Volume Title: The Flow of Capital Funds in the Postwar Economy

Volume Author/Editor: Raymond W. Goldsmith

Volume Publisher: NBER

Volume ISBN: 0-870-14112-0

Volume URL: http://www.nber.org/books/gold65-1

Publication Date: 1965

Chapter Title: The Market for Corporate Bonds

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Chapter URL: http://www.nber.org/chapters/c1687

Chapter pages in book: (p. 208 - 233)

CHAPTER 8

The Market for Corporate Bonds

Character of the Market

CORPORATE bonds constitute one of the major sectors of the American capital market. The total amount outstanding during the postwar period was larger than that of tax-exempt securities or preferred stock, although smaller than Treasury securities, residential mortgages, or common stock. The corporate bond market is characterized by the great variety of securities it covers, differing in maturity, callability, security, and convertibility, as well as in the variety of issuers, holders, and methods of distribution. Hence, general statements about corporate bonds are more difficult to make than for Treasury or state and local government securities.

1. While corporate bonds are issued for many purposes, their proceeds are used most commonly to defray fixed capital expenditures, then for the retirement of maturing or called bond issues, the repayment of other debt, and the financing of inventories and receivables, particularly bond issues of trade corporations and finance companies. The fluctuations in the volume of net corporate bond issues are therefore related primarily to those in business expenditures on structures and equipment.

The volume of offerings of corporate bonds and of the net change in corporate bonds outstanding depends partly on corporate expenditures on fixed capital, but the relationship is not a very close or invariable one. For the postwar period as a whole, aggregate offerings of bonds and notes by nonfinancial corporations (i.e., all corporations less those classified by the Securities and Exchange Commission as "financial and real estate") averaged one-fourth of their expenditures on fixed capital, while the net increase in bonds and notes outstanding was about one-sixth of fixed capital expenditures. The link between these two ratios is that the average net increase in bonded debt was three-fifths of new bond offerings; these ratios were very similar in Cycles II and III (Table 67).

2. Three main methods of bringing together the issuers and the buyers of corporate bonds were used on a large scale throughout the postwar period: negotiated public offerings, competitive public offerings, and direct placements. Public offering of corporate bonds acquired by investment bankers from the issuers as a result of competitive bidding was the prevalent method of distributing public utility (excluding telephone) bonds. The bonds of industrial, telephone, and railroad corporations, on the other hand, were distributed either by public offerings of issues acquired as a result of negotiations between the investment bankers and the issuers, or by direct placement, in which a small group of institutional investors acquires the securities directly from the issuer. Life insurance companies and, to a lesser extent, pension funds acquired most of the directly placed bonds. Public offerings were absorbed mostly by other institutional investors, although insurance companies and pension funds were important buyers also.

3. The distribution of corporate bond offerings among the main groups of issuers can be followed in Table 68, while Table 71 shows the share of directly placed bonds and notes for the same groups. Of total bond offerings of about $90 billion,[1] approximately 30 per cent each were issued by manufacturing companies and by electric and gas utilities. Communications, primarily the Bell system, accounted for 11 per cent and railroads for 6 per cent. The last fourth of corporate bond offerings was divided among finance companies, real estate corporations, and trade and miscellaneous corporations. The distribution of bond offerings among the main industries did not significantly differ from one cycle to the other (Table 68). Yet, as shown in Table 71, between 1949–54 and 1954–58 the share of privately placed bonds issued by the major industries, such as manufacturing, public utilities, and financial and real estate corporations, declined; as a result, the share of total bonds issued and privately placed was only 44 per cent in Cycle III compared to 52 per cent in Cycle II.

[1] *25th Annual Report,* SEC, p. 222.

TABLE 67

CORPORATE BOND ISSUES IN RELATION TO CAPITAL EXPENDITURE, 1946-58
(billion dollars)

	Gross Issues			Net Issues			Gross Capital Expenditures of Nonfinancial Corporations		
	Total (1)	Privately Placed (2)	Total Nonfinancial (3)	Total (4)	Nonfinancial Corp. (5)	Finance Companies (6)	Total (7)	Durable (8)	Inventory[a] (9)
1946	4.72	1.86	n.a.	1.14	.88	.26	23.44	12.22	11.22
1947	5.02	2.15	n.a.	3.12	2.84	.28	24.17	17.02	7.15
1948	5.94	3.01	5.50	4.81	4.23	.58	23.74	19.53	4.21
1949	4.87	2.45	4.39	3.42	2.90	.52	13.89	17.46	-3.57
1950	4.81	2.56	4.28	2.03	1.61	.42	28.75	18.98	9.77
1951	5.68	3.33	5.40	3.87	3.30	.57	32.43	22.68	9.75
1952	7.34	3.96	6.99	5.26	4.72	.54	24.77	23.52	1.25
1953	6.65	3.23	5.30	4.93	3.35	1.58	27.25	25.45	1.80
1954	7.83	3.48	7.14	3.73	3.54	.19	23.13	24.73	-1.60
1955	7.57	3.30	6.19	4.40	2.77	1.63	34.16	27.50	6.66
1956	7.93	3.78	6.59	4.86	3.67	1.19	40.73	33.15	7.58
1957	9.64	3.84	8.29	7.48	6.35	1.13	37.77	35.03	2.74
1958	9.67	3.32	8.91	5.93	5.92	0.01	25.10	29.54	-4.44
Annual averages									
1946-49	5.25	2.44	n.a.	3.40	2.99	0.42	22.19	17.13	5.06
1949-54	6.17	3.21	5.55	3.93	3.24	.69	26.34	22.35	4.00
1954-58	8.47	3.58	7.27	5.39	4.38	1.01	34.19	30.70	3.49
1946-58	6.74	3.10	6.27[b]	4.23	3.54	0.68	27.64	23.60	4.04

Source

Col. 1: SEC mimeographed release, April 1, 1959, and April 1, 1961, "Net Change in Corporate Securities Outstanding," all industries.
Col. 2: SEC _25th Annual Report_, p. 226.
Col. 3: _Ibid._, total excluding financial and real estate.
Col. 4: Sum of cols. 5 and 6.
Cols. 5-6: _National Balance Sheet_, Vol. II, Table VIII-c-12.
Col. 7: Sum of cols. 8 and 9.
Cols. 8-9: _Ibid._, Table VII-4.

[a] Inventory at book value.
[b] Annual average for 1948-58.

4. The cost of distribution was considerably lower for direct placements, in which the investment banking machinery is not involved, than for public offerings. In the latter case, the cost depended mainly on the size and the quality of the issue. In comparison to earlier periods and to other types of securities, the costs of distribution of corporate bonds were low, generally amounting to only 1 to 2 per cent

TABLE 68

DISTRIBUTION OF BOND OFFERINGS BY INDUSTRY DURING THE POSTWAR PERIOD[a]
(per cent)

	1949-54 (1)	1954-58 (2)	1948-58 (3)
Manufacturing	32	30	31
Commercial and miscellaneous[b]	7	7	7
Electricity, gas, and water	31	28	29
Communication	9	12	11
Other transportation	4	4	4
Railroads	7	5	6
Financial and real estate (excluding investment companies)	10	14	12
All industries			
Per cent	100	100	100
Billion dollars per year	6.31	8.49	7.16

Source: Statistical Bulletin, SEC. 1948-50: December 1951, p. 5; 1951-52: December 1953, p. 7; 1953-54: December 1955, p. 4; 1955-56: December 1957, p. 7; and 1957-58: December 1959, p.7.

[a]No industrial breakdown before 1948.

[b]The SEC included mining in this group prior to December 1953 and therefore mining was added to commercial and miscellaneous after 1953. (See Statistical Bulletin, SEC, December 1954, p. 4.) In this table this classification was continued through 1958 for the sake of comparability.

for medium-size or large offerings of high-grade securities; they were, however, considerably higher for small issues (see Table 69). In the case of direct placements, the small costs varied less with size or quality of the issue, but these differences were instead reflected in the interest rate and in indenture provisions.[2]

5. Most publicly offered corporate bonds have the form of issues with only one final maturity, commonly between fifteen and thirty years. A slight tendency toward lengthening final maturities was observed at least for industrial bonds; the average maturity rose from about eighteen years in the earlier part of the period to twenty-one

[2] For data, see *Cost of Flotation of Corporate Securities, 1951–1955,* SEC, Washington, 1957, and *Privately Placed Securities—Cost of Flotation,* SEC, Washington, 1952.

years in 1956–58. Public utility bonds usually had longer final maturities, averaging close to twenty-five years for direct placements and negotiated public offerings, and thirty years for issues sold by competitive bidding.[3] In most issues, particularly those placed directly, a substantial part of the principal is refunded before maturity through

TABLE 69

COST OF FLOTATION OF CORPORATE SECURITIES DURING THE POSTWAR PERIOD
(per cent of total proceeds)

Size of Issue (million dollars)	Publicly Offered Securities, 1951, 1953, 1955: Bonds, Notes, and Debentures (1)	Preferred Stock (2)	Common Stock (3)	Directly Placed Securities, 1947, 1949, 1950, Bonds, Notes, and Debentures (4)
Under 0.5			27.2	1.1
0.5 to 1	11.5	12.6	21.8	0.8
1 to 2	8.2	8.1	13.6	0.5[a]
2 to 5	3.8	4.9	10.0	0.4[b]
5 to 10	1.8	3.7	6.2	0.3
10 to 20	1.5	2.9	4.7	0.2[c]
20 to 50	1.3	3.2	5.4	0.2[d]
50 and over	1.2	2.5		
All sizes[e]	1.5	4.3	10.3	0.5

Source

Cols. 1-3: Cost of Flotation of Corporate Securities, 1951-1955, SEC, p. 37.
Col. 4: Privately Placed Securities--Cost of Flotation, SEC, p. 23.

[a] Size of issue \$1 to \$3 million.

[b] Size of issue \$3 to \$5 million.

[c] Size of issue \$10 to \$25 million.

[d] Size of issue \$25 million and over.

[e] Median values.

sinking-fund operations. The only important types of corporate bonds sold in serial form are railroad equipment trust certificates, but they constituted only about 4 per cent of total corporate bond gross issues during 1948–58.[4]

[3] A. B. Cohan, *Private Placements and Public Offerings: Market Shares Since 1935*, Chapel Hill, 1961, p. 29.

[4] For all corporate and railroad bonds issues, see *Statistical Bulletin*, SEC, March issues (e.g., March 1961, p. 8).

Railroad equipment trust certificates were computed as the difference between all bonds issued by railroads and railroad bonds excluding railroad equipment trust certificates (see Cohan, *Private Placements*, p. 8).

6. The size of corporate bond issues varied over a very wide range. On the average, private placements were considerably smaller than public offerings. For public utility bonds, the size of issues acquired by bankers through competitive bidding was usually higher than that of issues obtained through direct negotiation with the issuer. In 1958, for instance, the average size of directly placed issues of more than $1 million was about $6 million, and more than three-fourths of them fell between $1 and $5 million. On the other hand, only 6 per cent of the publicly offered issues were in the $1 to $5 million class, while 37 per cent exceeded $25 million, and the average size was $25 million. For industrial bonds (IFS category), the average size of privately placed issues was $8 million compared with an average size of $69 million for public offering.[5]

7. A considerable proportion of all corporate bonds is callable at the option of the issuer, beginning a few years after issuance and usually at small and declining premiums above issue price. This occurs because many institutional buyers, particularly life insurance companies, with long-term contracts embodying assumptions about average yield rates want to be protected against calls before maturity, which occur only when rates on new issues are low. There was a tendency to restrict callability as the capital market tightened during the latter half of the 1950's.

8. Virtually all transactions in corporate bonds occur in the over-the-counter market, the only exceptions being convertible bonds which resemble common stock. The volume of transactions in corporate bonds after issuance, however, is small. During the only period for which statistics are available, a few months in late 1949, the volume of over-the-counter and exchange transactions was equivalent only to an annual turnover rate of about 10 per cent of corporate bonds outstanding.[6] If this ratio applies to the whole period, the volume of secondary transactions in corporate bonds is below that of new offerings, in contrast to the situation in the markets for corporate stock or for government securities.

9. The yields of corporate bonds differ according to the size of the issue and the issuer, the type of security pledged, the industry of the issuer, the maturity of the bond and its quality rating, and possibly other factors.

[5] *Ibid.*, pp. 27 and 44–45.

[6] The figures on corporate bond sales are from Irwin Friend, *The Over-the-Counter Securities Markets,* New York, 1958, p. 119.

Developments During the Postwar Period

Between the end of 1945 and the end of 1958 the volume of corporate bonds more than tripled, rising from $27 to $89 billion, an average increase of 9.5 per cent per year (Table 70 and Chart 18).[7] Cyclical variations were considerable, but intercyclical changes point toward an upward trend. The volume of new bond offerings, of course, was considerably higher because some of the new issues were used to retire outstanding issues. The ratio between net increase in bonds outstanding and bond offerings, however, was about two-thirds in all three cycles.[8]

THE ROLE OF CORPORATE BONDS IN FINANCING NONFINANCIAL CORPORATIONS

Corporate bonds provided approximately one-tenth of total financing, over one-fifth of external financing, and over one-fourth of debt financing of nonfinancial corporations (Table 32). These ratios would be slightly higher if term loans by banks, particularly those with maturity of more than five years, were included. The relative importance of corporate bonds as a means of financing was fairly stable between the three cycles, particularly if bonds are related to total net sources of funds.

The share of bonds in total internal or debt financing, of course, varied considerably among industries and among corporations of different size or other characteristics. Bonds, for instance, were a much more important means of financing for electric and gas utilities than for industrial corporations, and for large than for small companies. Thus, for the period 1947–56 long-term debt provided about 14 per cent of the total funds of manufacturing and mining corporations, but supplied 34 per cent of the total funds of public utilities. On the other hand, trade corporations raised 6 per cent of their total funds through the issuance of long-term debt.[9] (The source does not permit separation of corporate bonds from other long-term liabilities of more than one year's maturity.) The share of corporate bonds in external financing amounted to somewhat less than two-fifths in manufactur-

[7] When figures for all corporate bonds are used, they include a relatively small amount of foreign government bonds.

[8] See Table 67, cols. 1 and 4.

[9] Figures from *Survey of Current Business,* various issues, e.g., September 1957, pp. 10–11.

TABLE 70

STRUCTURAL CHANGES IN OWNERSHIP OF CORPORATE BONDS DURING THE POSTWAR PERIOD

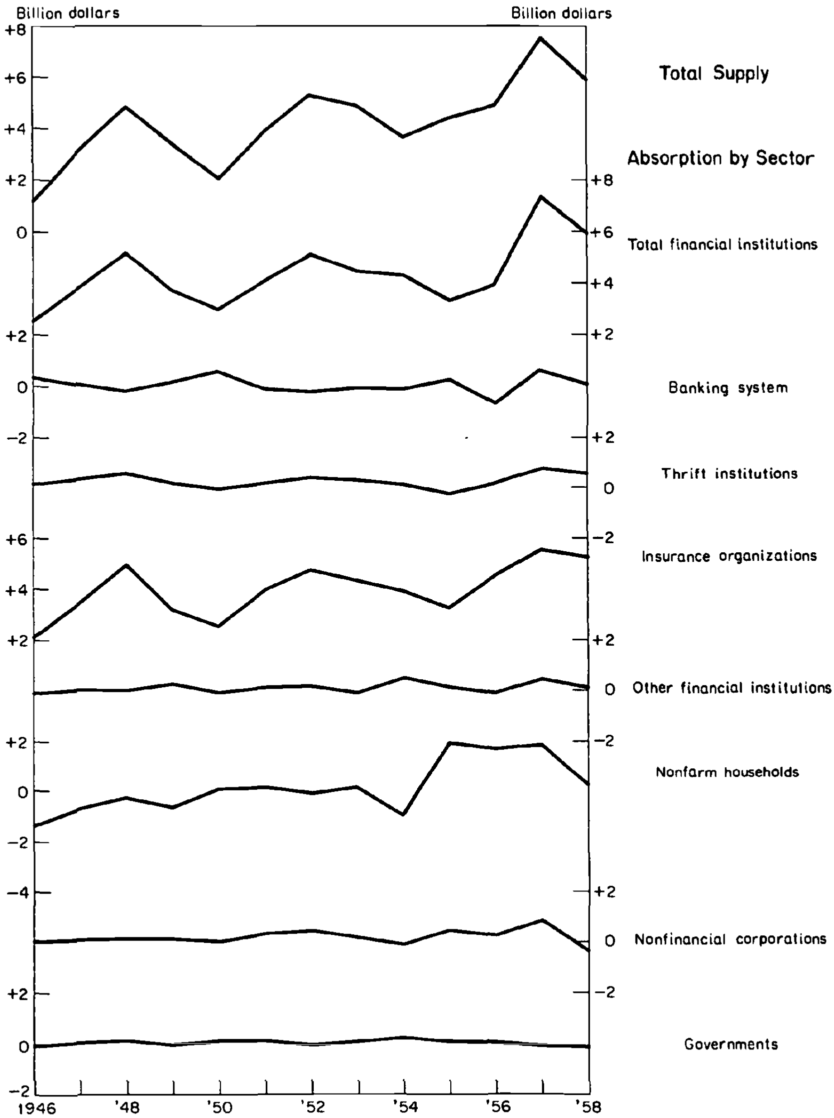
	Outstandings (billion dollars)		Aggregate Net Flows, 1946-58 (billion dollars)	NET FLOWS (ANNUAL AVERAGES): Amounts (billion dollars)			Distribution (per cent)		
	1945 (1)	1958 (2)	(3)	Cycle I 1946-49 (4)	Cycle II 1949-54 (5)	Cycle III 1954-58 (6)	Cycle I 1946-49 (7)	Cycle II 1949-54 (8)	Cycle III 1954-58 (9)
1. Nonfarm households	9.29	11.12	1.83	-0.66	-0.15	1.27	-18.4	-3.6	19.5
2. Nonfinancial corporations	0.18	2.68	2.50	0.12	0.19	0.33	3.4	4.5	5.1
3. Financial institutions, total	17.70	74.30	56.60	4.05	4.10	4.93	113.1	97.9	75.6
a. Government insurance and pension funds	0.14	5.31	5.17	0.05	0.29	0.75	1.4	6.9	11.5
b. Commercial banks	2.96	3.52	0.56	0.04	0.02	0.04	1.1	0.5	0.6
c. Mutual savings banks	1.02	4.11	3.09	0.32	0.16	0.23	8.9	3.8	3.5
d. Investment companies	0.22	1.22	1.00	0	0.06	0.16	0	1.4	2.5
e. Life insurance	11.30	44.37	33.07	3.15	2.54	2.41	88.0	60.6	33.9
f. Fire and casualty insurance	0.46	1.48	1.02	0.09	0.09	0.06	2.5	2.1	0.9
g. Noninsured pension plans	0.78	12.44	11.66	0.32	0.84	1.40	8.9	20.0	21.5
h. Other private insurance	0.50	1.24	0.74	0.06	0.06	0.04	1.7	1.4	0.6
i. Other finance	0.32	0.61	0.29	0.03	0.03	0.04	0.8	0.7	0.6
4. State and local governments	0.29	0.67	0.38	0.07	0.05	0	2.0	1.2	0
5. Total	27.46	88.77	61.31	3.58	4.19	6.52	100.0	100.0	100.0

Source: National Balance Sheet, Vol. II; cols. 1-2 from Table IV-b-15; cols. 3-9 from Table VIII-b-15.

Note: Components may not add to totals because of rounding here and elsewhere in this chapter.

CHART 18

MARKET FOR CORPORATE BONDS: SUPPLY AND ABSORPTION BY SECTOR, 1946–58



Source: *National Balance Sheet,* Vol. II, Tables VIII-b-15 and VIII-c-12.

ing and mining corporations, about one-half in public utilities, and 70 per cent in railroads, but less than 20 per cent in trade.

The difference in the share of corporate bonds in total and external financing are due to numerous factors: the character of the uses of funds, particularly the share of fixed capital expenditures against inventories and receivables; the character of the industry, particularly the stability of earnings and the influence of regulatory agencies. The main determinant appears to be the volume of fixed capital expendi-

TABLE 71

SHARE OF PRIVATELY PLACED CORPORATE SECURITIES[a] IN TOTAL BOND OFFERINGS BY INDUSTRY, 1948-58
(per cent)

	1949-54	1954-58	1948-58
Manufacturing	71	56	64
Commercial and miscellaneous[b]	88	68	77
Electricity, gas, and water	36	28	31
Communication	11	12	11
Other transportation	84	92	89
Railroads	4	3	3
Financial and real estate	77	63	71
All industries	52	44	48

Source: For numerator, 25th Annual Report, SEC, p. 226; for denominator, see source to Table 68.

[a]The numerators include a small amount of corporate stocks privately placed. The source does not provide a breakdown by industry between privately placed bonds and stocks.

[b]Includes extractive industry (see note b in Table 68).

tures, although corporate bond issues usually are considerably smaller than fixed capital expenditures. For all nonfinancial corporations together, corporate bonds provided about one-sixth of fixed capital expenditures during the postwar period, and changes in the ratio from cycle to cycle were moderate.

CHANGES IN METHOD OF MARKETING CORPORATE BONDS

The proportion of corporate bonds placed directly averaged about 45 per cent for the entire postwar period. It was highest at slightly above 50 per cent in Cycle II, the ratio for Cycle I being 47 per cent, and for Cycle III 44 per cent.[10] As can be seen from Table 71, most industrial subdivisions followed the main pattern, but the level of the share of private placements varied widely among industries. Of the two most important issuer groups, electric utilities had an average

[10] Cohan, *Private Placements*, pp. 6–8.

ratio of direct placements of about 30 per cent since many regulatory agencies prescribe offerings through competitive bidding, while bond offerings of manufacturing had an average ratio of almost two-thirds.

CHANGE IN DISTRIBUTION OF HOLDINGS

The outstanding characteristic of the distribution of net purchases of corporate bonds during the postwar period is the dominance of financial institutions (see Table 70 for cycle averages and Tables 72 and 73 for annual data). While financial institutions absorbed only about three-fourths of the total increase in Cycle III, their purchases were virtually as large as or even larger than the entire increase in supply in Cycles I and II. In Cycle I the increase in holdings of financial institutions was higher than the rise in total corporate bonds outstanding so that all other holders together showed a net sales balance, even though the total supply of corporate bonds increased by about 50 per cent from 1945 to 1949. The share of financial institutions in the net issuance of corporate bonds, while remaining high throughout the postwar period, declined from cycle to cycle.

Among financial institutions, the insurance sector was the predominant buyer of corporate bonds, and here again private life insurance companies were the decisive factor. For the entire postwar period the increase in the holdings by life insurance companies amounted to slightly more than one-half of the total increase in corporate bonds outstanding. The addition of private and government pension and social insurance funds brings the share to four-fifths of the total, and to almost nine-tenths of the absorption of corporate bonds for all financial institutions. In comparison to the insurance sector, the net purchases of other financial institutions were relatively small. Mutual savings banks absorbed about 5 per cent of the total increase in corporate bonds outstanding during the postwar period. Net purchases by commercial banks were virtually nil, but consideration must be given to the fact that at least part of their term loans are very similar in character to directly placed corporate bonds, such as were purchased in large amounts by insurance organizations. If term loans with a maturity of more than five years are included, the share of commercial banks in the net issuance of corporate bonds would rise to about one-tenth of the total, which is still much lower than the purchases of life insurance companies and private pension plans.

The predominance of life insurance companies is most pronounced during Cycle I; their share remained high during Cycle II, but

TABLE 72

DISTRIBUTION OF DOMESTIC HOLDINGS OF CORPORATE BONDS, 1945-58
(per cent)

	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958
1.Nonfarm households	33.8	27.6	22.6	18.7	15.6	14.6	13.4	11.8	11.0	8.8	10.9	12.3	13.1	12.5
2.Nonfinancial corporations	0.7	0.8	1.1	1.3	1.5	1.5	2.0	2.6	2.7	2.4	2.8	2.9	3.5	3.0
3.Finance	64.5	70.6	75.3	78.7	81.6	82.6	83.3	84.6	85.2	87.4	85.0	83.6	82.4	83.7
a.Govt. insurance and pension funds	0.5	0.5	0.5	0.6	0.9	1.2	1.6	2.0	2.6	3.2	3.8	4.4	5.0	6.0
b.Commercial banks	10.8	11.5	10.5	8.5	8.2	9.0	7.9	6.7	5.9	5.3	5.2	4.0	4.2	4.0
c.Mutual savings banks	3.7	4.1	4.7	5.4	5.3	4.8	4.6	4.8	4.9	4.8	4.0	3.9	4.3	4.6
d.Investment companies	0.8	0.7	0.6	0.5	0.5	0.6	0.6	0.8	0.7	0.9	1.1	1.2	1.2	1.4
e.Life insurance	41.2	45.7	50.4	54.7	56.7	56.9	57.2	57.4	57.3	57.5	55.2	53.8	50.6	50.0
f.Fire and casualty insurance	1.7	1.6	1.6	1.9	1.9	1.9	1.8	2.0	2.0	1.9	1.8	1.7	1.7	1.7
g.Noninsured pension plans	2.8	3.6	4.2	4.6	5.0	5.7	7.0	8.3	9.5	10.9	11.3	12.6	13.2	14.0
h.Other private insurance	1.8	2.0	1.9	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.6	1.5	1.4	1.4
i.Other finance	1.2	0.8	0.8	0.7	1.1	0.8	0.8	0.8	0.6	1.1	1.0	0.6	0.9	0.7
4.State and local governments	1.1	1.0	1.1	1.4	1.2	1.3	1.4	1.1	1.1	1.4	1.3	1.2	1.0	0.8
5.Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
6.Total (billion dollars)	27.46	28.69	32.01	37.21	40.42	43.49	47.99	53.23	58.04	61.50	67.24	73.02	82.92	88.77

Source: National Balance Sheet, Vol.II, Table IV-b-15.

TABLE 73

DISTRIBUTION OF DOMESTIC FLOW OF FUNDS, CORPORATE BONDS, 1946-58
(per cent)

	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958
1. Nonfarm households	-111.4	-20.8	-5.4	-19.6	1.0	1.6	-2.9	2.5	-28.0	33.3	28.7	18.7	4.8
2. Nonfinancial corporations	3.3	3.6	2.7	4.4	1.0	6.7	7.8	3.7	-2.0	7.1	4.0	8.4	-4.4
3. Finance	207.3	116.0	99.4	115.6	96.1	89.6	96.4	92.7	124.3	58.9	67.1	73.9	101.7
a. Government insurance and pension funds	0	0.3	1.2	4.7	4.9	5.3	6.5	8.3	14.2	10.3	10.9	9.7	19.7
b. Commercial banks	28.5	1.8	-3.8	4.7	18.9	-2.9	-4.2	-2.5	-4.0	4.2	-11.1	6.1	0.5
c. Mutual savings banks	13.8	9.6	9.6	4.4	-2.6	2.9	7.1	6.0	2.6	-4.5	2.2	7.5	9.4
d. Investment companies	-1.6	-0.6	0.2	0.6	1.3	1.1	1.9	0.2	4.0	3.1	1.9	1.4	4.1
e. Life insurance	147.2	91.0	81.3	80.1	59.6	60.2	59.2	56.3	60.7	30.5	37.2	27.0	41.4
f. Fire and casualty insurance	0	1.8	3.3	2.8	1.6	1.1	3.1	2.5	0.9	-0.2	0.5	1.8	1.5
g. Noninsured pension plans	21.1	9.3	6.7	10.6	14.3	19.6	20.2	22.2	35.0	15.9	27.5	17.5	25.8
h. Other private insurance	4.9	1.8	1.2	1.9	1.6	1.3	1.3	1.5	1.7	0.3	1.0	0.3	1.4
i. Other finance	-6.5	0.9	-0.2	5.9	-3.6	0.9	1.3	-1.9	9.2	-0.7	-3.1	2.7	-2.1
4. State and local governments	0.8	1.2	3.3	-0.3	2.0	2.2	-1.3	1.0	5.8	0.7	0.2	-1.0	-2.1
5. Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
6. Total (billion dollars)	1.23	3.32	5.20	3.21	3.07	4.50	5.24	4.81	3.46	5.74	5.78	9.90	5.85

Source: National Balance Sheet, Vol. II, Table VIII-b-15.

dropped markedly in Cycle III. Life insurance companies' purchases in Cycle III were also considerably below those in Cycles I and II in absolute figures. On the other hand, the contribution of private pension plans was more important in Cycle III than in Cycles I or II. In Cycle III the absolute volume of their net purchases equaled two-thirds of those of life insurance companies. The importance of state and local government insurance and pension funds increased rapidly during the postwar period until in Cycle III they had become the third most important buyers of corporate bonds. Insurance organizations were net buyers of corporate bonds in practically every year, as were on a smaller scale mutual savings banks, fire and casualty insurance companies, and investment companies. Commercial banks, on the other hand, shifted from net buying to selling in several years of upswing (1948, 1951, 1952, 1953, 1956), and also occasionally in recession years (1954).

CORPORATE BONDS IN THE ASSET STRUCTURE OF HOLDER GROUPS

A better understanding of some of the reasons for the changes in volume and distribution of the net flow of funds through corporate bonds can be obtained from Table 74, which shows holdings of corporate bonds as a percentage of total assets of the main investor groups, and Table 75, in which the net purchases of corporate bonds are expressed as percentages of the total net uses of funds by these sectors. It will be seen from these tables that, in relation to total uses, corporate bonds absorbed a larger amount of funds in the last year of cyclical upswings (1948, 1952, 1953, and 1957) than in the following years of recession or early upswing. The years 1948, 1953, and 1957 were periods of relatively high interest rates on corporate bonds and it is reasonable to assume that these interest rate differentials—in the case of financial institutions, particularly the difference between the more volatile yield on corporate bonds and the more sluggish interest rates on mortgages—were an important factor in the high share of corporate bonds in total uses of funds. There were, on the other hand, no great differences among cycles in the percentage of total funds invested in corporate bonds, the share being close to 3 per cent in all three cycles for all sectors of the economy taken together. In the case of all financial institutions, the proportion of total funds allocated to the net purchase of corporate bonds varied as a result of the considerable differences in the share of corporate bonds in the total supply of funds by different types of financial institutions. Corporate

TABLE 74

SHARE OF CORPORATE BONDS IN ASSETS OF EACH SECTOR, 1945-58
(per cent)

	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958
1. Nonfarm households	1.5	1.2	1.0	0.9	0.8	0.7	0.6	0.6	0.6	0.5	0.6	0.6	0.7	0.7
2. Nonfinancial corporations	0.1	0.1	0.1	0.1	0.2	0.1	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4
3. Finance	5.0	5.7	6.4	7.4	8.1	8.3	8.6	9.0	9.5	9.6	9.5	9.7	10.4	10.6
a. Government insurance and pension funds	0.5	0.5	0.4	0.6	0.9	1.3	1.7	2.2	2.8	3.6	4.4	5.2	6.4	8.0
b. Commercial banks	1.8	2.2	2.2	2.0	2.1	2.3	2.1	1.9	1.8	1.6	1.7	1.3	1.5	1.5
c. Mutual savings banks	6.0	6.3	7.6	9.7	9.9	9.1	9.3	10.1	10.4	10.0	8.5	8.4	10.0	10.8
d. Investment companies	6.1	5.6	5.1	5.2	4.8	4.7	4.5	5.2	5.0	4.7	5.0	5.5	6.8	6.0
e. Life insurance	25.2	27.1	31.0	36.4	37.9	38.2	39.8	41.2	41.9	41.4	40.5	40.4	40.9	40.8
f. Fire and casualty insurance	6.0	5.7	5.6	6.7	6.5	6.3	6.1	6.5	6.6	5.9	5.4	5.3	6.1	5.8
g. Noninsured pension plans	29.1	32.0	34.6	37.4	38.9	39.9	43.1	46.4	48.0	46.8	43.9	45.9	49.1	44.7
h. Other private insurance	27.2	28.5	30.1	31.2	31.9	32.4	32.7	32.9	33.3	32.8	31.0	31.3	31.8	31.8
i. Other finance	4.4	4.4	5.8	5.0	7.8	5.2	5.8	6.4	4.8	7.3	6.7	4.8	7.0	5.2
4. State and local governments	0.4	0.4	0.3	0.5	0.5	0.5	0.5	0.4	0.5	0.6	0.5	0.5	0.4	0.3
5. Total	1.8	1.7	1.7	1.9	2.0	1.9	2.0	2.1	2.2	2.2	2.2	2.2	2.4	2.4

Source: National Balance Sheet, Vol.II, Tables III-1, III-4, III-5, 5-b, 5c, 5d, 5f, 5h, 5i, 5j, 5k, 5m, III-6; line 5 from Table I.

TABLE 75

SHARE OF NET PURCHASES OF CORPORATE BONDS IN TOTAL NET USES OF FUNDS OF SECTORS, 1946-58
(per cent)

	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958
1. Nonfarm households	-3.6	-1.7	-0.7	-1.5	0.1	0.1	-0.2	0.2	-1.4	2.2	1.9	2.2	0.3
2. Nonfinancial corporations	0.2	0.4	0.5	0.8	0.1	0.7	1.3	0.6	-0.2	0.7	0.5	1.7	-0.7
3. Finance	159.4	16.5	30.0	30.4	11.6	14.0	15.5	17.8	14.7	9.3	12.8	25.2	15.8
a. Govt. insurance and pension funds	0	0.3	1.7	5.9	11.5	5.9	7.8	11.8	18.2	18.2	17.6	33.7	93.5
b. Commercial banks	-3.3	1.0	57.1	4.8	5.1	-1.2	-2.4	-2.7	-1.5	2.8	9.2	11.2	0.2
c. Mutual savings banks	9.9	31.7	50.0	13.7	-8.7	13.1	20.9	15.2	4.2	-12.9	6.4	40.2	21.0
d. Investment companies	-16.7	-9.5	6.2	7.7	14.3	20.0	19.2	2.4	31.8	21.2	15.5	14.7	18.0
e. Life insurance	48.9	83.7	112.8	64.9	42.2	64.1	62.8	52.3	38.8	31.2	37.3	49.3	43.8
f. Fire and casualty insurance	0	5.0	15.0	8.1	5.2	5.1	12.0	8.2	2.6	-1.0	4.8	18.6	8.2
g. Noninsured pension plans	45.4	47.8	54.3	48.0	45.3	60.7	66.4	54.8	59.6	43.9	61.0	60.0	49.2
h. Other private insurance	53.7	54.0	56.3	44.0	38.6	37.4	37.6	39.8	26.7	7.6	37.0	84.8	34.4
i. Other finance	4.4	-3.7	-1.7	32.8	-15.3	400.0	17.5	-22.0	18.7	-20.0	450.0	40.9	-7.2
4. State and local governments	0.4	0.9	3.2	-0.2	0.8	1.2	-0.7	0.4	1.6	0.3	0.1	-0.7	-0.8
5. Total	2.1	2.7	4.6	3.6	1.9	2.7	3.5	3.2	2.2	2.7	2.9	5.0	2.9

Source: <u>National Balance Sheet</u>, Vol. II, Tables VII-1, VII-4, VII-5, 5b, 5c, 5d, 5f, 5h, 5i, 5j, 5k, 5m, VII-6; line 5 from Table V.

bonds were very important for life insurance companies and private pension funds. The share of corporate bonds in total net uses of private noninsured pension funds averaged over one-half for the entire period. For other financial institutions, the net acquisition of corporate bonds was important but more erratic. In the case of mutual savings banks, net purchases of corporate bonds averaged 15 per cent of total uses for the entire period, but ranged from negative values in two early years of upswing (1950, 1955) to more than 30 per cent in three later years of cyclical rise (1947, 1948, 1957). Fire and casualty insurance companies invested relatively most heavily in corporate bonds in the middle or later years of upswings (1948, 1952, 1957) and least heavily in recessions and in early upswing years (1946–47, 1949–50, 1954–56), but did not show a net sales balance in corporate bonds during any year except 1955. Commercial and mutual savings banks showed a more erratic behavior. Mutual savings banks allocated a considerable proportion of total net uses of funds to corporate bonds in the later phases of upswings (1947–48, 1952–53, 1957), but on balance sold corporate bonds in only two years (1950, 1955). Commercial banks reduced their holdings of corporate bonds in about as many years as they increased them. In relation to total net uses, the purchases were substantial only in three years (1957, 1950, 1949), while sales occurred mostly in the later phases of cyclical upswings, being particularly large in relation to total net uses of funds in 1948 [11] and 1956.

Historical Background

A comparison of the market for corporate bonds in the postwar period with that in the preceding half century, particularly from 1900 to 1929, shows that the main structural changes occurred in the distribution of the bonds among the main investor groups, in the methods of marketing them, and in the distribution of the issuance of the bonds among the main industries. Changes in the characteristics of corporate bonds (such as maturity, security, and callability), in the role of corporate bonds as a source of finance, and in the cyclical behavior of new issues, retirements, and interest rates have been less pronounced.

1. The change in the distribution of corporate bonds outstanding between the postwar and the predepression periods is characterized

[11] Both net uses of funds and net bond purchases were negative in 1948 (i.e., they represented net sales of assets) and hence the ratio was positive (Table 75).

by a far-reaching shift toward institutional holdings accompanied by a substantial reduction of individuals' holdings.[12] As Table 76 and Chart 19 show, individuals accounted for nearly two-thirds of all corporate bonds outstanding at the three benchmark dates of 1900, 1912, and 1929. Hence individuals also may be assumed to have absorbed about two-thirds of all new issues of corporate bonds during these thirty years. Even as late as 1939, individuals still held more than one-half of all corporate bonds outstanding, although the absolute amounts were considerably lower than ten years earlier, while the holdings by financial institutions had increased. This situation is in sharp contrast to the rapid decline during the postwar period of individuals' holdings.

The distribution of holdings of corporate bonds among financial institutions also shows considerable differences between the predepression and the postwar periods. In 1900, 1912, and 1929 commercial banks held more corporate bonds than life insurance companies, although there was a slight tendency for the latter to increase relative to the former. During the postwar period on the other hand, the holdings of life insurance companies rose from almost four to twelve times those of commercial banks. As a result, the holdings of commercial banks declined between 1945 and 1958 from about one-sixth to one-twentieth of institutional holdings of all financial institutions.[13] Mutual savings banks and fire and casualty insurance companies also were more important among financial institutions as holders of corporate bonds during the predepression than during the postwar period, but the difference was less pronounced than for commercial banks. The outstanding change, however, occurred in the role of life insurance organizations. While they had held only about one-eighth of total amounts outstanding and one-third of total institutional holdings of corporate bonds in 1900, 1912, and 1929, their share in the postwar period rose to two-fifths of total outstandings in 1945 and to one-half in 1958, and they accounted for three-fifths of institutional holdings of corporate bonds.

[12] Actually a residual, the difference between estimated total bonds outstanding and reported or estimated institutional holdings.

[13] The decline in the share of holdings would be partly offset if allowance were made for the holdings by commercial banks of term loans, particularly loans of more than five years' maturity which expanded considerably during the postwar period. Even if these loans are included (*Federal Reserve Bulletin,* April 1959, p. 358), commercial banks in 1958 held only a little over one-tenth of all bonds and term loans of more than five years.

TABLE 76

DISTRIBUTION OF CORPORATE BONDS AMONG HOLDER GROUPS, 1900-58
(per cent)

	1958 (1)	1945A (2)	1945B (3)	1939 (4)	1929 (5)	1912 (6)	1900 (7)
1. Nonfarm households	12.5	33.8	37.7	51.8	63.2	65.3	64.5
2. Nonfinancial corporations	3.0	0.7	0	1.4	0	0	0
3. State and local governments	0.8	1.1	0	0	0	0	0
4. Federal government	0	0	0	2.6	0	0	0
5. Financial institutions, total	83.7	64.5	62.3	45.2	35.3	34.7	35.5
a. Commercial banks	4.0	10.8	11.0	10.5	12.4	13.9	13.1
b. Mutual savings banks	4.6	3.7	3.6	4.2	5.3	6.7	8.6
c. Investment companies	1.4	0.8	0.9	0.4	0.3		
d. Life insurance	50.0	41.2	38.9	25.5	12.2	11.0	10.6
e. Noninsured pension plans	14.1	2.8	4.0	1.8	0.8		
f. Fire and casualty insurance	1.7	1.7	1.5	2.0	3.3	2.4	2.2
g. Other private insurance	1.4	1.8	1.8	0.5	0.2	0.1	0
h. Government insurance and pension funds	6.0	0.5	0.5	0.2	0		
i. Brokers and dealers[a]	0.7	1.2	0.2	0.2	0.7	0.7	1.0
6. Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
7. Total (billion dollars)	88.8	27.5	25.9	32.5	38.1	14.5	5.2

Source: National Balance Sheet, Vol. II, Table IV-b-15 and IV-b-15a.

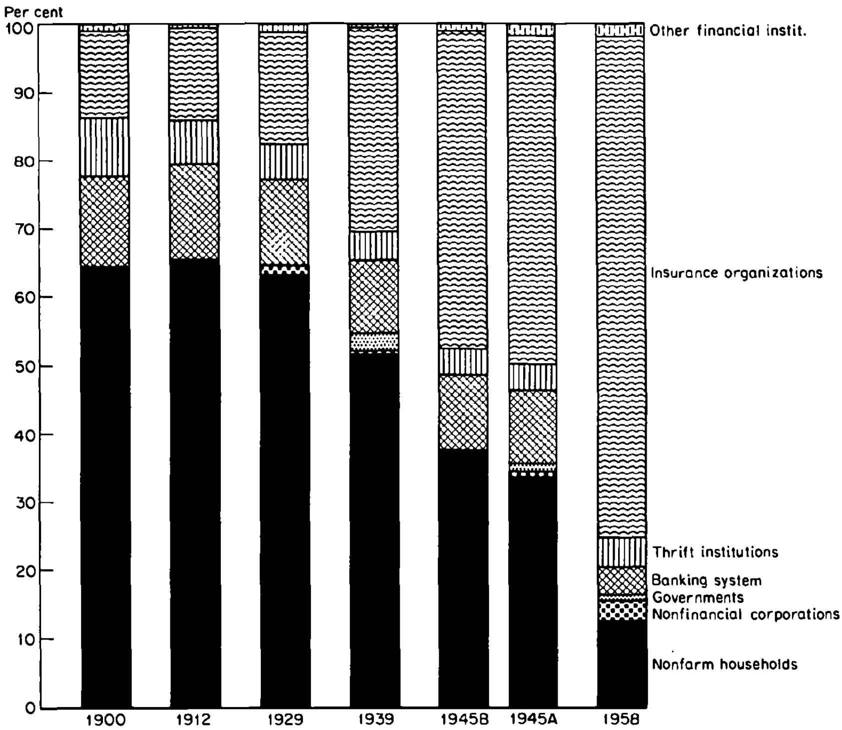
See note to Table 55.

[a]Cols. 1-2 include both incorporated and unincorporated brokers and dealers. Cols. 3-7 include unincorporated only.

These changes in the distribution of holdings reflect partly the changed position of corporate bonds among the assets of different investor groups, which can be followed in Table 77 and Chart 20, and partly differences in the rate of growth of total assets of different

CHART 19

DISTRIBUTION OF CORPORATE BONDS AMONG MAIN HOLDER GROUPS, 1900–58



Source: Table 76.

investor groups. The share of corporate bonds in individual's total assets declined considerably from the predepression to the postwar period. There was no great difference in the relative importance of corporate bonds in 1958 and in the predepression period for all financial institutions together—particularly if allowance is made for longer bank term loans, but very substantial differences appear if attention is turned to individual institutions.

TABLE 77

SHARE OF CORPORATE BONDS IN TOTAL ASSETS OF HOLDER GROUPS, 1900-58
(per cent)

	1958 (1)	1945A (2)	1945B (3)	1939 (4)	1929 (5)	1912 (6)	1900 (7)
1. Nonfarm households	0.7	1.5	1.5	4.5	5.4	7.9	5.4
2. Nonfinancial corporations	0.4	0.1	0	0.1	0.2	0	0
3. State and local governments	0.3	0.4	0	0	0	0	0
4. Federal government	0	0	0	3.4	0.2	0	0
5. Financial institutions, total	10.6	5.0	4.7	8.5	10.2	14.1	10.8
a. Commercial banks	1.5	1.8	1.8	5.2	7.1	9.3	6.7
b. Mutual savings banks	10.8	6.0	5.5	11.6	20.4	24.1	18.3
c. Investment companies	6.0	6.1	8.6	8.0	4.4		
d. Life insurance	40.8	25.2	22.5	28.3	26.7	36.1	31.4
e. Noninsured pension plans	44.7	29.1	36.0	55.0	60.0		
f. Fire and casualty insurance	5.8	6.0	4.9	13.6	27.0	35.0	22.9
g. Other private insurance	31.8	27.2	26.7	12.1	8.6	7.3	4.0
h. Government insurance and pension funds	8.0	0.5	0.5	0.9	1.2		
i. Brokers and dealers[a]	5.7	5.9	2.0	3.3	3.3	10.0	9.1
6. Total	2.4	1.8	1.7	3.8	3.9	4.7	3.3

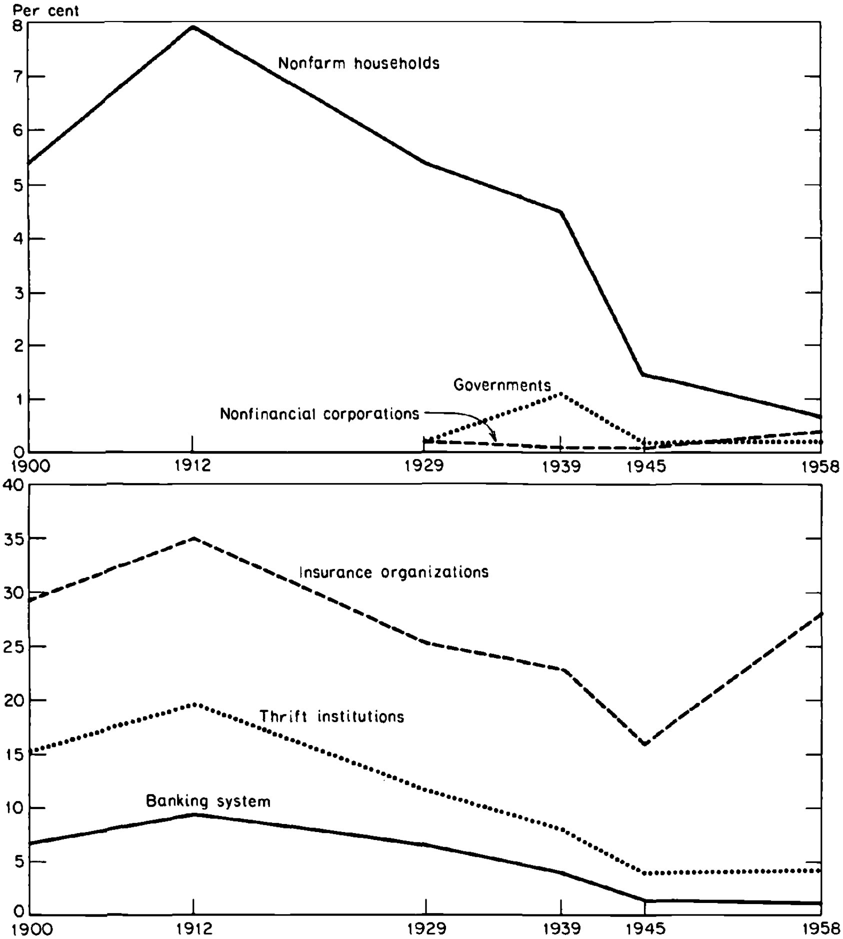
Source: National Balance Sheet, Vol. II, unless otherwise specified.
Lines 1-5: Tables I and Ia.
Lines 5a-5h, cols. 1-2: Tables III-5a through III-5ℓ and Table III-5m-1.
Lines 5a-5h, cols. 3-7: Numerators from Table IV-b-15a; denominators from Financial Intermediaries, Tables A-3, A-4, A-5, A-21, A-8, A-10, A-12, A-13, A-9, A-14, and A-11.
Line 5i: A Study of Saving, Vol. III, Table W-37.
Line 6: Tables I and Ia.

[a]Cols. 1-2 include both incorporated and unincorporated brokers and dealers. Cols. 3-7 include unincorporated only.

See note to Table 55.

CHART 20

SHARE OF CORPORATE BONDS IN TOTAL ASSETS OF MAIN HOLDER GROUPS, 1900–58



Source: Table 77.

In the case of commercial banks, the decline in their share in total corporate bonds outstanding was due largely to a reduction in the proportion of their total assets invested in corporate bonds. Inclusion of term loans would, however, considerably reduce the difference, for a substitution of term loans for corporate bonds occurred rather than a reduction in the share of all long-term advances to corporate business in the assets of commercial banks. The increasing importance of life insurance companies as holders of corporate bonds, on the other hand, is due mostly to the rapid growth of total assets of these institutions and only secondarily to the increased allocation of funds to corporate bonds. The 1958 share was considerably higher than the shares of 1929 and 1945, but was not much above the proportion before World War I. Mutual savings banks, fire and casualty insurance companies, and investment companies showed a considerably lower share of corporate bonds in total assets in the postwar than in the predepression or prewar period. On the other hand, corporate bonds were much less important in the portfolios of "other private insurance" in the predepression period than after World War II. In a few investor groups corporate bonds, while still representing only a relatively small proportion of total assets, were essentially introduced after World War II, particularly state and local governments and their pension and insurance funds.

The second major difference between the postwar and prewar periods is the much greater importance of railroad bonds compared to public utility, and particularly to industrial bonds, in the prewar period. The decline in the share of railroad issues, however, was already evident during the prewar period, foreshadowing their precipitous decline in 1958 (see Table 78). The share of railroads in net new corporate bond issues showed the same movement in still more pronounced form falling from almost one-half in 1900–12 to about one-fifth in 1913–29, and almost to zero in the postwar period.[14]

2. The combination of the shift from railroad to public utility and industrial bonds and from scattered individual to relatively concentrated institutional holdings resulted in considerable differences in the methods used in offering and marketing corporate bonds. Before 1929, public offering by groups of investment bankers on the basis of direct negotiation with the issuers was predominant. Direct placements were virtually unknown and competitive bidding rare except for railroad equipment trust certificates. This difference was accompanied by considerably higher costs of offerings before the 1930's, reflecting the much smaller average amount per sale and the reliance on retail bond salesmen. Thus publicly offered larger corporate bond issues ($5 million or over) in the postwar period carried an invest-

[14] *A Study of Saving*, Vol. I, Table V-15, and David Meiselman and Eli Shapiro, *The Measurement of Corporate Sources and Uses of Funds*, Technical Paper 18, New York, NBER, 1964, Table C-23.

ment banking compensation of less than 1 per cent[15] compared to a spread of 3 to 5 per cent for similar offerings in the 1920's. The predominantly retail market of the first three decades of the century thus contrasts sharply with the wholesale market for corporate bonds of the postwar period.

TABLE 78

DISTRIBUTION OF NONFINANCIAL CORPORATE BONDS OUTSTANDING BY INDUSTRY, 1900-58

		1900 (1)	1912 (2)	1929 (3)	1939 (4)	1945 (5)	1950 (6)	1958 (7)
				BILLIONS DOLLARS				
1.	Railroads	5.2	9.8	12.3	11.9	10.2	10.2	10.2
2.	Public utilities[a]	1.3	5.0	11.5	11.7	10.3	17.4	33.9
3.	Industrial and other[b]	0.4	2.6	6.2	4.0	3.0	8.1	25.0
4.	Total	6.9	17.4	30.0	27.6	23.5	35.7	69.1
5.	Real estate	0	0.1	6.2	3.0	1.9	0	0
				PER CENT				
6.	Railroads	75	56	41	43	43	28	15
7.	Public utilities[a]	19	29	38	42	44	49	49
8.	Industrial and other[b]	6	15	21	14	13	23	36
9.	Total	100	100	100	100	100	100	100

Source

Cols. 1-6: W. B. Hickman, Trends and Cycles in Corporate Bond Financing, New York, NBER Occasional Paper 37, 1952, p. 33.
Col. 7: Extrapolation of col. 6 on the basis of SEC mimeographed releases of April 1, 1959, and April 1, 1961, "Net Change in Corporate Securities Outstanding."
Line 5: Study of Saving, Vol. I, Table R-40.

[a]Consists of the following two components: electricity, gas, and water; and communications.

[b]Consists of manufacturing, extractive, commercial, and miscellaneous, and other transportation.

3. We close with a brief look backward at what may be regarded as the most important point, the share of corporate bonds in financing corporations of different type. Unfortunately the material permits only very approximative statements and limits them to all nonfinancial corporations taken together and a few of their major subgroups.

For all nonfinancial corporations, the importance of corporate bonds as a source of funds appears to have been much the same in the predepression period as it was in the postwar period. The sources underlying Table 37 show this share to have declined from 20 per cent in

15 *Cost of Flotation of Corporate Securities, 1951–1955,* SEC, Washington, 1957, p. 38.

1901–12 and 14 per cent in 1923–29 to 10 per cent in 1945–58. The difference would be reduced, possibly by about 2 per cent, if allowance were made for term loans of more than five years by commercial banks.

While this similarity in the role of corporate bonds in providing funds may hide important differences in size or other characteristics among industries and among corporations, this does not seem to be the case in the only direction in which at least rough comparisons can be made between the predepression and the postwar periods, that is, the share of corporate bonds in total sources of funds of railroads, electric light and power companies, and industrial and manufacturing corporations, which together account for the bulk of corporate bonds issued.

Among manufacturing and mining corporations, bonds accounted for 12 per cent of internal financing plus net sales of securities in 1900–14 and 5 per cent in 1919–29 against a share of 10 per cent in 1946–53.[16] The difference is even smaller for electric light and power utilities. In this industry bonds supplied about 40 per cent of all net funds for 1881–1937,[17] compared to a share of about 32 per cent in 1950–55 for electric and gas corporations,[18] so that there is hardly any difference if allowance is made for bank term loans. In the case of railroads, on the other hand, the role of corporate bonds declined considerably. Here bonds predominated among sources of funds until World War I and still accounted for more than one-third in 1914–30,[19] but their contribution to total net funds was very small in the postwar period.

Hence, corporate bonds (including bank' term loans of over five years' inactivity) played about the same role, notwithstanding many changes in detail, in total and in external financing of corporations in the postwar period as during the generation before the Great Depression; but great changes occurred in the distribution of corporate bonds among issuers, the share of industrials increasing at the ex-

[16] Daniel Creamer, Sergei Dobrovolsky, and Israel Borenstein, *Capital in Manufacturing and Mining*, Princeton for NBER, 1960, pp. 121, 331–332. Figures for long-term external financing other than bonds and for short-term financing are not given in the source and are not easily obtainable elsewhere.

[17] Melville J. Ulmer, *Capital in Transportation, Communications, and Public Utilities*, Princeton for NBER, 1960, p. 151.

[18] Meiselman and Shapiro, *Measurement of Corporate Sources and Uses of Funds*, Table 9.

[19] Ulmer, *Capital in Transportation*, p. 150.

pense of railroads; in the distribution among investor groups, financial institutions, particularly insurance organizations, almost entirely supplanting individual holders; and in market techniques, direct placement and competitive bidding acquiring equal importance with negotiated public offerings. Another important change, which has not been documented here, is the increasing flexibility of corporate bonds as instruments of financing. This is evidenced in a wider range of maturity, security, and callability provisions and an increasing ease of modifying original bond indenture provisions, all contributing to adapting corporate bonds to the specific needs of individual borrower and lender groups.