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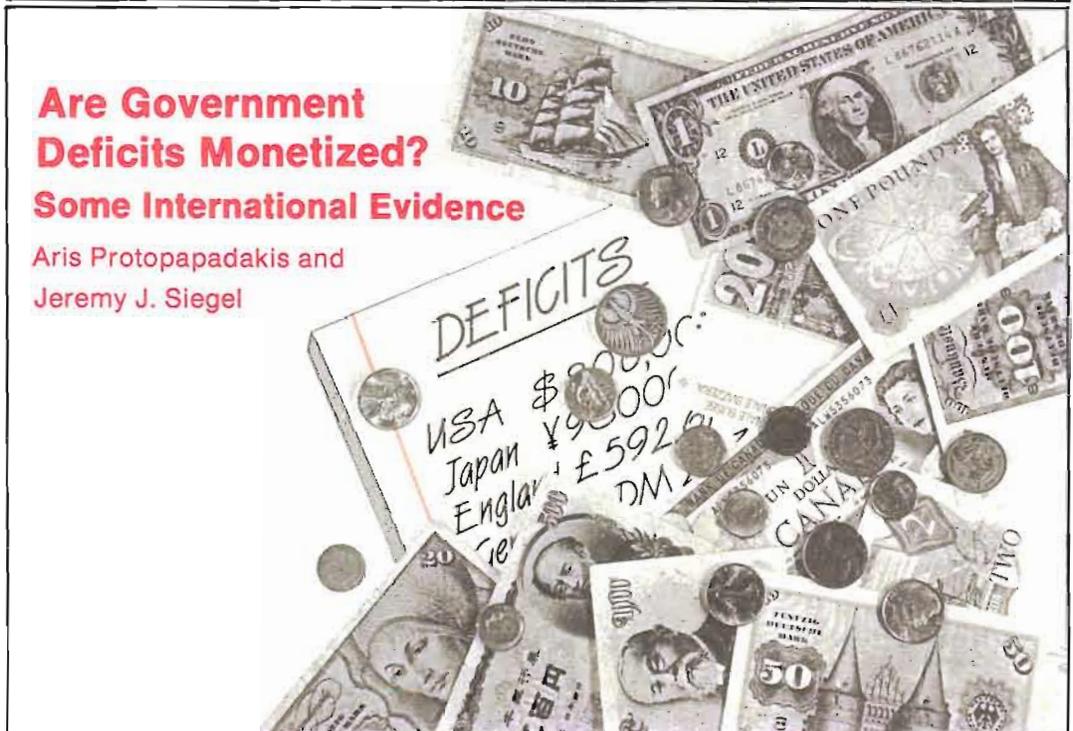
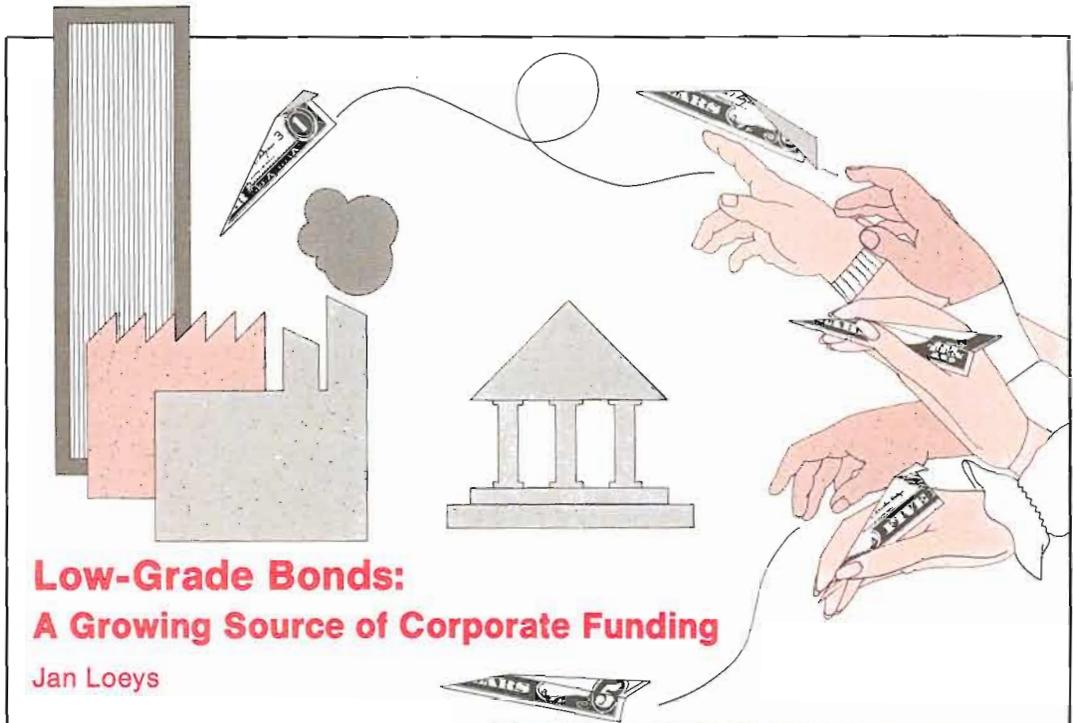


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Federal Reserve Bank of Philadelphia
Ten Independence Mall
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LOW-GRADE BONDS: A GROWING SOURCE OF CORPORATE FUNDING 3

Jan Loeyes

Low-grade bonds—rated as speculative investments by the rating agencies—recently have stirred the interest of investors. In part, their growth is due to improvements in information technology that have lowered the costs of monitoring these securities. In addition, because of increased economic uncertainty, institutional investors have shifted their focus toward assets that are somewhat more marketable, as low-grade bonds are. As a result, certain smaller, less well known firms that traditionally relied on bank loans and private placements can now issue low-grade bonds and borrow directly in the public capital markets.

ARE GOVERNMENT DEFICITS MONETIZED? SOME INTERNATIONAL EVIDENCE 13

Aris Protopapadakis and Jeremy J. Siegel

The enormous federal deficit has a lot of people concerned. One of the more subtle issues is whether economic and political pressures force the monetary authority to “monetize” the debt—does the central bank buy up much of the deficit, thereby pumping more money into the economy, and ultimately leave us with high inflation? While a precise answer is difficult to provide, we can look at historical experience both here and in other industrialized countries to see if large deficits are accompanied by high money growth.

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Low-Grade Bonds: A Growing Source of Corporate Funding

*Jan Loeys**

In recent years, a growing part of corporate borrowing has taken the form of “low-grade bonds.” Called “junk bonds” by some, and “high-yield bonds” by others, these bonds are rated as speculative by the major rating agencies, and they are therefore considered more risky than high- or investment-grade bonds. Lately, low-grade bonds have received a lot of public attention because of their use in corporate takeovers. But in fact, most low-grade bond issues are not used for this purpose.

Corporations that now issue low-grade bonds

are firms that, because of their lack of size, track record, and name recognition, used to borrow mostly via bank loans or privately placed bonds. Recently, investors have become more willing to lend directly to smaller and less creditworthy corporations by buying these low-grade bonds. There are several reasons for the new popularity of these bonds. But before discussing those reasons, it is useful to examine in more depth exactly what low-grade bonds are and how their market first developed.

WHAT ARE LOW-GRADE BONDS?

Low-grade bonds represent corporate bonds that are rated below investment grade by the major rating agencies, Standard & Poor’s and

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Moody's. These ratings, which firms usually request before issuing bonds to the public, reflect each agency's estimate of the firm's capacity to honor its debt (that is, to pay interest and repay principal when due). The highest rating is AAA (for firms with an "extremely strong" capacity to pay interest and repay principal), and then AA ("very strong"), A ("strong"), and BBB ("adequate"). Bonds rated BB, B, CCC, or CC are regarded as "speculative" with respect to the issuer's capacity to meet the terms of the obligation.¹ Firms generally strive to maintain at least a BBB rating because many institutions or investment funds cannot, because of regulation, or will not, because of firm policy, invest in lower-grade bonds. This explains why bonds rated below BBB are also known as "below-investment" grade bonds.

There is no set formula for determining a bond rating—the rating agencies say they look at the entire spectrum of financial and product market conditions. But a certain issue may be considered too risky to be rated investment grade for several reasons. For one, certain financial ratios—such as a high debt-equity ratio or a high ratio of interest expenses to total income—may indicate that even moderate fluctuations in cash flow could endanger the issuer's capacity to pay the bondholders. Or the firm's assets may not be well diversified (too dependent upon a single product), which also makes the firm's revenues highly variable. Alternatively, if the firm is relatively new and thus lacks a proven track record, the firm's cash flow might be hard to predict. Finally, the firm or its industry may be considered in decline, which increases the likelihood of a default.

THE MARKET FOR LOW-GRADE BONDS

Low-grade bonds have received widespread

¹These are the ratings for Standard & Poor's. The corresponding ratings for Moody's are Aaa, Aa, A, Baa, Ba, B, Caa, and Ca, with ratings below Baa considered below investment grade. For both agencies, the rating C is reserved for bonds on which no interest is being paid, while bonds rated D are in default.

attention from the press in recent years, largely because of their association with certain corporate takeover techniques.² But low-grade bonds have been around for a long time. In fact, during the 1920s and 1930s, about 17 percent of domestic corporate bond offerings (that is, new issues) were low grade.³ Furthermore, as the Depression of the 1930s wore on, many bonds that were originally issued with a high-grade rating were downgraded to below-investment grade. These so-called "fallen angels" were bonds of companies that had fallen on hard times. By 1940, as a result of both these downgradings and the earlier heavy volume of new low-grade offerings, low-grade bonds made up more than 40 percent of all bonds outstanding.

After 1940, the market for new public offerings of low-grade bonds shrank significantly. Many investors avoided low-grade bonds due to their high default rate during the 1930s—an average of almost 10 percent of outstanding low-grade bonds (valued at par) defaulted each year.⁴ Most additional low-grade bonds represented only new fallen angels. By the mid-1970s, only about 4 percent of all public corporate bonds outstanding in the U.S. consisted of low-grade bonds.⁵

²For a discussion of these issues, see Kevin F. Winch and Carol Kay Brancato, "The Role of High-Yield Bonds (Junk Bonds) in Capital Markets and Corporate Takeovers: Public Policy Implications," in *The Financing of Mergers and Acquisitions*, Hearing before the Subcommittee on Domestic Monetary Policy of the Committee on Banking, Finance and Urban Affairs, House of Representatives, 99th Congress, 1st session (May 3, 1985) pp. 246-297.

³See W. Braddock Hickman, *Corporate Bond Quality and Investor Experience*, (Princeton University Press, 1958) p. 153.

⁴See W. Braddock Hickman, *Corporate Bond Quality and Investor Experience*, p. 189.

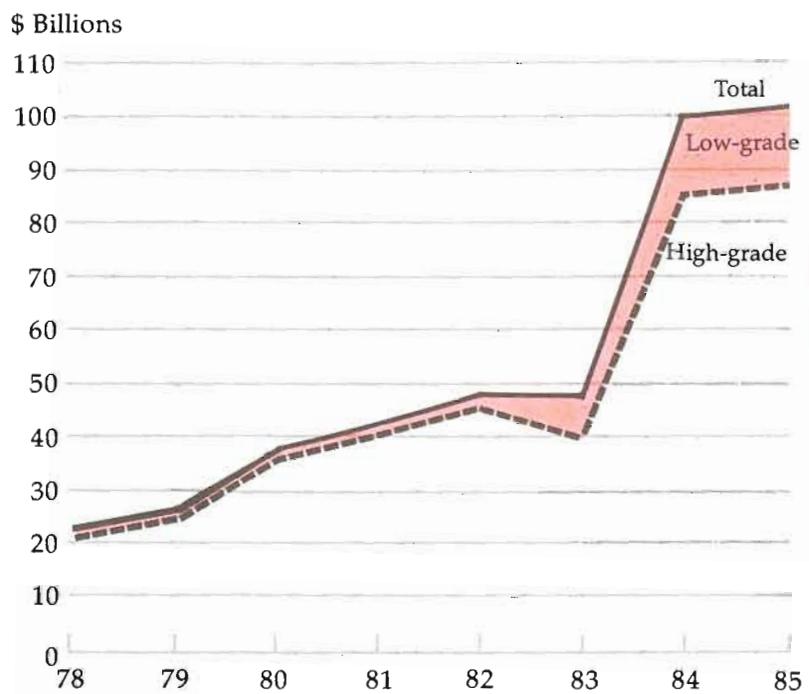
⁵Edward I. Altman and Scott A. Nammacher, "The Anatomy of the High Yield Debt Market," Morgan Stanley (September 1985), Table 2. These and the following data refer only to publicly issued, nonconvertible debt that is rated below BBB (or Baa). Including unrated debt, which would probably be low grade if it were rated, and debt that is convertible into stock, would raise the outstanding amount of low-grade bonds by up to 30 percent.

In 1977, Drexel Burnham Lambert, an investment bank that was already making a secondary market in fallen angels, started an effort to revitalize the market for original-issue low-grade bonds by underwriting new issues and subsequently making a secondary market in them. By 1982, low-grade bond issuance had grown gradually to about \$2.8 billion per year (or 6 percent of total corporate bonds issued publicly that year). In 1983, the market started growing much faster, reaching an annual issue volume of about \$15 billion in 1985 (or 15 percent of total corporate issues that year; see Figure 1). Most low-grade bonds were issued by industrial companies and utilities, accounting for more than a third of the bonds raised by these firms in 1985. By the end of 1985, the total stock of low-grade bonds outstanding reached about \$75 billion (or 14 percent of the total), less than a third of which consisted of fallen angels.

Historically, default rates on low-grade bonds have been much higher than those on high-grade bonds, lending credibility to the speculative rating of low-grade bonds. A recent study finds that between 1970 and 1984, this average annual default rate for low-grade bonds was only 2.1 percent, while the default rate for investment-grade debt was close to zero percent.⁶

⁶Edward I. Altman and Scott A. Nammacher, "The Anatomy of the High Yield Debt Market: 1985 Update," Morgan Stanley (June 1986) Table 10. One must be careful in interpreting these data. A default does not necessarily

FIGURE 1
New Domestic Corporate Bond Issues: 1978-1985



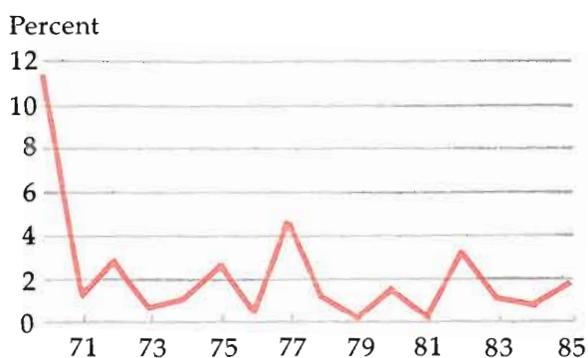
SOURCE: Edward I. Altman and Scott A. Nammacher, "The Anatomy of the High Yield Debt Market: 1985 Update," Morgan Stanley (June 1986) Table 2. Data do not include exchange offers, secondary offerings, tax exempts, convertible bonds, or government bonds.

This average for low-grade bonds, however, hides a lot of year-to-year variability: it varied from a high of 11.4 percent in 1970, when Penn Central went under, to a mere 0.15 percent in 1981, when only two firms defaulted on their bonds (see Figure 2, p. 6).

To compensate investors for the risk they bear by holding low-grade debt—or indeed any debt of private firms—rather than (presumably) default-free Treasury securities, firms promise to pay higher yields on their debt than the

mean that bondholders lose all of their investment. If the firm in default has some assets left, bondholders may still retrieve part of their investment, although it may be some time before these funds are returned.

FIGURE 2
Historical Default Rates
On Low-Grade Bonds
1970-1985



SOURCE: Edward I. Altman and Scott A. Nammacher, "The Anatomy of the High Yield Debt Market: 1985 Update," Morgan Stanley (June 1986) Table 10.

Treasury does.⁷ This difference between yields is called a "risk premium." In general, the lower a firm's rating, the higher the risk premium will be. As Figure 3 shows, high-grade (AAA) bonds usually yield only 50 to 100 basis points more than Treasury bonds, while medium-rated (BBB) bonds may yield from 150 to 300 basis points above Treasury yields. The risk premium of lower-grade bonds over Treasuries, however, has run from 300 to 600 basis points over the last five years. But default risk is probably not the only reason for these yield differentials. Low-grade bonds may require a higher return to compensate investors for the fact that the secondary market for low-grade securities is much less liquid than that for Treasury securities.⁸

⁷Sometimes this compensation takes the form of a "warrant," which gives the bondholder the right to buy equity in the firm at an attractive price, or an option to convert the bond to the common stock of the firm. These so-called "equity kickers" allow bondholders to benefit from any improvements in the value of the firm.

⁸In addition, unlike most Treasury securities, most corporate bonds are callable; that is, the issuer has the option to

Actual realized returns frequently differ from promised returns, however. Aside from the promised return, the actual return includes capital gains and losses due to defaults, upgradings and downgradings, and changes in market interest rates. For example, from 1978 to 1985, low-grade bonds realized an average annual return of 12.9 percent, compared with 10.8 percent on Treasury bonds.⁹

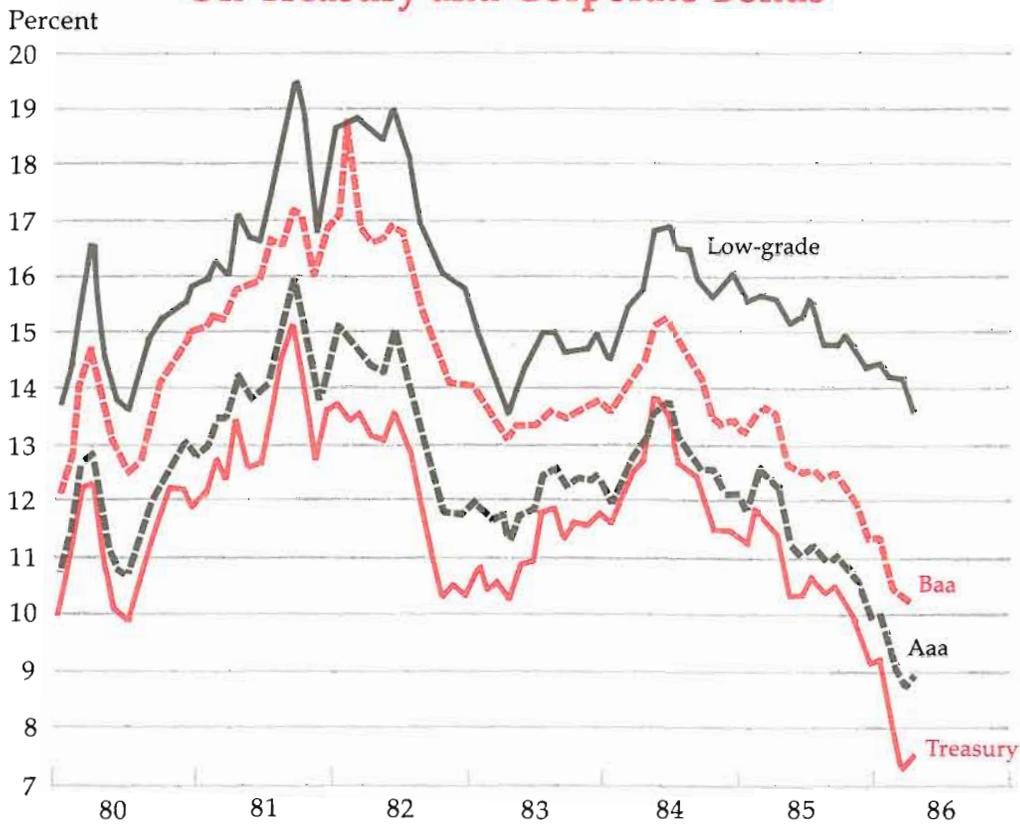
This average return hides a lot of variability, however. In 1983, low-grade bonds outperformed Treasury securities by almost 20 percentage points (see Figure 4, p. 8). But in 1982, and again in 1985, as yields on new Treasury issues dropped much more than the yield on new low-grade issues, the larger capital gains on Treasury securities allowed them to beat low-grade bond returns by almost 10 percentage points. Therefore, although low-grade bonds have yielded a higher return than Treasury or investment-grade bonds on average, there is no guarantee that they will do so in any given year.

The recent revival of the low-grade bond market raises the question of why this product has become successful again. One popular misconception is that these bonds are used solely to finance corporate takeovers. But while the sudden rise in corporate mergers and acquisitions in the last few years did contribute to the growth in low-grade bond offerings, the market had taken off well before the first major use of low-grade bonds in corporate takeover attempts in 1983. And even in 1985—a year of unprecedented merger activity—low-grade bonds issued for takeover purposes made up only about 38 percent of total low-grade bond issuance (see LOW-GRADE BONDS AND TAKEOVERS, p.

pay off part (or all) of the issue at a predetermined price during a predetermined period prior to maturity. The issuer pays for this option in the form of a higher yield.

⁹Edward I. Altman and Scott A. Nammacher, "The Anatomy of the High Yield Debt Market: 1985 Update," Table 1. See also Marshall E. Blume and Donald B. Keim, "Risk and Return Characteristics of Lower-Grade Bonds," Rodney L. White Center for Financial Research, University of Pennsylvania (August 1986).

FIGURE 3
Promised Yields
On Treasury and Corporate Bonds



SOURCE: Salomon Brothers and Moody's.

9). Rather than reflecting a rise in one particular use for low-grade bonds, the reemergence of the market paralleled more fundamental changes in financial markets that made low-grade bonds relatively more attractive compared with other forms of financing.

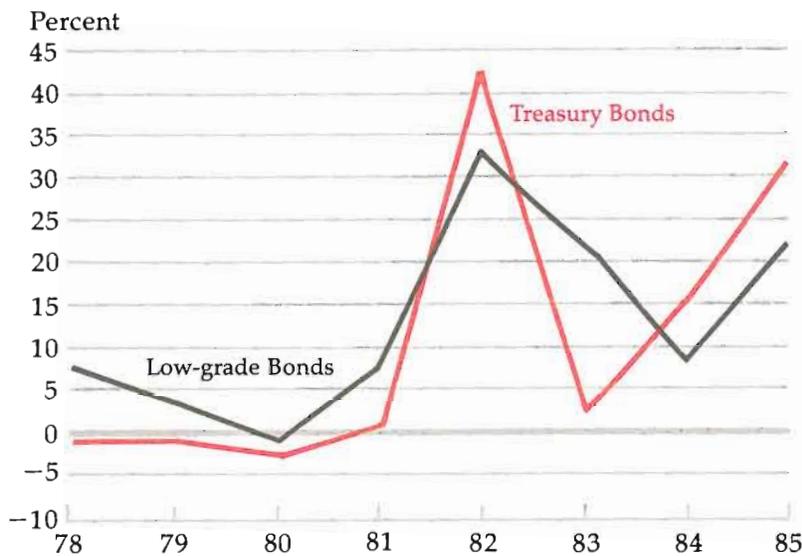
WHY DID THE MARKET GROW?

The main alternative to issuing public debt securities directly in the open market is to obtain a loan from a specialized financial intermediary that issues securities (or deposits) of its own in the market. These alternative instruments usually are commercial bank loans—for short- and medium-term credit—or privately placed bonds—for longer-term credit. Unlike publicly issued

bonds, privately placed bonds can be sold directly to only a limited number of sophisticated investors, usually life insurance companies and pension funds.¹⁰ Moreover, privately placed bonds are held for investment purposes rather than for resale, and they have complex, custo-

¹⁰The Securities Act of 1933 exempts privately placed bonds from the normal registration process that the Securities and Exchange Commission enforces on public securities offerings. For more details on this market, see John D. Rea and Peggy Brockschmidt "The Relationship Between Publicly Offered and Privately Placed Corporate Bonds," Federal Reserve Bank of Kansas City *Economic Review*, (November 1973) pp. 11-20, and Patrick J. Davey, "Private Placements: Practices and Prospects," *The Conference Board Information Bulletin* (January 1979).

FIGURE 4
Realized Yields on Treasury
and Low-Grade Bonds



SOURCE: Edward I. Altman and Scott A. Nammacher, "The Anatomy of the High Yield Debt Market: 1985 Update," Morgan Stanley (June 1986) Table 1.

mized loan agreements (covenants). The restrictions in the covenants range from limits on dividend payments to prohibitions on asset sales and new debt issues. They provide a series of checkpoints that permit the lender to review actions by the borrower that have the potential to impair the lender's position.¹¹ Thus, these agreements have to be regularly renegotiated prior to maturity. As a result, these privately placed bonds in effect are much more like loans than public securities.

Before the reemergence of original-issue low-grade bonds, only large, well-known firms with established track records found it economical to raise money by issuing their own debt securi-

ties in the public capital markets. For smaller, relatively new or unknown firms, the expense was usually prohibitive. Because of the risk of underwriting low-grade bonds, investment bankers would demand hefty underwriting fees. Also, less credit-worthy issuers would have had to pay a very high premium on their debt because investors perceived them as particularly risky investments.

Such borrowers thus found it more economical simply to obtain a loan from a bank or to place a private bond issue with a life insurance company. These alternatives proved cheaper because banks and life insurance companies specialize in credit analysis and assume a large amount (if not all) of a borrower's debt. Consequently, they could realize important cost savings in several functions, such as gathering information about the condition of debtor firms, monitoring their actions, and renegotiating loan agreements.

The reemergence of a market for public original-issue low-grade bonds suggests that this situation is changing. Certain lower-rated corporations now apparently find it economical to issue their own bonds directly in the public capital markets (see *THE GROWTH OF SECURITIES MARKETS*, p. 10). As with many financial innovations, it is impossible to identify all the factors responsible for this development. But it is possible to suggest several important ones that may have made a contribution to the reemergence of original-issue low-grade bonds, and three seem particularly noteworthy—a greater demand by investors for marketable assets; lower information costs; and changes in

¹¹See Edward Zinbarg, "The Private Placement Loan Agreement," *Financial Analyst Journal* (July/August 1975) pp. 33-35 and 52.

Low-Grade Bonds and Takeovers

Low-grade bonds became the center of public attention because of their association with corporate takeover attempts. In a takeover, one firm or a set of investors acquires the stock (and thus ownership) of another firm. When the stock purchase is not financed with cash or newly issued stock of the acquiring firm, the acquisition is financed by borrowing funds. As a result, equity in the combined firm is replaced with debt and its debt-equity ratio rises. Many of these cases involve so-called "leveraged buyouts" (LBOs), in which a group of investors, usually including the management of the firm being acquired, buy out stockholders in order to take the firm private.^a

In the past, there was little LBO borrowing and what there was took the form of bank loans. However, because an increased debt-equity ratio raises the default risk of a firm's debt, bank loans usually come with a lot of restrictions and collateral requirements. In response to an increased demand for LBO financing, Drexel Burnham Lambert, in late 1983, started using its extensive network of private and institutional buyers of low-grade debt to float LBO bonds. These bonds are frequently rated below investment grade, especially when they are junior to already existing debt, and when cash flow projections barely exceed the higher required interest payments. The flexibility of this new source of LBO financing allows some investors to attempt acquisitions of firms several times their own size.^b

In contrast to the amount of public discussion about this topic, low-grade bond issues actually involved in takeovers make up only a small part of the market. During 1984, LBOs amounted to only \$10.8 billion, compared with \$122.2 billion in total merger and acquisition activity.^c Drexel estimates that of about \$14 billion in publicly issued low-grade bonds in 1984, only "approximately 12 % was issued in acquisition or leveraged buyout transactions, of which a de minimis amount was connected with the financing of unsolicited acquisitions."^d By 1985, however, other analysts had estimated that the proportion of new low-grade issues used to finance acquisitions and LBO transactions had risen to 38 percent.^e

^aFor details, see Carolyn K. Brancato and Kevin F. Winch, "Merger Activity and Leveraged Buyouts: Sound Corporate Restructuring or Wall Street Alchemy?" U.S. Congress, House, Committee on Energy and Commerce, Subcommittee on Telecommunications, Consumer Protection, and Finance, 98th Congress, 2nd Session (November 1984).

^bEarly in 1986, the Board of Governors of the Federal Reserve System ruled that bonds that are issued by a corporation with no business operations and no assets other than the stock of the target company, are functionally equivalent to borrowing to buy stock (that is, buying stock on margin). Therefore, these bonds are subject to a 50 percent margin as required by Regulation G. That is, only 50 percent of the stock purchase can be financed with borrowed funds. However, the Board specifically excluded bonds that are issued simultaneously with the consummation of the merger or LBO—a standard practice in LBOs—because the assets of the firm, and not its stock, would be the source of repayment of the bond issue. For details, see Federal Reserve System 12 C.F.R. Part 207 (Regulation G; Docket No. R-0562).

^cW. T. Grimm & Co. "1984 Merger/Acquisitions Set Ten-Year Record: Total Dollar Value Rose to 67% to a Record-Breaking \$122.2 Billion," (Chicago: W. T. Grimm & Co., 1985). Press release, undated, duplicated.

^dDrexel Burnham Lambert, Inc., "Acquisitions and High Yield Bond Financing," submitted to the Subcommittee on Telecommunications, Consumer Protection, and Finance (March 20, 1985) p. 14.

^eMartin Fridson and Fritz Wahl, "Plain Talk About Takeovers," *High Performance* (February 1986) p. 2. Fridson and Wahl use a more restrictive definition of the size of the low-grade market than Drexel does.

investors' risk perceptions.

Marketability vs. Covenant Restrictions. One reason for the growth in the public issuance of low-grade bonds is that buyers of privately placed bonds have become more willing to trade some of the safety they found in the contractual restric-

tions they placed on borrowers in return for the marketability and higher yields of publicly issued low-grade bonds. Private placements are bilateral, customized loan agreements with complex contractual restrictions on borrowers' actions. However, the lack of standardization of these

The Growth of Securities Markets

The growth of low-grade bond offerings is not an isolated phenomenon. In several other financial markets there is also a growing tendency for corporate borrowing to take the form of negotiable securities issued in the public capital markets rather than in the form of nonmarketable loans negotiated with financial intermediaries. For example, in the short-term credit market, commercial paper has become increasingly competitive with bank loans. By the end of 1985, bank loans constituted only 24 percent of short-term debt at large manufacturing firms, compared with 59 percent in early 1974.^a And even in the Eurodollar market, large corporations are more frequently bypassing syndicated loans in favor of financing arrangements that allow them to issue debt under their own names. In fact, by 1985, financing in the form of securities made up 80 percent of total funds raised in international financial markets, compared to only 33 percent in 1980.^b

This move towards borrowing in the form of securities reduces the role of the traditional intermediary that just makes loans and issues deposits. These financial intermediaries will still help link ultimate savers and borrowers, although the way in which they do business may change substantially. The traditional intermediary provides all forms of financial intermediation under one roof: it pools the funds of many small savers, issues insured deposits, provides a payments mechanism, and lends out the funds in a different form to a diverse set of borrowers. The new growth of securities markets implies an "unbundling" of this process with many of these services being provided by different intermediaries: a commercial bank or thrift may originate the loan; an investment bank may package it into a security and distribute it; an insurance company may insure it; and a mutual or pension fund may end up financing it by attracting funds from a large number of small savers.

^aLarge manufacturing firms are firms with more than \$1 billion in assets. Source: *Quarterly Financial Report*, U.S. Department of Commerce (1st Quarter 1975) p. 69, and (4th Quarter 1985) p. 134.

^b*Financial Market Trends*, OECD (March 1986) p. 7, and earlier issues. See also *Recent Innovations in International Banking*, Bank for International Settlements (April 1986) Chapter 5.

covenants and the frequent need for renegotiation when borrowers want to transgress the covenant restrictions make it very costly to have a lot of lenders per issue, or to change the identity of the lenders. As a result, there is not much of a secondary market for private placements. That is, they are not marketable.

Low-grade bonds, in contrast, are public securities and are issued with relatively simple, standardized contracts without cumbersome restrictions on borrowers' actions, in order to facilitate their trading in a secondary market. And in exchange for the added freedom from covenant restrictions, borrowers pay a higher yield on low-grade bonds than on private placements. The marketability and liquidity of low-grade bonds still are not comparable to those of Treasury or high-grade bonds. But the recent development of a secondary market for low-

grade bonds and the increasing number of dealers in this market do make these securities much more liquid and marketable than privately placed bonds.

Historically, life insurance companies, to which most private placements were sold, had no great need for marketability or liquidity. They held long-term liabilities and received highly predictable cash flows. They had no particular preference for marketable securities because they expected to hold their investments to maturity.

But recent economic developments have forced life insurance companies to abandon their traditional buy-and-hold-to-maturity policy and to become more active in money management.¹²

¹²See James J. O'Leary, "How Life Insurance Companies Have Shifted Investment Focus," *Bankers Monthly Magazine*

On the asset side, life insurance companies, as well as other financial intermediaries, have been faced with increased interest rate volatility and higher credit risk.¹³ On the liability side, increases in loan requests by holders of whole life insurance policies and the growth of “separate accounts”—accounts managed temporarily for pension funds or other types of mutual funds—convinced life insurance companies that their liabilities have become much more volatile. In order to gain more flexibility in responding to unexpected cash outflows or to changing perceptions about firms, industries, or interest rates, life insurance companies shifted their investment focus away from nonmarketable, illiquid assets, such as private placements, toward publicly traded securities, including low-grade bonds.¹⁴

Information Costs. A second factor contributing to the growth of the low-grade bond market is that, in recent years, it has become much easier for individual and institutional investors to obtain and maintain information about the condition of corporate borrowers. Thus lenders are now more likely to find it cost-effective to lend directly to smaller and less well-known corporations, rather than indirectly through financial intermediaries such as commercial banks.

(June 15, 1982) pp. 2-28, and Timothy Curry and Mark Warshawsky, “Life Insurance Companies in a Changing Environment,” *Federal Reserve Bulletin* (June 1986) pp. 449-459.

¹³The early 1980s saw severe sectoral problems—for example in the farm and the energy sectors—and a third-world debt crisis. From 1980 to 1983, the business failure rate—that is, the annual number of failures per 10,000 listed enterprises—averaged 76, more than twice its level during the 1970s. See *The Economic Report of the President* (Washington, DC: GPO, February 1986) Table B-92. For evidence on interest volatility, see Harvey Rosenblum and Steven Strongin, “Interest Rate Volatility in Historical Perspective,” *Federal Reserve Bank of Chicago Economic Perspectives* (January/February 1983) pp. 10-19.

¹⁴Timothy Curry and Mark Warshawsky, “Life Insurance Companies in a Changing Environment,” p. 456, report that: “In recent years, however, life insurance companies have been committing to private placements smaller percentages of their investable cash flow: 25 to 30 percent in 1984, down from a historical level of 40 to 50 percent.”

Indeed, recent technological improvements in such areas as data manipulation and telecommunications have reduced greatly the costs of obtaining and processing information about the conditions—whether international or domestic, industry-wide or firm-specific—that affect the value of a borrowing firm. Any analyst now has computerized access to a wealth of economic and financial information at a relatively low cost. New information reaches investors across the world in a matter of minutes. Given the reduction in information costs, the cheapest method of lending to certain smaller and less creditworthy borrowers may no longer require a specialized intermediary as the sole lender to these borrowers, especially after recognizing the other expenses of using the intermediary.¹⁵ For many institutional investors—such as mutual funds, pension funds, and insurance companies—the costs of being informed about certain borrowers have dropped enough that it has become profitable to acquire relatively small amounts of debt directly from those firms. As a result, firms that now issue their own low-grade bonds in the open market face a growing acceptance of their securities.

Risk Perceptions. A third explanation of the growth in low-grade bond offerings is more on the psychological side. Investors are not only better informed about the risks they take on, but they may have also become more willing to invest in risky securities. After the 1930s, the market for newly issued low-grade bonds shrank as most investors—with the losses incurred during the Depression still vividly in mind—turned to high-grade securities and left it to financial intermediaries to manage the risk of lending to less creditworthy borrowers. But as time passed and the memory of the 1930s faded, portfolio managers probably started to discount the proba-

¹⁵These added costs of using a financial intermediary instead of lending directly to a firm by buying its debt securities involve, for example, taxes, administration costs, and the costs of monitoring the condition and behavior of the intermediary.

bility that the economy would again become subject to a major system-wide shock.¹⁶ It is thus possible that, as new generations of portfolio managers with no direct experience of the Depression took over, financial markets as a whole became more receptive to riskier securities, such as low-grade bonds.

SUMMARY

Low-grade bonds are bonds that are rated "speculative" by the major rating agencies and that are therefore considered very risky investments. These bonds are either corporate bonds that have been downgraded, or, more recently, bonds that are issued originally with a rating below investment grade. Original-issue low-grade bonds are issued mostly by corporations that previously borrowed in the form of commer-

cial loans or privately placed bonds.

Several factors seem to have contributed to the growth in low-grade bond offerings. For one, increased volatility in their sources of funds and a worsening of interest rate and credit risk have forced life insurance companies, which are the major buyers of private placements, to shift their investment focus towards assets that are somewhat more marketable and liquid, such as low-grade bonds. Also, improvements in computer technology have lowered the information and monitoring costs of investing in securities and have thus allowed smaller and less known corporations to borrow directly from private and institutional investors. Third, it may be that the favorable post-World War II default experience on low-grade bonds has made investors more receptive towards investing directly in riskier securities, including low-grade bonds.

The growth in low-grade bond offerings thus represents mostly a rechanneling of corporate borrowing, away from individually negotiated loans, towards public securities. As such, it exemplifies a continuing effort by financial market participants to search out the most cost-effective way to channel funds from lenders to borrowers.

¹⁶For a discussion of this type of behavior, see Jack Guttentag and Richard Herring, "Credit Rationing and Financial Disorder," *The Journal of Finance* (December 1984) pp. 1359-1382. As an example, the authors describe the behavior of a driver who has just witnessed a car accident. His immediate reaction is to drive much more cautiously. But gradually, as time passes and the image of the accident recedes from memory, the driver reverts to less cautious behavior.