tends to be liberalized when international tensions lessen, and to be protected when tensions heighten, is not unrelated to the phenomenon of specialization. A nation that produces a full spectrum of products has little reason to fear that the outbreak of hostilities will leave it stranded in some important economic dimension. But with a natural propensity toward increasing international economic specialization, this fear becomes a more understandable reason for engaging in economic protection. Privately operating markets cannot be expected to adjust prices to reflect a national fear of becoming dependent. Increasing specialization of economic activity will tend to tie inversely the prospect for free trade to the prospects for war. It is always safer to become more dependent on neighbors when at peace with them.

But, in addition, the interests of many of the new specialized industries in England often favored trade liberalization. Reducing English tariffs on foreign grains could reduce the real cost of labor to such industries, but, perhaps more important, such tariff reductions might lead to reciprocal reductions in foreign barriers to the exports of

English manufacturing industries. These were industries that had developed early leads over foreign competitors in the adoption of specialized and mechanized methods of production.

During this push for trade liberalization, Parliament was still influenced heavily by the interests of large land owners. The struggle between industry, which sought both to expand its exports and to reduce the cost of living to its workers, and large land owners, who sought to retain protection for agriculture, extended to the issue of suffrage. Brebner explains the support given by industry to an extension of suffrage to workers as an attempt to win support at the polls for free trade.

Under Huskison, Peel, and Gladstone, free international trade achieved a level of development in England that was never to be equalled again. It culminated with the signing of the Cobden treaty with France in 1860 which substantially reduced or ended "all duties on manufactures". England enjoyed unparalleled prosperity during the two decades beginning in 1850. World trade centered on England, and she led the world in many key industries.

The Cobden treaty called for no duties on imported goods which competed with goods made at home, but only revenue duties on goods not made at home. But when the treaty system of the sixties collapsed, it became clear that other nations were by no means prepared to forego protection. England, however, still held to free international trade, even as calls for protection mounted at home. These came primarily from agricultural interests and from industries producing clocks and watches, hats, boots, gloves, silks and ribbons, woolens, shipping, and iron, but the great move toward protection did not begin until after 1875. The movement received help from an earlier recession and also from the threat posed by Bismarck's growing influence in Europe.

There was, however, division in the ranks opposed to free trade. Some wanted tariff protection pure and simple, some desired to use English tariffs as a bargaining tool by which to bring about lower tariffs in Europe, and most nonagricultural opponents of free trade were opposed to higher English tariffs on foreign grains. It was not until international frictions again mounted, early in the 1900's, that England clearly abandoned its international policy of free trade. The seeds for that event were clearly sowed in 1895, when the protectionists succeeded in putting Joseph Chamberlin into the post of Colonial Secretary. The essential elements of Chamberlin's subsequent tariff reform movement was largely the work of manufacturers who suffered from foreign competition and foreign tariffs.

As the industrial revolution progressed in Europe, the new industries of England met stiffer competition from maturing counterparts on the Continent, and tariff barriers began to mount. Faced with robust competition on both sides of the channel, the natural resolution of these conflicting specialized interests was to divide the market by erecting tariff barriers. This movement to protection and increased government involvement was facilitated by the increase in political tensions. After 1900, it became clear that the interests of specialized groups were much more in accord with the seeking of protection from competition, but it should not be thought that protectionism had not been on the increase prior to this. The shift toward tariffs, toward legislative approval of unions (as labor became ever more specialized), or a host of minor measures since 1870, and earlier, reveal that protectionism had never really died.

The net shift toward liberalization from the middle of the 18th to the middle of the 19th centuries, the maintenance of protectionist currents during that period, and the net shift toward protectionism after 1900, are consistent with the particular demands, at particular times, of the interests brought about through growing specialization. Ultimately, the growth of specialization brought forth a growth in government.

The United States, born of suspicion and fear of central government, constructed a constitutional barrier to an expansion in the role of government. This legal barrier to government growth and the emotional and psychological feelings that imparted real strength to it were unique to the U. S. during the 18th and 19th centuries. The role of central government was limited by the peculiarities of our history, but even this legacy began to crumble after *Munn v. Illinois* (1877). This famous case allowed regulation to extend to property "affected with a public interest"; in this case, the court upheld the right of the State of Illinois to fix maximum charges collectable by privately owned grain elevators. It is difficult to reasonably construe "affected with a public interest" as anything but the existence of interdependence arising out of specialization. Such an interpretation suggests that this decision removed all legal constraints to extended government involvement in economic matters. The precedent was quickly applied to industries not previously thought subject to price regulation under the common law. But these extensions were sporadic and unsystematic.

The first major Federal intervention to regulate prices reflected an attempt to resolve the conflict between specialist growers (and shippers) of agricultural products and the railroads. The Act to Regulate Commerce, 1887, marked the beginning of a pattern of regulation based on dependencies

born of specialization in important developing industries -- the I.C.C., F.C.C., C.A.B., and S.E.C., at the Federal level, the regulation of electric and gas utilities at the local level.

Major commercial crops -- cotton, tobacco, and wheat -- benefitted from subsidies and parity prices. It is instructive to quote from the decision in U.S. v. Rock Royal Cooperative (1939), a case which legalized the right of the Secretary of Agriculture, under the Agricultural Marketing Agreement Act of 1937, to fix minimum prices to be paid for milk.

The people of great cities depend largely upon an adequate supply of pure, fresh milk. So essential is it for health that the consumer has been willing to forego unrestricted competition from low-cost territory to be assured of the producer's compliance with sanitary requirements, as enforced by the municipal health authorities. It belongs in the category of commodities that for many years has been subjected to the regulatory power of the state.

The specialization of milk production for shipment to large dependent cities could hardly be used to support such legislation in 1800, but it could by 1937. Similarly, the Supreme Court in the Sunshine Anthracite Case (1940), when upholding the right of a Federal Commission to establish minimum coal prices under the Bituminous Coal Conservation Act of 1937, used the rationalization that "If the strategic character of this industry in our economy and the chaotic conditions which have prevailed in it do not justify legislation, it is difficult to imagine what would".

The psychological impact of specialization may now be commented upon. In a self sufficient farming community, the main sources of disaster are adverse crop growing weather, infestation by insects, or an attack of the plague, but not primarily a fall in some basic price upon which the community was very dependent. These adversities are "acts of nature" not easily characterized as injustices wrought by the acts of fellow men,

but rather as misfortunes requiring heavenly redress and a dose of charity. Specialization probably reduced the magnitude of such misfortunes, and also the variability of incomes. Nonetheless the fortunes of industries, communities, and nations increasingly seemed to turn on events controllable by men if not caused by them. If the absence of specialized trade made such misfortune worse in an earlier day, it was not obviously because of what others did. In an interdependent world of specialized production, however, changes in relative prices imposed both losses and gains on large numbers of persons whose welfare became tied to trade with others.

These conditions of particular markets, involving the interdependence of men, seemed, therefore, to possess an ingredient of injustice not equally identifiable in the case of "natural" events. A person whose earnings were adversely affected by a decline in demand for his skills or for the product he produced could hardly view the event as less arbitrarily redistributive of wealth than a decline in his wealth brought about weather, but he could view it as less just and as more deserving of intervention designed to prevent its recurrence. A flood that deprived him of home and property might lead him to seek charity, but an inundation of his domestic market by the product of a foreign producer that deprived him of job and income would lead him to seek price protection from the "unfair" advantage possessed by his foreign competitor.

Narrowly conceived self-interest undoubtedly motivated much of the cry for government intervention, and specialized interests often exercised political leverage when contesting with dispersed opposition, but much support was available from those genuinely concerned about the "injustice"

of a harm wrought by events not obviously related to actions or to decisions taken by those harmed. The greater surprise would be to have found no growing appeal for protection as specialization spread to new activities. Faced with the apparent "injustice of it all," reformers stood ready to intercede in market processes, and risk-averse voters were prepared to support them even at a net cost to the nation.

There arose two sources of demand for government involvement in markets, a narrowly based one stemming from specialized self interest and a broader one premised on the desire to correct for the "injustices" of specialized society or for the separation of consumer control over the products he used. The broader demand undoubtedly lacked the drive and staying power of that based on specialized self interest, but it may have been important in the timing of government concern with particular markets and specialized activities. Specialized self interest could be counted upon to operate with persistence during good times and bad, but the supplementary demand for government involvement could be aroused mainly when conditions were adverse. The involvement of government in such matters probably has been most successful when its beneficees have been experiencing hard times, not booming conditions. A call to protect the steel industry when profit and employment in that industry are high is less likely to succeed than when they are low. This asymmetry constitutes evidence that more than narrowly based self interest is at work.

V. The Impacts of Mass Democracy and Mass Communication.

Democracy did not emerge fully blown from the shrinking powers of monarchies. Political representation of the type required to provide

incentives to political entrepreneurs did not appear upon the scene in the United Kingdom until about 1890. A substantial extension of the franchise waited upon passage in 1884 of Gladstone's Franchise Bill which extended the voting rights enjoyed by borough voters to the rural classes. The measure virtually provided manhood suffrage -- only those of no fixed abode, domestic servants, and bachelors living with their families were excluded. Some 2 million voters were added, nearly four times the number added in 1832 and twice the number added in 1867. Prior to this Bill, democracy in the U.K. was highly limited, and, therefore, not much in the way of redistributive legislation could be expected. Electorates were small -- at Marlborough, Wells, Thetford and Knaresborough, for example, they were less than 300 in 1865. Even Birmingham with a population of nearly 300,000 had less than 10,000 voters. Perhaps the U.K.'s first exposure to true mass democracy came as late as at the very end of the 19th century, and it was not until much later that a substantial fraction of adults, including women, came into possession of the right to vote.

The extension of suffrage during the last decades of the 19th century in England was partly at the urging of industry which saw in its workforce specialized interests similar to its own. By the end of the century the union movement became effective on the political scene, winning for itself the legal right to organize and strike. This, of course, opened a conflict in interest between industry and labor but in the main, with regard to tariffs and subsidies, these interests did coincide. The added dimension of political power emanating from enfranchised laborers surely strengthened the political appeal of protection, for it is in protection that commonality of interest in growing governmental interference existed in labor and

industry. The move to mass democracy initially strengthened the forces moving Western societies toward increased centralization.

The franchise in the United States began more democratically, but a combination of poll taxes, financial responsibility criteria, and residence requirements led to relatively small voter turnouts. From 1900 to 1970, by decades, votes per capita reveal the following pattern: 18%, 16%, 25%, 31%, 38%, 37%, 38%, 37%. The last four entries, covering the period 1940 to 1973, excluding World War II, mark a break with the lower voting levels of previous years and also coincide with the period of growing government activity with respect to redistribution.

The historical extension of the franchise also must have increased the political weight of the poor and lower middle income persons in Western Democracies, not only by bringing the vote to rural groups and wage earners, but to women and minorities also. The enfranchisement of women gave considerably more votes to the nonwealthy, because of their numbers, than to the wealthy. It would be difficult to explain the long and sometimes bitter battles for extending the franchise other than by assuming that the extension did in fact create additional representation in the market for government services.

Extension of the franchise could be expected to have some consequences for the provision of public supply and redistribution of wealth. I consider public supply first. Public supply is not generally made available to the population as a whole, as if such supply were a pure public good, but it

is generally made available to particular geographic areas, communities, and institutions. When the Urban Mass Transit Authority awards grants, these are for use in particular political jurisdictions. Roads and schools are built to serve specific regions and neighborhoods. There are exceptions, such as National Defense, but most government agencies are busy deciding which area, institution, or group is to benefit from government expenditures and which are not. Presumably, one of the important considerations will be how the provision of public supply impacts on votes and on the likelihood of reelection. Competition between political parties leads them to service voters more than non-voters, other things being equal. This translates into a system that tends to tax all but to benefit fewer than all, a primary reason for seeking public supply from the government, with a disproportionate share of benefits going to voters, especially to voters not wedded tightly to any of the competing parties.

Of course, non voters receive public supply as well, especially in cases where geographic or institutional discrimination is difficult. Nonetheless, it has been characteristically true of the provision of public supply that discrimination will be practiced where it can. The allocation of equitable or of more than equitable funds to schools serving primarily black students awaited the effective enfranchisement of large numbers of blacks. The allocation of public supply among various "pork barrel" projects is undoubtedly related to the number of swing votes involved. The political pressure that can be brought to bear on this allocation process is determined by factors other than the fraction of involved population possessing the vote, and many of these factors will be more

important than mere enfranchisement. Still, in the background, counting for something, is the ability to cast a ballot for one party or another.

The enfranchisement of larger fractions of the population, especially around 1900 when the number of voters was still relatively small, must have increased the effective political demand for public supply among the middle class and, later, among the poor, and must have diluted the political power of the wealthy. Political parties needed to secure larger number of votes in the competition to get elected and, in the process, they needed to provide increasing amounts of public supply to a broader spectrum of population.

The resources for the provision of such supply came from the nation at large, so that the opposition to increasing public supply was very dispersed and increasingly diluted by larger numbers of new voters. In the terminology of the new political science, enfranchisement lowered the income of the median voter. In so doing, enfranchisement increased the effective demand for public supply, for the poorer is the voter the less he can be taxed to fund the provision of public supply.

Through the provision of public supply, some redistribution took place, because the public supply appeal for government benefits, case by case, was based on narrow regional or institutional grounds. A populist demand for pure redistribution, say by income class, faced handicaps in using the political process because the benefits to be derived were dispersed and not linked to more confining considerations of geography.

The provision of public supply to increased numbers of voters also provides some explanation of why larger government came to involve larger number of bureaucrats. This was not merely because public supply often

requires labor resources, but because the nature of political competition encourages the use of larger numbers of in-house laborers as the fraction of the population possessing the vote increases. To see why this is so, it is necessary to consider certain aspects of political competition in a mass democracy.

A political party cannot specify in detail, or even broad outline, the complex package of services that it will deliver, nor can voters easily ascertain the impact on them of those elements of the package that are detailed. This is one reason for appealing to voters with "gut" pork barrel projects. All parties are against inflation, unemployment, and (usually) war, and all favor an effective defense. Even experts cannot agree on proper monetary and fiscal policies, or on when defense outlays rise to redundant levels. The voter must choose between contending parties on the basis of vague and impressionistic ideas about how well a particular party will perform when confronted by equally uncertain problems.

Lack of reliable knowledge about rival parties, and about the impact of particular policies, deters voting. In addition, as is widely recognized, most voters have very little incentive to become informed about parties or issues because each lacks a quick and effective method for influencing party policy. No one vote has a perceptible impact on the political process, so "let someone else" do it. A party that aspires to win must exert itself to get its vote out. On occasion, the masses of uninformed voters may achieve a better understanding of their interests, as when a dramatic issue of war or peace crystallizes issues and parties and generates unusual interest in the election, although, even then, I

doubt that voter knowledge and motivation are significantly improved. Certainly in the garden variety of elections, those that really determine the long term course of a nation, most voters will be unmotivated and poorly informed.

The competition to get elected, which is real if periodic, must cope with these characteristics of voters. A party that sends a few of its leaders out to inform and lecture the mass of voters, so that they truly understand more, is likely to lose the election to a party that sends large masses of party workers out to cajole or to bribe, both with dollars and favors. Rivalry between parties based significantly on the size and effectiveness of the army of political workers that can be mustered, requires a method of paying this army. That method overwhelmingly is appointment to office in the bureaucracy. A party whose philosophy is to reduce the size of government obviously labors under a handicap in recruiting this army of political workers. It will tend to win control mainly on those occasions when political issues transcend the garden variety, when a popular folk hero leads it, or when the party that espouses bigger government has pushed too far, too fast in taxing citizens. The nature of political competition in a democracy thus gives rise to the recruitment of large numbers of followers who seek their reward from the public treasury in the form of wages, staff, and programs.

The larger is the number of votes to be gathered in, the larger will be the desired number of party workers. No party wishes to divide the spoils of victory among more members than are necessary to deliver a strong showing at the polls, but this number will increase approximately as does the population of voters, vote gathering being the labor intensive activity

that it is. Political competition thus can be expected to keep bureaucracies growing at least as fast as the voting population. This will yield only proportionate growth in number of bureaucrats unless the franchise is being extended, or is being exercised defacto by an increasing fraction of the population.

The extension of the franchise may, in some cases, create its own demand for political action and, thereby, an outlet for the services of party workers in a growing bureaucracy. Present commissions and agencies to protect women's rights receive part of their force and prominence from the fact that women can vote. Similarly, the civil rights movement, while winning the vote for large numbers of blacks, also created a new constituency calling for actions that require new government activities and personnel, and new directions of wealth transfer.

The advantage in eliciting a political response possessed by an important industry, whether we speak of owners or workers, or by a geographic region, is two-fold. The benefits are concentrated on a narrower, common interest group, so that ample motivation to solicit such aid is often present, even when the total aid to be received is less than the costs thereby imposed on a much larger, but dispersed, group of consumers or taxpayers. This may be termed the incentive advantage. There is also an organizational advantage in as much as members of an industry or geographic region are normally brought into repeated contact while going about the business of living and earning a living. The organizational costs of guiding the interests of members of such a group into political channels for the purposes of receiving protection, subsidy, or other goals is therefore considerably less than for dispersed members of "nongroups".

These considerations make it difficult, but not impossible, for dispersed "nongroups", such as the poor, the middle class, the wealthy, the tall, the obese, the consumers, etc. to bring proportional weight to bear on political policy formulation. In general, persons in such groups are sufficiently numerous that even a large potential total gain becomes a small one per person; the incentive for individuals to act is therefore small. The cost of organizing coherent political action for such "nongroups", however, is large because of the absence of frequent normal contact. For these reasons, effective political action requires somewhat different mechanisms than for specialized, common interest groups. The political entrepreneur is an important part of such a mechanism.

The cost-benefit calculus of mass democracy creates a demand for representation of large masses of voters that is serviced by persons whose rewards are the power and prestige of office not the wages of one who lobbys for industry or labor. The informational and free-rider problems that plague large dispersed groups of voters undermine any attempt to compensate the political entrepreneur other than through political office. His payment is the usual mixture of rewards, financial and political support, power, prestige, and, if he personally espouses the cause he represents, some psychic satisfaction. The feasibility of being able to receive such incentives depends a great deal on his ability to communicate cheaply with potential supporters and on their ability to deliver votes to him at election time. Political and technological developments since the 1930s have significantly reduced the cost of these actions.

The political development was the extension of the franchise. This put voting power into the hands of large numbers of citizens, thus creating

a potential source of "heterogeneous" support different than that emanating from narrowly based common interest groups. These latter can bring considerable political power to bear whether or not they possess the vote. They would be effective in dealing with a monarch or dictator, and they gain from possessing a specialized labor force mainly under democratic conditions. "Nongroups", in contrast, require the explicit political vehicle offered by the franchise.

The technological development was the dramatic reduction in the cost of communicating with large numbers of people. There were continual reductions in the cost of the printed word, but it was the development of radio and television that made available to political entrepreneurs a truly effective, low cost method of communicating. Votes (and contributions) from large numbers of "nongroup" members became attainable.

These two developments, mass democracy and effective, low cost mass communication, increasingly complemented each other during the decade of the thirties, but, with the advent of television after World War II, political entrepreneurs and "nongroups" of dispersed voters possessing similar interests gained political influence. The advantage in influencing government policy, no doubt, still rests with specialized groups, but the magnitude of the advantage has been reduced significantly in recent years. It is now possible to constitute the "middle class", the elderly, the nonsmokers, etc. into "special" interest groups much more effectively than in the past.

It is undoubtedly more difficult to maintain such groups as viable political forces for as long as it is possible to maintain regional or

industry related special interest groups, but it is much easier than heretofore to marshal political support from them for a short period of time. The effectiveness of environmentalism and "consumerism" in the recent past is evidence of their increasing political power. The incentive of such supporters to become well informed is slight, given the dispersed nature of the support, and there is more likely to be error in such legislation when viewed from the true interests of many of its supporters. Political support for such legislation is also more likely to wane after a relatively short time because dramatic episodes, such as the thalidomide experience or the Three Mile Island accident, are required to marshal the services of the mass media and the interests of viewers. Even the "poor", the "middle class", or the "wealthy" are so heterogeneous in other characteristics and so temporary in particular income classification, that their durability as long term political force is still subject to question.

The decade of the 1960s saw a fusion between special interest legislation, obtained by an organizationally cohesive minority, and general redistribution legislation. Through motivation born of felt discrimination, institutionalized in civil rights organizations, grown politically cohesive through geographic concentration, the black minority acquired political energy and organizational power much greater than what it had possessed in the past. Such power and the sympathy it received from many in the North, could not have been secured as easily without low cost mass media. Many of the programs sought and won by blacks produced spillover benefits for poor whites, and this brought forth supplementary support for the redistributionist policies pursued by the organized black minority. The impact of welfare programs on nondefense expenditures in the U.S. after

engendered in recent years stronger political forces favoring redistribution from the young to the old. The coincidence of the political emergence of the aged and the black minority made for atypically effective "quasi specialized" groups seeking redistribution beginning about 1960. Between 1960 and 1970, the government responded by increasing significantly the share of its resources used for redistribution.

The broad political implication of the extension of the franchise and the reduction in the cost of mass communication is an increase in the viability of populism as a political strategy for political entrepreneurs, but the implication of populism for long term growth of government is unclear. There is likely to be a rash of attempts to resolve problems by legislation or commission, often in situations in which no real solution exists or in which the real cost of "solving" the problem are poorly perceived -- auto safety, drug safety, the energy "crisis", etc.

But populism may also produce broadly based appeals to reduce taxes. With mass communications, the disadvantages of dispersed interests are not so great. Since government can resort to borrowing or to the printing press to finance its expenditures, appeals to cut taxes may be an ineffectual solution to such problems as inflation. But to the extent that calls for less taxes are translated by politicians into calls for less government expenditure, the increase in the political viability of populism should reduce the relative growth of government. Just how the inconsistency is resolved between populist calls for governmental action, on one hand, and for lower taxes and less inflation, on the other hand, will determine the future pattern of government growth that emanates from the combination of franchise and mass media. Up to now the evidence is

mixed. There has been an increase in the number of new government agencies, such as EPA, OSHA, DOE, etc. But there also has been an increase in the political viability of programs to cut taxes and reduce industry specific regulation. One clear effect of mass media competition will be to reduce the armies of political workers needed to get out the vote. This could well lead to a reduction in the number of bureaucrats per capita even if it does not reduce government expenditures per capita, and there seems to be some evidence that this has in fact been happening.

VI. Some Statistical Evidence.

The statistical study to be described now is based on data for each of the 48 contiguous states. These have been collected primarily for each of two periods, 1940-42 and 1970-72, and, on a more limited basis, for 1960. The objective is to determine whether the growth of state and local government can be explained in terms of the ideas put forth in parts IV and V above. The thirty year time span does not go back far enough to provide rich material by which to examine the impact of the industrial revolution, or of the most important extensions of suffrage, developments that had matured in the United States before World War II, but detailed data are not easily found for earlier years. Even so, there are enough differences in voting patterns and degree of industrialization among the forty eight states during this period to allow some evidence to be presented. The period is better suited to examine whether differences in the sizes of diffuse interest groups are associated with differences in the sizes of state governments.

The period under examination is, of course, too recent to examine the impact of industrialization when its main effects were to reduce barriers to international trade and to increase mobility in input markets. The impact of specialization is therefore taken to be that of increasing the size of government. The theory discussed above yields two major implications.

1. Industrialization, by increasing the fraction of the population employed in specialized tasks, was a primary source of growth in the relative size of government before World War II, a period when government responded to the relative increase in demands for protection from these specialized interests.

2. After World War II, growth in the relative size of government became increasingly associated with the enhanced political effectiveness of diffuse interest groups.

Before launching into a description of variables and regression equations, it might be useful to present a general view of what is to be explained. In Table 1, for the period between 1940 and 1970, the forty eight contiguous states are ranked by growth in number of state and local government employees per capita. A casual glance at the table suggests a tendency for those states that have experienced rapid industrialization and extensions of the franchise during this period, many of them Southern states, also to have experienced the most rapid growth in the relative sizes of their government sectors. Conversely, those states that remained agricultural and that employed an extensive franchise by 1940 tended to experience the slowest growth rates in their government sectors.

Table 1

Ranking of States By 1940 to 1970 Growth Rates of State and Local Government

<u>Rank</u>	<u>State</u>	<u>Growth Rate</u>	<u>Rank</u>	<u>State</u>	<u>Growth Rate*</u>
1	Georgia	1.63	25	Indiana	.74
2	Alabama	1.56	26	New York	.74
3	Mississippi	1.43	27	Colorado	.73
4	Arkansas	1.34	28	Rhode Island	.68
5	Tennessee	1.33	29	Pennsylvania	.65
6	South Carolina	1.31	30	Idaho	.63
7	Maryland	1.31	31	New Jersey	.63
8	North Carolina	1.22	32	Connecticut	.62
9	Virginia	1.20	33	Michigan	.61
10	Kentucky	1.18	34	Nebraska	.60
11	New Mexico	1.12	35	Massachusetts	.59
12	Arizona	1.03	36	Iowa	.59
13	Delaware	1.02	37	Ohio	.53
14	Missouri	1.00	38	Montana	.51
15	West Virginia	.99	39	Wisconsin	.47
16	Louisiana	.98	40	Kansas	.47
17	Florida	.96	41	Utah	.41
18	Wyoming	.96	42	Minnesota	.41
19	Illinois	.94	43	Vermont	.36
20	Texas	.93	44	Maine	.34
21	Oklahoma	.92	45	North Dakota	.29
22	California	.84	46	South Dakota	.11
23	Nevada	.81	47	Oregon	.05
24	Washington	.78	48	New Hampshire	.02

*Growth rate = $\frac{\text{number of state and local government employees per capita, 1970}}{\text{number of state and local government employees per capita, 1940}}$ - 1

The main variables to be used in a closer examination of government growth are the following.

ΔN = growth rate in the number of state and local government employees per capita.

$\Delta N'$ = growth rate in the number of state and local government employees per capita excluding public education employees.

$\Delta N''$ = growth rate in the number of public education employees per capita.

ΔA = growth rate (always negative) of the fraction of labor force employed in agriculture.

ΔM = growth rate in the 18-44 (or 21-44) "middle aged" fraction of voting aged population.

ΔV = percentage change in the fraction of population voting in presidential elections.

ΔP = growth rate in state population.

There are serious collinearity problems among these variables; these are discussed below, but for now let us plunge ahead. The fraction of a state's work force that is agricultural, A, is taken as an (inverse) index of economic specialization. Clearly, as discussed in section IV, modern agriculture can be viewed as an important specialized interest, so that an increase in A could be interpreted reasonably as increased specialization of one sort, perhaps in association with decreased specialization of another sort -- commercial activity. Such an interpretation, reasonable at the national level of government, seems unreasonable at the state level.

The specialized interests of agriculture may be served at the national level by price supports, tariff protection, or subsidies. At the state and local levels such protection is impractical. A tariff on agricultural commodities imported into a state (not to be confused with a nation)

generally would be unconstitutional. If the state were highly specialized to producing that agricultural product, the cost of the tariff would fall primarily on the state's farmers as consumers. An attempt to control the supply of agricultural products shipped out of the state, in the hope of raising the price of these products, would work only if the elasticities of supplies from other states were not very high. This might be true for selected warm weather fruit crops, but for grain crops, cotton, tobacco, etc., there are several states from which production could be expanded to offset the attempt to curtail output coming from one such state.

A state's agricultural interests could also seek a subsidy from the state. But if the state were virtually all agricultural from whom would the subsidy come? Even agricultural interests can be protected better if others are around to share the cost. As a state's specialization in agriculture begins to fall, or as the elasticity of supply of substitutes from other states decreases, some of these sources of protection become feasible at the state and local level. An approximation of tariff protection was achieved after World War II by butter producing states that succeeded in restricting sales of margarine within their boundaries. There existed considerable numbers of nonbutter producers within those states who, in effect, were forced to pay for this protection. As A decreases some such protection schemes become possible, even for agricultural interests, at the state level. Subsidies for agricultural research and education are another example; by distinguishing between public employees in education and public employees in other activities such subsidies can be accounted for.

The increase in commercialization of a state's economy that accompanies a decrease in A creates a richer opportunity for protection. A state that is, say, 80% agricultural, will contain many more different specialized interests than a state that is 80% agricultural, the number of different crops being much more limited by location, land type, and demand than the number of commercial products and services. There are thus more specialized interests to protect. In a highly commercialized state most state residents will be members of different specific special interest groups, so that each special interest can hope to spread the cost of protection to many who are not members of its group. State personnel required to enforce the licensure of the professions and retail establishments, the cartelization of local transport, the maintenance of boards to maintain prices of alcoholic beverages, etc., will quickly exceed in numbers those required to protect a state's agricultural interests as the degree of commercialization increases. The argument for associating lower levels of A with higher levels of specialization can hardly be correct in all possible dimensions or all possible situations, and, in fact, it may be too weak in general to test the role of specialization over so recent a 30 year time period. Nonetheless, the expectation is that larger declines in A will be associated with more rapid growth of governmental sectors. Since ΔA is uniformly of negative algebraic sign, this implies that a negative regression coefficient should link ΔA to government growth.

The fraction of voting population aged 18 to 44, measured by variable M , is taken here to be the most important diffuse voting group opposed to redistribution to the aged. This group is about to or already has entered into the high earning phase of life cycle earnings. It therefore constitutes a promising source of funds for redistribution to the aged. The simple

correlation between the fraction of population in this group and the fraction older than 64 years of age is $-.74$, so, indirectly, variable M measures inversely the impact of the aged in the population. Growth in the fraction of population falling into class M should be associated with lack of growth in those governmental sectors most concerned with income redistribution. ΔM also is of negative algebraic sign, so it too should take a negative regression coefficient if reductions in M are to be associated with the growth of government.

Variable V indexes the extent to which the franchise is exercised. Differences in V existed in 1940 between southern, border, and northern states, but by 1970 these differences had diminished significantly. Those states experiencing a growth in V will have experienced more rapid increases in the effective demands for public goods and redistribution, since increases in suffrage generally extends the vote to lower income groups. ΔV is generally positive; the theory therefore implies a positive coefficient. The growth rate of population, ΔP , is included to control for possible scale economies (or diseconomies) in the size of state and local government. Adjustments in the size of government to accommodate rapid changes in population would also be reflected in ΔP .

Variables N , N' , and N'' are available for 1940 and 1970, but only N has been collected for 1960. The interest groups affecting the size of the public education "industry" may be substantially different than those affecting the delivery of other government services. This would generally be true for each different government service, but the public education occupies such a large fraction of government employment that it is likely to have a more discernable impact on government size than

are the services of police and fire protection, etc. It is therefore separated from "the rest of government" and denoted here by N'' . N' counts those government employees concerned with governmental tasks other than education; it includes those concerned with direct redistribution programs. ΔN , $\Delta N'$, and $\Delta N''$ are all generally of positive values.

The means and standard deviations of these variables are reported in Table 3 and simple correlation matrices are given in Table 4; reference will be made to these tables later.

Ordinary least square techniques are used to estimate the coefficients for linear equations exhibited in Table 2. The first three equations, one for each measure of per capita government growth, are estimated for the entire 1940 to 1970-2 period. The fourth equation is estimated for the first 20 years and the fifth for the last ten years.

Variables ΔM and ΔV have a significant association with total government growth as shown in equation (1). The direction of their associations is consistent with the ideas put forth above. Those states experiencing higher growth rates in votes per capita also experienced higher growth rates in government employment per capita. Those states experiencing the most rapid decline in young and middle aged voters per capita (ΔM is negative) also experienced the most rapid growth in government employees per capita, or, viewed from a different perspective, those states experiencing the more rapid growth in numbers of aged per capita also experienced the more rapid growth rate in government employees per capita. The explanatory variables most closely associated nationally with redistribution and for public supply do quite well.

The decline in the number of agricultural workers per capita, the variable most closely associated with the rise of industrialization (and

Table 2

Government Growth Regressed on ΔA , ΔM , ΔV , and ΔP

("t" statistics in parentheses)

Time Period	Dependent Variable	Coefficients of				Constant	Adjusted R ²
		ΔA	ΔM	ΔV	ΔP		
(1) 1940 to 1970-2	ΔN	-.00531 (0.83)	-3.243 (2.91)	.167 (2.17)	.087 (1.32)	.467	.45
(2) 1940 to 1970-2	$\Delta N'$	-.0173 (2.21)	-5.135 (3.76)	.144 (1.52)	.0343 (0.43)	.020	.58
(3) 1940 to 1970-2	$\Delta N''$	.0237 (3.02)	-1.072 (0.78)	.271 (2.86)	.133 (1.64)	1.350	.19
(4) 1940 to 1960	ΔN	-.0106 (2.23)	-1.59 (2.01)	.143 (1.71)	.283 (3.57)	.052	.48
(5) 1960 to 1970-2	ΔN	.00186 (0.29)	-1.172 (1.60)	.126 (1.75)	-.340 (3.92)	.482	.35

Table 3
Variable Means and Standard Deviations

	<u>Time Period</u>					
	<u>1940 to 1970-2</u>		<u>1940 to 1960</u>		<u>1960 to 1970</u>	
	<u>Mean</u>	<u>S.D.</u>	<u>Mean</u>	<u>S.D.</u>	<u>Mean</u>	<u>S.D.</u>
ΔN	.805	.384	.264	.225	.425	.127
$\Delta N'$	.600	.538				
$\Delta N''$	1.174	.390				
ΔA	-16.119	9.656	-12.037	7.400	-4.081	2.922
ΔM	-.047	.044	-.041	.039	-.006	.021
ΔV	.257	.819	.144	.418	.037	.248
ΔP	.649	.660	.363	.323	.180	.184

Table 4

Simple Correlation Matrix - 1940 to 1970-2

	$\Delta N'$	$\Delta N''$	ΔA	ΔM	ΔV	ΔP
ΔN	.93	.54	-.52	-.59	.61	-.04
$\Delta N'$		.21	-.65	-.67	.65	-.18
$\Delta N''$			.18	-.10	.15	.23
ΔA				.46	-.72	.27
ΔM					-.51	.20
ΔV						-.23

Simple Correlation Matrix - 1940 to 1960

	ΔA	ΔM	ΔV	ΔP
ΔN	-.58	-.46	.54	.13
ΔA		.57	.71	.26
ΔM			.55	.37
ΔV				-.30

Simple Correlation Matrix - 1960 to 1970-2

	ΔA	ΔM	ΔV	ΔP
ΔN	-.21	-.28	.36	-.54
ΔA		-.13	-.50	.34
ΔM			-.15	.08
ΔV				-.21

protectionism) is not strongly related to overall government growth in equation (1). However, a glance at equations (2) and (3) reveals that total government growth measured in equation (1) cloaks two strong associations for the two sub parts of such growth. The rise of industrialization is positively associated with government growth in the non-educational sector, as can be seen in equation (2) where greater negative values of ΔA are translated through the negative coefficient into larger values of ΔN ! But in equation (3) the reverse relationship holds with respect to growth in numbers of government education employees per capita; the larger the decline in numbers of agricultural workers per capita, ΔA being negative, the smaller the growth of this government sector. Until more time can be given to study this result, I am inclined to attribute this relationship in large part to the fact that private schools become more numerous the more urbanized becomes the state. The dependent variable in equation (2), $\Delta N'$, is unaffected by the peculiarities of the educational split between private and public schools, and in that equation the decline of the rural condition is strongly associated with the rise of the bureaucratic condition.

The period 1940 to 1960 examined in equation (4) essentially confirms equation (1) with respect to direction for variables ΔM and ΔV , although the coefficient of ΔV does not rise to the usually accepted levels of statistical significance. ΔA , however, exhibits a strong association between reductions in agricultural employment per capita and increases in per capita government growth rates. The decline in agricultural employment was much more marked from 1940 to 1960 than after 1960 (see Table 3), while private education grew in popularity more rapidly after 1960 than before. These two developments combine to help highlight the

association between the rise of industrialization and the growth of government for this early period even though education workers have not been sorted out. The absence of these developments probably causes the reversal in sign for ΔA in the period 1960 to 1970-2 shown in equation (5). During this period, ΔA was but one third its absolute value of 1940-60 (see Table 3).

The growth rate of population becomes significant in equations (4) and (5), but with a puzzling reversal of sign. The same reversal is shown under ΔP in the second and third rows of the first correlation matrix of Table 4. The puzzle raises questions stemming from collinearity problems. ΔP is more highly correlated with ΔM and ΔV in the earlier period, but with ΔA in the later period.

A sharp change in voting behavior is also suggested by Table 4. In the 1940 to 1960 period reductions in the relative sizes of the agricultural sector and the young-middle aged voter group, ΔA and ΔM , were strongly correlated positively with increases in votes per capita, but in 1960 to 1972 the correlation is reversed, indicating reduced political participation by these groups in the later period. This and the changing role of population growth suggest that other factors are at work in the unexplored milieu within which these variables are connected.

Table 4 also reveals a very high intercorrelation between explanatory variables. This is especially true of ΔA , ΔM , and ΔV both for the entire period and for the period 1960 to 1970-2. It is difficult to draw clear inferences about the independent relationship between these variables to government growth under the circumstances.

The explanatory variables used above to record changes in various dimensions of a state over time may also be used to compare differences between states at any given time. For example, the relationship between comparative sizes of agricultural sectors across states and comparative sizes of government across states may be examined. The results of such a study are presented in Table 5. Table 5 includes two new variables. G , which is a Gini index of income inequality is added to the study; ΔG was not included in the study of government growth (exhibited in Table 2) because of serious definitional and measurement problems with regard to changes in income inequality over time. Equations 1'' and 3'' include a variable E which measures, for 1970-2, the ratio of public education employees to private education employees; it is included only for equations seeking to explain N and N'' which include the public education "industry".

Several aspects of Table 5 merit comment. Most important is the change in the role of income inequality. This bears directly on the implication that growth in the relative size of government became increasingly associated with the enhanced political effectiveness of diffuse interest groups because of reductions in the cost of mass communication and defacto extensions of the franchise. For the period 1940-2 variations in income inequality among the states had little explanatory significance for the relative magnitudes of government employment, whether government employment is measured by N , N' , or N'' . For the period 1970-2, however, greater income inequality is quite significant in its positive association with N and N' and somewhat less significant in its association with N'' . (See equations (1), (2), and (3).) Between 1940-2 and 1970-2, something seems to have happened to make government more responsive to income inequality, but the data do not allow a determination of whether larger

Table 5

Size of Government Regressed on G, A, M, V, and P

("t" statistics in parentheses)

Year	Dependent Variable	Coefficient of					Constant	Adjusted R ²
		G	A	M	V	P		
(1) 1970-2	N	12.167 (2.77)	.0315 (1.95)	8.866 (2.40)	3.401 (2.70)	-.000005 (0.32)	-8.124	.31
(1') 1940-2	N	-.559 (0.43)	.016 (2.26)	-5.217 (1.60)	2.526 (3.04)	-.000004 (1.59)	5.102	.50
(2) 1970-2	N'	8.734 (2.82)	.00121 (0.10)	-.0324 (0.00)	1.256 (1.41)	.000009 (0.74)	-2.355	.10
(2') 1940-2	N'	.163 (0.05)	-.00043 (0.08)	-6.724 (2.50)	.987 (1.44)	-.000018 (0.83)	5.576	.44
(3) 1970-2	N''	3.433 (1.67)	.0303 (4.01)	8.899 (5.16)	2.145 (3.64)	-.000014 (1.82)	-5.769	.59
(3') 1940-2	N''	-.715 (1.33)	.0163 (5.61)	1.428 (1.05)	1.526 (4.42)	-.000024 (2.18)	-.420	.59
(1'') 1970-2	N	11.297 (2.64)	.0313 (1.99)	7.234 (1.97)	3.426 (2.80)	.000002 (0.14)	-6.895	.36
(3'') 1970-2	N''	3.018 (1.94)	.0302 (4.12)	8.120 (4.73)	2.157 (3.78)	-.000001 (1.34)	-5.183	.62

government size represents an attempt to reduce existing large income inequality or to protect or produce such inequality. There can be little doubt, however, that a much closer statistical association between government size and income inequality has emerged during the thirty year period under study. The statistical association is of rather recent vintage. Equation (1) run on 1960 data fails to reveal such an association, so its emergence can be dated sometime between 1960 and 1970-2 that income inequality has such an association in 1970-2 is perhaps not as surprising as the absence of such an association in 1960 and 1940-2; the phenomenon seems to be new.

The second finding is the statistical significance of the relationship between per capita voting, V , and both N and N' . An increase in per capita voting seems to bring forth an increased public education supply. It might be argued that larger numbers of government employment yield larger numbers of votes per capita, so that the causation is reversed, but if that were so there should also be a significant relationship between N' and V ; the data fail to reveal such an association. The statistical relationship between V and size of government revealed in Table 5 is consistent with the relationship between ΔV and the change in the size of government revealed in Table 2.

The significance of M , the fraction of population between 18 and 44, exhibits a changing relationship to government size. In 1940-2, M was significantly and negatively related to N' . The larger the income earning fraction of the population the smaller the non-educational sector of government; since that age category pays most of the taxes, an inverse relationship between it and the component of government most concerned

with redistribution is not too surprising. Note that no strong relationship between M and N'' existed in 1940-2. In 1970-2, M and N'' are significantly and positively correlated. This is a reasonable relationship between these two variables since persons in the 18-44 age group are likely to have a positive interest in the public supply of education; the absence of a correlation between M and N'' in 1940-2 is more puzzling.

In Table 2, those states exhibiting the greater reductions in the fraction of population in the 18-44 category experienced greater increases in the relative size of government. This finding is generally confirmed in Table 5 for 1940-2 by the inverse relationship between both N and N' and M (equations (1') and (2')) but not for 1970-2.

The fraction of employment in agriculture, however, does not yield a statistical relationship to size of government in Table 5 that is entirely confirmatory of the relationship revealed in Table 2. In Table 2, the larger the reduction in size of the agricultural sector, ΔA , the larger the increase in noneducational government employment, $\Delta N'$ (see equation (2)) and the smaller the increase in educational employment $\Delta N''$. In Table 5, the sizes of agricultural sectors, A , are not statistically related to per capita noneducation government employment, N' ; in this respect Table 5 fails to add confirmation to the result shown in Table 2. With respect to public education employment per capita, N'' , there is a positive relationship association with A (see equations (3) and (3')); this is confirmatory of the relationship shown in Table 2 where greater reductions in the size of the agricultural sector, yield smaller increases in public education employment, $\Delta N''$ (see equation (3)). The addition of variable E , the ratio of public to private education employment in a state, in

equations (1'') and (3'') does not alter any of the associations revealed in equations (1) and (3).

APPENDIX

Statistics on the Size of Government

Table 1

U.K. Government Expenditures As A Percentage Of GNP

Year	Veverka Estimates Total	Peacock and Wiseman	
		Total	Excluding Interest and Military
1792	11%		
1800	24		
1814	29		
1822	19		
1831	16		
1841	11		
1850	12		
1860	11		
1870	9		
1880	10		
1890	9	3.8%	5%
1900	15	14.4	6
1910		12.8	8
1920		26.1	11
1928		24.2	13
1933		25.9	16
1938		30.1	16
1950		39.5	26
1952		41.9	24
1955		37.3	22

Source: Peacock and Wiseman, The Growth of Public Expenditures In the United Kingdom (NBER, Princeton University Press, 1961), pp. 37, 42, and calculated from Appendix tables.

Table 2

The Relative Size of Government (Federal, State, and Local) In the United States, "Real" Expenditures and Employment, 1900-1970

<u>Year</u>	<u>Expenditures As % of GNP Constant (1929) Dollars</u>	<u>Employment As % of Labor Force</u>
1900		6.0%
1902	6.8%	
1910		6.4
1913	8.0	
1920		8.2
1922	12.6	
1930		9.8
1932	21.3	
1940	20.3	12.2
1950	24.7	15.2
1960	30.1	17.9
1970	34.1	20.1

Source: Borcharding, Thomas E., Budgets and Bureaucrats, The Sources of Government Growth (Duke University Press, Durham, N.C., 1977)
pp. 26 and 34.

Table 3

GOVERNMENT EXPENDITURES AS A PERCENTAGE OF NATIONAL INCOME

	<u>1953</u>	<u>1958</u>	<u>1963</u>	<u>1968</u>	<u>1973</u>
Austria	38%	41%	44%	49%	49%
Belgium	32	32	40	46	48
Canada	34	39	40	45	48
Denmark	27	32	36	47	54
France	44	44	47	49	50
West Germany	40	42	45	47	50
Italy	32	36	38	43	49
Japan	19	18	24	24	27
Netherlands	37	44	46	52	59
Norway	36	40	46	51	62
Switzerland	22	24	28	27	30
U. K.	44	39	42	49	50
U. S.	34	36	36	39	40

Source: Nutter, Warren G., Growth of Government in the West (American Enterprise Institute, Washington, D.C., 1978) pp. 58-81.

Table 4

NON-DEFENSE GOVERNMENT EXPENDITURES AS A PERCENTAGE OF NATIONAL INCOME

	<u>1953</u>	<u>1958</u>	<u>1963</u>	<u>1968</u>	<u>1973</u>
Austria	37%	39%	42%	47%	48%
Belgium	26	28	35	42	45
Canada	24	32	35	41	46
Denmark	23	29	32	44	52
France	34	36	40	43	45
West Germany	35	39	39	43	46
Italy	28	32	34	40	46
Japan	16	17	23	23	26
Netherlands	30	38	41	48	55
Norway	30	36	41	46	48
Switzerland	20	21	25	*	*
U. K.	33	31	35	42	44
U. S.	20	24	25	29	37

*Defense Expenditures not available.

Source: Nutter, Warren G., Growth of Government in the West (American Enterprise Institute, Washington, D.C., 1978) pp. 58-81.

FOOTNOTES

* Professor, UCLA and Senior Research Associate, the Hoover Institution

1/ Beck, Morris, "The Expanding Public Sector: Some Contrary Evidence",
National Tax Journal 29 (1), March 1976, pp. 15-21.

2/ Joseph A. Schumpeter, Capitalism, Socialism, and Democracy (New York:
Harper & Brothers, 1950) p. 282.

3/ D. C. Coleman, The Economy of England 1450-1750 (Oxford: Oxford University
Press, 1977) p. 177.

4/ Paul Mantoux, The Industrial Revolution in the Eighteenth Century (Harper
& Row, Rev. Ed. 1961) p. 452.

5/ The statistical impact of age distribution on the growth of government can
be estimated by comparing state and local government growth across
the forty-eight contiguous states. From 1940 to 1970, the rate of
growth in number of persons employed outside education by state and
local governments is significantly related to the rate of growth of
the aged in the states population, after taking account of the impact
of other variables in these states, such as the rate of growth of the
agriculture, of per capita income, etc. Two states equally committed
to redistribution in favor of a typical older citizen will quite
mechanically devote different quantities of resources to such a purpose
if the fraction of population that is elderly differs in the two states.
But the impact of age is more than in proportion to the fraction of
the population that is elderly. A one percent increase in the fraction
65 and over, yields at least a five percent increase in state and local
employment excluding education employees.