

Will Higher Corporate Debt Worsen Future Recessions?

By Jon Faust

In the decade of the 1980s, huge debt-financed takeovers spotlighted the rapid growth in corporate debt in the United States. With the rise in debt, nonfinancial corporations enter the 1990s with debt equal to about 40 percent of gross national product, up almost ten percentage points from a decade ago.

The increase in corporate debt confronts society with a host of important questions. For example, will heavy debt burdens induce managers to run firms more efficiently, allowing the firms to compete better in world markets? Do stockholders benefit from the rise in a firm's debt? Can heavily indebted firms afford to invest for the future?

Among the questions raised by higher corporate debt, however, one emerges as particularly significant for monetary policy: Will higher corporate debt worsen future recessions? This question is important because one goal of policy is to minimize the detrimental effects of recessions.

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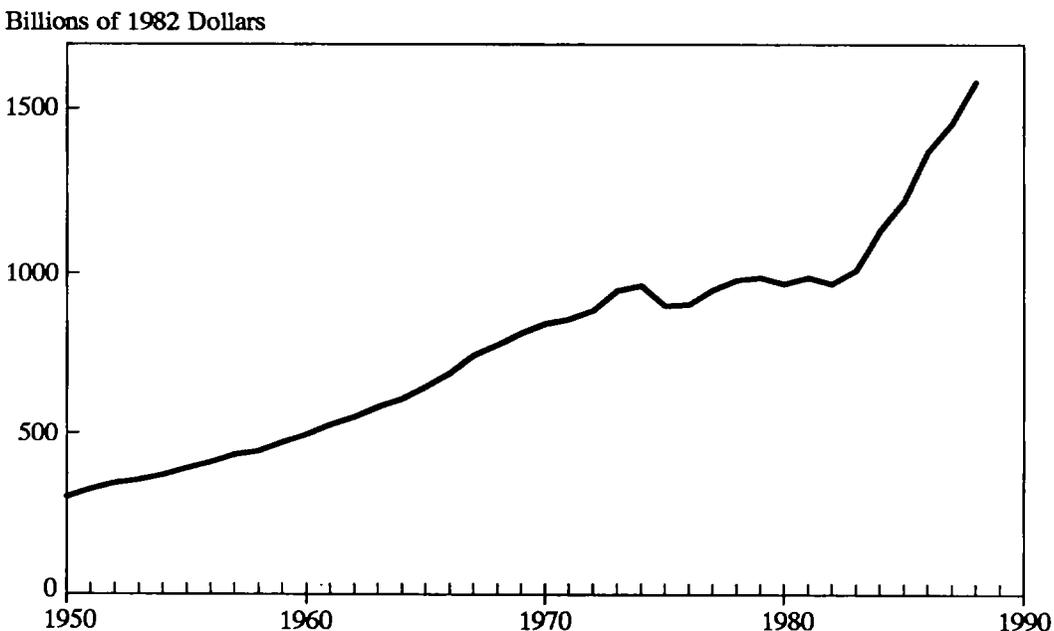
Policy. Policymakers must often balance the inflation-fighting benefits of restrictive monetary policy against the risk those policies might precipitate a recession. How corporate debt will affect the severity of future recessions is an important factor in this balancing act.

This article examines the implications of increased corporate debt for future recessions by considering two related questions. First, will increased corporate debt increase firms' risk of bankruptcy; and second, will increased bankruptcy risk worsen future recessions? While economists have not fully resolved either of these questions, the available evidence supports the conclusion that increased corporate debt will increase bankruptcy risk, which in turn will probably worsen future recessions.

I. The Rise in Corporate Debt

In the second half of the 1980s, corporations amassed a record amount of debt. In dollar terms, corporations took on \$700 billion of additional debt from 1984 to 1988, with total debt rising to about \$1.9 trillion.¹ After adjustment for

Chart 1
Nonfinancial Corporate Debt Adjusted for Inflation



Sources: Board of Governors of the Federal Reserve System, "Balance Sheets for the U.S. Economy 1949-88"; U.S. Department of Commerce, *Survey of Current Business*, various issues.

inflation, the rise in debt was particularly striking; real corporate debt rose 40 percent from 1984 to 1988 (Chart 1). Such reliance on debt represented an unprecedented change in the way corporations finance their business activities. This section reviews the role debt plays in corporate finance and documents the increased reliance on debt in the 1980s.

Corporate reliance on debt financing

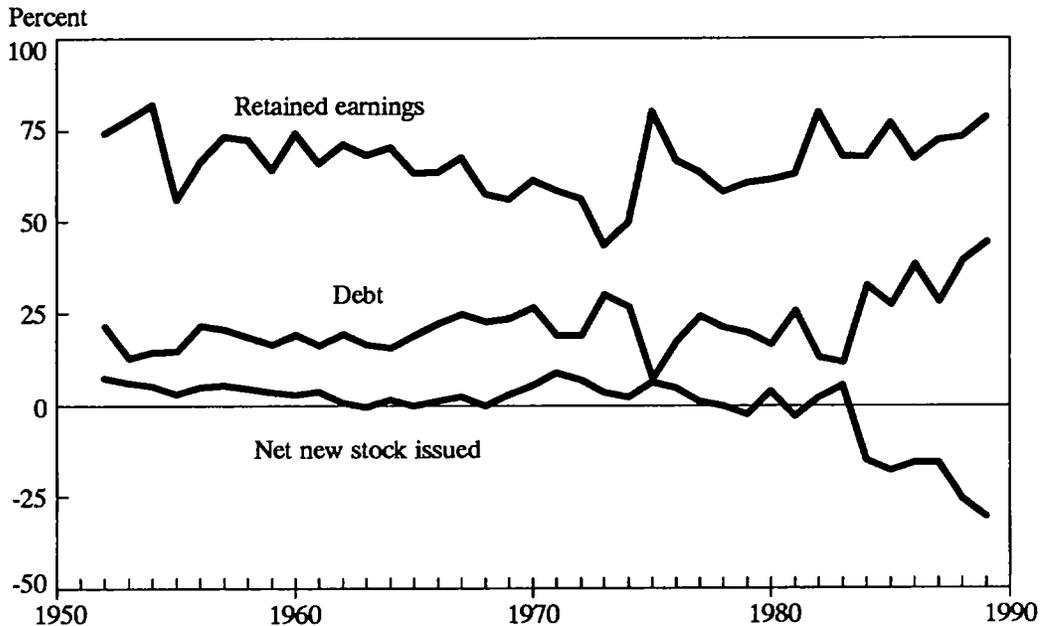
Corporations can raise funds in three ways: take on debt, sell stock, and retain earnings. Debt comprises funds borrowed in any form, with bank loans and corporate bonds the two primary forms of corporate debt. The second major way firms raise funds is by selling new stock in share

or equity issues. The third source of corporate funding is retained earnings, which are the portion of after-tax profits in a given period not paid out to owners of the firm.

Among the three sources of finance, corporations relied more heavily on debt in the 1980s than in the three previous decades (Chart 2).² Prior to 1984, debt's share of total corporate financing fluctuated around an average of 21 percent each year. Since then, debt's share has averaged about 37 percent, rising to 46 percent in the first three quarters of 1989.

The increased reliance on debt has come at the expense of new stock issuance rather than retained earnings. In fact, new stock issuance dropped precipitously after 1984. Prior to then, corporations obtained an average of about 3 per-

Chart 2
Sources of Corporate Finance



Source: Board of Governors of the Federal Reserve System, "Flow of Funds Account," various issues.

cent of their funds each year by selling stock. Since then, corporations have repurchased almost \$500 billion more stock than they have sold. In contrast, retained earnings' share of total funds increased in the 1980s, rising from about 66 percent for the period through 1984 to an average of 74 percent since then. In the first three quarters of 1989, retained earnings' share was 79 percent.

Measuring the burden of increased corporate debt

While the increase in corporate debt in the 1980s was unprecedented, other factors need to be considered in evaluating the financial position of corporations. It is important to take into

account not only the amount of corporate debt, but also corporations' capacity to bear debt. Obviously, a \$100,000 debt that would swamp many small businesses would impose little burden on General Motors.

Financial analysts use two common statistics for measuring the debt burden of a firm, debt-equity ratios and interest-coverage ratios. Called measures of leverage, these statistics measure the size of a firm's debt relative its capacity to repay its debt.

Debt-equity ratios report the ratio of the principal a firm owes on its debt to the firm's equity value, or net worth. A firm with a small debt-equity ratio has little debt compared to its net worth. Such a firm has a small debt burden

because the firm's net worth could drop significantly and the firm would still be able to repay its debts. A firm with a high debt-equity ratio, on the other hand, faces a higher risk that a drop in its net worth would leave it unable to pay its debts. If that happens, the firm is insolvent and, unless reorganized, will ultimately go bankrupt.

Analysts often consider two different ways of measuring debt-equity ratios. The two ratios are based on different measures of the firm's equity value: a market-value measure and a measure based on book value adjusted for inflation. The market value of equity in a firm is, generally speaking, the value of the firm if it were to be sold on the market. For publicly held firms, the market value of equity is the value of all the firm's shares on the stock market. Book value of equity is measured by the net worth of the firm based on the firm's books. This is approximately the net value left over if the firm were broken up, all assets sold at book value, and all debts paid off at book value. The particular book-value measure discussed below adjusts the value of the firm's physical capital—its property and equipment—for the effects of inflation.

The *interest-coverage ratio* relates the size of a firm's interest payments on debt in any period to the amount of cash it takes in during that period. Specifically, it is a ratio of interest payments to cash flow, where cash flow is defined as profits before interest payments, taxes, and depreciation charges.³ A large interest-coverage ratio suggests a substantial portion of a firm's cash intake goes to pay interest on its debt. Thus, even if it remains solvent, the firm may have difficulty making debt-service payments if profits temporarily dip. A solvent firm not earning enough cash to make its interest payments has a liquidity problem. Liquidity problems are less serious than insolvency, and temporary loans or a rescheduling of debt payments will allow the firm to remain in business.

Debt burdens have increased

The interest-coverage ratio and book-value debt-equity ratio reveal a similar picture of rising debt burdens in the 1980s (Chart 3).⁴ From 1984 to 1988, the debt-equity ratio rose from 36 percent to 52 percent. From 1984 to 1989, interest payment's share of each dollar of cash flow rose from 15 to 21 cents.

The evidence provided by these measures reveals leverage is far higher now than in the 1950s and early 1960s. And, although debt burdens reached high levels in the 1973-75 recession, today's levels are considerably above that earlier peak.

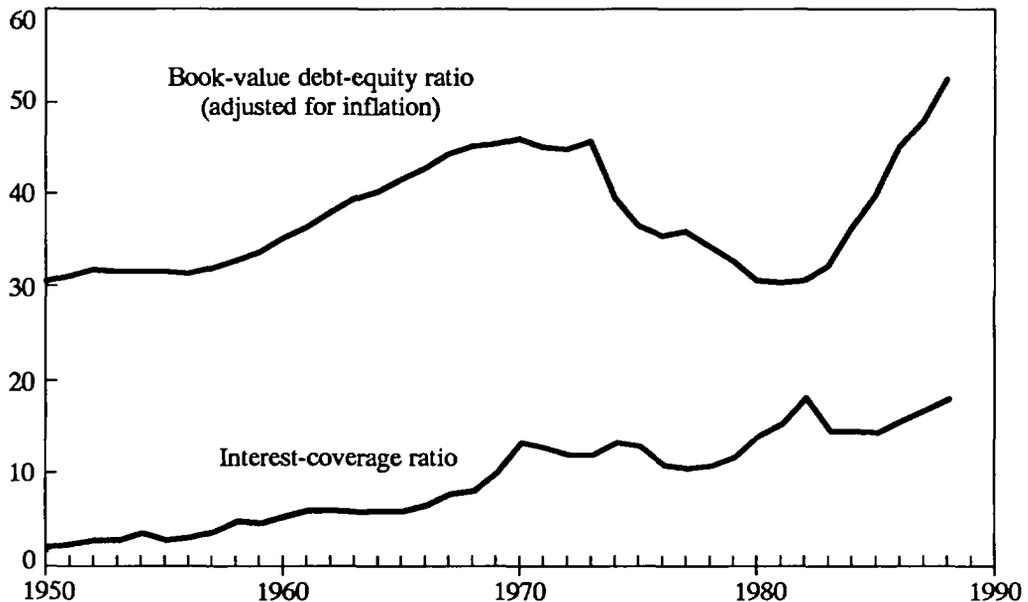
A contrasting view of debt burdens is provided by the market-value debt-equity ratio (Chart 4). This measure has fluctuated since the late 1970s, showing no increase during the rapid debt growth of the 1980s. While the market-value measure agrees with the other two measures that debt burdens are higher now than in the 1950s and early 1960s, the market-value debt-equity ratio reached its highest level in 1974, well above the current level.

Why do these measures of the debt burden diverge? An important reason is that the interest-coverage and book-value measures of leverage tend to reflect current or past capacity to bear debt, while the market-value measure is more forward-looking. For example, the interest-coverage ratio relates the current interest burdens to current corporate cash flow. Thus the growth in the interest-coverage ratio indicates the debt burden has risen relative to current cash flow, but the ratio will not reflect any anticipated rise in cash flow. Similarly, the book-value debt-equity ratio measures debt relative to the value of assets when they were purchased (adjusted for inflation), but it will not reflect any appreciation in these assets due to enhanced business prospects.

In contrast, the market-value debt-equity ratio is forward-looking. The market value of a firm should be related closely to the profits the

Chart 3

Interest-Coverage Ratio and Book-Value Debt-Equity Ratio



Source: Board of Governors of the Federal Reserve System, "Balance Sheets for the U.S. Economy 1949-88"; U.S. Department of Commerce, *Survey of Current Business*, various issues.

firm's owners are likely to accrue in the future. The rapid rise in the market value of equity in the 1980s, under this view, reveals that market participants expect a rise in corporate profitability and are therefore willing to pay more for company shares.

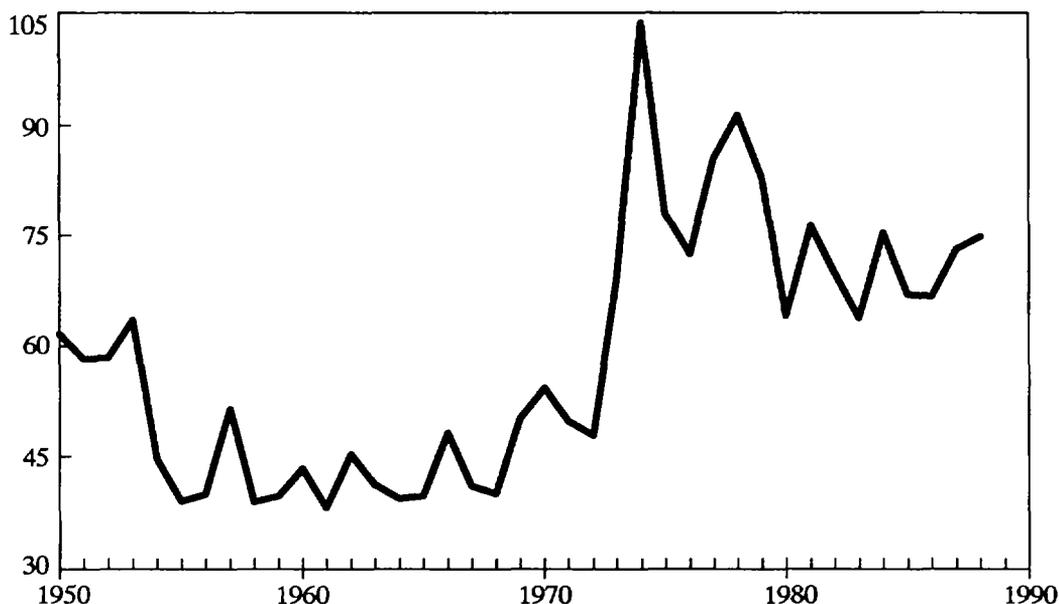
Some analysts suggest the market-value measure may be the most useful measure of the debt burden.⁵ Of course, if corporate profitability does rise, then the capacity to bear debt will also rise. Thus, the market-value debt-equity ratio may suggest that, in the view of stock market participants, corporate debt has not risen appreciably relative to future corporate profits. If the market forecasts of future profits are correct, the market-value debt-equity ratio provides good reason to believe debt burdens have not risen.

There are several reasons to place more weight on the measures showing a rise in the debt burden, however. The stock market has shown wide swings in the 1980s, casting some doubt on whether the market always provides an accurate forecast of future corporate profitability.⁶ This doubt is underscored by the continued rise of the interest-coverage ratio, which reveals that six years into a robust economic expansion the rapid profit growth signaled by the strong stock market has not yet materialized.

From a monetary policy perspective, there is another reason to place emphasis on measures that show the debt burden rising relative to current capacity to pay. Policymakers must consider what will happen in a future recession. That is, what will happen if the expectations of higher

Chart 4

Market-Value Debt-Equity Ratio



Source: Board of Governors of the Federal Reserve System, "Balance Sheets for the U.S. Economy 1949-88."

profits reflected in the market-value measure of the debt burden do not materialize? In this case, the interest-coverage ratio or book-value debt-equity ratio may present a more accurate picture of the debt burdens.

In sum, the evidence indicates corporate reliance on debt has risen significantly in the 1980s. Debt has risen significantly relative to corporate capacity to pay, as measured by book value of equity and current cash flow. The market-value debt-equity ratio provides reason to question whether the debt burden has risen relative to the prospective corporate earnings reflected in the market value of equity. In assessing the likely effects of a future recession, however, the measures not anticipating increased earnings are probably the most relevant.

II. Increased Corporate Debt and Bankruptcy Risk

Analysts who are concerned increased debt may worsen future recessions have focused on the risk of bankruptcy faced by heavily indebted firms. These analysts argue that heavy debt burdens will magnify the detrimental effects of future recession by increasing bankruptcies and by subjecting more firms to distress near bankruptcy. Their argument has two important and distinct steps: first, increased debt burdens will increase the risk of bankruptcy; and second, increased bankruptcy risk will worsen future recessions. The present and following sections take up these two points in order.

Resolving whether increased corporate debt

has increased firms' risk of bankruptcy is complicated because the 1980s witnessed many changes that may have mitigated bankruptcy risk. Examination of the available evidence suggests, however, that the current level of corporate debt has heightened the bankruptcy risk firms will face in any future recession.

Factors affecting bankruptcy risk in the 1980s

Most economists agree increased debt burdens have tended to increase the risk of bankruptcy.⁷ By definition, a firm with a heavier debt burden has larger liabilities relative to its assets than a less burdened firm. Any fall in the value of the heavily indebted firm's assets, therefore, is more likely to send the firm into bankruptcy.⁸ Economists who argue bankruptcy risk has not increased do not deny higher corporate debt has increased bankruptcy risk; rather, they argue increased bankruptcy risk has been attenuated by other changes in the economy.

Several changes in the 1980s may have reduced the bankruptcy risk associated with a given level of debt. These changes allow firms to more accurately control cash and have more flexibility in meeting their debt obligations. Either type of change increases the likelihood firms will be able to meet their debt obligations.

One major development in the 1980s was the rise of the junk (low-grade) bond market. While the junk bond market allowed firms to take on more debt, it also may have made it easier to bear large amounts of debt in two ways. First, the junk bond market is a new source of funds to corporations who cannot issue investment-grade bonds. In the past, these corporations were often forced to rely on bank borrowing, which is difficult to obtain in periods of tight credit. These corporations can now turn to the junk bond market when they need to borrow additional funds to meet financial obligations. Second, some analysts believe junk bonds are more closely held

than traditional debt. That is, the debt holders take a more direct and active interest in the firms than do holders of other forms of debt. If so, debt holders may be unlikely to force a distressed firm to declare bankruptcy, preferring instead to reschedule debt payments and to aid in reorganizing the firm. Whether junk bonds are more closely held than traditional debt, however, is debatable.

A number of other innovative financing techniques emerged in the 1980s that may reduce bankruptcy risk. For example, strip financing may have increased the tendency of debt holders to negotiate with a distressed firm, rather than forcing bankruptcy. In strip financing, investors hold a fixed combination of the firm's debt and equity instruments. Because debt holders also have an equity stake, they may have an incentive to keep the firm afloat.⁹

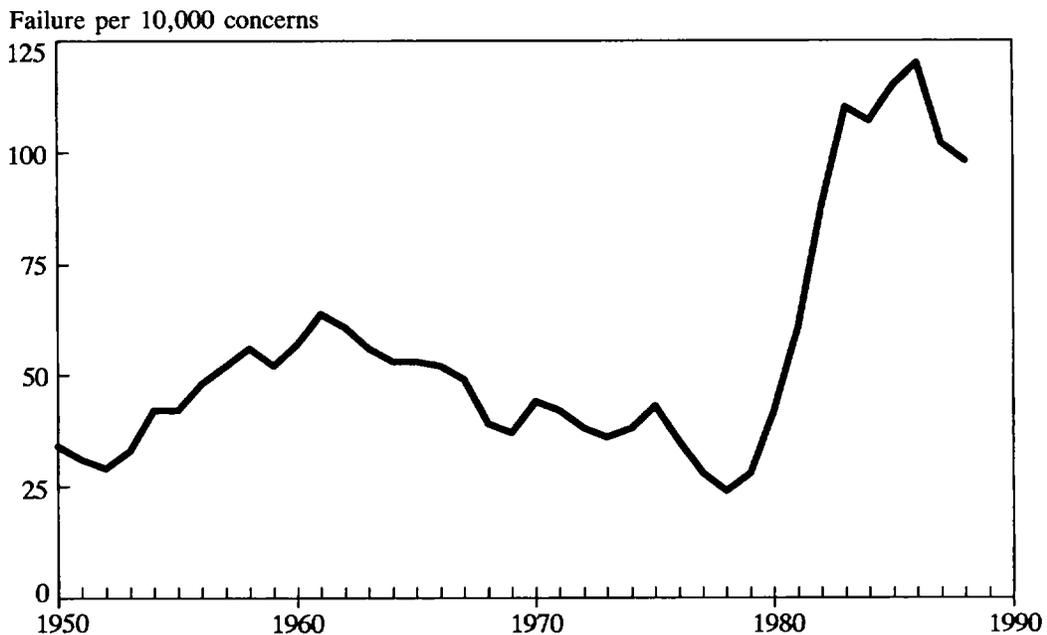
Also, firms' liabilities other than debt have become more flexible in the 1980s, allowing firms to safely take on more fixed debt liabilities. For example, since the deep recession of 1981-82, labor unions seem to be more willing to give concessions to a distressed firm than in the past. If so, heavily indebted firms may have more flexibility than in the past to reduce obligations to labor when distressed.¹⁰

The net effect of these changes on bankruptcy risk is difficult to gauge based on argument alone. While the increased debt burden certainly has tended to increase the risk of bankruptcy, these other developments may have mitigated the increased risk in part or in whole. Fortunately, evidence on the performance of heavily indebted firms sheds some light on this subject.

Evidence indicates bankruptcy risk will be higher in future recessions

The important question is whether the combined changes in the 1980s have increased the likelihood firms will go bankrupt in the next

Chart 5
Business Failure Rate



Source: Dun and Bradstreet, *Business Failure Record*, various issues.

recession. Answering this question is complicated because many of the relevant changes have occurred in the seven years since the last recession in the United States. Thus, there is no direct experience upon which to base judgments about how changes in the 1980s will affect firms in recession.

The risk of bankruptcy in the next recession, however, can be assessed in two ways. The first approach is to examine empirical evidence from the late 1980s to see if increased debt burdens did in fact raise bankruptcy risk. Evidence of heightened bankruptcy risk during this period of economic expansion will provide a basis for concluding firms with high debt burdens face a higher risk of bankruptcy in the next recession. The second approach involves simulating the

effects of past recessions to predict the bankruptcy risk firms would face if similar events occurred with today's corporate debt burden.

Bankruptcy risk evidence from the late 1980s. The first piece of evidence to consider when assessing bankruptcy risk is the dramatic rise in business failures in the 1980s.¹¹ Business failures per 10,000 firms averaged 109 from 1985 to 1988, compared with 49 from 1950 to 1984 (Chart 5).

Although a number of analysts point to this evidence as strong support for the view that bankruptcy risk has increased, others contend the interpretation of the data is clouded by two special factors. First, bankruptcy laws changed in 1979, increasing the attractiveness of declaring bankruptcy. Second, because new businesses

always have a high rate of failure, the failure rate in the current economic expansion may be distorted by a large number of business starts.

These two special factors probably cannot account for the entire rise in the measured failure rate, however. While the first factor, the change in the bankruptcy laws in 1979, may have permanently increased the rate of failures, the increase in the rate due to this factor was probably completed in the early 1980s. In contrast, the measured failure rate rose through 1986. The second factor, the failure of newly formed businesses, does seem to have been important in the early part of the expansion, as the share of failures accounted for by young firms (age five years or less) rose sharply. In the late 1980s, however, this share dropped to an unusually low level, while the failure rate remained high. Thus, while interpretation of the failure rate data is complicated, the data do seem to reflect an increased risk of bankruptcy.

Further evidence on bankruptcy risk is provided by assessments of corporate bond riskiness. Two major services, Moody's and Standard and Poor's, rate the quality of corporate bonds. These ratings are intended to reflect the likelihood the issuing corporation will meet its debt obligations. Evidence from both rating services shows a general decline in the quality of bonds. For example, since the end of the recession in 1982, Moody's has downgraded the bonds of 154 firms per year and upgraded only 72. Rather than abating as the economic expansion continued, the downward trend in quality ratings accelerated. From 1983 to 1985, downgrades exceeded upgrades by about 45 per year. From 1986 to 1989, downgrades outnumbered upgrades by over 100 per year.¹² In contrast, over the entire period from 1973 to 1982, downgrades exceeded upgrades by an average of only 24 per year.

It might be argued the rating services are downgrading firms simply because financial measures of their debt burdens have increased and, therefore, the ratings do not reflect the

changes in the 1980s that may have made debt less risky. This objection, however, is not supported by the interest rates paid on these bonds.

The objection suggests higher quality borrowers are being improperly assigned to lower rating categories. If so, then the average quality of bonds in the Baa category, for example, should have increased in the 1980s. And, if Baa bonds were safer than in the past, the interest-rate premium Baa bonds pay relative to Treasury bonds (which have no default risk) should have decreased. In actuality, the interest-rate premium on Baa bonds over ten-year Treasury bonds has grown.¹³ Since 1984, this spread has been 213 basis points, about 20 basis points larger than in any expansion before the 1980s, and nearly as large as the spread of 215 basis points experienced in the deep recession of 1973-75. Thus, gauging by the premium investors require to hold these bonds, Baa bonds have become more, not less, risky.¹⁴

In brief, evidence from the late 1980s suggests bankruptcy risk has increased. The actual failure rate is up significantly and the rated quality of bonds has fallen. Even after the downgrading of bonds, interest rate premium data reveal bonds within a given category are riskier than before.

Bankruptcy risk evidence from simulations. Bankruptcy risk normally rises in recessions as business slows and profits fall. Thus, evidence from the economic expansion in the late 1980s may not reveal the full risk corporations will face in a future recession. One way to shed light on bankruptcy risk in recession is to use a statistical model to simulate the effect of a future recession on firms with today's debt burdens.

A recent study by Bernanke and Campbell (1988) provides just such an assessment. They examined 643 large firms with varying debt burdens, simulating the effect on the firms of recessions resembling the severe recessions of 1973-75 and 1981-82. Their study concludes that

such severe recessions would lead to severe problems for 10 percent of the firms in their sample. In a recession as in 1981-82, about 10 percent of the firms would be unable to make debt payments and would require additional lending or a rescheduling of payments in order to avoid bankruptcy. A recession as in 1973-75 would present greater problems, with about 10 percent of firms becoming insolvent. Recent work extending and updating Bernanke and Campbell's study to consider the rise in debt burdens in 1987 and 1988 suggests an event greater share of firms will face distress in a future recession (Warszawsky 1990).

The simulation evidence must be viewed with caution because it does not reflect the changes in the financial environment in the 1980s that may have increased the firm's ability to avoid bankruptcy. Furthermore, simulations of this kind cannot anticipate the steps a firm might take to avoid bankruptcy if the risk were to arise. The basic point, however, is consistent with the evidence from the late 1980s, indicating a significant increase in bankruptcy risk.

In summary, available evidence supports the view businesses will experience higher bankruptcy risk in a future recession than if debt burdens were smaller. Given this conclusion, determining the cost bankruptcy risk will impose on the economy in a future recession is very important.

III. Increased Bankruptcy Risk and Economic Recession

Since the buildup of corporate debt began, analysts have questioned how heavier debt burdens might affect the economy in a future recession. The major concern probably is not that increased corporate debt will precipitate economic recessions. Rather, the concern is that bankruptcies and near-bankruptcies of heavily indebted firms will increase the severity of recessions caused by factors other than debt. This sec-

tion examines the implications of increased bankruptcy risk, concluding that bankruptcy risk will probably contribute to the severity of future recessions.

Alternative views of bankruptcy risk

The cost of bankruptcy risk can be divided into direct and indirect costs. The direct costs, incurred only if a firm actually goes bankrupt, are the legal and administrative costs associated with resolving the bankruptcies. The indirect costs may be incurred by any firm facing a high risk of bankruptcy, whether or not the firm ultimately avoids bankruptcy. The indirect costs arise because of the damage high bankruptcy risk can do to a firm's business dealings. While most analysts agree there are direct and indirect costs of bankruptcy risk, their views on the magnitude of these costs differ widely.¹⁵ The views of most analysts fall into two broad categories: the large-cost view or the small-cost view.

Analysts supporting the *large-cost view* of bankruptcy typically emphasize the indirect costs of bankruptcy risk. In this view, high bankruptcy risk adversely affects the choices of everyone involved with a firm—investors, managers, suppliers, employees, and customers.

Investors, aware they may lose their money, may charge a large premium to lend to a firm near bankruptcy or simply be unwilling to lend to the firm.¹⁶ Faced with a high cost of borrowing and the prospect that borrowing may become altogether impossible, a firm's managers may cancel otherwise profitable investment projects. The potential loss of credit sources may also lead managers to enhance the store of cash on hand by liquidating inventories and cutting production.

Because high bankruptcy risk precludes stable, long-run business relations, a firm facing high bankruptcy risk could also have troubles with employees, suppliers, and customers. For example, top-quality employees may refuse to work for a firm near bankruptcy, and a manufac-

turing firm near bankruptcy may have difficulty finding suppliers willing to produce specialized parts.¹⁷

In short, high bankruptcy risk may precipitate general retrenchment of a firm's business activities under the large-cost view. High-risk firms will have problems taking advantage of new business opportunities and sustaining old ones.

Analysts who defend the *small-cost view* of bankruptcy see the business world quite differently. In this view, investors can protect themselves from bankruptcy risk by hedging and diversifying their portfolios. Because investors can protect themselves, firms near bankruptcy do not have problems borrowing funds. Further, long-term relations are unimportant in this view: when a firm goes bankrupt, its employees, suppliers, and customers switch to other firms swiftly and without cost. Since bankruptcy poses so few inconveniences in this view, employees, suppliers, and customers do not hesitate to deal with firms near bankruptcy.

Thus, the primary costs associated with a high risk of bankruptcy in the small-cost view are the direct administrative and legal expenses of resolving actual bankruptcies. Supporters of this view believe these direct costs of bankruptcy are small and, therefore, argue high bankruptcy risk poses no significant problems for firms or the economy.¹⁸

Case studies reveal significant cost of bankruptcy risk

One way to assess opposing views of the cost of bankruptcy is to examine actual cases of firms facing a high bankruptcy risk. Noteworthy examples are provided by the major bankruptcy or near-bankruptcy cases of Campeau, Chrysler, Braniff, and Texaco corporations. In each of these cases, the corporations involved suffered many of the symptoms predicted by the large-cost view of bankruptcy.

For example, Campeau, a large retailing conglomerate, declared bankruptcy in January 1990 while struggling under heavy debt burdens amassed in several large buyouts. When major financial problems surfaced several months before the bankruptcy, Campeau had serious problems with suppliers. Many apparel manufacturers cut off Campeau's credit lines and stopped shipping merchandise to Campeau's department stores (Agins 1989).

When Chrysler approached bankruptcy in 1979, it contended its share of new car sales dropped two percentage points due to buyer concern the firm would fail (Altman 1984). Customers were concerned about long-run support for their automobiles. Similarly, Braniff, which was twice reorganized under bankruptcy in the 1980s, faced a "fear of buying" by consumers who were worried their Braniff tickets might not be honored (McKanic 1989).

While these and similar cases seem to provide support for the large-cost view of bankruptcy, analysts cite two arguments that temper this conclusion.¹⁹ First, there is the chicken-and-egg problem. Did high bankruptcy risk lead to business difficulties, or did business difficulties lead to high bankruptcy risk? For example, did Chrysler really lose sales because of fear Chrysler would not back their cars in the future, or was Chrysler facing bankruptcy because buyers believed Chrysler's cars were inferior?

The second problem with such evidence is that it only considers the loss of the distressed firm and not the gain to its competitors. In the small-cost view, financial distress of one firm merely shifts business from the distressed firm to its competitors, with only minor costs to the economy as a whole. This point has some merit. For example, while the traveler who avoided Braniff may have had to switch to more time-consuming routes, the actual cost to society of this inconvenience may be minor.²⁰ Because these two problems raise questions about the cost of bankruptcy risk in the cases of Campeau,

Chrysler, and Braniff, analysts look to the case of Texaco and Pennzoil, which may be less clouded by these problems.

From 1984 to 1988, Texaco and Pennzoil were engaged in litigation over Texaco's preemption of Pennzoil's attempt to purchase Getty Oil. The original verdict required Texaco, a firm valued at about \$8 billion, to pay Pennzoil over \$10 billion. Ultimately, the case was settled for about \$3 billion, but Texaco faced four years of financial distress while the case was being resolved.

The case of Texaco and Pennzoil was analyzed by Cutler and Summers (1988), who suggested it was not subject to the two problems mentioned above. First, financial distress was caused by a single management decision on Texaco's part, not an overall pattern of bad management that had driven the firm to near bankruptcy. Second, it may be possible to tell if Texaco's loss was offset by the gains of others. The legal judgment involved a transfer of assets from Texaco to Pennzoil. In the small-cost view of bankruptcy, any loss to Texaco from the transfer should provide a gain to Pennzoil, with few other effects. Thus, in the small-cost view, the legal dispute should have had little effect on the combined value of the two firms (after the legal and administrative costs to the two firms are deducted). Cutler and Summers found, however, the litigation reduced the combined wealth of investors in the two firms by about \$2 billion and reduced the combined wealth of equity holders by almost 10 percent.

In assessing the cause of this tremendous drop in value, one of the central explanations put forward by Cutler and Summers was that the financial distress imposed on Texaco adversely affected its ability to do business.²¹ Texaco experienced very similar problems with creditors and suppliers to the ones experienced by Campeau, Chrysler, and Braniff. For example, one market analyst noted of Texaco, "They've been unable to refinance debt, they've missed

opportunities in the oil patch, and the diversion of management has to cost something" (Crossen and Siconolfi 1987).

Overall, the evidence from case studies is consistent with the view that firms facing high risk of bankruptcy may have serious difficulty sustaining their business dealings. Furthermore, the evidence suggests some significant losses of distressed firms are not simply offset by gains to the firm's competitors. While the evidence from these cases supports the large-cost view, more general evidence must also be considered.

Broader evidence supports the large-cost view

The best general evidence supporting the large-cost view of bankruptcy deals with the difficulties financially weak firms have in obtaining credit. The evidence suggests firms facing a substantial risk of bankruptcy find it difficult or extremely costly to obtain funds.²²

The most powerful evidence linking bankruptcy risk and borrowing probably comes from the Great Depression. The balance sheets of small and medium-sized firms deteriorated dramatically from 1929 to 1933. The fall in firm income raised interest-coverage ratios, and firm net worth shrank with the general deflation in the economy. The combined effect of these factors was to make it extremely difficult for small and medium-sized firms to obtain credit, which probably contributed to the severity of the Great Depression (Bernanke 1983).

More modern evidence links bankruptcy risk with how firm investment is affected by cash flow. Cash flow is important because if managers cannot finance investment out of cash flow, they must either cut back on investment or turn to credit markets to obtain funds. The large-cost view predicts some firms facing difficulty raising funds will reduce investment.

A number of studies confirm the prediction that when firms are short of cash they tend to

reduce investment rather than raise additional funds in credit markets (Gertler and Hubbard 1988). In a recent study, for example, it was found a one-dollar decrease in cash flow reduced firm investment by between 20 and 50 cents (Fazzari and others 1988). This more general evidence supports the contention bankruptcy risk may greatly affect firms' access to credit.²³

While much evidence supports the large-cost view of bankruptcy, however, some important problems are still unanswered. For example, although the evidence is quite suggestive, it is difficult to quantify with any precision the cost of a given level of bankruptcy risk. Furthermore, neither the large-cost nor the small-cost view offers a good explanation for why corporations chose to take on so much debt in the 1980s. Until more is known about what caused the rapid growth in corporate debt, any conclusion about the implications of the rise in debt for bankruptcy must be viewed with caution. Nonetheless, while these objections serve to emphasize that the cost of bankruptcy risk is not fully understood, neither objection overthrows the central conclusion of the large-cost view.

Altogether, the case studies and modern and historical evidence provide considerable evidence supporting the view that firms facing a high risk of bankruptcy may have substantial difficulties sustaining their business operations. Because bankruptcy risk is likely to rise in recession, firms are likely to face these problems when the economy is weakest.

Implications for future recessions

Overall, the analysis above suggests two important conclusions regarding future recessions. First, because of increased debt burdens, a significantly larger portion of firms than in the past may face a high risk of bankruptcy in a future recession. Second, the high risk of bankruptcy may pose important obstacles to these firms in raising funds and in their other business

dealings, causing them to curtail business activities. What then are the implications of these two conclusions for the performance of the economy in future recessions?

Perhaps the most ominous implication is that the retrenchment of heavily indebted firms in recession may adversely affect other firms. For example, when a firm cuts back investment and production, it reduces the earnings of the firms from which it buys raw materials and investment goods. In turn, these firms may be forced into the same cycle of cutting production and investment.²⁴

Financial institutions may also play an important role in propagating the recessionary forces.²⁵ The failure of some borrowers to meet their debt-service obligations could contribute to liquidity or solvency problems of banks or other financial institutions. Just as deterioration of a firm's financial conditions may lead the firm to cut production, financial institutions faced with similar problems may curtail lending and take other steps to increase their liquidity.²⁶ Reduced lending, of course, would magnify the problems of nonfinancial firms.

How important are these consequences of heavier debt burdens likely to be in a future recession? Views on this question differ widely. Henry Kaufman (1986, p. 22) has argued, "Huge debt will add a very troubling dimension to the next business recession. If a major economic and financial upheaval is to be avoided, official policymakers must act with alacrity." In contrast, Lawrence Summers (1988, p. 130) has written, "Corporate debt is to national economic policy about what disputes with Norway over fishing rights are to foreign policy."

The evidence presented here supports a less extreme position than either of these. The rise in corporate debt probably does pose risks for the economy in a future recession. Yet the 1980s rise in debt must be kept in perspective. As long as the United States has had corporations, it has had corporate debt and corporate bankruptcies.

Thus, the economy has long been vulnerable to the problems discussed here. The significant rise in corporate debt in the 1980s will probably intensify this vulnerability, however, worsening future recessions.

IV. Summary

The rapid growth of corporate debt in the 1980s has raised many important questions regarding how increased debt may enhance or diminish U.S. economic performance. This article has focused on a potential cost of increased corporate debt, namely, whether increased debt will worsen future recessions. The article has not addressed the potential benefits of increased debt,

such as enhanced corporate efficiency. Thus, the conclusions of this analysis form only one part, albeit an important part, of a total analysis of increased corporate debt.

The implications of increased corporate debt for future recessions hinge on two questions. First, will more debt raise the risk of bankruptcy; and second, will a higher risk of bankruptcy increase the severity of future recessions? The article finds that increased debt will raise firms' bankruptcy risk in future recessions and that higher bankruptcy risk is likely to cause firms problems in sustaining their business activities. For these reasons, increased corporate debt will probably worsen future recessions.

Endnotes

¹ The data on sources of corporate finance are from the Federal Reserve Board of Governor's flow of funds accounts and cover nonfarm, nonfinancial corporations. The numbers presented in this article are generally the most recent at the time of publication. Some data are not released as rapidly as others, however, so for various series the most recent data available will range from 1987 to 1989.

² Total corporate financing is defined as capital expenditures plus the net increase in financial assets of corporations plus a statistical discrepancy. The retained earnings measure is total internal funds plus an inventory valuation adjustment.

³ Net interest payments are used, defined as interest paid on debt less any interest earned on financial assets. There are many definitions of cash flow. While the interest-cover ratios based on these measures tell the same story of rising debt burdens, the value of the ratios may differ substantially. The cash flow measure used here is profits before net interest payments and taxes plus book-value depreciation.

⁴ For a more sophisticated analysis with similar results to those here, see Warshawsky 1990, Bernanke and Campbell 1988, and Taggart 1985.

⁵ See the discussion in Bernanke and Campbell 1988.

⁶ For example, the stock market collapse in October 1987, which did not seem to be justified by any expected change in profitability, provides an important reason to question

the reliability of the market.

⁷ Indeed, to many economists who favor rising corporate debt, it is the increased risk of bankruptcy risk that yields part of the benefit of debt. For example, bankruptcy risk may provide the impetus for firms to reorganize on a more efficient basis (Jensen 1988).

⁸ This point is generally true in economic theory. For example, in finance theories in which the debt burden is irrelevant to business decisions (such as the famous theory originally laid out in Modigliani and Miller 1958), debt raises fixed obligations, but does not alter revenues. This must increase the circumstances in which a firm fails to meet its obligations. The point is more subtle in theories (called agency cost theories) in which debt may alter business decisions and revenues. In most agency cost theories, however, increased debt burdens do raise bankruptcy risk.

⁹ Other financial instruments that have become prominent in the 1980s include interest-rate swaps and interest-rate futures. Both of these may allow corporations better to manage their debt liabilities.

¹⁰ Indeed, a large part of shareholder gains observed in leveraged buyouts may be the result of concessions by labor (Shleifer and Vishny 1988).

¹¹ In the Dun and Bradstreet data, business failures include more than just bankruptcies. Business failures "consist of businesses involved in court proceedings or voluntary

actions involving losses to creditors'' (Dun and Bradstreet 1988). Certain categories of firms were added to the pool considered by Dun and Bradstreet in 1984. Strictly, this invalidates comparing the pre-1984 and post-1984 data. The general perspective reported here carries over to breakdowns of the data, however, suggesting this point may not be of major importance.

12 These data on upgrades and downgrades were compiled using Moody's published ratings (Moody's various issues).

13 Similar results are obtained for other rating categories.

14 This use of a market indicator to judge risk is consistent with the possibility, raised in Section I, that today's stock market may be unduly optimistic. Whether justified or not, such optimism would be expected to shrink risk premia.

15 The costs of bankruptcy have been debated by economists primarily in the context of a "capital mix" debate. In this debate, the question is whether the debt-related costs of bankruptcy risk are large in the sense they offset the tax advantages of using debt instead of equity financing. The capital-mix issue is different from the issue considered in this article, which is whether bankruptcy risk will impose large costs on the economy in the event of recession. This recession issue deals with costs borne by the firm's investors and costs borne by society, while the capital-mix question only considers costs borne by investors. Further, the costs of bankruptcy risk in a recession are premised upon the occurrence of recession, whereas in the capital-mix debate the costs are unconditional, expected costs based on the likely course for the economy. Given these two facts and the fact the tax advantage of debt has often been quite large, it may be bankruptcy risk has small costs in the capital-mix debate, but still has important adverse implications for the economy in a recession.

16 Bankruptcy risk can damage the lender-borrower relation, causing lenders to become concerned about the quality

of the managers' investment projects and about how the managers will use borrowed funds. These problems are called "agency problems." Jensen and Meckling 1976 is the seminal paper on this topic.

17 If the firm actually goes bankrupt, bankruptcy laws may compound the problems a firm faces by placing severe restrictions on the activities of firms during bankruptcy proceedings.

18 Warner 1977 suggests these direct costs of bankruptcy are quite small, but Altman 1984 disagrees.

19 Altman 1984.

20 For example, in the months before Braniff's bankruptcy, no direct commercial flight operated between Philadelphia and Kansas City except Braniff's.

21 Cutler and Summers discuss several explanations. For example, they note the possibility Pennzoil's managers would waste the award. This possibility suggests investors are suspicious of managers and is consistent with the large-cost view of bankruptcy. They also suggest legal and administrative costs were probably far below \$2 billion. The remaining possibility discussed was that the loss in value was simply due to investors acting irrationally.

22 Gertler and Hubbard (1988) review this evidence.

23 While this association between investment spending and cash flow has long been noted, economists have proposed many possible explanations. Because some of these explanations are inconsistent with the large-cost view of bankruptcy, this evidence must be viewed as supportive of, but not definitive regarding, the large-cost view. See the discussion in Fazzari and others 1988.

24 Stiglitz and Greenwald (1989) emphasize these problems.

25 Benjamin Friedman (1986) suggests the economy faces large risks in this regard.

26 The recent plight of savings and loan institutions may provide examples of this sort of behavior.

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