

debt and default: corporate vs. sovereign. This essay focuses on the differences between corporate and sovereign bankruptcy. Perhaps the most striking differences are those of collateral, control and continuity.

Theoretically, all the assets of a company serve as collateral for its debts. Most sovereign debt on the other hand is not secured by specific collateral, but rather by the penalties that creditors may impose on defaulting debtors, such as reduced access to the world trading system. Debtor countries will seldom agree to transfer more than five percent of national income for more than a few years. Thus while the creditors of a highly indebted *company* might get all or most of the returns generated from a new investment, the creditors of a highly indebted *country* cannot count on more than a fraction of the gains from new investment.

When a company defaults on its debts, creditors can go to court for the purpose either of liquidating the business or of assuming control. If the days of gunboat diplomacy are past, sovereign creditors have no similar option.

Because sovereign debtors retain most of their income when they default, and cannot be compelled to sacrifice control, their negotiating position is better than that of corporate debtors. Corporate debt restructuring can be modelled as once-for-all negotiations with all claims settled at once. (By contrast, the theory of corporate financial structure can best be explained in a multiperiod setting; see Hart and Moore 1990.) In contrast, sovereigns cannot turn over control of their cash flows and (implicitly) they always retain the right to renegotiate any debt agreement (see Alexander 1987 for a good description of the legal issues involved in sovereign debt). Therefore, sovereign debt deals must specify the transfer of income flows rather than asset

stocks, and those transfers must be limited by the debtor's ability to renegotiate if transfers become high relative to creditors' punishment threats. That is, sovereign debt renegotiation tends to be an ongoing rather than a one-shot process (see, for example, Eaton and Gersovitz 1981 and Bulow and Rogoff 1989).

A simple model of corporate debt is used here to elaborate on these differences, and then altered to consider sovereign debt.

CORPORATE DEBT. Consider a simple firm that must divide its assets, A , between cash, C , and investment, I , so that $C + I = A$.

Further assume that the return on investment is risky, and will equal θI where $\theta \in [0, \bar{\theta}]$ and $E(\theta) = 1$. All investors are risk neutral, the riskless interest rate is zero, and the company has a debt of D , payable after the returns on its investment are realized. There is some chance that $C + \theta I$ will be greater than D , so equity has some value, but there is also a chance that θI will be too low to pay all debt, and default will occur. Of course, reality is a bit more complicated; see, for example, Webb (1990) for the current insolvency procedures in Britain.

Now fix $I = I^*$ and allow the stockholders the right to use C to repurchase debt. Should they do so? So long as debt can be repurchased at a discount, debt repurchases are profitable. Before a repurchase creditors effectively own the C dollars of cash in the firm, and the first $D - C$ dollars of return on the risky investment. That is, if the risky investment yields a gross return of $D - C$ or greater, then the creditors are paid $C + (D - C) = D$ and if the risky investment yields a gross return of less than $D - C$ then the creditors are paid C plus the entire gross return from the investment. If debt is risky because there is some chance that the gross return will be too low to repay the debt in full, then C dollars of cash can be used to repurchase $B > C$ dollars of debt. Such a repurchase would leave creditors with C from the repurchase, but only the first $D - B < D - C$ of returns from the risky asset. Creditors would lose, and (since there are no efficiency consequences of the repurchase) stockholders would gain.

If the firm's capital structure is more complex so that there is both junior and senior debt, stockholders would benefit most by acquiring the cheapest (most junior) debt. That is because shareholder value is only a function of the amount of debt left after the repurchase, and not of the relative quantities of different classes of bonds. In the limit, where debt is divided finely enough, purchasing the most junior debt is as beneficial to shareholders as repurchasing stock (or equivalently, paying a dividend). That is because either a stock purchase or the purchase of the most junior dollar of debt will have the same effect on all the more senior creditors. By contrast, repurchase of the most senior debt, which is riskless if it has a face value of less than C (and repurchase of junior debt is prohibited) has no effect whatsoever. Of course, all these results stem from shareholders having no recourse but to accept partial repayment if θI is too low to cover all debt.

In general, though, the creditors of highly indebted companies press for early retirement of debt. Why so? Allow