

American Economic Association

American Government Finance in the Long Run: 1790 to 1990

Author(s): John Joseph Wallis

Source: *The Journal of Economic Perspectives*, Vol. 14, No. 1 (Winter, 2000), pp. 61-82

Published by: [American Economic Association](#)

Stable URL: <http://www.jstor.org/stable/2647051>

Accessed: 11/04/2011 17:39

Your use of the JSTOR archive indicates your acceptance of JSTOR's Terms and Conditions of Use, available at <http://www.jstor.org/page/info/about/policies/terms.jsp>. JSTOR's Terms and Conditions of Use provides, in part, that unless you have obtained prior permission, you may not download an entire issue of a journal or multiple copies of articles, and you may use content in the JSTOR archive only for your personal, non-commercial use.

Please contact the publisher regarding any further use of this work. Publisher contact information may be obtained at <http://www.jstor.org/action/showPublisher?publisherCode=aea>.

Each copy of any part of a JSTOR transmission must contain the same copyright notice that appears on the screen or printed page of such transmission.

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



American Economic Association is collaborating with JSTOR to digitize, preserve and extend access to *The Journal of Economic Perspectives*.

American Government Finance in the Long Run: 1790 to 1990

John Joseph Wallis

Since Americans won their independence from Great Britain, they have engaged in an ongoing debate over the size of their governments, what taxes should be raised to support them, what services those governments should provide, how much debt governments should issue, and which of the three major levels of governments—federal, state, or local—should do the taxing, spending, or borrowing. It is in the nature of the constitutional structure of American government that these debates should be continuous, and that our governments respond to changing circumstances by changing their policies, whether incrementally or dramatically. At the end of the 20th century, American governments have come to an uneasy equilibrium where somewhat more than a third of all economic activity passes through the public sector, the national government collects slightly more than half of all government revenues, and state and local governments undertake slightly more than half of all government expenditures.¹ But it was not always so.

Between 1790 and 1990 the United States passed through three distinct systems of government finance. In each system, one type of revenue was relatively

¹ Naturally, these numbers are approximate and change from year to year. In 1992, for example, the national government collected \$1,259 billion in revenues, 55 percent of all government revenues. The national government transferred \$179 billion, or 14 percent, of its revenues to state and local governments. The national government also borrowed almost \$270 billion that year, most of which it spent. So the national share of total government expenditures in 1992 was 53 percent (U.S. Department of Commerce, 1997).

■ *John Joseph Wallis is Professor of Economics, University of Maryland, College Park, Maryland, and Research Associate, National Bureau of Economic Research, Cambridge, Massachusetts.*

more important than in the other periods. In each system, one level of government played a relatively more active role in promoting economic development than in the other periods. By examining the long sweep of government history, we can begin to answer whether government grew because the costs of raising revenue fell or because the perceived benefits of expenditures rose; what forces drove changes in the allocation of revenues and expenditures between levels of government; and why government have, from time to time, accumulated more or less debt. The last section of the paper will examine, in more detail, the anomalous history of government finance since World War II.

The first financial system lasted from 1790 until about 1842. In this period, state governments took the active lead in promoting economic development through infrastructure investment and legal innovation to promote corporations and banks. Infrastructure investment and land sales offered governments the opportunity to collect “asset income.” State governments were uniquely situated to charter corporations and create asset income in the process. Given the national government’s unwillingness to participate in transportation improvements, states took the lead in those investments as well. By the late 1830s, state debt was roughly eight times the debts of the national and local governments combined.

The second financial system began to unfold in the 1840s and was dominated by local governments and property taxation. Local governments grew in size and importance and took over most of the important infrastructure investment in education, highways, water systems, sewer systems, and public utilities. Property taxes grew to become the most important source of local and state finance. By 1900, local government debt was roughly eight times state government debt. On the eve of the Great Depression, local governments collected over half of the tax revenues collected by all governments and had incurred a debt for their investments equal to the national debt that remained from World War I.

The Great Depression and New Deal ushered in the third financial system. This system had two components: a federal system of domestic economic programs (including infrastructure investment) funded by national grants and administered by state and local governments; and a national system of defense and old age security. Income and sales taxes became the most important sources of government revenue at the national and state level. While the system has not been static, the basic relations between national, state, and local governments has been broadly stable for the last 60 years.

In each of these eras, a certain level of government was more active than the others. The eras are also marked by distinct fiscal structures: an era of asset finance with more active state governments, an era of property tax finance with more active local government, and an era of income tax finance with a more active federal government. The fact that different levels of government were more active under different fiscal regimes suggests that the structure of revenue may have had something to do with the structure of government. These relationships are complex. Revenue structure and government structure are clearly interdependent, and

how we think of them depends both on theory and history. As we will see, the shifting patterns of fiscal behavior suggest several important forces that constrain the shape that government takes, forces that are still at work today.

Overall government expenditures have grown steadily over the 20th century, and unlike revenues, without sharp changes in their composition, except for certain patterns of war-related expenditures and debt service by the national government. The difference in the historical pattern of expenditures and revenues opens a window into the reasons why the size and structure of government has changed over the last 200 years.

Sources and Methods

What economists know about government budgets becomes more cloudy as we move back in time to the 1790s.² Annual data on national revenues, expenditures, and debt were collected and published by the Secretary of the Treasury from the 1790s onward. With a few caveats about budget concepts—for example, the treatment of Social Security taxes—national government budgets are complete and well understood. The Census Department began collecting data on state and local fiscal activity in 1850, and publishing volumes in each decennial census whose titles were variations on the theme of “Wealth, Debt, and Taxation.”³ As the title suggests, the emphasis was on property assessments, government borrowing, and taxation. Information on all revenues, as opposed to taxes, was not collected, nor was information on expenditures. These censuses were never complete, because many small local governments were not enumerated. Beginning in 1902, the Census attempted to collect complete information on fiscal activity, and the 1902 census was a good one. However, follow-up censuses in 1913 and 1922 were, again, incomplete, both with regards to fiscal coverage and enumeration. Limited data was collected in 1927, 1932, and 1942. The first modern Census of Governments was authorized in 1952, but it was not funded until the Census of Governments in 1957. Since then complete censuses have been taken at five-year intervals.

Richard Sylla, John Legler, and I have been mining the existing sources of state and local finance for the 19th century. We have worked with state and local government documents, primarily treasurer, auditor, and comptroller reports, to produce annual series on state government revenues and expenditures. We have collected information on local governments at decade intervals. What makes the local government task so daunting is the enormous number of local governments.

² The classic histories of American public finance are Dewey (1934) and Studenski and Krooss (1963).

³ The late 19th and early 20th century census data can be found in United States Department of the Interior/Commerce (1866, 1872, 1884, 1895, 1907, 1915). An overview of 20th century government statistics is available in the introduction to the chapter on “Government Finance and Employment” in U.S. Department of Commerce (1975).

In 1942, when the first complete count of local government was produced, there were 155,000 local governments in the United States. Our information represents only a small sample of 19th century governments, and does not approach the level of coverage in 20th century census sources.

Tables 1 and 2 present information on government revenues and debt, taken from an amalgam of sources. Table 1 gives per capita government revenues by level of government and total government revenues as a share of GNP for the 19th century in the upper panel, and as a share of GNP in the lower panel for the 20th century. The local numbers for the 19th century are taken from our work and are speculative. The numbers for state governments are reliable, but still subject to minor revisions. The national numbers are reliable. Table 2 gives debt by level of government for select years in the 19th and 20th centuries, as well as the share of all government debt issued by each level. Again, the local numbers for the 19th century are the weakest. Overall, however, the debt numbers from 1870 onwards, and state debt for 1838 and 1842, are the result of the census's interest in wealth, debt, and taxation and are fairly reliable.

What can we tell about the course of government activity from these tables? I'll organize my thoughts around a simple economic model of government. Governments raise revenues and spend money. Raising revenues is politically costly, but spending money generates political benefits. Thus, the political system will maximize net political benefits by equating the marginal benefits of another dollar of expenditure with the marginal cost of another dollar of revenue. When there are multiple levels of government, with multiple revenue instruments and multiple purposes on which money can be spent, then marginal costs and marginal benefits should be equated across all governments, revenue sources, and expenditure functions. In the simplest version of this model, the overall system of government is constrained to have a balanced budget, but individual levels of government do not have to have balanced budgets.⁴ If, for example, the marginal dollar of revenue is less costly to raise at the federal level but the marginal dollar of expenditure is more beneficially spent at the local level, then the federal government transfers money to local governments.

This model offers useful ways to think about the level of government fiscal activity, the structure of revenues and expenditures, and the allocation of revenues and expenditures between levels of government. In general, the fiscal size of government will rise when the costs of raising revenue falls or the benefits associated with spending rise, and one may ask which of these two forces has been more important over time. Revenues will be collected using the least costly revenue

⁴ Government debt can be incorporated into the model by treating loans and debt repayment as revenues and expenditures. Governments can then have a balanced budget with borrowing. In standard fiscal accounts, loan revenues are typically excluded from revenues and repayments of principal are typically excluded from expenditures. This enables one to read directly from a comparison of revenues and expenditures whether the budget is in "balance."

Table 1

Government Revenues in Current Dollars Per Capita and as Percent of GNP

	<i>Current \$ Per Capita</i>				<i>As Percent of GNP</i>
	<i>National</i>	<i>State</i>	<i>Local</i>	<i>Total</i>	
1800	1.96	0.42			
1810	1.80	0.36			
1820	2.52	0.56			
1830	2.07	0.54			
1840	1.50	0.88	1.23	3.60	4.0%
1850	1.93	0.99	1.23	4.14	4.2%
1860	3.32	1.72	2.17	7.20	5.4%
1870	9.82	2.34	5.48	17.64	8.4%
1880	6.39	1.70	4.98	13.07	5.7%
1890	5.74	1.84	5.96	13.55	6.4%
1900	6.42	2.43	8.83	17.68	7.2%
	<i>As Percent of GNP</i>				
1902	3.0%	0.8%	4.0%		7.8%
1913	2.4%	0.9%	4.2%		7.5%
1922	5.8%	1.7%	5.2%		12.6%
1927	4.7%	2.1%	6.0%		12.8%
1934	6.0%	3.8%	7.6%		17.4%
1940	7.0%	5.0%	5.8%		17.9%
1946	22.3%	3.7%	3.6%		29.5%
1952	20.4%	4.1%	4.0%		28.5%
1957	19.3%	4.6%	4.7%		28.6%
1962	18.5%	5.2%	5.5%		29.2%
1967	19.7%	5.7%	5.4%		30.8%
1972	18.4%	6.9%	6.2%		31.5%
1977	19.2%	7.6%	6.0%		32.8%
1982	21.6%	8.2%	6.2%		36.1%
1987	21.0%	9.1%	6.9%		37.0%
1992	20.8%	9.3%	7.3%		37.5%

Sources: Data after 1902 taken from Department of Commerce (1975, 1985, 1997) and Advisory Council on Intergovernmental Relations (1994). State revenues 1800 to 1900, data collected by Sylla, Legler, and Wallis. Local revenues 1840 to 1890, Legler, Sylla, and Wallis (1988). GNP from Gallman (1966), up to 1860; remaining years up to 1929 from Balke and Gordon (1989).

instruments and money will be spent on the most beneficial functions. Over time, changes in these costs and benefits will affect both the size and structure of government. Finally, the system of government will tend to raise revenues at the least costly level of government and make expenditures at the level that generates the greatest benefits, and, if necessary, use intergovernmental grants to adjust discrepancies. Again, over time, we can trace out the changes to see if any systematic patterns emerge.

Table 2

Government Debt by Level of Government In Levels and Shares

<i>Year</i>	<i>State Debt</i>	<i>Local Debt</i>	<i>National Debt</i>	<i>State Share</i>	<i>Local Share</i>	<i>National Share</i>
1838	172	25	3	86.0%	12.5%	1.5%
1841	193	25	5	86.4%	11.4%	2.3%
1870	352	516	2436	10.7%	15.6%	73.7%
1880	297	826	2090	9.2%	25.7%	65.0%
1890	228	905	1122	10.1%	40.1%	49.8%
1902	230	1877	1178	7.0%	57.1%	35.9%
1913	379	4035	1193	6.8%	72.0%	21.3%
1922	1131	8978	22963	3.4%	27.1%	69.4%
1932	2832	16373	19487	7.3%	42.3%	50.4%
1942	3257	16080	67753	3.7%	18.5%	77.8%
1952	6874	23226	214758	2.8%	9.5%	87.7%
1962	22023	58779	248010	6.7%	17.9%	75.4%
1972	59375	129110	322377	11.6%	25.3%	63.1%
1982	147470	257109	919238	11.1%	19.4%	69.4%
1992	372319	603920	2998639	9.4%	15.2%	75.4%

Sources: Debt in millions of dollars. National debt up to 1932 taken from Department of Commerce (1975). National debt after 1942 taken from Advisory Council on Intergovernmental Relations (1994) and is net debt held by public. State debt, 1838 and 1841, taken from Ratchford (1941); 1870–1890, Department of the Interior (1866, 1872, 1884, 1895); 1902 to 1992 Department of Commerce (1975, 1985, 1997). Local debt from Department of the Interior (1866, 1872, 1884, 1895); for 1838 and 1841 from Hillhouse (1936).

The Era of Active State Government: 1790 to the 1840s

Economic historians now understand in more detail what state and local governments did in the 19th century. From 1790 to the 1840s, state governments were the most active level of American government.⁵ They invested widely in banks, canals, and other transportation improvements (Callender, 1902). They served as the primary conduit through which a large amount of capital, both foreign and domestic, was funneled into investment projects. They made basic investments in transportation and financial infrastructure that provided the growing American economy access to a large and growing internal market. By the late 1830s, states throughout the country were deeply engaged in a canal boom. Historically, debt of state and local governments is a rough indicator of recent infrastructure investments. National debt has tended to reflect how long it had been since the last major

⁵ “Most active” is meant to be a relative term. The national government has always been responsible for national defense, international relations, public lands, and monetary policy (the later responsibility was sometimes honored in the breach). Local governments have always been primarily responsible for education and public safety. State governments have always been responsible for aspects of the public welfare system.

Table 3

Property Tax Revenues as Share of All State Government Revenues

	1835–1841	1842–1848	1902
Atlantic Seaboard			
MA, MD, NY, PA, RI, DE, SC, NC	0.02	0.17	0.55
West and South			
IL, IN, OH, AK, MS, KY	0.34	0.45	0.70
All States	0.16	0.30	0.57

Source: Sylla and Wallis (1998).

war. Total state government debt in 1841 was \$193 million, local debt was approximately \$25 million, and national debt was \$5 million, as shown in Table 2.

Part of the state government investment strategy was the creation of private and mixed public/private corporations. States experimented actively with the corporation as a way to accomplish public policy goals and to promote individual initiative. Moreover, they often profited nicely from these activities. Ties between states and the corporations they created gave this period a distinctive fiscal structure. States initially relied upon property taxes for their revenues. But as states began widening their investments, first in banks and later in canals and railroads, they were able to eliminate their state property taxes. States began earning “asset income” which came primarily from tolls on canals, dividends from bank stock, and revenues from land sales as well as indirect taxes on business.⁶ State governments created thousands of corporations, wholly private, public, or mixed, to carry out development projects. The states took a fiscal interest in these corporations.

Rising levels of asset income allowed many states to reduce or eliminate their property taxes. States on the commercially developed Atlantic seaboard were able to make investments in banks or canals, or to tax businesses, particularly banks, and do away with the state property tax altogether. Maryland, New York, Rhode Island, Massachusetts, Pennsylvania, South Carolina, Georgia and Alabama were all able to eliminate their state property taxes by 1835. Table 3 shows property taxes as a share of revenue for certain eastern and frontier states for the periods 1835 to 1841, 1842 to 1848, and for 1902.⁷ State property taxes in eastern states were only 2 percent of revenues in the late 1830s. In contrast, state property taxes in the newly settled west and south were commonly 30 percent or more of state revenue. Frontier states did not have banks and businesses to tax before 1840. Western states became active

⁶ I have combined asset income and indirect taxes in this discussion, since the two revenue sources were closely connected. For example, when a state chartered a bank, it could charge a charter fee, receive an ownership interest, or levy a tax on bank capital. All three ways of taxing banks were used in the early 19th century. The first produced a fee, the second asset income, and the third, indirect tax revenues.

⁷ The inclusion of states in the table is the result of data availability. For more detail on the data, see Sylla and Wallis (1998).

investors in canals, railroads, and banks in the mid-1830s, and a major reason was their desire for asset income. This was the culmination of an early 19th century trend toward “taxless” government, where taxless meant no direct taxes: property, poll, or income. As Ratchford (1941, p. 78) described public finances in the mid-1820s, “Evidently the states at this point were in a fair way to realize the Cameralist ideal—a situation in which the state derives a major part of its income from state-owned properties rather than from taxation.”

While the states were busily promoting internal improvements, the national government was struggling to find its proper place in the system of government. The Constitution gave the national government a wide range of revenue instruments. Congress held the unrealized hope that its major asset, public lands, would be a steady source of asset income. In practice, tariff revenues accounted for 80 to 90 percent of all national revenues in the 19th century, and, with the exception of wars, the national government was amply provided with revenues. In times of fiscal stress, like the anticipated war with France in 1798 and during the War of 1812, Congress levied a property tax and internal excise taxes. In normal years, the tariff provided a steady flow of revenue that enabled the national debt to be paid down to zero by 1835.

The national government was unable to commit itself to making major investments in transportation and finance. There were a number of attempts to develop a national plan of transportation investment, the most thorough drawn up by Albert Gallatin in 1808. But a combination of constitutional questions, sectional differences, and the emerging conflict between national activists like Henry Clay and their Jacksonian opponents prevented national investment on a large scale. The national government did invest in many smaller, and sometimes successful, canal and turnpike projects. But where states actively pursued investments in transportation and finance for financial as well as developmental reasons, the national government’s hands were tied, for several reasons.

First, the tariff was already providing a steady stream of revenues, so there was no pressing need for a new revenue source. Second, any transportation investments would necessarily benefit some geographic sections more than others. The tariff itself was creating sectional tensions. Crafting a compromise internal improvement bill that would ease sectional strains, rather than exacerbate them, was extremely difficult. Third, states had used corporate charters as the vehicle for their investments and as the way of organizing public and private efforts. The national government possessed the chartering power, but nationally chartered corporations encountered stiff opposition.

The First and Second Banks of the United States (1791 to 1811 and 1816 to 1836) were nationally chartered banks that operated throughout the country, and by virtue of their large size and their control of a steady flow of government deposits, they were able to exert a substantial influence over money and credit markets, as well as over state-chartered banks. Both banks were granted charters of 20 years and both banks failed to be rechartered. The Second Bank’s charter was

renewed by Congress, but vetoed by Andrew Jackson. Jackson's veto message (as quoted in Richardson, 1897, vol. 2, pp. 1153) summarized his case against the bank:

Many of our rich men have not been content with equal protection and equal benefits, but have besought us to make them richer by acts of Congress. By attempting to gratify their desires we have in the results of our legislation arrayed section against section, interest against interest, and man against man in fearful commotion which threatens to shake the foundations of our Union.

In short, corporate charters created special privileges, and the national government was not capable of forging a compromise over how privileges like that would be allocated.

Before 1842, states had access to asset finance at much lower costs than the national or local governments. They could and did create corporations, in which they invested in and from which they received dividends, fees, and indirect taxes. These public investments provided the starting point for enhanced transportation and financial systems, and so directly promoted economic development. The national government found it much more costly to make similar investments. There was a national sentiment behind investing in internal improvements, but the national government was unable to work out how the different sections and interests were to be satisfied. Local government possessed neither the financial wherewithal, the geographic scope, nor the chartering powers to enter into the process.⁸

The Era of Property Finance and Local Government: 1842–1933

The years between 1839 and 1842 were the beginning of the end for the era of asset finance. A deep and lasting economic depression began in 1839, and by the middle of 1842, eight states and the Territory of Florida were in default on debts they had incurred to build or buy the banks, canals, and railroads emblematic of state economic activism. The default crisis brought infrastructure investments in most states to an abrupt halt, and the recovery of state investment after the crisis was

⁸ For those interested in reading more about this period, the most important source on government involvement in transportation investment is Goodrich (1960), and the article that I find most interesting is "The Revulsion against Internal Improvements" (1950). I have written about the general process of internal improvement investment in Wallis (1999a). The default crisis is the subject of McGrane (1935) and plays a prominent role in Ratchford (1941). I have examined the default crisis in Sylla and Wallis (1998) and Grinath, Wallis and Sylla (1997). Public land policy is explained in Gates (1968). Developments in banking are described in Redlich (1968) and in Sylla (1966; 1998). The connection between banks and state public finance is explored in Sylla, Legler, and Wallis (1987) and Wallis, Sylla, and Legler (1994). The close financial relationship between states and corporations in general is investigated in Wallis (2000).

uneven. New state constitutions and amendments to old ones placed limits on state borrowing, limited state investment in private corporations, and in some cases prohibited such investments altogether (Goodrich, 1950). This did not spell the absolute end of state activity. A new group of states got into the business of building railroads in the 1840s and 1850s, and states continued to build canals and charter banks (Heckelman and Wallis, 1997). But the tide of events had turned against state activity, and state governments as a group became less dynamic than they had been before 1842.

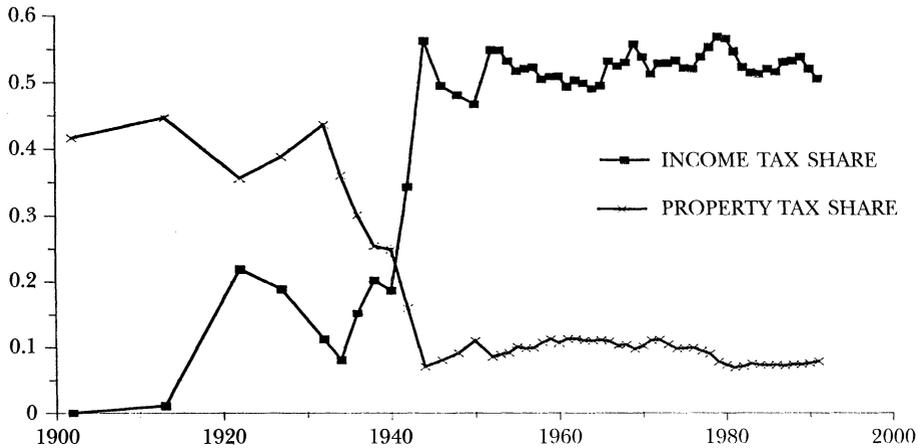
After 1842, local infrastructure investments steadily rose relative to state investments, as shown by the rise in local government debt in Table 2. By 1902, local debt was \$1,877 million, about eight times the amount of total state debt. National debt was \$1,178 million in 1902, consisting primarily of debt from the Civil War. In rough terms, per capita local government revenues were about 40 percent higher than state revenues in 1840; in 1902, they were 260 percent higher. Local government revenues per capita exceeded national government revenues, \$8.83 to \$6.42. By 1900, local governments had clearly become the most active level of government in the United States.

Property taxes came to dominate the state and local revenue structure after 1842 as well. The necessity of raising property taxes to meet the default crisis shows clearly in Table 3. State property taxes rose from 16 percent of revenues in the years between 1835 and 1841 to 30 percent of revenues between 1842 and 1848. By 1902, property taxes accounted for 57 percent of all state revenues. The continued reliance of states on the property tax was, in part, the result of the constitutional changes begun in the 1840s. State debt limitations typically established procedures for new debt issue that effectively required states to raise property taxes to fund debt. The property tax had always been a mainstay of local finance, and in 1902, property taxes were 73 percent of all revenues raised at the local level. Overall, property taxes accounted for 42 percent of all revenues at the national, state, and local levels combined. Property tax revenues as a share of all government revenues for the 20th century are shown in Figure 1.

Just as asset income was a revenue source that could be tapped at lowest cost by state governments, the property tax was best suited for local government collection for several reasons. When local governments impose taxes, they face a problem of mobility. Taxpayers vote with their feet and leave high tax jurisdictions. By taxing an immobile resource—land—local governments minimized the mobility problem. However, taxpayers and economic activity could still relocate unless the property taxes that they pay are matched with benefits. To the extent that property taxes went to provide valuable public services, and those public services raise property values, the property tax can be viewed as a benefits tax. By carefully matching their property taxes to the beneficiaries of those taxes (and remember that there were over 150,000 local governments levying taxes in 1940), local governments were able to reduce the political costs of property taxation.

State governments, on the other hand, found it much more difficult to mobilize political support for their property taxes, because it was much more difficult to match

Figure 1

Property and Income Tax Shares (Including OASDI) of All Government Revenues

taxpayers to expenditure beneficiaries in a large geographic entity, particularly if the taxes go to fund programs with geographically specific benefits. This was doubly true in the large number of states that adopted “uniformity” and “universality” provisions in the constitutions after the 1840s. These provisions required that all property within the state be fully assessed and taxed at a uniform rate (Wallis, 1999b). The unpopularity of state property taxes was revealed by the speed with which states eliminated their property tax in the early 19th century (shown in Table 3) and the virtual disappearance of state level property taxes in the 20th century (shown in Figure 1). Even at the local level, property taxes work best when they can be tightly focused on specific groups and interests. Robin Einhorn’s (1991) book on 19th century Chicago shows how the ability to target the property tax to specific property owners enabled the property tax to function as a sub-local tax in the mid-19th century. Property tax rates and assessments were levied street by street to finance water, sewage, curb, and paving projects.

Property taxation works best at the local level. When a property tax is the dominant form of taxation, local governments are the lowest-cost revenue producers.⁹

The Era of Income Finance and the Federal Government: 1933 to the Present

The Great Depression and the New Deal signaled the onset of the third fiscal system. Table 1 gives the government revenue collected by each level of the

⁹ The development of late 19th century public finance is not as well-studied as it should be. For histories of the property tax, see Benson (1965) and Fisher (1996). I have written about the rise of property tax in conjunction with constitutional changes in Wallis (1999a) and the changing constitutional relationship between states and corporations in Wallis (1999b).

government over the course of the 20th century as a share of GNP.¹⁰ During the 1930s, the relative fiscal importance of national and local governments shifted substantially, and the national government became by far the largest level of government. This change had two distinct parts: the “federal system” and the “national system.” The “federal system” provided welfare services, agricultural price supports, and public works projects and was financed through intergovernmental grants. Roosevelt and the New Deal Democrats constructed a federal system where the national government collected revenue and the states administered expenditures. “Cooperative federalism” became the norm for intergovernmental relations, and national grants to state and local governments, which had been extremely small before 1933, grew to 9.4 percent of national expenditures in 1940 and 15.4 percent in 1977—and were still 14 percent of national revenues in 1992. National grants now account for roughly a third of state and local revenues. A system of central revenue collection and decentralized expenditure and administration became the standard model for administering programs in education, highways, water and sewage systems, and public welfare. This basic system remains in place today, although it undergoes constant adjustment and realignment.

The “national system” was built around the two new responsibilities assumed by the national government during the New Deal and World War II: Social Security and a permanently large military establishment. The national government had always been primarily responsible for the national defense. Yet, while expenditures for the military services and the expense of servicing and retiring war debt had occupied a large share of the national budget prior to 1940—usually 40 to 50 percent of all spending even in peacetime—these expenditures exceeded 1 percent of GNP only during the Civil War and World War I. After World War II, military expenditures commanded between 5 and 10 percent of GNP each year until the late 1980s, as the nation fought cold and hot wars and the acceptable level of peacetime military preparedness increased. At the same time, commitments made during the New Deal to Social Security, together with the later commitments to Medicare and Medicaid, steadily required more resources. Outlays for Social Security, Medicaid, and Medicare were 4.5, 1.2, and 2.6 percent of GNP, respectively, in 1997.¹¹

As in the earlier fiscal regimes, this new structure of government was associated with the rising importance of a particular tax, in this case income taxes, broadly

¹⁰ The picture looks different if one focuses on national expenditures, since the cost of fighting wars causes the national expenditures to spike at certain times. However, if one looks at expenditures by different levels of government and exclude spending on military and interest (which is largely the cost of fighting past wars) the picture looks much the same. The issue of shifting expenditures over time will be taken up later in this paper.

¹¹ The figures are taken from U.S. Congressional Budget Office (1999). The Social Security Act of 1935 did not establish Medicare and Medicaid, of course. But the two programs were originally within the purview of the Social Security Board and had a very similar fiscal structure to the existing Social Security programs.

understood to include individual, corporate, and payroll taxes at both the national and state level. One effect of the Depression was the adoption of new sales and income taxes between 1929 and 1933. National income tax collections actually fell between 1929 and 1933, and then rose through the rest of the 1930s. Income tax collections jumped during World War II when the income tax was dramatically expanded by the reduction in personal deductions, increases in marginal tax rates, and the beginning of withholding. The country emerged from the war with a completely different revenue structure, one that has remained largely in place until the present. The main contours of the change can be seen in Figure 1, which plots the share of income taxes in total government revenues.

Once income and payroll taxes had risen to prominence, the national government had an advantage in collecting revenues. Through the administration of the Social Security payroll tax, the national government possessed an enormous amount of information on wages and salaries, information critical to the administration of a broad-based income tax, and had experience with the administrative machinery necessary to put an income tax in place. State and local governments can piggyback on the IRS information, but as small jurisdictions, they are relatively more constrained by the mobility of business and labor. In 1992, personal and corporate income taxes were \$716 billion, of which 80 percent was collected by the national government, 18 percent by state governments, and only 2 percent by local governments. An additional \$394 billion in Social Security payroll taxes was collected by the national government (1992 Census of Governments). Once again, the most active level of government was the one with the access to the lowest cost revenue source.¹²

Expenditure and Revenue Patterns

The focus of the discussion to this point has been to identify the level of government that was most active and what revenue structure was most prominent at that time. The evolution of fiscal policy over time, of course, necessarily involves changes in the expenditure side as well. The fundamental nature of revenue structures have changed several times in U.S. history with the rise and fall of asset finance, the rise and fall of property finance, and now the rise of income finance. These changes in revenue structure have occurred rapidly, within relatively short historical time frames. Each shift in revenue structure is closely associated with a major change in the allocation of activity between levels of government. This is the most outstanding feature of the fiscal record when viewed over the last two centuries.

No such dramatic changes are apparent in the structure of expenditures. In

¹² For an overall treatment of the importance of the New Deal to American federalism, see Wallis and Oates (1998), and for specific attention to the New Deal, see Wallis (1984; 1988).

contrast to revenues, changes in expenditure structures occur gradually, over relatively long historical time frames, with the obvious exception of war-related defense expenditures and the ensuing debt and interest payments. However, there is long-term movement in expenditures: Table 1 shows a steady increase in the size of government as a share of GNP from the late 19th century onwards. The table reports revenues as a share of GNP, but over time revenues track expenditures very closely. There are changes in functions of government as a share of GNP. The share of military spending, Social Security, and non-Social Security welfare expenditures increases after 1933; the share spent on public safety declines; while the shares of education, transportation, interest, and other expenditures fluctuate. But none of these changes is comparable to the changes in the shares of different revenue instruments.

Consideration of the difference in patterns of revenues and expenditures over time leads to three major conclusions. First, there is little to indicate that the growing size of government since the late 19th century was driven by a reduction in the cost of raising revenues. Consider Table 1. Government was already growing rapidly in the early 20th century when revenue structures were not changing. The average annual growth rate of total government spending as a share of GNP was 2.2 percent per year from 1902 to 1940, and 2.6 percent per year from 1902 to 1952 (the impact of World War II is obvious). After 1940, when income and payroll taxes came to be the dominant revenue source, total government spending grew by 1.4 percent per year from 1940 to 1992, and by only .7 percent per year from 1952 to 1992. Using the rate of growth in the ratio of government to GNP has its own problems as a measure, since the high growth rates in the early part of the century are, in part, a result of low absolute levels of government as a share of GNP. In absolute terms, government grew by about 30 percent of GNP between 1902 and 1992. Roughly 10 percentage points of that growth occurred before 1940, another 10 percentage points during World War II, and the remaining 10 percentage points after 1962. Whatever measure is used, it is clear that the growth of government did not start in the 1930s or the 1960s. In short, there is no clear evidence that adoption of the income tax sped the growth of government.

The 1930s are an equally interesting case. The shift to modern federalism began between 1933 and 1939. Although the seeds were sown in the Social Security Act and World War II, the system took decades to mature, with the addition of Medicare and other Great Society programs in the 1960s. A national income tax was possible at any time after 1913, but the income tax did not become an important source of national government revenue until the early 1940s. Despite increases in rates and coverages during World War I, only 5 percent of the population was paying income taxes in the late 1920s and only 10 percent were filing returns. Even the Great Depression did not stimulate the income tax, although Franklin Roosevelt argued for several “soak the rich” increases. Repealing Prohibition generated as much new revenue for the national government as all of Roosevelt’s increases in

individual tax rates.¹³ Since income taxes do not become a broad-based tax until World War II, it is difficult to argue the national government's ability to raise income tax revenues was the cause of the New Deal changes in social welfare policy in the 1930s.

A second main conclusion is equally straightforward. Long-term changes in the allocation of fiscal activity between levels of government are largely driven by changes in revenue structures, not by changes in expenditures. In each of the three main periods of U.S. fiscal history, an individual level of government became relatively more active and it was that level of government that had access to the lowest cost revenue instrument.

Long-term changes in expenditure patterns are not connected to changes in the allocation of activity between levels of government in the direct way that revenues are. Government throughout the 19th century continued to spend money to fight wars, to provide general government services and a modicum of education, and to make infrastructure investments in transportation and public utilities. Expenditures began rising at the end of the 19th century, and continued to rise in the 20th as shown in Table 1. But expenditure growth was not associated with a change in the intergovernmental allocation of spending. Some expenditure functions, like education and public safety, were hardly centralized at all over the 20th century. Other functions, like welfare, were already centralized in 1902 and became slightly more so as the century progressed. Thus, between 1902 and 1992, the revenue structure of American government showed a centralizing tendency, moving toward income and sales taxes collected by the national and state governments. This centralization in revenues, however, was not matched in magnitude by centralization in expenditure. Revenues became more centralized than expenditures through the increasing use of intergovernmental grants, including national grants to state and local governments, and state grants to local governments. Such a pattern is consistent with the idea that the relative cost of raising revenues at different levels of government had changed, while the relative benefits of spending money at different levels of government had not changed.

The two obvious exceptions to the generalization that revenues have been centralized more than expenditures involve Social Security and defense spending. In this century, expenditure growth for defense and Social Security has clearly increased fiscal centralization in both revenues and expenditures.

A third major conclusion is that the primary factor driving the growth in the size of government relative to the economy over the long term since the late 19th century appears to be changes in expenditures, rather than revenues. Beginning in the late 19th century, governments at all levels began making commitments to provide more and better schools and transportation networks. Those commitments

¹³ From 1932 and 1940, individual income tax revenues rose from \$405 million to \$959 million, while alcoholic beverages revenues rose from \$8 million to \$613 million (U.S. Department of Commerce, 1975, Series Y570 and Y575).

gradually grew larger. During the New Deal, governments at all levels committed themselves to providing a higher level of social welfare services, a commitment that has continued to grow, while the national government committed itself to providing retirement security. World War II produced a new world order in which the United States was committed to provide military leadership, men, and materials. These are the reasons that government has grown in the United States over the last century. Expenditures did not rise because the income tax amendment suddenly made it much cheaper to raise revenues and therefore increased the size of government.

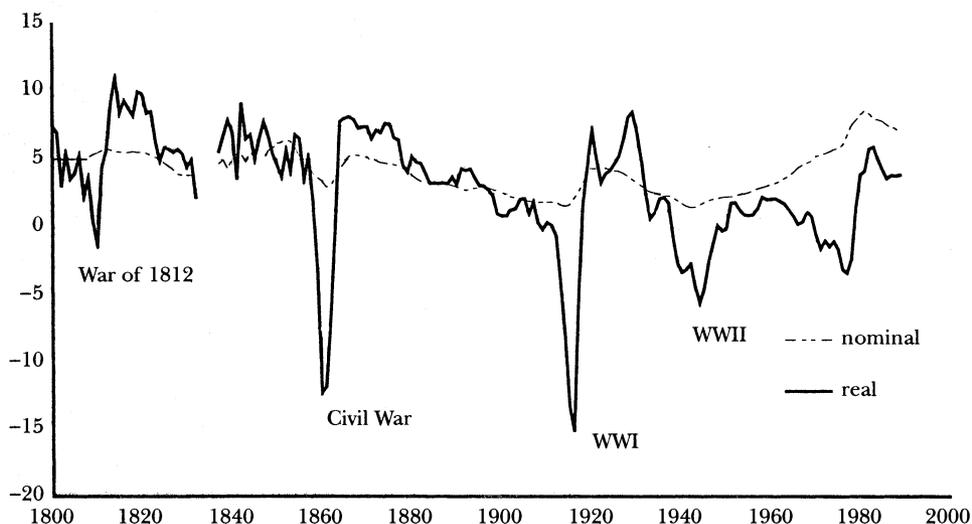
Defense and Deficits: National Fiscal History after World War II

Wars have an enormous impact on public finances. In looking at national expenditures since the 1790s, it becomes clear that the period from World War II to 1980 is an anomaly. Up until World War II, normal peacetime military expenditures are typically about 1 percent of GNP. However, defense spending exceeded 10 percent of GNP for several years in the 1950s during the Korean War and was above 8 percent of GNP for almost all of the 1960s. Even when defense spending had dropped in the 1970s, before the military buildup of the early 1980s, it never fell below 4.7 percent of GNP (in 1978 and 1979). Even today, when peacetime defense expenditures as a share of GNP are at their lowest since the 1940s, around 3 percent of GNP, they are still far higher than any other peacetime period in the nation's history before World War II.

The pattern of spending in the postwar period is also unusual in another, more subtle way. The national debt rose steadily through the first part of the 20th century, averaging 4.3 percent of GNP in the first decade of the 20th century, 22.5 percent in the 1920s, and rising to 94.1 percent of GNP in the 1940s, before gradually dropping back to less than 26 percent of GNP in the mid-1970s. What is truly surprising about the period after 1940 is the failure of national interest expenditures to track the size of the national debt. The increase in debt in the 1930s and 1940s was not accompanied by a sharp rise in interest expenses, and the decline in the national debt as a share of GNP from the 1940s to the 1970s had virtually no effect on interest expenses as a share of GNP. Interest payments were .9 percent of GNP in the 1920s, rose to only 1.9 percent of GNP in the 1940s, and fell to only 1.4 percent of GNP in the mid-1970s.

The reason is straightforward. Wartime fiscal and monetary policies produced negative real interest rates in every major war from 1812 on, as shown in Figure 2. The end of every major war was accompanied by a sharp return to real rates higher than their long-term trends, followed by a return to real interest rates of around 5 percent for most of the 19th and early 20th century. The post-World War II period is the exception. Real interest rates did not return to high or even normal levels

Figure 2

Implicit Nominal and Real Interest Rates on National Government Debt, 1800 to 1992

after World War II. Instead, real interest rates stayed very low, sometimes even negative, as in the 1970s.

For 35 years after 1945, national military expenditures were extraordinarily high and national interest payments were extraordinarily low. The postwar pattern only makes sense if we think of World War II as the beginning of a lengthy shock called the Cold War that would take 40 years to run its course. From 1940 to 1980, the nation experienced what amounted to wartime mobilization in fiscal policy, combined with wartime monetary accommodation to help keep interest rates low. Monetary accommodation produced inflationary pressures, culminating in the great inflation of the late 1960s and 1970s. Real interest rates remained very low into the late 1970s, when the Fed finally abandoned its policy of accommodating federal debt issues.

The national debt crisis of the 1980s and 1990s is much easier to understand in light of this history. In a long-term perspective, a reasonable fiscal plan might have been to end Cold War defense expenditures first, then reduce taxes, and finally go back to a more sustainable monetary policy. Instead, the first step toward end of wartime finance was the Federal Reserve Board's decision to stop accommodating national government debt issues in the late 1970s. This slowed inflation and sharply raised real and nominal interest rates. The next move, in the early 1980s, was to lower tax rates and increase military expenditures. National tax revenues fell from 19.7 percent of GNP in fiscal 1981 to 17.5 percent in 1983, while outlays rose from 22.3 percent in 1981 to 23.6 percent in 1983. Military expenditures remained high until the late 1980s. The short-term deficits had to be financed

at the highest nominal interest rates in the nation's history and the highest real rates since the end of World War I. Between 1981 and 1993, national debt held by the public grew from 25.8 percent of GNP to 50.1 of GNP. The end of wartime finance finally came with the reduction in military expenditures at the end of the 1980s, when military expenditures dropped from 6 percent or more of GNP in the mid-1980s to about 3 percent of GNP by the late 1990s. The peace dividend eventually experienced in the 1990s ended up being roughly equal to annual interest on the national debt.

The shift away from wartime finance in the last two decades has also affected the relationship between the different levels of government. After World War II, the national government could not only levy income taxes, it also could borrow at preferential rates. This contributed to the centralizing tendency at work since the New Deal. The end of wartime finance has raised the costs of government borrowing and dramatically increased national government expenditures on interest. This produced pressures to reduce the amount of money that the national government raised and distributed to state and local governments, which is commonly referred to as the movement towards fiscal devolution. While the basic patterns of intergovernmental responsibility for taxing and spending have remained in place, there has been some movement towards fiscal decentralization in recent years. For example, direct national grants to local governments accounted for 8.4 percent of local revenues in 1977, but only 1.9 percent in 1992.

The best-known recent change in this areas, of course, is the Welfare Reform Act of 1996. Since 1935, the national government has been required to match state spending on categorical welfare programs. The 1996 act changed the obligatory national matching grants to discretionary block grants. As Inman and Rubinfeld (1997) noted in this journal, the Welfare Reform Act of 1996 "saves the federal government money and it breaks the federal-to-state-to-recipient entitlement . . . The savings equals only \$7.8 billion over six years . . . These cost figures, together with much political rhetoric, suggest that the real fiscal target of the Welfare Reform Act of 1996 was not lower federal spending, but the federal-state relationship for how poverty dollars are budgeted." How this new system of financing welfare will perform in the face of the next sharp economic downturn remains to be seen.

The Fed's post-World War II policy of keeping interest rates very low to accommodate wartime debt had one other consequence: it intensified the incentives for politicians to design programs that committed the government to large expenditures in the future, in return for political credit in the present. In the 1960s, the national government expanded its commitment to a number of transfer programs, including Social Security and Medicare. The national government increasingly cut state and/or local governments out of the spending loop and funneled money directly to projects and recipients. Many of these changes had little impact on current expenditures, but involved heavily back-loaded promises. Surely, one underlying reason that the government was willing

to commit to large future expenditures, rather than starting to accumulate surpluses in the 1960s to pay for the later obligations, was the expectation, developed over several decades, that deficit spending would not be a problem and that real interest rates would remain low. Low or negative real interest rates helped to create a fiscal environment where committing the government to large future expenditures on programs like Social Security, Medicare, and Medicaid—without raising current taxes—was not especially irrational or irresponsible policy.

I do not mean to imply that politicians were actually saying those words. However, politicians between 1950 to 1980 did not experience the kind of fiscal constraints that usually came with a large deficit. The entire postwar period seemed to be an object lesson in how a large and persistent national deficit (albeit one that was declining steadily as a share of GNP) did not adversely affect the economy. The Cold War fiscal system lasted long enough to become the status quo. When it began to disappear, fiscal structures that had made perfect sense in the 1960s and 1970s, particularly a more active national government, now began to look as if they were misguided. The habit of commit now, spend later, and let the next Congress deal with it was a rationally acquired habit—but it is a habit which has served the country badly.

Lessons

The next step in an evolutionary chain is always less clear than what has come before. In the past, changes in revenue sources and responsibilities of the levels government have grown out of crises, like the depressions of 1839 and 1933, and have often involved constitutional changes, like the limits on state indebtedness or the federal income tax. Fiscal decentralization is all the rage today. Since the New Deal, the national government has been committed to raising money for local and state governments—indeed, for raising money to make expenditures that it could not control, because the levels were determined by matching grants to states. If the national government is truly serious about devolving considerable responsibility back to the states, the long-term perspective presented here suggests that states will need to acquire a prominent new revenue source. Moreover, this new revenue source will have to be one that is less costly to collect at the state level than at the national or local level.

It would be naive to predict that the next fiscal crisis will necessarily promote decentralization over centralization. For example, if the present welfare arrangements fall notably short during the next recession, there may be a push for greater centralization. Perhaps it will take the form of giving responsibility for Medicaid and welfare to the federal government. Perhaps some arrangement like a national sales or value-added tax, coordinated or collected by the federal government and then distributed back to states on a pro rata basis, might come about. In either case,

I believe that today's devolution movement is less a fundamental response to structural problems in government than part of the shift away from fiscal and monetary patterns, and the accompanying policy habits, that were appropriate during the Cold War.

I have tried to demonstrate two fundamental lessons that we can learn from the historical record. First, how governments raise revenues goes a long way to explaining which level of government plays the most active role. U.S. fiscal history can be divided into three periods in which government revenues were dominated by one type of revenue. In each period, the level of government that could collect that revenue at the lowest costs was the most active level of government. The fact of a connection between revenue instruments and levels of government seems clear, but the directions and interplays of that causation are a subject for further research. It is intriguing, for example, that changes in the main revenue instruments were often accompanied by constitutional changes. Thus, debt restrictions written into state constitutions in the 1840s and 1850s curtailed the opportunity to pursue asset income, and in the process certainly played a role in the growing importance of property taxes in the late 19th century. The national income tax also required a constitutional amendment.

A second lesson is that the size of government relative to GNP seems to follow from the functions and services that the government commits to provide, not from the choice of revenue source or the preeminent level of government at that time. When a government promises to provide highways, or education, or sewers, or welfare, or national defense, or old age assistance, it incurs obligations that are not easily abrogated. The steady growth of the public sector in the 20th century is the result of decisions to provide basic social and economic services. Some of these decisions were first made over a century ago, and while our deliberative democracy is continually reconsidering these decisions, there is no reason to believe that they will change fundamentally in the near future. There is no substantial evidence to suggest that tinkering with revenue structure will change the size of government.

■ *The author wishes to thank Richard Sylla, Price Fishback, Wallace Oates, Brad De Long, and Timothy Taylor, and seminars at University of Delaware, Harvard University, and NBER for helpful comments. This research was supported by NSF grants SES-8419857, SES-8706814, SES-8908272, SBR-9108618, and SBR-970940.*

References

- Advisory Council on Intergovernmental Relations.** 1994. *Significant Features of Fiscal Federalism, 1994*. Washington: GPO.
- Balke, Nathan S. and Robert J. Gordon.** 1989. "The Estimation of Gross National Product: Methodology and New Evidence." *Journal of Political Economy*. 97:1, pp. 38–92.
- Benson, George C. et al.** 1965. *The American Property Tax: Its History, Administration, and Economic Impact*. Claremont: College Press.
- Callender, Guy Stevens.** 1902. "The Early Transportation and Banking Enterprises of the States." *Quarterly Journal of Economics*. November, 17, pp. 111–62.
- Dewey, Davis R.** [1934] 1968. *Financial History of the United States, 12th edition*. New York: Augustus Kelley.
- Einhorn, Robin L.** 1991. *Property Rules: Political Economy in Chicago, 1833–1872*. Chicago: University of Chicago Press.
- Fisher, Glenn W.** 1996. *The Worst Tax? A History of the Property Tax in America*. Lawrence: University of Kansas Press.
- Gallman, Robert.** 1996. "Gross National Product in the United States, 1834–1909," in *Output, Employment, and Productivity in the United States after 1800*. Studies in Income and Wealth, vol. 30. Brady, Dorothy, ed. New York: Columbia University Press.
- Gates, Paul Wallace.** 1968. *History of Public Land Law Development*. Washington, D.C.: GPO.
- Goodrich, Carter.** 1950. "The Revulsion Against Internal Improvements." *Journal of Economic History*. November, X, pp. 145–169.
- Goodrich, Carter.** 1960. *Government Promotion of Canals and Railroads, 1800–1890*. New York: Columbia University Press.
- Grinath, Arthur, John Joseph Wallis, and Richard E. Sylla.** 1997. "Debt, Default, and Revenue Structure: The American State Debt Crisis in the 1840s." NBER Working Paper, Historical Series, no. 96.
- Hammond, Bray.** 1957. *Banks and Politics in America from the Revolution to the Civil War*. Princeton: Princeton University Press.
- Heckelman, Jac and John Joseph Wallis.** 1997. "Railroads and Property Taxes." *Explorations in Economic History*. January, 34, pp. 77–99.
- Hillhouse, A. M.** 1936. *Municipal Bonds: A Century of Experience*. New York: Prentice-Hall.
- Inman, Robert P. and Daniel L. Rubinfeld.** 1997. "Rethinking Federalism." *Journal of Economics Perspectives*. Fall, 11:4, pp. 43–64.
- Legler, John B., Richard E. Sylla, and John Joseph Wallis.** 1988. "U.S. City Finances and the Growth of Government, 1850–1902." *Journal of Economic History*. 48:2, pp. 347–56.
- McGrane, Reginald C.** 1935. *Foreign Bondholders and American State Debts*. New York: Macmillan Company.
- Ratchford, B. U.** 1941. *American State Debts*. Durham: Duke University Press.
- Redlich, Fritz.** 1968. *The Molding of American Banking*. New York: Johnson Reprint Corporation.
- Richardson, James D.** 1897. *A Compilation of the Messages and Papers of the Presidents*. New York: Bureau of National Literature.
- Studenski, Paul and Herman E. Krooss.** 1963. *Financial History of the United States*. New York: McGraw-Hill.
- Sylla, Richard E.** 1966. "American Banking and Growth in the Nineteenth Century: A Partial View of the Terrain." *Explorations in Economic History*. 9:2, pp. 197–227.
- Sylla, Richard E.** 1998. "U.S. Securities Markets and the Banking System, 1790–1840." *Federal Reserve Bank of St. Louis Review*. May/June, 80, p. 83–98.
- Sylla, Richard E.** 1985. "Early American Banking: The Significance of the Corporate Form." *Business and Economic History*. 2:14, pp. 105–23.
- Sylla, Richard, John B. Legler and John Joseph Wallis.** 1987. "Banks and State Public Finance in the New Republic." *Journal of Economic History*. 47, pp. 391–403.
- Sylla, Richard E. and John Joseph Wallis.** 1998. "The Anatomy of a Sovereign Debt Crisis." *Japan and the World Economy*. 10:3, pp. 267–293.
- United States, Congressional Budget Office.** 1999. *The Economic and Budget Outlook: Fiscal Years 2000–2009*. Washington: GPO.
- U.S. Department of the Interior.** 1866. *Statistics of the United States in 1860*. Washington: GPO.
- U.S. Department of the Interior.** 1872. *The Statistics of the Wealth and Industry of the United States*. Washington: GPO.
- U.S. Department of the Interior, Census Office.** 1884. *Valuation, Taxation, and Public Indebtedness in the United States: 1880*. Washington: GPO.
- U.S. Department of the Interior, Census Office.** 1895. *Report on Wealth Debt and Taxation, Part II Valuation and Taxation*. Washington: GPO.

U.S. Department of Commerce, Bureau of the Census. 1907. *Wealth, Debt, and Taxation: 1902*. Washington: GPO.

U.S. Department of Commerce, Bureau of the Census. 1915. *Wealth, Debt, and Taxation: 1913 Vol I and II*. Washington: GPO.

U.S. Department of Commerce, Bureau of the Census. 1975. *Historical Statistics of the United States, 1790–1970*. Washington: GPO.

U.S. Department of Commerce, Bureau of the Census. 1985. *1982 Census of Governments, Volume 6, Number 4, Historical Statistics of Government Finance and Employment*. Washington: GPO.

U.S. Department of Commerce, Bureau of the Census. 1997. *1992 Census of Governments, Volume 4, Number 5, Compendium of Government Finance*. Washington: GPO.

Wallis, John Joseph. 1984. "The Birth of the Old Federalism: Financing the New Deal." *Journal of Economic History*. March, 44:1, pp. 139–59.

Wallis, John Joseph. 1991. "The Political Economy of New Deal Fiscal Federalism." *Economic Inquiry*. July, 29:3, pp. 510–24.

Wallis, John Joseph. 1999b. "State Constitutional Reform and the Structure of Government Finance in the Nineteenth Century," in *Public Choice Interpretations of American Economic History*.

Heckelman, Jac, John Moorhouse, and Robert Whaples, ed. Boston: Kluwer.

Wallis, John Joseph. 2000. "Market Augmenting Government? The State and the Corporation in 19th Century America," in *Market Augmenting Government*. Azfar, Omar and Charles Cadwell, ed. Center for Institutional Reform and the Informal Sector.

Wallis, John Joseph. 1999a. "American Federalism and Economic Development, 1790–1840," in *Environmental and Public Economics: Essays in Honor of Wallace E. Oates*. Panagariya, Arvind, Paul Portnoy, Robert Schwab et al. Northampton, MA: Edward Elgar.

Wallis, John Joseph and Wallace E. Oates. 1998. "The Impact of the New Deal on American Federalism," in *The Defining Moment: The Great Depression and the American Economy in the Twentieth Century*. Bordo, Michael, Claudia Goldin, and Eugene White, eds. Chicago: University of Chicago Press.

Wallis, John Joseph, Richard E. Sylla and John B. Legler. 1994. "The Interaction of Taxation and Regulation in Early 19th Century Banking," in *The Political Economy of Regulation*. Goldin, Claudia and Gary Libecap, eds. Chicago: University of Chicago Press.