Section 1: Modern Corporate Financial Theory

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Overview: Definitions of Capital, Sources and Uses, and Optimal Structure

a. Explain the various definitions of capital, including regulatory, rating agency and other risk-based capital requirements, the context in which they are appropriate, and how they affect decisions.

Cost of Capital

b. Calculate the cost of capital for a venture or a firm using the most appropriate method for given circumstances and justify the choice of method.

c. Evaluate various profitability measures including IRR, NPV and ROE, etc.

Economic Capital

d. Define and compare risk metrics used to quantify economic capital and describe their limitations.

e. Apply the concept of economic capital and describe methodologies for allocating capital within a financial organization.

Rating Agency Issues

f. Explain how rating agencies affect the choice of capital structure.

Corporate Structure

g. Recommend a specific legal form of organization and justify the choice.

h. Recommend specific firm governance measures and justify the recommendation.

i. Identify sources of agency costs and explain methods to address them.

Financial Theory and Corporate Policy (4th edition) by Copeland
Chapter 2: Investment Decisions: The Certainty Case

Introduction

In the investment decision, must decide how much to not consume today so as to enjoy more consumption in the future

Should maximize expected utility over the planning horizon

Individuals, corporate managers, and public sector managers must all make the allocation between current and future consumption

Initially interest rates are known and constant

Also assume there are no imperfections in capital markets

The firm objective is to maximize the wealth for its shareholders

Fisher Separation: The Separation of Individual Utility Preferences from the Investment Decision

It is difficult to determine individual utility functions (how happy is happy?)

Assuming no market friction, individuals can delegate investment decisions to firm managers

Managers should choose to invest until the rate of return equals the market-determined rate of return

Maximizing shareholders' wealth is equivalent to maximizing the present value of their lifetime consumption

$$W_0 = C_0^* + \frac{C_1^*}{1+r}$$

This implies the slope of the capital market line is –(1+r)

The individual shareholders all prefer the same investment decisions at the firm (called the unanimity principle)

The individuals can adjust for their risk/reward tolerance by borrowing or lending at the risk-free rate

The Agency Problem

The shareholders' wealth is the present value of cash flows discounted at the opportunity cost of capital

Owners must find a way to monitor (at a cost) the behavior of managers

Owners must balance the monitoring costs with incentive-type compensation (e.g. stock dividends)

Shareholder Wealth Maximization

Dividends vs. Capital Gains

Shareholder wealth could be defined as the present value of future dividends

$$S_0 = \sum_{t=1}^{\infty} \frac{Div_t}{\left(1+k_s\right)^t}$$

The above formula works if the dividends and discount rates are known with certainty

The effect of capital gains is effectively in the formula above

If the dividend stream is growing at a rate *g,*

$$S_0 = \frac{Div_1}{k_s - g}$$

The Economic Definition of Profit

Economic profits equal the mean rates of return in excess of the opportunity cost for funds

To determine this, must know the timing of the cash flows and the opportunity cost

In this section, dividends include any cash flows that *could* be paid to shareholders; this includes items such as capital gains, spin-offs to shareholders, and repurchase of shares

Assume you have an all-equity firm in a no-tax environment

The sources of funds are revenues (*Rev*) and sale of new equity (*m* shares at *S* dollars per share)

The uses of funds are wages, salaries, materials, and services (*W&S*); investment (*I*); and dividends (*Div*)

For each time period,

$$Sources = Uses$$

$$Rev_t + m_t S_t = Div_t + \left(W\ \&\ S\right)_t + I_t$$

Assuming no new equity is issued,

$$Div_t = Rev_t - \left(W\ \&\ S\right)_t - I_t$$

$$S_0 = \sum_{t=1}^{\infty} \frac{Rev_t - \left(W\ \&\ S\right)_t - I_t}{\left(1+k_s\right)^t}$$

The accounting definition does not deduct gross investment; rather, it deducts a portion as depreciation (*dep*)

$$NI_t = Rev_t - \left(W\ \&\ S\right)_t - dep_t$$

Can reconcile the two definitions by realizing the change in asset book value during the year is the gross investment less the depreciation

$$\Delta A_t = I_t - dep_t$$

$$S_0 = \sum_{t=1}^{\infty} \frac{NI_t - \Delta A_t}{\left(1 + k_s\right)^t}$$

The economic definition focuses on the actual timing of cash flows

Managers should not just try to maximize earnings per share, which is based on accounting profits; rather, should maximize shareholder value

For example, FIFO (first-in, first-out) accounting method results in higher earnings per share but lower cash flows because more is paid in taxes

So LIFO (last-in, first-out) is better for shareholder value even if it is worse for earnings per share

Capital Budgeting Techniques

Problems for managers making investment decisions

1. Searching out new opportunities in the market
2. Estimating expected cash flows of projects
3. Evaluating projects according to sound decision rules

Criteria for essential property of maximizing shareholder value

1. All cash flows should be considered
2. Cash flows should be discounted at the opportunity cost of funds
3. Select from mutually exclusive projects the one that maximizes shareholders' wealth
4. Consider one project independently from others (value-additivity principle)

   Summing the values of all the projects will compute the firm value

Widely used capital budgeting techniques

1. Payback method
2. Accounting rate of return (ARR)
3. Net present value (NPV)

   This is the only method consistent with shareholder maximization
4. Internal rate of return

Cash flows for four mutually exclusive projects

Year	A	B	C	D	PV Factor @10%
0	-1000	-1000	-1000	-1000	1.000
1	100	0	100	200	0.909
2	900	0	200	300	0.826
3	100	300	300	500	0.751
4	-100	700	400	500	0.683
5	-400	1300	1250	600	0.621

The Payback Method

Project A has the shortest payback method, only 2 years

However, this method does not consider all the cash flows and does not discount them

This violates the first two criteria for maximizing shareholder value

The Accounting Rate of Return (ARR)

The ARR is the average after-tax profit divided by the initial cash outlay

Similar to the return on assets (ROA) and the return on investment (ROI)

Assuming the cash flows in the table above are profits, the average after-tax profit for project A is:

$$\frac{-1000+100+900+100-100-400}{5}=-80$$

And the ARR is -80 / 1000 = -8%

Project B has the highest ARR at 26%

The problems for the ARR method is it uses accounting profits instead of cash flows and does not consider the time value of money

Net Present Value (NPV)

The net present value is simply the present value of the free cash flows less the initial investment

$$NPV = \sum_{t=1}^{N} \frac{FCF_t}{(1+k)^t} - I_0$$

Using the table above, just multiply the product cash flows by the discount factors

Should accept projects that have a NPV greater than zero

Project C has the highest NPV of 530.85

If the projects are mutually exclusive, then only Project C is accepted

If the projects are independent but not mutually exclusive, then accept Projects B, C, and D since they all have positive values

Internal Rate of Return (IRR)

The IRR is the rate which equates the present value of cash outflows and inflows

Solve for the rate that makes the NPV = 0

$$NPV = 0 = \sum_{t=1}^{N} \frac{FCF_t}{(1+IRR)^t} - I_0$$

Project D has the highest IRR of 25.4%

Should accept any project that has an IRR greater than the cost of capital

Of course can only accept one project if they are mutually exclusive

Comparison of Net Present Value with Internal Rate of Return

IRR and NPV can lead to different project choices

NPV is appropriate because it uses the market-determined opportunity cost of capital

The IRR method does not discount at the opportunity cost of capital

The Reinvestment Rate Assumption

The NPV approach assumes shareholders can reinvest at the market-determined opportunity cost of capital

Under the IRR method, it is assumed shareholders can reinvest at the IRR

The Value-Additivity Principle

IRR does not adhere to the value-additivity principle

The results change when different projects are combined

NPV always follows the value-additivity principle

Multiple Rates of Return

There will be multiple IRR solutions when the sign changes more than once in a cash flow stream

Could use the opportunity cost of capital to accumulate the positive cash flows in the calculation to eliminate the multiple roots

This makes sense because the cash flows lent to the firm should be at a reasonable rate

Summary of Comparison of IRR and NPV

Problems with IRR

1. Does not obey value-additivity principle
2. Assumes funds invested in projects have opportunity costs equal to the IRR for the project
3. Cash flows cannot be discounted at the market-determined cost of capital
4. Multiple roots can emerge if the sign of the cash flows change more than once

Cash Flows for Capital Budgeting Purposes

This section adds debt and taxes

Investment funds can be provided by creditors and shareholders

Debt holders expect to receive a stream of payments unless the firm is bankrupt; shareholders get the residual value

Both creditors and shareholders should receive their expected risk-adjusted rates of return

Use the following assumptions in a simplified example

An initial investment of $1000 is required to buy equipment that will depreciate at $200 per year for 5 years

The owners will borrow $500 at 10% interest

The cost of equity is 30%

The table below illustrates the pro forma income statement

Rev	Revenue	1300
− VC	Variable costs	−600
− FCC	Fixed cash costs	0
− dep.	Noncash charges (depreciation)	−200
EBIT	Earnings Before Interest and Taxes	500
$-k_dD$	Interest Expense	−50
EBT	Earnings Before Taxes	450
− T	Taxes @ 50%	−225
NI	Net Income	225

Assuming the residual cash flows continue forever,

$$S = \frac{\text{Residual Cash Flow}}{k_s} = \frac{225}{30\%} = 750$$

The present value of the bondholders' wealth, B, is:

$$B = \frac{\text{Interest Payments}}{k_b} = \frac{50}{10\%} = 500$$

Thus, the market value of the firm, V, is:

V = B + S = 1250

Define the weighted average cost of capital (WACC) in the following manner:

$$k = WACC = k_b\left(1-\tau_c\right)\left(\frac{B}{B+S}\right) + k_s\left(\frac{S}{B+S}\right) = \left(0.10\right)\left(1-0.5\right)\left(0.4\right) + \left(0.30\right)\left(0.6\right) = 20\%$$

Cash flows for capital budgeting purposes is free operating cash flows minus taxes on free operating cash flows

$$\begin{aligned}
&\left(\Delta Rev - \Delta VC - \Delta FCC\right) - \tau_c\left(\Delta Rev - \Delta VC - \Delta FCC - \Delta dep\right) - \Delta I \\
&= \left(\Delta Rev - \Delta VC - \Delta FCC\right)\left(1-\tau_c\right) + \tau_c \Delta dep - \Delta I \\
&= EBIT\left(1-\tau_c\right) + \Delta dep - \Delta I
\end{aligned}$$

Notice the cash flows are independent of the capital structure (debt and equity mix); that is taken into account in determining the WACC

Discounting at the WACC separates the investment decision of the firm from its financing decision

Must assume the capital structure stays constant or the cost of capital would change each period

The definition of cash flows includes working capital requirements

Relaxing the Assumptions

Will need to introduce uncertainty

Also must account for manager flexibility (e.g. could defer the start date, increase or decrease the scale)

This means the NPV approach systematically undervalues every project

Recommended Problems

You can certainly work all the problems, but the ones below are particularly valuable in your exam preparation.

1, 4, 5, 8, 9

Solutions to Recommended Problems

1. First calculate the net income:

Revenue	140,000
Variable and fixed costs	−100,000
Depreciation	−10,000
Earnings Before Interest and Taxes	30,000
Interest Expense	−0
Earnings Before Taxes	30,000
Taxes @ 40%	−12,000
Net Income	18,000

$$CF = (\Delta Rev - \Delta VC - \Delta FCC)(1-\tau_c) + \tau_c \Delta dep - \Delta I$$
$$= (140,000 - 100,000)(1-0.4) + (0.4)(10,000) = 28,000$$
$$CF = EBIT(1-\tau_c) + \Delta dep - \Delta I = (30,000)(1-0.4) + 10,000 - 0 = 28,000$$

$$NPV = \sum_{t=1}^{10} \frac{28,000}{(1.12)^t} - 100,000 = 58,200$$

4. Calculate the net cash flows and discount back at 12% to find the net present value

   At time t = 0 (buy new machine, sell old machine, take tax loss on sale)

   $$-100,000 + 15,000 + (40,000 - 15,000)(0.4) = -75,000$$

   In years 1 to 8 (increase in earnings, tax savings from new depreciation amount)

   $$\sum_{t=1}^{8}(1.12)^{-t}\left[(31,000)(1-0.4)+\left(\frac{100,000-12,000}{8}-\frac{40,000-0}{8}\right)(0.4)\right]$$
   $$=(4.968)[18,600+2400]=104,328$$

   In year 8 (salvage value of new machine)

   $$(1.12)^{-8}(12,000) = 4,847$$

   Note there is no tax effect because this portion of the investment was never deducted for tax purposes; only 88,000 was deducted over the life of the new machine

   NPV = -75,000 + 104,328 + 4,847 = 34,175

5. Note the financing of the project is irrelevant.

   $$NPV = \left[(3000)(1-0.4)+(0.4)\left(\frac{10,000}{5}\right)\right](2.991)-10,000 = -2,223.40$$

8. The financing information in this project is also irrelevant.

   The annual cash flows are increased due to the revenue increase, cost reduction, and tax savings from the depreciation:

   $$[200+360](1-0.4)+(0.4)\left(\frac{1200}{3}\right)=496$$

   $$NPV = \left\{\sum_{t=1}^{3}(1.10)^{-t}\,496\right\}-1200 = 33.55$$

9. First calculate the cash flow difference with and without the proposal

   $$CF = (\Delta Rev - \Delta VC - \Delta FCC)(1-\tau_c)+\tau_c \Delta dep$$
   $$=(0--290-0)(1-0.5)+(0.5)(180)=235$$

   Then calculate the NPV at the weighted average cost of capital

   $$NPV = \left\{\sum_{t=1}^{5}(1.10)^{-t}\,235\right\}-900 = -9.12$$

Financial Markets and Corporate Strategy by Greenblatt & Titman
Chapter 18: How Managerial Incentives Affect Financial Decisions
(Study Note FET-162-08)

Introduction

Learning Objectives

1. Distinguish between managerial incentives and shareholder incentives
2. Understand how differences affect ownership structure, capital structure, and investment policies
3. Describe ways to design compensation contracts that minimize managerial-shareholder incentive problems

Purposes of Chapter

1. View how financial decisions are actually made in light of incentive problems
2. View how financial decisions should be made in light of incentive problems

Why might management decisions not maximize firm value?

1. Managers take advantage of position and benefit at shareholders expense

   For example, Armand Hammer used Occidental funds to build a museum for his personal art collection
2. Managers serve more than just shareholders (e.g. employees)

18.1 The Separation of Ownership and Control

Most large corporations are effectively controlled by management that own a very small stake in the company

Whom Do Managers Represent?

1. Investors (e.g. equity holders and debt holders)
2. Customers and suppliers
3. Employees

Managers spend more time with the last two groups relative to investors

What Factors Influence Managerial Incentives?

1. Length of time on job

   Longer time increases loyalty to those who the manager frequently interacts (e.g. customers and employees)

2. Proportion of company stock owned by management

   Only a fraction of the perquisites (e.g. corporate jet) is paid by the manager

How Management Incentive Problems Hurt Shareholder Value

Share prices normally increase when entrenched executives leave

New CEOs can make the tough decisions that benefit shareholders even if employees are hurt

Why Shareholders Cannot Control Managers

For most companies, CEOs own a very small fraction of the company (less than 1%)

The ownership of outside shareholder is too diffuse to make a change

Free-rider problem: individual investors are not inclined to discipline management even though it would be in the best interest of the shareholders as a group

Proxy fights are very expensive and the cost must be borne by the individuals that wage them

These individuals are only getting a fraction of the benefit; the other shareholders are getting a free ride

Why is Ownership so Diffuse if it Leads to Less Efficient Management?

Investors must balance the desire to have a diversified portfolio with the need to control management

An investor that sacrifices diversification for control would benefit other shareholders, but only the investor would bear the lack of diversification cost

Can Financial Institutions Mitigate the Free-Rider Problem?

Large institutional investors (like mutual funds) could control a significant stake in a company and still be diversified

Mutual funds and insurance companies in the US are precluded by law from owning more than 5% of the stock of any individual firm

Pension funds have begun to exert more influence, but there is still some reluctance in private ones

Companies don't want other private pension plans to monitor their actions, so they provide the same courtesy to other companies with their pension plan

Public pension funds are even more aggressive at monitoring managers of corporations because they do not have concerns about other plans monitoring them

Changes in Corporate Governance

Changes in the mid-1980s that made managers more responsive to shareholders include:

1. Active takeover market
2. Increased usage of executive incentive plans
3. More active institutional shareholders

   The SEC changed two rules in the early 1990s to encourage this

   - Fuller disclosure of executive compensation packages
   - Made it easier for shareholders to get information about other shareholders; this reduced the cost of proxy fights

Board members are becoming more effective at monitoring management

1. Smaller number of members with greater percentage of outsiders
2. Receive more compensation in stock options to align incentives

CEOs are now more likely to lose their jobs for poor performance

Corporate Governance Problems Differ Across Countries?

Some countries, like the US and UK, provide strong legal protection for outside shareholders

Other countries, like Russia, have very weak protection

The countries with strong protection have more active markets

18.2 Management Shareholdings and Market Value

The ownership in many corporations is quite concentrated

Many of the large shareholders are the company founders (e.g. Michael Dell)

The Effect of Management Shareholdings on Stock Prices

A person like Bill Gates may choose not to sell his Microsoft stock for tax reasons or to avoid sending bad signals to the market

Executives in the industries with the greatest potential incentive problems retain the largest ownership

The market expects the entrepreneur will work harder if he or she retains a larger ownership position

Management Shareholdings and Firm Value: The Empirical Evidence

One study showed higher management concentration was good up to a point (5%), but then it hurt the value of the corporation

This is tough to measure because market-to-book ratios are affected by many factors

Closed-end mutual funds often trade at a significant discount to the net asset value (NAV)

> This indicates investors dislike the large shareholders; negative effects of management ownership outweigh the positive benefits

18.3 How Management Control Distorts Investment Decisions

The Investment Choices Managers Prefer

1. Making Investments that fit the Manager's Expertise

   This makes it harder to fire and replace the manager

   Mangers want to become entrenched and irreplaceable
2. Making Investments in Visible/Fun Industries

   Media companies are more fun to manage than chemical companies
3. Making Investments that Pay Off Early

   Managers are focused on short-term results even if the decisions hurt the long-run

4. Making Investments that Minimize the Manager's Risk and Increase the Scope of the Firm

   Managers want to avoid bankruptcy to keep their jobs

   This also explains why managers prefer large empires

   Unsystematic risk matters to managers even though it does not matter to shareholders, so managers prefer diversified structure

   Managers also prefer less debt

   Managers also like larger companies because pay is correlated with size

Outside Shareholders and Managerial Discretion

Outside shareholders can reduce management discretion though fixed assets and other technologies

Flexibility is more valuable in uncertain environments, so outside shareholders may be better off monitoring the managers rather than restricting the decisions

The cost of discretion is greater when manager and shareholder interest do not coincide

18.4 Capital Structure and Managerial Control

Increasing debt may motivate the manager – simply trying to avoid bankruptcy and keep job

The Relation between Shareholder Control and Leverage

Companies managed by individuals with a strong interest in the stock price tend to have higher leverage

How Leverage Affects the Level of Investment

Using debt to limit the firm's ability to invest in the future may be beneficial; it avoids poor investments by management

Large debt limits management's ability to use corporate resources

Selecting the Debt Ratio that Allows a Firm to Invest Optimally

Shareholders should use more debt if management has a tendency to overinvest

In Example 18.3 on page 641

A firm is financed with initial investment of $100

In one year, the firm can invest an additional $100 in a project that has the following potential payoffs in different states of the economy:

	Good	Medium	Bad
Value with additional investment	$250	$175	$125
Value without additional investment	50	50	50
Incremental value added	200	125	75

The $100 additional investment in the bad state of the economy should not be made because it will lose $25

To prevent management from making the second investment in the bad economy state, could structure the initial $100 investment to restrict future choices

For example, the initial investment could be $70 of senior debt and $30 of subordinate debt

The value with the additional investment (the first row in the table above) must first pay back the $70 of senior debt

Then only if there are sufficient funds could it support the additional $100 investment

In the bad state of the economy, there would only be $55 remaining, which is clearly not enough to support the $100 additional investment

Thus, management is prevented from investing in a negative NPV project

This restriction will only work if the internal cash flows of the company are not sufficient to cover the additional investment

A Monitoring Role for Banks

Banks could monitor the firm position much better than diffuse debt holders

Many debt holders would have the same free-rider problem discussed above

The bank could review the prospects before deciding to lend additional funds

This is a more flexible option compared to Example 18.3 above

However, if banks have too much influence it could make management too conservative for the likes of equity holders

Borrowing from a bank can be done discretely; this is advantageous if the firm is trying to keep proprietary secrets from its competitors

A Monitoring Role for Private Equity

Private equity suppliers (e.g. venture capital firms) could also provide monitoring services

They are likely to provide more monitoring because

1. They have substantial equity stake
2. Their investment is not liquid, so interested in long-term viability of firm
3. They have the needed expertise

18.5 Executive Compensation

Stockholders are the principals and management is the agent hired by the principals

The Agency Problem

The tenant farmer (the agent) and the owner of the farm (the principal)

The farmer compensation should be tied to the output, but not too much because outside influences (e.g. weather) can dramatically affect the crop and is not controllable by the farmer

Two Components of an Agency Problem

1. Uncertainty the agent cannot control
2. Lack of information for the principal (cannot monitor the agent all the time)

Measuring Inputs versus Measuring Outputs

The principal can either closely measure the agent input (labor intensity) or indirectly monitor the agent by measuring the output

In the mid-1970s it was popular to measure the input; however, it was difficult to measure the quality of the input even if the quantity was objective

Now there is a tendency to monitor the output

Designing Optimal Incentive Contracts

Managers should not be penalized for factors outside their control

So should not tie the managers to the overall stock return; rather, should compare to the stock return of other firms in the industry

Minimizing Agency Costs

Agency costs are the difference between actual firm value and hypothetical value if the management and shareholder incentives were in sync

Is Executive Pay Closely Tied to Performance?

The Jensen and Murphy Evidence

In a 1990 article they argued executive compensation is not tied to performance enough

More Recent Evidence

Subsequent evidence hints Jensen and Murphy underestimated the sensitivity

They failed to capture the future CEO compensation relationship to performance

Positive actions taken by the CEO are immediately reflected in the stock price on a present value basis; the investors assume the positive results will continue into the future

It is more important to compare cumulative compensation to cumulative stock gains over many years

Cross-Sectional Differences in Pay-for-Performance Sensitivities

The performance sensitivities differ greatly by industry

Industries that have more potential agency problems tie the pay more to performance

Higher performance sensitivities is observed at smaller companies

Growth firms in volatile industries have smaller pay-for-performance sensitivities; too much of the performance is outside the manager's control

Is Pay-for-Performance Sensitivity Increasing?

It has increased over the past 20 years, mainly through stock options

How Does Firm Value Relate to the Use of Performance-Based Pay?

Empirical studies tend to show performance-based pay does improve financial results

However, the positive correlation does not imply causation

Managers may be inclined to accept performance-based pay if they expect high returns in the short term

Thus, the implementation of performance-based pay could be a form of market signaling

Is Executive Compensation Tied to Relative Performance?

Relative performance compensation tie the manager's pay to performance relative to a benchmark

Stock options are the dominant form of performance-based compensation, and they are not based on relative performance

Bonuses are easier to tie to relative benchmarks

Relative benchmarks could encourage too much competition within the industry

Stock-Based versus Earnings-Based Performance Pay

Stock-Based Compensation

Advantageous because ties managers directly to shareholder desire

Disadvantages include:

1. Stock prices change for reasons outside the manager's control
2. Stock prices change due to changing *expectations*, not just *realizations*

   This penalizes managers if the market has a favorable opinion of them in advance

Earnings-Based Compensation

Advantageous because numbers are available for separate business units and privately held firms

Disadvantages include:

1. Difficult to determine the appropriate measure
2. Accounting numbers can have quirks

Value-Based Management

Based on economic cash flows

Adjusts for the amount of capital used

Compensation Issues, Mergers, and Divestitures

Stock-based compensation is not as useful at motivating heads of business units since their actions are not as impactful on the stock price

Spin-Offs and Carve Outs

- Spin-offs create a new company by distributing shares to the existing shareholders
- Carve outs create a new company through an IPO
- Both of these could be done to better motivate the division heads

Mergers

- Mergers combine separate firms into a single entity
- Many divestitures undo past mergers

Financial Markets and Corporate Strategy by Greenblatt & Titman
Chapter 19: The Information Conveyed by Financial Decisions
(Study Note FET-163-08)

Introduction

Learning Objectives

1. Understand how financial decisions are affected by well-informed managers
2. Indentify situations in which managers may want to distort accounting information
3. Explain how dividend choice, capital structure, and real investments affect stock price
4. Interpret empirical evidence regarding stock price reaction to financing and investing decisions

Introduction

The stock market reacts greatly to dividend changes and other financial restructurings

Managers often have inside information that cannot be disclosed to investors

The information could give the company a competitive advantage or the management team may simply want to hide unfavorable news

Investors strive to interpret indirect news from management – called signals

These actions (e.g. management purchasing shares) often speak louder than words

Managers often want to maximize the short-term stock price simply to boost their own pay

Must distinguish between decisions that *create* value and decisions that simply *signal* positively to shareholders

19.1 Management Incentives When Managers Have Better Information Than Shareholders

Should the manager strive to maximize the current market value of the firms which is based on public information or the true value of the firm (the intrinsic value) based on private information?

Long-term shareholders prefer the maximization of intrinsic value

Short-term shareholders prefer the maximization of the current value

At times they even want management to conceal bad news

Conflicts between Short-Term and Long-Term Share Price Maximization

Reasons for management concern of current stock prices

1. May plan to issue equity or sell some of own stock
2. Prevent acquisition at a low price
3. Boost management compensation
4. Need higher price to attract customers and outside stakeholders

Managers want to increase the weighted average of the current and intrinsic value; must determine these weights based on the particular circumstances

Good decisions can reveal unfavorable information and bad decisions can reveal favorable information

This means stock price reactions do not necessarily imply the decision was good or bad

19.2 Earnings Manipulation

Managers often increase reported earnings in the current year at the expense of future years

Depreciation and inventory methods can be used to manage earnings

Some of the methods are disclosed, but other estimates left to manager discretion are hidden from shareholders

Incentives to Increase or Decrease Accounting Earnings

Earnings are manipulated most when it is most advantageous

For example, earnings will be increased prior to a stock issue

Sometimes the earnings will be lowered (e.g. prior to union negotiations or plea for government assistance)

19.3 Shortsighted Investment Choices

Savvy investors rarely take the reported earnings at face value

Sometimes cash flow numbers are more reliable

Management's Reluctance to Undertake Long-Term Investments

Some investments will not generate significant profits for many years

Analysts are skeptical about management claims of future profits; they are more concerned about the current year profits

This causes reluctance for managers to invest in long-term projects

A manager only concerned about maximizing intrinsic value would still undertake good long-term investments

What Determines a Manager's Incentive to be Shortsighted?

The weights assigned to the current value and intrinsic value determine the shortsightedness

19.4 The Information Content of Dividend and Share Repurchase Announcements

Empirical Evidence on Stock Returns at the Time of Dividend Announcements

Stock prices increase about 2% on announcement of a dividend increase; the jump is greater if no previous dividends have been paid

Stock prices drop about 9.5% when dividends are cut or omitted

However, this does not mean increased dividends are good for intrinsic value maximization

A Dividend Signaling Model

Operating Cash Flow = Investment Expenditures – Change in Equity + Dividends

A company must use the internal cash flows for investments or give it back to shareholders

Information Observed by Investors

- Assume investors cannot observe the operating cash flows and investment expenditures
- They can observe the dividends paid and amount of capital raised

The Information Content of a Dividend Change

- Increased dividends could mean higher operating cash flow (which is good) or reduced investment expenditures (which is bad)

Dividend Signaling and Underinvestment

- If the manager is focused on the current stock price, will likely forgo some investment opportunities to increase the current dividends
- Often this will hurt the intrinsic value of the company

Do Positive Stock Price Responses Imply That a Decision Creates Value?

- Not necessarily
- As mentioned above, increased dividends could actually mean the company is not making proper investments
- Also, dividend cuts could be viewed negatively by the market when it is the prudent decision for management to make worthwhile investments

Share Repurchases versus Dividends

- Share repurchases are equivalent to dividends, ignoring transaction costs and taxes
- Studies have shown stock prices react favorably to share repurchase announcements
- A greater stock price reaction is observed for tender offers compared to purchases made in the open market
- This occurs because tender offers are usually larger in size and at a premium
- Simultaneous dividend cuts and share repurchases should be a wash in the market
- However, the market may view the share repurchase as a one-time event and the dividend cut as permanent
- Share repurchases are more tax efficient for the investor
- There is very limited empirical evidence on simultaneous dividend cuts and share repurchases

Dividend Policy and Investment Incentives

Investors and analysts rarely know details about the investment opportunities of the firm

Can Dividend Cuts Signal Improved Investment Opportunities?

Management must convince the shareholders the investments are worthwhile

Sometimes the shareholders will believe management, other times they will not

Dividend Cuts and the Incentive to Overinvest

Managers may overinvest simply to see the firm grow rather than add value for the shareholders

Studies have shown companies with better investment opportunities (measured by the ratio of the market value to the book value) have smaller market reactions to dividend cuts and dividend increases

This could simply show people who invest in growth stocks (high MV to BV ratio) are not interested in dividends

Dividends Attract Attention

There is more incentive for management to attract attention when it feels the firm is undervalued

Stock dividends and stock splits also usually increase the share price even though they do not affect the firm's cash flows

This could be due solely to the attention the announcement solicits

19.5 The Information Content of the Debt-Equity Choice

Two key pieces of information in the debt/equity choice

1. Managers will avoid debt if think it will be difficult to repay; therefore, debt issues express the management confidence in future cash flow
2. Managers would be reluctant to issue equity if they thought the shares were underpriced; therefore, equity issues may signal overpriced shares

A Signaling Model Based on the Tax Gain/Financial Distress Trade-Off

When issuing debt, management must weigh the tax benefits with the cost of financial distress

Management that expects large future cash flows will favor debt financing

Management may even increase leverage when it reduces the intrinsic value just to pump up the current stock price

In order for this to be a credible market signal firms with poor prospects must find it difficult to issue debt

The Credibility of the Debt-Equity Signal

Sometimes a firm will take on more debt than desired just to send a strong market signal

Investors must take into account the motives of management

For example, the CEO would like to increase the stock price right before a sale of his or her personal shares

The investors must determine if management (in particular the CEO) has a long-term or short-term agenda

Adverse Selection Theory

Adverse selection is displayed when individuals choose among various medical or dental insurance plans

Managers have the greatest incentive to sell stock when it is a lemon (overpriced)

Adverse Selection Problems When Insiders Sell Shares

An entrepreneur must consider the following when deciding how many shares to sell:

1. Diversification benefits
2. Tax costs
3. Whether the shares are undervalued or overvalued

Investors watch carefully the buying and selling by insiders

The big inside investors must convince the market that selling shares is not a bad signal for the company stock

Adverse Selection Problems When Firms Raise Money for New Investments

Firms may pass up good investments just to avoid issuing equity

This is especially true if the current stock price is below the intrinsic value

Using Debt Financing to Mitigate the Adverse Selection Problem

With debt financing, a company should take on a new project provided it has a positive NPV

Management does not have to worry about the current stock price be undervalued

Management may still pass up good investments if it increases the risk of bankruptcy too much

Adverse Selection and the Use of Preferred Stock

Preferred stock has fixed payments like a bond but avoids the financial distress risk because missing payments does not cause bankruptcy

Preferred stock may be a good option for firms that are experiencing temporary financial problems

Empirical Implications of the Adverse Selection Theory

1. The reluctance of managers to issue equity when the stock price is undervalued explains why the stock price drops when equity is issued
2. Also explains why managers prefer the following order for financing projects:
    a. Retained earnings
    b. Debt
    c. Equity

19.6 Empirical Evidence

What is an Event Study?

Examine stock price responses to announcements

The stock price often moves a few days before the announcement because information is leaked to the public

Also, sometimes the stock price reacts slowly to the news over several days

Therefore, many studies average the total return or excess return over several days

Excess return calculations adjust for the market returns, which is most important for small samples

Event Study Evidence

Capital Structure Changes

Leverage-increasing events (e.g. stock repurchase, exchange debt for preferred) tend to increase stock prices and leverage-decreasing events (e.g. conversion-forcing call, common stock sale) tend to decrease stock prices

Issuing Securities

In general raising capital is viewed negatively by the market

It implies the company has generated insufficient internal capital

The negative reaction is much more severe for equity issues because it also implies management thinks the stock is overpriced

Debt issues get almost a neutral market reaction because the market likes the increase in leverage

Explanations for the Event Study Results

The empirical findings above are consistent with the adverse selection theory

Equity issues are most subject to adverse selection (management knows the stock price is overvalued) and short-term bank debt is least subject to adverse selection

Management is enticed to buy back shares when the stock price is undervalued

Managers also are willing to take on debt when they expect the future profits to be sufficient to cover the cash flow needs

Summary of the Event Study Findings

Stock prices react favorably to

1. Distributing cash to shareholders
2. Increasing leverage

Stock prices react negatively to

1. Raising cash
2. Decreasing leverage

Differential Announcement Date Returns

Announcements of equity issues will be perceived less negatively if investors realize the company cannot easily issue debt

The empirical evidence supports this conclusion

Postannouncement Drift

The market often underreacts to important information

Studies have shown the market underreacts to dividend initiations and omissions

It also underracts to equity issues and share repurchases

Investors may place too much confidence in their own analysis of the firm's value before the announcement

How Does the Availability of Cash Affect Investment Expenditures?

The borrowing capacity and availability of cash affect a firm's ability to invest

Too much debt financing can hurt the company's credit rating, which could affect its ability to attract customers

Empirical Evidence in the United States

- Studies have shown companies limit investments based on cash flows
- This is especially true for companies that pay lower dividends

Empirical Evidence in Japan

- A keiretsu family is a group of firms with interlocking ownership structures
- It makes it difficult for another firm to take them over
- The family is usually held by a large bank that can supply the capital needs
- Therefore, investment decisions are not greatly impacted by cash flow