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Relationships Between Government Size and Economic Growth: Japan's Government Reforms and Evidence from OECD

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ABSTRACT: This paper examines the relationship between government size and economic growth of 21 industrialized countries. Government size is measured by government final consumption expenditures and transfer payments. The relationship between government consumption is expected to increase GDP growth for developing countries, and reduce it for industrialized countries. Government consumption can contribute to increased economic growth. However, government consumption is likely to expand beyond an efficient level in industrialized countries. In contrast, transfer payments, and social welfare programs are likely to reduce economic growth for most countries. These programs reduce work incentives and encourage tax avoidance activities. Work disincentives and tax avoidance reduce economic growth. These expected relationships are consistent with economic performance and government size for the countries considered here. Inefficiency and excessive government growth are checked by voter feedback as tax burdens exceed the associated benefits. Unfortunately, government program costs and benefits are asymmetrically distributed. The resulting tendency is to expand government programs, particularly programs that benefit a majority of voters at the expense of a minority. This tendency becomes even more acute as the tax system becomes more progressive

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(i.e., tax burdens become concentrated. Reductions in government size are more likely with stagnant or declining economic growth, and in government programs whose costs are widely shared, compared to programs with widely shared benefits and narrowly shared costs.

The Japanese bureaucracy has been highly touted for its efficiency and effectiveness by many observers.[1] After all, it presided over a spectacular economic growth that led Japan out of the ruin of World War II to its economic superpower status of today. The Japanese economy enjoys the second highest GDP, the highest GDP per capita, stable prices and low unemployment relative to other major industrialized countries.[2] In addition, life expectancy is among the highest, and infant mortality the lowest among all OECD countries.[3] However, Japan's robust economic position has recently shown weaknesses. Since the collapse of the bubble economy in 1991, average real annual economic growth has remained 0.7% through 1996, the longest stagnation in postwar Japan.[4]

Currently, the government bureaucrats seem not only incapable of invigorating the economy, but have possibly prolonged the stagnation with their outdated management practices. A flurry of scandals involving high ranking bureaucrats and Japan's slow and ineffective handling of crises such as oil-tanker spills in the Sea of Japan, the Kobe earthquake and the terrorist siege at the Japanese ambassador's residence in Peru, have prompted Japanese citizens to reexamine role of government and reevaluate their hitherto benevolent view of their bureaucracy. No longer is the bureaucracy seen as the solution to the problems; it is the problem.

This paper will briefly examine the characteristics of the Japanese bureaucracy and its role in Japan's economic ascendancy. We find that, despite the Japanese government's "activist" reputation, the size of the government has been remarkably small in terms of government employment and total government disbursements. Government disbursements include both government final consumption expenditures and transfer payments, including social security and welfare payments. Examining comparable data for other G7 countries shows a consistent relationship between government size and the country's macroeconomic performance. The data suggest smaller government size is correlated with faster GDP growth, smaller unemployment and lower inflation. This raises a basic question: is government size, and not the quality of public management, the key factor in determining the "efficacy" of public management? This paper explores both analytical and empirical aspects of this question for mature industrial countries.

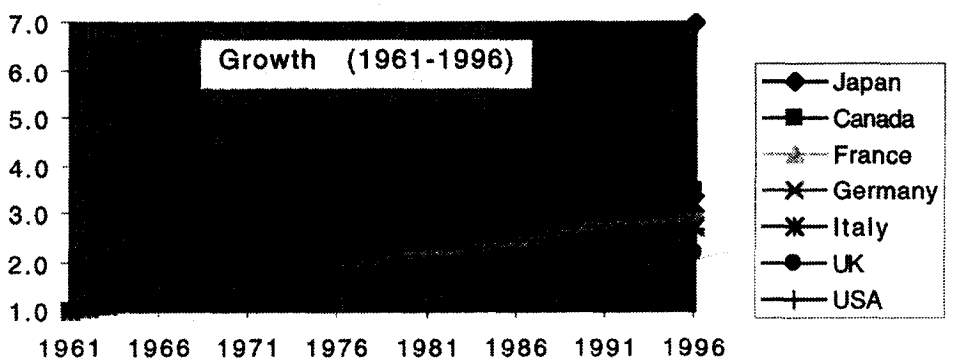
JAPANESE ECONOMIC PERFORMANCE

Japan's economic performance since 1961 has been quite remarkable. Its real GDP growth has averaged 5.7% annually, while the unemployment rate remained around 2% and inflation around 4.7%. Compared with other major industrialized countries,

Table 1. Economic Performance of G7 Countries (1961-1996)

	Japan	*Canada*	*France*	*Germany*[1]	*Italy*	*UK*	*USA*
Growth Rate	5.7% (1)[2]	3.7% (2)	3.2% (4)	2.9% (5)	3.4% (3)	2.3% (7)	2.9% (5)
Unemployment	2.0% (1)	7.6% (7)	6.2% (5)	3.5% (2)	5.5% (3)	6.5% (6)	6.1% (4)
Inflation	4.7% (2)	5.2% (4)	6.0% (5)	3.4% (1)	8.6% (7)	7.4% (6)	5.0% (3)

Notes: 1. 1961-1990 figures reflect former West Germany, and 1991-1996 figures reflect united Germany.
2. The numbers in parenthesis denote the country's relative ranking for each measure.
Source: Economic Report of the President (1987-1997), Council of Economic Advisers.



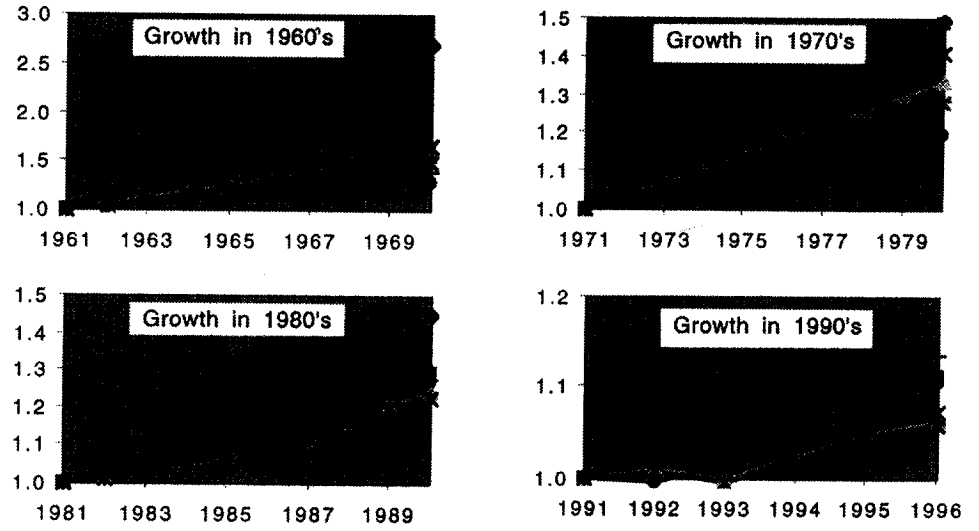
Source: OECD, National Accounts: Aggregate Tables, Volume 1, Table 1.

Figure 1. Relative Growth of Real GDP Among G7 Countries

Japan has achieved the highest growth at a relatively low cost of inflation and unemployment. For example, Canada, the country with the second highest GDP growth, averaged 7.6% unemployment and 5.2% inflation, as shown in Table 1.

A closer examination of Japanese growth, however, shows that the annual growth rate has steadily declined during this 35 year period, along with growth in all other countries. In the 1960s, Japan averaged 12% annual growth, more than double the rate achieved by Italy, the G7 country with the second highest growth rate. Japan's growth during this period was rather extraordinary, considering the average growth rate for the remaining G7 nations was a mere 4.5% during this period. This high growth rate partially reflects Japan's catch-up status in the early 1960s.

In the 1970s, Japan's average annual growth dropped to 4.6%, barely above Canada, the G7 country with the second highest average annual growth rate. The oil embargo and resulting high energy costs reduced Japan's growth more than any other G7 country. In the 1980s, Japan's average annual growth was 4.2%, almost 50% better than Canada, again the G7 country with the next highest growth rate. Japan's growth, however, hit a wall in the 1990s. Its meager 0.7% average annual growth, for this period, is the second to the lowest among G7 countries. It is half the U.S. growth rate, the highest among G7 countries for this period.



Source: OECD, National Accounts: Aggregate Tables, Volume 1, Table 1.

Figure 2. Relative Growth of Real GDP Among G7 Countries

Table 2. Economic Performance of Selected Countries (1991-1996)

	Japan	*Canada*	*France*	*Germany*[1]	*Italy*	*UK*	*USA*
Growth Rate	0.7% (5)[1]	1.2% (2)	0.7% (5)	0.8% (4)	0.6% (6)	1.1% (3)	1.4% (1)
Unemployment	3.2% (1)	11.3% (5)	12.4% (7)	10.2% (3)	12.2% (6)	10.5% (4)	7.5% (2)
Inflation	0.7% (1)	1.4% (2)	2.0% (3)	2.7% (4)	4.5% (7)	2.7% (4)	2.9% (6)

Note: 1. The numbers in parenthesis denote the country's relative ranking for each measure.
Source: Economic Report of the President (1987-1997), *Money Watch*, Long Term Credit Bank, May 1997.

Table 2 shows the growth, unemployment and inflation rates for G7 nations between 1991and 1996. Although Japan's unemployment and inflation still rank as the best among the G7 countries, Japan's GDP growth rate has remained one of the lowest, a first for the post-war era. The precipitous fall in Japan's economic performance from the giddy heights of the late 1980s to its current relative status is prompting close attention.

The destruction of both consumer confidence and asset values in the 1990 land and stock market collapse is clearly one of the major factors in this prolonged stagnation. In May of 1989, the Bank of Japan reversed its two year old easy monetary policy to curb rampant property and stock speculation. As shown in Table 3, the official discount rate increased from 2.5% to 3.25%; it continued to increase for the next 15 months, peaking at 6% in August 1990. It remained 6%, the highest rate in ten years, for next 11 months. The tight monetary policy curbed property and stock market speculation, but it also created a lengthy recession. The economy remained in the doldrums for much of the 1990s, despite dramatic expansionary fiscal and

Table 3. Changes in Official Discount Rate

Date		*Discount Rate*	*Date*		*Discount Rate*
1981	March 18	6.25%	1990	March 20	5.25%
	December 11	5.5%		August 30	6.0%
1983	October 22	5.0%	1991	July 1	5.5%
1986	January 30	4.5%		November 14	5.0%
	March 10	4.0%		December 30	4.5%
	April 21	3.5%	1992	April 1	3.75%
	November 1	3.0%		July 27	3.25%
1987	February 23	2.5%	1993	February 4	2.5%
1989	May 31	3.25%		September 21	1.75%
	October 11	3.75%	1995	April 14	1.0%
	December 25	4.25%		September 8	0.5%

Source: *Money Watch*, Long Term Credit Bank, May 1997.

monetary policies, including a ¥33.6 trillion ($300 billion) fiscal stimuli and the lowest discount rates since the end of the World War II.

Japan's prolonged economic stagnation in the face of expansionary fiscal and monetary policies has prompted many observers and citizens to seek other explanations for the economy's malaise. This includes examining the elite financial bureaucrats' role and policy stewardship, particularly their role in inflating and later deflating property and stock values. In part, the current administrative reforms are driven by dissatisfaction with the Japanese bureaucracy.[5]

CHARACTERISTICS OF JAPANESE BUREAUCRACY

The Japanese bureaucracy is led by career civil servants, chosen through an extremely competitive selection process. They are typically graduates of preeminent universities. A measure of success for these civil servants is to serve in senior managerial positions within their respective ministries, particularly in the prestigious Ministry of Finance (MOF), Ministry of International Trade and Industries (MITI) or Ministry of Foreign Affairs (MOFA). As in the private sector, careerists are rotated through various positions in the organization to acquaint them with the institution's varied aspects, and many hours are spent creating group cohesiveness and informal communication networks. Despite the hierarchical organizational structure, decisions are effectively made at a relatively low level of the management hierarchy.

In one sense, public management in Japan, as embodied by the MOF, MITI and MOFA, should be the envy of all bureaucracies—small and cohesive organizations staffed with highly competent and dedicated civil servants. Because the ministries face tight budget and manpower constraints, they rely relatively heavily on the private and quasi-public sectors for policy implementation and actually producing government services. Although reliance on the private and quasi-public sectors may have started as an unintended by-product of extreme fiscal conservatism, the

resulting institutions have successfully balanced the interests of both the general public and the bureaucrats. For the general public, this bureaucratic structure delivered public services relatively efficiently, which enabled Japan to maintain its low tax structure. For the bureaucrats, the emerging private and quasi-public sectors provided secure and profitable second career or retirement opportunities. These opportunities compensated the bureaucrats for the short, competitive and low paying nature of many career civil service positions.

PAST JAPANESE ADMINISTRATIVE REFORMS[6]

The modern Japanese government has consciously restrained government size since the Meiji Restoration of 1868.[7] In this view, Japanese bureaucracy has long practiced at least some of the tenets of New Public Management Theory, including privatization, out-sourcing and decentralization.[8] In postwar Japan, there have been three significant administrative reforms prior to Prime Minister Hashimoto's current reform: one in 1949, the second in the 1960s and the last in the 1980s.

Past reforms attempted to limit government size, increase administrative efficiency and promote economic development. They attempted to reduce both personnel and the budget; simplify the regulation and permit system; and increase the bureaucrats' accountability.

The 1949 Reform

The 1949 reform instituted restrictive fiscal policies to combat inflation, and moved Japan from a postwar priority production system (1946-1948) to a market-based economy. Under Joseph Dodge, financial adviser to the Supreme Commander of the Allied Powers, a series of measures ("the Dodge Line") were initiated. These measures suspended new loans from the Reconstruction Finance Corporation (Fukko Kin'yu Kinko) and eliminated the associated subsidies. This reform reduced the number of civil servants from 1.6 million to 1.4 million, cut the number of bureaus by 30%, and created a surplus budget. In fact, this balanced budget policy became the guiding financial principle of the conservative administration, until Keynesian deficit financing was introduced in the early 1960s.

An unintended consequence of this zeal for fiscal conservatism, however, was the start of *de facto* "privatization" of government functions by creating quasi-public corporations. Faced with both increasing investment needs in the growing economy and the balanced budget restriction placed on the general account budget, the Trust Fund in the Ministry of Finance emerged as the "second budget," the source of needed loans to the various public and quasi-public corporations. Funds were collected from postal savings, the premiums of welfare and national pension plans, and other government revenue sources. The distinctly Japanese development of this loan program, called "Zai-To," or the Fiscal Investment and Loan Plan (FILP), will be discussed in more detail later.

Unlike the direct priority system practiced from 1946 to 1948, the public management principle emerging from the 1949 reform emphasized economic incentives and a more advisory-oriented style in this transition economy. In 1952, the Law on Temporary Emergency Adjustment of Demand and Supply of Goods expired, marking this transition. The law had given the government legal authority to directly allocate key commodities. In contrast, the newly created Export-Import Bank (1950) and the Japan Development Bank (1951), which were partly financed by FILP, provided below-market interest rates to encourage plant investments by key industries. Special tax measures, including accelerated depreciation, encouraged both investments in promising new industries, and rationalization in declining industries. Japan also became an Article VIII IMF member in 1964, after liberalizing its trade and foreign exchange transactions.

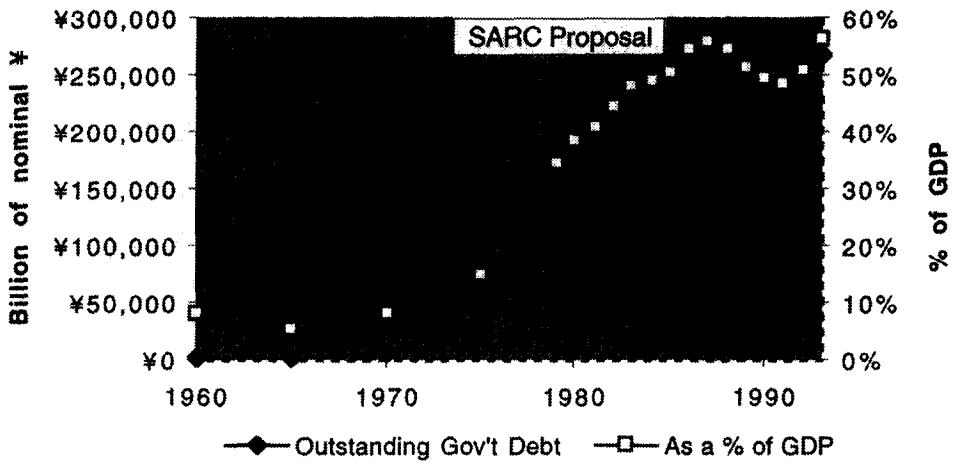
1960s Reform

Although Japanese industry became more competitive through accelerated investments and a series of market opening-measures, the delayed rationalization in the public sector was seen as a major obstacle to further economic growth. In 1962, the First Provisional Administrative Reform Council (FPARC) was formed under Sato Kiichiro, president of Mitsui Bank. Members and staff drawn from the business, labor, government and academic communities. Its reform proposal was submitted directly to Prime Minister Sato in 1964. Some of the proposals were implemented by the late 1960s. They included reducing government size by:

1. Eliminating one bureau in each ministry.
   - 18 bureaus were eliminated in all, representing a 15% reduction.
2. Adopting a Scrap and Build System.
   - Prohibited new bureaus unless existing bureaus were scrapped.
3. Limited the personnel in administrative agencies.
   - Reduced personnel from 899,333 in 1967 to 887,022 in 1983.

1980s Reform

The Second Provisional Administrative Reform Committee (SPARC) was created in 1981, under the chairmanship of Toshio Doko of Keidanren (Federation of Economic Organizations). A philosophy of "neo-liberalism" guided SPARC, emphasizing self-reliance, individual and private sector initiatives, reducing both government size and its intervention power, and increasing the administration's efficiency. The 1980s reform was partly motivated by Japan's mounting public debt, which more than doubled in five years, from 15% in 1975 to almost 40% in 1980, as shown in Figure 3.

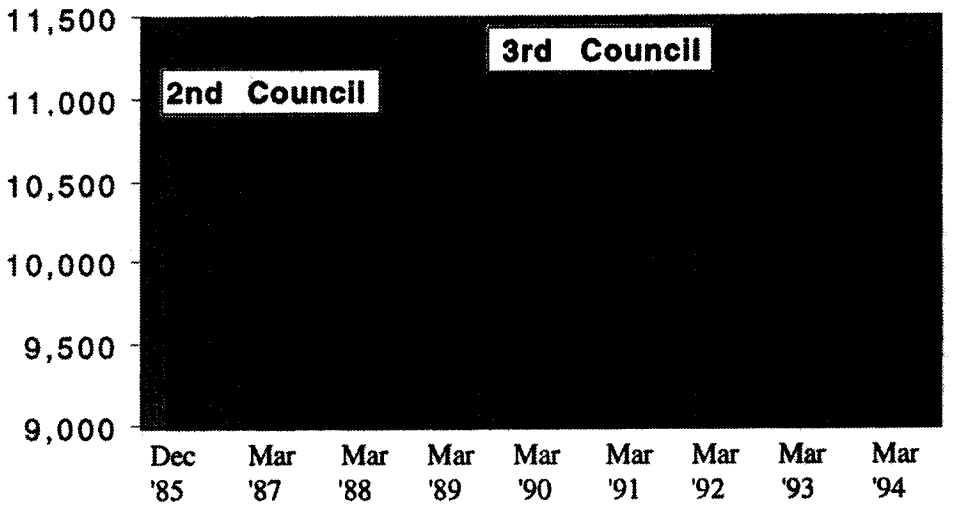


Source: Nihon Tokei Nenkan (Japanese Statistical Year Book) 1970-1996.

Figure 3. Mounting Public Debt (1960-1993)

Faced with a declining tax base, associated with an aging population, and declining economic growth, the reform emphasized reducing government expenditures and inoculating the country against "advanced country disease." The SPARC proposals were submitted to Prime Minister Nakasone in 1982. The First (1983), Second (1987) and Third Provisional Councils (1990), promoted and implemented the SPARC reforms. The SPARC proposal included:

1. Fiscal reconstruction, including reducing government subsidies, personnel and expenditures.
   - Under a 'zero ceiling budget,' a 1.8% 1982 budget growth was reduced to 0% in 1983, and to a -0.1% in 1984.
   - The public pension program was reformed in 1985 to reduce the future fiscal burden.
   - Previous sharp increases in public debt, growing at a 17% annualized rate, declined to 4% annually by the mid-1980s.
2. Reforming and privatizing public corporations.
   - JNR and NTT were privatized.
3. Reducing and rationalizing permits, licenses and inspection procedures.
   - This effort was not successful; for example, activities requiring a permit increased by 891 from 1985 to 1994 (see Figure 4).
4. Reinforcing the cabinet's authority over individual ministries and agencies.
   - This effort was also not successful; for example, attempts failed to shift the budget-making authority from MOF to the cabinet.



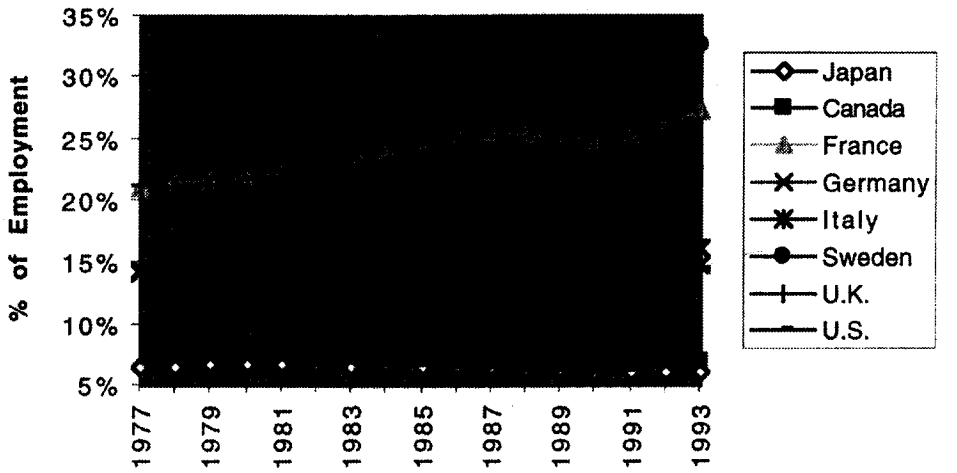
Source: The Mangement and Coordination Agency Report, 1996.

Figure 4. Difficulty in Controlling Regulatory System

Summary

In summary, the past reforms attempted to limit government size, increase administrative efficiency and promote economic development. Greater success was achieved containing government size than in reforming regulatory processes or changing the basic bureaucratic structure. The force and the impetus for these changes came mainly from the Prime Minister, with strong support from the business community. Among the government bureaucracies, the Management and Coordination Agency (Somu-cho) and the Ministry of Home Affairs (Jichi-sho) have been particularly sensitive to the political executives' interests, as is consistent with their institutional interests, but they often lacked the power to implement changes. The Ministry of Finance (MOF), on the other hand, has often played a key role in checking the growth of other ministries. The finance ministry's cooperation coincides with its institutional interest in furthering fiscal conservatism.

This public management system, with its superb flexibility, could function extremely smoothly and effectively under dedicated and competent bureaucrats. The same system, however, could easily be abused for the bureaucrats' benefit, to the detriment of the people they serve. Given this bureaucratic structure, it is clear why past reforms were only successful in reducing government size, where reformers could count on the tacit acquiescence of the MOF, if not on its outright support. Equally evident is the reason why regulatory reform failed; this would erode every bureaucrat's interest and diminished their influence, including MOF bureaucrats.



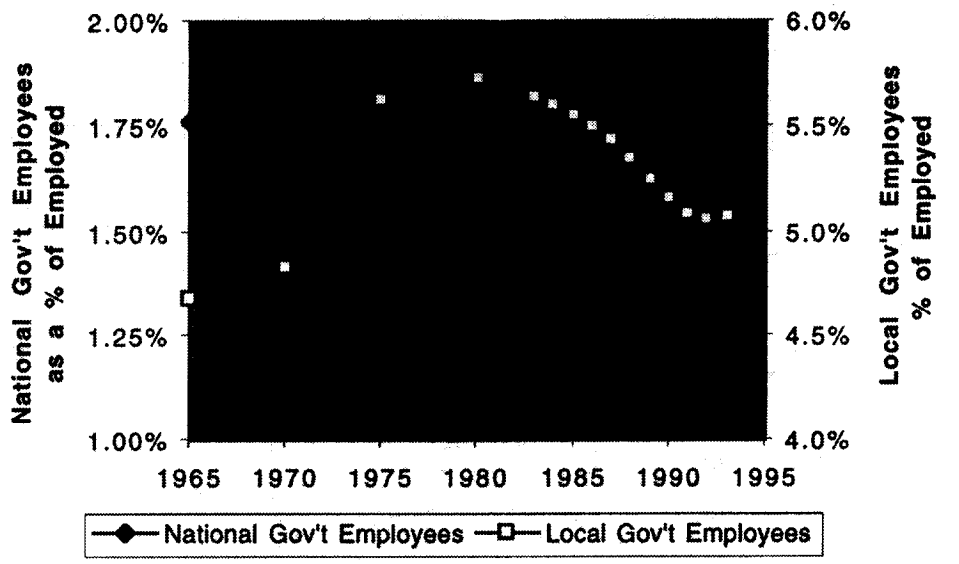
Source: Based on OECD, National Accounts: Detailed Tables, Volume II, Table 15, various countries.

Figure 5. Government Service Employment as a Percent of Total Employment

Empirical Support

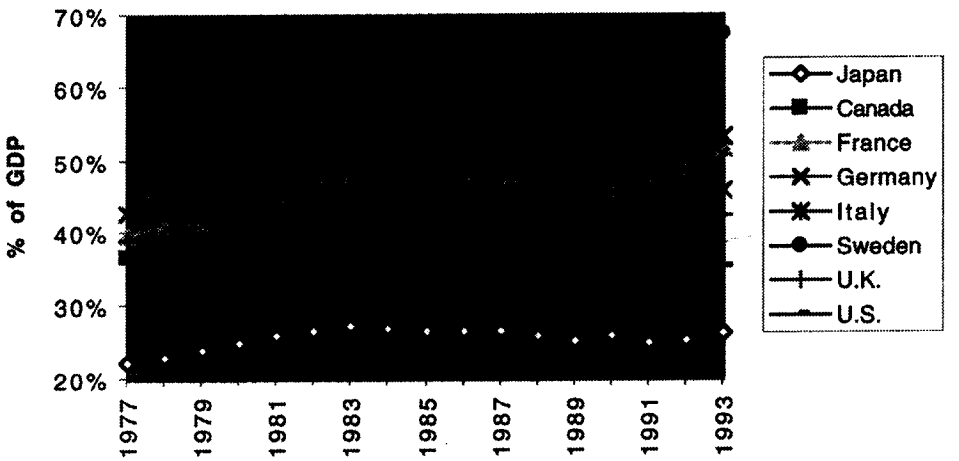
Figure 5 shows that Japan has the lowest government employment, relative to total employment, among OECD counties. Canada is a close second. Within OECD, Scandinavian countries, including Sweden, Denmark, and Norway, have the highest proportion of workers engaged in government employment, often exceeding 30% of the total employment. France and Germany represent the second tier, where government employment hovers around 20%. In recent years, however, French government employment has steadily increased to 25% of total employment, while Germany's percentage has dropped to 15%. Italy, the U.S. and the U.K. follow as the third tier, with government employment around 15% of total employment.

Japan's government employment over the last 28 years is shown in Figure 6. Comparing the beginning and end of this period, total government employment was relatively stable as a percent of total employment; government employment accounted for approximately 6.4% of total employment in both 1965 and 1993. National government employment has declined throughout this period, both in relative and absolute terms. The national government employed 834,000 workers in 1965, which was 1.8% of total employment. This figure fell to 824,000 in 1993, a mere 1.3% of total employment. Local government employment increased from 2.2 million to 3.3 million over the same period. In relative terms, it increased from 4.7% to 5.1% of the total employment. However, local government employment reached its peak relative to total employment, in 1980. Since 1980, both national and local government employment have fallen. This represents the administrative



Source: Based on Nihon Tokei Nenkan (Statistical Yearbook of Japan) 1965-1996.

Figure 6. Japan's Government Employment, Percent of Total Employment



Source: Based on OECD, National Accounts: Detailed Tables, Volume II, Table 6, various countries.

Figure 7. Total Government Disbursements as a Percent of GDP

reforms initiated by Prime Minister Nakasone, and the succeeding privatization initiatives involving the national railway and telephone systems.

The relatively small size of the Japanese public sector is also illustrated by comparing Japan's government disbursements as a percent of GDP to the percentage

characterizing other OECD countries (see Figure 7). Government disbursements include both government final consumption expenditures and transfer payments (e.g., welfare and social security payments). The comparative disbursement patterns in Figure 7 are similar to the comparative employment patterns in Figure 6 with the exception of Canada and Italy. Government disbursements relative to GDP in these two countries are much higher than the government employment figures might suggest. For the other countries, however, the comparative patterns seem to hold. The countries with a relatively high share of government employment also have a relatively high share of government disbursements.

REAL GDP GROWTH AND GOVERNMENT SIZE

Japan's success in maintaining relatively low government employment and disbursements represents a conscious objective of repeated reform initiatives. It is natural to ask whether Japan's efforts to limit its government size have contributed to its economic well-being. The hypothesis is that decreasing government size will increase economic growth. This question will be addressed by looking at the relationship between government size and economic growth for eight industrialized countries, the G7 countries plus Sweden. This section will discuss the theoretical basis for expecting an inverse relationship between government size and economic growth, summarize past empirical studies, and present new empirical analysis.

Efficiency and Optimality in Government Programs

Government expenditures and transfers are typically designed to address market failures involving imperfect competition, externalities, public goods and income distribution. Government disbursements primarily involve public goods (e.g., national security, infrastructure and education) and income redistribution (e.g., transfer payments, public health insurance and social security). Imperfect competition and externalities are primarily addressed through legal and regulatory mechanisms (e.g., antitrust law and environmental regulations). All of these activities will have an impact on efficiency, economic growth and social welfare (income distribution); some positive, others negative.

For example, government expenditures to provide such public goods as transportation, communication and industrial infrastructure are designed to increase economic growth. Similarly, legislative, regulatory and bureaucratic interventions to correct negative externalities are intended to increase efficiency; they presumably reduce economic growth for activities creating negative externalities while increasing growth for activities affected by the externalities. Alternatively, government activities may be inefficient, impose excessive burdens and distort private market incentives.[9] If implemented efficiently and at the appropriate level, government programs are likely to have the intended effects. If inefficient and over-expanded, they are likely to reduce economic growth and social welfare. The

relevant question is whether we can expect these policies to be implemented at the appropriate level.[10]

As opposed to private market goods, publicly provided goods and services do not typically have well defined output or value measures (e.g., how do you measure the quantity or value of national security or public health?). This makes it difficult to measure the performance of public sector providers (e.g., how do you measure the impact of an additional staff member on the output of national security or public health?). In the private sector, the effect of such changes are more readily observable in terms of future profits; this feedback enhances production efficiency. In contrast, public sector goods and services are typically valued by their production costs, and performance is measured by administratively established intermediary performance measures (e.g., budget or staff growth). The lack of proper output and value measures obscures the proper level of public outlays and the efficiency of those outlays.[11]

In addition, consumers do not pay the full cost of the public goods they consume, and government producers do not have to generate revenues to cover their production costs. Costs are typically born by general or specific groups of tax payers, and tax burdens are not directly related to the value of benefits received. Thus, payments for public sector goods and services do not link consumers and producers in the public sector as prices do in the private sector.

Combined, these forces will have two effects on publicly provided goods and services: reduce efficiency and increase demand. Limited competition and non-existent profit motives within government agencies reduce their incentive to maximize static efficiency. The separation between consumers and producers, and between costs and revenues, increases the demand for public goods and services. For given tax and economic growth rates, consumers will tend to demand public goods and services beyond the point where the added value justifies the added production costs. In addition, producers have an incentive to satisfy the consumers' excessive demands. Producers don't have to generate revenues from sales to cover their production costs, and expanding output frequently satisfies intermediate performance measures in government agencies. Thus, the actual mix of private market and public sector goods and services will likely overemphasize public sector outputs relative to the optimal point.

To the extent that taxes pay for publicly provided goods and services, the tax payers' desire to reduce their tax burden provides the primary incentive to increase efficiency and limit government outlays. As the level of public goods increases, so does the associated tax burden. If the resulting tax burden is considered excessive, tax payers will clamor for tax relief. This encourages the public sector to increase efficiency and reduce government expenditures. The strength of this counter force depends both on how society's tax and public output preferences are transmitted to political decision makers and on the distribution of income and the tax burden across taxpayers.[12]

Wolf (1988) identifies at least two types of government programs in which voter feedback might be ineffective: programs that benefit politically active special interest groups but are paid for by a majority of voters (e.g., industry specific production subsidies, tariffs and quotas), and programs that benefit the majority but are paid for by a minority of voters (social security, national health care and welfare payments in countries with relatively progressive tax systems).

While voter feedback is imperfect in both cases, it is probably most effective in the first case. A majority of the voters bears the costs of these programs. If the majority views these programs as excessive, they can vote to change them (abstracting from the problems associated with multiple competing issues, incomplete information and limited voter turnout). However, control becomes particularly troublesome in cases where the majority benefits at the expense of the minority. Even if the voters bearing the burden of these programs consider them excessive, they do not have sufficient political power to overcome the majority will. The U.S. failure to modify the cost of living adjustment for Social Security payments, France's failure to reduce the scope of certain "rights" and the experiences of the "Old Labor" Party in the U.K. all exemplify the difficulty of limiting programs benefiting broad population groups at the expense of minority constituencies. These programs may not be limited unless economic performance deteriorates sufficiently to justify drastic measures by the majority.[13]

GDP Growth Versus Government Size in Industrialized Countries

Considering the preceding discussion, there are at least two reasons to expect a negative relationship between government size and GDP growth: (i) the tendency to over-expand government consumption and investment activity and, (ii) the impact on growth of transfer payments and other social welfare programs. While many government activities are designed to increase economic growth, they may have the opposite effect if they are over-expanded. Consider the example of public infrastructure investments. Public infrastructure investments, like private investment projects, presumably experience diminishing marginal returns. The larger the public investment in industrial infrastructure, the lower the return to the last dollar invested. To the extent that public and private investments compete for the same pool of investment funds (as maintained by the argument that public expenditures, including public investment, "crowd out" private investment), public investment comes, at least in part, at the expense of private investment. Public investment should be expanded to the point where the marginal return to the last dollar invested is the same in both public and private investments. If public investment is over-expanded, it will have a lower marginal return than private investment. This reduces the overall economic growth rate. Thus, over-expanding government expenditures can reduce economic growth; as described above, there is a tendency to over-expand government expenditures.[14]

This is the primary impact of government size on economic growth that is captured by previous empirical studies. Government consumption expenditure data generally reflects government spending on public goods (e.g., industrial infrastructure, defense, education, public health, etc.). Much of this expenditure can be considered as public capital investment (both physical and human capital). Low levels of government consumption expenditures will increase economic growth if the marginal productivity of government expenditures is high relative to private market investments. As Government consumption expenditures expand, their marginal productivity is likely to decrease while the marginal productivity of foregone private market opportunities increases. Increasing government consumption expenditures will eventually decrease economic growth. This negative relationship is more likely in industrialized countries than in developing or undeveloped countries. Industrialized countries have higher government expenditures and a greater stock of public capital, both of which reduce the marginal productivity of government expenditures. This result is consistent with the empirical findings reported above.

Transfer payments and other social and corporate welfare (income redistribution) programs can be expected to reduce economic growth in all countries. In an effort to make the distribution of income more equitable (and possibly avert growth reducing social unrest), transfer payments and social welfare programs shift income from high to low income members of the economy. This redistribution reduces work incentives for both groups. For high income members, income redistribution reduces the effective marginal wage rate. Lower marginal wage rates encourage the more successful members of the economy either to work fewer hours per year, or, more likely, to retire earlier. Higher marginal tax rates also encourage successful individuals to undertake tax avoidance activities that are typically less productive from society's viewpoint. For low income members, redistribution reduces the cost of not working by providing a social "safety-net," and reduces the effective wage rate for low income wage earners (as welfare payments are phased out). Thus, income redistribution retards work incentives at both ends of the income distribution. This reduces the economic growth rate and ultimately the level of aggregate social utility.

Furthermore, it is particularly likely that income redistribution programs will over-expand. Ideally, the government would scale income redistribution programs by balancing society's preferences for short run equity relative to long run economic growth against the economy's capability to produce equity relative to economic growth. Unfortunately, this tradeoff is virtually impossible to quantify. More importantly, transfer payments and other social welfare programs are typically examples of programs that benefit the majority at the expense of the minority. Under a progressive tax system, the burden of redistribution is concentrated on high income voters, while it benefits a broader range of lower income voters. Thus, social safety-net programs that start as small scale, temporary or emergency measures, naturally expand into permanent, large scale programs (e.g., Social Security,

Medicare and Medicaid in the U.S.). The broader based their benefits, the harder it is to control program expansion. The tendency for expansion is only reversed if economic growth is reduced sufficiently that voters are willing to accept drastic measures.[15]

PAST EMPIRICAL STUDIES

Past empirical studies concerning the relationship between government size and GDP growth have found mixed results. For example, Kormendi and Meguire (1985) found no significant relationship between economic growth and either the growth in, or level of, government consumption expenditures relative to GDP. They studied 47 countries in the post-World War II period. However, other studies found a negative relationship between government size and GDP growth rates, as described above. For example, Grier and Tullock (1987) extended Kormendi and Meguire's analysis to 115 countries using pooled cross-section, time series data. They found a significantly negative relation between GDP growth rates and the government share of GDP for many OECD countries. Landau (1983) found a similar relationship between government consumption expenditures as a percent of GDP and growth rates in GDP per capita for approximately 100 countries during the 1960s and early 1970s, though this relationship was not significant when lower income countries were considered independently. Similarly, Barro (1991) found a statistically significant negative relationship between GDP growth and government consumption spending less expenditures on defense and education (because these expenditures are essentially public investment rather than public consumption). He analyzed 98 countries over the period 1960-1985.

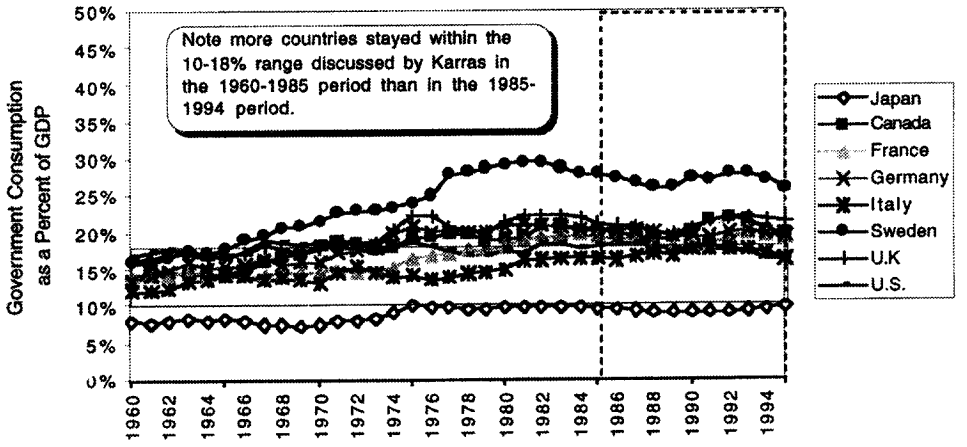
In contrast, Ram (1986) examined the relationship between GDP growth rates and the growth in government consumption expenditures, in both absolute terms and relative to GDP. Ram found that the growth of government has a positive effect on GDP growth. He further found that government generates a positive externality on the rest of the economy and that factor productivity is higher in government activities than in the private market. However, he did find evidence that the positive effects of government consumption expenditures are weaker in higher income countries, such as those considered here.

Finally, Levine and Renelt (1992) questioned the significance of all these results. They examined the relationship between GDP growth and several measures of government activity relative to GDP, including government consumption expenditures (as in Landau, 1983), total government expenditures, and government consumption expenditures less defense and education (as in Barro, 1991). While they found a negative relationship between government activity and GDP growth, they found that the results were only statistically significant for particular choices of explanatory variables. They called the results "fragile," because they could not withstand small changes in the list of explanatory variables. Levine and

Renelt maintain that readers should not place confidence in statistical results unless they are 'robust' to changes in the list of explanatory variables.

Finally, Barro (1990) suggests that the effect of government activity on economic growth may depend on the level of government activity. Barro used an endogenous growth model with optimizing households to derive the growth maximizing level of government activity. For low levels of government expenditures relative to GDP, economic growth increases with government activity. For high levels of government expenditures relative to GDP, economic growth decreases with government activity. Economic growth is maximized at an intermediate level of government activity.[16] Karras (1996) estimated the growth maximizing level of government activity for different groups of countries. He assumed that economic growth is maximized when the marginal product of government expenditures equals unity (the "Barro rule"). Karras noted, among other things, that the optimal government size for OECD countries is approximately 14% of GDP (± 4%). He reached his conclusion using 1960-1985 data.

The average share of the government consumption in GDP has been increasing since 1960 for all G7 countries (Figure 8). Most countries exceed Karras' optimal size range. The remaining countries are within Karras' optimal range. Thus, it would not be surprising to observe a negative relationship between government size and economic growth in OECD countries. However, previous empirical work considers only government consumption expenditures. It excludes transfer payments and social welfare programs. Transfer payments and social welfare programs may have a particularly important negative effect on economic growth. A more rigorous empirical study that distinguishes between government consump-



Source: Government Consumption Expenditures as a Percent of GDP: 1960-1996

Figure 8. Government Consuption Expenditures as a Percent of GDP:1960-1995

tion and transfer payments might better characterize the relationship between government size and economic growth.

Empirical Analysis: Government Outlays, Consumption Expenditures and Transfers

Ideally, this empirical analysis would examine the relationship between total government activity and a comprehensive measure of economic impact. Total government activity would include government expenditures and the effects of legislative, regulatory and bureaucratic measures. Unfortunately, data for broad measures of government activity and economic welfare are not readily available. As a compromise, quantifiable measures of government size and GDP (or per capita GDP) growth rates are used as proxies for total government and total economic impact, respectively.

Three commonly cited measures of government size are reported here: total government disbursements as a percent of GDP, government consumption expenditures as a percent of GDP, and government transfer payments as a percent of GDP. Each of these measures captures different elements of government intervention. Total government disbursements is the broadest measure, including both government consumption expenditures and transfer payments, but excluding legislative, regulatory and bureaucratic activities. Government consumption expenditures measure those inputs used in providing goods and services. Government transfer payments reflect efforts to redistribute income.

The analysis presented here examines two hypothesis regarding government size and GDP growth rates. These hypotheses follow from the discussion above. This discussion suggested that the relationship between government size and GDP should be negative for higher income countries, but positive for lower income

Table 4. OECD Countries and 1977 GDP per Capita (in $1000)

Higher Income OECD Members		*Middle Income OECD Members*		*Lower Income OECD Members*	
Country	*1977 Per Capita GDP*	*Country*	*1977 Per Capita GDP*	*Country*	*1977 Per Capita GDP*
U.S	8.93	U.K.	5.89	Spain	4.52
Switzerland	8.07	Italy	5.77	Ireland	3.56
Canada	7.15	Japan	5.62	Greece	3.08
France	6.83	Norway	5.54	Portugal	2.78
Sweden	6.59	Finland	5.41		
Australia	6.49	W. Germany	5.30		
Denmark	6.43				
Netherlands	6.36				
Belgium	6.27				
Austria	6.01				
Iceland	6.00				

Source: OECD, National Accounts: Detailed Tables, Volume II, Table 1, various countries.

countries. Furthermore, government income redistribution programs should have a stronger negative effect on GDP growth than government consumption expenditures. The relationship between GDP growth and government outlays should lie between these two extremes, because government outlays include both consumption expenditures and transfer payments. These relationships will be examined for OECD countries using data for the period 1977-1996.[17]

Over the period of interest, there was data on GDP, government outlays, government consumption expenditures and government transfers for 21 OECD members. These members and their 1977 GDP per capita are listed in Table 4. Using

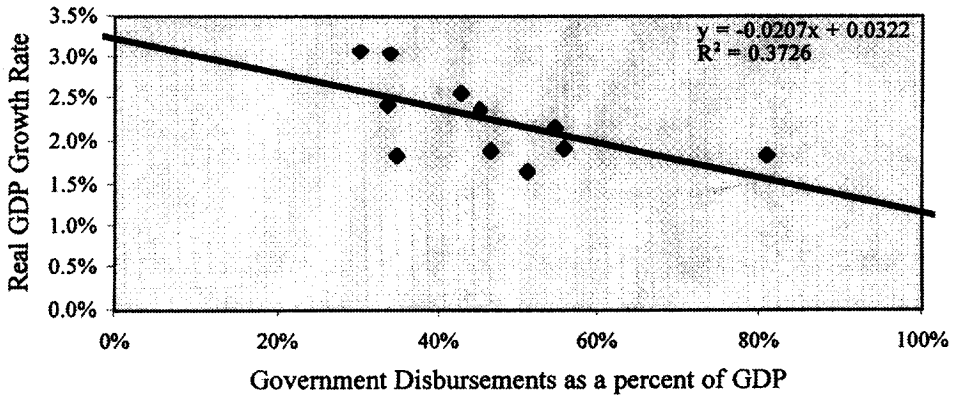
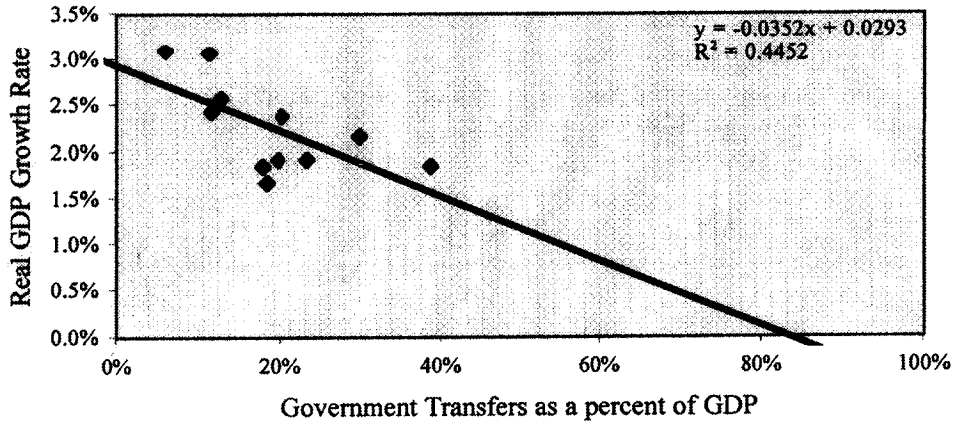


Figure 9A. Real GDP Growth versus Government Disbursements as a Percent of GDP



Source: OECD, National Accounts: Detailed Tables, Volume II, Table 6, various countries (1977-1996).

Figure 9B. Real GDP Growth versus Government Transfers as a Percent of GDP

1977 GDP per capita, countries are combined into three groups: higher income OECD members, medium income OECD members and lower income OECD members. These groups will be used to examine if the effects of government size varies with income level.

Figures 9A and 9B show the relationship between real GDP growth rates and both government disbursements and government transfers as a percent of GDP for high income OECD members over the period from 1977 to 1996. The data points in these figures plot the average GDP growth rates and the average government disbursements or government transfer payments as a percent of GDP for the eleven countries in this group. The trend lines were derived using linear regression analysis. The intercepts and slopes were all statistically significant at the 95% level or above. The fit of the regression is indicated by the R^2 value (the R^2 value shows the percent of the data variation explained by the estimated trend line, with 1.00 representing a perfect fit). As hypothesized, both of these figures shows a negative relationship between real GDP growth rates and government size. This is consistent with the hypothesis that increasing government size reduces economic growth.

Comparing the trends in Figures 9A and 9B provides additional insight concerning the nature of the interaction between GDP growth rates and government size. In these figures, the slopes of the trend lines indicate that the relationship between GDP growth and government size becomes increasingly negative as the measure of government size narrows from total disbursements to transfer payments. Because the vertical and horizontal axes have the same scale, the slope of the trend line can be observed visually. Mathematically, the slope of the trend line is indicated by the coefficient of the x term, as specified in Figures 9A and 9B. This result is consistent with the hypothesis that income redistribution programs have a stronger negative effect on GDP growth than government disbursements, which include both government consumption and transfer payments.[18]

Figures 10A and 10B show the relationship between real GDP growth rates and government disbursements as a percent of GDP for both low and high income OECD members over the period from 1977 to 1996. Again as hypothesized, the trends show a positive relationship for lower income OECD members, and a negative relationship for higher income OECD members.[19] It appears that government expenditures may provide valuable public infrastructure and stabilizing income redistribution for relatively low income countries.[20] As countries develop, and the scope of government activity expands, government expenditures become a drag on GDP growth rates. In part, this may reflect the difficulty of controlling growth in government activity as the country develops.

If the range of countries considered expands to either the 17 high and middle income OECD members, or the 10 middle and low income OECD members, the slope of the trend line becomes statistically insignificant. This indicates that government activity has the greatest impact on GDP growth rates for high income

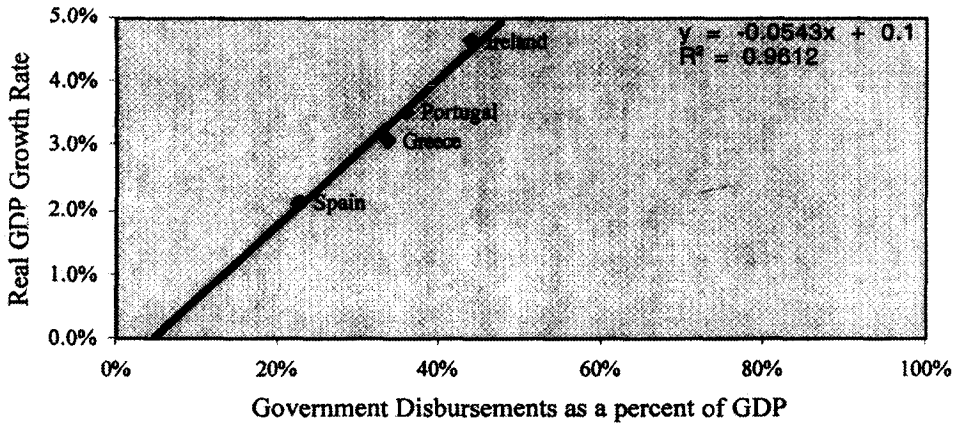
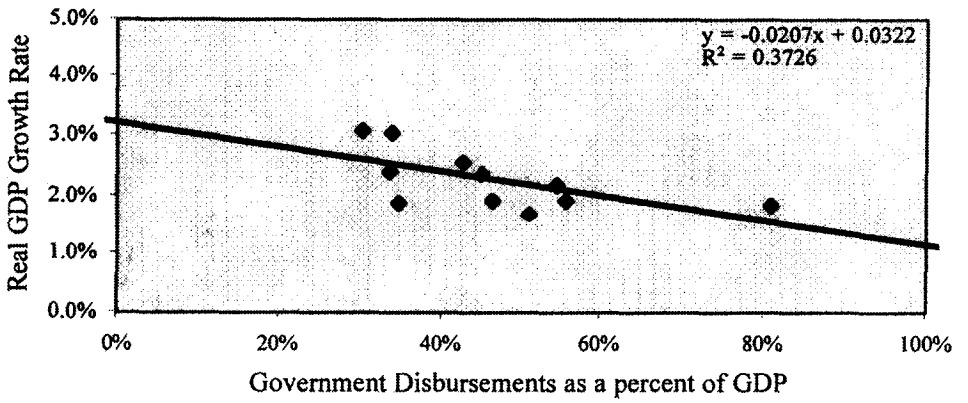


Figure 10A. Low Income OECD Members—
GDP Growth vs Government Disbursements



Source: OECD, National Accounts: Detailed Tables, Volume II, Table 6, various countries (1977-1996).

Figure 10B. High Income OECD Members—
GDP Growth vs Government Disbursements

(negative impact) and low income (positive impact) OECD members. The effect for middle income members is ambiguous.

Finally, Figures 11A and 11B show the relationship between government disbursements as a percent of GDP and the inflation and unemployment rates, respectively, for the G7 countries plus Sweden. As expected, there is a positive relationship. Thus, increases in government size are consistent with decreases in economic growth and increases in both inflation and unemployment.[21]

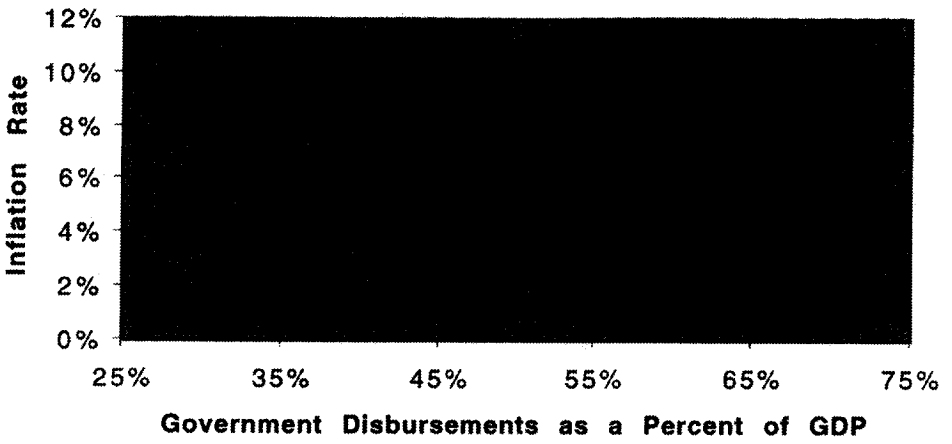
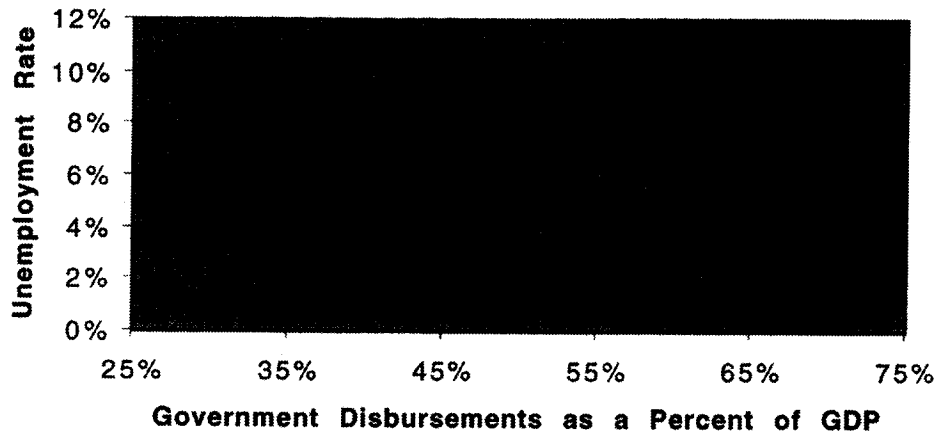


Figure 11A. Inflation versus Government Disbursements as a Percent of GDP



Source: OECD, National Accounts: Detailed Tables, Volume II, Table 6, various countries (1977-1996).

Figure 11B. Unemployment versus Government Disbursements as a Percent of GDP

CONCLUSIONS

This paper has described the expected long run relationship between government size and GDP growth, examined empirical data concerning this relationship, and used these results to analyze Japan's current efforts to reduce government size. The theoretical discussion and empirical evidence developed for this paper is consistent with a negative relationship between government size and GDP growth for higher income countries. This is consistent with Japan's historical experience.

Japan has initiated four reform initiatives to limit government size since World War II, including the current reform effort. As discussed previously, the success of the three earlier reforms is indicated by the subsequent decreases in various measures of Japan's government size. Japan's success is also indicated by comparing international data. Japan has the highest average economic growth rate and lowest government size of the G7 countries over the period 1960-1995. However, a closer look at Japan's prior reforms indicates more mixed results. For example, the 1980s reforms failed to reduce and rationalize permits, licenses and inspection procedures. They also failed to reinforce the cabinet's authority over individual ministries and agencies.

To shed further light on Japan's reform initiatives, this paper looked more closely at the long run relationship between government size and economic growth. Compared to their private market counterparts, government programs typically lack competition, profit incentives, quantitative output measures, and a link between production costs and consumer values. Thus, government expenditures are likely to distort private market incentives, use resources less efficiently than their private market counterparts, and to naturally tend to expand over time beyond the optimal size.

Inefficiency and excessive growth are primarily checked by voter feedback as tax burdens become excessive relative to the associated benefits. Rational voters will choose to expand government programs until their marginal value of an incremental unit becomes lower than the marginal cost they must pay for that unit. Conversely, rational voters will choose to decrease government programs if their marginal cost exceeds their marginal benefit. Unfortunately, the cost distribution is different than the benefit distribution in government programs. This creates two opposing constituencies: voters where rationality implies expanding government intervention and voters where rationality implies contracting government intervention.[21] The political viability of expanding or contracting a particular government program depends on the relative size of the competing constituencies for that program. As a result, the tendency to expand government programs is particularly acute in programs that benefit a majority of voters at the expense of a minority (e.g., Social Security, Medicare, social welfare programs). It becomes even more acute as the tax system becomes more progressive (i.e., tax burdens become increasingly concentrated on a small group of voters).

Considering this anatomy of government programs, the relationship between government consumption expenditures (including government investments in physical and human capital and the provision of public goods and services) and GDP growth is expected to be positive for developing countries and negative for industrialized countries. To a point, government physical and human capital investment and public goods and services provision can increase economic growth. However, industrialized countries are likely to have large governments relative to GDP and significant stocks of public physical and human capital. Thus,

government consumption expenditures are more likely to have expanded beyond the point where the marginal productivity of government programs is less than their private market counterparts. This uses resources inefficiently and reduces economic growth.

In contrast, transfer payments and social welfare programs are likely to reduce economic growth for all countries, once they reach a relatively modest size. These programs reduce work incentives and encourage counterproductive tax avoidance activities. Once the social safety net is sufficient to forestall social unrest, labor force and tax avoidance effects reduce economic growth.

These expected relationships are consistent with empirical data on economic performance and government size for 21 members of OECD considered here. The empirical results showed a negative relationship between several measures of government size and economic growth for higher income OECD members. More importantly, the relationship became more negative when the government size measure was narrowed from government disbursements to transfer payments. The effects of transfer payments and social welfare programs has not been explored in previous empirical work.

Previous empirical work found conflicting evidence concerning the relationship between government size and GDP growth rates. Some studies found a negative relationship, others found a positive relationship, and still others found no statistically significant relationship. However, these studies included a much larger sample of countries (up to 100 or more), and combined countries in all development states. Unfortunately, as the sample size increases, data availability decreases. Of necessity, these studies used government consumption expenditures (less defense and education expenditures in some cases) to measure government size. This data does not include government transfer payments and social welfare programs. Thus, past empirical work used a broader sample of countries and a narrower measure of government size. In part, past ambiguous results might reflect the study design, which combined countries in different development stages and excluded transfer payments and social welfare programs.

The more detailed description of the relationship between government size and economic growth developed here has at least two implications for government reform: reductions in government size are more likely with stagnant or declining economic growth rates, and government programs whose costs are widely shared are politically easier to reduce than government programs with widely shared benefits and narrowly shared costs. These implications are consistent with the experience in Japan and other industrialized countries.

It is easier to reduce government size if there is a strong external constituency supporting the reductions (e.g., a majority of voters). Typically, government bureaucrats have a stake in maintaining the status quo, or increasing government size. They bear significant economic burdens as government size is reduced, and reap significant benefits as it expands. Thus, significant reductions in government

operations are more plausible if supported by an external constituency. This constituency is more likely to develop if there is a sense of crisis. Low economic growth rates, both in absolute terms and relative to other similar countries, foment dissatisfaction with the status quo. Voters are more likely to support meaningful government size reductions if they are dissatisfied with the status quo.

It is even more difficult to reduce government programs that benefit majority constituencies at the expense of minority constituencies. In this case, the majority constituency must recognize a clear connection between the perceived economic crisis and the minority constituency's burden. If not, the majority constituency would not support either the reform or the politicians and bureaucrats proposing the reform.

For example, consider Japan's government reforms in the 1980s. These reforms were initiated primarily by Prime Minister Nakasone and his cabinet, in response to Japan's mounting public debt. However, Japan's average annual economic growth rate was a respectable 4.2% during this period, almost 50% higher than the second highest G7 country. Considering Japan's economic performance, government reform did not generate the strong public reaction one would expect during an economic crisis. As such, the primary support did not spread from the Prime Minister and his cabinet to the general public. This limited the prospects for success and helps explain both the failure to reduce and rationalize permits, licenses and inspection procedures and the inability to reinforce the cabinet's authority over individual ministries and agencies. Considering the central role Japanese bureaucrats play in writing regulations, administering the law and adjudicating disputes, it is not surprising that Japan was unable to streamline the bureaucratic process and reduce the bureaucrats' autonomy without significant public support.

Contrast the 1980s with Japan's current economic environment. Japan's average annual economic growth has fallen to 0.7% in the 1990s, the second lowest among the G7 countries and only half of the U.S. average annual growth rate. Japan's economy is faltering, both in absolute terms and relative to other similar countries. This has fostered a greater sense of economic crisis among the Japanese population. As such, the prospects for fundamental government reform are more promising. With a stronger sense of public support, economic reforms are more likely to prevail in reducing the bureaucracy's size and span of control.[22]

Similar examples characterize government reforms in other countries. For example, the U.S. has been debating proposals for reducing the government budget deficit. However, the politicians are having trouble agreeing on the appropriate mixture of cuts in government programs and taxes. Medicare and other social welfare programs are particularly troublesome. Concurrent with this debate, the U.S. has benefited from the highest average annual GDP growth rate among the G7 countries. This alleviates the crisis mentality that characterized U.S. government reform debates in the late 1980s. Without a public sense of crisis, it is difficult to support drastic reductions in government programs, particularly Medicare and

other social welfare programs that benefit the majority constituency at the expense of the minority.

Areas for Future Research

Future research should focus on using an expanded database to verify or reject the hypotheses developed in this paper. In particular, testable hypotheses include:

- Government size has a negative impact on economic growth for industrialized countries, it has a positive impact on economic growth for lower income countries.
- Transfer payments and social welfare programs have a stronger negative effect on economic growth than government consumption expenditures.
- There is an inverse relationship between economic growth and initiatives to reduce government size; as growth decreases, there is increasing pressure to reduce government programs.

Acknowledgments: This analysis expands the work presented in an earlier paper: Better Government Versus Less Government: Relationships Between Government Size and Economic Growth, was published in L. R. Jones, K. Schedler, and S. W. Wade, eds., *Advances in International Comparative Management*, Supplement 3: *International Perspectives on the New Public Management*, JAI Press Inc., 1997. The authors would like to thank Larry Jones for inspiring this research, and for his encouragement and patience throughout. Of course, any errors, omissions, or misinterpretations are the authors' responsibility.

NOTES

1. See Johnson, C. (1982); Ozaki, R. (1984); Itoh, M. (1995).
2. The per capita GDP figures in dollar terms vary depending on whether the conversion is based on the currency exchange rate or purchasing power parity. The figures here are computed using 1994 data and the then prevailing exchange rate. Japan's per capita GDP changes from the first to the second highest among G7 countries when the conversion is computed using purchasing power parity. Source: OECD IN FIGURES 1996 edition.
3. Based on the most recent OECD data available (1994). For women's life expectancy, Japan leads OECD countries at 83 years followed by France at 81.8 years. For men's life expectancy, Iceland leads OECD countries at 77.1 years followed by Japan at 76.6 years.
4. The real GDP in 1991 and 1996 were 448.9 trillion yen and 482 trillion yen, respectively, in 1990 yen. Source: Long Term Credit Bank, *Money Watch*, May 1997.
5. See K.L. Terasawa and W.R. Gates, *Better Government Versus Less Government: Relationships Between Government Size and Economic Growth*, was published in *Advances in International Comparative Management*, Supplement 3: *International Perspectives on the New Public Management*, Lawrence R. Jones, Kuno Schedler and Stephen W. Wade, eds., JAI Press Inc., 1997.
6. Discussion in this section draws from an excellent account of the subject by Mitsutoshi Ito (1995) and Masahiko Aoki (1988), Suzumura and Okuno-Fujiwara (1991).
7. See Itoh (1995).

8. Kamensky's Guiding Principle (1996).
9. Levine and Renelt (1992, pp. 950–951) observe that government expenditures, taxes, etc., may or may not promote private sector efficiency and growth. Even if growth promoting, government intervention may inappropriately distort private decisions. Finally, government programs may use resources ineffectively and inefficiently. None of these considerations can be captured in simple measures of government expenditures.
10. See Wolf (1988) for a general discussion of imperfections in public goods provision.
11. It is possible to identify the value of many government programs. Just as profit measures firm performance in private markets, the value of peace (e.g., the avoided cost of war) and the value of good health (e.g., the avoided cost of disease) measure national security and public health performance. However, productive inputs directly affect profitability in private markets, while inputs to national security and public health primarily affect the probabilities of peace and good health. Because we either observe peace (good health) or war (disease), it is difficult to determine the direct effect inputs have on the associated probabilities. In private markets, the value of inputs can be measured by observing the change in profits over time. To determine efficiency and optimality in public goods provision, we need to be able to measure the incremental impact of specific inputs, as with private market inputs.
12. Competition for funds between programs and across agencies, as well as altruistic motives in government employees, also increase efficiency and counterbalance expansionary tendencies in government programs.
13. A successful log-rolling arrangement, however, could effectively make programs that benefit a minority at the majority's expense as difficult to control as programs that benefit the majority at a minority's expense.
14. This is consistent with the empirical studies that find low levels of government activity increase economic growth, while high levels decrease growth. For example, see Barro (1990) and Karras (1996).
15. From society's viewpoint, growth reducing transfer payments and social welfare programs may be desirable. In choosing the appropriate level for these programs, it is important to balance their growth and equity implications. Without good information about their growth implications, it is impossible to make informed decisions regarding appropriate levels for income redistribution programs.
16. As observed by others, Barro acknowledges that maximizing growth may not maximize social well-being. He also develops a model where a "benevolent" government maximizes utility for a representative household. See Barro (1990: S110-S112).
17. Data for this analysis is taken from OECD, National Accounts: Detailed Tables, Volume II, Tables 1 and 6, various countries and various years.
18. The stronger negative impact of transfer payments also holds if the group of countries considered either narrows to the G7 countries plus Sweden or broadens to the high and middle income OECD members. In both cases, all coefficients are statistically significant and the R2 indicates a similar fit to the data. There is also a negative relationship between real GDP growth and government consumption as a percent of GDP for all three groups of countries: the high income OECD members, the G7 plus Sweden and the high and middle income OECD cpuntries. However, the slope of the trend line is not generally statisticlly significant and the relationship has a low R2. Thus, these results are not higlighted in the text.
19. As stated above, both regression coefficients for the high income OECD members are statistically significant at the 95% level or above. For the low income OECD members, the slope of the trend line is statistically significant at the 95% level; the intercept term is not significantly different from zero at the 95% confidence level. As in Figure 9, the scales of the vertical and horizontal axes are the same in figures 10A and 10B. Thus, the relative strength of the relationships can be observed visually by the slope of the trend lines.

20. The negative effect of transfer payments continues to prevail in lower income countries. To verify this result, data for government disbursements and transfer payments were used as independent variables explaining average GDP growth. The regression analysis estimated the following relationship: Y = 0.02 + 0.23X1 - 0.22X2, where Y is the real average GDP growth rate, X1 is government disbursements and X2 is transfer payments. All variables are significant at the 99% level and the R2 for the estimated relationship is 0.99. This indicates that government disbursements have a negative effect for all countries.
21. There are similar positive relationships between government employment as a percent of total employment and government consumption expenditures as a percent of GDP and both inflation and unemployment. As with GDP growth rates, the strongest positive relationship is found using government disbursements relative to GDP as the independent variable. Only this relationship is reported here.
22. The analysis presented here considers long run economic performance. At any point in time, economies are also subject to short run fluctuations. Balancing long run goals and short run fluctuations requires balancing government policy measures. Reducing government size does not preclude policies to address short run fluctuations. However, the analysis presented here cautions against government policies that increase government regulations and bureaucracy or transfers and social welfare programs.

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