

Solutions to Selected Questions from Chapter 26

Questions

1. Corporate financial distress is when a firm has significant trouble paying its debts as they come due.
2. Useful indicators of impending financial distress are net working capital / total assets, retained earnings / total assets, EBIT / total assets, market value of equity / book value of total liabilities, and sales / total assets.
3. The purpose of the bankruptcy code is to allow debtors and creditors to negotiate to achieve a consensual plan of reorganization. A firm should file for bankruptcy protection when the going-concern value of the reorganized debtor exceeds its liquidation value.
4. Chapter 7 is a liquidation while Chapter 11 is a reorganization.
5. Managerial inexperience and incompetence are the leading causes of corporate business failure. External factors such as economic downturns and competition within an industry can also play a role.
6. The age of the firm affects the probability of bankruptcy as younger firms are more likely to fail due to a lack of experience.
7. The basic premise of Chapter 11 is that debtors and creditors should negotiate to achieve a consensual plan of reorganization given the going-concern value of the reorganized debtor exceeds its liquidation value.
8.
 - a. Debtor in possession means that the firm is a debtor that has defaulted yet is allowed to possess its assets and operate its business.
 - b. An automatic stay prevents creditors from attempting to collect their debts.
 - c. A plan of reorganization is a plan to restructure the firm so that it can operate profitably.
 - d. A consensual plan of reorganization is a plan of reorganization that has been negotiated between with the creditors.
 - e. Cramdown is a procedure that permits the bankruptcy court to confirm a proposed plan over the objections of one or more classes of creditors.
 - f. In a prepackaged bankruptcy, the debtor and creditors negotiate a plan of reorganization and then file it along with the bankruptcy petition.
9. The purpose of the cramdown provision is to facilitate the confirmation of a proposed plan when dissenting classes are refusing to accept a viable plan.
10.
 - a. Reorganization is preferred over liquidation when the going concern value of the firm is greater than the liquidation value of the firm.
 - b. Liquidation is preferred over reorganization when the liquidation value of the firm is greater than the reorganization value of the firm.
11. A prepackaged bankruptcy attempt is most likely to succeed when there is only one class of creditors that will be disadvantaged by the plan.
12. The absolute priority doctrine means that a senior claim must be paid in full before a junior claim is permitted to receive any distribution. The argument for enforcing the doctrine is that the senior creditors have a legal claim to be paid before the junior creditors. The argument against enforcement of the doctrine is that a small payment to a junior class may speed up the reorganization process.
13. No single variable works well for predicting corporate bankruptcy for all industries in all situations, thus multiple variables should be used.

14. The positive incentives a firm can use to induce exchange are to offer securities with a higher interest rate, shorter maturity, senior ranking, or stronger covenants. A negative incentive a firm can use to induce exchange is to structure the offer such that nonexchanging holders would find their securities subordinated to the new securities.
15. Holdouts are holders of outstanding securities who refuse to exchange their securities for new ones. Holdouts frustrate the financial reorganization process by attempting to get a better deal for themselves.
16. The advantages of an out-of-court restructuring are that the firm does not incur the costs associated with bankruptcy such as a loss in sales and a tarnished firm image. The disadvantages are that the plan is not binding on all debtholders, the debtor foregoes some tax advantages, and the debtor cannot void burdensome leases and other contracts.
17. The five basic conditions necessary to confirm a plan of reorganization are that the plan must be feasible, the plan cannot discriminate unfairly among creditors of equal classes, at least one creditor must accept the plan, the plan must satisfy the fair-and-equitable test, and the plan must satisfy the best-interests-of-creditors test.

Challenging Questions

18. Multiple discriminant analysis is a technique used to distinguish between two groups. It is useful in predicting financial distress because it is based on more than one variable.
19. Valuation plays an important role in the bankruptcy process because the estimated going-concern value of the firm and liquidation value of the firm will determine whether the firm files for a Chapter 11 bankruptcy or a Chapter 7 bankruptcy. The DCF approach can be used to determine going-concern value by estimating the present value of the future cash flows of the firm.
20. One of the potential cost savings from Chapter 11 is the potential tax savings from retiring debt at less than face amount. Another potential cost savings is from the cramdown provision, which can facilitate the proceedings by confirming the plan over a rejection by a class of creditors. Also, creditors and stockholders are bound by the terms of the reorganization plan.
21. The Bankruptcy Reform Act of 1978 should probably not be a cause for concern as it is unlikely that the act has caused more firms to face financial distress. The Bankruptcy Reform Act actually has sped up the bankruptcy process, making it less costly.
23. The growing importance of financial intermediaries is likely to facilitate the reorganization process as they are sophisticated investors that understand the process and are likely to negotiate.

Problem Set A

- A1. a. $Z = 0.012 X_1 + 0.014 X_2 + 0.033 X_3 + 0.006 X_4 + 0.999 X_5$
 $Z = 0.012 (5) + 0.014 (10) + 0.033 (-5) + 0.006 (50) + 0.999 (1.05) = 1.38$
 b. $Z < 1.81$ so the firm is likely to go bankrupt within one year.
- A2. a. $Z = 0.012 X_1 + 0.014 X_2 + 0.033 X_3 + 0.006 X_4 + 0.999 X_5$
 $Z = 0.012 (5) + 0.014 (20) + 0.033 (2) + 0.006 (110) + 0.999 (1.25) = 2.31$
 b. $1.81 < Z < 2.99$ so the chance of bankruptcy is unknown.
- A3. Liquidation value = \$80 million
 Reorganization value = \$10 million / 0.10 = \$100 million
 The firm should reorganize.

A4. Liquidation value = \$125 million
 Reorganization value = \$13 million / 0.12 = \$108 million
 The firm should file for bankruptcy under Chapter 7.

A5. Liquidation value = \$600 million
 Reorganization value = $\$100 / 1.10^1 + \$120 / 1.10^2 + \$140 / 1.10^3 + \$160 / 1.10^4 + \$180 / 1.10^5$
 Reorganization value = \$516 million
 The firm should liquidate.

A6. Liquidation value = \$100 million
 Reorganization value = $\$20 / 1.13^1 + \$25 / 1.13^2 + \$30 / 1.13^3 + \$35 / 1.13^4 + \$40 / 1.13^5$
 Reorganization value = \$101 million
 The firm should file for bankruptcy under Chapter 11.

Problem Set B

B1. $n = 10$ $r = 16\%$ $PMT = \$10$ $FV = \$100$ **PV = -\$71.00**
 The new debt is worth 71% of its face amount.

B2. $n = 15$ $r = 15\%$ $PMT = \$12$ $FV = \$100$ **PV = -\$82.46**
 The new debt is worth 82.46% of its face amount.

B3. The subordinated debt is subordinated to the accounts payable claim of \$4 million, the bank claim of \$1 million and the mortgage claim of \$1 million. The \$3 million available consideration will be distributed to the claimants in proportion to their claim.
 Accounts payable receive $\$3 \text{ million} \times \$4 \text{ million} / \$6 \text{ million} = \2 million
 Banks receive $\$3 \text{ million} \times \$1 \text{ million} / \$6 \text{ million} = \0.5 million
 Mortgagee receives $\$3 \text{ million} \times \$1 \text{ million} / \$6 \text{ million} = \0.5 million

	Distributions		
	Secured Claim	Unsecured Claim	Total Distribution
Trade creditors	\$0	\$2,000,000	\$2,000,000
Banks	\$2,000,000	\$500,000	\$2,500,000
Subordinated debtholders	\$0	\$0	\$0
Mortgage bondholders	\$1,000,000	\$500,000	\$1,500,000
Total	<u>\$3,000,000</u>	<u>\$3,000,000</u>	<u>\$6,000,000</u>

B4. Secured debt is owed \$100 million and receives \$50 million from the sale of the new factory.
 There is \$100 million remaining for distribution between the \$50 million dollars of the remaining secured debt and the \$200 million dollars of the unsecured debt.
 Secured debt also receives $\$100 \text{ million} \times \$50 \text{ million} / \$250 \text{ million} = \20 million
 Unsecured debt receives $\$100 \text{ million} \times \$200 \text{ million} / \$250 \text{ million} = \80 million

	Distributions		
	Secured Claim	Unsecured Claim	Total Distribution
Secured	\$50,000,000	\$20,000,000	\$70,000,000
Unsecured	\$0	\$80,000,000	\$80,000,000
Total	<u>\$50,000,000</u>	<u>\$100,000,000</u>	<u>\$150,000,000</u>

- B5. Secured debt is owed \$20 million and receives \$10 million from the sale of the newest land acquisition. There is \$10 million remaining for distribution between the \$10 million dollars of the remaining secured debt and the \$15 million dollars of the unsecured debt.
 Secured debt receives $\$10 \text{ million} \times \$10 \text{ million} / \$25 \text{ million} = \4 million
 Unsecured debt receives $\$10 \text{ million} \times \$15 \text{ million} / \$25 \text{ million} = \6 million

Distributions			
	Secured Claim	Unsecured Claim	Total Distribution
Secured	\$10,000,000	\$4,000,000	\$14,000,000
Unsecured	\$0	\$6,000,000	\$6,000,000
Total	<u>\$10,000,000</u>	<u>\$10,000,000</u>	<u>\$20,000,000</u>

- B6. The legal and accounting fees must be paid the \$500 first, leaving only \$5,100 for distribution. The bank loan is secured by the accounts receivable and is paid off in full, leaving \$3,600. The mortgage bond is secured by the \$2,500 of fixed assets, leaving \$1,100 for unsecured claims. The mortgage bond is entitled to the subordinated debtholders' claim until it is paid in full.
 Accounts payable receives $\$1,100 \times \$1,500 / \$5,500 = \300
 Bank loan receives $\$1,100 \times \$4,000 / \$5,500 = \800

Distributions			
	Secured Claim	Unsecured Claim	Total Distribution
Trade creditors	\$0	\$300	\$300
Banks	\$1,500	\$0	\$1,500
Mortgage bondholders	\$2,500	\$800	\$3,300
Subordinated debtholders	\$0	\$0	\$0
Total	<u>\$4,000</u>	<u>\$1,100</u>	<u>\$5,100</u>

- B7. The legal and accounting fees must be paid the \$250 first, leaving only \$2,550 for distribution. The bank loan is secured by the accounts receivable and is paid off in full, leaving \$1,800. The mortgage bond is secured by the \$1,250 of fixed assets, leaving \$550 for unsecured claims. The mortgage bond is entitled to the subordinated debtholders' claim until it is paid in full.
 Accounts payable receives $\$550 \times \$750 / \$2,750 = \150
 Bank loan receives $\$550 \times \$2,000 / \$2,750 = \400

Distributions			
	Secured Claim	Unsecured Claim	Total Distribution
Trade creditors	\$0	\$150	\$150
Banks	\$750	\$0	\$750
Mortgage bondholders	\$1,250	\$400	\$1,650
Subordinated debtholders	\$0	\$0	\$0
Total	<u>\$2,000</u>	<u>\$550</u>	<u>\$2,550</u>

- B8. a. The bank is entitled to the subordinated debtholders' claim until it is paid in full. The bank should receive $\$600 \text{ million} \times \$600 \text{ million} / \$800 \text{ million} = \450 million . The trade creditors should receive $\$600 \text{ million} \times \$200 \text{ million} / \$800 \text{ million} = \150 million . The plan discriminates unfairly against the bank.
 b. The plan cannot meet the fair and equitable test because the bank creditors have voted against the plan and junior creditors are receiving a distribution.

- B9. a. The bank is entitled to the subordinated debtholders' claim until it is paid in full.
 The bank should receive $\$600 \text{ million} \times \$600 \text{ million} / \$800 \text{ million} = \450 million .
 The trade creditors should receive $\$600 \text{ million} \times \$200 \text{ million} / \$800 \text{ million} = \150 million .
 The plan discriminates unfairly against the trade creditors.
- b. The plan could be crammed down because no junior class receives anything.
- B10. The bank is entitled to the subordinated debtholders' claim until it is paid in full.
 The bank should receive $\$700 \text{ million} \times \$600 \text{ million} / \$800 \text{ million} = \525 million .
 Since the bank is only owed $\$500 \text{ million}$, the subordinated debtholders' should receive $\$25 \text{ million}$.
 The trade creditors should receive $\$700 \text{ million} \times \$200 \text{ million} / \$800 \text{ million} = \175 million .
 The plan discriminates unfairly against no one.

B11.

Firm	X1	X2	X3	X4	X5	Z	Projected outcome
1	10%	35%	13%	150%	0.90	2.8381	gray area
2	4%	-10%	-7%	3%	1.20	0.8938	likely to fail
3	5%	20%	10%	70%	0.80	1.8892	gray area
4	2%	26%	12%	55%	1.10	2.2129	gray area
5	4%	50%	8%	60%	0.90	2.2711	gray area
6	8%	1%	4%	25%	0.80	1.1912	likely to fail

B12.

	Fixed Assets	Fixed Assets	Fixed Assets	Fixed Assets
	\$1,000.00	\$1,500.00	\$2,000.00	\$2,500.00
Trade creditors	\$136.36	\$153.85	\$176.47	\$379.31
Banks	\$1,627.27	\$1,630.77	\$1,635.29	\$1,675.86
Mortgage bondholders	\$1,436.36	\$1,915.38	\$2,000.00	\$2,000.00
Subordinated debtholders	\$0.00	\$0.00	\$388.24	\$644.83
Preferred stock	\$0.00	\$0.00	\$0.00	\$0.00
Common stock	\$0.00	\$0.00	\$0.00	\$0.00
Total	\$3,200.00	\$3,700.00	\$4,200.00	\$4,700.00

ts (6.0) and the value of the junior claims (2.37).