

Chapter 13 - Corporate Financing and Market Efficiency (pages 351 - 354, 368 - 369)

In this chapter, we define market efficiency and discuss how market efficiency applies to financing choices of a firm.

At this point of the course, we shift the focus from capital budgeting decisions (which projects should the firm select) to financing decisions (how do we acquire the funds to finance good projects). These financing decisions will also determine who receives the cash flows from the accepted projects.

- The capital budgeting decision affects the asset side of the balance sheet.
- The financing decision (typically) determines the make-up of the liability and equity side of the balance sheet.

The owners of the debt and equity are (combined) the owners of the firm's assets and therefore share in the cash flows of these assets.

Principal and interest payments are the portion of a firm's cash flow paid to the owners of debt. These payments are set by contract. What happens if the company cannot meet the contractual obligations of the debt contract?

What can the firm do with the excess cash flow?

- 1) Paid to the owners of equity in the form of a dividend
- 2) _____
- 3) _____
- 4) _____
- 5) _____

Example (\$6000 of debt, 5% interest, no principal payment due this year)

Cash flow from assets	\$1000
New financing	\$ 0
Total	<u>\$1000</u>
Principle and interest payments	\$ 300
Dividend payment to stockholders	\$ 50
Investment in new projects	\$ 500
Cash deposited in the firm's checking account	50
Investment in T-Bills	\$ 100
Repurchase of debt or equity	\$ 0
Total	<u>\$1000</u>

Let's assume that we have identified a valuable project (one with a positive NPV) using the tools learned in the first half of this course. This project requires a \$500 initial investment in land and machinery. What financing method should the firm use to acquire the \$500 of funds for the project?

Cash flow from assets	\$1000
New financing	\$ 0
Total	<u>\$1000</u>
Principle and interest payments	\$ 300
Dividend payment to stockholders	\$ 50
Investment in new projects	\$1000
Investment in marketable securities	\$ 150
Repurchase of debt or equity	\$ 0
Total	<u>\$1500</u>

The answer to this question affects:

1. Capital structure policy.
 - Should the firm borrow money or sell new stock to meet its needs for cash?
 - Should the firm borrow with short-term or long-term debt?
 - Should the firm borrow with straight debt or convertible debt?
2. Dividend policy - Should the firm reduce its scheduled dividend payments to stockholders and use these savings to invest into the new project or should it continue to pay high dividends forcing the firm to raise cash in some other way?
3. Lease versus buy decisions - Should the firm buy land, machinery, and other assets needed for the project or should the firm rent these assets?
4. Mergers and acquisitions - Should a cash-rich firm acquire a cash-poor firm (which has a lot of good projects)?

These questions are important even if the firm does not have a particular project to finance.

- Should the firm issue debt to retire equity (or vice versa)?
- Should the firm restrict its current dividends to pay for *unidentified future* projects?
- Should the firm sell its assets and lease them back from the purchaser?
- Should the firm seek to acquire undervalued merger candidates?

If financial markets are perfect, efficient, and in equilibrium, then the answer to these questions is simple - The firm's value will not be affected by the decision. Therefore:

- Finance the project with debt or equity - the firm's value will not be affected by the choice.
- Pay high (or low) dividends - the firm's value will not be affected by the choice.
- Lease (or buy) assets - the firm's value will not be affected by the choice. Here, the rental market is perfect, efficient, and in equilibrium.
- Acquire (or don't acquire) another firm - the firm's value will not be affected by the choice.

Therefore, the important decisions for the firm are those that affect the asset side of the balance sheet - such as project selection/rejection. Firm value cannot be increased by the financing decision.

The above statements are valid at time 0. But, at a future point in time, one decision is likely to have been better than the other.

For example, assume that there is a recession over the next year. Would you have rather have financed the project with debt or equity?

Definition of an efficient market - An efficient market is one where prices for securities (and other assets) reflect all relevant (and available) information.

A quick aside - The three forms of efficiency

- *Weak-form* efficiency - security prices reflect only past price (and return) information.
- *Semi-strong form* efficiency - security prices reflect all publicly available information
- *Strong form* efficiency - security prices reflect all (relevant) information

There is currently a debate as to the degree of efficiency of the security markets.

Therefore, market efficiency deals with the degree to which information is reflected in a security's price.

Implications of a perfect, efficient, and in equilibrium market. (Two examples)

1. Firms can fund positive NPV projects using a wide variety of financing choices. Each of the possible financing choices will have no effect on the value of the firm since all have a zero NPV.

Example. A project requires a time zero investment of \$100 and produces an expected cash flow of \$110 in one year. The opportunity cost of capital is 7% and the project NPV is \$2.80. The firm has two financing choices for raising the \$100, a one-year risk-free debt issue with a 5% interest rate or a common stock issue with a 15% required return to stockholders.

Base case NPV =
 Financing NPV (debt) =
 Project NPV =

Base case NPV =
 Financing NPV (equity) =
 Project NPV =

Conclusions -

2. Acquiring firms will not make (or lose) money when buying another firm (assuming they pay the market price for the target firm). For example:

Acquiring firm's market value (as set by investors in the perfect, efficient, and in equilibrium market) = \$80 million
 Target firm's market value (as set by investors in the perfect, efficient, and in equilibrium market) = \$20 million

Market values set before merger is considered

Board members of both firms discuss and agree to the acquisition of the target firm. Announcement is made.

Reason for the merger: synergistic gains from merger = \$5 million

What market values would you expect to see for the two companies when the financial markets open tomorrow?

Will the acquiring firm benefit from the merger?

Will the target firm benefit from the merger?

Market inefficiencies, imperfections, and disequilibrium can make financing decisions important.

An example. Assume the security markets are only semi-strong form efficient and managers (who know the true present value of the firm's securities) need to raise \$1000 for the initial investment in a project.

Security A: Managers' valuation = \$1,100, Investors' valuation = \$1,000

Security B: Managers' valuation = \$900, Investors' valuation = \$1,000

Which security will the firm's managers select to fund the project?

Is the NPV of the two financing choices = 0?

Note – insiders and outsiders having the same information is one of the assumptions used in defining market perfection.

Note – this example might not hold up in equilibrium. To see, assume (in addition to the facts given above) that investors know that one security has a value of \$1,100 and the other has a value of \$900. However, investors don't know which security has which value. What is the post-announcement (pre-issue) market value of the security selected by management?

Chapter 13 Review Questions

1. Understand how cash flows from assets are paid to the owners of debt and equity and the financing sources for projects.
2. Understand the definition of an efficient market.
3. Remember that in a perfect, efficient, and in equilibrium market, the present value of a security's expected future cash flows is equal to the current market price for that security ($NPV = \$0$).
4. Assume that a firm has a project to finance. What are the implications of being able to raise funds for that project by issuing securities in a perfect, efficient, and in equilibrium market? What happens if the market is not efficient?

Chapter 13 Practice Problems

1. Assume that financial markets are perfect, efficient, and in equilibrium. This means that the NPV of all financing choices are equal to zero. A firm is considering two financing choices to finance a project:

Debt required return = 5%, Equity required return = 15%

Assume that either of the two financing choices will be outstanding for one year. Under what economic conditions over the next year would the firm be better off issuing equity rather than debt?

- A. A recession economy (*Correct*)
 - B. A booming economy
 - C. Since the $NPV = \$0$ for both financing choices, it doesn't matter what the economy is like over the next year.
2. Similar to the discussion in class, assume that security markets are only semi-strong form efficient and managers (who know the true present value of the firm's securities) need to raise \$5,000 for the initial investment in a project.

Managers have two financing choices, Security AA and Security BB. The following shows the valuation of the securities using information available to managers (also called "insiders") and investors (also called "outsiders"):

Security AA: Managers' valuation = \$4,800. Investors' valuation = \$5,000

Security BB: Managers' valuation = \$5,200. Investors' valuation = \$5,000

Assume that managers can issue either of the two securities to investors for \$5,000.

Using managers' information, the financing NPV for Security AA is:

- A. Positive (*Correct answer*)
 - B. Negative
 - C. Zero
3. Similar to the discussion in class, assume that financial markets are only semi-strong form efficient and managers (who know the true present value of the firm's securities) need to raise \$10,000 for the initial investment in a project.

Managers are considering issuing Security X.

Managers' valuation of Security X = \$9,500

Investors' valuation of Security X = \$10,000

Assume that managers plan to issue Security X to investors for \$10,000 (i.e., what investors think Security X is worth). Using managers' information, what is the financing NPV for Security X? *\$500*