Corporate Finance

Lecture 11: Signaling Theory: Capital Structure and Dividend Policy

Albert Banal-Estanol

Reactions of the stock market

- Stock price movement of about 10-15% when firms announce changes in…
  - Investment
  - Dividend choices
  - Financing choices
- Also stock prices are affected by stock splits, managers' decision to acquire shares,…

Information is revealed

Today's Lecture

- How the market is going to react to those announcements?
- How market reactions are going to affect those decisions?

- Implicit assumption: insiders have more information than investors
- Managers may not be able or willing to directly disclose this information
- Some information may be indirectly revealed by managerial actions

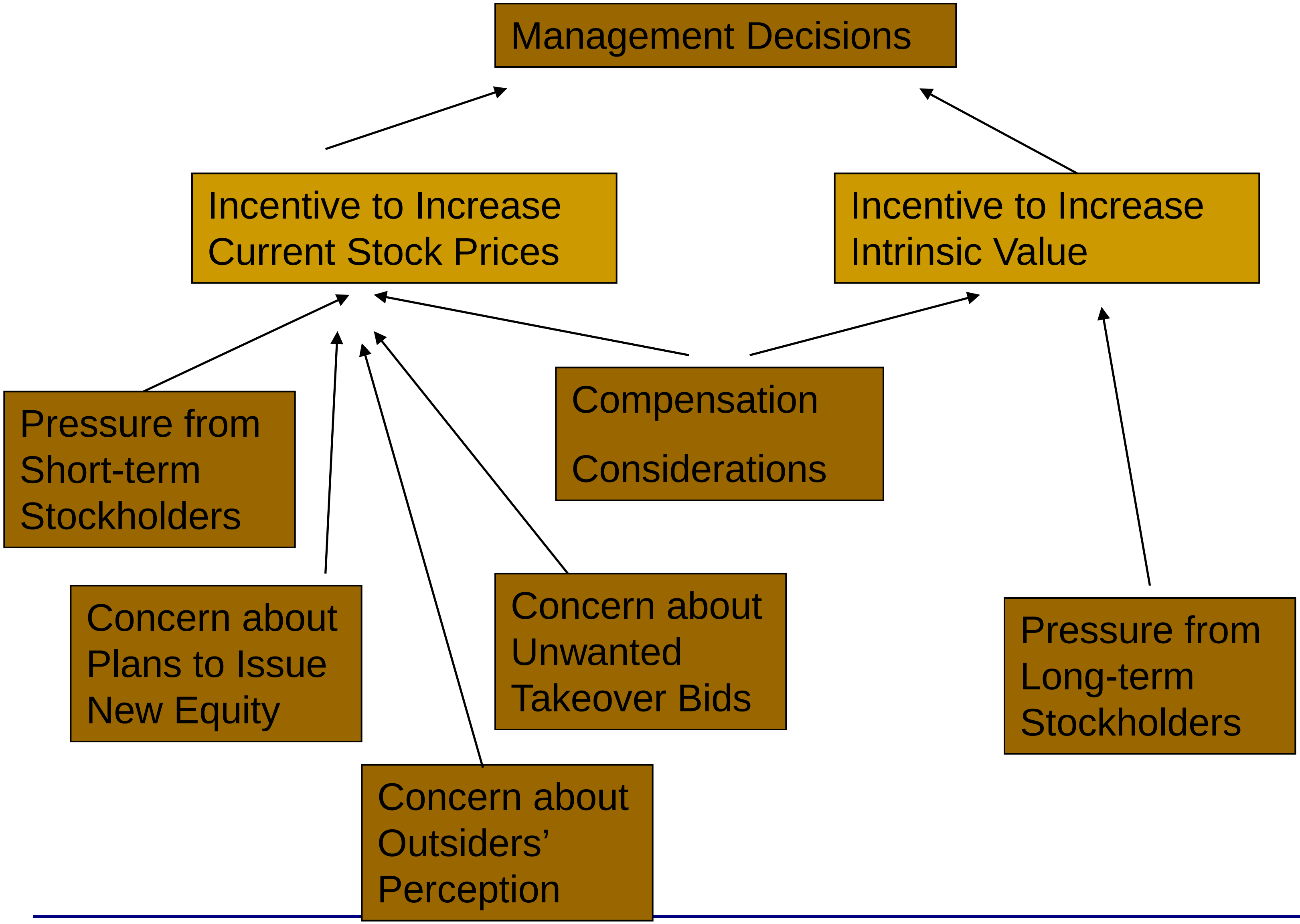
Intrinsic and Perceived Value

- Mostly, we have assumed that managers maximise shareholder value (i.e. share price)
- However, managers may know whether the market over or undervalues the firm

- Intrinsic value: “firm’s (full information) value”
- Perceived value: “current market value”

- What should the manager maximise?

What will the manager maximise?



Simple Numerical Example

- A CEO owns 20,000 shares and…
  - Plans to sell 10,000 in near future and
  - Hold 10,000 indefinitely

- If she has a fixed salary and does not have any of the previous concerns…
  - She will weight current and intrinsic value equally
  - Reduction of $1 in intrinsic value needs to be compensated with an increase $1 in current value

Real Life Example

- Joint venture of IBM, Motorola and Apple to collaborate on PC and workstations
- On announcement, the market evaluates…
  - Whether the JV is a good decision for IBM
  - New information about IBM signaled indirectly by the decision
    - Good: IBM is confident to fund a major new investment
    - Bad: IBM does not have confidence in the mainframe business

In the end…

- It may well be that…
  - Good decisions can reveal unfavourable information and
  - Bad decisions can reveal favourable information
- As a consequence:
  - Stock market reactions can be poor indicators about the change in intrinsic value
  - Managers concerned about the short-term prices may take decisions reducing intrinsic vale

Effects of Announcements about Dividends and Share Repurchases

- Announcement of…
  - An increase in dividends (+2%)
  - Initiation of quarterly dividends (higher)
  - Omission of a dividend (-9.5%)

  - A repurchase of share with tender offer (+16%)
  - A repurchase of share at the open market (3%)

A Simple Model

- All-equity-financed firm

OPERATING CASH FLOW = INVESTMENT EXPENDITURES - CHANGE IN EQUITY + DIVIDENDS

- Assume: investment expenditures (and equity and dividend) are observable by investors
- Higher than expected dividend implies good news about the company

A Signaling Model

OPERATING CASH FLOW = INVESTMENT EXPENDITURES − CHANGE IN EQUITY + DIVIDENDS

- Assume: operating cash flows and investment expenditures can't be observed by investors
- If manager has incentives to…
  - maximise intrinsic value, it will pick the optimal investment level
  - maximise share price, she may underinvest and increase the dividend

Numerical Example

	Option 1	Option 2	Option 3
	$10m dividend	$15m dividend	$20m dividend
	$15m invested	$10m invested	$5m invested
Intrinsic Value	$220m	$210m	$200
Current Value	$190m	$210m	$215

Summary

- A manager with equal weight for short and long term value will choose option two
- Market correctly inferred that the firm would choose this option
- If they had unexpectedly paid more…
  - Because e.g. management face takeover threat
  - Investors would have incorrectly believed that firm had better than expected cash flows

Dividend Policy and Investment

- If investors cannot foresee investment expenditures, dividend choice gives info about
  - Investment opportunities and incentives
  - Operating cash flows
- A cut in dividend means…
  - Good investment opportunities
  - Less profitable firm
- Managers' task: convince that it is the first!

Information Content of the Debt-Equity Choice

- Managers avoid increasing leverage if the firm is in bad shape
  - Debt issue signals confidence about the firm
- Managers do not issue equity if their stock is undervalued
  - Equity issue signals that stock may be overvalued

Credibility

- In order to signal quality, managers have an additional incentive to increase their debt ratios
- However, a signal transmits information only if firms in bad shape cannot mimic behaviour of firms in good shape
- But a higher debt ratio will be costly for bad firms and therefore is a credible signal
  - Higher impact in the probability of bankruptcy

Adverse Selection while Selling Equity

- We said that mangers have incentives to issue equity when stock is overvalued
- Similarly an insider has incentives to sell her shares when the stock is overvalued
- But holding shares has costs!
- Insiders' job: convince investor that costs are high

Adverse Selection while Issuing Equity

- Again need to convince investors that good investment opportunities arose
- Sometimes, impossible and therefore positive NPV investments not taken
- Using debt or preferred stock can sometimes be a solution