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TRENDS IN GOVERNMENT FINANCING

CHAPTER I

Introduction

Government capital requirements, like the capital requirements of the various private sectors of the United States economy, are of two sorts—physical and financial. By physical requirements is here meant the actual gross capital formation demand of governments for final products of the economy. Financial requirements will be taken to be actual governmental demand for funds in the loan and security markets.

Particularly in the case of government the term “capital requirements” applied in retrospect is likely to suggest the question, Were the expenditures—and the borrowing they entailed—really necessary? The objective of this monograph is not to appraise the wisdom or necessity of government capital requirements. Rather it is to determine what borrowings and what capital outlays there actually have been and what circumstances have given rise to them, and by so doing to provide a basis for judging what they are likely to be in the future.

1. *Concepts of Capital Requirements*

While government capital requirements have much in common with private capital requirements, they also have some quite distinctive characteristics. Let us first consider, therefore, more precisely what is meant by government capital formation and government demand for funds. Because of the distinctive characteristics of government we shall be mainly concerned with the latter.

Let us take first the question, What are financial requirements? Broadly speaking we propose to mean by government financial requirements the demand for funds in the loan and security markets, or government borrowings. More specifically we propose to take as our principal measure of borrowings the increments in net debt, meaning by net debt the excess of what a government owes others over what others owe it. Although figures on gross debts outstanding still receive a good deal of attention in the press and although they are useful for some purposes, taken by themselves they can be quite misleading. As of the end of 1955 federal agencies held more than \$51 billion of federal obligations. What the government borrows from its own agencies we propose to exclude from the reckoning of its financial requirements. This applies both to the

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federal government and to other units of government. For state and local governments, Census Bureau compilations have long reported figures on outstanding debts net of sinking fund assets. Whenever such figures are available, we will prefer them to gross debt figures.

But one government unit may hold the debts of another as sinking fund assets. It may hold them for other purposes as well. All told, state and local governments have come to owe the federal government over three-quarters of a billion dollars; and the federal government has come to owe them some \$14 billion.¹ In general, and unless there is some special reason for doing otherwise, we propose to exclude all inter-government debts from the reckoning of financial requirements.

Nor is this quite the end of the matter. If the financial requirements of a sector of the economy are to be measured by the increments in the sector's net indebtedness, it is desirable for many purposes that net indebtedness should be so defined that we can add the indebtedness of any two sectors of the economy together to determine the indebtedness of the two. We therefore propose to give chief attention to government net debt in the very net sense of gross debts less total portfolios and less cash balances. In the case of state and local governments this means essentially reporting debts net of cash and government securities owned.

For the federal government the situation is different. The net debt figure to which we here propose to give primary attention involves deducting a large loan and security portfolio as well as the cash balance from outstanding debts. And the cash balance is especially important in this case too. Thus it seems wise to distinguish between paying off nearly \$10 billion of World War I debt out of the tax surpluses of the 1920's and paying off nearly \$20 billion of World War II debt in 1946 by simply drawing down the general fund balance. While the latter operation retired government IOU's, it retired at the same stroke an equal quantity of the IOU's of the banking and monetary system held by the federal government.² It seems equally wise to distinguish between money the federal government borrows to relend or to invest in securities and money it borrows to finance payrolls or the purchase of munitions.

We shall, then, in measuring government financial capital requirements, give main attention to the increment in net debt, meaning by net debt the excess of gross debt outstanding over cash balances and loans and securities held. However, grosser figures are significant also, and they are often available where net figures are not. They will therefore receive attention too.

¹ The latter figure is as of December 31, 1955. See *Federal Reserve Bulletin* for March 1956. The former is as of December 31, 1954. See Board of Governors of the Federal Reserve System, *Flow of Funds in the United States, 1939-1953*, Table 78. (For bibliographical information, see Appendix B.)

² However, private cash balances increased by about half this amount during 1946.

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But what about government capital requirements in the physical sense, or government capital formation? Following the analogy to private sectors of the economy we might take government capital formation to consist of (a) all new construction, (b) all new durable equipment, and (c) the increment in physical inventories. However, there is a growing consensus that military construction, equipment, and inventories should not be counted as capital formation. The life of such "fixed assets" is highly uncertain; so is the turnover rate of such inventories. And in an economic sense many would hesitate to call them productive assets, however necessary they may be for the country's national security in the present state of world affairs.

The private analogy suggests a further exclusion. Present conventions exclude consumer inventory increases from capital formation; presumably the nonenterprise inventory increases of government may well be left out by the same token. This omission seems necessary in any case because there is no satisfactory comprehensive information on the subject. We might then—in fact, present conventions suggest we should—define government capital formation as new nonmilitary construction and equipment plus physical increases in the inventories of government enterprises. This definition, however, leaves borderline cases to be classified: war housing, war industrial facilities, and additions to the stockpiles of strategic materials. In principle it is proposed to count these items as capital formation.

In application it seems advisable not to press for a rounded picture of equipment and inventory increments. The basic records are too sketchy. Further, the general objective of the study of which this monograph is only a part presumably implies for most sectors of the economy a kind of connection between physical capital formation and the demand for capital funds that in the case of governments is missing. Both because of the sketchiness of the capital formation data and because of the missing connection it has been decided to devote this monograph mainly to analyzing government financial capital requirements.

The relation between state and local government physical and financial requirements will be examined below (primarily in Chapter IV). At this juncture a brief comment contrasting it with that in the private sectors of the economy may suffice. In general gross private domestic capital formation is financed in three ways: (a) by borrowing, capital stock flotation, and the liquidation of financial assets; (b) by new non-corporate proprietorship investment; (c) by inside funds, i.e. depreciation, retained income, etc. In the case of government these lines of connection between physical and financial capital requirements are somewhat obscured. Of course there is nothing analogous to (b). Further, except in the case of government enterprises it would be practically impossible to

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identify anything that really corresponds to (c);³ and even enterprise surpluses and deficits are so difficult to distinguish from indirect taxes and subsidies that the national income and product accounts currently do not attempt to draw the distinction. As for borrowings—financial capital requirements in the sense here proposed—they may be occasioned by various emergency outlays such as those connected with national defense and the depression of the 1930's, outlays that are mostly not for non-military construction and equipment or enterprise inventories. And physical capital formation can be financed out of current tax receipts.

This contrast may be put in rather different words. The established accrual accounting practices of private business draw a sharp line between capital expenditures and the means of financing them, on the one hand, and charges and credits to the income account, on the other. These practices make for a clean-cut separation of the capital from the annual budget. Through the balance sheet business financial reports tie capital requirements in the physical sense and capital requirements in the financial sense together. Government accounting practices are quite different; the development of accrual conventions has not gone very far. Only a few general government units (nonenterprise, non-trust-fund units) have anything called a capital budget, and none of these maintains a set of accrual accounts that provide a full-fledged balance sheet. The accounting tie between the two types of capital requirements is, for the most part, missing.

No doubt the wide differences between government fiscal and accounting practices and those of private business reflect a fundamental difference in policy objectives. Business accrual accounting is designed to give a measurement of profit, and profit is the central business objective. The policy objectives of government do not lend themselves to specification in financial statement terms. Nonetheless, conceivably a wider application of businesslike techniques in government fiscal procedures may bring about a closer relation between government physical and financial capital requirements in future. We will give this possibility some attention in Chapter IV.

2. *An Outline of the Growth of Government Capital Requirements*

Let us briefly review the growth of government debt during the past several decades. In 1890 the federal net debt was a little over \$900 million, and only a little more than the total net indebtedness of all state and local governments combined. (See Table 1.) However, aggregate

³ Raymond Goldsmith in his monograph, *Financial Intermediaries in the American Economy since 1900*, presents computations of an item he calls government "funds . . . supplied by internal sources." We doubt that this item is properly comparable to the similarly captioned items for the private sectors of the economy.

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government debt reached a low point during the early 1890's. At the close of the Civil War the federal gross debt exceeded \$2.75 billion; Ratchford estimates the debt of the Confederacy—which was repudiated—at \$1.5 billion.⁴ The census reports a state and local total (net of sinking funds) of nearly \$870 million for 1870. At the end of the Civil War the total may well have exceeded a billion dollars, for the war debts of the southern states—and of some cities—were repudiated.⁵ Of the \$870 million about

TABLE 1
Government Gross and Net Debt, Selected Years, 1890-1950
(billions of dollars)

	1890	1913	1929	1939	1950
GROSS AND NET DEBT					
A. Federal gross debt	1.12	1.19	17.5	50.5	268.1
B. Federal net debt	0.93	0.98	15.4	31.4	195.4
C. State and local gross debt	1.34	4.78	17.8	20.1	25.6
D. State and local net debt	0.88	3.35	10.9	11.8	4.9
E. Total gross debt	2.46	5.97	35.3	70.6	293.7
F. Total net debt	1.81	4.38	26.3	43.2	200.3
INDEBTEDNESS NET OF SINKING FUNDS					
G. States	0.23	0.35	2.48	2.95	4.44
H. Counties	0.15	0.37	2.39	2.01	1.59
J. Cities, villages, townships, etc.	0.72	2.95	9.18	9.01	9.67
K. School districts	0.04	0.12	2.04	1.71	2.58
L. Special districts	^a	0.04	1.60	2.50	2.96
M. All state and local governments	1.14	3.82	17.70	18.18	21.23

^a Negligible.

NOTE: Figures for 1929, 1939, and 1950, lines A through F, refer to December 31. Other figures are fiscal-year-end figures; lines C through F, 1913-50, include territories and possessions. Other local government figures do not. Because of rounding, sums of columns may not precisely equal totals on lines E, F, and M. Terms are defined in Appendix A.

SOURCE: See Appendix A.

three-fifths were accounted for by municipalities and other local units of government. Local debts had probably more than doubled during the preceding ten years; they apparently continued to grow rapidly until 1873, a substantial amount of borrowing being undertaken to aid in financing railroad construction. (See Table 2A.) During the postwar years, too, southern state and local governments borrowed to finance reconstruction and to some extent also to finance the regime of the carpetbaggers. The severe depression which began in 1873 brought extensive defaults, and some compositions of municipal debts. And the ousting of the carpetbaggers in 1876 was followed by debt repudiations

⁴ B. U. Ratchford, *American State Debts*.

⁵ See Chapter IV on the amounts of war borrowing by Union and Confederate states.

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and compositions totaling well over \$100 million. But despite these developments total local indebtedness was larger in 1880 than in 1870 and larger still in 1890. In 1890 net of sinking funds it totaled \$926 million as compared with \$516 million twenty years earlier. However, state debts, net of sinking funds, declined from \$353 million to \$211 million during these two decades. And the federal gross debt decreased by \$600 million, 1866-73, and by more than \$1,300 million, 1879-93.

TABLE 2A
Bonded State and Local Government Debt Outstanding,
1880, by Purpose
(millions of dollars)

	Cities ^a (1)	Total (2)
A. Bridges	21	25
B. Improvement of harbors, rivers, wharves, canals, and waterpower	17	36
C. Parks and public places	40	40
D. Public buildings	26	48
E. Railroad and other aid	68	185
F. Schools and libraries	14	26
G. Sewers	21	21
H. Streets	82	87
J. War expenses	29	75
K. Water works	142	146
L. Other (including unidentified)	222	428
M. Total	682	1,117

^a Cities and towns of more than 7,500 population.

NOTE: These figures are from the 1880 census. That census also cites a compilation by the comptroller of the State of New York for 1838 covering 18 of the then 26 states which shows their debt by purpose as follows:

	<i>(millions of dollars)</i>
Aid to banks	53
Building canals	60
Aid to railroads	43
Turnpikes and macadam roads	7
Other	8
Total	171

So far as government financing is concerned, the period from 1890 to World War I conforms in its broad outlines to a somewhat prevalent concept of "normal times." Possibly it was in a way a basis for this concept of what is normal. There were ups and downs in federal debt, of course; but for the period as a whole the federal budget was substantially in balance. The gross debt was \$1.25 billion in 1889, \$1.23 billion in 1916. And while state and local debts increased sharply, from \$1.14 billion in 1890 to \$4.5 billion in 1913, the new borrowing was mostly to finance physical capital formation. (See Tables 2B and 2C.)

Despite increased pensions in the early 1890's the budget surpluses

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the federal government had been enjoying in the 1880's continued until the panic year of 1893. The deficits during the ensuing depression brought debt back up to the 1889 level in 1898. Then the Spanish-American War—the war proper lasted only four months—carried it some \$200 million higher. But Congress promptly passed a war revenue bill, and the continuation of most of the war emergency taxes to 1901 reduced the debt to \$1.22 billion in that year. The downs and ups of federal debt during the next fifteen years reflect a variety of factors. There was a deficit in 1904 due mainly to the expenditure of \$50 million for the purchase of the Panama Canal.

During the 1890's the growth of local debts was accelerated, and there was some net borrowing by states. On a per capita basis even local indebtedness had declined in the preceding decade. The financial difficulties of the 1870's had led to a substantial tightening of the legal restrictions on borrowing—we consider these restrictions in Chapter V—and the restrictions seem for a time to have been reinforced by a psychology of caution that temporarily somewhat checked recourse to borrowing. But by 1890 the factors of debt increase had again become predominant. Per capita local debt, net of sinking funds, was \$14.80 in that year, \$20.74 in 1902.

Broadly speaking most of the factors of increase during the latter years of the nineteenth century and the early years of the twentieth were associated with the industrial revolution. The mere growth of urban population that accompanied the process of industrialization called for substantial investments in new streets, schools, and other public improvements. But technological change also involved additional investments per capita. The more general installation of running water and inside flush toilets meant large municipal outlays on water and sewage systems. Other capital formation expenditures reflecting the new technology and rising standard of living included those for improved fire department equipment, grade crossing eliminations, better schools, city hospitals, institutions, parks and recreation facilities—not to mention municipal enterprises such as transit systems. (See Tables 2B and 2C.)

On the whole other units of government responded less promptly to the influences making for increased borrowing. Thus state capital expenditures totaled less than half a million dollars in 1890 and only \$2 million in 1902. But these influences began to be felt in the early years of the twentieth century. Between 1902 and 1913 state debts (net of sinking funds) rose from \$235 to \$346 million, county debts from \$197 to \$372 million. About half the \$68 million of state capital expenditures in 1917 was for highways (including the Barge Canal in New York State). The pressure of the automobile for improved roads and streets had come to be an important factor in state and county as well as in city debt increases.

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But borrowing was not confined to existing units of government. Various "special districts" were established, partly as a device for getting concerted action over an area involving more than one local—or state—jurisdiction, in some cases too as a device for getting around debt and other restrictions: school districts, drainage, irrigation, and levee districts,

TABLE 2B
Functional Distribution of State Government Debt,
Selected Years, 1915-51
(millions of dollars)

	1915	1929	1941	1951
A. Highways	207	1,181	1,524	1,974
B. Schools	8	48	120	582
C. Hospitals	6	25	50 ^a	165 ^b
D. Veterans' aid and homes	c	244	d	1,970
E. Housing and community development	d	d	d	232
F. Welfare	11	6	460	10
G. Parks and reservations	7	20	35	d
H. Public service enterprises and investments	29	250	250	262 ^e
J. General government properties	16	29	96	d
K. Other	228	369	715	779
L. Total above	512	2,172	3,250	5,974
M. Total gross debt	580	2,300	3,462	6,223

^a Includes institutions for the handicapped.

^b Health and hospitals.

^c Less than \$500,000.

^d Included with "Other."

^e Nonhighway transportation facilities.

NOTE: Detail covers funded and floating debt, 1915; funded, floating, and special assessment debt, 1929; long-term debt, 1941 and 1950.

SOURCE: Bureau of the Census, *State Government Finances*, annual (before 1942, called *Financial Statistics of States*).

and units of government devoted to a number of other special purposes. In part the growth of local debt, 1902-13, reflects the borrowing of new school and special districts.

The influences making for increased indebtedness of state and local governments that were prominent during the first decade of the twentieth century were even stronger during the next two decades. In 1929 the net debt of all such governmental units was \$10.9 billion, or more than twelve times what it had been in 1890. The growth of school and special districts continued, too. In fact the total indebtedness of these units in 1932 was greater than that of either counties or states. We will consider the significance of special districts in Chapter V.

During the Civil War the states, particularly the Confederate states, played a considerable part in financing the war. By the time of the

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Spanish-American War this financial function had been largely taken over by the federal government. Nonetheless during and after both world wars the states incurred substantial war-connected expenditures, chiefly for soldiers' and sailors' aid and homes. As Table 2B shows, such expenditures were responsible for the third largest identifiable category of state debt in 1929 and the second largest in 1951.

TABLE 2C
Functional Distribution of City Government Debt
Selected Years, 1905-51

<i>Year</i>	<i>1905</i>	<i>1930</i>	<i>1941</i>	<i>1951</i>
Number of cities	154	310	92	41
	debt in millions of dollars			
A. Public service enterprises	446	2,799	3,353	3,529 ^a
B. Highways	208	1,416	723	893
C. Schools and libraries	171	1,705	656	547
D. General government properties	25	190	139	^b
E. Parks and playgrounds	95	341	227	227
F. Charities, hospitals, and corrections	^c	132	307	161
G. Sanitation	72	792	444	512
H. Public safety	12	101	76	78
J. Other	494	1,875	1,107	1,262
K. Total above	1,523	9,351	7,032	7,209
L. Gross debt of cities of over 30,000	1,618	10,018		
M. Gross debt of cities of over 25,000			8,355	9,975

^a On the method of estimating this figure see Appendix A. *Large-City Finances in 1951* shows: (1) enterprises, \$2,891 million; (2) nonhighway transportation facilities, \$637 million; (3) housing and community development, \$528 million. Portions of (2) and (3) in prior years were treated as public service enterprises.

^b Included with "Other."

^c \$43 million, 1912.

^d Health and hospitals only. In 1941 the figure for hospitals alone was \$120 million.

NOTE: The figures for 1941 and 1951 are not exactly comparable to those for 1905 and 1930 because they exclude the computed portions of the debts of overlying counties and school and special districts. The principal effects of this exclusion are roughly indicated by the following comparison of the percentages of all debt identified by function represented by four major functions which overlying units of government perform:

	<i>1940</i>	<i>1941</i>
	<i>(including overlying units)</i>	<i>(excluding overlying units)</i>
Public service enterprises	46.7%	56.5%
Schools and libraries	16.4	11.1
Parks and playgrounds	5.3	3.8
Sanitation	8.7	7.5

SOURCE: See Appendix A.

As a result of World War I the net federal debt was increased from less than \$1 billion to \$22 billion by June 30, 1920. During the following decade about \$9 billion of war debt was paid off. Then came fifteen years

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of deficits. At the close of the depression decade of the 1930's the net federal debt stood at \$31.4 billion; it was increased by World War II to \$220 billion by December 31, 1945. In the next three years it declined by about \$25 billion. Stepped-up national security and other expenditures practically eliminated the surplus in 1949-52—there was little change in net debt during these four years. It increased about \$9 billion in the next two years.

Much of the time changes in state and local indebtedness have contrasted markedly with changes in federal debt. Sharp increases of the one have been accompanied by a retarded growth or even a contraction of the other. This was so in 1900-16, during World War I, and throughout the 1920's. It was so too during most of the 1930's and again during and after World War II. True, the 1929-33 recession forced state and local governments for a time to borrow—not primarily to finance capital formation but rather to make up for decreased revenues. However, by the end of 1933 the depression growth of state and local debts was checked; and during the next five years net indebtedness declined by about \$1 billion. Then small increases in net debt in 1939-40 to finance capital outlays were followed by substantial decreases during the next several years. World War II brought large cash surpluses. Receipts increased, and on the whole wartime restrictions kept expenditures from increasing. As a result state and local governments, viewed collectively, got practically out of debt.

This does not mean that there were no debts outstanding on or about June 30, 1946; at that time such debts totaled some \$16.5 billion. Rather it means that financial assets—cash balances and portfolios—came to about the same figure.

Nor does saying state and local governments were practically out of debt mean that each individual unit of government was in an equally favorable financial condition. For all states taken together financial assets apparently exceeded debts outstanding by more than \$2 billion. And for cities of over 25,000 population net financial assets—financial assets minus total debts—were probably in excess of \$1 billion. Clearly there were other units of government that had net debts.

Since the figures on state and local debt which receive most attention do not make clear the 1946 net debt situation—they are too gross—we give an approximate statement of state and local debt condition in Table 3.

After 1946 state and local governments again had recourse to net borrowing. The major purpose of the new debt issues, as Tables 2B and 2C make clear, was to finance physical capital formation. New construction, which in 1945 had totaled less than two-thirds of a billion dollars, exceeded \$3 billion in 1947 and \$8 billion in 1954. But, as after World War I, veterans' bonus bonds were a substantial debt item for states.

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However, despite a large postwar step-up in expenditures and despite a large volume of new bond issues, the growth in net debt was moderate. It amounted to only about \$6.5 billion by the end of 1954.

But gross state and local debt was about two and one-fourth times what it had been in 1929. And the major purposes of borrowing continued to be the financing of various types of capital expenditures. Still there were

TABLE 3
State and Local Government Gross and Net Debt,
December 31, 1946 and 1950
(billions of dollars)

	1946	1950
A. Gross debt outstanding	16.5	28.2
B. Held in sinking, trust, and investment funds	2.4	3.6
C. Federal interest-bearing debt held in sinking, trust, and investment funds	6.8	8.9
D. Cash balances	7.1	9.5
E. Other securities owned	0.2	1.3
F. Total financial assets (sum of lines B through E)	16.5	23.3
G. Net indebtedness (line A minus line F)	0	4.9

SOURCE: See Appendix A.

significant changes among the detailed components during the period covered by Tables 2A and 2B. Highways represented 73 per cent of the state debt identified by purpose in 1915; only a little over 30 per cent in 1951. The corresponding figures for cities are: 20 per cent, 1905; 15 per cent, 1951. State school debt was relatively unimportant in 1915; in 1951 it was one-ninth of the total identified by purpose. The growth of state university debts—particularly in Texas, Michigan, Tennessee, and Oklahoma—was an important factor in this increase, although the total of such debts for all states was only three-fifths of the \$582 million on line B of Table 2B. Debts incurred for welfare purposes were especially large in the post-depression year 1941. City enterprise debt accounted for some 43 per cent of all identified city debt in 1905—water supply systems alone for 26 per cent. By 1951 the percentage for enterprise debt had increased to nearly 60—transit systems alone accounted for 25 per cent of the identified total, water supply systems for 23 per cent, electric power systems for 4.5 per cent. And—to particularize further—the acquisition of the BMT and IRT subways by New York City in 1940 contributed substantially to the increase in transit system debt; it explains nearly 10 per cent of \$3.4 billion on line A, 1941, in Table 2C.

No entirely satisfactory standard of comparison that would enable us to appraise the significance of the growth of government net debts from

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less than \$2 billion in 1890 to some \$200 billion sixty years later is available. Goldsmith has estimated the total investments of all types of financial intermediaries in loans and securities and their investments in government obligations at various dates. His estimates for 1900 and 1952 show:

	1900	1952
	(billions of dollars)	
A. All government obligations	1.7	209.2
B. Federal obligations	0.7	186.0
C. All loans and securities	13.7	450.4
	(per cent)	
D. All government obligations/all loans and securities	12.4	46.0
E. Federal obligations/all loans and securities	5.1	41.1

NOTE: See Goldsmith, *op.cit.*, p. 131. Line C represents what he calls "funds made available" to domestic nonfinancial sectors and to the rest of the world.

Also, the Department of Commerce has estimated what it calls net public and net private debt, for years beginning 1916.⁶ A comparison for this year and for 1950 follows:

	1916	1950
	(billions of dollars)	
A. Government net debt	5.5	239.4
B. Federal net debt	1.2	218.7
C. "Net" private debt	76.5	246.4
	(per cent)	
D. Government net debt/"net" private debt	7.3	97.0
E. Federal net debt/"net" private debt	1.6	89.00

These two comparisons highlight the extent to which government debt, and particularly federal debt, has come to be a dominating influence in the loan and security markets.

Table 1 gives us an approximate picture of the financial capital requirements of governments, 1890-1950. The record of physical capital requirements is considerably less satisfactory. Table 4 compares physical and financial capital requirements, so far as we have somewhat acceptable measurements for the former. One would not expect to find any obvious over-all relationship in the case of the federal government, because the major factors in the growth of federal debt have been the two world wars and the depression of the 1930's. Only in a few debt issues, an issue of \$125 million to help finance the purchase and construction of the Panama

⁶ Public debt is gross debt less own obligations held. Private debt is gross debt of corporations other than currency and deposit liabilities of banks and policy reserves of insurance companies minus indebtedness to affiliated corporations plus gross mortgage and other debt of individuals and unincorporated enterprises. The noncorporate, nonmortgage debt component of the 1916 figures is incomplete. See *Survey of Current Business*, September 1952.

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Canal and some more recent agency issues such as the TVA bond issue of 1933, is there a direct connection.

State and local governments, on the other hand, have borrowed mainly to finance new capital assets. Nonetheless, as Table 4 makes clear, the extent to which state and local governments have financed physical capital formation through recourse to the loan and security markets has varied widely from time to time.

TABLE 4
Federal and State and Local Debt Growth Compared to
Increase in Capital Assets and Construction
(billions of dollars)

	1902-12	1912-29	1929-46	1915-29	1930-40	1941-45	1946-50
FEDERAL GOVERNMENT							
A. Increase in capital assets ^a	0.4	1.1	21.2	c	c	c	c
B. New nonmilitary construction	c	c	19.0 ^d	1.2	6.1	12.2	5.1
C. Increase in net debt	0.1	14.4	203.5	14.4 ^e	18.4 ^e	190.8 ^e	-24.6 ^e
STATE AND LOCAL GOVERNMENT							
D. Increase in capital assets ^b	3.1	12.8	8.8	c	c	c	c
E. New construction	c	22.4	30.7 ^d	21.9	23.9	5.3	18.2
F. Increase in net debt	1.6	7.8	-10.9	7.3 ^e	0.7 ^e	-10.8	2.4 ^e

^a Includes corporations.

^b Excludes roads, streets, and sewage systems.

^c Increments for these intervals not provided in the basic figure.

^d 1930-46.

^e 1914-29; 1929-40; 1940-45; 1945-50.

NOTE: Federal nonmilitary new and maintenance construction totaled \$0.3 billion, 1891-1902; \$0.8 billion, 1903-12. (See *Historical Statistics*, H-27 and H-28.) The increment in federal net debt, 1890-1902, was \$0.2 billion.

Line D in Table 4, like line A, is a measure of net capital formation. Since it omits roads, streets, and sewage systems—as well as nonconstruction items—it is seriously incomplete. It certainly understates the amount of net capital formation; probably also the percentage increase from 1902-12 to 1912-29. State highway debt outstanding increased by \$52.5 million 1902-12; by \$1.29 billion 1912-29.⁷ Surfaced road mileage increased by 93,000 in the former period; by 431,000 in the latter.⁸

Lines B and E reflect gross capital formation other than new equipment purchases and inventory increases. Until recent years there is little comprehensive information on any components of government capital

⁷ *Historical Statistics*, K-175 and K-204.

⁸ *Ibid.*

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formation except new construction. Some data on equipment purchases and on enterprise inventories are currently available. During the five years ending 1951 the inventories of federal government corporations and business-type agencies increased by some \$270 million.⁹ In the two years 1950 and 1951 cities of over 25,000 population made capital outlays for equipment of \$193 million; construction outlays of \$1,812 million.¹⁰ These figures suggest that new construction may in recent years have accounted for perhaps as much as 84 or 90 per cent of government physical capital formation as defined above.

Judging by Table 4 net borrowing provided the funds for a substantial part of state and local government net physical capital formation, 1903-29. The dollar value of such net physical capital formation in 1930-46 including roads, streets, and sewage systems must have been larger than that in 1903-29; nonetheless in the later period net debts decreased by more than \$10 billion. And during 1946-50 net borrowing was only a little over one-eighth of the dollar value of total new construction.

These comments emphasize the special nature of the problem of determining capital requirements for the government sector of our economy. We shall analyze this problem further in Chapter II in terms of government budgets and the growth of government functions.

It is tempting to conclude from Table 4 that during the initial impact of the industrial revolution there was a close relation between physical and financial capital requirements for state and local governments, a relation that more recently has largely disappeared. We shall examine this possibility more closely in Chapter IV, but it is clear from Tables 2B and 2C that even in 1951 a large part of the outstanding debt had been incurred to finance capital formation.

3. Summary

Our main concern in this monograph will be with changes in government indebtedness. It is proposed to give particular attention to changes in net debt, i.e. total debt minus holdings of cash, of government obligations, and of other financial assets.

Our brief review of the growth of government debt during the past several decades raises the question of the nature of the relation between state and local borrowing and capital formation and of recent changes in that relation. It confirms the common-sense view that the main factors in the increase in federal net debt from about \$1 billion in 1913 to some \$195 billion in 1950 were wars and the depression of the 1930's, rather than capital formation.

⁹ *Treasury Bulletin*, April 1952, p. 67. Between June 30, 1950, and December 31, 1951, they decreased by \$0.73 billion. This compilation does not include the Post Office and the Maritime Administration.

¹⁰ *City Government Finances*. Outlays on existing assets totaled \$188 million.

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During the twentieth century government securities, particularly federal obligations, have had increasing influence upon the loan and security markets.

Besides the relationship between borrowing and capital formation, there are a number of questions suggested by our brief historical review to which we will need to give attention: What changes in government functions and in the governmental units responsible for financing them have taken place? What are the implications of national security programs for federal financial requirements? What are the implications of anti-recession measures for federal financial requirements? What are their implications for state and local requirements? Why has the distinction between gross and net debt become so important? What are the conditions making for retirement of large emergency-incurred debts?

We will need also to examine the history of government indebtedness and borrowing in somewhat greater detail. And we will need to give further consideration to the concept of net borrowing and to note the significance of various fiscal techniques and developments for the growth of government debts.