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CHAPTER VII

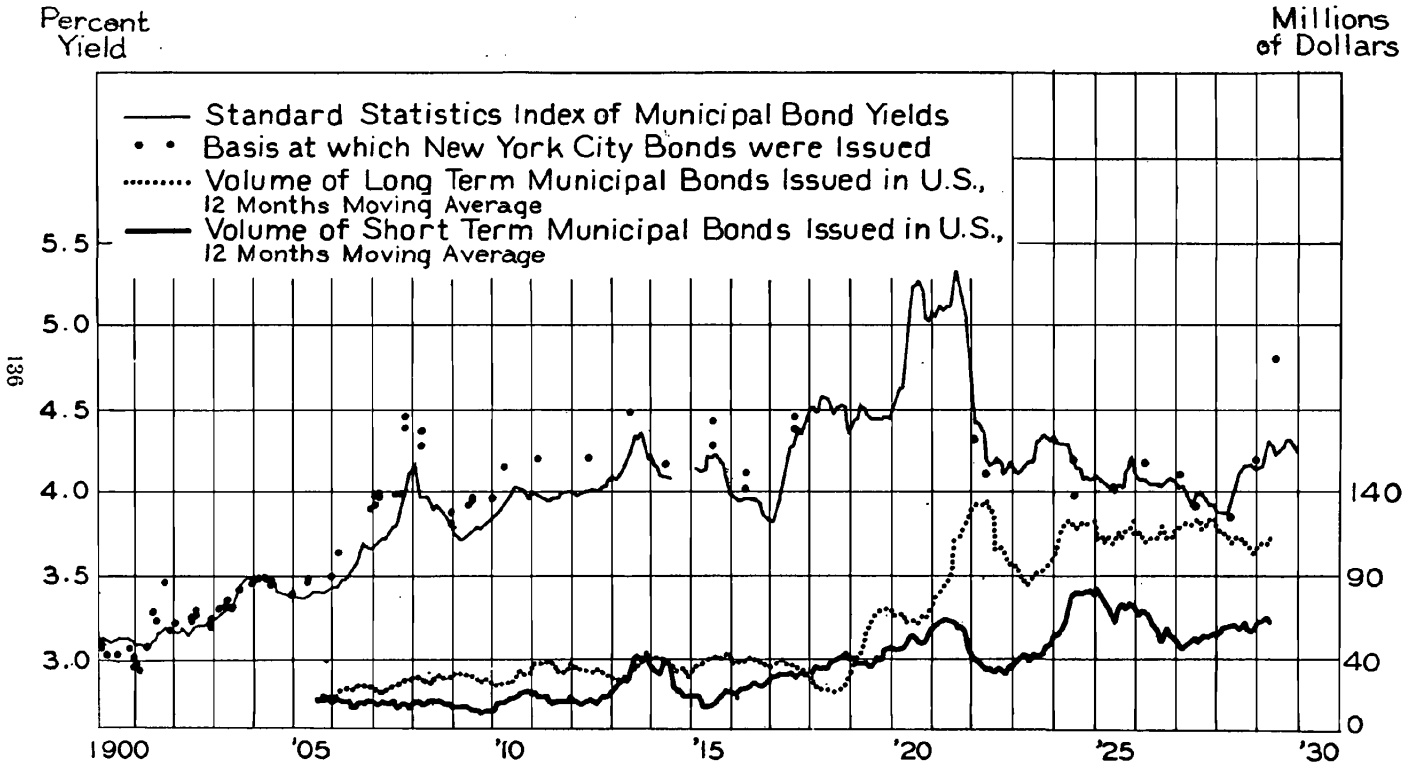
THE FINANCING OF PUBLIC CONSTRUCTION

Public construction, in this country and elsewhere, is paid for out of current revenue and out of the proceeds of long and short-term borrowings. The scale of permanent public improvements prevailing at any time, therefore, is not alone determined by the needs of the community or by its plans, but is subject, also, to the influence of other factors of equal importance. The rate of taxation, as is well known, is often limited by the capacity and willingness of citizens to pay; and the volume of contemplated loans is on occasion fixed by constitutional limitations on borrowing capacity or by the state of the money market. In this regard there is a marked analogy between a public agency, planning to initiate a program of permanent improvements, and a private business enterprise, contemplating improvements and additions to its plant and equipment, which depends for its capital on its net income and its ability to borrow.

The record of municipal bond flotations in this country indicates a persistent relation between money rates and the amount of such bond issues. In periods of tight money, when the price which governments are required to pay for their credit is high, there is a tendency to shift from long to short-term loans and to reduce the total volume of borrowings until such time as money rates have eased. Occasionally, under the stress of critical conditions of war, a municipality may cease nearly all borrowing for the time being, as in the case of New York City. The prevailing relation between the yields of standard municipal bonds and the volume of long and short term bond issues is shown for the period since 1900 in Appendix I, Tables 1 and 2, and in Chart 27.

During the past two years of rising money rates, the condition of tight money was reflected in the changing level of the amount of municipal loans. Thus, the total of municipal loans for new financing dropped from $1,151,784,994 in the first nine months of 1927, to $962,103,769 in 1928, and to $918,079,139 in 1929. With

CHART 27.—MUNICIPAL BOND YIELDS AND MUNICIPAL BOND ISSUES IN THE UNITED STATES, 1900–1929.



the sudden easing of money rates in November, 1929 and the subsequent rise in bond prices, public financing hitherto withheld came upon the market and produced a substantial rise in the volume of new flotations. The following tabulation of permanent state and municipal borrowing shows that the amount issued in December, 1929 was greater than in the same month of any year since 1920, excepting 1921, and that the total for 1929 now exceeds the issues during 1928, but is slightly below the volume of loans in 1927.[59]

Year	December	12 Months Ending December 31
1920	$ 81,556,865	$ 773,663,986
1921	313,745,876	1,383,368,900
1922	53,497,002	1,279,553,134
1923	97,346,640	1,135,167,134
1924	73,600,315	1,446,688,993
1925	166,272,700	1,404,702,240
1926	147,246,926	1,362,037,801
1927	117,903,228	1,477,769,824
1928	116,140,540	1,389,818,718
1929	273,377,311	1,443,008,693

The annual issues of municipal bonds are not a proper measure of the net increase in the amount of bonds outstanding. While practice differs materially from state to state and city to city, bonds everywhere mature or are redeemed by the sinking fund or serial bond methods. The volume of maturities and redemptions, the gross annual new issues and the net annual increase in the amounts outstanding are shown in Table 47.

Purposes of Bond Issues.—The survey of contracts awarded for public construction and of the expenditures for this purpose by several selected municipalities, considered earlier in this book,[60] revealed considerable variation in categories of public works expenditures from year to year. Street improvement, water supply, schools and other public buildings, however, always loom large in the total. These findings are confirmed by the classification of municipal bond issues from 1924 to 1928, given in Table 48.

[59] *The Daily Bond Buyer,* New York City.
[60] Chapters I and II, pp. 11-15, 18-21, 27-34.

TABLE 47. — NET ANNUAL INCREASE IN AMOUNT OF MUNICIPAL BONDS OUTSTANDING, IN THE UNITED STATES, 1914–1928

(In millions)

Year	Gross Amount New Issues	Amount of Bonds Matured and Redeemed	Net Annual Increase in Amount of Bonds Outstanding
1914	$446	$275	$171
1915	492	172	320
1916	497	121	376
1917	444	135	309
1918	262	68	194
1919	762	317	445
1920	773	263	510
1921	1,383	431	952
1922	1,279	672	607
1923	1,135	390	745
1924	1,446	228	1,218
1925	1,404	544	860
1926	1,362	713	649
1927	1,464	572	892
1928	1,389	482	907

Source: The Bond Buyer, *Municipal Bond Sales*, Annual Edition, New York City, 1928, p. 6.

TABLE 48. — PURPOSE OF MUNICIPAL BOND ISSUES IN THE UNITED STATES, 1924–1928

(In thousands)

Purpose	1924	1925	1926	1927	1928
Water supply	$120,064	$105,864	$104,950	$95,459	$62,173
Schools	57,799	120,591	59,556	83,802	56,624
Sewers	46,094	69,243	54,479	59,804	50,285
Street improvement	90,979	112,587	99,543	114,753	114,534
Public utilities	34,924	24,247	60,022	107,712	76,208
Parks	14,243	8,826	7,431	6,375	20,532
Public Buildings, Hospitals, Police and Fire Departments	53,900	28,674	42,085	46,968	41,031
Miscellaneous	310,133	228,482	283,514	243,930	219,136

Source: The Bond Buyer, *Municipal Bond Sales*, Annual Edition, New York City.

CHART 28.—NET ANNUAL INCREASE IN AMOUNT OF MUNICIPAL BONDS OUTSTANDING IN THE UNITED STATES, 1914–1928.

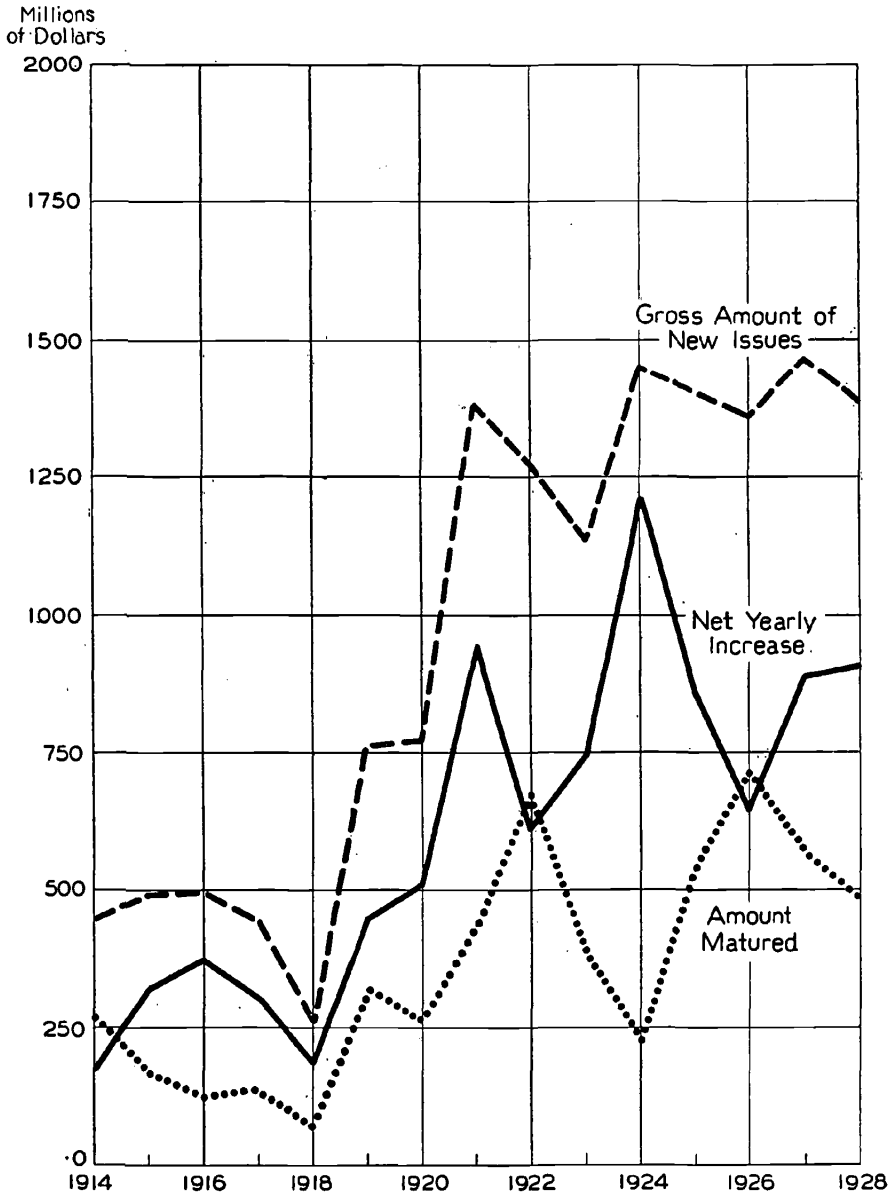


CHART 29.—PURPOSE OF MUNICIPAL BOND ISSUES IN THE UNITED STATES, 1924–1928.

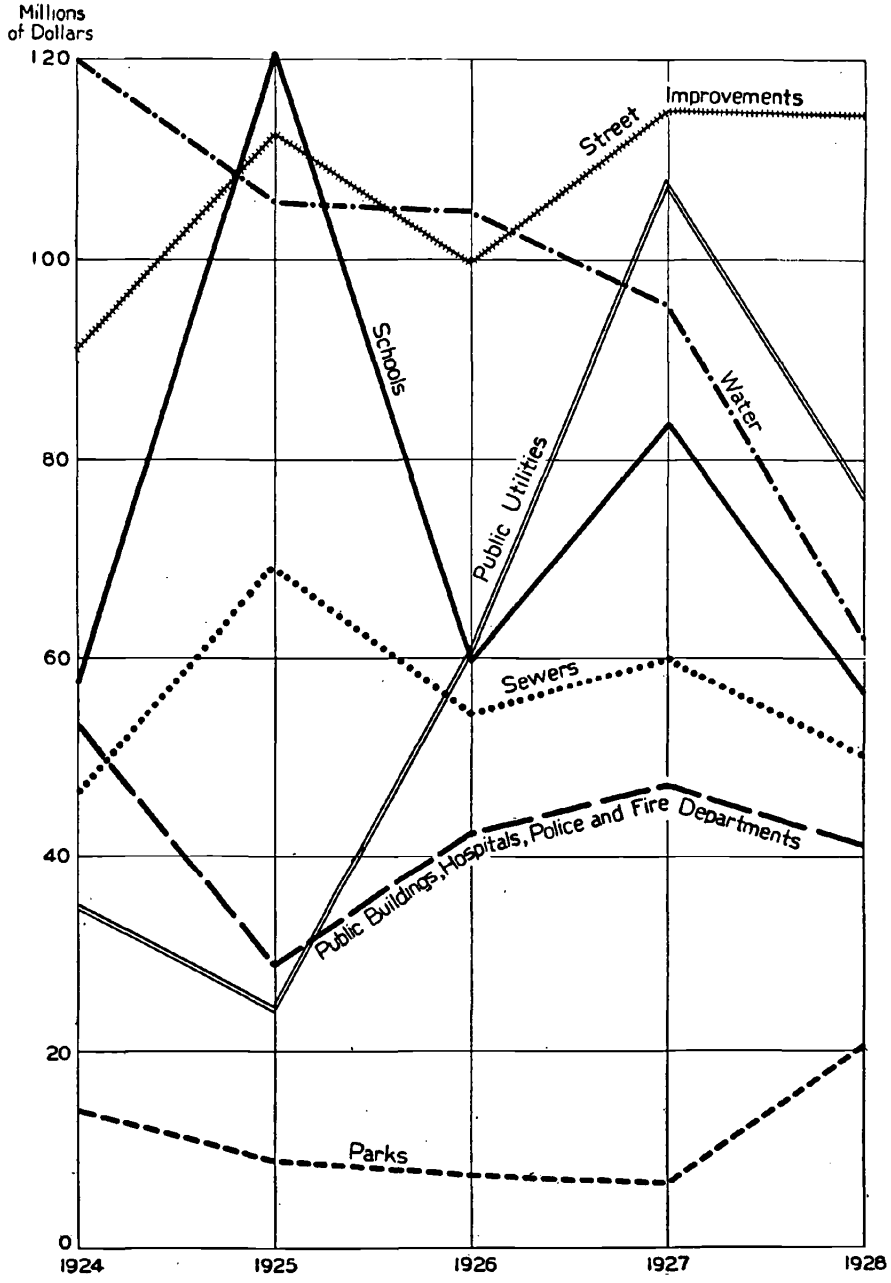
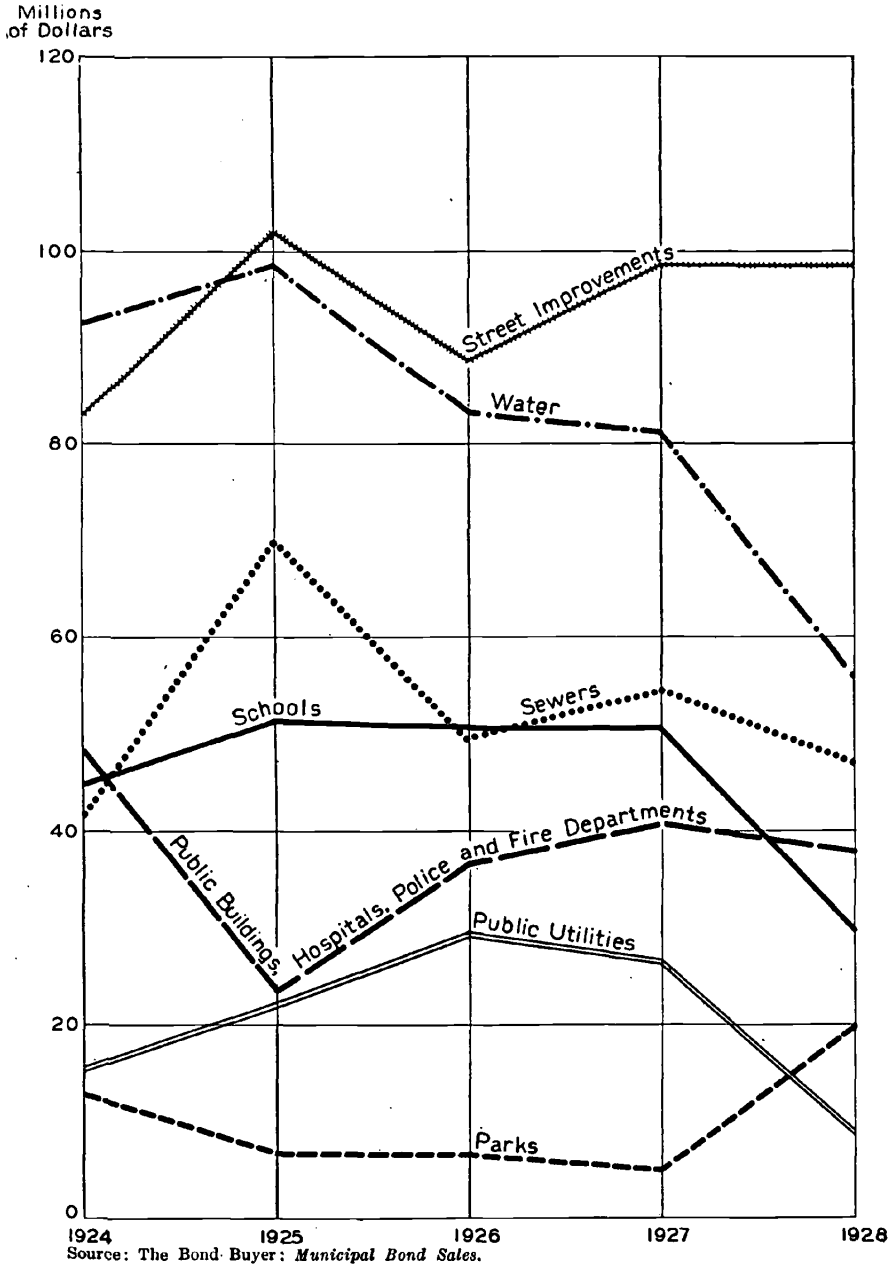


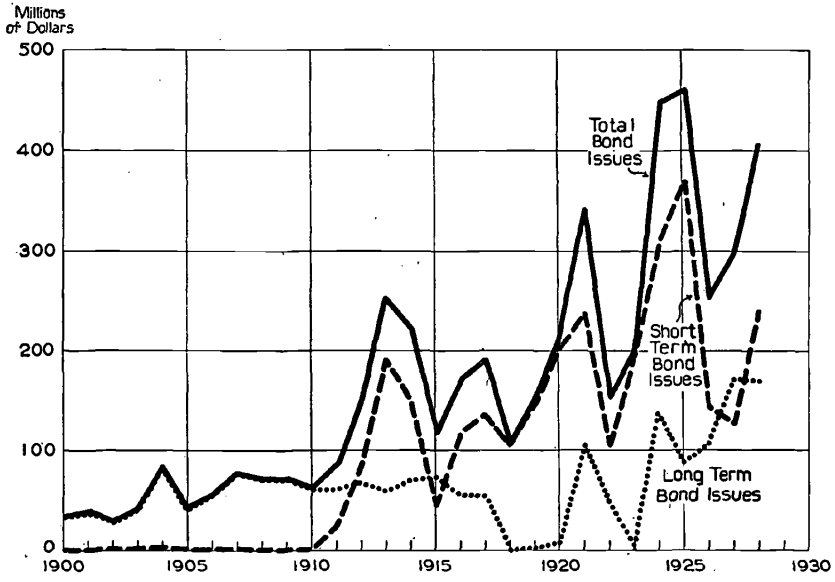
CHART 30.—PURPOSES OF MUNICIPAL BOND ISSUES THROUGHOUT THE UNITED STATES, EXCLUDING MUNICIPALITIES IN NEW YORK STATE, 1924–1928.



Source: The Bond Buyer: *Municipal Bond Sales.*

Municipal Tax Receipts and Bond Issues.—The problem of the sound method of financing permanent improvements and the other activities of government has long been a subject of discussion in this country with reference to the operation of federal, state and local governments. The adoption of the pay-as-you-go policy by New York City during the war period and the abandonment of that policy later is by no means an uncommon experience. While

CHART 31.—YEARLY VOLUME OF BONDS ISSUED BY NEW YORK CITY FOR PERMANENT IMPROVEMENTS, 1900–1929.



Source: New York City Comptroller's *Annual Reports.*

there are exceptions to the rule, it is still the condition in the United States that the financing of public construction, except in road building, where income has come more and more out of current revenues, is done by means of long-term loans and the use of short-term issues in anticipation of later long-term borrowings. Table 49, which is a summary of the tax receipts and new bond issues of American municipalities, does not indicate the use of the tax receipts and the proceeds of bond sales, but it shows how income from these two sources has increased *pari passu.*

In general the growing cities of the country show huge increases

in income from both sources.[61] Thus Detroit, Michigan, had in 1910 tax receipts of over $6,000,000, and bonds issued in that year, exclusive of Water Commission and Street Railway bonds, amount-

TABLE 49. — TAX RECEIPTS AND NEW BOND ISSUES OF AMERICAN CITIES, 1905–1929

(In millions)

Year	All Tax Receipts of Cities Having Population [a] 30,000 and Over	Amount of Long Term Bonds Issued [b]	Amount of Short Term Bonds Issued [b]	Total Amount New Bonds [b]
1905	$357	$198	$150	$348
1906	377	301	125	426
1907	403	301	168	469
1908	444	355	175	530
1909	472	364	118	482
1910	525	324	197	522
1911	553	452	191	643
1912	583	339	192	591
1913	597	408	483	892
1914	619.5 [c]	446	292	738
1915	642	493	155	647
1916	695	497	292	790
1917	742	445	392	837
1918	791	263	473	736
1919	875	770	450	1,220
1920	897 [c]	774	664	1,438
1921	919	1,383	762	2,145
1922	1,441	1,280	396	1,675
1923	1,485	1,135	514	1,649
1924	1,617	1,447	979	2,426
1925	1,736	1,405	866	2,271
1926	1,901	1,362	661	2,023
1927	2,047	1,478	625	2,103
1928	....	1,390	717	2,107
1929 (11 mos.)	....	1,163	816	1,980

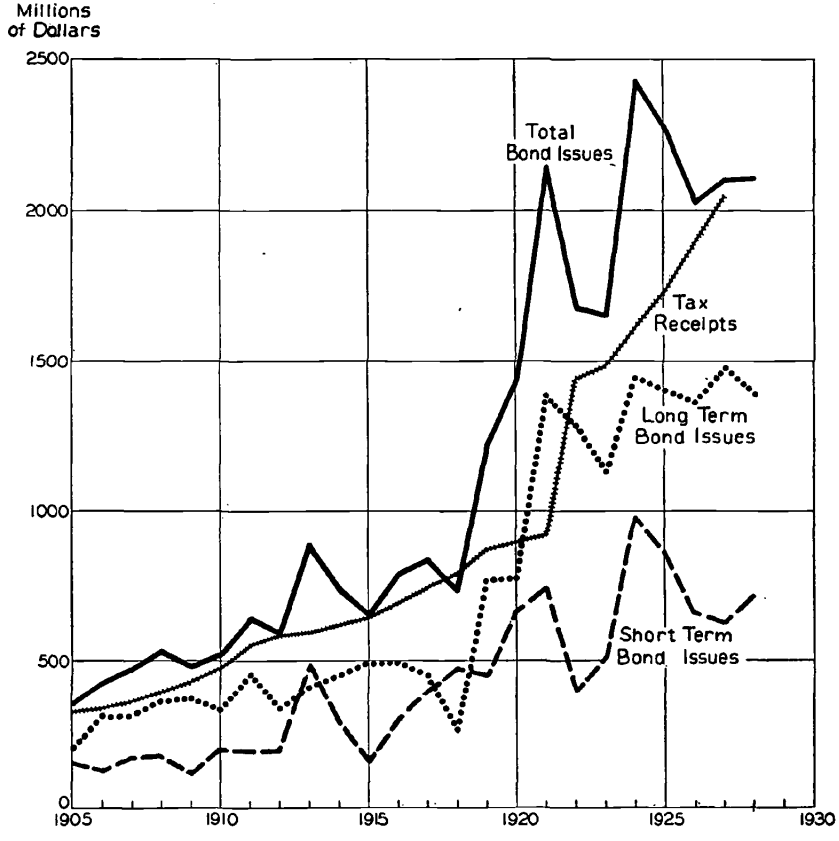
[a] United States Bureau of the Census, *Financial Statistics of Cities.*
[b] The Bond Buyer, *Municipal Bond Sales*, Annual Edition, New York City.
[c] Interpolated figures.

ing to only $365,000. In 1929 the tax levy of Detroit was more than $76,000,000 and the bonds issued, including water bonds, nearly $20,000,000. Tax receipts in Los Angeles, likewise, rose from

[61] See Appendix I, Tables 3A and 3B.

$4,100,000 in 1910 to $29,500,000 in 1928; and bond issues from $5,740,000 in 1910 to $13,171,000 in 1929, although a peak in bond issues was reached in 1925, when the amount issued was in excess of $36,000,000. The experience of New York City in this regard

CHART 32.—YEARLY AMOUNT OF BOND ISSUES AND TAX RECEIPTS OF CITIES IN THE UNITED STATES, 1905–1929.



has already been described. In some cities, notably Boston, Massachusetts, tax receipts are commonly far greater than bond issues. In the years 1926, 1927 and 1928, the tax receipts of Boston were more than $75,000,000 a year, while bond issues averaged annually less than $10,000,000. The financing of the operations of Chicago, also, until the difficult condition of 1929 when borrowings rose above $84,000,000, appears to have been derived largely from

CHART 33.—COMPARISON OF TAX RECEIPTS AND LONG TERM BOND ISSUES OF SELECTED CITIES, 1900–1929.

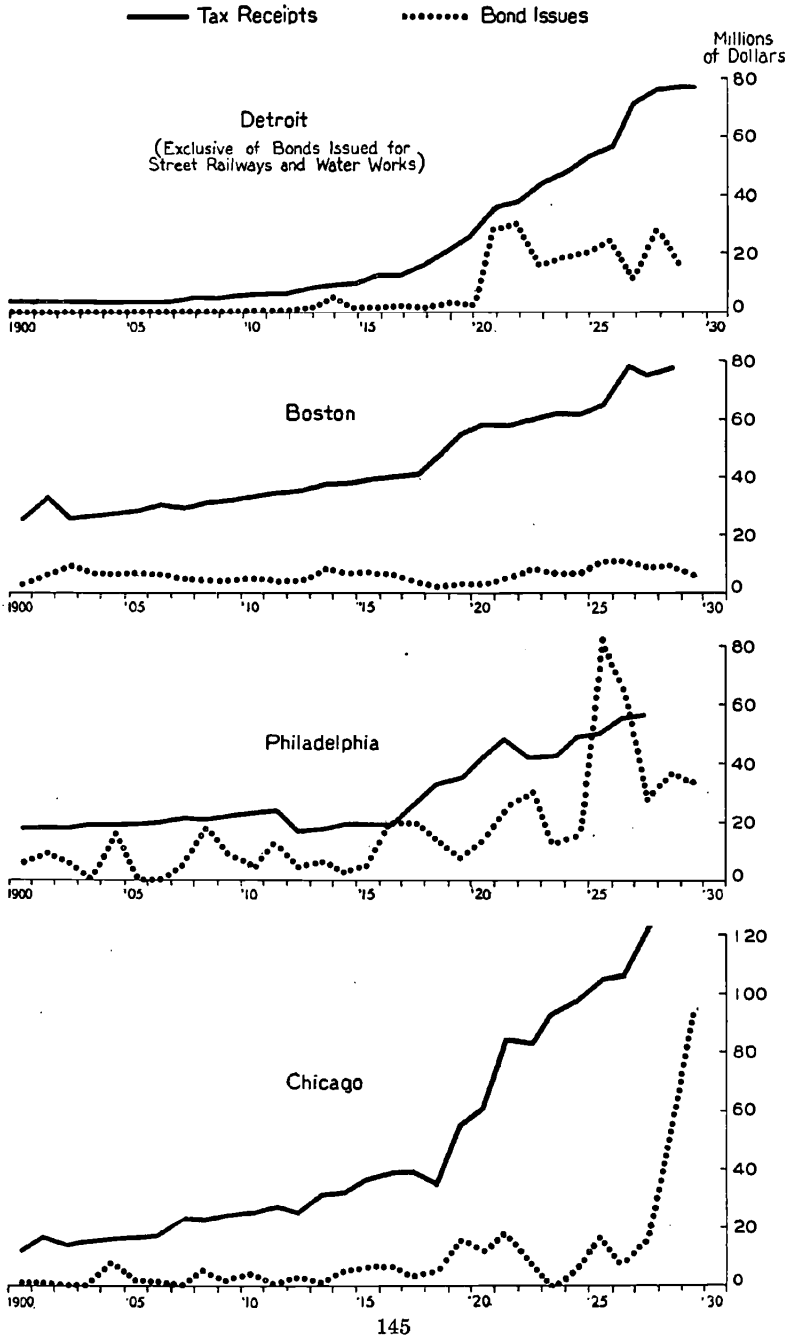


CHART 33.—COMPARISON OF TAX RECEIPTS AND LONG TERM BOND ISSUES OF SELECTED CITIES, 1900–1929.—*Continued*

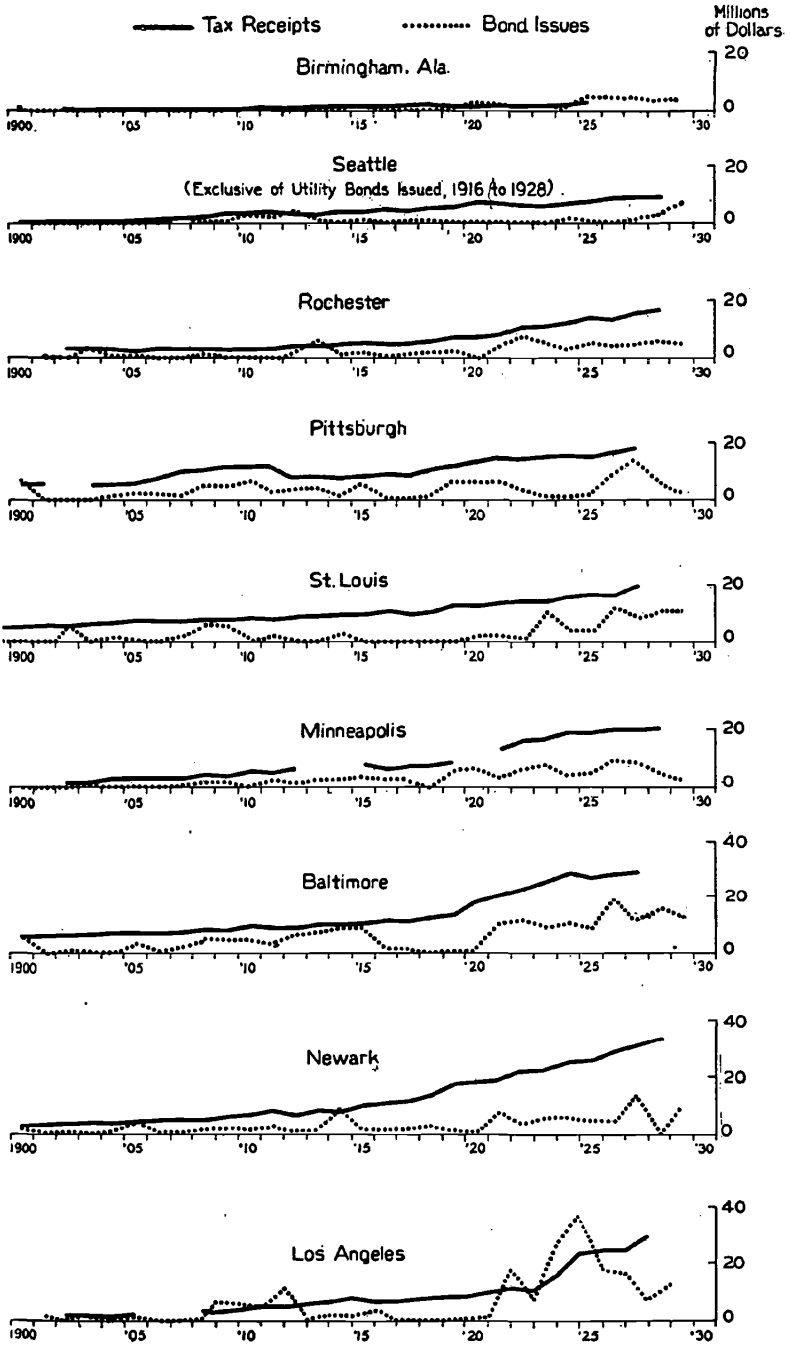
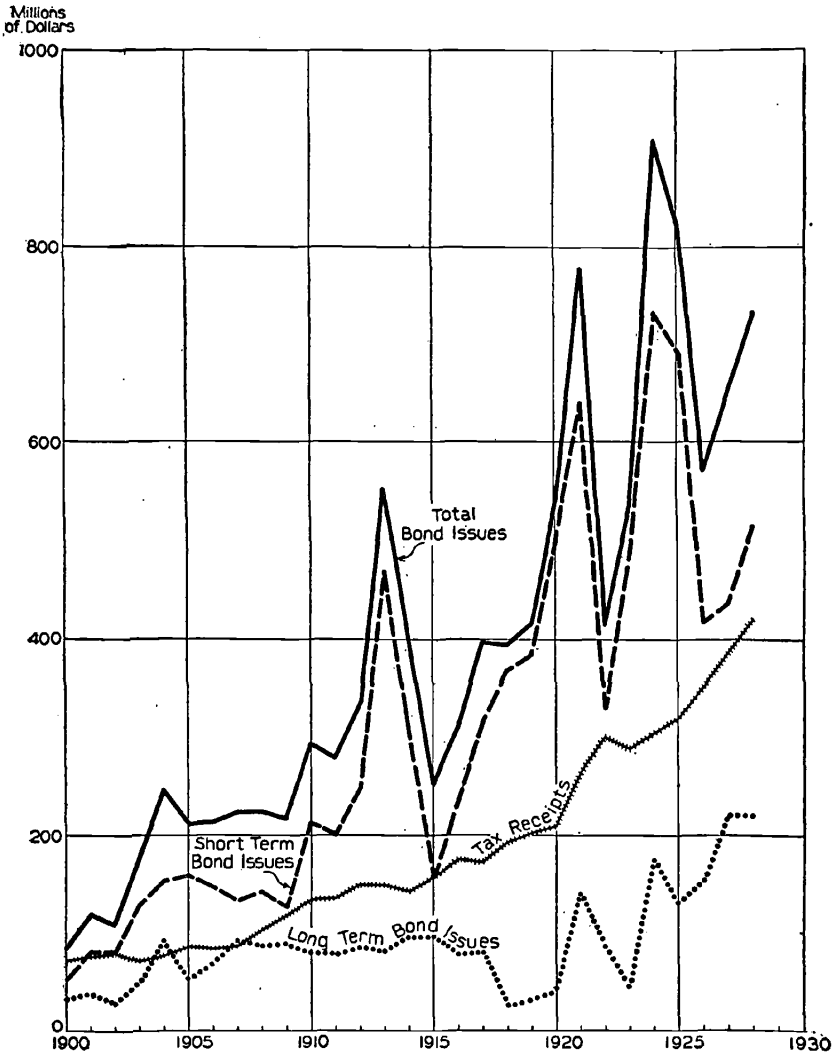


CHART 34.—COMPARISON OF TAX RECEIPTS AND BOND ISSUES FOR ALL PURPOSES OF NEW YORK CITY, 1900–1928.



Source: New York City Comptroller's *Annual Reports.*

current tax revenues. The trend in the financing of roads, where the cost has come increasingly out of various forms of taxes, has already been described in Chapter VI.

Constitutional Debt Limits.—Practically all local governments in the United States are limited in their capacity to borrow by the

provisions of their state constitutions. Limitations on the borrowing capacity of state governments are less direct, and arise out of the necessity of conforming to a rigid procedure that requires considerable time and usually the consent of the voters of the state. Both the form and content of the restrictions on local governments, city, county, town and other public administrative agencies, differ markedly in the various states and do not lend themselves to any simple summary description. Such constitutional limitations as there are, restrict the purposes of the debt, its amount, the amount of tax levy that may be used for debt payment, and often define the form of borrowing.

Almost universally the constitutional debt limit is stated as a percentage of the assessed value of property, the amount varying with the size of the governmental unit and the purposes of the debt. Thus, in many states, as is shown in Appendix J, the percentage of assessed valuation employed in computing the debt limit for the issue of water bonds is frequently either higher than for other purposes, or there is no limitation at all. Provisions regarding purposes of the debt differ widely and are equally hard to summarize. Thus, the counties and townships of Colorado are allowed to borrow only for the construction of county buildings, roads and bridges; whereas the loans of cities and towns are fixed in purpose and amount by vote of the tax paying electors and, in any event, the aggregate of loans may not exceed 3 per cent of the assessed valuation. In California, all loans in excess of revenue in any year in any subdivision require a vote of two-thirds of the electors. With regard, also, to the form of the loan, some state constitutions define the requirements in detail, as to methods of redemption, period of maturity, and the issue price, while others omit all specifications.

To reduce these constitutional and legislative limitations on borrowing to statistical terms is a task of large proportions that cannot be undertaken in a short period of time. A sample of what is involved in the problem of measuring the present unused borrowing capacity of American local governments was presented earlier in the discussion of the financing of public works by the governments of New York City and New York State.[62] It is not possible, on the basis of the information now available, to venture an estimate of the extent to which all types of limitation would at this moment restrict an expanding program of public construction

[62] See Chapters II and III, pp. 35-41, 71-80.

in the whole country. Barring unusual conditions, like that now prevailing in the City of Chicago, where unwise spending has impaired the credit of the municipal government, the probabilities are that credit limitations are not in general the crucial limiting factors.

For many types of public permanent improvements, particularly those that are revenue producing, local governments have devised new agencies which are allowed, under certain restrictions, to borrow on their own account. Such an agency is the Port of New York Authority, described earlier in this book;[63] and many of this character exist throughout the country. Wherever it is possible to make service charges, and hence to be assured of an income, local governments have either created new quasi-public administrative agencies or have permitted the organization of private companies, authorized to construct and operate the particular public utility. The State of Michigan, for example, permits "governmental agencies or municipalities" to grant "a franchise for a period not to exceed thirty years to any private corporation . . . to build, construct, own and operate a sewage or garbage disposal system . . ." and to charge a fee for its services. In Pennsylvania, an amendment to the state constitution in 1915 allowed municipalities "to exempt from calculations of borrowing capacity such water bonds as could be supported by the net earnings of the Water Bureau, in accordance with due certification of such fact by the Court."[64] "In Ohio and elsewhere there is authorization for issuing water revenue bonds, outside the normal limitation as to bonded indebtedness, provided net water revenues will sustain such issues."[65]

[63] See Chapter III, p. 79.

[64] Act 320, P. A. 1927 (511), Sec. 5.

[65] *Water Works Practice,* Manual of the American Water Works Association. Baltimore, 1925, p. 548.