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Volume Title: The Volume of Corporate Bond Financing Since 1900

Volume Author/Editor: W. Braddock Hickman

Volume Publisher: Princeton University Press/NBER

Volume ISBN: 0-870-14145-7

Volume URL: <http://www.nber.org/books/hick53-1>

Publication Date: 1953

Chapter Title: Appendix C: Comparison of Basic Estimates with Those of Other Investigators

Chapter Author: W. Braddock Hickman

Chapter URL: <http://www.nber.org/chapters/c3092>

Chapter pages in book: (p. 399 - 421)

## APPENDIX C

### COMPARISON OF BASIC ESTIMATES WITH THOSE OF OTHER INVESTIGATORS

SEVERAL of the basic series developed in our investigation with the aim of providing integrated statistics on corporate bond financing can be checked against those of other investigators. In the first and second sections below, the offerings statistics will be compared with similar series published by the *Commercial and Financial Chronicle* and the *New York Journal of Commerce*. Next, the series on cash flows on capital account will be compared with cash-flow estimates of the Securities and Exchange Commission. Lastly, the estimates on outstandings will be compared with those of the Interstate Commerce Commission and the National Industrial Conference Board.

#### BOND OFFERINGS: COMPARISON WITH ESTIMATES OF THE COMMERCIAL AND FINANCIAL CHRONICLE

Since 1919 the *Commercial and Financial Chronicle* has published a carefully constructed series on bond offerings that provides the best available check on the accuracy and comprehensiveness of the estimates presented in this monograph. Comparison is facilitated by the fact that the *Chronicle* carries detailed industrial breakdowns and listings of the titles and par amounts of all issues included in its series.

An analysis of the *Chronicle* listings shows that they usually exclude noncash offerings. On the other hand, the *Chronicle* includes various issues excluded by us, such as short-term notes, bonds offered by eleemosynary and other nonprofit institutions, and bonds offered by the financial and real estate groups. Our series for offerings of issues of all types (Table A-1) is compared in Table C-1 with the *Chronicle* series after adjustment of the latter for major differences in coverage. Adjustments in column 2 are based on the finding that about 85 percent of the issues listed by the *Chronicle* under "land and buildings" were excluded from our data for 1928, the peak year for such offerings. Adjustments in column 3 are for issues listed by the *Chronicle* under the headings "investment trusts, holding, trading, etc." and "miscellaneous" that

TABLE C-1—Comparison of Commercial and Financial Chronicle Offerings with National Bureau Offerings, 1919-43  
(DOLLAR FIGURES IN MILLIONS)

| YEAR | Chronicle<br>domestic<br>corporate<br>(1) | 85% of<br>Chronicle<br>realty<br>(2) | Financial <sup>a</sup><br>(3) | Chronicle<br>excluding<br>real estate<br>& financial<br>(1)-(2)-(3)<br>(4) | N.B.E.R.<br>noncash<br>offerings <sup>b</sup><br>(5) | Chronicle<br>adjusted<br>(4)+(5)<br>(6) | N.B.E.R.<br>offerings<br>of all<br>types <sup>c</sup><br>(7) | DIFFERENCE                |                           |
|------|---|--------------------------------------|-------------------------------|--|--|---|--|---------------------------|---------------------------|
|      |   |                                      |                               |  |  |   |  | Dollars<br>(7)-(6)<br>(8) | Percent<br>(8)÷(6)<br>(9) |
| 1919 | \$1,120.7                                 | \$ 51.1                              | \$ ...                        | \$1,069.6  | \$156.4  | \$1,226.0                               | \$1,320.3  | \$ 94.3                   | 7.1%                      |
| 1920 | 1,750.3                                   | 67.1                                 | ...                           | 1,683.2  | 150.5  | 1,833.7                                 | 1,997.3  | 163.6                     | 8.2                       |
| 1921 | 1,993.5                                   | 43.1                                 | 0.3                           | 1,950.1  | 289.5  | 2,239.6                                 | 2,437.2  | 197.6                     | 8.1                       |
| 1922 | 2,325.4                                   | 139.2                                | 0.6                           | 2,185.6  | 356.0  | 2,541.6                                 | 2,731.8  | 190.2                     | 7.0                       |
| 1923 | 2,429.8                                   | 204.5                                | 2.3                           | 2,223.0  | 380.7  | 2,603.7                                 | 2,779.4  | 175.7                     | 6.3                       |
| 1924 | 2,655.1                                   | 275.9                                | 2.8                           | 2,376.4  | 221.4  | 2,597.8                                 | 2,774.4  | 176.6                     | 6.4                       |
| 1925 | 2,975.2                                   | 614.0                                | 3.4                           | 2,357.8  | 143.1  | 2,500.9                                 | 2,684.7  | 183.8                     | 6.8                       |
| 1926 | 3,353.5                                   | 573.8                                | 20.1                          | 2,759.6  | 201.1  | 2,960.7                                 | 3,152.2  | 191.5                     | 6.1                       |
| 1927 | 4,768.2                                   | 521.6                                | 103.0                         | 4,143.6  | 85.3   | 4,228.9                                 | 4,226.2  | -2.7                      | -0.1                      |
| 1928 | 3,439.0                                   | 614.2                                | 153.4                         | 2,671.4  | 463.0  | 3,134.4                                 | 3,449.2  | 314.8                     | 9.1                       |
| 1929 | 2,620.0                                   | 347.0                                | 188.9                         | 2,084.1  | 94.6   | 2,178.7                                 | 2,234.8  | 56.1                      | 2.5                       |
| 1930 | 3,430.6                                   | 194.3                                | 132.2                         | 3,104.1  | 146.6  | 3,250.7                                 | 3,332.9  | 82.2                      | 2.5                       |
| 1931 | 2,028.0                                   | 111.4                                | 34.9                          | 1,881.7  | 168.3  | 2,050.0                                 | 2,188.1  | 138.1                     | 6.3                       |
| 1932 | 619.9                                     | 7.0                                  | 10.5                          | 602.4  | 428.3  | 1,030.7                                 | 1,008.5  | -22.2                     | -2.2                      |
| 1933 | 227.2                                     | 0.8                                  | 6.1                           | 220.3  | 451.7  | 672.0                                   | 572.1  | -99.9                     | -17.5                     |

| YEAR  | Chronicle<br>domestic<br>corporate<br>(1) | 85% of<br>Chronicle<br>realty<br>(2) | Financial <sup>a</sup><br>(3) | Chronicle<br>excluding<br>real estate<br>& financial<br>(1)-(2)-(3)<br>(4) | N.B.E.R.<br>noncash<br>offerings <sup>b</sup><br>(5) | Chronicle<br>adjusted<br>(4)+(5)<br>(6) | N.B.E.R.<br>offerings<br>of all<br>types <sup>c</sup><br>(7) | DIFFERENCE                |                           |
|-------|---|--------------------------------------|-------------------------------|--|--|---|--|---------------------------|---------------------------|
|       |   |                                      |                               |  |  |   |  | Dollars<br>(7)-(6)<br>(8) | Percent<br>(8)÷(6)<br>(9) |
| 1934  | \$ 455.3                                  | \$ 0.3                               | \$ 0.8                        | \$ 454.2   | \$ 279.0   | \$ 733.2                                | \$ 734.8   | \$ 1.6                    | 0.2%                      |
| 1935  | 2,116.6                                   | 7.1                                  | 10.7                          | 2,098.8  | 542.6  | 2,641.4                                 | 2,702.2  | 60.8                      | 2.3                       |
| 1936  | 4,026.0                                   | 19.7                                 | 226.3                         | 3,780.0  | 260.9  | 4,040.9                                 | 4,093.6  | 52.7                      | 1.3                       |
| 1937  | 1,583.6                                   | 28.4                                 | 41.0                          | 1,514.2  | 221.0  | 1,735.2                                 | 1,876.4  | 141.2                     | 7.5                       |
| 1938  | 2,042.8                                   | 16.3                                 | 6.3                           | 2,020.2  | 121.9  | 2,142.1                                 | 2,204.6  | 62.5                      | 2.8                       |
| 1939  | 1,882.7                                   | 11.3                                 | 103.5                         | 1,767.9  | 562.1  | 2,330.0                                 | 2,465.1  | 135.1                     | 5.5                       |
| 1940  | 2,434.6                                   | 11.3                                 | 59.4                          | 2,363.9  | 496.5  | 2,860.4                                 | 3,041.1  | 180.7                     | 5.9                       |
| 1941  | 2,319.7                                   | 30.4                                 | 41.5                          | 2,247.8  | 260.9  | 2,508.7                                 | 2,619.8  | 111.1                     | 4.2                       |
| 1942  | 910.0                                     | 4.9                                  | 1.2                           | 903.9  | 219.5  | 1,123.4                                 | 1,169.5  | 46.1                      | 3.9                       |
| 1943  | 886.8                                     | 10.2                                 | 8.5                           | 868.1  | 142.4  | 1,010.5                                 | 1,040.2  | 29.7                      | 2.9                       |
| TOTAL | \$54,394.5                                | \$3,904.9                            | \$1,157.7                     | \$49,331.9   | \$6,843.3  | \$56,175.2                              | \$58,836.4   | \$2,661.2                 | 4.5%                      |

<sup>a</sup> From search of *Chronicle* listings classified as "investment trusts, holdings, trading, etc." and "miscellaneous"; no listings were given for 1919 and 1920. Included are small amounts of offerings of eleemosynary institutions not classified as real estate (\$4.5 million in 1937 and \$11.5 million in 1940).

<sup>b</sup> Noncash offerings of straight bonds from Table A-10 plus total offerings of income bonds (Table A-5) plus 2 percent of serial offerings (Table A-4).

<sup>c</sup> From Table A-1.

are excluded from our data as "financial." Adjustments for non-cash offerings in column 5 are based on the assumption that the *Chronicle* series includes only bonds offered to the public for cash, a reasonably accurate assumption for most years (but see the second paragraph below). Column 5 includes, as items to add to the *Chronicle* series, all noncash offerings of straight bonds (Table A-10), total offerings of income bonds (Table A-5), and a 2 percent correction for serial bonds (Table A-4) offered for considerations other than cash.<sup>1</sup>

Table C-1 indicates that the rough adjustments made to the *Chronicle* estimates provide a series that is tolerably close to our offerings series in most years, the latter being usually the more inclusive. The largest absolute discrepancy occurs in 1928, and the largest relative discrepancy in 1933. For those years a more detailed reconciliation was attempted, the results of which are presented in Table C-2. The table shows that we purposely excluded, for 1928, \$40 million of issues that did not meet our definition of a domestic corporate bond (see Chapter 1); and that the *Chronicle* included an additional \$10 million of issues, some of which would possibly have been included in our estimates if the manual information on the characteristics of the issue had been more complete. But the total, \$50 million, for issues included by the *Chronicle* and excluded or possibly omitted by us was more than offset by the \$360 million of cash offerings listed in our sources but omitted by the *Chronicle*. Most of these were cases where no public announcement of an offering was made, yet the balance sheet showed an increase in outstandings. The difference of \$310 million is the amount shown in Table C-1 as the 1928 discrepancy.

For 1933 the principal cause of the discrepancy was the simplifying assumption, made in constructing Table C-1, that only cash offerings were included in the *Chronicle* series. While that assumption is reasonably accurate for most years, our analysis shows that the *Chronicle* included \$140 million of noncash offerings arising from heavy corporate reorganizations in 1933. The

<sup>1</sup> It may be recalled from Chapter 1 that income bonds are usually offered during corporate reorganizations in exchange for old fixed-income bonds. Therefore we have considered them all as noncash offerings. The 2 percent of serial offerings treated as noncash is an estimate based on a special breakdown of 1928 data.

TABLE C-2—Reconciliation of *Commercial and Financial Chronicle* Offerings with National Bureau Offerings, Selected Years

(MILLIONS OF DOLLARS)

|  | 1928    | 1933             |
|--|---------|------------------|
| <i>Chronicle</i> domestic corporate                                  | \$3,440 | \$230            |
| — realty   | 610     | <sup>a</sup>     |
| — financial  | 150     | 10               |
| — other N.B.E.R. exclusions <sup>b</sup>                             | 40      | 10               |
| — N.B.E.R. possible omissions <sup>c</sup>                           | 10      | 0                |
| = offerings included in both series                                  | 2,630   | 210              |
| + N.B.E.R. noncash offerings   | 460     | 310 <sup>d</sup> |
| = <i>Chronicle</i> estimates adjusted                                | 3,090   | 520              |
| N.B.E.R. total offerings   | 3,450   | 570              |
| Excess of N.B.E.R. total over <i>Chronicle</i> adjusted <sup>e</sup> | 360     | 50               |

Figures are correct to tens of millions of dollars only.

<sup>a</sup> Less than \$5 million.

<sup>b</sup> For exclusions, see pages 30-32.

<sup>c</sup> Manual information on these issues is incomplete.

<sup>d</sup> After deduction of \$140 million exchanges and contract modifications included in the *Chronicle* series.

<sup>e</sup> Estimated cash offerings not covered by the *Chronicle*.

double counting of these issues in adjusting the *Chronicle* series in Table C-1 accounts for slightly more than the apparent discrepancy for 1933.

#### BOND OFFERINGS: COMPARISON WITH ESTIMATES OF THE NEW YORK JOURNAL OF COMMERCE

One of the oldest of the published series on corporate bond offerings is that compiled by the *New York Journal of Commerce*; it covers the period 1906-46. Like the *Chronicle* series, it excludes most noncash offerings and thus must be raised to compare with our series on total offerings. The *Journal of Commerce* series excludes real estate issues, as do our estimates; but it includes financial issues and bonds of Canadian and other foreign corporations when offered in the United States. Another important difference is that the *Journal of Commerce* series excludes private placements with savings institutions and cash offerings to stockholders, and thus drifts downward as compared with other offerings series during the late thirties and early forties.

Although the *Journal of Commerce* published a list of all obligors whose bonds were included in its series, the exact bond titles were not given; moreover, only the broadest industrial classifications were presented, so that it is quite difficult to identify and eliminate foreign and financial issues. Accordingly we have not attempted a full comparison of their estimates with ours for all years. Nevertheless, rough adjustments indicate reasonably close agreement except for 1906, 1907, 1926, and 1935. A detailed reconciliation made by comparing individual offerings in three of those years is presented in Table C-3, 1907 being omitted because the *Journal of Commerce* did not publish a complete list of obligors for that year.

In 1906, offerings totaling some \$190 million, included by the *Journal of Commerce*, were deliberately excluded under our definitions, the majority because they were short-term notes; this

TABLE C-3—Reconciliation of New York *Journal of Commerce* Offerings with National Bureau Offerings, Selected Years

|  | (MILLIONS OF DOLLARS) |         |              |
|--|-----------------------|---------|--------------|
|  | 1906                  | 1926    | 1935         |
| <i>Journal of Commerce</i> unadjusted  | \$ 780                | \$2,820 | \$2,440      |
| — foreign  | <sup>a</sup>          | 320     | <sup>a</sup> |
| — financial  | <sup>a</sup>          | 60      | 630          |
| — other N.B.E.R. exclusions <sup>b</sup>                                       | 190                   | 90      | 10           |
| — N.B.E.R. possible omissions <sup>c</sup>                                     | 30                    | 40      | <sup>a</sup> |
| = offerings included in both series  | 560                   | 2,310   | 1,800        |
| + N.B.E.R. private placements and cash offerings to stockholders               | 260                   | 180     | 350          |
| + N.B.E.R. noncash offerings   | 210                   | 200     | 540          |
| + N.B.E.R. real estate <sup>d</sup>  | <sup>a</sup>          | 160     | <sup>a</sup> |
| = <i>Journal of Commerce</i> adjusted  | 1,030                 | 2,850   | 2,690        |
| N.B.E.R. total offerings   | 1,220                 | 3,150   | 2,700        |
| Excess of N.B.E.R. total over <i>Journal of Commerce</i> adjusted <sup>e</sup> | 190                   | 300     | 10           |

Figures are correct to tens of millions of dollars only.

<sup>a</sup> Less than \$5 million.

<sup>b</sup> For exclusions, see pages 30-32.

<sup>c</sup> Manual information on these issues was incomplete.

<sup>d</sup> See page 31 for discussion of real estate bonds included in the service group.

<sup>e</sup> Estimated cash offerings not included in the *Journal of Commerce* series.

compares with \$470 million of private placements, noncash offerings, etc. that were excluded under their rules. In addition, cash offerings totaling \$190 million were not recorded by the *Journal of Commerce*. The latter omissions resulted largely from the fact that in 1906—the first year of the *Journal of Commerce* series—offerings whose size was less than \$1 million were excluded. (In all subsequent years, coverage was extended to include offerings of \$100,000 and over.)

The situation is reversed in 1907, when the *Journal of Commerce* reported a large volume of offerings that are not included in our series. Although full reconciliation is not possible, it is clear that the *Journal of Commerce* included certain long-term issues that were offered but not taken up by the public during the money-market panic in the spring of 1907. The *Journal of Commerce* also included an appreciable volume of short-term notes offered in the latter part of the year when the unsold long-term issues were canceled. On the other hand, we included, and the *Journal of Commerce* excluded, certain contract modifications and exchanges arising from the settlement of default situations in 1907.

As Table C-3 indicates, 1926 was a year of heavy foreign flotations and 1935 a year of heavy financial flotations; such securities are excluded from our estimates but included by the *Journal of Commerce*. At the same time, our figures reflect an appreciable volume of noncash offerings, private placements, etc. that theirs do not. In 1926 the volume of cash offerings omitted from the *Journal of Commerce* estimate was especially large.

The general impression obtained from the comparisons with the *Journal of Commerce* and *Chronicle* series is that our offerings series is quite inclusive for the area it represents. An analysis of possible omissions suggests that the average error on account of incomplete primary data is probably under 1 percent.

#### CAPITAL-FLOW ESTIMATES: COMPARISON WITH ESTIMATES OF THE SECURITIES AND EXCHANGE COMMISSION

Our data on cash capital flows originating in the corporate sector from transactions in corporate bonds (see Chapter 6 and Table A-22) may be checked against similar estimates prepared by the Securities and Exchange Commission as part of its broad savings study. The SEC materials, which cover the period 1933 to date,



were compiled by Irwin Friend and Vito Natrella, who have kindly permitted us to use their figures as a check on our estimates.

Conceptually the SEC estimates are identical with those presented here: both measure gross cash proceeds from sale of corporate bonds, gross cash payments at extinguishment, and net cash flow. Both exclude corporate mortgage and term loans; but in several respects the coverage differs. Our flow estimates cover only straight bonds of the railroad, public utility, and industrial groups; the SEC includes, in addition, certain minor types of issues (principally equipment obligations, serial issues, and receivers' certificates) and bonds of the real estate and financial groups. In Tables C-4 and C-5, where our estimates are compared with those of the SEC, rough adjustments have been made for these differences in coverage.

The adjusted gross cash proceeds in Table C-4, column 1, were obtained by adding par amounts of offerings of equipment obligations and serial issues (Tables A-3 and A-4) to our series on gross cash proceeds from sale of straight bonds (Table A-22); income bonds were omitted, since they are seldom offered for cash. Column 2 of Table C-4 contains estimates of cash proceeds from sale of real estate and financial bonds that were excluded from our series and included in the SEC series, the real estate and financial data in column 2 being obtained by a detailed examination of the SEC files. No adjustments have been made for receivers' certificates, which are included in the SEC estimates but excluded from our own. Our adjusted estimates and the SEC estimates are presented in columns 3 and 4, respectively, and the differences, absolute and relative, in columns 5 and 6.

Despite the approximations involved in putting the figures on a comparable basis, the differences are remarkably small in most years. The largest relative discrepancies occurred in 1933 and 1934. In the first year, the SEC relied exclusively on the *Chronicle* listings for its estimates; and our analysis has shown (page 402) that the *Chronicle* overstated the volume of cash offerings in that year by \$140 million, approximately the amount of the discrepancy. The discrepancy of \$84 million in 1934, although small absolutely, is large relatively (18 percent of our total); it may be traced in part to the SEC's omission of several rail issues previously held by a lessee that were sold to the public under

TABLE C-4—Comparison of Securities and Exchange Commission Estimates of Gross Cash Proceeds with National Bureau Estimates, 1933-43

(DOLLAR FIGURES IN MILLIONS)

| YEAR  | GROSS CASH PROCEEDS  |  |  | DIFFERENCE              |                             |                             |
|-------|--|--|--|-------------------------|-----------------------------|-----------------------------|
|       | N.B.E.R. rails,<br>utilities, and<br>industrials <sup>a</sup><br>(1) | Real estate<br>finance <sup>b</sup><br>(2) | N.B.E.R.<br>adjusted<br>(1) + (2)<br>(3) | SEC <sup>c</sup><br>(4) | Dollars<br>(3) - (4)<br>(5) | Percent<br>(5) ÷ (3)<br>(6) |
| 1933  | \$ 119   | \$ 24                                      | \$ 143                                   | \$ 247                  | \$ -104                     | -72.7%                      |
| 1934  | 454  | 21   | 475                                      | 391                     | 84                          | 17.7                        |
| 1935  | 2,168  | 68   | 2,236                                    | 2,257                   | -21                         | -0.9                        |
| 1936  | 3,869  | 259  | 4,128                                    | 4,027                   | 101                         | 2.4                         |
| 1937  | 1,661  | 74   | 1,735                                    | 1,656                   | 79                          | 4.6                         |
| 1938  | 2,104  | 11   | 2,115                                    | 2,092                   | 23                          | 1.1                         |
| 1939  | 1,942  | 99   | 2,041                                    | 1,939                   | 102                         | 5.0                         |
| 1940  | 2,602  | 119  | 2,721                                    | 2,477                   | 244                         | 9.0                         |
| 1941  | 2,411  | 81   | 2,492                                    | 2,391                   | 101                         | 4.1                         |
| 1942  | 962  | 4  | 966                                      | 929                     | 37                          | 3.8                         |
| 1943  | 906  | 11   | 917                                      | 996                     | -79                         | -8.6                        |
| TOTAL | \$19,198   | \$771                                      | \$19,969                                 | \$19,402                | \$567                       | 2.8%                        |

<sup>a</sup> Estimates obtained by adding par amounts of offerings of equipment obligations (Table A-3) and serial issues (Table A-4) to gross cash proceeds from sale of straight bonds (Table A-22).

<sup>b</sup> Estimates obtained from a special search of the SEC file of cash offerings for issues that were excluded from the original series combined in column 1 because belonging to the real estate and financial groups, augmented by SEC estimates of sales by "investment companies" (open-end investment trusts).

<sup>c</sup> Unpublished estimates prepared by the SEC: based on their published estimates of gross cash proceeds, adjusted to include bonds offered by investment companies and to exclude foreign issues offered in the United States and amounts offered but not sold.

ICC authorization in that year. It is notable that for the full period of overlap, 1933-43, our estimates exceed those of the SEC by less than \$600 million or 2.8 percent, a discrepancy sufficiently small to be accounted for by the approximate nature of the adjustments made and by minor differences in coverage.

Similar comparisons for gross cash payments at extinguishment and for net cash flows are made in Table C-5. Our series on gross cash payments is made roughly comparable with that of the SEC by adjustments similar to those made for gross cash proceeds. The principal difference in the method of adjustment is that income-bond extinguishments are included in the payments estimates, since most of them were cash transactions. As is noted on the table, the estimates of column 2 for cash payments on bonds in the real estate and financial groups were obtained from scattered sources and may be incomplete.

Our estimates for payments generally agree less well with those of the SEC than the corresponding estimates for proceeds, the payments estimates exceeding the SEC's in the aggregate by \$1.9 billion or 8.1 percent. Annual excesses appear in every year but show a pronounced downward trend. This downward movement quite possibly reflects the greater publicity given by the financial press to redemptions in the late thirties and early forties, and a consequent improvement in the SEC extinguishment schedules. In recent years also, the SEC has revised and improved its system for collecting and recording data on extinguishments.

It is particularly encouraging that our series on gross proceeds and payments, and the difference (net cash flow), agree tolerably well with those of the SEC after 1938. While our estimates of net cash flow from the corporate sector for the full period 1933-43 exceed those of the SEC by approximately 58 percent, after 1938 the SEC's figures exceed ours, but by only 1.7 percent. The closeness of the flow series from 1939 through 1943 seems to justify our use of the current SEC data to obtain the estimates of corporate bond outstandings for recent years that have been discussed in Chapter 2 and developed in Chapter 6.

OUTSTANDINGS: COMPARISON WITH ESTIMATES OF THE  
INTERSTATE COMMERCE COMMISSION AND NATIONAL  
INDUSTRIAL CONFERENCE BOARD

Several published series on outstandings are available, but most of them cover only brief periods and do not differentiate between

TABLE C-5—Comparison of Securities and Exchange Commission Estimates of Gross Cash Payments and Net Cash Flow with National Bureau Estimates, 1933-43

(DOLLAR FIGURES IN MILLIONS)

| YEAR  | GROSS CASH PAYMENTS                                    |       |                                    |                                       | DIFFERENCE                  |                             | NET CASH FLOW                         |                         |
|-------|--|-------|------------------------------------|---------------------------------------|-----------------------------|-----------------------------|---------------------------------------|-------------------------|
|       | N.B.E.R. rails, utilities, and industrial <sup>a</sup> |       | Real estate & finance <sup>b</sup> |                                       | Dollars<br>(3) — (4)<br>(5) | Percent<br>(5) ÷ (3)<br>(6) | N.B.E.R. adjusted <sup>c</sup><br>(7) | SEC <sup>d</sup><br>(8) |
|       | (1)  | (2)   | (1) + (2)<br>(3)                   | N.B.E.R. adjusted<br>(1) + (2)<br>(3) |                             |                             |                                       |                         |
| 1933  | \$ 796   | \$ 32 | \$ 828                             | \$ 601                                | \$227                       | 27.4%                       | \$-685                                | \$-354                  |
| 1934  | 762  | 38    | 800                                | 635                                   | 165                         | 20.6                        | -325                                  | -244                    |
| 1935  | 2,792  | 62    | 2,854                              | 2,444                                 | 410                         | 14.4                        | -618                                  | -187                    |
| 1936  | 3,731  | 91    | 3,822                              | 3,429                                 | 393                         | 10.3                        | 306                                   | 598                     |
| 1937  | 2,285  | 70    | 2,355                              | 2,085                                 | 270                         | 11.5                        | -620                                  | -429                    |
| 1938  | 1,541  | 34    | 1,575                              | 1,504                                 | 71                          | 4.5                         | 540                                   | 588                     |
| 1939  | 2,419  | 181   | 2,600                              | 2,550                                 | 50                          | 1.9                         | -559                                  | -611                    |
| 1940  | 2,760  | 81    | 2,841                              | 2,814                                 | 27                          | 1.0                         | -120                                  | -337                    |
| 1941  | 2,686  | 31    | 2,717                              | 2,516                                 | 201                         | 7.4                         | -225                                  | -125                    |
| 1942  | 1,265  | 84    | 1,349                              | 1,327                                 | 22                          | 1.6                         | -383                                  | -398                    |
| 1943  | 1,791  | 75    | 1,866                              | 1,800                                 | 66                          | 3.5                         | -949                                  | -804                    |
| TOTAL | \$22,828   | \$779 | \$23,607                           | \$21,705                              | \$1,902                     | 8.1%                        | \$-3,638                              | \$-2,303                |

<sup>a</sup> Estimates obtained by adding par amounts of extinguishments of equipment obligations (Table A-3), serial issues (Table A-4), and income bonds (Table A-5) to gross cash payments at extinguishment of straight bonds (Table A-22). In 1940, \$251 million BMT and IRT issues extinguished by exchange for New York City stock were included to conform with the SEC treatment of those issues.

<sup>b</sup> Default payments and maturities for bonds of the real estate and financial groups were obtained from a search of the financial manuals; redemptions and sinking-fund payments, from lists in Poor's fiscal manuals, *Fitch Revision Service*, and the *Commercial and Financial Chronicle*. Data for 1943 were compiled from the SEC file of retirements. Totals for all years were adjusted to include SEC estimates of repurchases of bond issues by investment companies.

<sup>c</sup> Column 3, Table C-4 less column 3, Table C-5.

<sup>d</sup> Column 4, Table C-4 less column 4, Table C-5.

funded and unfunded debt.<sup>2</sup> Estimates by the National Industrial Conference Board, however, cover virtually the same period as ours and are generally adjusted to exclude unfunded items.<sup>3</sup> The Conference Board series were obtained largely from official sources, which vary in their inclusiveness. Therefore comparisons between the Conference Board series and ours are best made by major industry divisions.

### *Railroads*

Table C-6 presents statistics of the volume of rail debt outstanding, measured at three sector levels. The first column contains Interstate Commerce Commission statistics on the gross volume of rail bonds outstanding (bonds "actually outstanding" in the ICC terminology); it includes all rail bonds held by railroads, in addition to those held by the general investing public. The third column contains the ICC series on net funded debt, used by the Conference Board in its studies; from it are excluded all bonds held by railroads. Our estimates, given in the second column, are intermediate in that they include rail bonds held by unaffiliated railroads for investment purposes but exclude bonds held within systems of affiliated corporations.

Since the ICC figures are based on uniform accounting data obtained under a compulsory reporting system, they afford a

<sup>2</sup> Estimates of total corporate long-term debt and occasional references to funded debt for selected years are contained in the following sources: G. F. Warren and F. A. Pearson, "Commodity Prices," *Farm Economics*, February 1932, pp. 1659-68; Irving Fisher, *Booms and Depressions* (New York, 1932), pp. 80, 109, and 174; Lionel D. Edie, "New Year Opens in Midst of Major Debt Adjustments," *Iron Age*, January 5, 1933, p. 25; Evans Clark, editor, *The Internal Debts of the United States* (New York, 1933), pp. 96, 144, and 175; Simon Kuznets, *National Income, 1929-32* (Department of Commerce-National Bureau of Economic Research, 1934), pp. 236-37; "Estimates of Securities Outstanding in the United States," *Moody's Manual of Investments-Industrial Securities*, 1937 and earlier years; Donald C. Horton, *Long-Term Debts in the United States*, Department of Commerce, Domestic Commerce Series, No. 96 (1937); A. G. Hart, *Debts and Recovery* (New York, 1938), p. 333; *Indebtedness in the United States, 1929-41*, Department of Commerce, Economic Series, No. 21 (1942); *Survey of Current Business*, September 1951 and earlier issues.

<sup>3</sup> Leonard Kuvin, *Private Long-Term Debt and Interest in the United States* (New York, 1936); M. R. Gainsbrugh, "Impact of the War on Private Long-Term Debt," *The Conference Board Economic Record*, Vol. V, No. 12 (December 1943).

unique opportunity to check the accuracy of our data—and, indirectly, the comprehensiveness of the manual sources. All series in Table C-6 have virtually the same industry coverage. The ICC statistics include steam railways of classes I-III, switching and terminal companies of classes I-III, and nonoperating subsidiaries of companies in the foregoing six groups; the companies included correspond closely to our category “railroads,” which is the sum of “passenger and freight railroads” and “services incidental to railroads.”<sup>4</sup> A minor discrepancy arises from the fact that the ICC statistics include and ours exclude a few issues held for a short time by controlling syndicates (syndicates holding a majority of the voting shares) before they were sold to the general investing public. The ICC figures are affected, too, by the fact that the dividing line between current and long-term liabilities has varied between maturities of one and two years.

Other differences in treatment, which assume more importance in certain years than in others, disturb the comparability of the data without vitiating their use as a check on our series. One important difference is that the ICC includes railroad debt held by the federal government or its agencies, whereas we exclude such issues until they are sold to the investing public. Another is that during the period covered by our statistics the ICC treated “matured debt unpaid” (defaults of principal) as current liabilities, whereas such issues are treated in our study as funded debt. Adjustments for the latter difference in coverage have been made in the estimates in the first column of Table C-6 for 1930 and after, in which year the ICC began to report separately the volume of issues matured but unpaid;<sup>5</sup> but since the volume of such issues held by the railroad companies themselves is not given, the net figures in the third column could not be adjusted. A third difference in treatment, which is of importance only before the twenties, arises from our exclusion of sterling bonds and their inclusion by the ICC.

Despite procedural differences, the ICC gross and net estimates

<sup>4</sup> For a description of the coverage of the railroad service group, see page 31 and footnote 7.

<sup>5</sup> The statistics on funded debt matured but unpaid are reported only for class I railroads and switching and terminal companies and their lessors. The amount of such unpaid debt is not given for class II and III roads, but it is relatively small.

TABLE C-6—Comparison of Interstate Commerce Commission, National Bureau, and National Industrial Conference Board Estimates of Railroad Bonds Outstanding, 1900-1944 (MILLIONS OF DOLLARS)

| DATE <sup>a</sup> | ICC funded<br>debt actually<br>outstanding plus<br>matured debt<br>unpaid <sup>b</sup> | N.B.E.R.<br>railroads<br>(issues of<br>all types) <sup>c</sup> | N.I.C.B.<br>steam railroads<br>and switching<br>and terminal<br>companies <sup>d</sup> | DATE <sup>a</sup> | ICC funded<br>debt actually<br>outstanding plus<br>matured debt<br>unpaid <sup>b</sup> | N.B.E.R.<br>railroads<br>(issues of<br>all types) <sup>c</sup> | N.I.C.B.<br>steam railroads<br>and switching<br>and terminal<br>companies <sup>d</sup> |
|-------------------|--|--|--|-------------------|--|--|--|
| <i>July 1</i>     |  |  |  | <i>January 1</i>  |  |  |  |
| 1900              |  | \$ 5,053   | \$ 5,172   | 1922              | \$11,754   | \$10,573   | \$10,743   |
| 1901              |  | 5,808  | 5,413  | 1923              | 11,899   | 10,842   | 10,865   |
| 1902              |  | 6,034  | 5,612  |                   |  |  |  |
| 1903              |  | 6,437  | 5,924  | 1924              | 12,362   | 11,114   | 11,299   |
|                   |  |  |  | 1925              | 12,788   | 11,785   | 11,742   |
| 1904              |  | 7,003  | 6,315  | 1926              | 12,809   | 11,813   | 11,734   |
| 1905              |  | 7,416  | 6,683  | 1927              | 12,876   | 11,950   | 11,834   |
| 1906              |  | 7,813  | 7,126  |                   |  |  |  |
| 1907              |  | 8,281  | 7,460  | 1928              | 12,798   | 12,216   | 11,811   |
|                   |  |  |  | 1929              | 12,793   | 12,225   | 11,858   |
| 1908              |  | 8,507  | 8,239  | 1930              | 13,024   | 12,349   | 11,905   |
| 1909              |  | 8,945  | 8,596  | 1931              | 13,403   | 12,768   | 12,378   |
| 1910              |  | 9,201  | 9,041  |                   |  |  |  |
| 1911              |  | 9,424  | 9,401  | 1932              | 13,385   | 12,812   | 12,330   |
|                   |  |  |  | 1933              | 13,437   | 12,600   | 12,339   |
| 1912              |  | 9,743  | 9,569  | 1934              | 13,364   | 12,430   | 12,200   |
| 1913              |  | 9,969  | 9,774  | 1935              | 13,368   | 12,408   | 12,161   |
| 1914              |  | 10,289   | 9,974  |                   |  |  |  |
| 1915              |  | 10,415   | 10,446   | 1936              | 13,200   | 12,212   | 11,894   |
| 1916              |  | 10,325   | 10,289   | 1937              | 13,202   | 12,261   | 11,786   |
|                   |  |  |  | 1938              | 13,044   | 12,169   | 11,795   |
| <i>January 1</i>  |  |  |  | 1939              | 12,958   | 11,978   | 11,505   |
| 1917              | 11,203   | 10,381   | 10,193   |                   |  |  |  |
| 1918              | 11,098   | 10,389   | 10,104   | 1940              | 12,921   | 11,868   | 11,246   |
| 1919              | 10,949   | 10,349   | 10,017   | 1941              | 12,940   | 11,878   | 11,145   |
|                   |  |  |  | 1942              | 12,782   | 11,710   | 11,078   |
| 1920              | 11,010   | 10,333   | 10,079   | 1943              | 12,419   | 11,313   | 10,665   |
| 1921              | 11,649   | 10,474   | 10,618   | 1944              | 11,310   | 10,765   | 10,356   |

## Footnotes to Table C-6

<sup>a</sup> Interstate Commerce Commission and National Industrial Conference Board figures are for June 30 of the indicated year or December 31 of the preceding year. National Bureau figures refer to July 1 or January 1.

<sup>b</sup> Data on funded debt actually outstanding, which include railroad bonds held by railroads other than the obligor as well as those held by the public, are from *Statistics of Railways*, Statement 16 for 1916, Statement 17 for 1917 and 1922-37, Statement 18 for 1918-21, and Table 141 for 1938-43; they cover steam railways of classes I-III, switching and terminal companies of classes I-III, and nonoperating subsidiaries of companies in those six groups. Data on "funded debt matured unpaid" are from the same source, Statements 42-45 for 1929-37 and Tables 128-31 for 1938-43; they cover only class I steam railways and switching and terminal companies, and their nonoperating subsidiaries. No data on matured debt unpaid are available for earlier years.

<sup>c</sup> Figures for January 1, 1917 to January 1, 1944 are from Table A-1. Figures for July 1, 1900 to July 1, 1916 include July 1 figures for straight bonds from Table A-13 and similar figures for issues of minor types obtained from a special tabulation.

<sup>d</sup> Data for 1936-43 are from M. R. Gainsbrugh's "Impact of the War on Private Long-Term Debt," *The Conference Board Economic Record*, Vol. V, No. 12 (December 1943), p. 366. Data for earlier years are from Leonard Kuvin's *Private Long-Term Debt and Interest in the United States* (New York, 1936), p. 14. Data for 1916 and 1944 were computed by the National Bureau of Economic Research, following Conference Board methods. The Conference Board railroad estimates are based principally on ICC data for total outstanding bonds of steam railroads and switching and terminal companies less amounts owned by railroads (see *Statistics of Railways*, 1943, Table 143, for details of subtraction). Figures for switching and terminal companies 1908-14 and for steam railroads 1907-09 were estimated by the Conference Board on the basis of trends in subsequent years (cf. Kuvin, *op.cit.*, p. 123).



generally bracket our figures. The gross estimates always exceed them; the net estimates always fall short of them, except in 1900, 1915, and 1921-24. The first two years fall in a period when sterling bonds were outstanding in fairly large volume, and the latter four years in a period when a substantial volume of rail bonds was held by the federal government. (We estimate that federal holdings averaged about \$500 to \$700 million in the four years after federal operation of the railroads terminated.) In the thirties the holdings of the Public Works Administration and Reconstruction Finance Corporation were also large (together, approximately \$500 million at most times in the period from 1932 to January 1944), but their inclusion in the net figures is roughly offset by the omission of the public's holdings of rail bonds matured but unpaid.<sup>6</sup>

Although the combined effect of the several differences in treatment is difficult to measure precisely, the evidence indicates strongly that properly adjusted gross and net estimates would bracket our series in all years. The conclusion is that our estimates of rail-bond outstandings are not wide of the mark, and that the manual sources, from which they were obtained, are reasonably complete.

### *Public Utilities*

Table C-7 compares the Conference Board estimates for public utilities with ours. The Conference Board estimates have been adjusted to include their series for street railways and miscellaneous transportation companies, which the Conference Board normally groups with railroads. The industry coverage of the series compared in the first two columns of the table is thus roughly the same: included are electric utilities (electric light and power, street railway, and telephone and telegraph companies); gas, water, and miscellaneous transportation companies; and miscellaneous utilities. The third column of the table presents the Conference Board estimates of "accountable" debt; for the included industries, which are all the foregoing except miscellaneous utilities and miscellaneous transportation, the Conference Board had periodic information. The first column contains the

<sup>6</sup> The estimate of federal loans to railroads in the thirties is from a recent compilation by the Financial Research Program, National Bureau of Economic Research, made as part of its Government Lending Project.

accountable items plus Conference Board adjustments for "unaccountable" debt, for which little information was available.

The Conference Board data for the electric utilities are from statistics compiled by the Bureau of the Census for the quinquennial years 1902-37, supplemented by annual data from the Interstate Commerce Commission, Federal Communications Commission, and other agencies. The annual estimates for other than quinquennial years were obtained by linear interpolation or extrapolation or by the use of sample data. The census figures, which cover operating companies only, were adjusted to eliminate intercorporate holdings. The data for gas and water companies were obtained largely from corporate balance sheets submitted for tax purposes to the Bureau of Internal Revenue and reported in *Statistics of Income*, and are gross estimates in that they include a varying amount of intercorporate holdings. The estimates for gas companies before 1926 are extrapolations, as are those for water companies before 1922. The Conference Board did not adjust these series to eliminate real estate mortgages or other types of unfunded long-term debt, but such financing has presumably been relatively unimportant for utilities.

For the unaccountable items the Conference Board based its estimates on special balance-sheet tabulations of the Bureau of Internal Revenue for the single year 1930 (our 1931; see first footnote to Table C-7). The debt of the miscellaneous transportation group in that year (estimated at \$458 million) was then made to move backward and forward with total funded debt of railroads, switching and terminal companies, and street railways, while the debt of miscellaneous utilities (\$1,689 million) was made to move similarly with total accountable utility debt.<sup>7</sup> Unaccountable debt was 16 percent of the total public utility estimate of the Conference Board at the beginning of 1931, and the extrapolation of such a large amount raises questions as to the reliability of the totals for other years.

A further question of reliability concerns the basic 1931 estimate for miscellaneous utilities. The BIR gives no breakdown of the estimate, but the presumption is that it is composed largely

<sup>7</sup> The original data are presented by D. C. Horton, *op.cit.*, p. 65. The estimates were adjusted by the Conference Board to remove approximately \$600 million of debt of switching and terminal companies that was already included in rail debt.

TABLE C-7—Comparison of National Industrial Conference Board and National Bureau Estimates of Public Utility Bonds Outstanding, 1901-43

(MILLIONS OF DOLLARS)

| YEAR <sup>a</sup> | <i>N.I.C.B.<br/>public utilities<br/>(accountable &amp;<br/>unaccountable)</i> <sup>b</sup> | <i>N.B.E.R.<br/>public utilities<br/>(issues of<br/>all types)</i> <sup>c</sup> | <i>N.I.C.B.<br/>public utilities<br/>(accountable)</i> <sup>b</sup> |
|-------------------|---|---|---|
| 1901              | \$1,543   | \$1,262   | \$1,171   |
| 1902              | 1,800   | 1,432   | 1,385   |
| 1903              | 2,055   | 1,742   | 1,600   |
| 1904              | 2,326   | 1,974   | 1,825   |
| 1905              | 2,589   | 2,211   | 2,039   |
| 1906              | 2,874   | 2,468   | 2,276   |
| 1907              | 3,216   | 2,951   | 2,557   |
| 1908              | 3,613   | 3,305   | 2,889   |
| 1909              | 3,913   | 3,598   | 3,125   |
| 1910              | 4,038   | 3,682   | 3,222   |
| 1911              | 4,330   | 4,044   | 3,461   |
| 1912              | 4,623   | 4,471   | 3,702   |
| 1913              | 4,935   | 4,987   | 3,968   |
| 1914              | 5,191   | 5,238   | 4,182   |
| 1915              | 5,368   | 5,424   | 4,330   |
| 1916              | 5,612   | 5,564   | 4,526   |
| 1917              | 6,111   | 5,778   | 4,966   |
| 1918              | 6,480   | 5,918   | 5,289   |
| 1919              | 6,812   | 6,085   | 5,578   |
| 1920              | 7,171   | 6,381   | 5,888   |
| 1921              | 7,543   | 6,578   | 6,192   |
| 1922              | 8,105   | 6,911   | 6,675   |
| 1923              | 8,275   | 7,044   | 6,819   |
| 1924              | 8,808   | 7,524   | 7,267   |
| 1925              | 9,348   | 8,003   | 7,719   |
| 1926              | 9,941   | 8,632   | 8,233   |
| 1927              | 11,124  | 9,429   | 9,255   |
| 1928              | 12,204  | 10,547  | 10,191  |
| 1929              | 12,473  | 11,027  | 10,423  |
| 1930              | 12,866  | 11,465  | 10,761  |
| 1931              | 13,068  | 12,350  | 10,921  |
| 1932              | 13,377  | 12,780  | 11,190  |
| 1933              | 13,691  | 12,872  | 11,461  |
| 1934              | 13,593  | 12,509  | 11,383  |
| 1935              | 13,547  | 12,170  | 11,349  |
| 1936              | 13,567  | 12,111  | 11,429  |

TABLE C-7 (concluded)

(MILLIONS OF DOLLARS)

| YEAR <sup>a</sup> | N.I.C.B.<br>public utilities<br>(accountable &<br>unaccountable) <sup>b</sup> | N.B.E.R.<br>public utilities<br>(issues of<br>all types) <sup>c</sup> | N.I.C.B.<br>public utilities<br>(accountable) <sup>b</sup> |
|-------------------|---|---|--|
| 1937              | \$13,249  | \$12,170  | \$11,181   |
| 1938              | 12,996  | 11,667  | 11,000   |
| 1939              | 13,211  | 11,964  | 11,255   |
| 1940              | 13,127  | 11,652  | 11,210   |
| 1941              | 13,314  | 11,594  | 11,316   |
| 1942              | 13,591  | 11,369  | 11,575   |
| 1943              | 13,207  | 11,372  | 11,250   |

<sup>a</sup> National Bureau figures are for January 1. National Industrial Conference Board figures are for December 31 of the preceding year or for end of fiscal year nearest thereto.

<sup>b</sup> Data for 1933-43 are from M. R. Gainsbrugh's "Impact of the War on Private Long-Term Debt," *The Conference Board Economic Record*, Vol. V. No. 12 (December 1943), Tables 4 and 5, p. 366. Data for earlier years are from Leonard Kuvin's *Private Long-Term Debt and Interest in the United States* (New York, 1936), pp. 14 and 36. In addition to industries normally classified by the Conference Board as public utilities, street railways are included in "accountables" and miscellaneous transportation companies in "unaccountables."

<sup>c</sup> From Table A-1.

of the debt of operating and holding companies that could not be classified elsewhere because their activities covered several fields.<sup>8</sup> To the extent that the debt of both operating and holding companies is included there would be a duplication, since no correction was made to eliminate intercorporate holdings. According to Horton, the decline of \$600 million in the debt of the miscellaneous utility group between the beginning of 1931 and the beginning of 1932 was largely the result of an increase in the number of corporations submitting balance sheets on a consolidated basis in 1932. If so, intercorporate holdings in 1931 would have totaled at least \$600 million. And that, as Table C-7 shows, is roughly the amount of the discrepancy between our estimate for 1931 and the Conference Board total for accountable and unaccountable items in that year. A duplication of about \$600

<sup>8</sup> D. C. Horton, *loc.cit.* Other minor types of industries are also included.

million in the basic 1931 estimate would, of course, put the Conference Board totals (i.e. the series including the debt of miscellaneous utilities extrapolated to other years) generally above ours. Table C-7 shows that usually to be the case; our estimates are bracketed by the two Conference Board series in most years. Considering the degree of approximation involved and the magnitude of the discrepancies, the comparison gives no reason to doubt the accuracy of our series.

### *Industrials*

Unfortunately, reliable statistics against which to check our estimates on industrial outstandings are not available. For the sake of completeness, the Conference Board estimates are presented in Table C-8. Although covering essentially the same minor industry groups as our estimates (manufacturing, mining, trade, and service), they differ in so many other important particulars that it is impossible to effect even a rough reconciliation for most years.

The principal differences between the Conference Board estimates and ours are as follows:

(1) The Conference Board figures for most years and for most industry groups are gross estimates based on corporate balance-sheet data submitted for tax purposes to the Bureau of Internal Revenue.<sup>9</sup> Since the returns were made on an unconsolidated basis in all years except 1926-33, and since no attempt was made to eliminate duplicating debt (intercorporate holdings, pledged bonds, treasury bonds, bonds authenticated but unissued, etc.), such debt figures are generally biased upward as compared with our net estimates.<sup>10</sup>

(2) The Conference Board estimates refer to corporate debt measured from the obligor's point of view, and ours to the private sector's holdings of such debt. Hence the Conference Board includes, and we exclude, debt instruments held by the federal government. Although the aggregate volume of government hold-

<sup>9</sup> Willford I. King's gross debt estimates, which are based on samples adjusted to the BIR data in the twenties, were used for the period 1909-25. See *The National Income and Its Purchasing Power* (National Bureau of Economic Research, 1930), p. 199. Estimates for later years are based on gross long-term debt figures as reported in *Statistics of Income*.

<sup>10</sup> For comments on some of the weaknesses of the BIR gross data in estimating net funded debt, see *Indebtedness in the United States, 1929-41*, Department of Commerce, Economic Series No. 21, pp. 86-88.

TABLE C-8—Comparison of National Industrial Conference Board and National Bureau Estimates of Industrial Bonds Outstanding, 1901-43

(MILLIONS OF DOLLARS)

| YEAR <sup>a</sup> | N.I.C.B.<br>indus-<br>tri-als <sup>b</sup> | N.B.E.R.<br>industrial<br>(issues of<br>all types) <sup>c</sup> | YEAR <sup>a</sup> | N.I.C.B.<br>indus-<br>tri-als <sup>b</sup> | N.B.E.R.<br>industrial<br>(issues of<br>all types) <sup>c</sup> |
|-------------------|--|---|-------------------|--|---|
| 1901              | \$2,422                                    | \$ 380  | 1924              | \$4,701                                    | \$4,907   |
| 1902              | 2,481                                      | 937   | 1925              | 5,259                                      | 5,093   |
| 1903              | 2,539                                      | 1,089   | 1926              | 5,485                                      | 5,363   |
| 1904              | 2,599                                      | 1,340   | 1927              | 5,623                                      | 5,939   |
| 1905              | 2,657                                      | 1,434   | 1928              | 6,384                                      | 6,591   |
| 1906              | 2,716                                      | 1,562   | 1929              | 7,206                                      | 6,596   |
| 1907              | 2,776                                      | 1,704   | 1930              | 7,639                                      | 6,151   |
| 1908              | 2,839                                      | 1,843   | 1931              | 8,109                                      | 6,306   |
| 1909              | 2,902                                      | 1,968   | 1932              | 7,836                                      | 6,150   |
| 1910              | 2,963                                      | 2,143   | 1933              | 7,254                                      | 5,686   |
| 1911              | 3,048                                      | 2,296   | 1934              | 6,910                                      | 5,250   |
| 1912              | 3,172                                      | 2,521   | 1935              | 6,232                                      | 4,881   |
| 1913              | 3,269                                      | 2,606   | 1936              | 6,883                                      | 4,396   |
| 1914              | 3,312                                      | 2,622   | 1937              | 7,592                                      | 4,175   |
| 1915              | 3,388                                      | 2,682   | 1938              | 8,293                                      | 3,870   |
| 1916              | 3,501                                      | 2,648   | 1939              | 6,779                                      | 4,182   |
| 1917              | 3,617                                      | 2,763   | 1940              | 6,715                                      | 4,048   |
| 1918              | 3,746                                      | 2,887   | 1941              | 6,882                                      | 3,901   |
| 1919              | 3,862                                      | 2,998   | 1942              | 6,684                                      | 3,759   |
| 1920              | 3,995                                      | 3,028   | 1943              | 6,381                                      | 3,748   |
| 1921              | 4,160                                      | 3,701   |                   |  |   |
| 1922              | 4,292                                      | 4,313   |                   |  |   |
| 1923              | 4,397                                      | 4,656   |                   |  |   |

<sup>a</sup> National Bureau figures are for January 1. National Industrial Conference Board figures are for December 31 of the preceding year or for end of fiscal year nearest thereto.

<sup>b</sup> Data for 1935-43 are from M. R. Gainsbrugh's "Impact of the War on Private Long-Term Debt," *The Conference Board Economic Record*, Vol. V, No. 12 (December 1943), Table 1, p. 364. Data for earlier years are from Leonard Kuvin's *Private Long-Term Debt and Interest in the United States* (New York, 1936), p. 36.

<sup>c</sup> From Table A-1.

ings is not easily estimated, it has been of increasing importance since the emergence of the Reconstruction Finance Corporation, the Federal Reserve System, and other federal organizations as agencies for the financing of industry.

(3) The Conference Board estimates embrace other types of long-term securities not considered as funded debt within our definition. No adjustments were made by the Conference Board to eliminate unfunded debt other than mortgage loans, e.g. term loans and other long-term notes payable to banks, although such debt has increased markedly since the mid-thirties. Adjustments to eliminate direct mortgage loans were made very roughly, by applying against the total debt of each industry group the average of the ratios of nonmortgage to total debt, obtained from capital-stock tax data for the three years 1922, 1924, and 1925. These ratios show great instability for the trade group and mining.<sup>11</sup> Moreover, the use of a single deflator for each industry group over such a long period is questionable and may have resulted in a considerable upward bias in the early years.

(4) As the result of an industrial reclassification by the BIR, the Conference Board estimates for the service group prior to January 1, 1939 include real estate bonds secured by apartment houses, office buildings, etc.<sup>12</sup> Such issues are specifically excluded from our series in all years.

(5) The Conference Board had no data on the funded debt of the service and trade groups (including real estate) before 1926, and therefore extrapolated the trend in these data backward on the basis of movements in all other types of debt (total farm and nonfarm mortgage debt plus funded debt). For years prior to 1910 no data were available on the other two components of industrial debt—manufacturing and mining—and the trend was extrapolated backward from the 1910-20 data.

In view of the facts that the industrial estimates of the Conference Board are entirely extrapolations in the first decade of the century, that the service and trade series are extrapolations before 1926, that the mortgage correction may be inadequate for the early years, and that no correction was made for duplicating debt, the Conference Board industrial series does not appear to be a reliable check on the accuracy of our estimates through the period under study. Our work with the manual sources suggests

<sup>11</sup> For trade the ratios were 72.7 percent in 1922, 51.2 in 1924, and 37.2 in 1925, or an average of 53.7; for mining they were respectively 80.1, 90.3, and 82.2, or an average of 84.2 percent.

<sup>12</sup> *Statistics of Income for 1938*, Treasury Department, Bureau of Internal Revenue (1941), part 2, p. 248.

that our figures may be somewhat too low for the first five or ten years of the century but are reasonably correct for later years. Our series agrees best with the Conference Board estimates in the twenties when BIR data were reported on a consolidated basis, when government holdings were negligible, when information was available to the Conference Board for all minor industry groups, and when the assumed ratios of funded debt to total debt were probably most reliable. The discrepancies widen thereafter and are large in the late thirties and early forties. But from the rather sketchy information available, they do not appear unreasonable. For example, the greatest discrepancy (\$4.4 billion in 1938) is largely accounted for by real estate bonds (approximately \$2 billion), intercorporate holdings (approximately \$1 billion), and loans from government agencies, term loans, etc. (approximately \$1 billion).<sup>13</sup> Similarly, for other recent years rough reconciliations are possible. The fact that our cash-flow estimates compare favorably with the SEC's also suggests that our figures for the thirties and forties are tolerably accurate measures of the volume of industrial bonds held by the domestic investing public.

<sup>13</sup> The 1939 BIR service group shows a decline of slightly under \$2 billion as compared with 1938, principally because of the reclassification of the real estate group in that year. The estimate of intercorporate holdings is inferred from a special BIR tabulation of bonds of domestic corporations held by various classes of corporations in 1933 and reported by D. C. Horton, *op.cit.*, p. 103. The estimate of term loans is inferred from data in Neil H. Jacoby and R. J. Saulnier's *Term Lending to Business* (National Bureau of Economic Research, 1942). Estimates of government loans are from special tabulations of the Government Lending Project, Financial Research Program, National Bureau of Economic Research.