

Borcherding, Thomas E.; Lee, Dong

Working Paper

The growth of the relative size of government

Claremont Colleges Working Papers, No. 2002-05

Provided in Cooperation with:

Department of Economics, Claremont McKenna College

Suggested Citation: Borcherding, Thomas E.; Lee, Dong (2002) : The growth of the relative size of government, Claremont Colleges Working Papers, No. 2002-05, Claremont McKenna College, Department of Economics, Claremont, CA

This Version is available at:

<https://hdl.handle.net/10419/31419>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

The growth of the relative size of government

Thomas E. Borcharding
Professor of Economics and Politics
Claremont Graduate University

Dong Lee
Doctoral Candidate in Economics
Claremont Graduate University

1. How government grew in wealthy countries

Throughout the 20th century most industrialized countries experienced a remarkable growth of public expenditure, despite marked differences in their institutional and demographic structures. Up until World War I the size of public spending was relatively negligible in most industrialized countries, due perhaps to the laissez-faire outlook that prevailed during the 19th century. According to Tanzi and Schuknecht (2000), the average share of public expenditure in Gross Domestic Product (GDP) among 17 industrialized countries was a mere 12 percent in 1913, only slightly above 11 percent of 1870. After World War I, however, government spending escalated rapidly as governments took more active roles in economic and social developments, especially so in reaction to the Great Depression. By 1937 the average size of government among Organization for Economic Co-operation and Development (OECD) countries grew to 23 percent of GDP, doubling the 1913 level.

Such a trend reached its peak between 1960 and 1980. Backed by the general optimism of government's ability to correct various market failures and perhaps by naïve perceptions of government bureaucrats' competency and public spiritedness, average public expenditure as a share of GDP rose from 28 percent to 43 percent during the period, nearly quadrupling the 1870 level. By 1980 the level of government spending in France and Germany approached nearly the half of GDP, while relatively smaller governments of Japan, U.K. and U.S. kept their public expenditures well above 30 percent of GDP. Interestingly, this growth has considerably slowed down since 1980, and in some countries the share of government spending in GDP even declined, a phenomenon Tanzi and Schuknecht speculate was caused by the Reagan-Thatcher revolution which made voters and taxpayers less sanguine about state actions. From 1980 to 1990, for example, the U.K. share of public expenditure in GDP declined from 43 percent to 40 percent, and similarly so for Belgium, Ireland, New Zealand and the Netherlands. In fact, on average, government spending in all OECD countries rose by only 2.5 percentage points from 1980 to 1996 (Tanzi and Schuknecht, 2000).

Despite this recent slowdown, the growth of government's share of GDP over the past century is both impressive and unprecedented compared to the previous history of public expenditure, inviting numerous scholars to explain this extraordinary phenomenon. We believe that the literature parses the sources of government growth into two broad analytic categories- what Holsey and Borcharding (1997) termed "a-institutional" and "institutional" approaches. The a-institutional approach focuses on the "mechanical" aspects of public expenditure growth, anchored in conventional neo-classical economic theory. This paradigm claims that the growth of government's

relative size is a natural consequence of changing social and market conditions. On the other hand, the institutional paradigm is concerned mainly with political modelings of the public expenditure growth in the context of rent-seeking activities among voter-taxpayers, special-interest groups, and government bureaucrats.

2. A-institutional approaches

On the whole, a-political types of modeling assume that government provision arises due to the failure of private market to provide desired levels of a given public service.

Therefore, determining whose desire is to be served by government becomes a central issue, and it is generally presumed that the median voter plays a key role in determining the level of government expenditures under majority rule. The general procedure for deriving the demand for public services is then identical to determining the median-voter's demand function, which, in turn, depends on the voter preferences, incomes, tax-price per unit of services, and the price of related private goods and services. For example, Borcharding and Deacon (1972) and Bergstrom and Goodman (1973) modeled nonfederal U.S. government expenditure as a function of factors that influence the median voter's demand, such as tax-price, income, and a sharing-economy element representing the degree of publicness in consumption of the services provided.

On the supply side of this a-institutional analysis, Baumol's cost disease hypothesis features most importantly. Baumol (1967) argued that because the government sector is largely labor intensive, productivity growth rates are likely lower there compared to those of private capital-intensive industries, causing the relative price of government services to rise over time. Since demands for public services are rather

own-price inelastic, the increase in the relative price of government services implies an increase in the real value of government expenditures. In fact, the steady rise in the relative price of government services has been empirically supported by numerous studies, including Bradford, Malt, and Oates (1969); Beck (1976); Spann (1977); Peltzman (1980); Berry and Lowery (1984); Ferris and West (1996, 1999). More recently, Borcharding, Ferris and Garzoni (2002) found a 0.8 percent average growth rise of the price index of government sector output relative to the GDP deflator for private output for twenty OECD countries from 1970 to 1997. In addition, price-inelastic demands for government services are now established facts in the public choice literature. Early studies by Borcharding and Deacon (1972) and Bergstrom and Goodman (1973) indicated price-inelastic demands in the range of -0.25 to -0.50. These have been replicated by subsequent studies by Perkins (1977) and Gramlich (1985). Not surprisingly, the Baumol price effect is now generally accepted by a large majority of public choice scholars as a major source of public sector expansion (Lybeck and Henrekson, 1988; Ferris and West, 1993).

Income rise is another of the conventional elements to explain the growth of government. Over a century ago Adolph Wagner (1893) observed that as a society and its economy progress over time, the role of government in fiscal-budgetary matters expands both in absolute and relative terms, in what he called “the law of expanding state expenditure.” Empirically, however, most contemporary researchers are unsupportive of this idea. For “Wagner’s law” to be valid income elasticities for the public expenditures must be greater than the unity. Although Peltzman (1980) claimed that the standard estimating technique resulted in downwardly biased estimates, most empirical studies

have estimated income elasticities to be much less than the unity, mostly in the range of 0.5 to 0.75, rejecting Wagner's law even after using refined estimating techniques to adjust for biases previously noted (Mueller, 1989; Ram, 1987; Gemmell, 1990; Henrekson, 1990).

Population enters into the median-voter's demand function via the offsetting effects of joint consumption economies and median voter tax-share reductions. Taking price-elasticity as zero, and given constant marginal cost of providing public goods and services, a larger population implies less government spending as a share of GDP, since publicly provided goods are shared amongst more people. On the other hand, this sharing aspect effectively reduces tax-price per unit of the government services to the median voter, thus increasing the quantities demanded since demands are not totally price inelastic. Borchering (1985) demonstrated that the net effect of population change depends on both the degree of publicness of the service (not much) provided and the price elasticity of given government services (also low). He found that on the whole the two effects cancel each other out. This finding is consistent with the Peltzman's study (Peltzman, 1980) which yielded an elasticity coefficient for population on per capita government spending not significantly different from zero. A recent study by Borchering, Ferris, and Garzoni (2002) again found no significant relationship between population change and government's relative size.

3. Institutional approaches

According to Borchering (1985) and Borchering, Ferris, and Garzoni (2002), determinants based on traditional economic theories explain no more than fifty percent of

public expenditure growth, and likely less. To complete the missing pieces of the puzzle, public choice economists have turned to neoinstitutional modelings of the growth of government size. Unlike the conventional method with emphasis on productive, community-service aspect of government services, this political approach typically assumes that government is a vehicle for various sorts of interest groups to promote income redistribution in their own favor, depending on their sizes and relative powers. In this neoinstitutional view of complicated processes of political competition, more powerful coalitions win redistributive gains at the expense of less politically favored groups. As the ownership structure of political influence asymmetrically alters, more redistribution takes place and the size of public expenditure increases.

Although many factors affect this redistributive activity, the rules and procedures of the voting process that determine collective choices are crucial. Stigler's "Director's law" (1970) hypothesized that the major beneficiary of public expenditures in democracies is the middle-class, since its financing burdens the various income classes differentially. In the 19th century, Stigler notes, taxes were not tied to personal incomes, nor were benefits of public spending closely tailored to particular beneficiary groups. Instead, federal revenues came largely from tariffs and excise taxes. These severe restrictions on tax discrimination and the targeting of federal expenditures to fairly general-interest projects severely limited the redistributive role of government. Although state and local government grew slightly in relative size from 1870 until 1910, the federal share of U.S. public expenditures actually fell a bit (Borcherding, 1985). As restraints on tax discrimination and limitation on federal expenditures were relaxed in the 20th century- e.g., federal personal and corporate income taxes were introduced in the wake of

the 16th amendment of 1913- taxes and expenditures became more closely tied to income class, enabling the middle class, the putative majority coalition, to seek more redistribution through subsidies and transfer spending. Thus, a larger federal government budget materialized (Stigler, 1970). In fact, Tanzi and Schuknecht (2000) point out that changes in transfer and subsidies explain most of the growth in the U.S. public expenditures during the period of 1960 and 1990, as well as for the other wealthy OECD countries.

Building upon the Director's law, Meltzer and Richard (1981, 1983) developed a rent-seeking model based on income classes in the context of the median-voter paradigm. They assume that public services serve redistributive ends and note the skew of income distribution towards the wealthy, since mean income necessarily exceeds that of the median. Given this bias, the median voter (who by hypothesis is the median income earner) sets the effective tax rates and determines the redistributive outcomes. Voters with incomes less than the median's also favor more income redistribution, providing the necessary majority support for government expenditure growth. The key prediction of this Director's law model is that the increase in indicators of income inequality (e.g., an increase in the ratio of mean to median income) leads to greater redistribution, hence greater size of government.

Two examples of such structural changes which enhance these rent-seeking fiscal effects were the extension of suffrage to lower income families in the late 19th and throughout the 20th centuries, and the effects of social security system on the number of retired persons (Meltzer and Richard, 1981). Using U.S. time-series data and econometric estimation techniques, Meltzer and Richard (1983) discovered a statistically

significant positive relationship between government spending and the ratio of mean to median income. Nevertheless, subsequent studies of this phenomenon for other countries have yielded mixed results. For example, using a pooled cross-sectional time-series data for many industrialized countries, Kristov, Lindert and McClland (1992) show a negative correlation between government expenditures and income inequality.

Peltzman (1980) also has modeled redistributive rent seeking by income-based coalitions which focuses upon the vote-gathering and coalition-forming processes. While differences among groups promote redistributive rent-seeking, effectiveness of these activities depends on the transaction costs and returns of forming effective coalitions and preventing the formation of blocking ones. Peltzman's model recognizes that, along with between-group inequality, within-group equality tends to increase the level of redistribution implying greater sized government. As incomes are more evenly distributed within potential beneficiary classes, the transaction costs of forming successful coalitions fall, making redistributive efforts more effective. His study concluded that the growth of government in the post-World War II period can be attributed mostly to the growth of a more homogeneous middle class, which gave differential advantage to this group over the rich and poor, strengthening both the theoretical and empirical case for Director's law.

Several other scholars also appealed to competition among pressure groups to influence fiscal processes for political favor as of explanatory importance. Unlike Stigler's and Peltzman's income-class approaches to redistribution where the majority systematically manipulates the minority through the democratic process, interest group theories are driven by the assumed lower organization costs of smaller, more

homogeneous groups organized on non-class bases and the ability of these to exploit larger, less-cohesive citizen groups. In general, such theories imply that (1) specialization and increased division of labor accompanied by economic development increase the numbers of powerful interest groups (Demsetz, 1982; North and Wallis, 1982, 1986), and (2) these larger numbers of interest groups tend to increase the size of government spending (Demsetz, 1982; Olson, 1982). Recently, more theoretical attention has been given to incorporating electoral politics and interest groups into fiscal choice. Becker (1983, 1985) developed a pressure group influence function, which depends on time and money spent on rent-seeking effort, as well as the degree of free riding due to increasing group size. In the Becker model the main determinant of the relative strength of interest-group pressure is the efficiency, or its negative complement—deadweight cost, of the tax system. He concludes that more efficient tax systems actually lower general taxpayer-voter influence relative to the pressure of the competing subsidy recipient group, thus increasing budget size. More recently, Becker and Mulligan (1998) have demonstrated empirically that there is a positive correlation between tax system efficiency and the size of government. The preliminary work of Dušek (2002) for the U.S. from 1940 to 1970 confirms this. Generally speaking, these findings imply that the introduction of value-added type taxes in the 1970s in all OECD countries, but the U.S., contributed importantly to the growth of public spending. Perhaps this explains why its adoption is so fiercely resisted in the U.S. (Holsey and Borcharding, 1997).

Another important strand of the budget growth literature claims that government growth may be the result of rent-seeking activities of government bureaucrats. Just as income-based coalitions in the models of Meltzer and Richard (1981) and Peltzman

(1980) seek redistributive gain at the expense of others, interest groups in the Becker (1983, 1985) framework spend resources to enhance their political influences for the same purpose. Clearly, government bureaucrats and public employee unions are also motivated to transfer the wealth of general taxpaying public in their favor. Niskanen's budget-maximizing theory states that government bureaucrats are hardly benevolent promoters of the public weal, but, instead, are rational rent seekers with a desire for larger budgets. Because bureaucrats are principally motivated by "power, pay and prestige" and possess some monopoly power over the supply of public services, the budget is likely to be pushed beyond the median voter's ideal level (Niskanen, 1971). Romer and Rosenthal (1978, 1979) operationalized this theory by proposing the notion of a "budget reversion point." The budget is expanded when monopolistic bureaucrats offer an alternative budget so small that the larger, bureaucratically preferred budget is chosen. In an empirical study, Borcherting, Bush and Spann (1977) also confirm the Niskanen conjecture by scrutinizing the hypothesis that the existence of civil service regulations caused higher levels of spending in state and local governments. They found that within the U.S., non-federal per capita public expenditures were positively correlated with the length of time civil service regulations were in effect.

These bureaucracy models were further developed by Brennan and Buchanan (1977) in their Leviathan theory, which added limits of various sorts on the Tiebout (1956) effects of citizen mobility and inter-jurisdictional competition to the framework of budget-maximizing bureaucrats. The Leviathan approach reasons that greater centralization over time has increased government's monopoly power, since voters have fewer locational choices than in decades past. With less competition from other districts,

government is more able to inflate its budget without seriously risking the loss of taxable income bases or other revenue sources (Brennan and Buchanan, 1977, 1978, 1980).

Although empirical studies of the Leviathan theory have produced mixed results, the centralization hypothesis seems to work well as an explanation of greater nonfederal public spending in the U.S., particularly with respect to local governments where citizen mobility is otherwise less restricted (Oates, 1989).

An increased level of fiscal illusion is yet another neoinstitutional force for explaining the relative growth of government. This theory basically holds that taxpayers systematically underestimate their tax burdens, while self-interested bureaucrats pursue more than the median voter's ideal level of public expenditures. Such illusions come in a variety of forms, such as "(1) complexity of tax structure, (2) renter illusion respect to property taxation, (3) income elasticity of tax structure, (4) debt illusion, and (5) the flypaper effect (Oates, 1988, 60)." While empirical studies of the fiscal illusion hypothesis generally have resulted in mixed results, renter's illusion (renters incorrectly believe that landlords pay property taxes) and flypaper effect (voters erroneously perceive lump-sum grants as lowering marginal tax price) have received wide empirical support. The fiscal illusion literature, however, does not explicitly model who manipulates and reaps the benefits of voter misperceptions (Mueller, 1989). While we suppose that Niskanen bureaucrats could be in the position of utilizing taxpayer misperceptions, neither income-based coalitions nor special interest groups can be readily overlooked as they are also, by hypothesis, able to influence the bureaucrats through electoral politics and political pressures.

Additionally, in spite of their theoretical and empirical underdevelopments, several alternative theories of government growth are also worth mentioning: (1) changing ideologies and social preferences (North, 1985a; Lindback, 1985); (2) reduced community inputs, including diminished social capital (Hamilton, 1982; Schwab and Zampelli, 1987); (3) increased household production costs (North, 1985a; Breton, 1989); and (4) rising transaction costs (North, 1984, 1985 a, 1985 b; North and Wallis, 1982, 1986). These theories argue that government expenditures grew over time because citizen-consumers set higher priority on publicly provided services relative to private market services; lower levels of community resources increased the median voter's tax-price; increased geographic mobility and the participation of women in the labor force greatly increased household costs of providing the typical family services; and greater specialization and division of labor increased the transaction costs of market exchange. Interestingly, these hypotheses are concerned with changes in socioeconomic environments and their effects on demands for government services. Empirical evidence for these approaches is decidedly suggestive.

4. Concluding thoughts

While economic theories of government growth focus upon the median voter model, institutional approaches span a wider range of frameworks, adding more social and *realpolitik* factors missing in the neoclassical analysis. Less generally recognized, however, is that the conventional budgetary measure of government size becomes a less useful indicator of the magnitude of government's influence over the economy as regulation, the alternative political instrument to fiscal activity, increases (Posner, 1971).

This means that the true size of government should also incorporate an estimate of the spending equivalent necessary to obtain private sector compliance with public sector regulatory rules and directives. Without properly accounting for this “quiet side” of government activity (Leonard, 1986), public expenditures will significantly underestimate the full impact of government on the overall economy. Leonard (1986) finds several sources of budget understatement: promises of retirement benefits and social insurance, tax expenditures, subsidies in sale of public activities to favored groups, and, of course, regulatory impositions of government on the private sector. In the recent study of government growth of twenty OECD countries in the post-1970 period, Borchering, Ferris and Garzoni (2002) used two measures of the degree of regulation to show that relatively more regulation is positively correlated with the size of public expenditures, suggesting that regulation and government spending are complements rather than substitutes for one another. They also show that although regulation adds to the relative size of U.S. government, it does not seem to increase the rate of growth in the post-1980 period, since the ratio of regulation costs to fiscal spending was roughly constant. It will be interesting to discover whether this holds generally for the other OECD countries.

Finally, our survey focused wholly on the growth of spending in wealthy countries. If we were to look at the developing world, we would find that government spending shares were much smaller than for the richer countries (by 10 to 20 percentage points). We also believe that the unmeasured regulatory sector would be vastly understated. Again, this illustrates the desirability of developing accurate measures of the regulatory side of the public sector.

References

- Baumol, W.J. (1967). The microeconomics of unbalanced growth: The anatomy of urban crisis. *American Economic Review* 57 (June): 415-426.
- Beck, M. (1976). The expanding public sector: Some contrary evidence. *National Tax Journal* 29 (March): 15-21.
- Becker, G. S. (1983). A theory of competition among pressure groups for political influence. *Quarterly Journal of Economics* 98 (August): 371-400.
- Becker, G. S. (1985). Public policies, pressure groups and deadweight costs. *Journal of Public Economics* 28 (December): 329-347.
- Becker, G.S. and Mulligan, C.B. (1998). Deadweight costs and the size of government. *NBER Working Paper* #6789.
- Bergstrom, T.C. and Goodman, R. (1973). Private demands for public goods. *American Economic Review* 63 (June): 280-296.
- Berry, W.D. and Lowery, D. (1984). The growing cost of government: A test of two explanations. *Social Science Quarterly* 65(September): 735-49.
- Borcherding, T.E. (1985). The causes of government expenditure growth: A survey of the U.S. evidence. *Journal of Public Economics* 28 (December): 359-82.
- Borcherding, T.E., Bush, W.C., and Spann, R.M. (1977). The effects on public spending of the divisibility of public outputs in consumption, bureaucratic power, and the size of the tax-sharing group. In T.E. Borcherding (Ed.), *Budgets and bureaucrats: The sources of government growth*. Durham: Duke University Press:211-28.
- Borcherding, T.E. and Deacon, D. (1972). The demand for the services of non-federal governments. *American Economic Review* 62 (December): 891-901.
- Borcherding, T.E., Ferris, J.S. and Garzoni, A. (forthcoming 2002). The growth of real government. *Handbook of Public Choice*. London: Edward Elgar.

- Bradford, D.F., Malt, R.A. and Oates, W.E. (1969). The rising cost of local public services: Some evidence and reflections. *National Tax Journal* 22 (June): 185-202.
- Brennan, G. and Buchanan, J.M. (1980). *The power to tax: Analytical foundations of a fiscal constitution*. Cambridge: Cambridge University Press.
- Brennan, G. and Buchanan, J.M. (1978). Tax instruments as constraints on the disposition of public revenues. *Journal of Public Economics* 9 (June): 301-18.
- Brennan, G. and Buchanan, J.M. (1977). Towards a tax constitution for Leviathan. *Journal of Public Economics* 8 (December): 255-74.
- Breton, A. (1989). The growth of competitive governments. *Canadian Journal of Economics* 22 (November): 717-50.
- Demsetz, H. (1982). The growth of government. In deVries Lectures, no.4. *Economic, legal and political dimensions of competition*. Amsterdam: North-Holland.
- Dušek, L. (2002). Do governments grow when they become more efficient? Evidence from tax withholding. *Ph.D. thesis proposal*. Department of Economics, University of Chicago (April).
- Ferris, J.S. and West, E.G. (1999). The cost disease versus Leviathan explanations of rising government cost. *Public Choice* 98(March): 307-16.
- Ferris, J.S. and West, E.G. (1996). The cost disease and government growth: Qualifications to Baumol. *Public Choice* 89(October): 35-52.
- Ferris, J.S. and West, E.G. (1993). Changes in the real size of government: US experience 1948-1989. *Carleton Economic Papers* 93-01. Department of Economics, Carleton University.
- Gemmell, N. (1990). Wagner's law, relative prices and the size of the public sector. *The Manchester School* 57 (September): 361-77.
- Gramlich, E.M. (1985). Excessive government spending in the U.S.: Facts and theories. In E.M Gramlich and B.C. Ysander (Eds.), *Control of local government*, 29-73. Stockholm: Almqvist and Wiksell International.
- Hamilton, B.W. (1982). The flypaper effect and other anomalies. *Journal of Public Economics* 22 (December): 347-61.
- Henrekson, M. (1990). An economic analysis of Swedish government expenditure. *Ph.D. Thesis*. Gothenburg University.

- Holsey, C.M. and Borcharding, T.E. (1997). Why does government's share of national income grow? An assessment of the recent literature on the U.S. experience. In D.C. Mueller (Ed.), *Perspectives on public choice: A handbook*, 562-589. New York: Cambridge University Press:562-89.
- Kristov, L., Lindert, P. and McClelland, R. (1992). Pressure groups and redistribution. *Journal of Public Economics* 48 (July): 135-63.
- Leonard, H.B. (1986). *Checks unbalanced: The quiet side of public spending*. New York: Basic Books.
- Lindback, A. (1985). Redistribution policy and expansion of the public sector. *Journal of Public Economics* 28 (December): 309-28.
- Lybeck, J.A. and Henrekson, M. (1988). *Explaining the growth of government*. Amsterdam: Elsevier Science Publishers.
- Meltzer, A.H. and Richard, S.F. (1983). Tests of a rational theory of the size of government. *Public Choice* 41 (3): 403-18.
- Meltzer, A.H. and Richard, S.F. (1981). A rational theory of the size of government. *Journal of Political Economy* 89 (October): 914-27.
- Mueller, D.C. (1989). *Public Choice II*. Cambridge: Cambridge University Press.
- Niskanen, W.A. (1971). *Bureaucracy and representative government*. Chicago: Aldine-Atherton.
- North, D. (1985a). The growth of government in the United States: An economic historian's perspective. *Journal of Public Economics* 28 (December): 383-99.
- North, D. (1985b). Transaction cost in history. *Journal of European Economic History* 14 (Sept.-Dec.): 557-76.
- North, D. (1984). Government and cost of exchange. *Journal of Economic History* 44 (June): 255-64.
- North, D. and Wallis, J.J. (1986). Measuring the transaction sector in the American economy, 1870-1890. In L. Engerman and R.E. Gallman (Eds.), *Long-term factors in American economic growth*. Chicago: University of Chicago Press.
- North, D. and Wallis, J.J. (1982). American government expenditures: A historical perspective. *American Economic Review* 72 (May): 336-45.
- Oates, W.E. (1989). Searching for Leviathan: A reply and some further reflections. *American Economic Review* 79 (June): 578-83.

Oates, W.E. (1988). On the nature and measurement of fiscal illusion: A survey. In G. Brennan (Ed.), *Taxation and fiscal federalism: Essays in Honor of Russell Mathews*, 60. Sydney: Australian National University Press.

Olson, M. Jr. (1982). *The rise and decline of nations: Economic growth, stagflation and social rigidities*. New Haven: Yale University Press.

Peltzman, S. (1980). The growth of government. *Journal of Law and Economics* 27(October): 209-87.

Perkins, G.M. (1977). The demand for local public goods: Elasticities of demand for own price, cross price and income. *National Tax Journal* 30 (December): 411-22.

Posner, R. A. (1971). Regulation as taxation. *The Bell Journal of Economics and Management Science* 2 (Spring): 22-50.

Ram, R. (1987). Wagner's hypothesis in time-series and cross-section perspectives: Evidence from 'real data' for 115 countries. *Review of Economics and Statistics* 69 (May): 194-204.

Romer, T. and Rosenthal, H. (1979). Bureaucrats versus voters: On the political economy of resource allocation by direct democracy. *Quarterly Journal of Economics* 93 (November): 563-87.

Romer, T. and Rosenthal, H. (1978). Political resource allocation, controlled agendas and the status quo. *Public Choice* 33 (Winter): 27-43.

Schwab, R.M. and Zampelli, E.M. (1987). Disentangling the demand function from the production function for local public services. *Journal of Public Economics* 33 (July): 245-60.

Spann, R. M. (1977). Rates of productivity change and the growth of state and local governments. In T. E. Borcharding (Ed.), *Budgets and bureaucrats: The sources of government growth*. Durham: Duke University Press:102-29.

Stigler, G.J. (1970). Director's law of public income distribution. *Journal of Law and Economics* 13 (April): 1-10.

Tanzi, V. and Schuknecht, L. (2000). *Public spending in the 20th century*. Cambridge: Cambridge University Press.

Tiebout, C.M. (1956). A pure theory of local government expenditure. *Journal of Political Economy* 64 (October): 416-24.

Wagner, A. (1893). *Grundlegung der politshen Oekonomie*. Leipzig. 3rd edition.

