

ECONOMIC COMMENTARY

Federal Reserve Bank of Cleveland

The High-Yield Debt Market: 1980-1990

by Richard H. Jefferis, Jr.

The February collapse of Drexel Burnham Lambert, which followed five months of turmoil in the junk bond market, signaled the end of a six-year period of sustained growth of that market. Prices of lower-grade bonds declined sharply from September 1989 through February 1990. In the secondary market, some investors found it difficult to locate buyers for their securities. In the primary market, new issues during January 1990 were only one-third of their value a year earlier. New issues during all of 1989 decreased by 11 percent from the 1988 total of \$27 billion, while mutual fund investment in high-yield bonds fell from \$34 billion to \$28 billion.¹ These events, triggered by financial distress in a number of leveraged buyouts that included the slide of the Campeau Corporation into bankruptcy, have engendered predictions of the demise of the modern high-yield market.²

This *Economic Commentary* reviews the growth of that market from virtual nonexistence in 1980 to nearly \$200 billion by the end of the decade, and assesses the impact of recent events on its viability. Three trends in debt formation that contributed to the rapid expansion of the high-yield market are discussed. The first is the overall growth of the economy, which contributed to the rapid expansion of both equity and debt during the 1980s. The second is the substitution of credit-market debt for bank loans in the balance sheets of middle-market customers who had not

previously enjoyed access to the bond market. The third is the wave of leveraged restructuring induced by the Tax Reform Act of 1986.

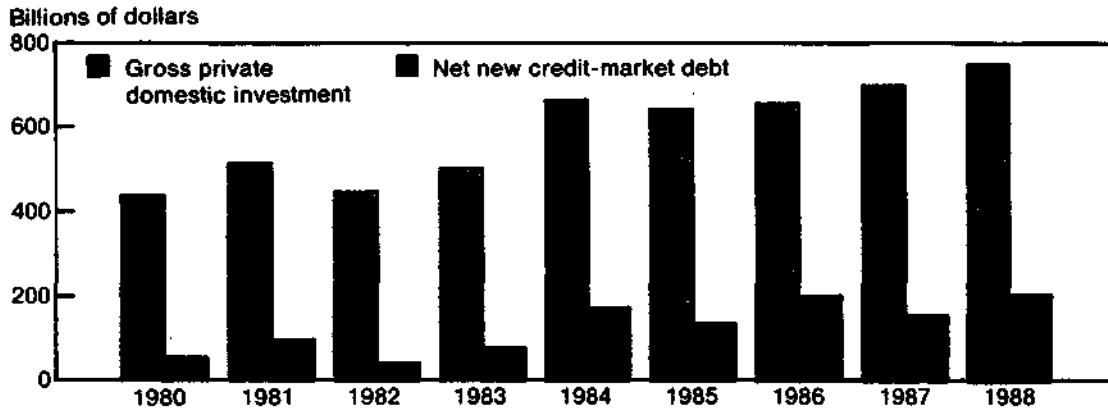
Volume patterns in the bond market, especially the high-yield market, suggest that the third phenomenon may have played itself out. The tax code, however, still provides both investors and corporations with a strong incentive to elect debt rather than equity as a vehicle for financing new investment. Moreover, the dynamic middle-market customers who fueled the growth of this market prior to 1986 continue to represent profitable lending opportunities. The high-yield market will shrink if investors, shaken by recent events, withdraw their capital, but the economic forces that created the market persist, and it is quite unlikely that high-yield bonds will disappear altogether.

■ Economic Growth and Debt Formation

Between 1980 and 1989, nominal gross national product expanded at an annual rate of 7 percent. Businesses spent \$3.6 trillion on new plant and equipment during this period, while outstanding credit-market debt on the balance sheets of domestic nonfinancial corporations increased by \$1.2 trillion. Other factors influenced the formation of credit-market debt during the 1980s, but the contribution of economic growth to this phenomenon should not be overlooked.

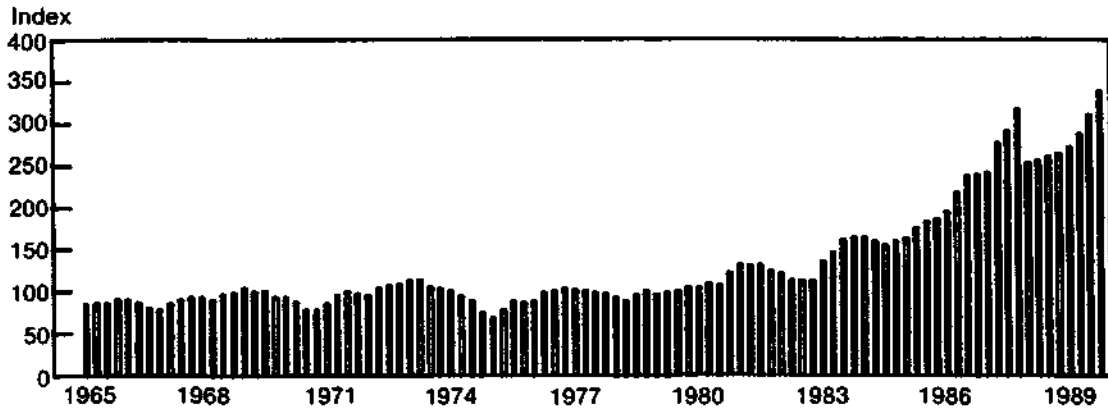
Did the collapse of Drexel Burnham Lambert in February signal the end of the high-yield debt market? Considering that the economic forces responsible for creating the market remain in place, it is unlikely that junk bonds will disappear any time soon.

FIGURE 1 INVESTMENT AND DEBT FORMATION IN THE 1980s



SOURCES: U.S. Department of Commerce, Bureau of Economic Analysis; and Board of Governors of the Federal Reserve System.

FIGURE 2 STANDARD & POOR'S 500 INDEX, 1965-1989



SOURCE: Standard & Poor's Corporation.

Figure 1 shows gross private domestic investment and net new credit-market debt over the course of the decade.³ As always, new debt formation closely tracks the behavior of investment.⁴ (The year of the Tax Reform Act is an obvious exception.) Figure 2 portrays the behavior of equity prices, an indicator of expected future investment opportunities. Equity markets supplied firms with a strong positive signal about the value of investment opportunities throughout the 1980s, contributing to the willingness of businesses to borrow.

■ Credit-Market Debt and Bank Loans

It is convenient for the sake of discussion to partition the decade into three time periods, although the division is

somewhat arbitrary. The first period is 1980-1982, which precedes the growth of the high-yield market and serves as a useful reference point. During the second period, between 1983 and 1985, high-yield bonds became a significant component of new corporate lending, capturing an increasing share of a growing debt market from commercial banks. The Tax Reform Act of 1986 marks the beginning of the third period, when the composition of the high-yield market shifted from middle-market firms seeking to finance new investment toward tax-driven restructuring.

Bank loans and corporate bonds make up the bulk of debt on the corporate balance sheet throughout the decade, as they have during the entire postwar period. Balance-sheet data indicate that the combined market share of these

two sources of funding remained steady during the 1980s, never varying outside a range of 70 to 75 percent. There was, however, a clear trend toward the use of credit-market debt throughout the decade. Figure 3 shows the steady decline of a composite of bank loans, finance company debt, and mortgage debt relative to security market debt that began in the 1970s.⁵

The share of these items in outstanding debt understates trends in new lending activity. Figure 4 portrays the year-to-year change in outstanding bank loans, corporate bonds, and speculative-grade bonds during the 1980s.⁶ Between 1980 and 1982, bank lending accounted for 57 percent of net new corporate credit, while bonds accounted for only 36 percent of that amount. The share of bank lending in net new credit fell by

TABLE 1 CHARACTERISTICS OF HIGH-YIELD ISSUERS
Annual Growth Rates, 1980-1986 (Percent)

Category	High-Yield Firms	Other Firms
Employment	6.7	1.4
Sales	9.3	6.2
Sales (manufacturing firms)	5.6	3.8
Capital spending	12.4	9.9
Capital spending (manufacturing firms)	10.6	3.8

SOURCE: G. Yago (1988—see footnote 7). All figures are percentages.

half, to 26 percent, between 1983 and 1985, while the share of bonds remained steady at 35 percent. Between 1986 and 1988, bank lending accounted for only 15 percent of new credit, while the share of bonds nearly doubled to 61 percent.

The overall growth in debt, and the substitution of bonds for bank loans, fueled the growth of the high-yield market. New issues of speculative-grade bonds rose from \$1.5 billion in 1982 to \$15 billion during 1984. During this period, Drexel Burnham Lambert underwrote virtually 100 percent of the new issues. The strategy that proved so successful at Drexel was the marketing of debt, issued by middle-market firms that had previously depended on banks for credit, directly to sophisticated investors. Insurance companies and pension funds provided most of the capital absorbed by the high-yield market between 1982 and 1984. By 1986, the public had become involved more directly through mutual funds.

The leveraged buyouts and leveraged restructurings of recent years have focused attention on a type of high-yield issuer that differs significantly from the representative borrower of 1983-1986. In a broad survey of U.S. industrial firms covering the period 1980-1986, Yago profiles the issuers of high-yield bonds and contrasts these firms with other U.S. industrial companies.⁷ Table 1 presents some of the findings from this study. Firms in the sample that used high-yield finance are dynamic enterprises, with growth in

sales, employment, and investment that exceeds that of other industrials. Only 3 percent of the firms in the sample that issued high-yield debt used the proceeds for merger or acquisition activity.

The forces that resulted in the substitution of credit-market debt for bank loans on corporate balance sheets during this period are poorly understood. Plausible explanations include a regulatory burden for banks, conservatism in lending induced by the onus of Third-World debt, and advances in information technology that made it possible for investors to monitor the performance of smaller firms directly, making it unnecessary to rely on banks for those services. The evidence necessary to discriminate among these explanations has not yet been accumulated.

It is, however, possible to dismiss on the basis of currently available evidence at least one other explanation of the substitution of bonds for bank debt. Thrift institutions received significant new investment powers under legislation passed in the early 1980s, which enabled them to invest in high-yield bonds.⁸ Some thrifts became active investors in the high-yield market. However, thrift industry investment in high-yield issues, which peaked at a total of \$13 billion in 1986, accounted for only 8 percent of outstanding high-yield issues during that year. Thrift holdings of high-yield debt were never a significant portion of either total thrift industry assets or outstanding high-yield debt.

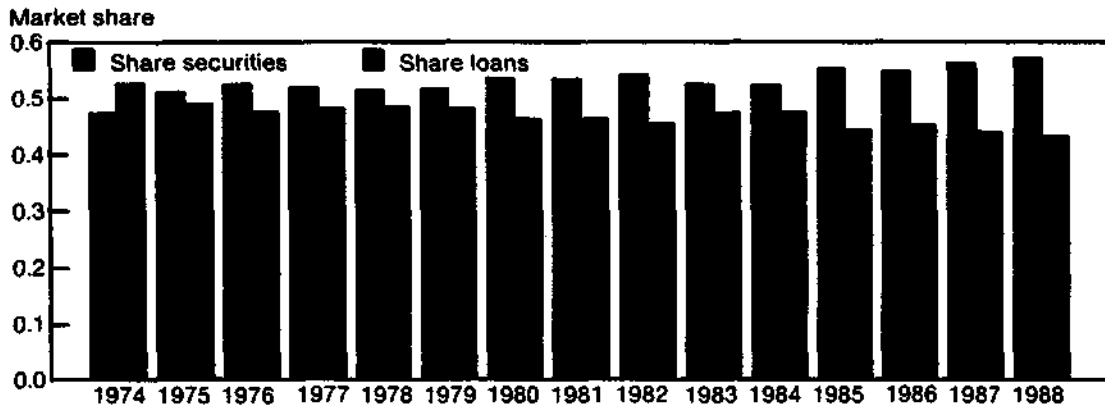
■ The Tax Reform Act of 1986

The biggest year of the decade in the high-yield debt market was not 1988, when leveraged buyout activity reached its zenith, but rather 1986, when the U.S. Congress enacted what may well be the most significant revisions of the tax code in this century. Two features of the Tax Reform Act provide corporations with a strong incentive to substitute debt for equity on the corporate balance sheet. At the corporate level, the curtailment of non-debt tax shields such as the investment tax credit and depreciation allowances eliminated important alternatives to debt for protecting corporate earnings from taxation.⁹ At the personal level, the abolishment of preferential treatment for capital gains enhanced the after-tax value of debt relative to equity.¹⁰ The combination of these factors provided a strong impetus for increased leverage between 1986 and 1989.

Financial economists have long believed that the financial structure of corporations is sensitive to the tax environment. When corporate taxes are calculated, interest payments to investors who hold debt are deductible, while dividend payments to investors who hold equity are not. This feature of the tax code provides firms with a powerful incentive to finance investment through the issue of debt. That incentive is mitigated by firms' preference for the flexibility associated with equity (or equivalently, an aversion to the financial distress that may result from excess leverage), and by the availability of tax deductions other than interest payments on debt. Changes in the tax code that reduce the availability of non-debt tax shields tilt the balance between debt and equity in favor of increased debt.

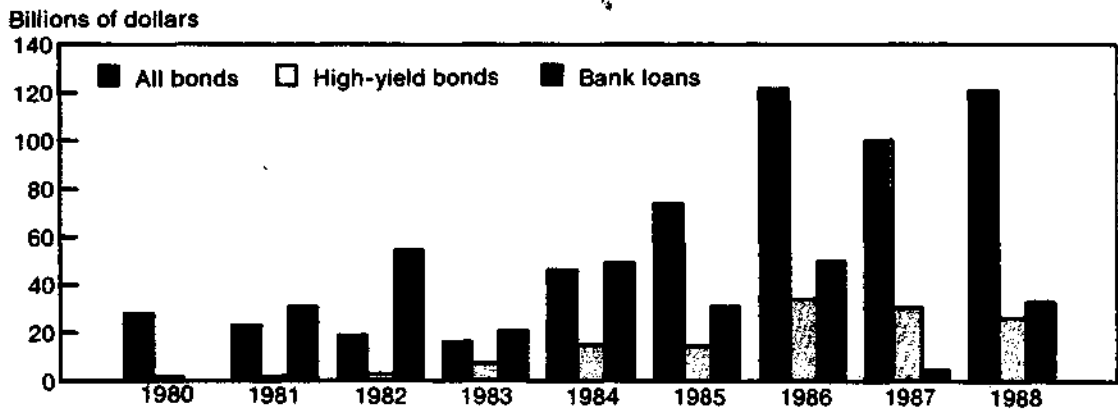
Hard empirical evidence concerning the relationship between the tax code and corporate financial structure has heretofore proved elusive, probably because of measurement problems inherent in financial accounting, and the imprecise timing of tax code revisions. But the Tax Reform Act resulted in such a drastic, instantaneous change in

FIGURE 3 DEBT STRUCTURE OF U.S. NONFINANCIAL CORPORATIONS



SOURCE: Balance Sheets for the U.S. Economy, Board of Governors of the Federal Reserve System.

FIGURE 4 NET CHANGE IN BONDS AND BANK LOANS ON THE CORPORATE BALANCE SHEET



SOURCES: Board of Governors of the Federal Reserve System; and E. Altman (1989—see footnote 14).

the tax environment that it has been possible to detect a response in corporate financial policy. A recent study using a diverse set of U.S. industrial companies documents a \$140 increase in outstanding debt in response to each \$100 decrease in non-debt tax shields associated with the Tax Reform Act.¹¹ Moreover, the observed response of individual firms depends on the dividend policy of the firm prior to the change, suggesting that changes in the personal tax code also affected the financial structure of corporations.

It is also possible to observe a response to the Tax Reform Act in aggregate data. The deviation in the relationship between investment activity and debt formation that is apparent in figure 1 has already been noted. Commercial and industrial lending, and new issues of both investment-grade bonds and

speculative-grade bonds, all increased sharply in 1986. Equity repurchases surged the following year: net issues of equity were negative in 1987. The accumulation of debt following tax reform increased the ratio of debt to equity in all nonfinancial corporations from 0.67 to 0.75 between 1985 and 1988.

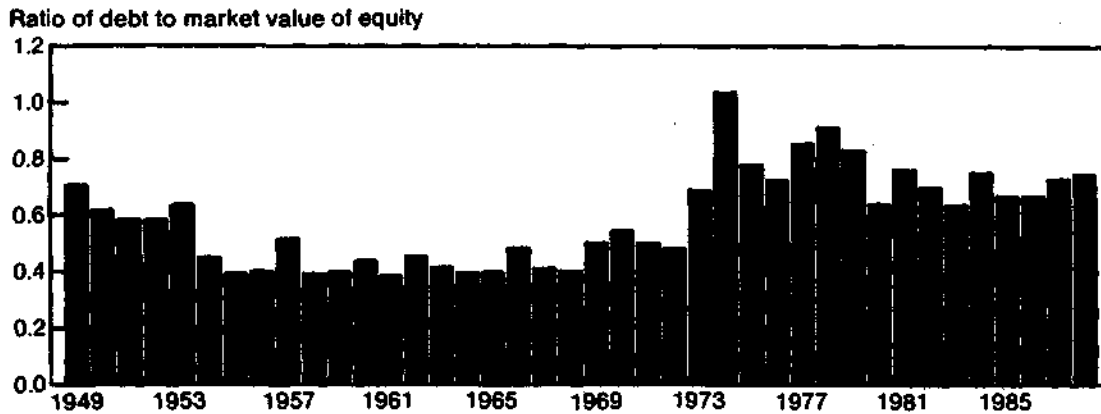
■ Leverage, Debt Quality, and Defaults

The accumulation of debt in the 1980s represents a significant increase in the fixed obligations of corporations. However, during a period when the value of debt on the corporate balance sheet grew by 150 percent, the market value of equity increased by 175 percent, so that the debt-to-equity ratio of nonfinancial corporations actually declined slightly over the past 10 years. As figure 5 shows, debt-to-equity ratios are

currently less than they were during much of the 1970s, a time when stock prices were depressed.¹² Although leverage in U.S. industrial corporations is greater than it was during the 1950s and 1960s, the shift toward more debt in capital structures occurred during the 1970s, not the 1980s.

Nor has there been any widespread decline in debt quality, despite frequent reports to the contrary in the popular press. Moody's Investor Services reports that issues rated Aaa (the firm's highest rating) constituted the most rapidly expanding category of bonds between 1977 and 1989. Issues rated B (the lowest rating for which figures are reported) did take second place in the growth sweepstakes, but by 1989, Aaa issues represented 33 percent of all outstanding issues rated by Moody's, while B-rated issues constituted only 8 per-

FIGURE 5 LEVERAGE IN NONFINANCIAL CORPORATIONS



SOURCE: Balance Sheets for the U.S. Economy, Board of Governors of the Federal Reserve System.

cent of the total.¹³ (Recall that the high-yield category was minuscule compared to the investment-grade category at the beginning of the decade.)

This is not to say that high-yield debt is of the same quality as investment-grade debt. Recent defaults among firms that experienced leveraged buyouts during the 1980s have called our attention to a simple fact: high-yield bonds bear high yields because they are riskier than investment-grade bonds. A number of studies report 10-year cumulative default rates on B-rated issues of 30 percent. In contrast, investment-grade issues enjoy cumulative default rates on the order of 1 or 2 percent.¹⁴ The greater default rates associated with high-yield bonds should not surprise investors: Hickman reported a similar discrepancy in default rates for the 1900–1943 period in his 1958 study. (The default rates reported by Hickman are higher than the modern experience for both investment-grade issues and speculative-grade issues. At least part of the difference is attributable to the fact that the Great Depression is included in his sample.)

A feature of default experience that is far more significant than the average default rate is the sensitivity of defaults to overall business conditions. Defaults among high-quality issues are not especially sensitive to economic growth. In contrast, defaults among lower-grade issues are affected significantly by the

level of business activity. The implication of this sensitivity is that the onset of a recession is likely to be associated with financial distress among a number of high-yield issuers. The \$6 billion in total 1989 defaults, which occurred during a year when economic growth slowed but did not stop, are a reminder of this fact.

The possibility of widespread financial distress among corporate borrowers merits careful consideration from policymakers. Recent analyses of the severe economic depressions that marked the nineteenth century and the first part of the twentieth century suggest that the collapse of credit markets played an important role in these episodes.¹⁵ But the mechanism that induced the collapse of credit appears to have been a significant deflation, or downward revision in expected inflation, which decreased corporate revenues while the value of debt obligations remained fixed, leaving borrowers unable to pay their bills or obtain new credit. The behavior of the money supply and the price level in the United States during the postwar period indicates that this scenario is unlikely, although not impossible.

Moreover, the nonchalant reception that the bankruptcy of Drexel Burnham Lambert received in credit markets suggests that isolated incidents are not apt to trigger a panic.¹⁶

■ **Conclusion**

The spectacular growth of corporate debt during the 1980s was accompanied by the equally spectacular growth of the high-yield bond market. Attributing these phenomena to fads or to greed ignores the fact that neither explanation represents a new force on Wall Street or in the world at large. Financial innovation and the significant restructuring of the U.S. tax code are explanations that hold up much better to careful scrutiny. Recent events are likely to result in increased caution among investors, but the high-yield bond market was created by forces that persist today, and it is unlikely to follow into oblivion the firm credited with its inception.

■ **Footnotes**

1. Price and volume statistics were supplied by IDD Information Services.
2. There was an active market in the U.S. for below-investment-grade bonds between 1900 and 1945. See W. Braddock Hickman, *Corporate Bond Quality and Investor Experience*. Princeton: The Princeton University Press and the National Bureau of Economic Research, 1958.
3. Business investment in plant and equipment is taken from table C-54 of the Economic Report of the President, February 1990. Credit-market debt figures are from Balance Sheets for the U.S. Economy, Board of Governors of the Federal Reserve System, October 1989.
4. The difference between investment and credit-market debt is accounted for by retained earnings.

5. The first composite consists of debt created through intermediaries, while the second focuses on securities issued directly by the firm. The appropriate category for some items (mortgage debt and tax-exempt bonds) is not always clear, but the trend is not sensitive to variations in the definition of the two categories.
6. The data for changes in bank loans and outstanding bonds are from Balance Sheets for the U.S. Economy, op. cit. The overall bond category is comprehensive, encompassing private placements, speculative-grade debt, and convertible debt. The speculative-grade debt figures are for public, nonconvertible debt only, as reported in E. Altman, "The Nature of the Market for High-Yield Bonds: Nature of the Market and Effect on Federally Insured Institutions," Washington, D.C.: U.S. Government Printing Office, May 1988. If private placements were included in the speculative-grade debt series, it would be significantly greater.
7. See Glen Yago, Testimony submitted to the U.S. General Accounting Office hearings on high-yield bonds, U.S. General Accounting Office, 1988.
8. The Garn-St Germain Act of 1982 provided thrift institutions with the authority to participate in a wide variety of new investment activities, including investment in high-yield bonds.
9. The elimination of the investment tax credit alone was designed to raise an additional \$118 billion in revenue at the corporate level between 1987 and 1991. See Joint Committee on Taxation, "Summary of Conference Agreement on HR 3838, The Tax Reform Act of 1986," August 29, 1986.
10. Prior to 1986, 60 percent of long-term capital gains were exempt from taxation. Individuals currently enjoy a greatly reduced incentive for realizing profits in the form of capital gains rather than interest or dividends.
11. See D. Givoly, C. Hayn, A. Ofer, and O. Sarig, "Taxes and Capital Structure: Evidence from Firms' Response to the Tax Reform Act of 1986," Working Paper, Northwestern University, December 1989. By observing individual firms before and after the Tax Reform Act, these authors are able to circumvent some of the measurement problems that plagued previous studies and document a number of responses to the tax-law revision.
12. The impact of rising equity prices on this relationship is reflected in the value of the Standard & Poor's 500 index, which increased by 210 percent between 1979 and 1989. Equity repurchases explain why the market value of outstanding equity grew less rapidly than equity prices. Figures for debt and equity values are from Balance Sheets for the U.S. Economy, Board of Governors of the Federal Reserve System.
13. "Historical Default Rates of Corporate Bond Issuers: 1970 Through 1988," Moody's Investor Services, July 1989.
14. See E. Altman, "Measuring Corporate Bond Mortality and Performance," *Journal of Finance*, vol. 44 (September 1989), pp. 909-22; P. Asquith, D. Mullins, and E. Wolff, "Original Issue High Yield Bonds: Aging Analyses of Defaults, Exchanges and Calls," *Journal of Finance*, vol. 44 (September 1989), pp. 923-52; and Moody's, op. cit. All of these studies report similar figures.
15. See B. Bernanke, "Nonmonetary Effects of the Financial Crisis in the Propagation of the Great Depression," *American Economic Review*, vol. 63 (1983), pp. 257-76; and Charles Calomiris and R. Glenn Hubbard, "Price Flexibility, Credit Availability, and Economic Fluctuations: Evidence from the United States, 1894-1909," *Quarterly Journal of Economics*, vol. 104 (August 1989), pp. 429-52.
16. Historically, widespread banking panics not accompanied by a severe downward revision in price expectations are quite rare. Runs against individual banks associated with fears of financial weakness (that were often warranted) were much more frequent. See Charles Calomiris and Charles Kahn, "Demandable Debt as the Optimal Banking Contract," Working Paper, Northwestern University, July 1989.

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The views stated herein are those of the author and not necessarily those of the Federal Reserve Bank of Cleveland or of the Board of Governors of the Federal Reserve System.

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