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How Firms Cope with Financial Distress

How do companies cope with financial distress, and at what cost? According to a new NBER study by **Paul Asquith, Robert Gertner, and David Scharfstein**, companies in trouble do one or more of the following: restructure both public and private debt through direct negotiations; offer to exchange cash or securities for public debt; get an infusion of new capital; sell assets, or merge; reduce capital expenditures; and/or file for Chapter 11 reorganization.

In **Anatomy of Financial Distress: An Examination of Junk-Bond Issuers** (*NBER Working Paper No. 3942*), the authors study 102 companies that issued high-yield junk bonds in the 1970s and 1980s, and subsequently got into financial trouble. For this study, financial distress is defined in terms of interest coverage ratios. That is, if the firm's earnings before interest, taxes, depreciation, and amortization are less than 80 percent of its interest expense in any one year, or 100 percent of its interest expense in any two years after issuing junk bonds, it is considered financially distressed.

The authors estimate the causes of the shortage in cash flow that led to each firm's financial distress. They find that 60 percent of the cash flow shortage was the result of a decline in the firm's performance relative to other firms in its industry, and 24 percent was caused by a decline in industry performance. High leverage was responsible for only 16 percent of the shortage in cash flow.

The authors learn that outside of formal bankruptcy proceedings, banks almost never forgive principal on their loans. They rarely provide new financing. While they often waive covenants and defer principal and interest payments, they also force accelerated payments and increase their collateral.

Banks do not play much of a role in resolving financial distress, despite their relationship with the firm. Indeed, all the firms that restructured only their bank debt and did not restructure their public debt or real assets, went bankrupt. Real debt relief appears to come from subordinated public creditors, if at all.

“Banks play a limited role because of the presence of subordinate public debt. Bank-led bailouts primarily benefit the subordinated creditors since they are the residual claimants.”

The authors suggest that banks play such a limited role *because* of the presence of subordinate public debt. Bank-led bailouts primarily benefit the subordinated creditors since they are the residual claimants. Because the banks are always senior, and in many cases secured, they do well in bankruptcy. Therefore, their incentive to help the company is somewhat limited. In fact, firms with secured bank debt are 34 percent more likely to file for Chapter 11 than firms with unsecured bank debt.

The authors further find that asset sales are an important means of avoiding bankruptcy: only 3 out of 21 companies in the sample that sold over 20 percent of their assets went bankrupt. But, companies in poorly performing or high-leverage industries (so that there is less debt capacity in the industry to finance an acquisition) are less likely to sell assets.

Public debt restructuring through exchange offers is also crucial for avoiding bankruptcy, the authors find. However, the more public debt issues a company has, the likelier it is to file for Chapter 11.

Surprisingly, there is no evidence that companies with better performance are more successful in dealing with financial distress. Better companies (measured by operating income and cash flow shortages) are no less prone to go bankrupt, sell assets, or reduce capital expenditures. In fact, 83 percent of the firms in the sample reduced capital expenditures from the year before the onset of distress to the year after. And, the reductions in capital expenditure were large.

Asquith, Gertner, and Scharfstein are somewhat puzzled by why there aren't more comprehensive debt restructurings and fewer costly Chapter 11 filings in their sample. They speculate that either Chapter 11 is *not* very expensive, or that there are substantial impediments to out-of-court restructurings. Their finding that companies with complex debt structures are more prone to go bankrupt supports the latter view.

Minimum Wage Causes Job Losses for Youths

A 10 percent increase in the minimum wage causes a 1 to 2 percent decline in the number of employed teenagers and somewhat smaller declines in employment for young adults, according to a new NBER study by **David Neumark** and **William Wascher**.

“In states with high minimum wages, introducing a subminimum equal to the lower federal minimum wage would offset about 35 percent of the teenage job loss caused by state minimum wages.”

In **Evidence on Employment Effects of Minimum Wages and Subminimum Wage Provisions from Panel Data on State Minimum Wage Laws** (*NBER Working Paper No. 3859*), the authors examine the effects of *both* federal and state minimum wages. Al-

though few states set minimum wages above the federal level during the 1970s and much of the 1980s, fully 13 states did so by 1989. The federal minimum remained at \$3.35 per hour from 1981–90, when it was increased to \$3.85. It is now \$4.25.

Neumark and Wascher find that allowing “subminimum” wages for teenagers reduces the job losses caused by minimum wages. On average, subminimum provisions of minimum wage laws allow teens to earn about 75 percent of the minimum wage. Neumark and Wascher estimate that, in states with high minimum wages, introducing a subminimum equal to the lower federal minimum wage would offset about 35 percent of the teenage job loss caused by state minimum wages. For example, if state minimum wages resulted in 100,000 fewer jobs for teenagers, about 35,000 of these jobs would be saved by a subminimum at the federal level. DRH

Social Security and Widows

“Although the poverty rate of elderly widows has fallen substantially over the past 30 years, it remains much higher than the rate for elderly couples or the rate for the nonelderly population,” note NBER Research Associates **Michael Hurd** and **David Wise**. In part, this high rate of poverty among widows is the result of the structure of Social Security benefits. In general, the benefits received by a retired couple are reduced when the husband or wife dies. The percentage reduction depends on the past earnings of each spouse, their ages, and when they retired. While the typical reduction is 33 percent, it can be as high as 50 percent.

“In 1989, 25 percent of widows aged 65–69 were classified as poor, while only 6 percent of couples the same age were poor.”

In 1989, 25 percent of widows aged 65–69 were classified as poor, while only 6 percent of couples the same age were poor. Hurd and Wise ask what would happen to poverty among widows if the surviving spouse's Social Security benefits were increased by 20 percent but the benefits received by the couple were reduced, so that the total actuarial value of the couple's lifetime benefits was unchanged. In **Changing Social Security Survivorship Benefits and the Poverty of Widows** (*NBER Working Paper No. 3843*),

they estimate that such a change would have reduced from 25 percent to 19 percent the fraction of widows aged 65–69 who were poor in 1989. Offsetting this, the fraction of couples in poverty would have increased from 6 to 8 percent.

Using data from the Retirement History Survey for 1969–79 and the Survey of Income and Program Participation (beginning in 1984), Hurd and Wise observe that the economic resources of widows increased between 1979 and 1984, mostly because of increases in Social Security benefits. These increases and other resources will reduce the projected 1999 poverty rate for widows from 39 percent to 26 percent, and will cut the projected poverty rate for couples from 9 to 6 percent. But if these overall increases in benefits were accompanied by a 20 percent increase in survivors' benefits, the poverty rate for widows in 1999 would be reduced further, to 20 percent.

Options Prices and Forecasts of Exchange Rate Volatility

"It would be wise to cut expectations by half." This traditional Chinese saying is meant to be an expression of modesty. But it has proven a useful guide to potential profitmaking in the forward exchange market and other financial markets, because speculators' forecasts move around too much. For example, when the forward exchange rate seems to predict that the value of the currency will rise (or fall) rapidly in the future, the currency in fact is likely to move half as far at most. On average, according to a new NBER study, one could make more money in forward exchange markets by betting against those who buy options.

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The NBER Digest summarizes selected Working Papers re-

In Are Option-Implied Forecasts of Exchange Rate Volatility Excessively Variable? (*NBER Working Paper No. 3910*), Research Associate **Jeffrey Frankel** and **Shang-jin Wei** find evidence of a similar pattern of forecasting bias in the market for foreign exchange *options*. As is well known, the value of an option is directly related to the volatility of the underlying asset price. In the case of foreign exchange options, only if the currency price moves around a lot (that is, if volatility is high) is there much chance that someday it will reach the price specified on the option, known as the "strike price." Only at that time will it be profitable for the investor to exercise the option to buy or sell the currency.

"When the option price is high, that is, when the implicit volatility of the currency price is high, the true realized volatility on average is only half as high, or less."

Using data on currency options traded on the Philadelphia Exchange between February 1983 and January 1990, Frankel and Wei examine the relationship between the *implicit* volatility that the options market appears to have forecast and the *true realized* volatility. They find that when the option price is high, that is, when the implicit volatility of the currency price is high, the true realized volatility on average is only half as high, or less. Conversely, when the option price is low, that is, when the implicit volatility is low, the true realized volatility on average is only half as low, or less. In both cases, it appears that on average one could make money by betting against the options market. Those who have been dealing in this market would be wise to heed the Chinese proverb, and cut expectations by half!

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