

**Chapter 13 - Corporate Financing and Market Efficiency (331 – 337, bottom of 348 to the middle of 349)**

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

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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 makeup 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 (i.e., cash flows above the payments owed to the owners of debt?)

1. Pay a dividend to the owners of equity
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

Let's apply this concept to financing a project. Consider the following firm:

Cash flow from assets (financial and real, e.g., interest, dividends, CF from projects)	\$1000
Sale of assets (financial and real)	\$ 0
New financing	\$ 0
<b>Total</b>	<b>\$1000</b>

Principle and interest payments (\$6000 perpetual debt, 5% interest rate)	\$ 300
Dividend payment to stockholders	\$ 50
Investment in new (positive NPV) projects	\$ 500
Cash deposited in the firm's checking account	\$ 50
Investment in T-Bills	\$ 100
Repurchase of debt or equity	\$ 0
<b>Total</b>	<b>\$1000</b>

Assume that we have identified another valuable project (one with a positive NPV) using the tools learned in the first half of this course. This project requires a \$400 initial investment in land and machinery.

What financing method should the firm use to acquire the \$400 of funds for the project?

Cash flow from assets (financial and real, e.g., interest, dividends, CF from projects)	\$1000
Sale of assets (financial and real)	\$ 0
New financing	\$ 0
<b>Total</b>	<b>\$1000</b>

Principle and interest payments (\$6000 perpetual debt, 5% interest rate)	\$ 300
Dividend payment to stockholders	\$ 50
Investment in new (positive NPV) projects	\$ 900
Cash deposited in the firm's checking account	\$ 50
Investment in T-Bills	\$ 100
Repurchase of debt or equity	\$ 0
Total	\$1400

How can we balance out the cash inflows and cash outflows?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

Which is the best method?

The answer to this last 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. Sale of assets – Should the firm sell off some of its financial or real assets to finance the project?
4. Lease versus buy decisions - Should the firm buy land, machinery, and other assets needed for the project or should the firm rent these assets?
5. 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 off some of its financial or real assets that it thinks are overvalued?
- 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.
- Sell (or don't sell) financial or real assets - 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. Here, the market value of the acquired firm is established in a perfect, efficient, and in equilibrium market.

In essence, the NPV of each of these decisions is zero.

For example, if the financial markets are perfect, efficient, and in equilibrium, then:

NPV of debt financing = \$0  
NPV of equity financing = \$0

So, either financing choice has the same effect on firm value.

A quick review: why would the NPV be zero for each choice? For example, why would the NPV of debt financing be zero?

If the NPV of borrowing money is positive, then what does this imply about the NPV of lending money?

Thus, competition in the financial markets forces the NPV to zero.

**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.

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

### 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 an efficient (and perfect, and in equilibrium) market – an example

Firms can fund positive NPV projects using a wide variety of financing choices. As stated above, each of the possible financing choices will have no affect on the value of the firm since all have a zero NPV.

Using this, assume a financial manager is trying to decide how to finance a new project. The project requires a time zero initial 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% expected return to stockholders.

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

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

Conclusion –

What does market efficiency have to do with the above example?

Each security has a market price of \$100. What do these prices reflect (according to market efficiency)?

Market value of the debt security = \$100 = PV of the future debt payments based on relevant and available information

Market value of the equity security = \$100 = PV of the future equity payments based on relevant and available information

Since both securities have the same PV, equal to \$100 (and therefore their NPVs are both equal to \$0),