

# ECONOMIC COMMENTARY

## Debt-Deflation and Corporate Finance

by Jerome S. Fons

1980s, but since have returned to, and even have surpassed, the leverage ratios experienced in the early 1970s, despite the disinflationary environment that has prevailed since 1980.<sup>7</sup>

A somewhat different way of looking at this measure that is favored by financial theorists is to use market values of debt and equity. Also shown in chart 1, this series behaves quite differently than its book-value counterpart. For instance, the collapse of stock prices following the first major oil price shock (in late 1973) sent this ratio soaring. Investors systematically reduced their assessments of the value of the equity of American firms. In recent years, this ratio has stabilized somewhat, helped in part by rising equity prices, though it remains far above levels prevailing before 1972.

Do either of these measures cause us to infer that corporate capital structures have degenerated to the point that their liabilities should be considered "junk" (that is, below investment grade)? Or, rather, is the trend towards debt-based financing a natural response to the creation of the economic stabilizers and expectations of stability that have been developed since the Great Depression?

There may, in fact, be many factors that have led to the current appetite for debt financing, none of which seriously contradicts the principles set forth by the traditional prudent investor guidelines. As was discussed above, it is considered perfectly acceptable for industries with stable earnings to employ a higher proportion of debt financing. The perception of increased stability of the overall economy, therefore, should lead to an increase in the percent-

age of leverage that is considered safe for all firms.

In chart 3, we present a time series representation of the percentage change in pre-tax corporate profits since 1910. Excluding the Great Depression and the Second World War, the volatility of the growth of corporate profits appears to have declined in recent years. Indeed, for the period covering 1910 to 1928, the variance of the percentage change in corporate profits is 7.1 percent. The same measure for the years 1945 through 1985 is 2.3 percent.<sup>8</sup>

The rational response to such a reduction, once it is regarded as permanent, would be to reduce the cushion of equity by taking advantage of the gains from leverage. Among these gains is the tax shield afforded by the deductibility of interest payments by borrowing firms. Seen in this light, the trend toward higher debt levels and the emergence of markets for low or unrated debt securities may suggest that the perceived probability of failure and/or bankruptcy costs (and the associated stigma) have been reduced over the past few years.<sup>9</sup>

If today's economic environment is in fact perceived to be less volatile, are rating agencies reacting justifiably when they downgrade the credits of firms that increase their leverage? The rating agencies claim to consider many factors beyond simple accounting ratios when assigning ratings to corporate debt. They try to take

a broad view of the circumstances facing the industry in light of overall economic developments. By using criteria that seemed appropriate in decades past, but that no longer may be appropriate, rating agencies may have failed to take account of the possible reduction in certain business risks. Or, perhaps corporate debt ratings are intentionally biased downward simply because the agencies want to avoid the potentially high cost of a ratings mistake.

### Conclusion

The effectiveness of various programs designed to protect against economic disruptions (both real and financial) have yet to face a serious challenge. Many respected analysts believe that the next recession will provide that challenge, with consequences potentially as severe as those experienced in the 1930s.

If the public and private promoters of debt-based financing have miscalculated and overestimated the stability of the economy, then we may find ourselves being pushed by bankruptcies into Fisher's debt-expansion trap. Keeping us out of the trap, and protecting the economy from the debt-deflation syndrome, would require extensive governmental assistance that would come out of the pocket of every taxpayer.

In any event, we appear to be dealing with new rules of prudent borrowing behavior that have been created and shaped by the belief that we *have* developed a "stabilized" economy. Our nation's corporations, as well as its households and government, may be just beginning to test these new rules.

8. The corresponding means for the two periods are 9.5 percent and 6.6 percent, respectively.

9. See, for instance, Walker F. Todd, "Aggressive Uses of Chapter 11 of the Federal Bankruptcy Code," in *Economic Review*, Federal Reserve Bank of Cleveland, Quarter 3, 1986.

Federal Reserve Bank of Cleveland  
Research Department  
P.O. Box 6387  
Cleveland, OH 44101

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Over the past few years, the rapid growth in the level of public and private domestic debt, and growth in the level of foreign debt owed to American banks, has been a major source of concern for our legislators and financial regulators.

This concern centers on the possible negative effects that debt buildup might have on the economy as a whole and on industry in particular.

In this *Economic Commentary*, we will first discuss the theoretical dangers faced by an overleveraged, debt-based economy. Against this background, major economic stabilizers and the effect that expectations of economic stability may be having on corporate financing decisions will be considered.

First, the historical context. Probably the first serious consideration of the macroeconomic effects of excessive debt accumulation was that of the distinguished economist and author Irving Fisher, who died in 1947.

In a 1933 paper, he notes that debt is a complex phenomenon.<sup>1</sup> It is not a simple, one-dimensional factor. In addition to the total of dollars owed, one must also take into account the maturity structure of the debt—that is, the points in time at which various payments come due. Moreover, the concept of overindebtedness is a relative one, which is dependent upon such factors as total national wealth, national income, and the availability of liquid assets.

Fisher thought that the severity of many historical business cycles could not be explained by the traditional theories used by classical economists. Those theories

tended to focus on things like the relative over- and under-production of various commodities, their relative prices, and the effects of disturbances (fire, earthquakes, pestilence, etc.) from "outside" the economy. Although certain forms of disturbance might succeed in explaining much of the cyclical expansion and contraction of business activity, he felt that major downturns required something extra: namely, overindebtedness and deflation. The existence of these conditions was considered sufficient to cause a disruption in all other economic variables. In particular, Fisher felt that growing overindebtedness tended to exacerbate overspeculation, which would increase until the following scenario began to unfold.

First, asset liquidation by overindebted borrowers would turn into distress selling. The distress selling would cause a contraction in bank deposits as loans were retired. In addition, asset sales would take place at "fire sale" prices, leading to a fall in the overall price level. Lower prices would then reduce business profits, causing a reduction in business net worth, thereby leading to bankruptcies. The loss of confidence in the economy could also lead to the hoarding of convertible currency and to bank runs. In such a world, nominal interest rates would fall, while real rates rose. The overall effect would be a reduction in output, employment, and trade.

Fisher felt that, in these circumstances, distress selling could cause the price level to fall faster than debt could be liquidated.

This would result in real debts rising, rather than falling as intended. Only through some form of reflation could catastrophe be avoided. Moreover, he reasoned that deflation resulting from any cause other than overindebtedness would not have the same devastating consequences.

Among the causes of overindebtedness envisioned by Fisher was the existence of new opportunities to invest at above-normal prospective profits. The development of new inventions and technologies provides incentives for such prospects. The lure of large dividends, as well as capital gains made possible by excessive borrowing, contributes to the bubble effect envisioned in his scenario. In addition, an "easy money" or low-interest-rate policy might have the same effects. Finally, the reckless promotion of investment opportunities (which unnecessarily raise expectations), in combination with fraud, also contributes to overindebtedness.

The failure of monetary authorities to offset rapid deflationary forces by creating more liquidity through open-market operations, currency issuance, or placement of Treasury funds in the banking system, may have been responsible for the severity of past great depressions.<sup>2</sup> Indeed, Fisher felt that the Roosevelt administration's successful reflation in 1932 was the chief factor in arresting the economic decline that would have otherwise continued unabated.<sup>3</sup> If the decline had gone unchecked, the strain on financial institutions could have eventually spread to the government,

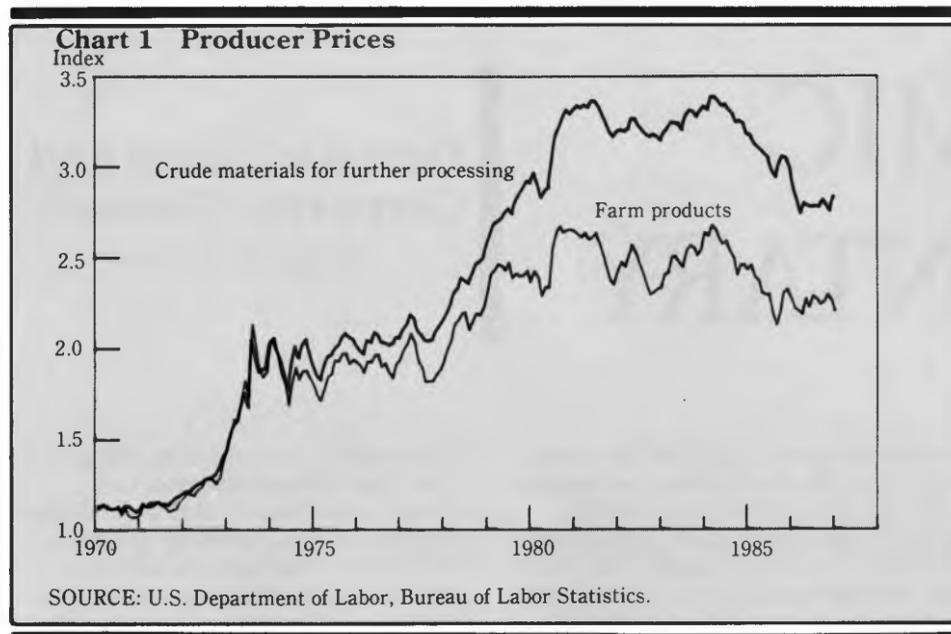
*Jerome S. Fons is an economist at the Federal Reserve Bank of Cleveland. The author would like to thank Mark Sniderman and Walker Todd for their helpful comments.*

*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.*

1. Fisher, Irving. "The Debt-Deflation Theory of Great Depressions," *Econometrica*, vol. 1, no. 4, Oct. 1933, pp. 337-57.

2. Most notably, 1837, 1873, 1893, and 1929.

3. Another well-known factor was the simultaneous, large increase in federal spending. The financing for this stimulus may have been aided by Federal Reserve purchases of Treasury debt.



perhaps leading to some form of revolution. Fisher notes that uprisings in the farm sector were already under way in 1933.

#### Lessons for the '80s

The parallels between Fisher's scenario and today's economy, at least within certain sectors, are quite compelling. The decline in the prices of agricultural and mining commodities, in oil, and in some sense steel, has led to a dramatic rise in the bankruptcy rates of firms within these industries over the past few years.<sup>4</sup> Commercial and residential real-estate markets in portions of the country in which these industries have a significant presence also have experienced similar problems. Heavily indebted, developing countries face similar strains that, in turn, are transferred to the U.S. banks that have made loans to these countries.

Although Fisher's scenario appears to be unfolding in certain areas of the economy, large portions of the economy, however, appear to be somehow insulated from this distress. In view of this, it is reasonable to ask whether some economic sectors are more prone to the debt-deflation syndrome than others.

Almost all of the affected industries are involved in the production of basic or primary commodities. These same sectors witnessed very high investment returns in the inflationary period that ended at the

beginning of this decade. Chart 1 plots price indices for farm products and crude materials for further processing. Note the dramatic rise, especially in crude materials prices, that occurred in the late 1970s. The prospects for continued high returns may have led to overcapacity in these industries that, in hindsight, can be characterized as excessive speculation. During this period, there was no shortage of loanable funds for firms engaged in the production of these commodities. In turn, this may have contributed to their willingness to carry high levels of debt, causing the banks and savings and loans (S&Ls) exposed to these industries to suffer losses as prices fell.

The fact that our overall economy has not experienced a major depression over the past 50 or so years, however, may indicate that Fisher's theory is no longer relevant. Indeed, several major economic "stabilizers" that have been created since the Great Depression may be preventing the unfolding of Fisher's scenario. Deposit insurance is one example.

Although bank failures are reaching post-1933 record numbers today, no retail depositor has suffered losses (on amounts within the insurance coverage limits).<sup>5</sup> The disastrous, cascading bank failures envisioned by Fisher have not materialized. Other economic stabilizers that help maintain balance in the economy are unemployment insurance, social security, and a progressive tax system.

Effective monetary policy can also counteract deflationary forces and help sta-

bilize the economy. In some respects, for example, the recent rapid increase in liquidity may be an important factor that has helped to protect the overall economy by isolating the problems of our troubled sectors. The growth permitted in the narrow definition of the money stock, M1, for instance, has reached an annual rate of 12 and 15 percent in the past two years, versus a 1974-1984 annual growth rate of roughly 7 percent. An overly tight monetary policy designed to keep M1 within lower limits could have spread contractionary impulses to other highly leveraged portions of the economy with much more serious consequences nationwide.

In a broad sense, the deflation scenario has already manifested itself to some extent throughout our economy. Fisher himself pointed out that, since expectations of future inflation are usually part of financial and wage contracts, problems can result if the inflation rate doesn't meet these expectations.

After reaching an annual rate as high as 13.5 percent in 1980, for example, inflation, as measured by the Consumer Price Index, declined to around 1.9 percent in 1986. This disinflation probably was unanticipated, with consequences not unlike those resulting from a deflationary environment. In this disinflationary context, certain real interest rates may have become almost as high as nominal interest rates, closely approaching the debt-expansion trap outlined by Fisher.

#### Risk-Taking and Corporate Debt Growth

The current tendency of society to accept higher levels of debt may indicate an increased tolerance towards risk-taking. Institutional factors also may have emerged recently that serve to spread or otherwise shift certain forms of risk away from the individual creditor. People are less inclined, for example, to hold the debt issues of firms directly. Increasingly, individual savers hold claims to large, well-diversified funds with managers who claim to possess expertise in credit evaluation. In addition, many funds take advantage of hedging instruments to minimize the exposure of investors to unexpected economic events.

Because of the combination of monetary policy, economic stabilizers, and diversified investment opportunities, investors may feel that they are somehow protected

against economic downturns, and thus exhibit a readiness to accept higher levels of debt.

The increase in the overall level of debt may also have resulted from the abandonment of traditional risk-minimizing standards for corporate finance as a result of expectations that the economy faces little risk of a major depression.

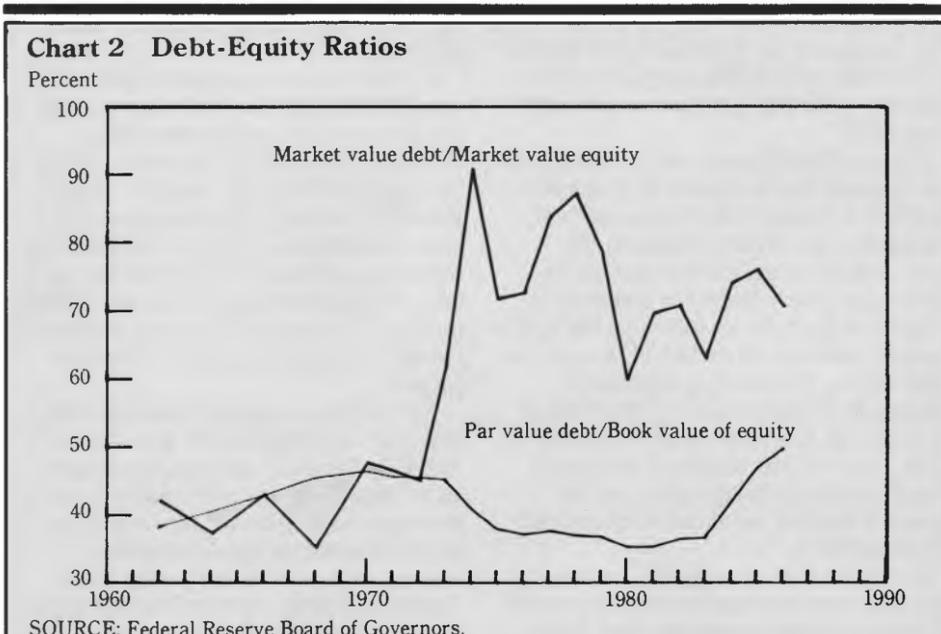
Traditional wisdom held that high levels of owners' equity, as a proportion of total capital, constitutes the best strategy for the prudent corporation. The role of equity is that of a "cushion" that serves to protect creditors in the event of an unforeseen business disruption. The high-equity firm can absorb a succession of periods of weak (or negative) earnings without the need to declare bankruptcy because it can always suspend dividends or otherwise exploit paid-in capital.

The credits of these high-equity firms are invariably valued more highly by investors than those of firms with more leveraged capital positions. Because the likelihood of bankruptcy (and the risk to owners' equity) is somewhat lower for high-equity firms, investors will generally require a lower rate of return on their equity shares, implying that, for a given level of earnings, the stock prices of high-equity firms will be valued more highly than those of highly leveraged firms.

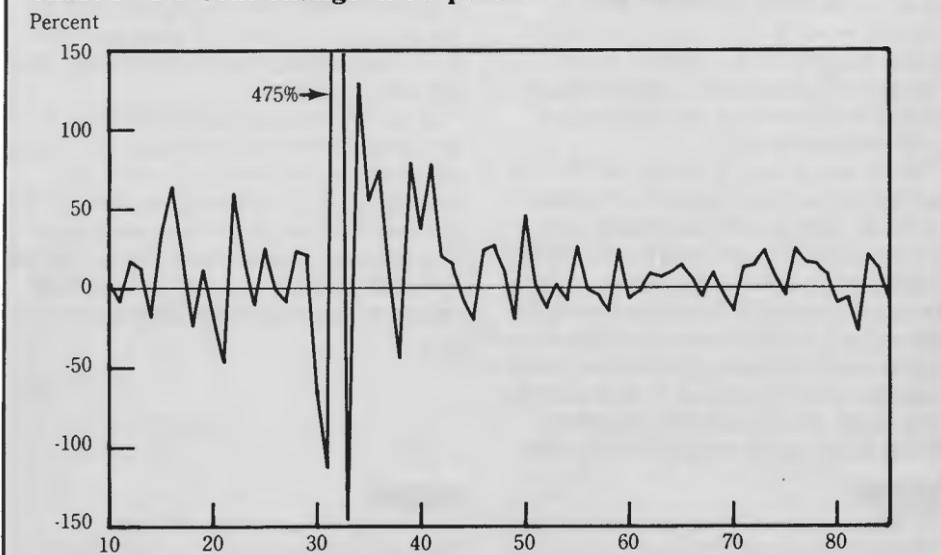
Using essentially common sense coupled with observation, Graham and Dodd were among the first to establish what are now considered the traditional guidelines for the valuation of corporate securities.<sup>6</sup> Their rules of thumb were designed to assist the individual in his choice of suitable investment opportunities. With the spectre of the Great Crash firmly in mind, they saw their mission as steering the unwise away from speculative actions that might lead to the misvaluation of financial assets.

Through their recommendations, they hoped that the wise investor would force prudent behavior onto the management of corporate America. Toward this end, Graham and Dodd specified limits on the financing arrangements of firms, though they recognized that some variation should be expected because of different circumstances faced by each company. As a result of their efforts, the industry of ratio analysis was created.

Many of the Graham and Dodd guidelines involved accounting and operational variables. In particular, it was their conviction that an industrial company should, in



#### Chart 3 Percent Change in Corporate Profits Before Taxes



fact, have long-term debt outstanding so long as it did not represent more than 35 percent of total book capital (liabilities, plus owners' equity). For firms in industries with very stable earnings, such as utilities, a debt-to-total-capital ratio of 50 percent was acceptable.

In later editions of their classic book, Graham and Dodd acknowledged, but gave short treatment to, the growing body of research that indicated that, except for taxes and bankruptcy costs, the value of a firm is invariant to its capital structure.

ods, implying that today's balance sheet ratios are closer to "typical." See Robert A. Taggart, Jr. "Have U.S. Corporations Grown Financially

They stressed instead the view that firms with debt financing above recommended levels constitute speculative enterprises and are, therefore, not worthy of the prudent analyst's attention.

Chart 2 is a plot of the ratio of the aggregate book value of the debt of nonfinancial corporations to the book value of equity. What emerges is a view of corporate America that conforms fairly closely to the ideal world of Graham and Dodd. Note that corporate balance sheets improved during the late 1970s and early

Weak?" in *Financing Corporate Capital Formation*, edited by Benjamin M. Friedman, Chicago: University of Chicago Press, 1986, pp. 13-33.

4. Indeed, last summer's bankruptcy filing by LTV Corp. caused 1986's corporate default rate to reach one of the highest levels in postwar experience.

5. Bank failures have occurred at an annual rate of nearly 200 per year in the first two months of 1987, versus 145 for all of 1986.

6. Graham, Benjamin, and David L. Dodd. *Security Analysis: Principles and Technique*, 3rd ed., New York: McGraw-Hill, 1951.

7. Data collected and analyzed by Robert Taggart indicate that the use of corporate leverage from the mid-1940s to early 1960s was unusually conservative when compared to surrounding peri-