

## **bankruptcy, economics of**

### **Abstract**

Bankruptcy is the formal procedure to resolve the dispute among creditors, shareholders, and managers, of a company in financial distress. Countries have designed different bankruptcy procedures that differ in the control that is given to the existing management relative to creditors. These differences determine the incentives that are given to the parties before, during, and after the bankruptcy proceedings. They also determine how expensive the bankruptcy process is. Ultimately, bankruptcy costs are borne by the firm shareholders

Bankruptcy is the legal procedure whereby 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 its creditors delegate a third party – be it a judge or other public official – to determine the amount of the creditors’ 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 ‘*banca rotta*’ (broken bench). It refers to the boards 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 the assets of 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), whereby 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 refers to the priority of secured debt (senior) over

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 favour 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 claims.

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 with British legal traditions, such as Canada, Australia and New Zealand, bankrupt companies are restructured via an *administrative receivership*. White (1996) and Franks and Davydenko (2006) provide a comparison between the bankruptcy codes in the United States and some European countries. Under a administrative receivership, the secured creditors appoint an expert (the administrative receiver) whose objective is to obtain sufficient funds to repay the secured creditors. To do 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 with a United States Chapter 11, in a receivership control is transferred from the management to the secured creditors.

Under 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, first, to preserve the estate and employment, 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 the Chapter 11 system in the United States.

In Germany, the system introduced in 1999 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's assets to the highest bidder. The winning bidder can pay only in cash, as described in Thorburn (2000), and the trustee distributes the proceeds respecting the 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 remaining cases are liquidated.

### **Controversy over Chapter 11**

In recent years, there has been a convergence in bankruptcy laws towards a Chapter 11-type 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 favours liquidations to a legal procedure that tends to maximize the probability of firm survival. However, the efficiency of Chapter 11 has been questioned 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 over 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 on the grounds that it leads to inefficient outcomes (Baird and Morrison, 2005; Franks and Loranth, 2006). In particular, Franks and Loranth show that Chapter 11 in Hungary is biased in favour of inefficient going concerns. The argument is that most bankrupt firms should be liquidated rather than reorganized. Chapter 11 is also attacked because it is considered a more lengthy process than other systems (Stromberg, 2000; Thorburn, 2000). Additionally, it is extremely expensive (Bris, Welch and Zhu, 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 have only 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 favour of small, empowered creditors. Therefore it has a positive redistributive effect. Finally, a private system is inefficient because of the 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 proceedings, 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 to 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 net present value (NPV) projects (a problem known as *underinvestment*) because they benefit current only 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 interested only 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, Capkun and Weiss (2005) have shown that a change in regulation in the United States around 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 the value of the firm as a going concern may exceed its liquidation value. Bolton

and Scharfstein (1996) show that borrowing from multiple creditors solves the problem by increasing the liquidation value of the firm.

### **Incentives during 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, Moore and Roenfeldt (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, 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 per cent of the firms in her sample still experience operating losses in the three years following the bankruptcy case, while another 32 per cent 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 costs of being in default. Among the latter, we can include loss of customers when the company is in financial distress, 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 forgone profits as a proxy, while 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, Welch and Zhu (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 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 four per cent 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 per cent of firm value, using a broader sample of 19 bankrupt companies from 1974 to 1978. Using 105 Chapter 11 cases, Ang, Chua and McConnell (1982) report that administrative fees are about 7.5 per cent 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 per cent of the distressed firm's total assets, and in some cases more than five per cent. 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. They report that professional fees were 1.4 per cent of the debtors' total assets at the beginning of the bankruptcy case. Bris, Welch and Zhu (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 per cent for Chapter 11, and 8.1 per cent for Chapter 7. However, they warn against simple averages because cost measures depend on the 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 or not they are in financial distress. 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 impose distortions on a firm's policies when it is in financial distress; in particular it can induce managers to make suboptimal decisions at the expense of shareholders.

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

**Arturo Bris**

*See also*

Default and Enforceability Constraints. Bankruptcy,  
Bankruptcy Law, Economics of Corporate and Personal,  
Value at Risk

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