

Economics of Bankruptcy

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Bankruptcy is the legal procedure by which the assets of a debtor are distributed among its creditors. The debtor can be either an individual or a firm. In corporations, bankruptcy happens when either the firm or the creditors delegate a third party—be it a judge or other public official—to determine the amount of the creditor’s claims, as well as the way to distribute the firm’s assets among them. In essence, bankruptcy results from financial distress, which happens when the market value of the assets is insufficient to satisfy the debt claims, or when the firm does not generate enough cash flow to meet the coupon and interest payments. An alternative to bankruptcy is an informal reorganization or *workout*, whereby creditors relax debt covenants, possibly exchanging their claims for a package of new claims.

Bankruptcy is an old European institution that derives its name from the Italian words “banca rotta” (broken bench). It refers to the board from which traders in medieval towns traded coins, and which they broke whenever they defaulted on their payments. Nowadays, countries have implemented different procedures to deal with the distribution of assets for a firm that cannot meet its debt obligations. In the United States, firms and creditors can opt into two forms of restructuring. Under a Chapter 7 liquidation, assets are sold piecemeal and the proceeds distributed according to the *Absolute Priority Rule* (APR), by which debt and equity are paid according to a predetermined order: secured debt first, then unsecured claims, and finally common stock. The distinction between *senior* and *junior* claims refer to the higher priority of secured debt (senior) with respect to unsecured debt (junior). The firm ceases to exist after a Chapter 7. Under a Chapter 11 reorganization, shareholders and creditors agree on a reorganization plan, which allows the company to continue. When the company enters a Chapter 11, the firm becomes a debtor-in-possession, a term that recognizes that the management retains control of the company’s operations, under court supervision. In a Chapter 11, APR may be violated if

secured creditors give up part of their claims in favor of unsecured debtors, or if shareholders receive some interest in the restructured firm at the expense of debtholders (Herbert 1998).

Under the Absolute Priority Rule, unsecured claims are classified into priority claims and general unsecured claims. Priority claims are further classified into three groups: administrative claims, wages and employee benefits and taxes. This means that, under APR—which is always upheld in Chapter 7 cases—wages cannot be paid unless administrative expenses (compensation of lawyers and other professionals) have been satisfied in full. Moreover, tax claims include only those taxes that the firm owes at the time it files for bankruptcy.

The practice in the United States is to reimburse administrative expenses incurred by the committee of unsecured creditors. A Chapter 11 creditors' committee is composed of creditors “*that hold the seven largest claims against the debtor of the kinds represented on such committee.*” (Bankruptcy Code §1102(b)(1)). The bankruptcy court is authorized to reimburse a substantial portion of the expert expenses that juniors incur. However, the United States Code does not authorize the bankruptcy court to compensate the expenses of creditors whom it defines as “*senior.*” This cost allocation fails to encourage the seniors to spend on activities that increase the value of the firm, but encourages the juniors to spend on activities that maximize only the value of their own claim.

In the United States, the debtor has an exclusivity period of 120 days to file a plan of reorganization. This period can be, and usually is, extended upon the debtor's requests. In the plan, each class of creditors is classified as *impaired* or *unimpaired*. An unimpaired class of creditors is paid in full, and does not vote on the reorganization plan. The plan requires the approval of each impaired class of creditors and equity security holders. Approval requires dual majority: more than one-half of the votes, and more than two-thirds of the amount of the claims.

In the United Kingdom and other countries of British legal tradition, like Canada, Austria and New Zealand, bankrupt companies are restructured via an *administrative receivership*. White (1996) and Franks and Davydenko (2006) provide a comparison of the bankruptcy codes in the United States and some European countries. In a receivership, the secured creditors appoint an expert (the administrative receiver) whose objective is to obtain sufficient funds to repay the secured creditors. For that, the receiver can either liquidate some assets, or sell the company as a going-concern. The receiver does not have any obligation with respect to other creditors, or shareholders, as long as absolute priority is respected. Unlike a United States Chapter 11, in a receivership, control is transferred from the management to the secured creditors.

In the old French system, neither the firm nor the creditors retained control. The court appointed an administrator who managed the day-to-day operations of the firm, and whose objectives were to preserve the estate and employment first, and then to satisfy creditors. Most systems in Continental Europe have followed this tradition. In the new Loi de Sauvegarde des Entreprises enacted in 2005, France has moved towards a system similar to a Chapter 11 in the United States.

In Germany, the 1999 system establishes an automatic stay of three months, which means that creditors cannot dispose of the firm's assets during that period. Moreover, and similar to a Chapter 7 in the United States, the court appoints an administrator who monitors the process and determines a plan of reorganization.

Auctions are a very efficient alternative to court-administered procedures. In Sweden, the court appoints an independent trustee who is in charge of selling the firm assets to the highest bidder. The winning bidder can only pay in cash, as described in Thorburn (2000), and the trustee distributes the proceeds respecting APR. Stromberg (2000) shows that in one out of three cases in Sweden, the assets are sold back to the incumbent managers (because they have the highest valuation of the assets), and the rest are liquidated.

Controversy over Chapter 11

During the last years, there has been a convergence in bankruptcy laws towards a Chapter 11-type of reorganization. Countries in Western and Eastern Europe, Asia and Latin America have enacted regulations that allow managers to retain control of defaulted firms. Regulators have moved from a system that favors liquidations, to a legal procedure that tends to maximize the probability of firm survival. However, the efficiency of Chapter 11 has been put into question by scholars like Bebchuk (1988), Adler (1993), Schwartz (1998), Baird and Rasmussen (2002), and Baird and Morrison (2005). They promote a *contractual approach* to bankruptcy, or a formal scheme of bargained bankruptcy. Under this view, the parties should be free to bargain in advance for a set of rules that will govern their rights in the event of bankruptcy, with Chapter 11 being only a default system. Bebchuk (1988) for instance proposes that firms can issue derivative securities, contingent on the firm being in default. The contractual view attacks the Chapter 11 system on several fronts. First of all, because it leads to inefficient outcomes (Baird and Morrison, 2005; Franks and Loranth (2006). In particular, Franks and Loranth (2006) show that Chapter 11 in Hungary is biased in favor of inefficient going concerns. That is, most bankrupt firms should be liquidated rather than reorganized. Chapter 11 is also attacked because it is considered lengthy compared to other systems (Stromberg, 2000; Thorburn, 2000). Additionally, it is extremely expensive (Bris et al, 2006).

The opponents of such a private bankruptcy system (Warren and Westbrook, 2005) make two important arguments to defend Chapter 11. In principle, a private system would only have redistributive effects, with some creditors (secured and large creditors) shifting risks to others. Also, Chapter 11 is a mechanism by which benevolent large creditors give up part of their claims in favor of small, empowered creditors. Therefore, it has a positive redistributive effect. Finally, a private system is inefficient because of duplication of transaction costs.

Most of the theoretical and empirical research on bankruptcy addresses the conflicts that arise among creditors, shareholders, firm managers and bankruptcy specialists. These conflicts arise during the bankruptcy proceeds, but also when the company is in financial

distress and before it files for bankruptcy. The design of the bankruptcy system can affect the interaction among all these agents, the efficiency of the bankruptcy process and, therefore, the costs of bankruptcy.

Incentives before Filing for Bankruptcy

Financial distress may lead to bankruptcy, if either the firm management or the creditors opt into a legal procedure to resolve their disputes. But if the distressed firm is economically viable, managers have an incentive to delay filing for bankruptcy and maintain operations, especially if the legal procedure gives control to a third party. Self-interested managers will then preserve their jobs at the expense of shareholders and creditors. Jensen and Meckling (1976) show that in distressed firms there is a *debt-overhang* problem. Managers have an incentive to bypass positive-NPV projects (a problem known as *underinvestment*) because they only benefit current creditors (Myers 1977). Instead, when choosing between less and more risky projects, managers prefer to invest in more risky projects because managers act on behalf of shareholders, and shareholders, because of limited liability, are only interested in the upside of the investments (*excess risk taking* or *overinvestment*). These incentives in turn reduce the value of the debtor's claims, and ultimately the value of the firm because creditors take them into account when pricing their securities.

Recently, Adler et al. (2005) have shown that a change in regulation in the United States around year 2000, which gave more control to creditors during the filing period, induced managers to delay the bankruptcy filing. Indeed, they show that after 2000, firms that file for Chapter 11 in the United States display a worse financial and operating condition. This can explain why in countries with secured creditor control of the bankruptcy process, the number of bankruptcy filings is much lower, and firm managers prefer liquidation (Claessens and Kappler, 2005).

Conversely, and depending on the debt structure, managers may have an incentive to default strategically, even if the firm is still economically viable. Bolton and Scharfstein (1996) argue that managers will always prefer to default strategically, so as to divert cash

to themselves. In order to avoid that distortion, creditors should have the right to liquidate the firm in case of default. However, this induces inefficient liquidations because perhaps the value of the firm as a going-concern exceeds its liquidation value. Bolton and Scharfstein (1996) show that borrowing from multiple creditors solves the problem because the liquidation value of the firm increases.

Incentives During the Bankruptcy Proceedings

The efficiency of the bankruptcy process and a firm's capital structure are closely related because, for a firm with multiple creditors, bankruptcy results in coordination problems among creditors, as well as conflicts between secured and unsecured, or between senior and junior claimants. Regarding coordination problems, and in contrast to Bolton and Scharfstein (1996), Bris and Welch (2005) argue that when competing for the firm's assets, multiple creditors (similar to public bonds) waste the firm's resources in fighting with each other, hence it is more efficient to issue highly concentrated debt (bank debt). Indeed, Welch (1997) shows that bank debt should be senior because a single creditor fights better with shareholders, thereby increasing the ex ante value of the debt.

Conflicts between secured and unsecured creditors depend on the bankruptcy system and the priority rules. If unsecured creditors can extract rents at the expense of more senior debtors (that is, if absolute priority can be violated), then a firm may prefer to liquidate its assets because unsecured creditors will expend the firm's resources in order to satisfy part of their claim. Eberhart et al. (1990) and Franks and Torous (1994) show that APR is often violated under Chapter 11.

Firms in bankruptcy are allowed sometimes to issue new financing that can be senior to the already outstanding debt (*debtor-in-possession financing* or DIP financing). The ability to raise DIP financing is priced ex ante by the firm's creditors. Therefore, it increases the value of the firm ex post, but it reduces shareholder value ex ante. This trade-off has been extensively considered in the literature.

Life after Bankruptcy

The design of the bankruptcy process can also affect the performance of firms when they emerge from Chapter 11. Hotchkiss (1995) reports that over 40 percent of the firms in her sample still experience operating losses in the three years following the bankruptcy case, while another 32 percent re-file for bankruptcy or restructure their debt.

Bankruptcy Costs

Bankruptcy costs encompass not only the explicit payments made to bankruptcy specialists (lawyers, trustees, accountants, investment bankers), but also the indirect cost of being in default. Among the latter, we can include the loss of customers when the company is in financial distress, the adverse payment terms enforced by suppliers when the viability of the firm is not guaranteed, loss of key personnel and waste of management time.

Measuring the indirect costs of bankruptcy is very difficult. Altman (1984) uses foregone profits as a proxy, and Opler and Titman (1994) focus on losses of trade credit. However, because of the nature of the indirect costs, any proxy tends to underestimate their extent. Other researchers have used the length of the proceedings as a proxy for indirect bankruptcy costs, under the assumption that, the longer the firm stays in bankruptcy, the larger the collateral effects (Franks and Torous, 1994). Bris et al. (2006) show that both liquidations under Chapter 7 and reorganizations under Chapter 11 take about two years to resolve. In exploring the Swedish system, Thorburn (2000) shows that, in comparison, the Swedish auction system is much faster than the United States Chapter 11 process, since auctions take only two months on average.

The evidence on direct costs is more extensive. Warner (1977) finds that the direct costs of bankruptcy are about 4 percent of the market value of the firm one year prior to the default. This result is based on a sample of 11 bankrupt railroads. Altman (1984) calculates these costs to be about 7.5 percent of firm value using a broader sample of 19 bankrupt companies from 1974-1978. Using 105 Chapter 11 cases, Ang et al. (1982) report that administrative fees are about 7.5 percent of the total liquidating value of the bankrupt corporation's assets. Lubben (2000) calculates in his sample of 22 firms from

1994 that the cost of legal counsel in Chapter 11 bankruptcy represents 1.8 percent of the distressed firm's total assets, with percentages above 5 in some cases. In his average case, the debtor spends \$500,000 on lawyers, and creditors spend \$230,000. LoPucki and Doherty (2004) study a sample of 48 cases from 1998 to 2002, mostly from Delaware and New York cases. They report that professional fees were 1.4 percent of the debtor's total assets at the beginning of the bankruptcy case. Bris et al. (2006) compare the costs of bankruptcy for Chapter 7 and Chapter 11 cases. They report that the mean ratio of total expenses to assets is 9.5 percent for Chapter 11, and 8.1 percent for Chapter 7. However, they warn against simple averages because cost measures depend on which value of the assets (pre-bankruptcy or post-bankruptcy) one uses.

Conclusion

The design of a bankruptcy system is very important because it determines shareholder value for all firms, whether they are in financial distress or not. The reason is that any conflict that can arise among creditors of different classes, and any coordination problem in the bankruptcy proceedings among creditors in a similar class are both priced in the debt securities that a company issues. Moreover, the bankruptcy system can create distortions on firm policies when it is in financial distress, and in particular it can induce managers to make suboptimal decisions at the expense of shareholders.

Countries differ in their legal systems in terms of who controls the firm's assets during bankruptcy. Because control shapes the conflicts above, this feature of the bankruptcy system is one of the most important aspects of bankruptcy considered by the academic literature. Additionally, scholars have studied the issue of bankruptcy costs in detail. While we have extensive evidence on direct costs of bankruptcy, the indirect costs of being in distress are very difficult to measure.

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