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INTRODUCTION AND SUMMARY

What has happened to the quality of corporate bonds in the period since the end of World War II? Has the risk in investing in these bonds increased or lessened from the early postwar period to recent years? How does their potential exposure to default and loss compare now with the period of the 1920's? In these pages various facets of quality are examined, following with some variation the tests developed by W. Braddock Hickman in *Corporate Bond Quality and Investor Experience* [1] for the 1900–43 period.

Whereas Hickman's material was compiled from a thorough search of all records of bond offerings plus year-by-year examination of the financial statements of major American corporations, this study principally drew upon investment service listings of public offerings and a separate compilation of announcements of bond issues to be placed directly with the ultimate holder (direct placements). Some findings of other authors, including the excellent sample of direct placements compiled by Avery Cohan for the period from 1951 through 1961, were also utilized.[2] Defaults were studied by compiling lists from the investment manuals as well as lists of corporations undergoing reorganization under Chapter X of the Bankruptcy Act. Finally, to cover some points not explicitly covered by Hickman, special tabulations were made of the data for the earlier period, particularly the 1920's.

Two related qualifications of the present study should be noted. First, in the absence of a major depression in the postwar period one cannot be sure that measurements of selected characteristics and tabulation of an admittedly minimal number of defaults give a true indication of how safe (or risky) the current increase of corporate bonds is, particularly relative to previous bond issues that experienced a severe economic test. Of course, it may be argued that with some advance in

[1] Princeton University Press for National Bureau of Economic Research, 1958.

[2] Further analysis of the quality characteristics of direct placements is expected to issue from Cohan's study, which is a part of the National Bureau's interest rate project.

economic knowledge and a greater degree of recognition of governmental responsibility for determining the course of the economy, recessions in the future may be limited to roughly the amplitude and duration of those experienced since World War II. Lacking here any conclusive proof on this point, the reader should interpret the findings on bond quality in the light of his own views about the likelihood that recent recessions will be typical of the severity of the economic test that the future will hold.

Second, in the absence of a substantial volume of actual defaults (because, apparently, they did not occur), most of the analysis is based upon so-called ex ante indicators of corporate bond quality, that is, the presence or absence of characteristics found to have been associated with default and loss in previous periods (for the most part, the 1900–43 period studied by Hickman). In this sense the postwar study of bond quality seeks to measure risk exposure to a given situation rather than to determine how many bonds currently outstanding can be expected to go bad over their lifetime. That the data are less than perfect for this task is obvious. On the other hand, standards of judgment of bond quality have not gone through the revolution that has characterized mortgage lending or consumer lending terms, nor have corporate bonds shown the proliferation of forms that has generally characterized bank loans to business. Indeed, the most conspicuous change, that of the development of serial payment for direct placements, is thought by some to be reassuring. While direct placements and convertibles have played important roles in the corporate bond field in the postwar period, these forms of obligation have existed for many years. Standards for maturity and earnings coverage have been fixed for many years also. Because no vast changes in corporate bond characteristics have occurred, ex ante characteristics, that is, those previously found to be associated with actual casualties, should not be misleading.

These are the findings of the study:

1. U.S. corporate bonds defaulting in the postwar period (from 1945 through 1965) averaged less than 0.1 per cent of the volume outstanding, or about one-half billion dollars in all. This compares with 1.7 per cent of the outstanding bonds which defaulted during 1900–43. The postwar defaults were concentrated in bonds of the railroad industry, many of which had been outstanding before 1920 or had been refundings of original bonds issued prior to that year.

2. Defaults in the postwar period were not concentrated in a particular cycle phase, perhaps because recessions were not severe. Bonds issued in the postwar period and defaulting from 1944 to 1965 were, however, largely offered in years of business peaks or one year before the cycle peak. From these facts we conclude that although bond defaults have not been a significant problem in the postwar period, the process whereby bonds are offered and some subsequently default continues to be associated with business cycles.

3. Direct placements in the postwar period were much more important than in the 1900–43 era. Because fewer data are available on these bonds, determination of quality trends is more difficult than for public offerings. Nevertheless, a search of available information indicated, first, that defaults and losses were extremely sparse in the postwar period; but second, that there occurred over the period a noticeable drift of direct placements from extremely high-grade categories to bonds merely considered acceptable as "investment grade." Similarly, there was some increase in the proportion of direct placements considered below investment grade, although the proportion remained much smaller than the corresponding figure for public issues.

4. As judged by agency ratings, public offerings have followed an irregular trend in quality in the postwar period, but are superior to those prior to World War II. Direct offerings are of better quality than public offerings as measured by agency rating divisions into investment and subinvestment grades. For all corporate bonds, agency ratings indicated higher quality and less irregularity in the postwar than in the prewar period; however, by 1965 the proportion rated high grade had drifted down to the 1943 level.

5. Agency ratings of public offerings are not consistently related to postwar business cycles. In two cycles quality has a positive conformity and in two an inverse conformity. Weakening in quality is seemingly not related to the volume of bond offerings.

6. Quality of public offerings as measured by fixed-charge coverage before taxes generally improved over the period 1900–46 and then decreased. Since data for direct offerings are not available for 1944–50, all that can be said is that the peak for all offerings occurred either in the mid-forties or mid-fifties.

7. Direct placements generally had higher earnings coverage than public offerings as a group because of differences in the industry mix.

Industrials, which form the majority of direct placements, usually had higher coverage than utility and transportation issues. In each major industry group, however, directly placed issues had lower coverage than public offerings.

8. Bond quality is sometimes measured by the difference between market yield and a basic interest rate representing the return on essentially risk-free investment. During most of the postwar period, the quality of public offerings was better than in the prewar period in that a larger proportion of issues was offered to yield less than 1 per cent above the "basic yield." While quality as indicated by this measure had slipped by the 1956–59 period to about the level of the late 1920's, the drive for yield in the early 1960's apparently caused most issues to be rated as high grade by this measure. This drive for yield in recent years casts doubt on this means of measuring quality.

9. For virtually the entire postwar period the proportion of bond offerings that were unsecured has been at or near record highs. This is not considered to be a significant factor affecting quality, however.

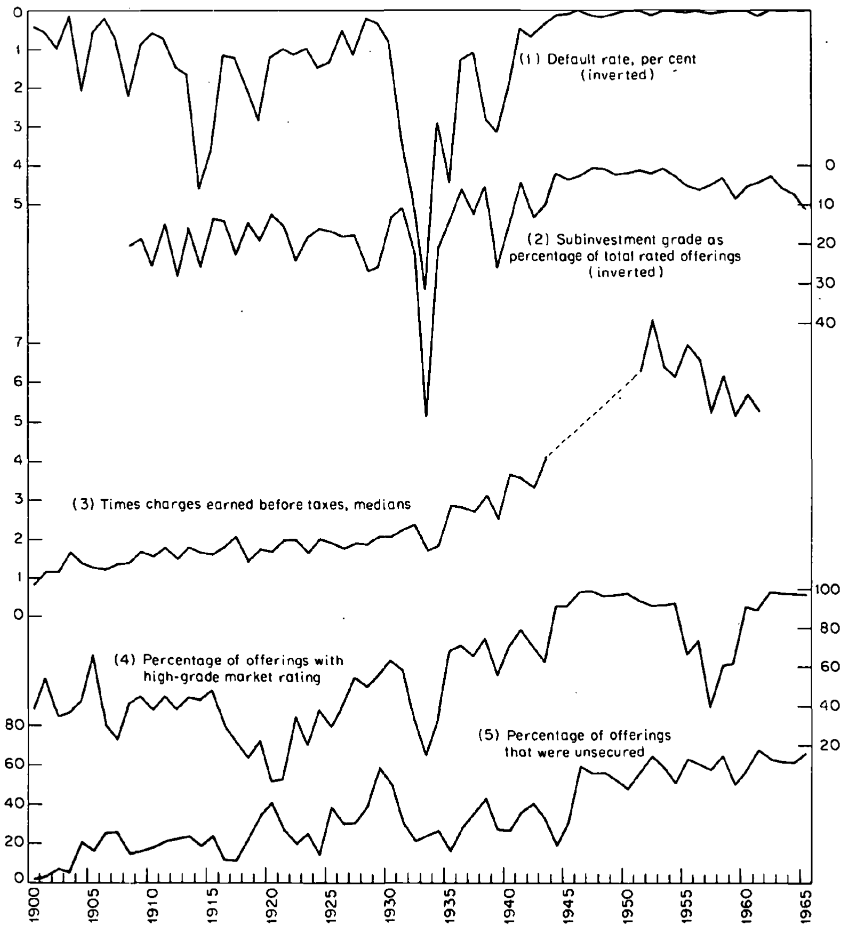
10. During the postwar period, bonds convertible into stock have frequently constituted 10 to 15 per cent of all bond issues. In neither the prewar nor the postwar period have convertibles had as good earnings-coverage as non-convertibles, and ratings by agencies have indicated a substantial proportion of convertibles are of poor quality. This judgment was generally confirmed by higher default rates among convertibles in the prewar period, although not in the postwar period. As measured by agency rating, convertible bonds have, moreover, apparently fallen in quality from the early to the late postwar period.

Even after this brief listing of the major findings of the study, the question again arises, Has the quality of credit deteriorated? The study aims to answer this question, and examines many different statistical series in the process. There are frequent contradictions in the data and there are obvious cases where certain classes of bonds are substitutes for others, so that partial analysis is likely to be misleading. To remedy this, Charts 1 and 2 present the principal relevant statistical series on the quality of corporate bonds.

Certain obvious conclusions follow from examination of these charts, which show quality improvement over time as a rising trend and, conversely, deterioration as a falling trend. The first is that quality,

CHART 1

Measures of Corporate Bond Quality, Public and Direct Offerings, 1900–65



Source

1. 1900–43: Hickman, *Volume of Corporate Bond Financing,* Table A-19 divided by Table A-21; 1944–65: Table 21 of this study, new defaults divided by bonds in good standing.
2. 1908–43: Hickman, *Statistical Measures,* Table 52; 1944–65: Tables B-1, B-2, and B-3 of this study.
3. 1900–43: Computed from Hickman, *Statistical Measures,* Table 79; 1951–61: Combination of Table 24 of this study for public offerings and unpublished data of Avery B. Cohan's for direct placements weighted by this study's industrial and public utility (including transportation) direct placements. Hickman's data are after-tax ratios and have been multiplied by a series of factors computed

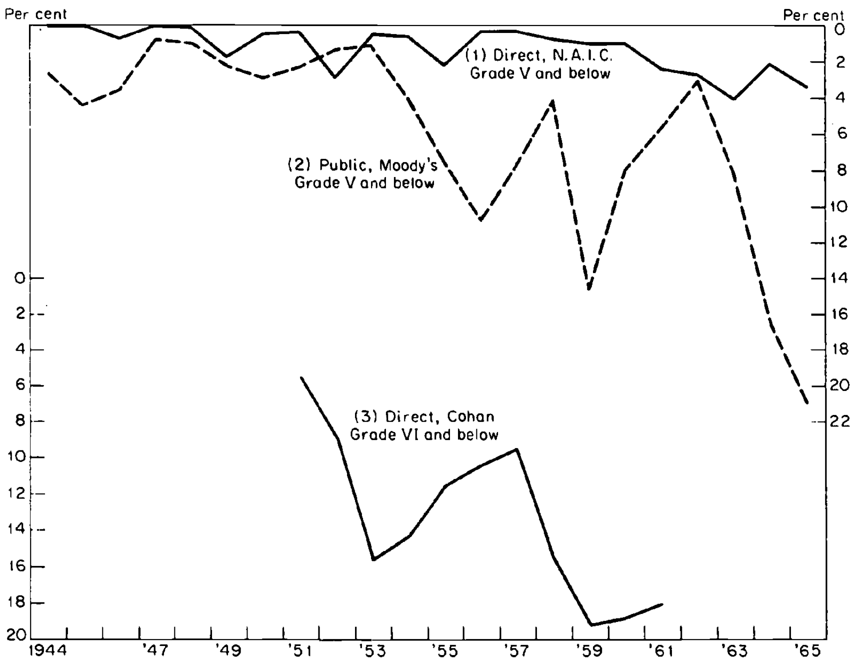
Source to Chart 1 (continued)

from *Statistics of Income* data on nonfinancial corporations to put them on a before-tax basis. Data for direct placements are unavailable for 1944–50 and after 1951.

4. 1900–43: Hickman, *Statistical Measures,* Table 70; 1944–65: Table E-1 of this study (percentage of rated bonds only).
5. 1900–43: Hickman, *Statistical Measures,* Table 85; 1944–65: Table D-1 of this study.

CHART 2

Low-Grade Bond Offerings as Percentage of Total Rated, 1944–65 (inverted scale)



Source: Lines 1 and 2 from Table 15 of this study; line 3 from Cohan, "Yields on Direct Placements, 1951–61," in preparation.

by most of the ex ante measures used, has improved, and now stands appreciably above the levels that prevailed from 1900 through the mid-1930's. Likewise, although most of the measures have shown some deterioration in the postwar period, all except those designated as investment grade were higher in 1965 than in 1943. The available evidence suggests that both direct placement and public offering quality have deteriorated in the last few years analyzed (Chart 1). An exception is times charges earned before taxes. This measure, which combines public offerings and direct placements, has a gap for the years 1944–50 and 1962–65 because earnings ratios are not available in those years for the latter series. The fragmentary data suggest an upward trend, possibly through the mid-forties or fifties, followed by a downward drift.