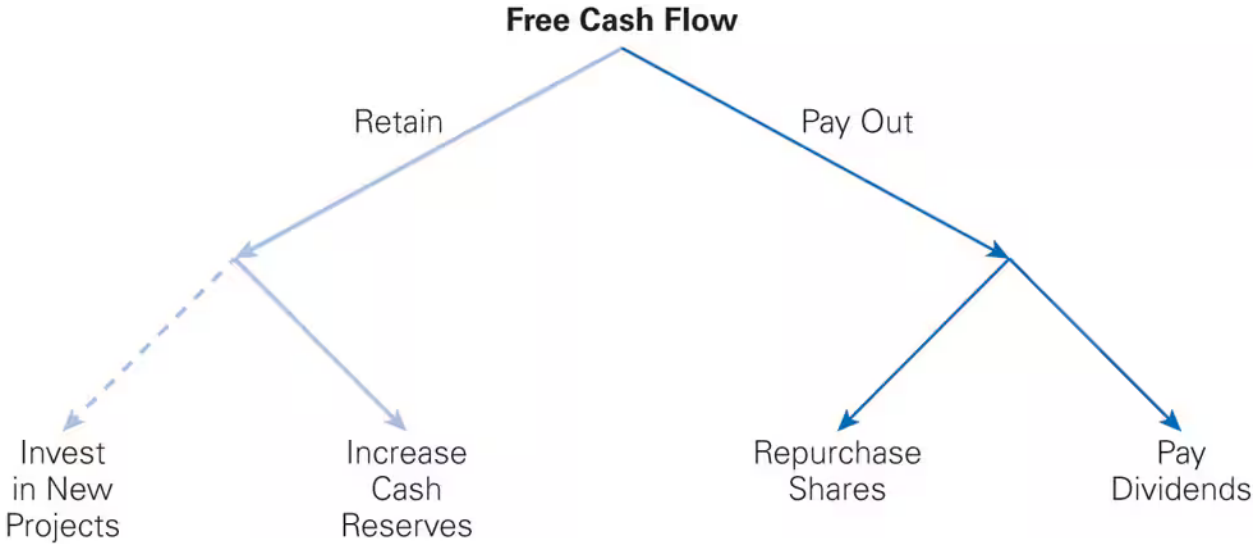
Chapter 17: Payout Policy

I. Introduction

A. Overview

Payout Policy: **Alternative uses of free cash flow.**
Main alternatives (as seen in Figure 17.1 from the text): **invest in new projects, increase cash holdings, distribute to shareholders through dividend or stock repurchase.**



Other possibilities: acquire other firms (or parts of other firms), pay down debt.

B. Methods for Paying Cash to Stockholders

1. Dividends

=> **cash (or shares) are paid to existing stockholders**

a. Important dates
1) Declaration date
=> board authorizes a dividend
=> firm is obligated to pay a dividend once declared
2) Ex-dividend date
=> if purchase on or after this date, don't receive next dividend
=> one business day before record date
=> gives time to process transfer of ownership before record date
3) Record date
=> firm pays dividend to shareholders of record on this date
=> set by board of directors
4) Payable date
=> firm mails check (or direct deposits them)

b. Types of dividends (and other distributions)
1) Regular => usually paid quarterly and changed infrequently
2) Special => large dividend which unlikely to be repeated
3) Liquidating => dividend that reduces firm's paid in capital
=> taxed as capital gain rather than dividend
4) Stock dividend (or split) => firm issues shares rather than paying out cash
=> no real consequences for firm or stockholders
=> may be used to keep stock prices in an "optimal range"
=> if too high, stock may become less liquid as fewer small investors
=> if too low, transaction costs become significant and can be delisted by exchange
5) Spin-off
=> firm distributes shares of subsidiaries to current stockholders
=> not taxed
=> avoids transaction costs of selling the division

2. Share Repurchases

=> **firm uses cash to buy shares from stockholders**

a. Open market purchases
=> **firm buys share in the open market like any other investor**
=> 95% of all repurchases
=> firm not obligated to make announced repurchases

b. Tender offer
=> **firm offers to buy a certain number of shares at a set price during a short time frame**
=> purchased at a premium to market price

c. Dutch auction
1) **firm gives price range at which it will buy shares**
2) **stockholders tell firm how many shares willing to sell at what price**
3) **purchase price = lowest price at which firm can buy the number of desired shares**
4) **firm pays purchase price to all stockholders who tendered at or below that price**

d. Targeted repurchase
=> **firm purchases shares directly from major stockholder**
Reasons:
1) **market not liquid enough to handle sale**
2) **greenmail to eliminate takeover threat**

II. Payout Policy in a Perfect Capital Markets

Perfect Capital Markets (same as in Chapter 14):

1. Investors and firms can trade the same set of securities at competitive market prices equal to the present value of their cash flows.
2. There are no taxes, transaction costs, or issuance costs associated with security trading.
3. A firm's financing decisions do not change the cash flows generated by investments, nor do they reveal new information about them.

Basic idea: **Once all positive net present value projects are undertaken, stockholders are indifferent to whether a firm retains or pays out cash and to the payout method.**

Key:

1) **Stockholders are indifferent to whether a firm pays a dividend**
   => **stock price drops by the amount of the dividend**
   => **the stockholder's wealth is unchanged**

   Note: arbitrage is possible if the drop in the stock price doesn't equal the dividend

   Ex. Assume stock price is $50 and firm declares a dividend of $5 per share. The ex-dividend price must be $45.

   If ex-divided price is $46:

   => **buy for $50, sell for $46, get $5 dividend**
   => Arbitrage profit = **$1**

   If ex-dividend price is $43

   => **short-sell for $50, buy for $43, pay $5 to make up dividend**
   => Arbitrage profit = **$2**

2) **Stockholders are indifferent to whether a firm repurchases shares**
   => **stock repurchases do not change the firm's stock price**

   Reason: the fall in the number of shares offsets the fall in the market value of the firm's assets

Ex. Assume a firm with 5 million outstanding shares has assets with a market value of $100 million and that $10 million of this is in cash.

=> Price per share $= \$20 = \frac{\mathbf{100{,}000{,}000}}{\mathbf{5{,}000{,}000}}$

Assume the firm uses $8,000,000 to repurchase shares at $20 per share

=> number of shares repurchased $= 400{,}000 = \frac{\mathbf{8{,}000{,}000}}{\mathbf{20}}$

Price per share after the repurchase $= \$20 = \frac{\mathbf{100{,}000{,}000-8{,}000{,}000}}{\mathbf{5{,}000{,}000-400{,}000}}$

3) **investors can create their own dividend (or repurchase) by selling shares**

4) **investors can undo any dividend or repurchase by using cash received to buy shares**

III. Taxes and Payout Policy

A. Stockholder Taxes and Payout Policy

Let: τ_d = tax rate on dividends
τ_g = tax rate on capital gains

Notes:

1) $\boldsymbol{\tau_g}$ **usually lower than** $\boldsymbol{\tau_d}$
2) **capital gains taxes are deferred until sell stock**
3) **entire dividend taxable while only gain is taxable with repurchase**

1. **If distributions are taxed, stockholders are better off if the firm repurchases shares rather than paying dividends**

Ex. Assume the tax rate on capital gains and dividends is 15% (true for qualified dividends this year). Assume also that you have purchased all 100 outstanding shares of a firm worth $4800 (for $48 per share). Finally, assume that the firm will generate cash flow of $200 per year.

Note: Qualified dividends are dividends paid by public firms to investors who have held the stock for 61 days. The IRS has laid out specific requirements. Sources:
Investopedia Article on Qualified Dividends
Investopedia Article on Capital Gains Taxes

1: Assume firm pays you \$200 of dividends (\$2 per share) per year

Tax = \$30 **= 200*.15**

2: Assume firm uses \$200 to repurchase shares (from you)

Note: in order to prevent arbitrage the price before the repurchase, the price at which the firm repurchases, and the price after the repurchase must be the same

=> price at which firm will repurchase shares = price before repurchase = \$50 **= (4800 + 200)/100**

=> Number of shares firm will repurchase at end of 1st year = 4 **= \$200/50**

Tax = \$1.20 **= 4*(50 – 48)*.15**

Notes:

1) with repurchase, total taxes catch up when you sell remaining shares.
   => repurchases shift taxes to the future
   => **investors better off because of TVM**
2) **if $\tau_d > \tau_g$, investors even better off with repurchase than dividend**
3) see "Ch17: Examples" from website for a 10-year holding period example.

2. **If $\tau_d > \tau_g$, current stockholders lose if firm issues stock to pay dividend**

Example: Assume firm currently has assets worth $100 million but no surplus cash. Assume firm decides to pay $10 million in dividends by issuing stock to the general public. Assume also that the dividend tax rate is 39% and the capital gain tax rate is 20% (these were the rates in 2001-2002).

a. impact on value of firm: **none**

=> **$10 million flows in when issue then out through dividend**

b. impact on new stockholders:

1) **outflow of $10 million of cash**
2) **receive stock in firm worth $10 million (as long as fairly priced)**

c. Impact on original stockholders:

1) **receive $10 million of cash**
2) tax on dividend = $3.9 million **= 10x.39**
3) impact on value of original stock
   => value of original stock = $90 million
      => value of firm unchanged at $100 million
      => new stockholders have stock worth $10 million
4) tax savings due to reduction in capital gains
   => tax savings = $2 million **= 10x.2**
   => value of stock and cash **=** 98.1 = **90 + 10 + 2 – 3.9**
5) Net impact
   => value of stock and cash = 98.1 **= 10 – 3.9 + 90 + 2**
   => net gain/loss = **$1.9 million loss**

Notes:

1) **net tax loss worse if don't realize loss immediately**
2) see "Ch17: Examples" from website to examine the impact of issuing stock to pay dividends at various historical tax rates.

3. Tax Clienteles

a. Basic idea: in order for the to be no tax arbitrage, the after-tax capital loss when a stock goes ex-dividend must equal the after-tax gain from the dividend

=> can use this relationship to show the following:

$$P_{cum} - P_{ex} = Div\left(1 - \tau_d^*\right) \tag{17.2}$$

where:

$$\tau_d^* = \left(\frac{\tau_d - \tau_g}{1 - \tau_g}\right) \tag{17.3}$$

=> see supplement for proof

Example: Assume tax rate on dividends is 40% and on capital gains is 20% (these rates existed from 1997-2000).

$\tau_d^* = .25 = \left(\frac{\mathbf{.4-.2}}{\mathbf{1-.2}}\right)$

$P_{cum} - P_{ex} = \boldsymbol{Div}(\mathbf{1-.25})$=$\boldsymbol{Div}$**(.75)**

=> net tax loss on dividend: **25%**

=> **$0.75 of capital gain (from repurchase) is equivalent to $1 of dividends**

=> **stockholders will have a strong preference for capital gains (and repurchases)**

b. Tax Differences Across Investors

Key: **taxes paid on dividends depend on tax bracket, where live and invest, and whether stock held in retirement account**

Ex. IRA or 401k Investors:

$\tau_d = 0,\ \tau_g = 0;\ \tau_d^* = 0 = \left(\frac{\mathbf{0-0}}{\mathbf{1-0}}\right)$

Ex. Corporation w/ $\tau_c = .35$

Note: can exclude 70% of dividends received but capital gains fully taxed

$\tau_d = .3*.35 = .105,\ \tau_g = .35;\ \tau_d^* = -.3769 = \left(\frac{\mathbf{.105-.35}}{\mathbf{1-.35}}\right)$

c. Clientele Effects

Basic idea: investor attitude towards dividends v. repurchases depends on tax rates

1) **If $\tau_d > \tau_g$, prefer repurchases to dividends**

2) **Investors in retirement accounts are indifferent between dividends and capital gains**

3) **Corporations prefer high dividends**

B. Personal Taxes, Corporate Taxes, and Payout Policy

Basic idea: investor preferences for payouts rather than retention depends on tax rates

If pays out excess cash, stockholders can reinvest and pay taxes on interest at rate τ_i
If firm retains cash and invests it, the firm will pay taxes on interest it earns at rate τ_c and the stockholder will pay capital gains taxes at rate τ_g

Using equation (17.2), the authors show that:

$$\tau_{retain}^* = 1 - \frac{(1-\tau_c)(1-\tau_g)}{(1-\tau_i)} \qquad (17.A)$$

where: τ_{retain}^* = effective tax disadvantage of retaining rather than paying out cash

Note: the tax disadvantage/disadvantage of retaining cash has changed over time as Congress has changed tax rates.

See Table 15.3 on p. 472 for a list tax rates from 1971-2005

Ex. From 2001-2002, $\tau_C = .35$, $\tau_i = .39$, $\tau_g = .15$

$$\tau_{retain}^* = .09426 = \mathbf{1} - \frac{\mathbf{(1-.35)(1-.15)}}{\mathbf{(1-.39)}}$$

=> **firms had incentive to pay out cash**

Ex. From 1979-1981, $\tau_C = .46$, $\tau_i = .70$, $\tau_g = .28$

$$\tau^*_{retain} = -0.2960 = \mathbf{1} - \frac{\mathbf{(1-.46)(1-.28)}}{\mathbf{(1-.70)}}$$

=> **firms had incentive to retain cash**

IV. Other Issues in Payout Policy

A. Signaling

1. Dividend Smoothing

Two observations lead us to believe that management smoothes out dividends:

1) firms do not change dividends very often even if earnings are volatile
2) firms increase dividends far more often than they decrease them

2. Dividend signaling

Basic ideas:

1) **management generally knows more about a firm's future prospects**
2) **if management smoothes dividends, dividend announcements contain information about management's expectations for future**

=> dividend increase: **shows management optimistic that firm will have sufficient earnings and cash flow in future to continue paying the dividend**
=> dividend decrease: **may show management has little confidence that firm will be rebound enough to continue paying current dividend**

Note: studies find evidence consistent with signaling hypothesis

3. Signaling and Share Repurchases

a. Share repurchases provide less of a signal about future earnings than dividends

=> unlike dividends:

1) **managers may or may not complete the announced repurchase**
2) **managers may or may not repeat repurchases**

b. **Repurchases may be signal that management believes shares under-valued**

B. Issuance costs

Basic idea: **firms hold cash to avoid issuance costs incurred to fund future growth**
Note: relevant to firms with: **large projects or acquisitions**

C. Distress costs

Basic idea: **firms hold cash to avoid distress costs created by temporary losses**
Note: most relevant to firms with: **volatile earnings**

D. Agency Costs of Retaining Cash

Basic idea: excess cash allows managers to pursue pet projects or acquisitions, receive excessive perks, etc.

=> **dividends and repurchases remove cash from firm**

V. Optimal payout

=> balance benefits and costs of retaining cash

Benefits: help firm avoid issuance costs and financial distress costs
Costs: tax disadvantage, agency costs associated with excess cash

VI. Stock Dividends, Splits and Spinoffs

A. Stock Dividends and Splits

=> **firm distributes additional shares rather than cash to stockholders**
=> % specifies percent of shares owned that receive in new shares
Ex. 20% stock dividend = receive new shares = 20% of shares owned
=> receive 1 new share for every 5 owned

Stock split: **stock dividend of 50% or higher**

Implications:
Stock price: **total value of equity unchanged, but price per share falls since more shares outstanding**
=> firms might use to keep price per share between $10 and $60
=> as shown in Figure 17.8 in the textbook, most firms keep their stock price in this range.
Taxes: **none**

B. Spinoffs

=> **firms create a separate company by distributing shares of a division or subsidiary to the original company's shareholders.**

Advantages to selling assets or division and paying proceeds as cash dividend:
1) Avoids transaction costs
2) Not taxed for stockholders