

Corporate Finance, Module 13: "Corporate Financing"

Homework Assignment

(The attached PDF file has better formatting.)

1. Market and Book Equity

An insurer is incorporated on January 1, 20X7, with 4 million shares authorized, of which 2 million shares are sold with a par value of \$1.00 each and a sale price of \$12.50 each.

The insurer rents office space and spends \$5 million on renovations, all of which is written off on the financial statements. (They are expenses deducted from book equity; they are not capitalized.) An additional \$8 million is used to buy land, which does not depreciate.

By December 31, 20X7, the insurer has earned \$6 million, separate from the \$5 million spent on renovations. The insurer sells another 1 million shares at a par value of \$1.00 each and a sale price of \$17.50 each. The year-ending stock price is \$17.50.

Ignore corporate income taxes for this homework assignment.

- A. How many shares are outstanding? (4 million are authorized; 2 million are sold on January 1 and 1 million are sold on December 31.)
- B. What is the common capital stock on the insurer's books? (Number of shares times their par value.)
- C. What is the additional paid-in capital on the insurer's books? (Sale price minus the common capital stock.)
- D. What are the retained earnings on the insurer's books? (Don't forget to subtract the renovation expenses from the earnings. The land is not depreciated, so the purchase price is exchanged for an asset called *land*, and earnings are not affected.)
- E. What is the book equity? (Original cash plus earnings minus renovation expenses.)
- F. What is the market equity? (Number of shares times market price.)

2. Cumulative Voting

An insurer with 5 million outstanding shares will elect 11 members of its Board of Directors under a cumulative voting procedure. How many shares are needed to elect at least 2 members of the Board?

{Added: 19 December 2005}

Explain the formula: $[5 \text{ million} / (11 + 1)] + 1 = 416,668$

Question: Can you explain cumulative voting?

Answer: Let us compare voting in the United States vs Europe (and most countries of the world). The elections in Iraq, for instance, are European style Parliamentary elections, not U.S. style Congressional elections.

Suppose a State gets two Senators, and each citizen in the State gets to vote for each Senator. The citizens are loyal party members and they vote along party lines. The State has 55% Democrats and 45% Republicans.

In the U.S., we have separate ballots for each Senate seat. Both Senate seats are won by the Democratic candidate.

In Europe, each party submits a list of two names. Citizens vote for a party, not for a Senator. The voting result is 55% Democratic and 45% Republican. The closest division is 1 Senator for each party.

Each system has its advantages. In the U.S., we never vote for parties. In theory, every election is between individuals, not between parties. A person may vote for the Republican candidate in one Senate seat and the Democratic candidate in the other Senate seat.

The problem with the U.S. system is that a slight edge in citizens may give an enormous disparity in Congress. Suppose every election district in the U.S. has a 55% to 45% split between Democrats and Republicans. If people vote along party lines, the Democrats pick up every seat in Congress.

The European system says: "This makes no sense. In practice, people vote along party lines. The Congress should end up 55% Democrats and 45% Republicans.

Question: How does this relate to cumulative voting?

Answer: Suppose a Board of Directors has 20 members. The managing officers of the firm own 10% of the stock. Most small stockholders will vote for whomever the management wants, and they give their votes to management to vote by proxy. These small stockholders have 45% of the stock, so management controls 55% of the votes.

Minority shareholders, such as a large pension fund, own 45% of the stock. They want a different direction for the firm, and they want to elect members of the Board of Directors.

With voting for individual members, the management would control all 20 seats on the Board. With cumulative voting, management controls 11 seats, and the minority shareholders control 9 seats.

Question: Are you saying that the European system is better? Are there advantages to the U.S. system?

Answer: In the European system, no one runs for office himself or herself. In the U.S., if a person can persuade voters that he or she is the best candidate, that person can win election. One doesn't need a party for support.

Question: Does this happen a lot in the U.S.?

Answer: It occurs all the time. To get on the ballot, a person needs signatures. To run a campaign, a person may use personal funds or find wealthy supporters. Candidates generally work through parties, since they get the party's campaign structure. But it is the individuals who promote themselves and get the party nomination; the party elders have little say. This occurs in every election we have. Even for Presidential elections, Bill Clinton and Jimmy Carter were outsiders, not the first choice of the Democratic Party, when they first ran for President.

CUMULATIVE VOTING

Question: Can you give a simple illustration of the cumulative voting procedure?

Answer: Suppose a firm has 101 shares and two positions on its Board of Directors. How many shares must one have to get a person on the Board of Directors?

Question: Let's call the two positions on the Board of Directors as Position A and Position B.

The firm has 101 shares. A candidate needs 51 votes to be assured of a majority. If one investor has 50 shares and another investor has 51 shares, the investor with 51 shares wins each seat on the Board of Directors.

Answer: That is true for individual elections, as we have in the United States. Your example shows the inequity it would create on the Board of Directors. The two investors have about the same number of shares (50 vs 51), so they should have about equal say in running the firm. But the investor with 51 shares wins every seat on the Board of Directors and has absolute control of the firm.

Question: Is this realistic? Publicly traded firms have thousands of shareholders, none of whom has more than 3% or 4% of the shares.

Answer: It is very realistic because of proxy voting. The current management sends a letter to all shareholders explaining its perspective on running the firm and asking them to vote for its slate of candidates. Most shareholders buy this stock because they believe its management is reasonably good, so many of the shareholders agree.

Suppose another investor buys 10% of the firm's stock and is the largest shareholder. Sending a different letter to other shareholders saying that the current management is not competent elicits the response: "Who are you? If you don't like the firm, invest elsewhere."

Question: How do we solve this problem?

Answer: We use a cumulative voting procedure. Let us continue with our example. Each share has two votes, since the Board of Directors has two seats. An investor with one share can vote for two people or give two votes to one person. The two candidates with the most votes get elected.

Suppose the investor with 51 shares wants to win both seats and gives 51 votes each to two candidates. The investor with 50 shares gives all 100 votes to one candidate and wins a seat on the Board of Directors.

Question: How many shares does an investor need to elect a candidate?

Answer: Consider two scenarios:

Scenario #1: One investor has 33 shares and another investor has 68 shares, for a total of 101 shares. The investor with 68 shares chooses two candidates and gives each one 68 votes. The investor with 33 shares has a total of 66 votes. Even if the investor casts all votes for one candidate, this candidate comes in third and doesn't get a seat.

Scenario #2: One investor has 34 shares and another investor has 67 shares, for a total of 101 shares. The investor with 34 shares gives all the 68 votes to one candidate. If the investor with 67 shares chooses two candidates and gives each one 67 votes, they come in ties for second and third place.

The textbook shows the formula for getting a candidate on the Board of Directors.