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THE LEGAL LISTS

IN the majority of states in which mutual savings banks conduct their business, their purchases of corporate securities are restricted to narrowly defined categories meeting rigid statutory standards or tests. Securities meeting those tests comprise the so-called legal lists of the various states. Like the ratings assigned by the investment agencies, the legal lists constitute an important means of ranking corporate bonds in order of quality. The present chapter discusses the legal lists of Maine, Massachusetts, and New York—lists that were prototypes for those of other states.

Following the outline of the preceding chapter, the first section treats of the general nature of the legal lists, the conventions followed in determining legal eligibility for purposes of this investigation, and the specific tests employed in drawing up the lists of Maine, Massachusetts, and New York. The second section traces changes in the volume and in the statistical characteristics of securities on the legal lists, and investigates their stability over business cycles and longer periods. The third and final section of the chapter examines the comparative experience of legal and nonlegal obligations as measured by default incidence, default losses, and the over-all returns obtained by investors holding corporate bonds over different periods in the life span of the issue.

SUMMARY OF FINDINGS

Legal lists are designed to provide small institutional investors with a group of individually "safe" securities. Issues on the legal lists are selected on the basis of compliance with an elaborate set of legal tests pertaining to assets, earnings, dividends, prior default record, etc. An immediate consequence of the complexity and severity of the legal tests is that the lists are highly selective, judged both by the total volume of corporate bonds included, and by the volume rated high grade by the agencies. In most of the years studied, from one-quarter to one-third of the total volume of straight corporate bond outstandings was included on the legal lists of Massachusetts, Maine, or New York, as compared with about

75 percent rated as high grade by the investment agencies. Despite the over-all limitations on volume, however, the amounts of eligible bonds have, over the long pull, increased in rough proportion to the funds of mutual savings banks available for the purchase of these and other investments. This was notably true of the New York list. In 1916, for example, the total deposits of mutual savings banks in the United States were \$4.3 billion and in 1944 were \$13.4 billion, an increase of 211 percent. Over the same period, the par-amount total of bonds on the legal list of New York increased from \$2.9 billion to \$8.4 billion or by 194 percent. The Massachusetts list was more restrictive than the New York list and the Maine list more liberal. Massachusetts legals increased from \$3.4 billion to \$5.9 billion between 1916 and 1944, or by 75 percent. Maine first published an official list in 1923, admitting a larger volume than other states. The volume of Maine legals stood at \$5.8 billion at the beginning of 1924 and rose to \$9.4 billion at the beginning of 1944, an increase of 61 percent.

The legal lists—or more specifically, the legal tests on which they are based—have been criticized repeatedly as antiquated and needlessly restrictive; but the securities meeting the legal tests in the past do not appear to have been markedly out of line with the consensus of investment opinion of the time. Most of the outstanding bonds on the legal lists were rated in the first four grades by the investment agencies. Most of them were large issues, backed by the power and financial strength of larger than average corporate obligors. In most cases they were also well secured as to earnings and assets. The principal weakness of the legal lists is that they included a disproportionately large volume of rail bonds in the twenties and early thirties (e.g., through 1924 the rails comprised over 98 percent of the total par amount of bonds eligible for savings bank investment in New York and over 91 percent in Massachusetts, as compared with less than 58 percent for all issues outstanding). The investment agencies and the “market” (in so far as can be determined from the prices and yields of outstanding issues) also favored the rails during the same period. By favoring the rails, conservative investment opinion in effect prevented the purchase of issues that had a better record during the Great Depression. Other weaknesses of the legal lists are that they were quite restrictive, and were far from consistent with one another. In 1936, for example, 18 percent of the par-amount total of straight bond outstandings was eligible for savings bank invest-

ment in Maine, 26 percent in Massachusetts, and 33 percent in New York; and only 12 percent was eligible in all three of those states.

In most instances when securities are dropped from a legal list, the banking authorities require that they be liquidated promptly. The banks affected are therefore vitally concerned with the stability of the lists. The data indicate that the legal lists were wholly inadequate in this respect during the Great Depression. Between the beginning of 1928 and the beginning of 1936, issues dropped from the legal list of Maine shrank the volume of eligible corporate bond investment by 41 percent. Similarly, the volume of New York legals shrank by 25 percent between 1932 and 1940, despite the passage of special legislation easing the legal tests in that state. Since the prices of medium- and low-grade bonds were high in the twenties and low in the thirties, the net effect of these changes was to encourage the banks to purchase bonds when prices were high and to force liquidation when prices were low. Similar fluctuations did not occur in Massachusetts, but only because the list was so highly restrictive in the twenties and because of an easement of the earnings test in the thirties.

Over the shorter ups and downs spanned by most business cycles, however, the legal lists (except Maine's) appear to have been more stable than a list selected on the basis of agency rating (see the preceding chapter). The primary reason for the cyclical stability of the legal lists was the rapidity with which steps were taken to modify the legal tests in periods of stress. Such steps were not taken in Maine during the period studied, and the volume of previously ineligible bonds added to the list of that state expanded and contracted in perfect conformity with business cycles. It will be recalled that the rating agencies also usually upgraded bonds in good times and downgraded them in bad. A detailed review of the legislation in this field reveals the extreme difficulty of enacting strict rules of investment safety that will include a reasonably large volume of outstanding issues, and that will at the same time withstand the stresses and strains of the business cycle.

Since the legal lists were highly selective and restrictive as to volume, the proportion of legal bonds going into default was markedly below that of nonlegals. On the other hand, the very selectivity of the legal lists implies that the funds of the mutual savings banks were channeled into narrowly restricted classes of

investments. The restrictions on volume pushed up the prices of legal bonds and pushed down their promised yields to such an extent that legals systematically sold to yield less than other bonds. In consequence, the yields realized on legal bonds were below the corresponding yields on nonlegals, despite the higher default rates of the nonlegals. The conclusion is that legal bonds taken individually were safer than nonlegal bonds but that in the aggregate the promised and realized returns on legals were markedly lower.

NATURE OF THE LEGAL LISTS

From the scattered and incomplete sources available to us it is rather difficult to find a precise statement of the philosophy underlying state control of savings bank investments in the United States. It is nevertheless generally agreed among authorities in this field that the primary purpose of the original legislation was to provide the small institutional investor, having little access to financial information and limited knowledge of financial processes, with a list of very high-grade investments—a “foolproof” list for which the risks of default and of heavy default losses might be considered negligible. When first established in the early part of the nineteenth century, mutual savings banks were conceived to be benevolent associations designed as depositories for the savings of the poorer classes. Because of the typically small size of the banks, the special nature of their depositors, and the fact that some of them were originally staffed by nonprofessional, nonsalaried personnel, the states came to look upon their funds as special trusts, requiring protection and regulation over and above that afforded trusts generally.

With the rapid growth in the size of savings banks in later years, and the spread of financial information and knowledge, much of this legislation has come to be criticized as outdated. In addition, the growing volume of federal debt and of mortgage loans insured or guaranteed by the federal government now provides ready outlets for funds seeking low-risk investment. Under the circumstances, legal corporates have not been particularly attractive to savings bankers in recent years, although interest is renewed whenever the spread between the yields of governments and corporates widens, as it did in 1952 and 1954.

Despite recent liberalizations of the laws, detailed legal restrictions on corporate bond investments still remain on the books of twelve of the seventeen states in which savings banks now op-

erate. These states are Connecticut, Maine, Massachusetts, Minnesota, New Hampshire, New Jersey, New York, Oregon, Pennsylvania, Rhode Island, Washington, and Wisconsin.¹ Of the five other states in which detailed statutory tests are not specified, Vermont follows the Comptroller's Ruling (cf. Chapter 3) by permitting the purchase of bonds rated in the first four grades by two approved rating agencies, Indiana requires that they be rated in the first three grades by one agency, and Ohio permits savings banks to purchase any bond eligible for commercial banks in that state. Delaware and Maryland substantially follow the so-called Massachusetts "prudent man rule"; i.e. any kinds and classes of securities may be purchased, provided they meet standards of investment quality that would be acceptable to prudent men seeking a reasonable income and the preservation of their capital.

In New York from 1902 to 1950 a fiduciary holding funds for investment was restricted to securities eligible for savings bank investment unless the donor or testator had specifically granted greater freedom under the terms of the trust. In 1950 an amendment to the Personal Property Law, based on recommendations made by the Trust Investment Study Committee of the New York State Bankers Association, authorized investment up to 35 percent in issues other than specified tax-exempt bonds and corporates on the legal list (common stock purchase is permitted under the terms of the amendment). The remaining 65 percent, however, must still be invested in eligible securities, and, to the extent that it is invested in corporate bonds, in issues on the New York legal list.² The Trust Investment Study Committee estimated that about 20 percent of all trusts by volume are restricted to legal investments; and a study in April 1948 gave an unofficial total of \$13.5 billion trust funds in the state.³ In many other states, including some in which savings bank investments are closely regulated (e.g. Connecticut, Maine, and Massachusetts), trustees under a personal trust are given wide latitude under the Massachusetts prudent man rule.

Although twelve states require that savings bank investments

¹ See *Tentative Draft Model State Banking Code* (American Bankers Association, 1948), pp. 156-58.

² Bascom H. Torrance, "New Trust Investment Law," *Trusts and Estates*, May 1950.

³ *A Report of the Trust Investment Study Committee* (New York State Bankers Association, 1949), p. 21, and Gilbert Stephenson, "Trust Business in the United States," *Trust Bulletin*, April 1948.

meet specific statutory standards, only five—Connecticut, Maine, Massachusetts, New Hampshire, and New York—provide for the publication of an official legal list. Since most of the state laws are involved and difficult to interpret, we were practically restricted, when collecting the data for this investigation, to an analysis of the published legal lists. As a further economy measure, the investigation was limited to the lists of Maine, Massachusetts, and New York. The New York and Massachusetts lists were selected for special study because they were published quite early (the Massachusetts list in 1908; the New York list in 1915) and also because the laws of those states were generally considered at one time to be the best of their type. The Massachusetts law was also used as a model for an important revision of the Connecticut statute, so that over most of the period spanned by our records it was fairly representative of the law in both states. During most of the period studied, the Massachusetts and New York lists were quite conservative in that they prohibited investment in industrial bonds, and in most public utility debentures. The Maine list, which was first published in 1923, was selected as representative of a more liberal statute that permitted investment in such securities as well as other types not eligible in New York and Massachusetts.

For the present investigation, legal eligibility was necessarily determined almost exclusively from the published legal lists. In the strict legal sense, issues appearing on the published legal lists may not be eligible for savings bank investment; for each issue the burden of proof of legality rests with the trustees of the banks. Moreover, issues meeting the statutory legal standards may not appear on the lists unless they are of sufficient public interest to come within the purview of the banking authorities. Nevertheless, the lists are carefully prepared by special sections in the state banking departments that devote full time to such work. For that reason, and also because of the pressure brought by banks and business corporations to secure eligibility for issues in which they are interested, the lists are believed to be fairly complete, at least for the larger issues. The following statement, however, made in 1940 by William R. White, then New York State Superintendent of Banking, is typical of the cautious opinion expressed by the state authorities as to the official status of the published lists: "It [the legal list] has been prepared after a thorough investigation into the legality of the securities listed, and is believed,

therefore, to be substantially correct; but, notwithstanding the care that has been exercised in its preparation it is not to be assumed that the list is a complete and infallible guide."⁴

In Maine, publication of a list of eligible local utility and industrial issues is not required by law. For purposes of this investigation, a list of local utility issues was prepared from authorizations of bond offerings published in the annual reports of the Maine Public Service Commission. Since no official record appears to have been kept of local industrial issues in Maine, the coverage of our data is not entirely complete for them.⁵

A code for legal status was assigned to each large straight corporate bond issue in the railroad, public utility, and industrial fields, and to each issue in the 10 percent sample of small issues. In addition to such securities the laws of most states also permit investment in issues of the federal government, the states and minor civil divisions, and the Dominion of Canada; equipment obligations and other serial issues of railroad, utility, and industrial corporations; and selected guaranteed real estate mortgage bonds. For the straight issues studied, legal status was originally recorded at offering, at final extinguishment (or January 1, 1944, for issues outstanding at that time), and at the beginning of the quadrennial years, 1900, 1904, etc. To permit analysis of the cyclical stability of the legal lists, comparable to that given the agency ratings in Chapter 3, legal status was later recorded annually for all large issues and for the 10 percent sample of small issues.

Legal status at offering was determined from official publications appearing in the year following offering, and legal status at extinguishment from the lists of the preceding year. For the quadrennial and annual data on outstandings, the legal status of an issue refers to its eligibility as determined from the legal lists with official publication dates nearest to the first quarter of the year indicated (except for the year of extinguishment, when, for contractual extinguishments, legal status was determined from lists of the preceding year). The quadrennial prices, yields, and most other statistics used in this investigation are also based on first quarter data, so that the observations are roughly com-

⁴ From *List of Securities Considered Legal Investments for Savings Banks, July 1, 1940* (New York State Banking Department) quoted in *Commercial and Financial Chronicle*, Vol. 151, p. 132.

⁵ The legality of large Maine industrial corporations was determined from opinions given in Moody's and Poor's investment manuals.

parable as to timing. The official publication dates of the legal lists for the three states investigated are as follows:

<i>State</i>	<i>Official Publication Date</i>
Maine	May 1924-44 ⁶
Massachusetts	February 1909-27 ⁷ July 1928-44
New York	January 1915-18 ⁸ July 1919 ⁸ January 1921-28 ⁸ December 1928-36 ⁹ July 1938-44

The various statutory tests have been criticized repeatedly as unnecessarily rigid and restrictive, as inadequately reflecting economic growth within and between industries, as not allowing for compensating factors of strength for issues that fail to meet one or more of the legal tests, and so on. In large measure such criticisms appear to be well taken; but from the purely analytical point of view, the very rigidity of the legal tests has certain obvious advantages. Unlike the agency ratings, which are constructed on the basis of confidential systems of variables and weights, and which reflect nonstatistical as well as purely statistical factors, the legal lists are based on definite, known specific tests embodied in the laws of the several states. Since the published lists are carefully drawn, the recorded experience of legal bonds affords a unique opportunity to check on the specific-formula approach to investment safety. In order that the experience records of legal

⁶ The first official Maine list was published in November 1923, but was disregarded in favor of a revised list dated May 1924.

⁷ The first official Massachusetts list was published late in 1908, but was disregarded in favor of a revised list dated February 1909.

⁸ A complete official legal list was not published in New York between January 1, 1918 and July 1919, but revisions, more or less complete, were published in the *Commercial and Financial Chronicle*. The official January 1, 1918 list was used to determine legal status in 1918, and was brought up to date by means of *Chronicle* revisions for 1919. The July 1919 list was used to determine legal status in 1920. For 1921-28, legal lists dated January were used.

⁹ December lists were used to determine legal status in the calendar year following.

bonds may be interpreted against the background of the specific tests employed in each state, the laws are summarized briefly in the following pages, starting with New York, the most important state in terms of volume of funds seeking legal outlets, and then proceeding to Massachusetts and Maine.

New York Statutory Tests

Corporate bonds first became legal investments for New York savings banks in 1898.¹⁰ The original law restricted investment to first or refunding mortgage bonds of local railroads, provided that the issuer had paid, in each of the five years preceding investment, all principal and interest on its mortgage debt and dividends of 4 percent or more on its common stock, and that the outstanding common stock equaled at least one-half of the total mortgage debt. The law was revised in the following year to include first mortgage bonds of selected railroads of other states under the same conditions.¹¹ At the same time, the Attorney General ruled that the Manhattan Elevated Railway Co. was a "railroad" and not a "street railroad" within the meaning of the law. With that modification, the New York list consisted entirely of railroad issues until 1928, when a limited number of first mortgage public utility issues were added.¹²

In a further effort to broaden the law, the railroad section was codified and liberalized in 1929.¹³ Industrial issues generally and public utility debentures (including those of the Bell System) were ineligible until 1938, when the New York Banking Board was given discretionary powers to add these and other securities to the list.¹⁴ In 1949, the individual savings banks themselves were granted limited discretionary powers to purchase securities not on the legal list,¹⁵ and in 1950 public utility debentures, which had previously been authorized by the Banking Board, were made statutory legals by amendment of the law.¹⁶ The latter two developments, however, occurred after the terminal date of our records. Since we are particularly interested in the default and loss experience of legal bonds during the Great Depression, the public util-

¹⁰ New York Laws 1898, c. 236.

¹¹ New York Laws 1899, c. 386.

¹² New York Laws 1928, c. 448.

¹³ New York Laws 1929, c. 322.

¹⁴ New York Laws 1938, c. 352, § 1.

¹⁵ New York Laws 1949, c. 522.

¹⁶ New York Laws 1950, c. 645.

ity law of 1928 and the railroad law of 1929 are appropriate points of departure and will be described below. During the thirties, when most railroads did not meet the earnings test, bonds of nondefaulting railroads were kept on the list under Subdivision 7-a, which excluded the years 1931-36 from the computations.¹⁷ Finally in 1938 a new Subdivision 7-a reduced the coverage required on rail bonds for the years 1931-39.¹⁸

The principal types of tests employed in New York and elsewhere concern the following: size, earnings, dividends, default, and capital structure. The tests employed in New York for the various industries in which investments are permitted are given below along with the original dates of enactment.

SIZE TESTS

Railroads (1929):

Obligor must own and operate 500 miles of standard-gauge line exclusive of sidings or have total operating revenues of \$10 million in five out of the six years preceding investment. An earlier (1914) law applied such requirements only to railroads not incorporated in New York.

Gas and electric companies (1928):

Obligor must have average annual gross operating revenues of \$1 million over the five years preceding investment, and the par amount of the issue must be \$1 million or more.

Telephone companies (1928):

Obligor must have average annual gross operating revenues of \$5 million over the five years preceding investment, and the par amount of the issue must be \$5 million or more.

EARNINGS TESTS

Railroads (1929):

For first mortgage bonds, obligor must have earned charges one and one-half times in each of five of the six years preceding investment and in the last year.

¹⁷ New York Laws 1932, c. 5, amended by L. 1933, c. 329; L. 1934, c. 149; L. 1935, c. 563; L. 1936, c. 212; L. 1937, c. 145.

¹⁸ New York Laws 1938, c. 352, amended by L. 1939, c. 153, and L. 1940, c. 420. The new Subdivision 7-a, as amended, provided that obligations of railroad corporations that failed to meet the more stringent provisions of Section 7 in any or all of the fiscal years 1931-39 were to remain on the legal list provided earnings were sufficient to cover fixed charges at least once in each year for at least five of the six years and in the year next preceding the time of investment.

The 1938 law also included Subdivision 7-b which stated that a railroad obligation purchased before April 1, 1938 might be held even though it later failed to meet the requirements of Subdivisions 7 and 7-a.

For income mortgage bonds, junior mortgage bonds, collateral trust bonds, and debentures, obligor must have earned charges (including full interest on income bonds, if any) twice in five of the six years preceding investment and in the last year, and must have a net income after such fixed charges of \$10 million or more.

Subdivision 7-a, as amended in 1938, 1939, and 1940: railroads not meeting the above requirements in any of the years 1931-39 inclusive must have earned charges at least once in five out of the six years preceding investment and in the year next preceding investment.

Public utilities (1928):

Obligor must have earned charges twice on the average over the five years preceding investment and twice in the last year.

DIVIDEND TESTS

Railroads (1929)

Obligor must have paid as cash dividends an amount equal to one-quarter of its fixed charges in each of five of the six years preceding investment or, if not paid, must have earned charges one and one-half times in each of nine of the ten years preceding investment and in the last year. An earlier (1914) law had required that dividends of 4 percent be paid for five to ten years preceding investment (the length of time depending upon the class of road) on book value of capital stock outstanding in an amount equal to not less than one-third of the funded debt.

Gas and electric companies (1928):

Obligor must have earned or paid at least 4 percent on a sum equal to at least two-thirds of the funded debt in each of the five years preceding investment.

Telephone companies (1928):

Obligor must have earned or paid 4 percent on all outstanding capital stock in each of the five years preceding investment.

DEFAULT TESTS

Railroads (1929):

No default or delay in the payment of principal or interest must have occurred for at least six years preceding the date of investment. An earlier (1914) law specified no default for five years.

Public utilities (1928):

No default or delay in the payment of principal or interest for eight years prior to the date of investment.

OTHER PUBLIC UTILITY TESTS

Gas and electric franchise test (1928):

Obligor must have franchises needed to operate in the territory in which 75 percent of its gross revenue is earned, such franchises either to be indeterminate or to extend five years beyond the maturity of the issue.

Equity-debt ratio test (1928):

The par value of the capital stock (or book value, if no-par stock) must equal at least two-thirds the total mortgage debt.

Assets security test (1928):

Mortgage bonds outstanding must not exceed 60 percent of the value of the property mortgaged. In the case of telephone companies, not more than one-third of the property securing the issue may consist of stock or unsecured obligations of other telephone companies.

It is worth noting again that industrial issues generally, and public utility debentures, were not legal investments in New York State until 1938, when the Banking Board was given discretionary power to add such securities. It is indicative of the difficulty of applying the specific-formula approach to the heterogeneous industrial field that specific tests for such securities have never been enacted in New York. The New York dividend and earnings tests have had a checkered history in the railroad field. They were applied between 1914 and 1917, set aside by moratoria from 1918 through 1924 (the period of federal operation and four years after), applied from 1925 to 1930, set aside by moratoria from 1931 through 1939, and have been applied from 1940 to date.

Massachusetts Statutory Tests

In Massachusetts, savings banks were first permitted to invest in corporate bonds in 1863. The authorized corporates were first mortgage bonds of Massachusetts railroads (excluding horse railroads) that had earned and paid dividends for two years, and debentures and notes of such roads if unencumbered by mortgage.¹⁹ First mortgage bonds of New England railroads became eligible in 1881,²⁰ and in 1899 the underlying bonds of certain specifically designated large railroads incorporated in other states.²¹ Under the act of 1899, it was required that the railroad

¹⁹ Massachusetts Acts of 1863, c. 175.

²⁰ Massachusetts Acts of 1881, c. 214.

²¹ Massachusetts Acts of 1899, c. 269.

have paid dividends on its capital stock of at least 4 percent in each of the preceding ten years and that the capital stock be equal in amount to one-third the par value of the outstanding bonds.

Local street railway bonds were admitted in 1902,²² and a general railroad law, applicable to all roads in the United States, was enacted in 1908.²³ The latter act also provided for the purchase of first mortgage or collateral trust bonds of telephone companies the majority of whose directors were residents of Massachusetts and whose gross earnings for each of the five years preceding investment had been at least \$10 million per annum. (Only the collateral trust bonds of American Telephone and Telegraph Company qualified under the statute.) In 1919 bonds of local gas, electric, and water companies were admitted to the list,²⁴ and bonds of out-of-state gas and electric companies became eligible under a broad statute of 1926.²⁵ This was two years before any utility bonds appeared on the New York legal list.

Receiving powers analogous to those granted the New York Banking Board in 1938, the directors of the Massachusetts Mutual Savings Central Fund were authorized in 1945 to admit otherwise ineligible issues provided they had the approval of the Banking Commissioner.²⁶ In both New York and Massachusetts, industrials generally, and public utility debentures, first became legal under the discretionary provisions of such a law. The Massachusetts act of 1945 also overhauled rather thoroughly the statutory tests applied to underlying utility bonds, but these various liberalizations came too late to be reflected in our records. The basic legislation for our purposes is the act of 1908 covering out-of-state railroads and the act of 1926 covering out-of-state utilities. The essential features of these acts, with important amendments, are summarized below.

SIZE TESTS

Railroads (1908):

Obligor must either own in fee 500 miles of standard-gauge line exclusive of sidings or have had gross earnings of \$15 million in each of the ten

²² Massachusetts Acts of 1902, c. 483.

²³ Massachusetts Acts of 1908, c. 590, § 68, amended by Acts of 1931, c. 346, Acts of 1941, c. 413, and Acts of 1943, c. 215.

²⁴ Massachusetts General Acts 1919, c. 104.

²⁵ Massachusetts Acts of 1926, c. 351, amended by Acts of 1931, c. 345, and Acts of 1937, c. 96.

²⁶ Massachusetts Acts of 1945, c. 377.

years preceding investment (reduced to five years under a 1931 amendment). (New England railroads are not bound by this requirement.)

Obligation must be secured by a first or refunding mortgage on 75 percent of the line owned in fee, and by not less than 100 continuous miles of standard-gauge line; or by a first or refunding mortgage on 10 percent of the line, and by not less than 500 continuous miles of standard-gauge line. (New England railroads are not bound by this requirement.)

Gas and electric companies (1926):

Obligor must have had gross operating revenue of at least \$1 million in the year immediately preceding investment, not less than 75 percent of which was derived from the sale and distribution of electricity or artificial gas (natural gas added in 1931), and not more than 20 percent of which was derived from the operation of a transportation system.

Telephone companies (1908):

Obligor must have had gross income of at least \$10 million in each of the five years preceding investment.

Obligation must be secured by a first mortgage on at least 75 percent of the property of the telephone company or by the deposit of stocks and bonds of other telephone companies equal in value to at least one and one-third the par amount of the secured obligation.

EARNINGS TESTS

Railroads (1908):

Gross earnings must have been at least five times total fixed charges in each of the ten years preceding investment (reduced to five years in 1931); bonds already purchased are not rendered ineligible by reason of the failure of the obligor to meet this test for two years, but no further investment may be made unless the obligor complies in the following year. (Does not apply to New England corporations.)

An additional requirement was added in 1941, when the dividend test was dropped (see below) and replaced by the requirement that, for certain types of obligations, the railroad shall have earned fixed charges one and one-half times in five out of the six years immediately preceding investment and in the last year (in 1943 changed to six out of seven years).

In 1943 issues of railroads reorganized under Section 77 of the Federal Bankruptcy Act were also made eligible for investment provided that in the year preceding investment, and on the average over the ten years preceding investment, the net railway operating income was twice fixed charges, and that it exceeded fixed charges by at least 8 percent of gross.

Gas and electric companies (1926):

Earnings available for fixed charges must have been at least twice fixed charges on total funded debt in each of the five years immediately preceding investment. In 1945 the earnings requirement was reduced, for corporations obtaining at least 60 percent of their gross business solely from the sale and distribution of electricity, to an average of one and three-quarters times fixed charges over the five years immediately preceding investment and in the last year.

DIVIDEND TESTS

Railroads (1908):

Cash dividends equal to at least 4 percent on all outstanding capital stock must have been paid in each of the five years preceding investment by New England railroads, and in each of ten years by other railroads. The period of compliance for other than New England railroads was reduced to five years in 1931 and was replaced by an earnings test in 1941 (see above).

Street railways (1908):

Cash dividends of 5 percent on all outstanding capital stock must have been paid in each of the five years preceding investment. (Local street railways are the only ones whose obligations are eligible for investment in Massachusetts.)

Telephone companies (1908):

Cash dividends of not less than 6 percent on all outstanding capital stock must have been paid in each of the five years preceding investment, and the amount of dividends so paid must at least have equaled total fixed charges.

DEFAULT TESTS

Railroads (1908):

Obligor must have paid matured principal and interest on all of its mortgage indebtedness for ten years (the requirement was changed to five years in 1931); in 1943 a provision was added for corporations reorganized under Section 77 of the Federal Bankruptcy Act that no defaults on any fixed charges shall have occurred after the date of reorganization.

Telephone companies (1908):

Obligor must have paid the matured principal and interest on all of its obligations in each of the five years preceding investment. A similar provision was added for gas and electric companies in 1945.

CAPITAL STRUCTURE TESTS

Railroads (1908):

The outstanding funded debt shall not exceed three times the value of the capital stock. (Does not apply to New England railroads.)

Gas and electric companies (1926):

The par value of the capital stock shall not be less than two-thirds of total funded debt. For corporations with no-par stock, the book value of the property shall be at least equal to two-thirds of total mortgage debt.

In 1945 the capital structure requirement was changed to provide that the book value of the capital stock and surplus shall not be less than 60 percent of total funded debt, and that the par value of total mortgage debt shall not exceed 75 percent of the depreciated book value of the property.

MISCELLANEOUS PROVISIONS

In the case of railroad and gas and electric companies, less stringent provisions than those set forth above are applied to New England corporations, while investment in street railway bonds is restricted solely to Massachusetts corporations. Additional provisions of the laws generally restrict investment to underlying issues or issues well secured as to lien position. Under the Act of 1926 gas and electric bonds were eligible only if they matured in not over 30 years, the requirement being liberalized in 1937 to permit maturities up to 40 years. The Act of 1926 also requires that franchises covering 75 percent or more of the gross business of the utility must either be indeterminate or extend at least three years beyond the maturity of otherwise eligible bonds.

As in New York, so also in Massachusetts, difficulties have been encountered in applying rigid statutory standards to corporate bonds, especially in the railroad and industrial fields. For railroads, the 1908 law permitted noncompliance with the earnings test in two successive years, and by Acts of 1919 and 1920 all tests were set aside for the period of federal operation plus two years.²⁷ Again, beginning in 1933, a series of moratoria omitted from the tests fiscal years ending January 1, 1931 through April 1, 1939.²⁸ Further evidence of the difficulty of applying rigid statutory stand-

²⁷ Massachusetts Acts of 1913, c. 291, General Acts of 1915, c. 273, General Acts of 1919, c. 13, and Acts of 1920, c. 420.

²⁸ Massachusetts Acts of 1933, c. 111, Acts of 1934, c. 80, Acts of 1935, c. 73, Acts of 1936, c. 84, and Acts of 1937, c. 56. The 1939 law, c. 87, omitted fiscal years 1931 through 1940 and up to July 1, 1941 so long as net income as defined by the Interstate Commerce Commission had been earned in three of the five years immediately preceding investment.

ards to corporate obligations is the fact that industrial bonds generally, and gas, electric, and telephone company debentures, are not statutory legals in Massachusetts, although, as has been noted above, such obligations may now be placed on the legal list by special action of the Mutual Savings Central Fund. Underlying public utility bonds were added to the Massachusetts list in 1926, two years before similar action was taken in New York, but the Massachusetts law was the more conservative of the two in the late twenties and the thirties. In particular, the Massachusetts legislature did not follow the action taken in New York State of liberalizing the earnings test for railroads in 1929.

Maine Statutory Tests

Investments of savings bank funds were first regulated in Maine in 1869 under a liberal statute that permitted the banks to make any safe, nonfraudulent investment,²⁹ but shortly thereafter the pendulum swung towards greater restriction. In 1874 investments were restricted to securities issued by natural persons or corporations in the New England states, by a few municipalities, and by the United States government³⁰; and in 1877 were still further restricted to the first mortgage bonds of Maine railroads, and to the bonds and stocks of Maine utility and industrial corporations paying dividends of 6 percent or more.³¹ From that point onward, however, the law was gradually relaxed, first to include New England corporations, then corporations in certain designated states, and finally corporations in all other states provided they met certain specific tests.

First mortgage bonds of completed railroads in specifically designated states and of several transcontinental lines were admitted in 1883,³² and bonds of railroads in other states were admitted in 1917.³³ In 1885 securities of local water companies other than first

²⁹ Maine Public Laws 1869, c. 60 § 5.

³⁰ Maine Public Laws 1874, c. 266.

³¹ Maine Public Laws 1877, c. 218. In 1883 the dividend test for local utility and industrial corporations was reduced to 5 percent (Maine P.L. 1883, c. 202 § 3), and in 1909 was changed to the requirement that earnings after fixed charges and running expenses be at least 5 percent on an amount of capital stock equal to one-half the entire funded debt (Maine P.L. 1909, c. 11).

³² Maine Public Laws 1883, c. 202 § 3.

³³ Maine Public Laws 1917, c. 305 § 1. For roads not in the specifically designated states, it was required (1) that the issue be secured by a lien on at least 100 miles of completed standard-gauge line exclusive of sidings, (2) that gross operating revenues shall have been at least five times all fixed charges for interest and rentals in each of the three years preceding investment, and

mortgage bonds were dropped from the list of eligible investments,³⁴ but in 1893 the first mortgage bonds of water companies incorporated in New Hampshire were added,³⁵ and in 1903 those of similar companies incorporated in the other New England states.³⁶ Eligible local street railway bonds were first defined explicitly in 1895 (the line must have been completed, or equity equal to at least one-third the mortgage debt must have been expended in its construction)³⁷; and completed street railways in selected states were added in 1903.³⁸

A major revision, codification, and liberalization of the statute occurred in 1923 under legislation that provided for publication of the first official list; changed the earnings test for railroads; permitted investment in, and established general standards for, out-of-state utilities (gas, electric, street railway, water, and telephone companies); and revised the earnings requirement for bonds and stocks of Maine industrial corporations.³⁹ Important revisions since then include the addition of out-of-state industrial issues in 1929,³⁹ a reduction of the earnings test for water companies in 1935,⁴⁰ and the dropping of street railways and liberalization of the railroad law in 1937.⁴¹ The provisions of the 1923 law pertaining to other than local obligors, and important amendments thereto, are particularly relevant for our purposes and are summarized below.

SIZE TESTS

Railroads (1923):

Obligor must own in fee 500 miles of standard-gauge railroad exclusive of sidings, or must own 100 miles of standard-gauge railroad exclusive of sidings and have received gross operating income of not less than \$10 million in each of the five years immediately preceding investment.

Gas, electric, street railway, and water companies (1923):

Obligor must have had average gross earnings of at least \$500 thousand

(3) that net earnings shall have equaled at least one and three-quarters fixed charges in the three years preceding investment.

³⁴ Maine Public Laws 1885, c. 277.

³⁵ Maine Public Laws 1893, c. 195.

³⁶ Maine Public Laws 1903, c. 190.

³⁷ Maine Public Laws 1895, c. 161.

³⁸ Maine Public Laws 1923, c. 144 § 27.

³⁹ Maine Public Laws 1929, c. 102.

⁴⁰ Maine Public Laws 1935, c. 77 § 1-3.

⁴¹ Maine Public Laws 1937, c. 104.

in the three years immediately preceding investment. The requirement was reduced to \$250 thousand for water companies in 1935; street rail-ways were dropped from the eligible list in 1937.

Telephone companies (1923):

Obligor must have had gross revenues of \$5 million in each of the three years immediately preceding investment (also see under Earnings Tests below). The law was revised in 1931 to require a gross of \$5 million for five years.

Industrials (1929):

Obligor must have had \$10 million net income available for fixed charges, or in special cases, \$2 million, for each of the five years preceding investment (see under Earnings Tests below).

EARNINGS TESTS

Railroads (1923):

Obligor must have earned charges on eligible first mortgage and re-funding obligations (those secured by at least 75 percent of the line) and on all prior liens one and one-half times for five consecutive years preceding investment, and also for twelve consecutive months in the fifteen months preceding investment. Before 1937, earnings of the obligor were determined after deducting "all operating expenses, maintenance charges, depreciation, rentals, taxes, and guaranteed interest and dividends paid by or due from it." In 1937 the period of compliance was reduced to three years and earnings were redefined to conform with the Interstate Commerce Commission's concept of "income available for fixed charges."

Gas, electric, street railway, and water companies (1923):

Obligor must have had for the three years preceding investment an average net income of twice charges on eligible obligations (plus prior liens), and must have earned fixed charges one and one-half times for twelve consecutive months within the fifteen months immediately preceding investment. The requirements for water companies were reduced in 1935 to one and one-half and one and one-quarter times charges, respectively.

Eligible obligations are: first and refunding mortgage bonds secured by a lien on at least 75 percent of the property and by a franchise extending at least three years beyond the maturity of the issue. Net income available for fixed charges is defined as for railroads in the 1923 law (see above).

Telephone companies (1923):

Obligor must have earned charges twice on eligible first mortgage and refunding obligations (plus all prior liens) in each of the three years

preceding investment (extended to five years in 1931). Net income available for fixed charges is defined as for railroads in the 1923 law (see above).

Until 1937, when debentures of the Bell System became eligible, investments in telephone company bonds were restricted to first and refunding mortgage obligations secured by at least 75 percent of the property, and to collateral trust bonds of "telephone companies" (American Telephone and Telegraph Company) having a gross of more than \$75 million and earning charges three times in each of the three years preceding investment.

Industrials (1929):

Bonds or notes (including debentures) of any corporation that in each of the five years immediately preceding investment had a net income of not less than \$10 million and at least twice the interest on the entire funded debt, or not less than \$2 million and at least four times the interest on the entire funded debt.

DEFAULT TESTS

Gas, electric, street railway, and water companies (1923):

Obligor must not have defaulted on any of its obligations for a period of fifteen months preceding the date of investment.

Telephone companies (1923):

Obligor must not have defaulted on any of its obligations for a period of three years preceding the date of investment (extended to five years in 1931).

CAPITAL STRUCTURE TESTS

Gas, electric, railroad, street railway, and water companies (1923):

The total of eligible issues outstanding plus all prior liens shall not exceed three times the outstanding capital stock on the date of investment. In 1937, the law was amended to provide that total funded indebtedness shall not exceed three times the outstanding capital stock.

Comparison of the provisions of the Maine statutes with those of Massachusetts and New York indicates that Maine has on the whole been the most liberal of the three states. A general public utility law was first enacted in Maine in 1923, three years before the passage of similar legislation in Massachusetts, and five years before such action was taken in New York. The Maine law also permitted investment in industrial issues and in telephone debentures, securities not statutory legal in the other two states, but now eligible under the discretionary powers granted official bodies.

The Maine Act of 1937 applied to railroad obligations a somewhat more liberal set of statutory tests than the other two states', and also provided for investment in otherwise ineligible first mortgage bonds of steam railroads, upon the written application of a special committee of the Savings Banks Association of Maine. On the other hand, the tests have been applied more consistently in Maine than elsewhere. As in other states, the earnings test for railroads was forgiven during the period of federal operation and two years thereafter, but was applied relentlessly from that time forward. Despite the greater liberality of the Maine statutes, or rather because of that and the consistency of application, the shrinkage of the legal list during the Great Depression was greater there than in the other states.

VOLUME AND CHARACTERISTICS OF LEGAL BONDS

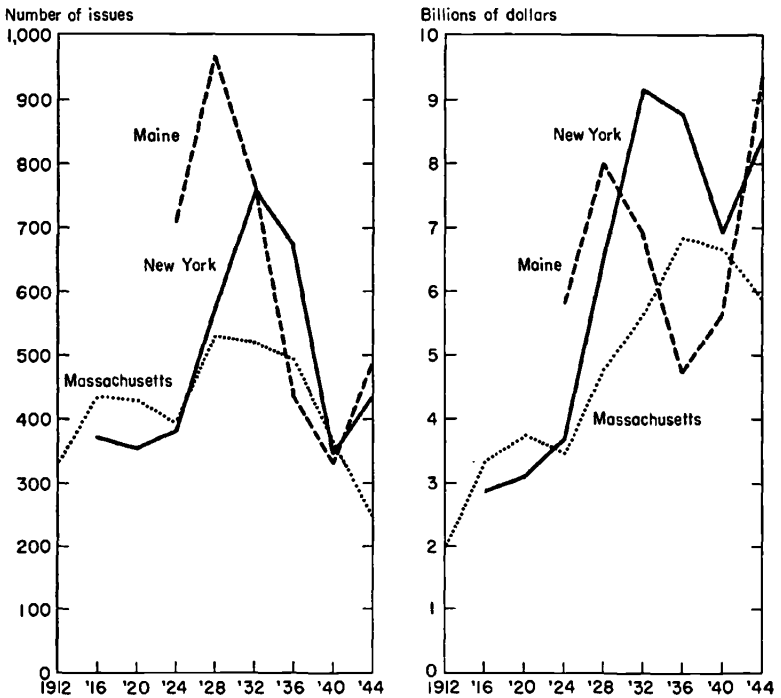
Changes in the state laws regulating savings bank investment and in the ability of corporate obligors to meet the statutory tests have produced important changes in both the volume and the composition of securities on the legal lists. Significant developments in these respects are described in the present section. Like our other materials on the volume and characteristics of bond offerings and outstandings, the basic data are universe estimates, obtained by combining information on all large straight issues with that for the 10 percent sample of small issues, after adjustment of the latter for sample size.

Outstandings

Series on the number and par amount of outstanding issues eligible for savings bank investment in Maine, Massachusetts, and New York are presented in Chart 11, running in each case from the beginning of the quadrennial year next following the first official publication date of the list to 1944 (when our records terminate). Analysis of the chart in the light of the legal history presented earlier provides ample evidence of the difficulties of establishing generally sound and acceptable standards of investment safety by legislative fiat.

The number of issues on the New York legal list remained virtually unchanged between 1916 and 1924, and the total par amount increased only gradually from \$2.9 billion to \$3.7 billion. Except for a few elevated railway issues eligible under an earlier special ruling of the Attorney General, the list throughout that

CHART 11—Number and Par Amount of Outstandings Legal in Maine, Massachusetts, and New York, 1912-44



Universe estimates for straight bonds, January figures, from "Statistical Measures," Tables 7 and 8.

period consisted entirely of railroad bonds. Public utilities were added sufficiently early in 1928 to be placed on the official list for that year (but several years after similar legislation had been enacted in Maine and Massachusetts). As a result of the New York legislation, the legal list expanded by \$2.8 billion between 1924 and 1928, of which the new utility bonds accounted for \$2.0 billion and rails for \$0.8 billion.

Despite the severe business contraction of the early thirties, an almost equally large expansion of the New York list occurred between 1928 and 1932 from the addition of \$2.2 billion rail bonds and \$0.5 billion utilities. The expansion of the rail list was caused by the liberalization of the rail law in 1929, and by emergency legislation early in 1932 that excluded 1931 earnings from the test. With the advantage of hindsight, the liberalization of 1929

appears unfortunate. Although perhaps difficult to foresee at the time, it would have been far wiser to permit greater diversification by broadening the utility and industrial sections of the list. The emergency legislation of 1932 is more difficult to appraise. The act provided that any railroad security on the legal list as of January 1, 1931 should remain on the list unless a default occurred. This in effect meant that the banks could continue to purchase various low-grade rail issues (the Subdivision 7-a legals) but were required to dispose of their holdings promptly if they went into default. The legislation resulted in the retention on the New York legal list of \$5.0 billion of low-grade rail bonds in 1932, an amount equal to three-quarters of the entire rail list at that time. The subsequent record shows that about 17 percent of this amount went into default by 1940. As the analysis of Chapter 2 has indicated, sale at default in the 1930's resulted in huge and largely avoidable losses. Yet forced sale of the entire group of Subdivision 7-a legals in 1932 would doubtless have resulted in even greater losses. As it was, the average price of these issues was under 75 at that time. The data of Chapter 2 show that retention in a period of stress is usually good policy; on the other hand, the permission given the savings banks to expand their low-grade rail holdings in 1932 was probably unwise, since many of these issues later went into default.

A shrinkage of \$0.4 billion in the total of bonds on the New York list between 1932 and 1936 resulted from a decrease of \$0.5 billion in the volume of eligible rail bonds partially offset by an increase of \$0.1 billion in the volume of eligible public utilities. The railroad shrinkage was caused mainly by the dropping of defaulted bonds from the legal list. By 1940 the list had shrunk by an additional \$1.9 billion, as the result of a further decline in rail earnings and of various changes in the law. A substantial amount of telephone debentures was placed on the legal list by special action of the Banking Board and a smaller amount of industrials, but these additions were more than offset by deletions of \$2.8 billion from the rail list. As has been indicated, emergency legislation of 1938, 1939, and 1940 provided that during the period 1931-39 previously eligible rail issues were to remain on the legal list and were to be eligible for new investment if interest charges were earned at least once in each of five of the six years preceding investment, and also in the year immediately preceding investment. Many of the railroads, however, were unable to meet even

this minimum standard, and \$2.5 billion par amount of their issues were dropped from the list. In addition, \$0.3 billion of rail bonds were dropped as they went into default. Although banks and trustees were not permitted to purchase rail issues that failed to meet the reduced test, the emergency legislation of the late thirties provided that they could continue to hold them if purchased earlier even though they might subsequently go into default. Capital losses would have been reduced considerably if such legislation had been enacted earlier in New York and in the other states.

The general expansion of corporate profits in the early war years and the discretionary powers granted the Banking Board resulted in an over-all expansion of the New York legal list of \$1.5 billion between 1940 and 1944. Ironically enough, in view of the preceding depression experience, most of the additions were rail bonds (\$0.9 billion), and over three-quarters of these were low-grade Subdivision 7-a legals. Over the same period the public utility list expanded by only \$0.5 billion and the industrial list by as little as \$0.1 billion.

It will be observed by those familiar with the history of security values that the broad trends in the volume of securities eligible for savings bank investment in New York were roughly similar to those of the prices of medium- and low-grade bonds, rising during the twenties, falling during most of the thirties, and rising again from the beginning of World War II to the close of the period studied. To an appreciable extent, the fluctuations in the volume of eligible bonds were caused by the various statutory tests and amendments. It would thus appear that the net effect of much of this legislation was to encourage the banks to purchase bonds when prices were rising or high, and to force them to sell at a loss after the bonds had dropped from the legal list.

The movements in the volume of securities eligible for savings bank investment in Maine are illustrative of what can happen when a basically more liberal set of statutory tests is applied relentlessly throughout a boom and a great depression. Over \$5.8 billion of corporate bonds were eligible in Maine at the beginning of 1924, 58 percent more than in New York and 67 percent more than in Massachusetts. Between then and 1928, \$2.2 billion par amount were added (\$0.8 billion of rail bonds and \$1.4 billion of utilities). Since the Maine statutory tests were unchanged during this period, these increases were due solely to growth in the vol-

ume of corporate outstandings, and in the proportion that met the legal tests. Over the next four years, 1928-31, though the legal lists of Massachusetts and New York both expanded, the list of Maine contracted by \$1.1 billion (\$2.1 billion rail bonds, partially offset by additions of \$0.8 billion utilities and \$0.2 billion industrials). Again, no legal changes occurred during the period, other than the addition of a small amount of industrials in 1929; moreover, a moratorium on the earnings test for railroads, similar to those of Massachusetts and New York, was not enacted in Maine. The decline in the volume of eligible bonds thus reflects almost entirely the changing ability of obligors in the different industry groups to meet the legal tests. Between 1932 and 1936, the Maine list contracted even more severely than in 1928-31 (an over-all decline of \$2.2 billion par amount, of which \$1.4 billion of the issues dropped were rails, \$0.7 billion utilities, and \$0.1 billion industrials). The contraction of the utility list occurred despite a liberalization of the law covering water companies in 1935.

From 1936 through the first quarter of 1944 the Maine legal list almost doubled in volume, although the total of corporate outstandings was contracting at the time. The addition of \$4.6 billion legal bonds in the period—comprised of \$2.4 billion rails, \$1.9 billion utilities, and \$0.3 billion industrials—largely reflected the wartime expansion of corporate earnings. The rail law was also liberalized in this period, and the Bell System debentures were added.

Because of the rigid application of the statutory tests in Maine, the upper and lower turning points in the volume of eligible securities, in so far as they can be determined from the quadrennial data, led those of New York, and the amplitude of variation was somewhat greater. In effect, Maine savings banks were required to dispose of a larger proportion of their corporate holdings than in New York, and to sell them somewhat earlier, but were also permitted to re-enter the market earlier. The economic consequences of these developments will be examined in a later section on bond experience.

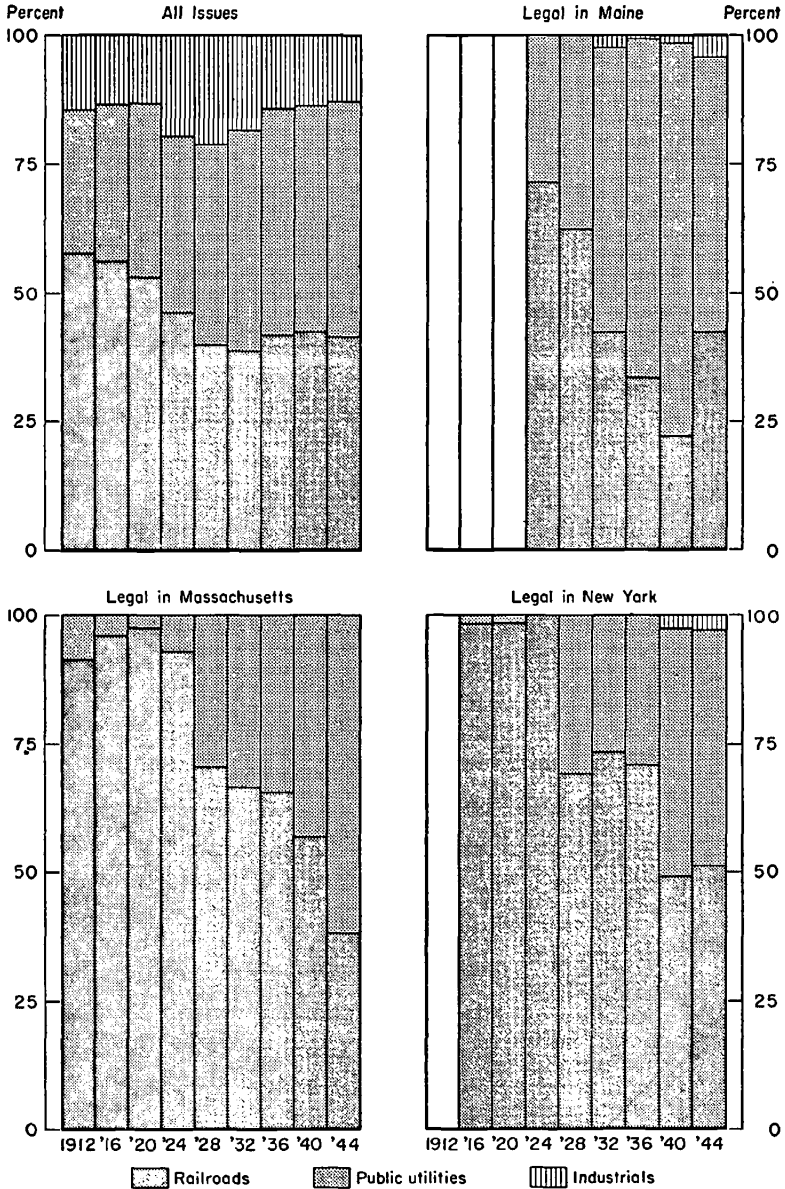
During most of the years covered by our records the Massachusetts list was more conservative than those of Maine and New York; and on the whole, it was the most stable of the three. From 1912 to 1924 the par amount of outstanding issues eligible for savings bank investment in Massachusetts ranged between \$2.0

billion and \$3.7 billion. The Massachusetts list, like that of New York, was then almost entirely a rail list. The first important liberalization occurred in 1926 with the passage of the act covering out-of-state utilities. As a result the volume of eligible securities increased from \$3.5 billion in 1924 to \$4.8 billion in 1928, all except \$0.1 billion of the increase occurring in the public utility field. Unlike the Maine list, the Massachusetts list did not contract over the next four-year period (1928-31) but the expansion (\$0.9 billion) was less than one-third that of New York, since few rails were added.

The Massachusetts legal list was atypical between 1932 and 1936, an increase of \$1.2 billion occurring while there were large shrinkages in both Maine and New York. For one thing, the Massachusetts railroad law of 1932 was more conservative than New York's and Maine's, so that less attrition occurred later because of defaults. Then, in 1933 the Massachusetts legislature followed New York by omitting the years 1931-39 from the rail earnings test. An early provision of the Massachusetts law is interesting in this connection, since it gave the banks somewhat more room to maneuver in this difficult period. As in other states, Massachusetts banks are required to sell most bonds promptly at default, but already-purchased issues of railroads incorporated outside New England are not rendered ineligible by failure of the obligor to meet the earnings test for two years, provided they are not in default. Under this provision, savings banks in Massachusetts are permitted a more orderly liquidation of securities approaching ineligible status. The law was passed in 1908. Similar but broader legislation was not enacted in New York until 1938.

Between 1936 and 1940 the Massachusetts utility list expanded by \$0.5 billion, primarily because of improved earnings and the passage of a more liberal statute that permitted investment in maturities up to forty years (formerly limited to thirty years). Over the same period, however, the rail list contracted by \$0.7 billion, so that the total list declined by \$0.2 billion. Similarly, the Massachusetts list contracted during the next four years by a net amount of \$0.8 billion, the result of an elimination of \$1.5 billion rail bonds, and an addition of \$0.7 billion utilities. The rail bonds were dropped when the moratorium on the earnings test was terminated on July 1, 1941.

CHART 12—Distribution of Outstandings by Major Industry Group: Legal Lists and All Issues Compared, 1912-44



Universe estimates for straight bonds in par amount, January figures, from "Statistical Measures," Table 7.

Characteristics of Legal Bonds

Analysis of percentage distributions of the par-amount totals of legal bonds by various characteristics permits us to trace the effects of the statutory tests upon the composition of the legal lists. Distributions by major industry groups are presented in Chart 12, and similar breakdowns covering other significant characteristics are given in Table 41.

The chart shows that the legal lists were comprised largely of rail bonds until after the Great Depression. Over 98 percent of the total par amount of straight corporate bonds eligible for savings banks investment in New York State, and over 91 percent of the amount eligible in Massachusetts, were rail bonds through the first quarter of 1924, as compared with from 46 to 58 percent of the total of all issues outstanding over the same period. With the legalization of public utilities in Maine in 1923, in Massachusetts in 1926, and in New York in 1928, the relative importance of the rails declined; but even so, approximately two-thirds of the lists, by volume, were rails as late as 1928. Because of the various moratoria on the rail earnings tests the rails continued to dominate the legal list of Massachusetts through 1940 and of New York throughout the period studied. Since a moratorium did not occur in Maine, the public utilities dominated the legal list of that state from 1932 onward.

In view of the depression experience, it is curious that as late as the first quarter of 1944 two of the state lists still contained a larger proportion of rail issues than did total outstandings in the market: 43 percent for Maine and 51 percent for New York, against 42 percent for the market as a whole. Massachusetts was the only exception, the end of the moratorium in 1941 having brought the rail proportion down to 38 percent.

Compared with the proportions of public utilities in total outstandings, the legal lists neglected the utilities as a class throughout the early period. Utilities have, however, been favored in Maine since 1932, and been given increased representation in Massachusetts and New York since 1940. In all states the industrials were neglected during the entire period studied, perhaps partly because of the difficulty of adapting the legal machinery to changing economic conditions, but primarily because of the problem of formulating sound and sufficiently inclusive tests for the heterogeneous industrial group. It should be noted, however,

TABLE 41—Proportions of Outstandings Characterized by High Agency Rating, Large Obligor, Exchange Listing, Long Term, etc. for Issues Legal in Maine, Massachusetts, and New York, 1920-44

BEGINNING OF YEAR	Agency Rating I-IV	Assets of \$200 Million and over	Amount Outstanding \$5 Million and over	Listed on New York Stock Exchange	Maturity over 30 Years	Senior Liens ^a	Debentures ^b
1920							
All issues	79.5%	45.5%	73.7%	56.5%	33.0%	75.1%	9.3%
Legal in							
Massachusetts	100.0	89.7	87.2	88.2	51.3	86.2	4.8
New York	99.8	86.9	86.2	90.4	56.6	86.1	3.5
1928							
All issues	85.4	47.0	78.0	57.0	24.1	67.1	14.7
Legal in							
Maine	100.0	66.2	86.2	73.1	38.1	77.9	1.3
Massachusetts	100.0	79.8	84.5	75.6	38.3	76.8	3.1
New York	99.9	75.4	91.2	81.9	43.6	76.7	1.5
1936							
All issues	62.0	51.4	84.0	59.8	21.5	69.0	16.3
Legal in							
Maine	99.9	61.3	89.9	63.0	25.8	79.9	0.6
Massachusetts	92.1	77.5	92.6	78.5	33.1	82.1	0.7
New York	89.2	75.6	92.2	81.4	37.1	79.8	2.9
1944							
All issues	60.0	58.9	90.0	65.7	15.1	67.0	20.6
Legal in							
Maine	87.7	71.3	96.9	73.9	26.0	72.7	14.9
Massachusetts	99.8	78.4	97.5	79.8	22.0	74.0	15.1
New York	87.6	73.1	95.4	83.2	24.5	73.6	12.2

Based on Tables 2, 4, 23, 25, 28, 31, 34, 37, and 40 of *Statistical Measures*, and special supplementary tabulations: par-amount data for all large (straight) corporate issues, and for 10 percent of small issues adjusted to universe totals.

^a A "senior lien" is an issue secured by mortgage, collateral, or leasehold, provided the lien is not entirely junior to that of other issues.

^b A debenture is an issue not secured by lien.

that industrial bonds were still under-represented in New York in 1944, even though discretionary power to add such securities had been granted as early as 1938. A similar law was passed in Massachusetts in 1945, but it is not reflected in our statistics.

The materials of Table 41 highlight other important characteristics of the legal lists. As compared with all issues outstanding in the market on the indicated observation dates, relatively large proportions of the par-amount totals of legal issues were rated in the first four grades by the investment agencies, were large issues of large obligors, were listed on the New York Stock Exchange, and had exceptionally long terms to maturity. In addition, relatively large proportions were senior liens, and relatively small proportions were debentures.

Generally speaking, the trends in the percentages in Table 41 reflect important changes in the laws of the various states and in the ability of obligors in different industry groups to meet the statutory tests. For example, virtually all of the issues on the legal lists were rated I-IV by the agencies through 1928. Because of the legal moratoria in Massachusetts and New York the quality of legal bonds in those two states then deteriorated, but not in Maine, where the tests were rigidly enforced. The tightening up of the Massachusetts railroad law in 1941 is reflected in the improved ratings assigned Massachusetts legals between 1940 and 1944, but during the same period relatively large proportions of low-rated rail issues became legal in Maine and New York. Cross-classifications of the data for 1936 and 1944 by composite rating and major industry group show that the states were less selective in the rail than in the utility and industrial fields.

The size tests imposed by the states are reflected in the higher proportions of large issues on the legal lists and of issues of large obligors as compared with the corresponding proportions for the market as a whole. The data show that a smaller proportion of the Maine list than of the other legal lists was issued by the large obligors. This was because Maine was less restrictive than other states on size of utility obligor.

As might be inferred from the fact that the issues of most large railroads are listed on the New York Stock Exchange, in 1920 the proportion of legal bonds traded there was very high. With the general admission to the legal lists of public utilities in the late 1920's, the proportions of legals traded on the New York Stock Exchange declined, but remained higher than the corresponding

proportions for total outstandings. Both the Stock Exchange and the legal lists favor large issues and large obligors, as is reflected in the fact that within major industry groups (not shown separately in the table) the proportions of legal bonds traded on the New York Stock Exchange are uniformly above the corresponding proportions for all outstanding issues.

The higher proportions of long-term issues for the legal lists than for all issues outstanding in the market reflects the favoritism shown the rails, and the longer than average maturities of such issues. Since investment in bond issues of gas and electric companies was restricted in Massachusetts to maturities of thirty years or less (changed in 1937 to admit maturities up to forty years), the long-term section of that list was comprised almost entirely of rails. Before the 1937 amendment the only legal utilities in Massachusetts having maturities of over thirty years were telephone bonds and a few local issues. Other differences in the maturity patterns among the state lists can largely be traced to the varying emphasis given the different industry groups.

Legal restrictions on the types of security that may be purchased are also reflected in the higher proportions of senior liens on the lists and lower proportions of debentures than for all issues outstanding in the market. Table 41 exhibits a clear-cut legal preference for senior liens in each of the years studied. The data for 1944, however, indicate a drift toward debentures and away from senior issues.

On the whole, it would appear that the legal lists unduly favored the rails and prevented adequate diversification by industry. Considered individually, however, most of the issues on the lists possessed the characteristics usually deemed desirable in securities of investment quality. During the period studied the legal lists were comprised essentially of large, well secured, marketable issues of top grade, backed by the financial power and strength of larger than average obligors.

Inclusiveness and Uniformity of the Legal Lists

Part of the price paid for the desirable attributes of legal bonds is the restricted volume of securities that meet the legal tests. Evidence on this matter is presented in Tables 42 and 43, the first showing the proportions of the total volume of outstanding issues in the major industry groups that were legal in the different states,

and the second, similar proportions for bond offerings. To permit analysis of the uniformity, or consistency, of the statutes, the tables also contain breakdowns into issues eligible for savings bank investment in any one of the states studied, in any two of them, and in all three of them.

One way of judging a legal list—or indeed any other selective list of securities—is by its inclusiveness. Other things equal, a broader list allows the investor greater freedom of selection and

TABLE 42—Percent of Outstandings Legal in Maine, Massachusetts, and New York, Quadrennially 1912–44

BEGINNING OF YEAR	LEGAL IN						Total Par Amount (millions)
	Maine	Massa- chusetts	New York	One State Only	Two of the States	All Three States	
<i>All Issues</i>							
1912		13.0%		13.0%			\$15,303.3
1916		19.4	16.6%	6.8	14.6%		17,226.6
1920		20.7	17.1	5.2	16.3		18,085.1
1924	27.7%	16.6	17.5	13.7	4.7	12.9%	21,035.3
1928	30.3	18.0	24.4	11.7	11.0	13.0	26,476.5
1932	23.7	19.4	31.5	16.4	14.4	9.8	29,014.0
1936	17.8	25.7	33.0	12.2	14.9	11.5	26,517.8
1940	22.2	26.3	27.2	11.7	14.0	12.0	25,360.5
1944	41.0	25.7	36.8	14.1	12.0	21.8	22,797.8
<i>Railroads</i>							
1912		20.6		20.6			8,828.3
1916		33.3	29.2	10.3	26.1		9,662.1
1920		38.0	31.6	8.4	30.6		9,630.5
1924	42.7	33.1	37.7	14.9	7.6	27.8	9,727.0
1928	47.0	31.6	42.1	14.8	13.5	26.3	10,647.3
1932	26.0	33.4	59.4	28.1	25.4	13.3	11,292.0
1936	14.2	40.2	55.8	19.1	28.0	11.7	11,142.1
1940	11.5	35.0	31.4	15.7	16.7	9.6	10,826.8
1944	42.0	23.7	45.2	16.0	17.3	20.1	9,488.2
<i>Public Utilities</i>							
1912		3.9		3.9			4,268.3
1916		2.4	0.8	3.2	0.0		5,277.9
1920		1.3	0.7	2.0	0.0		6,074.4
1924	22.8	3.4	0.0	19.6	3.3		7,202.3
1928	29.4	13.7	19.5	14.9	14.4	6.3	10,214.4
1932	30.6	15.1	19.7	11.7	10.5	10.9	12,395.4
1936	26.9	20.2	21.9	9.2	7.4	15.0	11,623.5
1940	38.9	25.9	30.1	10.4	15.1	18.1	11,078.3
1944	48.1	34.8	37.2	13.9	8.7	29.6	10,369.8

TABLE 42
(concluded)

BEGINNING OF YEAR	LEGAL IN					Total Par Amount (millions)	
	Maine	Massa- chusetts	New York	One State Only	Two of the States		All Three States
<i>Industrials</i>							
1932	2.8%			2.8%			\$5,326.6
1936	0.8			0.8			3,752.2
1940	2.1		5.0%	2.9	2.1%		3,455.4
1944	13.0		7.8	8.6	6.1		2,939.8
<i>Large Issues</i>							
1912		15.0%		15.0			10,928.2
1916		22.7	19.3	7.8	17.1		12,646.0
1920		24.0	19.5	5.9	18.8		13,668.1
1924	31.1	18.5	19.8	14.5	4.8	15.1%	16,176.5
1928	32.9	19.2	27.9	11.8	11.6	15.0	21,251.3
1932	25.0	20.7	34.5	17.4	14.9	11.0	24,233.7
1936	18.9	27.6	35.6	12.3	15.7	12.8	22,777.5
1940	23.8	28.3	29.5	12.0	15.0	13.2	22,683.1
1944	43.7	27.5	38.6	14.2	12.7	23.4	20,845.0
<i>Small Issues</i>							
1912		8.1		8.1			4,375.1
1916		10.5	8.9	3.6	7.9		4,580.6
1920		10.6	9.4	2.8	8.6		4,417.0
1924	15.6	9.8	9.4	10.6	4.0	5.4	4,858.8
1928	19.4	13.3	10.1	11.2	8.3	5.0	5,225.2
1932	17.4	13.2	16.5	11.5	12.1	3.8	4,780.3
1936	11.2	14.6	17.5	11.1	10.4	3.8	3,740.3
1940	8.3	9.6	7.8	8.0	5.7	2.1	2,677.4
1944	12.2	5.9	17.3	12.3	4.5	4.7	1,952.8

Based on Tables 7 and 9 of *Statistical Measures*: par-amount data for all large (straight) corporate issues, and for 10 percent of small issues adjusted quadrennially to universe totals. Omission of Subdivision 7-a legals from the New York list in 1932-44 reduces the coverage of the rail group and other affected categories as follows:

BEGINNING OF YEAR	All Issues	Railroads	Large Issues	Small Issues
1932	14.3%	15.1%	16.2%	4.5%
1936	13.0	8.0	14.3	4.7
1940	17.8	9.4	19.3	5.0
1944	23.2	12.7	24.5	9.8

diversification, and reduces the likelihood that price premiums may result from the channeling of funds into a narrowly restricted list. Other important attributes of a sound list to be examined later in the chapter are its stability, and—of paramount importance—the actual yield and loss experience of the issues on the list.

The legal lists do not fare well when judged on the basis of their inclusiveness. On the average over the period studied, only about one-quarter of the total volume of outstandings was eligible for savings bank investment in Maine, and the same was true of the lists of Massachusetts and New York. In no quadrennial year except 1936 and 1944 did any one of the lists include an amount as great as that rated in the first two grades by the agencies, and in no year did any of them include as much as was rated in the first four grades (cf. Table 27). Measured by percentages of the paramount totals of all outstanding issues included, the Massachusetts list was the most restrictive, and the Maine list the least. As has been indicated, however, the Maine list was quite restrictive during the depressed thirties, primarily because of the stringent application of the earnings test for rails.

As the preceding review of the state laws has suggested, the legal lists were least restrictive for rails, and most restrictive for industrials. Thus on the average each state list included roughly one-third of the total of rail outstandings, and the New York list, over one-half in 1932 and 1936. This compares with roughly 20 percent for utilities (in years when they were generally eligible) and only 5 percent for industrials. In the public utility field, the Massachusetts list was the most restrictive, while the Maine list was the most liberal. In the twenties, the same was true of the rails, but in the thirties the moratoria discussed above changed the ranking, so that New York ended up as the least restrictive state with respect to rail issues and Massachusetts the most restrictive. Comparison with Table 27 indicates that after 1928 one-third or more of the total volume of public utility outstandings was rated by the agencies in the first two grades, well above the proportions eligible in the various states before 1944. Table 42 shows that the lists were also highly selective in the case of the small issues, 19 percent being the largest fraction of their total par amount that was eligible in any state in any year (Maine 1928). The agencies also discriminated against the small issues (Table 27), but not to the same extent as the legal lists.

An indication that the laws were needlessly restrictive is provided by the small proportion of issues jointly eligible in all three of the states studied. For example, in 1928, when 30 percent, 18 percent, and 24 percent of the par-amount total of outstanding issues was eligible in Maine, Massachusetts, and New York, respectively, only 13 percent was eligible in all three states. To put the matter differently, 12 percent, 11 percent, and 13 percent of the total volume of outstandings in 1928 was eligible in one, two, and three states, respectively, so that 36 percent of the total was eligible in one or more states. Thus of the 36 percent eligible in at least one of the states in that year, Maine, the most liberal selector, rejected issues amounting to 6 percent (or one-sixth); and Massachusetts, the most restrictive, rejected issues amounting to 18 percent (or one-half). Measured by the volume of legal issues excluded, Massachusetts was the most restrictive state from 1924 on, except in 1936 and 1940, when the Maine list missed an exceptionally large proportion of issues eligible in other states.

The evidence does suggest a possible drift toward greater uniformity in the state laws. In 1944, for example, 22 percent of the total volume of outstandings was jointly eligible in all three of the states studied, almost twice the proportion for any of the earlier years. The laws, however, were still far from uniform. In the same year, 48 percent of aggregate outstandings was eligible for savings bank investment in one or more of the states studied, yet only 26 percent of the total was eligible in Massachusetts, 37 percent in New York, and 41 percent in Maine. By way of contrast, 60 percent of the aggregate volume of outstandings in the same year was rated in the top four grades by the investment agencies (Table 27).

The quadrennial breakdowns of bond offerings in Table 43 tell essentially the same story as the outstandings, and show in addition that the proportion of bonds legal at offering was usually well below the corresponding proportion of outstandings. (Compare particularly the percentages of bonds jointly eligible at offering in all three states, 1920-31, with the related figures for outstandings in Table 42). The data indicate that new issues were usually picked up slowly, and that some seasoning on the market was frequently required before they were placed on the lists. The periods 1932-35 and 1936-43 were exceptional in that substantial proportions of the new offerings met the tests in those years. The market was disorganized in the first of these periods, and only

issues of the very highest grade could be floated. (A few low-grade rail offerings that appeared as exchanges or contract modifications were retained on the legal lists of Massachusetts and New York under the moratoria.) In the second period most of the new offerings were public utility refundings, also of high grade. Since only the better issues were floated in these periods, exceptionally large proportions became eligible at offering. Even so, only about one-third to one-half of the utilities were placed on the legal lists at offering.

Stability of the Legal Lists

In addition to the inclusiveness of a given list of securities, a second desirable feature is its stability, as measured by the volume of securities retained on the list over different periods. Perfect stability cannot be expected of any list selected by human, and fallible, means. As mistakes of judgment occur and are corrected, securities will be dropped from the list. Nevertheless, large and erratic fluctuations in the volume of eligible investments are undesirable if they are due simply to the temporary inability of obligors to meet one or more of the standards imposed in drawing up the list. A highly unstable list in this sense frequently forces the investor to buy when prices are high and sell when prices are low.⁴²

Some evidence bearing on the stability of the legal lists is given in Table 44, which contains percentages of the par-amount totals of bonds legal at offering in the states studied that were still legal at extinguishment (or January 1, 1944, if still outstanding on that date). Although the legal lists were quite restrictive, over the long pull they appear to have been reasonably stable, judged solely on the basis of these data. Thus 82 percent of the par amount of bonds legal at offering in Maine and 83 percent of the corresponding total of bonds legal in New York were still legal at extinguishment, records that compare favorably with the 77 percent of bonds rated I-IV at offering by the agencies and still so rated at extinguishment (cf. Table 30). Surprisingly enough, the Massachusetts list, which was the most restrictive as to volume, was also

⁴² Liquidation at temporarily depressed prices may be avoided if investors are permitted to hold previously eligible securities for a reasonable time, even though further purchases may not be permitted until the securities again comply with the legal tests. See the Massachusetts law of 1908 and the New York emergency legislation of 1938 (summarized earlier in the chapter) for provisions of the indicated type.

TABLE 44
(concluded)

LEGAL AT EX- TINGUISHMENT IN	LEGAL AT OFFERING IN					Not Legal in Any of the States
	Maine	Massa- chusetts	New York	One State Only	Two of the States	
	<i>Industrials</i>					
Maine	86.4%		86.3%	81.8%	100.0%	1.3%
Massachusetts						
New York	22.7		100.0	43.8	100.0	0.8
One state only	63.7		13.7	54.6	0.0	1.7
Two states	22.7		86.3	35.5	100.0	0.2
Three states						
Not legal	13.6		0.0	9.9	0.0	98.1
TOTAL	100.0		100.0	100.0	100.0	100.0

Based on Table 67 of *Statistical Measures*: par-amount data for all large (straight) corporate issues, and for 10 percent of small issues adjusted annually to universe totals. Legal status at extinguishment refers to the status of an issue within one year prior to date of final extinguishment or at the beginning of 1944, if still outstanding at that time.

reflecting the fact that they became eligible towards the close of the period studied). It may be recalled that although an unusually large amount of rail bonds was dropped from the legal list of Maine in the thirties, a substantial amount was restored in the forties. The latter action, coupled with the fact that the Maine statute favored the more stable utility bonds, accounts for the large proportion of the volume of bonds legal in Maine at offering that was still legal at extinguishment.

In the chapter on agency ratings it was found that the higher grades tended to be more stable than the lower. The same is true if the measure of quality is the number of states in which the issue was legal at offering. Thus 85 percent of the total volume of bonds legal in all three states at offering was still legal at extinguishment, as compared with only 39 percent of the total legal in one state or in two states. Contrariwise, only 3 percent of the total volume of bonds legal in all three states at offering was not legal in any of the states at extinguishment, as compared with corresponding percentages of 15 and 24, respectively, for bonds legal at offering in two states and in one state.

One of the interesting features of Table 44 is the large proportion, by volume, of bonds legal in Massachusetts at offering that remained legal in all three states at extinguishment (64 percent: the corresponding percentages for New York and Maine are, respectively, 51 and 48). In this sense, Massachusetts legals constituted a rock-bottom conservative list. By the same token, the New York list was least conservative in the rail field, and the Maine list the least conservative in the public utility field.

Additional evidence on the stability of the legal lists is presented in Table 45, which shows the percentages of the paramount totals of bonds legal in the various states at the beginning of the quadrennial periods that were still legal at the end of those periods. The table is analogous to Table 31 based on agency rating grade: in both cases issues extinguished during a period were removed, for purposes of comparability. Such percentages are perhaps more relevant to some savings banks than percentages based on offerings, since the banks frequently purchase bonds in the secondary market after offering and may be required to liquidate their holdings promptly when issues are dropped from the lists.

Although the Massachusetts list was the least stable of the three as measured by the percent of offerings still legal at extinguishment, it was the most stable over several of the four-year periods. The reason for the larger proportion of bonds dropped from the Massachusetts list than from the New York list in 1928-31 is that the emergency moratorium on rail earnings took effect in New York in time to retain issues on the official list drawn up at the close of the period, but not in Massachusetts, where the first moratorium did not occur until 1933. The reason for the large proportion of bonds dropped from the Massachusetts list in 1940-43 was the tightening up of the railroad law in 1941. If such action had not been taken, the proportion of the aggregate volume of Massachusetts legals at the beginning of the period that was still legal at the end would have been about the same as in the other two states.

The statistics also indicate that legal utilities were on the whole more stable than legal rails during the thirties, although there is not much to choose from in earlier periods. Exceptionally large amounts of rail bonds were dropped from the legal lists of Maine and New York during the thirties, in Maine because of the rigid application of the earnings test throughout that period, and in

TABLE 45—Outstandings Legal in Maine, Massachusetts, and New York at Beginning of Four-year Periods Distributed by Legal Status at End; 1912-43

PERIOD	LEGAL AT BEGINNING OF PERIOD IN					
	MAINE		MASSACHUSETTS		NEW YORK	
	AT END OF PERIOD		AT END OF PERIOD		AT END OF PERIOD	
	<i>Legal in Maine</i>	<i>Not Legal in Maine</i>	<i>Legal in Mass.</i>	<i>Not Legal in Mass.</i>	<i>Legal in New York</i>	<i>Not Legal in New York</i>
	<i>All Issues</i>					
1912-15			88.2%	11.8%		
1916-19			99.3	0.7	100.0%	0.0%
1920-23			78.5	21.5	98.6	1.4
1924-27	97.0%	3.0%	99.1	0.9	88.8	11.2
1928-31	62.0	38.0	81.7	18.3	94.1	5.9
1932-35	62.6	37.4	97.8	2.2	88.5	11.5
1936-39	67.3	32.7	93.2	6.8	61.6	38.4
1940-43	97.6	2.4	65.9	34.1	92.5	7.5
	<i>Railroads</i>					
1912-15			89.5	10.5		
1916-19			100.0	0.0	100.0	0.0
1920-23			78.1	21.9	100.0	0.0
1924-27	97.6	2.4	99.0	1.0	88.9	11.1
1928-31	44.3	55.7	76.3	23.7	95.2	4.8
1932-35	54.6	45.4	99.1	0.9	90.7	9.3
1936-39	51.3	48.7	91.2	8.8	53.5	46.5
1940-43	100.0	0.0	53.0	47.0	86.0	14.0
	<i>Public Utilities</i>					
1912-15			74.3	25.7		
1916-19			79.3	20.7	100.0 ^a	0.0 ^a
1920-23			93.2 ^a	6.8 ^a	0.0 ^a	100.0 ^a
1924-27	95.3	4.7	100.0	0.0		
1928-31	97.6	2.4	96.3	3.7	91.3	8.7
1932-35	69.4	30.6	94.8	5.2	81.0	19.0
1936-39	83.4	16.6	100.0	0.0	94.8	5.2
1940-43	95.2	4.8	88.2	11.8	99.6	0.4
	<i>Industrials</i>					
1932-35	100.0 ^a	0.0 ^a				
1936-39	100.0 ^a	0.0 ^a				
1940-43	100.0 ^a	0.0 ^a			100.0 ^a	0.0 ^a

From special tabulations of the National Bureau of Economic Research: par-amount data for all large (straight) corporate issues, and for 10 percent of small issues adjusted quadrennially to universe totals, with issues extinguished during each period excluded.

^a Based on less than five issues.

New York because of the termination of the moratorium on rail earnings in 1938. Many of the rail bonds were later restored to the lists as rail earnings improved during the early war years. For example, 34 percent of the total volume of rail bonds ineligible for savings bank investment in Maine in 1940 was added to the list by 1944; the corresponding amount for New York was 26 percent (the figures are not shown in the table). Legal utilities held up fairly well during the thirties, the principal exception being Maine, 1932-35. The Maine list included an exceptionally large proportion of utilities in 1932 and some of these issues were dropped as earnings deteriorated (most of the deletions were rated in the fourth grade by the investment agencies, i.e. good grade but not highest quality). The deletions were unfortunate, as many of these issues (32 percent by volume) were later retired by call or other contractual method without being restored to the Maine list.

The Legal Lists and Business Cycles

To determine the sensitivity of the legal lists to the short-run ups and downs of the business cycle, special annual series were constructed covering par amounts of offerings, extinguishments, net upgrading, etc. The series are analogous to those examined in the preceding chapter (see the section "Agency Ratings and Business Cycles"). Indexes of cyclical conformity for the various series, calculated on the assumption that the timing of their turning points was roughly coincident with the general business cycle, are shown in Table 46; the series on net changes and net upgrading are plotted against the National Bureau's reference cycles in Charts 13 and 14.⁴³

It will be recalled from Chapter 3 that the investment agencies typically upgraded bonds during business expansions and downgraded them during business contractions. A similar relationship

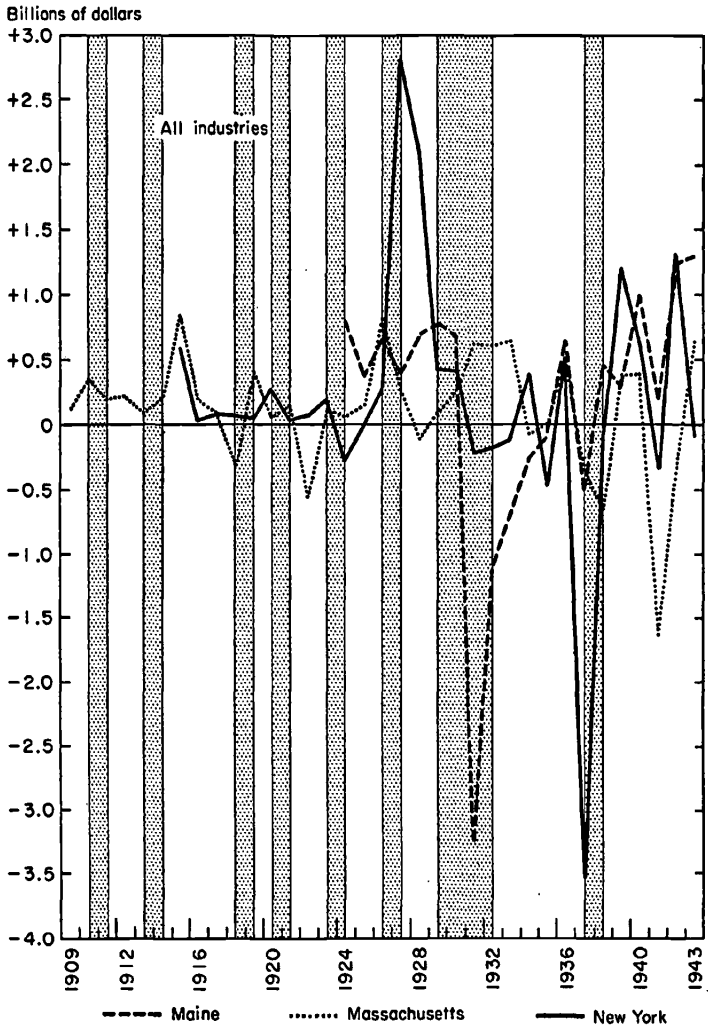
⁴³ The two series for net upgrading of legal bonds, which measure the excess of gross additions of outstanding securities to the lists over gross deletions, correspond to Variants I and II of Chapter 3. Since the published legal lists are presumably fairly complete (cf. p. 216), they may be conceived of as dividing all outstanding issues into "legals" (or high grades) and "nonlegals" (or low grades); thus there is no troublesome third category of unrated issues such as was encountered in Chapter 3. Since Variants I and II are very similar under these conditions, only one variant (Variant II) is plotted in Chart 14. Industrial bonds generally, and public utilities in New York, are not shown separately in the table and charts since none was legal for as much as two full cycles; but they are included in the all-industry series.

would be expected of legal bonds as well, in the absence of statutory changes that might obscure the effects of the business cycle. The conformity indexes and the charts show that for two of the states studied the various statutory amendments did in fact obscure the effects of the business cycle. Except for the Maine series (which cover only three cycles but which agree closely with the behavior of issues rated I-IV by the agencies) the conformity indexes for the net changes and net upgrading are quite low and erratic in sign. The sensitivity of the Maine series to the business cycle appears to have been caused by the fact that few changes of any consequence occurred in the Maine law during the period studied, so that the volume of Maine legals could respond freely to fluctuations in earnings coverage and other relevant economic factors. By way of contrast, major legal changes occurred in Massachusetts and New York (including in particular the moratoria on rail earnings) and these obscured the response of the lists to the business cycle.

The legal amendments would be expected to have their most pronounced effect on outstandings (and hence on the series for net changes and net upgrading), and less effect on bonds legal at offering or at final extinguishment. On the whole, the conformity indexes seem to substantiate this point. Most of the conformity indexes for offerings agree with the I-IV's in being low and negative. The indexes are also low, but mixed in sign, for bonds legal at date of final extinguishment; the same was true for bonds rated I-IV.

As has been noted earlier, the conformity indexes of Table 46 do not take account of possible leads or lags of the series at reference-cycle turning points; however, a special analysis of the all-industry series for each state failed to reveal marked departures from the standard reference pattern except for Massachusetts offerings and final extinguishments and Maine offerings and net upgrading. For Massachusetts, the series for bonds legal at offering typically rose from the reference peak to the middle of the following expansion (the same as total bond offerings; see *Volume of Financing*); but the conformity indexes when recomputed on that basis are not materially different from those given in Table 46 (—50 for expansions, —25 for contractions, and —33 for the full cycle). Bonds legal in Massachusetts at date of final extinguishment are also timed the same as total final extinguishments, typically rising only during the first half of reference expansions, and

CHART 13—Net Changes in Outstandings Legal in Maine, Massachusetts, and New York, 1909-43



Universe estimates for straight bonds, yearly totals in par amount, from "Statistical Measures," Table 7.

Shaded areas, representing contractions in general business activity, and white areas, representing expansions, are from Arthur F. Burns and Wesley C. Mitchell's "Measuring Business Cycles" (National Bureau of Economic Research, 1946), p. 78.

CHART 13, concluded

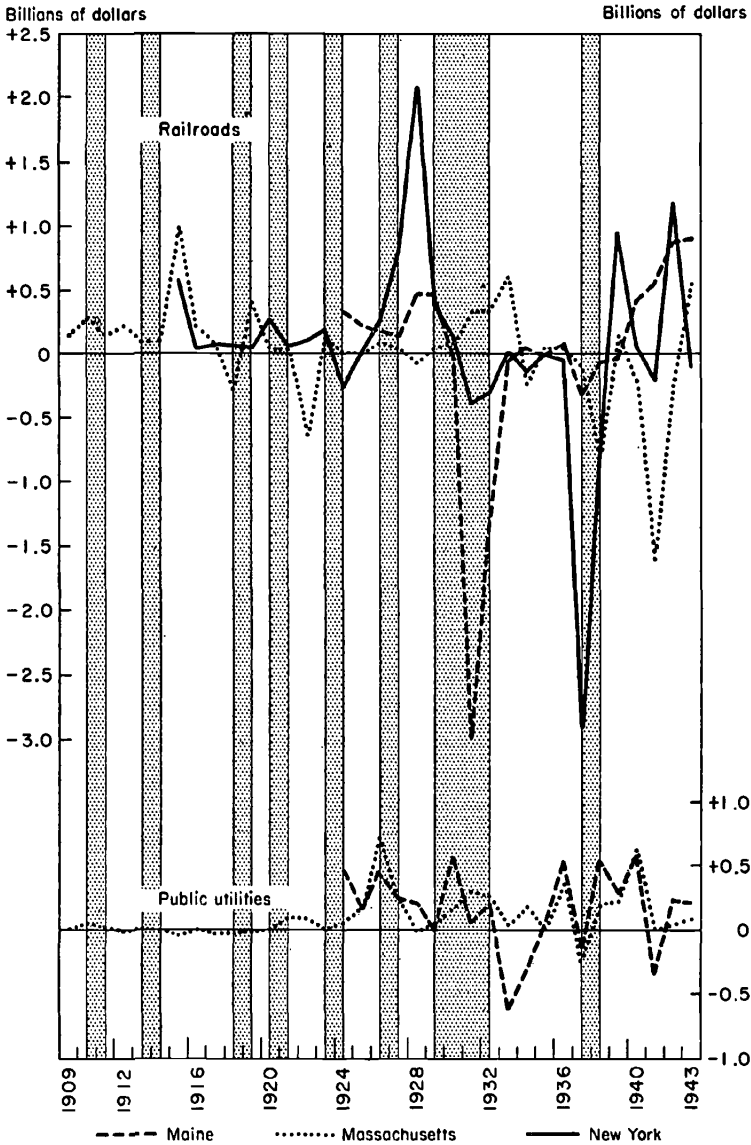
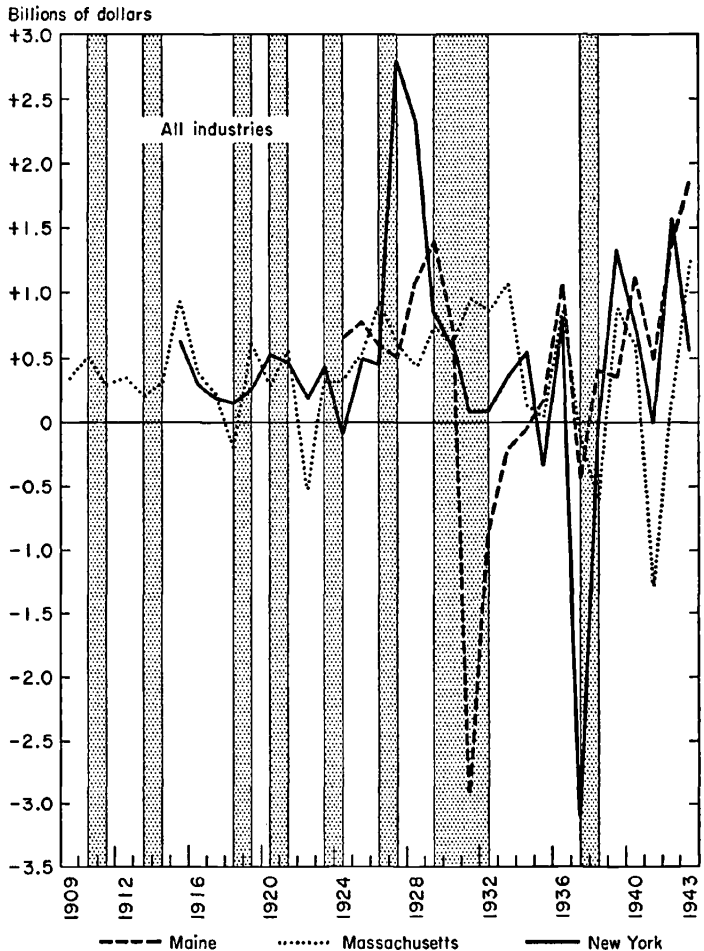


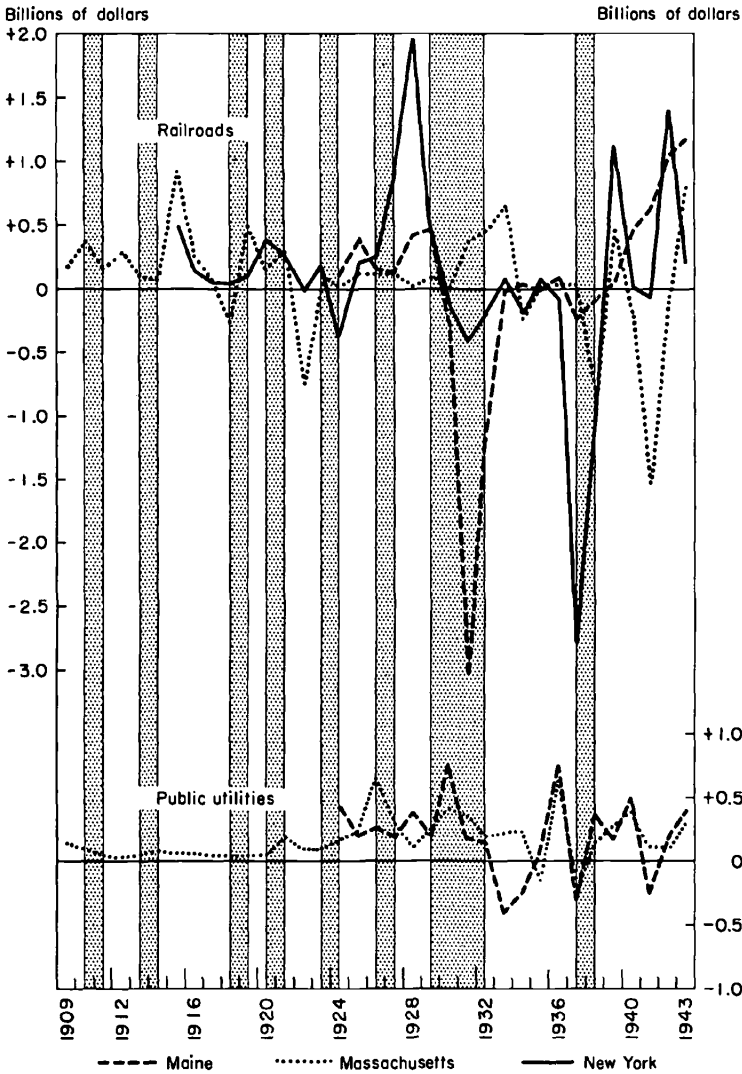
CHART 14—Net Upgrading of Outstanding Issues as Reflected in the Legal Lists of Maine, Massachusetts, and New York, 1909-43



Universe estimates for straight bonds, from "Statistical Measures," Tables 7, 61, and 64.

Net upgrading is that part of the annual net change in the par-amount total of bonds legal in a given state that is attributable (a) to adding or dropping outstanding issues that newly met or ceased to meet the legal standards for savings bank investment, or (b) to revision of the laws. Positive values indicate a greater amount added; negative values, a greater amount dropped. The estimates correspond to Variant II in Charts 9 and 19, and are exact except for lack of information on partial extinguishments.

CHART 14, concluded



Shaded areas, representing contractions in general business activity, and white areas, representing expansions, are from Arthur F. Burns and Wesley C. Mitchell's "Measuring Business Cycles" (National Bureau of Economic Research, 1946), p. 78.

TABLE 46—Conformity Indexes for Bonds Legal in Maine, Massachusetts, and New York: Offerings, Extinguishments, Net Changes, and Net Upgrading, 1908-38

	LEGAL IN MAINE			LEGAL IN MASSACHUSETTS			LEGAL IN NEW YORK					
	Expan- sion	Contra- ction	Full Cycle	Number of Cycles	Expan- sion	Contra- ction	Full Cycle	Number of Cycles	Expan- sion	Contra- ction	Full Cycle	Number of Cycles
All industries	+33	+33	+60	3	-71	0	-29	7½	+20	+33	0	5½
Railroads	+33	+33	+20	3	-14	0	0	7½	+20	+33	+20	5½
Public utilities	-100	-33	-20	3	-43	-25	-43	7½				
						<i>Net Changes</i>						
All industries	-33	-50	-33	3½	-25	-25	-47	8	-33	-33	-9	6
Railroads	-33	-50	-67	3½	-25	+25	-20	8	0	0	+27	6
Public utilities	+33	0	+33	3½	-13	-25	-47	8				
						<i>Offerings</i>						
						<i>Final Extinguishments</i>						
All industries	+33	+33	+20	3	+43	0	0	7½	-20	-33	-20	5½
Railroads	-33	+33	-60	3	+14	-25	-14	7½	-20	-33	-20	5½
Public utilities	+33	+33	+20	3	+100	+33	+60	2½ ^a				

TABLE 46
(concluded)

	LEGAL IN MAINE			LEGAL IN MASSACHUSETTS			LEGAL IN NEW YORK			
	Expansion	Contraction	Full Cycle	Expansion	Contraction	Full Cycle	Expansion	Contraction	Full Cycle	
All industries	+33	+33	+60	-71	0	-29	+20	0	0	5½
Railroads	+100	+33	+60	-71	+25	-14	+20	0	0	5½
Public utilities	-100	+33	-20	-14	0	-29	7½			
				<i>Net Upgrading, Variant I</i>						
All industries	+33	+33	+60	-43	-25	-14	-20	0	0	5½
Railroads	+100	+33	+100	-71	0	-43	7½	0	0	5½
Public utilities	-100	+33	-20	-14	-25	-43	7½			
				<i>Net Upgrading, Variant II</i>						

Based on annual par-amount data for straight corporate bonds from *Statistical Measures*, Tables 7, 61 and 64. The indexes cover different numbers of reference cycles, each ending with the reference trough of 1938. Since public utility data for New York cover only one and a half cycles and industrial data for Maine only one cycle, indexes were not computed for those series, but the data are included in the all-industries indexes. No industrial bonds were legal in Massachusetts or New York during the period ending 1938. These indexes do not take account of possible leads or lags at reference-cycle turning points.

^a Since no extinguishments of legal bonds occurred at turning points of the five reference cycles, 1910-26, the indexes cover only two and one-half cycles, 1926-38. Over the full seven and one-half cycles, counting zeros at turning points as ½ plus and ½ minus, as if the amounts extinguished were equal, the indexes would become: expansion +29, contraction +13, full cycle +21.

falling during the second half and throughout reference contractions. The conformity indexes for Massachusetts final extinguishments computed on the revised basis are +57, +25, and +57.

More interesting results were obtained for Maine offerings and net upgrading. Over each of the three cycles studied, new offerings of Maine legals rose from mid-expansion of the reference cycle to mid-contraction, whereas the net upgrading of old issues followed the reverse pattern, rising from mid-contraction to mid-expansion. The conformity indexes for the two series, when re-computed on the basis of their respective timing patterns, all changed to +100. Despite the perfect conformity on the revised bases, not too much confidence can be placed in the results because of the small number of cycles covered and the difficulty of determining timing patterns from annual data. Strictly speaking, the observed timing of both series is neutral with respect to the business cycle, so that it is impossible to determine on purely statistical grounds whether they led or lagged at reference turns. Since the legal tests are based so largely on past earnings, we should expect offerings and net upgrading of Maine legals to conform positively and to lag behind reference turns, which seems to happen for offerings but not for net upgrading. Thus it would appear that the volume of new offerings meeting the legal tests of Maine lagged behind the reference turns and was larger when business was buoyant than when it was depressed. The net upgrading of Maine legals cannot be explained satisfactorily on this basis, since the series leads at reference turns if it conforms positively or lags if it conforms negatively. Unfortunately, all that we can be reasonably sure of is that Maine legals were upgraded during the early stages of business expansions; their timing during business contractions cannot be determined accurately from the annual data.

On the whole, it appears that the legal lists, unlike the group rated high grade by the agencies, were relatively insensitive to business cycles. The Maine list appears to have been an exception, probably because there were no major changes in the law during the period studied, and the legal tests were applied relentlessly throughout. The net upgrading of Maine legals therefore expanded during early business expansions as old securities previously ineligible for savings bank investment were added to the legal list; similarly, during late business expansions and early

contractions the volume of offerings meeting the Maine legal tests increased. Statutory changes in the other states obscured the conformity to the business cycle.

INVESTOR EXPERIENCE WITH LEGAL BONDS

The purpose of the original legislation regulating savings bank investment was to provide the smaller banks with a select list of high-grade securities—a list for which the risks of default and of capital loss on individual issues might safely be neglected. To the extent that the statutes achieved their purpose, the legal lists should exhibit low default rates and low default losses on legal bonds.

Unlike the small investor, the large investor is less concerned with the protective features of the legal lists than with the adequacy of average rates of return. From his point of view the interesting question is whether the lower promised yields that result from confining purchases to a list of individually "safe" securities are more than made up for by the lower default losses incurred. To throw light on these matters, we shall next examine the default record of legal bonds, and then consider the average returns obtained on them over different periods of investment.

Default Rates

Percentages of the par-amount totals of bonds legal at offering that subsequently went into default are presented in Table 47. The table covers only regular offerings included in the offerings experience sample (cf. Table 3 and accompanying text).

The table reveals that the record of the legal lists was excellent for the public utility group. As compared with the 6.3 percent of the aggregate volume of large public utility offerings (other than street railways) that subsequently went into default, those legal at offering were entirely free of default. The record of the small legal utilities (again exclusive of street railways) was almost as good, only 3.5 percent of their amount subsequently going into default in the state with the poorest record (New York), as compared with 13.2 percent of all offerings in this industry-size group. The default record of the legal rails (large issues and small) is much less impressive than that of the utilities. (The performance of the large street railways was even worse, but they were apparently admitted to the legal lists for the purpose of aiding local areas rather than for their intrinsic quality, and were so unim-

TABLE 47—Proportions of Offerings 1900–1943 Legal in Maine, Massachusetts, and New York at Offering That Went into Default before 1944

	Legals and Nonlegals	LEGAL IN						Not Legal in Any of the States
		Maine	Massachusetts	New York	One State Only	Two of the States	All Three States	
Large issues, all industries	17.3%	7.1%	7.6%	9.0%	9.2%	17.9%	1.9%	19.5%
Railroads	28.1	30.7	22.3	22.4	24.2	34.9	9.9	28.8
Public utilities	10.6	0.0	0.2	0.0	0.4	0.0	0.0	15.3
Street railways	64.3	100.0 ^a	18.8	100.0 ^a	25.0	0.0	0.0	65.1
All others	6.3	0.0	0.0	0.0	0.0	0.0	0.0	9.5
Industrials	14.8	0.0	0.0	0.0	0.0	0.0 ^a	0.0	15.2
Small issues, all industries	24.9	14.9	8.3	3.5	21.2	4.8	0.0 ^a	25.3
Railroads	20.6	80.3 ^a	43.3	0.0 ^a	64.7	0.0 ^a	0.0 ^a	18.2
Public utilities	20.9	1.1	1.2	3.5	1.2	5.0	0.0 ^a	22.4
Street railways	67.1	0.0 ^a	0.0 ^a	0.0 ^a	0.0 ^a	0.0 ^a	0.0 ^a	70.0
All others	13.2	1.1	1.3	3.5	1.4	5.0	0.0 ^a	14.2
Industrials	33.7							33.7

Based on par-amount data for regular offerings in the offerings experience sample, *Statistical Measures*, Tables 188 and 189, and special supplementary tabulations.

^a Based on less than five offerings.

portant by volume that the rate for all large utilities is virtually unaffected by their poor performance.) In Maine, the state with the most liberal railroad law, 31 percent of the par amount of large legal rail issues subsequently went into default, as compared with 28 percent of all large rail issues. Both in Massachusetts and New York, states with more restrictive statutes than Maine, 22 percent of rail bonds eligible at offering subsequently went into default, a record only slightly better than that of the market as a whole.

The excellent default record of legal public utility bonds and the poor records of the railroads and street railways combined to produce a default rate for all bonds legal at offering about half that of total offerings (7 percent for Maine, 8 percent for Massachusetts, and 9 percent for New York legals; 17 percent for all large issues). Clearly the legal statutes, while highly restrictive as to volume, failed to achieve their primary purpose of including only riskless investments at offering, except in the public utility field. It remains to examine whether the record of the legal lists was markedly different in this respect from that of the investment agencies, which also attempt to rank securities in order of their relative freedom from default. A clue is provided by comparing the default rates for legal bonds with similar rates for issues selected on the basis of the composite agency rating (cf. Table 33). For large issues the legal default rates fell between those of issues rated II and III; but the legal lists usually included a much smaller proportion of offerings (cf. Tables 28 and 43). It would appear, therefore, that the legal lists at offering were less accurate indicators of default risk than the ratings of the investment agencies. A further comparison of default rates for legal and other high-grade bonds, based on equally inclusive groups of outstanding issues, will be made in Chapter 6.

The number of states in which an issue was legal at offering appears to stand up fairly well as a measure of bond quality under empirical testing. For example, less than 2 percent of the par amount of large issues eligible for savings bank investment at offering in all of the three states analyzed subsequently went into default, as compared with over 19 percent for issues not legal in any one of the three states. The record of small issues legal in all three states at offering was also excellent. It should be remembered, however, that the volume of securities meeting this severe test was quite small.

The default rates for all small issues behave as would be expected, being higher as the number of states in which the issue was legal decreases. For the large rails and the small public utilities, the default rates for issues legal in two states were higher than for issues legal in only one state; but these discrepancies are small and, in the case of the small utilities, are perhaps attributable to sampling errors. It is noteworthy that the default rates of offerings legal in one state and in two states were uniformly higher than those of offerings legal in all three states.

Additional materials on the default record of legal bonds are presented in Table 48, which contains default rates based on paramount totals of issues classified by legal status at the beginning of the indicated quadrennial periods. As in all of our tables of this type, the rates were derived from sample data adjusted to universe totals, and exclude issues in default at beginning of periods.

Contrasting with the percentages of issues legal at offering that subsequently went into default, the quadrennial default rates for legal bonds show that over short periods the legal lists were highly sensitive to impending defaults. The fact that the quadrennial default rates for legals are very low and that the differences between the rates for legal and nonlegal outstandings are usually much greater than the corresponding life-span rates based on offerings indicates that issues legal at offering were frequently dropped from the legal lists before they went into default. The same phenomenon was observed for issues rated high grade by the agencies (cf. Table 35).

For each of the states studied the quadrennial default rates for outstanding issues of the combined industries legal at the beginning of the periods were lower than those for total outstandings, except in New York in 1924-27 (5.0 percent as against 4.4 percent). Moreover, the highest of the default rates for the major industry components of the legal lists were below those for bonds rated I-IV by the agencies in 13 of the 19 periods for which comparisons are possible with our data and were equal in two periods (cf. Table 35). The exceptions were Maine rails in 1932-35, Massachusetts rails in 1936-39, and New York rails and Maine utilities in 1924-27. The relatively high default rate for New York rails, 1924-27, is attributable to defaults on two large issues of the Chicago, Milwaukee and St. Paul Railway, issues not legal in the other two states. The Maine utility default rate for 1924-27,

although higher than for grades I-IV over the same period, is still only 1.4 percent, and was caused by the difficulties of small, probably local, utilities. The heavy default incidence for Maine rails, 1932-35, was caused by defaults of the Missouri Pacific and the New York, New Haven, and Hartford. The defaulting issues were never legal in New York and were not legal in Massachusetts after 1914. The high default rate on Massachusetts legal rails for 1936-39 appears to be due largely to the poor record of the low-grade issues kept on the list under the moratoria of the mid-thirties. The high default rate of the New York rail list in those years is attributable to the same cause (all of the New York defaults from 1932 on were Subdivision 7-a legals). In Maine, where moratoria were not applied, the list was entirely free of defaults from 1936 onward.

It appears, therefore, that the legal status of an issue usually served as a good index to its default risk over the quadrennial periods. In all cases the quadrennial default rates for legals were below those for nonlegals, except New York rails, 1924-27. Moreover the superiority of the legals over the nonlegals would have been even greater if the statutes had not been biased in favor of the rails.

Issues legal in all three of the states studied had a perfect default record over each of the four-year periods, and the same was true of public utilities legal in two of the three states. The default record of rails legal in two states was marred principally by the poor performance in the period 1936-39. It is worth noting that none of the defaulted issues of that period was legal in Maine, the only state in which the statutory tests were rigorously applied. We conclude that the number of states in which an issue is legal provides a good index to the probable incidence of default over short periods, particularly when the statutory tests are applied consistently throughout the periods. The legal lists taken individually, although not free from defaults, also performed quite well over short periods. The data previously examined on bond offerings, and other materials presented in *Statistical Measures* on default rates over longer chronological periods, show, however, that the efficacy of legality as an indicator of default risk deteriorates as the period lengthens. That is to say, the longer the period of forecast, the less efficient was legal status as an indicator of default risk.

TABLE 48
(concluded)

PERIOD	Legals and Nonlegals	LEGAL IN						All Three States	Not Legal in Any of the States
		Maine	Massachusetts	New York	One State Only	Two of the States	States		
1912-15	6.8%		0.0%					7.1%	
1916-19	12.2		0.0	0.0%	0.0	0.0%		12.7	
1920-23	6.4		0.0	0.0	0.0	0.0		6.5	
1924-27	3.9	1.4%	0.0	0.0	1.6	0.0	0.0%	4.7	
1928-31	3.5	0.0	0.0	0.0	0.0	0.0	0.0	5.5	
1932-35	11.3	0.0	0.0	0.0	0.0	0.0	0.0	17.2	
1936-39	3.9	0.0	0.0	0.0	0.0	0.0	0.0	5.8	
1940-43	2.8	0.0	0.0	0.0	0.0	0.0	0.0	5.1	
<i>Public Utilities</i>									
1932-35	23.6	0.0			0.0			24.4	
1936-39	5.5	0.0			0.0			5.6	
1940-43	2.9	0.0		0.0	0.0	0.0	0.0	3.1	
<i>Industrials</i>									

Based on Tables 164 and 171 of *Statistical Measures*, and special supplementary tabulations: par-amount data for all large (straight) corporate issues in good standing at beginning of four-year periods, and for 10 percent of small issues adjusted quadrennially to universe totals.

Default Losses

Because of the short-run sensitivity of the legal lists to impending defaults, data covering legal status five years and one year before default (similar to those presented in the preceding chapter on agency ratings; cf. Table 37) are too sketchy to permit reliable statistical inferences. To round out the record, however, such materials as are available are presented in Table 49. Data corresponding to Table 38 are also quite sketchy, but, for what they may be worth, are presented in Table 50.

The most important conclusion to be drawn from these tables is the small number of defaulted issues included, and the consequent unreliability of the averages. The data of Table 49 suggest that there was little to choose from as between legal and non-legal bonds in their behavior as measured by the discounted values of receipts and by realized yields calculated from default to extinguishment, and the same was true of issues legal in one, two or three states. However, because of the small number of issues covered by the table, little confidence can be placed in this conclusion, particularly for the smaller issues.

Table 50 does indicate clearly that the promised yields at offering on the legal bonds that subsequently went into default were systematically below those of other issues of the same type. Except for Massachusetts legals, the average yields realized on large legal bonds held from offering to default were uniformly negative and were somewhat lower than for all large issues. The average loss rates on legal bonds were therefore quite high, showing that the legality of an issue is no protection against substantial capital loss, if issues are sold at default. In fact, the losses taken on large legal issues sold at default averaged out at 15 percent per annum for Maine (based on the price paid at offering), 9 percent for New York, and 5 percent for Massachusetts.⁴⁴ On the other hand, the realized yields calculated from offering turned predominantly positive for defaulted issues held to final extinguishment.

The conclusions are that a large part of the losses suffered on

⁴⁴ The explanation for the poor performance of the few large Maine legals that defaulted was that the list was not published until 1924, so that many issues legal at offering in Maine were outstanding for only a few years before the heavy defaults of the Great Depression. This is illustrated by the comparatively short average period from offering to default for defaulted issues on the Maine list (8 years, as against 15 for Massachusetts, and 11 for New York).

TABLE 49—Market Prices at Default, Discounted Values of Receipts after Default, and Realized Yields after Default for Bonds Legal in Maine, Massachusetts, and New York Five Years and One Year before Default, 1900-1943

	BY LEGAL STATUS FIVE YEARS BEFORE DEFAULT						BY LEGAL STATUS ONE YEAR BEFORE DEFAULT					
	RECEIPTS DISCOUNTED AT			RECEIPTS DISCOUNTED AT			RECEIPTS DISCOUNTED AT			RECEIPTS DISCOUNTED AT		
	Number of Issues Used for Prices and Receipts	Average Price at Default	Percent Default	Number of Issues Used for Prices and Receipts	Average Price at Default	Percent Default	Number of Issues Used for Prices and Receipts	Average Price at Default	Percent Default	Number of Issues Used for Prices and Receipts	Average Price at Default	Percent Default
<i>Legal in</i>												
Maine	39	39	60	48	13.6%	11	32	51	40	24.4%		
Massachusetts	36	42	60	49	17.2	26	32	55	46	22.1		
New York	41	33	52	43	20.9	26	36	45	36	13.5		
One state only	42	41	64	53	21.3	35	39	50	42	15.0		
Two states	19	31	48	40	18.8	14	27	50	39	23.9		
Three states	12	41	59	47	11.0	0						
Not legal	508	43	64	54	20.1	532	43	65	54	20.2		
						<i>Large Issues</i>						
<i>Legal in</i>												
Maine	4	50	59	49	4.7	0	56	65	54	5.5		
Massachusetts	4	66	70	59	4.2	3	41	55	45	6.7		
New York	5	41	51	45	10.6	2	85	84	71	3.0		
One state only	5	76	82	73	9.9	1	41	55	45	6.7		
Two states	1	22	15	12	-0.6	2						
Three states	2	41	55	45	6.7	0						
Not legal	129	38	63	54	27.9	134	39	63	54	27.2		
						<i>Small Issues</i>						

From special tabulations of the National Bureau of Economic Research, covering issues in the default experience sample. Receipts include liquidating values of securities still outstanding on January 1, 1944 at prices prevailing in the first quarter of that year. Prices, discounted values, and yields are unweighted averages.

TABLE 50—Yields and Loss Rates up to Default and over Life Span of Issues Defaulting 1900–1943 Classified by Legal Status in Maine, Massachusetts, and New York at Offering

LEGAL STATUS	Number of Issues	Promised Yield at Offering	FIRST OFFERING TO DEFAULT		FIRST OFFERING TO EXTINGUISHMENT	
			Realized Yield	Loss Rate	Realized Yield	Loss Rate
<i>Large Issues</i>						
All large issues	549	6.4%	-3.4%	9.8%	2.3%	4.1%
<i>Legal in</i>						
Maine	16	5.1	-9.7	14.8	0.3	4.8
Massachusetts	17	5.1	0.1	5.0	2.3	2.8
New York	22	5.2	-3.8	9.0	2.0	3.2
One state only	16	4.7	-5.1	9.8	1.0	3.7
Two states	15	5.4	-3.6	9.0	2.2	3.2
Three states	3	4.9	-5.4	10.3	0.3	4.6
<i>Small Issues</i>						
All small issues	119	7.8	-4.0	11.8	2.4	5.4
<i>Legal in</i>						
Maine	1	5.9	4.7	1.2	4.3	1.6
Massachusetts	3	4.8	4.4	0.4	4.0	0.8
New York	1	4.9	4.9	0.0	4.9	0.0
One state only	3	5.2	4.4	0.8	3.9	1.3
Two states	1	4.9	4.9	0.0	4.9	0.0
Three states	0					

From special tabulations of the National Bureau of Economic Research, covering issues in the default experience sample. Yields and loss rates are unweighted averages. For issues still outstanding on January 1, 1944 liquidation is assumed at prices prevailing in the first quarter of the year.

defaulted issues was avoidable, and that substantial capital gains were obtained on corporate bonds (both legals and nonlegals) when purchased at default and held to extinguishment. The data also suggest that the realized yields on defaults held from offering to final extinguishment were on the average lower with legals than with nonlegals, but the number of defaulting legals is too small to permit a firm conclusion.

Average Yields and Loss Rates on Legal Bonds

The default incidence and default losses on legal bonds are of primary concern to the small investor who is unable to balance

losses on some issues against offsetting capital gains on others. The large investor—particularly the large institutional investor—is interested, besides, in the possible use of legal lists as guides to the prospective average rate of return. Statistics bearing on this matter are presented in Table 51, which contains weighted average life-span yields and loss rates for all offerings in the offerings experience sample, and for such of these as were legal at offering in the states covered by this investigation. Except in cells specifically designated, each of the averages presented in the table covers at least five offerings. (For further details on coverage, and life-span yields over various periods, see *Statistical Measures*, Table 188 and the notes under the section on measures of experience from offering to extinguishment.)

The table shows that the average promised yields on large issues legal at offering were consistently below those of the large non-legals, the average differential being 1.6 percent for all offerings during the full period 1900–1943, and 1.3 to 1.5 percent for regular offerings since 1920. In addition, the average yields promised on issues legal at offering in all three states were consistently below those of issues legal in two states and in one state. The implication is that the typical investor paid a premium at offering for the restricted group of securities on the legal lists. This finding confirms what was found to be true of bonds rated by the agencies: namely, the higher the grade, the lower on the average was the yield promised at offering. Since legal bonds are generally assigned top grades by the agencies, it remains an open question whether legal status alone (i.e. the legality or nonlegality of issues within a given rating classification) has a significant effect on promised yield. That question will be examined in Chapter 6.

The average yields realized over the life spans of issues legal at offering were also consistently below the yields on nonlegals, but not so much below as was true of the corresponding promised yields. For example, realized yields on large regular legal offerings since 1920 averaged 0.6 to 0.8 percent below the nonlegals, as compared with corresponding differentials in promised yields of 1.3 to 1.5 percent. It follows that while the realized returns on bonds not legal at offering were typically above those on legal bonds, the loss rates on the legals were lower. Negative average loss rates (i.e. capital gains) occur in most of the cells of the table covering legal bonds, and positive loss rates (capital losses) in most of the cells for nonlegals. The occurrence of capital gains on bonds legal at

TABLE 51—Life-span Yields and Loss Rates for Bonds Classified by Legal Status in Maine, Massachusetts, and New York at Offering: Regular versus Total Offerings 1900-1943

	Legals and Nonlegals	LEGAL IN						Not Legal in Any of the States
		Maine	Massachusetts	New York	One State Only	Two of the States	All Three States	
<i>Promised Yield</i>								
<i>Total Offerings</i>								
Large issues	5.3%	4.0%	4.0%	4.0%	4.4%	4.4%	4.4%	3.7%
Small issues	6.3	4.6	4.7	3.5	5.0	5.1	5.1	3.5 ^a
<i>Regular Offerings</i>								
Large issues	4.9	4.0	3.9	4.0	4.4	4.3	4.3	3.7
Small issues	5.8	4.6	4.7	3.5	5.1	5.1	5.1	3.5 ^a
<i>Regular Offerings since 1920</i>								
Large issues	4.9	4.0	3.8	4.0	4.4	4.3	4.3	3.7
Small issues	6.3	4.6	4.7	3.5	5.1	5.2	5.2	3.5 ^a
<i>Realized Yield</i>								
<i>Total Offerings</i>								
Large issues	5.4	4.9	4.7	4.5	5.1	4.3	4.3	5.6
Small issues	6.1	5.3	5.1	4.4	5.2	5.8	5.8	6.2
<i>Regular Offerings</i>								
Large issues	5.0	4.7	4.6	4.5	4.7	4.2	4.2	5.1
Small issues	5.3	5.3	5.2	4.4	5.4	5.8	5.8	5.3
<i>Regular Offerings since 1920</i>								
Large issues	5.2	4.7	4.8	4.6	4.7	4.4	4.4	5.4
Small issues	5.6	5.3	5.3	4.5	5.4	5.9	5.9	5.6

TABLE 51
(concluded)

	LEGAL IN						Not Legal in Any of the States
	Legals and Nonlegals	Maine	Massachusetts	New York	One State Only	Two of the States	
<i>Loss Rate</i>							
<i>Total Offerings</i>							
Large issues	-0.1%	-0.9%	-0.7%	-0.5%	-0.7%	0.1%	-1.1%
Small issues	0.2	-0.7	-0.4	-0.9	-0.2	-0.7	-1.0 ^a
<i>Regular Offerings</i>							
Large issues	-0.1	-0.7	-0.7	-0.5	-0.3	0.1	-1.1
Small issues	0.5	-0.7	-0.5	-0.9	-0.3	-0.7	-1.0 ^a
<i>Regular Offerings since 1920</i>							
Large issues	-0.3	-0.7	-1.0	-0.6	-0.3	-0.1	-1.1
Small issues	0.7	-0.7	-0.6	-1.0	-0.3	-0.7	-1.0 ^a

Based on Tables 187 and 188 of *Statistical Measures*, covering issues in the offerings experience sample. Yields and loss rates are weighted averages with par amounts of included offerings as weights. For issues still outstanding on January 1, 1944 liquidation is assumed at prices prevailing in the first quarter of that year.

^a Based on less than five offerings.

TABLE 52—Yields and Loss Rates over Four-year and Longer Periods of Investment on Bonds Legal in Maine, Massachusetts, and New York at Beginning of Periods, 1912-43

PERIOD	LEGAL IN							Not Legal in Any of the States
	All Large Issues	Maine	Massa- chu- setts	New York	One State Only	Two of the States	All Three States	
	<i>Promised Yield</i>							
1912-15	4.7%		4.2%		4.2%			4.8%
1916-19	5.0		4.4	4.4%	4.5	4.4%		5.3
1920-23	6.9		6.1	6.0	6.4	6.0		7.2
1924-27	6.0	5.2%	5.0	5.4	5.8	5.2	5.0%	6.3
1928-31	5.0	4.5	4.4	4.4	4.7	4.6	4.3	5.3
1932-35	8.9	5.7	5.7	6.0	6.9	5.9	5.2	11.2
1936-39	4.9	3.8	4.0	4.2	4.8	4.1	3.6	5.4
1940-43	5.6	3.4	4.4	4.0	5.0	4.4	3.3	6.8
1920-27	6.7		6.0	6.0	6.1	6.0		6.9
1920-31	6.6		5.9	6.0	6.0	6.0		6.9
1920-39	6.5		5.6	5.7	5.7	5.7		6.8
1924-39	5.8	5.2	5.0	5.0	5.5	5.1	5.0	6.2
1928-39	4.9	4.5	4.4	4.4	4.6	4.6	4.3	5.2
1932-39	8.2	5.7	5.7	6.0	6.8	5.9	5.3	10.2
	<i>Realized Yield</i>							
1912-15	2.7		3.0		3.0			2.6
1916-19	0.2		-0.5	-0.8	-0.1	-0.7		0.5
1920-23	8.8		8.0	7.9	8.4	7.8		9.1
1924-27	8.5	7.7	7.5	7.9	7.9	7.4	7.7	8.9
1928-31	-0.9	0.1	0.4	0.5	-0.3	1.1	0.1	-1.6
1932-35	11.7	9.0	10.4	10.3	8.7	10.9	9.7	13.3
1936-39	1.3	2.3	-0.4	-0.4	-0.3	-2.3	2.6	2.6
1940-43	7.8	3.7	6.0	5.2	6.7	6.2	3.7	9.9
1920-27	8.7		7.9	8.0	7.7	7.9		9.0
1920-31	6.1		5.2	5.1	5.4	5.2		6.4
1920-39	5.9		5.2	5.1	5.6	5.1		6.2
1924-39	5.1	4.7	4.2	3.9	5.1	4.2	4.1	5.5
1928-39	3.1	3.1	3.2	3.1	2.7	3.5	3.0	3.2
1932-39	7.3	6.1	5.9	5.7	4.7	5.5	6.8	8.8

offering and capital losses on nonlegals is surprising in view of the large proportion of rails on the legal lists and their poor performance during the Great Depression.

Additional evidence bearing on the comparative performance of legal and nonlegal bonds is presented in Table 52. The table contains weighted average promised yields, realized yields, and

TABLE 52
(concluded)

PERIOD	LEGAL IN							Not Legal in Any of the States
	All Large Issues	Massa- chu- setts Maine	New York	One State Only	Two of the States	All Three States		
	<i>Loss Rate</i>							
1912-15	2.0%	1.2%		1.2%			2.2%	
1916-19	4.8	4.9	5.2%	4.6	5.1%		4.8	
1920-23	-1.9	-1.9	-1.9	-2.0	-1.8		-1.9	
1924-27	-2.5	-2.5%	-2.5	-2.5	-2.1	-2.2	-2.7%	
1928-31	5.9	4.4	4.0	3.9	5.0	3.5	4.2	
1932-35	-2.8	-3.3	-4.7	-4.3	-1.8	-5.0	-4.5	
1936-39	3.6	1.5	4.4	4.6	5.1	6.4	1.0	
1940-43	-2.2	-0.3	-1.6	-1.2	-1.7	-1.8	-0.4	
1920-27	-2.0	-1.9	-2.0	-1.6	-1.9		-2.1	
1920-31	0.5	0.7	0.9	0.6	0.8		0.5	
1920-39	0.6	0.4	0.6	0.1	0.6		0.6	
1924-39	0.7	0.5	0.8	1.1	0.4	0.9	0.9	
1928-39	1.8	1.4	1.2	1.3	1.9	1.1	1.3	
1932-39	0.9	-0.4	-0.2	0.3	2.1	0.4	-1.5	

From Table 169 of *Statistical Measures*, covering large issues in the periodic experience sample. Yields and loss rates are weighted averages with par amounts of outstandings at the beginning of the relevant period as weights.

loss rates over chronological periods for large issues in the periodic experience sample, classified by legal status at the beginning of the periods.

Like the yields promised at offering, the average yields promised on issues outstanding at given dates and legal in the several states were uniformly below those on nonlegals. In addition, the average promised yields at the beginning of each of the periods studied were perfectly ranked with respect to the number of states in which the issues were legal, issues not legal in any of the three states having the highest yields and those legal in all of the three states the lowest. The differentials in promised yields between legal and nonlegal bonds widened considerably between 1928 and 1932, but narrowed substantially in later years.

The weighted average realized yields on legal bonds over the assumed chronological periods of investment were also typically below those on nonlegals. While this was true only in a broad average sense for the four-year periods (e.g. the mean of the eight

averages of quadrennial realized yields for Massachusetts legals was 4.3 percent as against 5.7 percent for nonlegals), it was true uniformly for each of the longer periods. It may be recalled that substantially the same relationships held generally among high-grade and low-grade issues as rated by the agencies (Table 40), although issues in the top grades (I-IV) had higher realized yields over the "acid test" periods 1924-39, when the two groups were very close, and 1928-39, when the high grades did definitely better. Generally speaking, one would expect high-grade issues to perform better than low grades in periods of financial distress, but in the former of these two periods realized yields were higher for nonlegals than for legals, and in the latter the two groups behaved alike. Experience over periods of stress thus indicates a definite weakness of the legal lists as compared with issues rated high grade by the agencies. Examination of the detailed data presented in *Statistical Measures* shows that the principal cause of the weakness was not that the lists were insufficiently selective within the major industry classifications, but that they did not permit wider diversification among them. In this connection, it is worth noting that the Maine list, which in 1924 included a larger volume of outstandings than the others but which also permitted wider diversification by industry, had the best yield record of the three states over the test period 1924-39.

A further weakness of the legal lists is revealed by the behavior of the loss rates over the chronological periods. Since loss rates calculated over chronological periods are largely governed by the amount of price depreciation or appreciation from the price paid at the beginning of the period, it might be expected that the absolute value of the loss rate would be smaller (closer to zero) for high- than for low-grade issues.⁴⁵ The table shows, however, this was not generally true of legal bonds, which were not markedly more stable pricewise than the nonlegals. Again, the principal reason for the weakness of the legal lists appears to be the emphasis given the rails, rather than errors in the selection of issues within the major industry groups.

To summarize: Loss rates were generally lower on legal bonds than on nonlegals when held from offering to extinguishment.

⁴⁵ Strictly speaking, the loss rate over a chronological period measures the extent, converted to an annual basis, of price depreciation from the conventional amortized book value to an investor who purchased at the market price ruling at the beginning of the period (cf. Chapter 1).

On the other hand, because of the erratic behavior of the legal rails, the prices of legals were not markedly more stable over the chronological periods than those of other issues (i.e. absolute values of loss rates for legal bonds were not markedly lower). In addition, the promised and realized yields on nonlegal bonds averaged well above those on legals. The conclusion is that investors who could afford to bear the greater exposure to default risk inherent in nonlegal bonds would generally have obtained higher returns on nonlegals than on legals.