shdr cannot demand dividend
not legal obligation
& how much?
↳ giving money back to shdr in each period
payout
from net profit
reinvestment + free cash flow
amount available for paying dividend

Session 13
Payout Decisions and Theories of Dividend Policy

Objective

By the end of this session, students are expected to be familiar with the common corporate payout policies and related stylized facts, and to be able to exhibit a critical understanding of the irrelevance theorem of dividend policy.

Introduction

[Figures in and part of this session's lecture materials are taken from materials prepared by Professor Theo Vermaelen of INSEAD. His generous contribution is fully and gratefully acknowledged.]

What is a dividend/payout policy?

For a number of firms, each year they decide whether or not and how much to return to their owners. However, some firms may make this decision twice a year, or even quarterly. This decision is basically a 'dividend' or 'payout' policy. Note, however, shareholders do not have a *legal* right to receive dividends.

Either listed or unlisted, firms also have to decide how much to *reinvest*. If the distribution back to their owners or shareholders is too big, it is then likely that firms will have to *borrow* or *raise equity* to meet their reinvestment needs. Thus, a dividend policy can also be viewed as a financial policy or financing decision.

↳ if not, firm will underinvestment

dividend / payout policy is same as "financial" decision or leverage decision

Given the likely interaction between dividend and reinvestment, an important question becomes: does it matter how much firms return to their owners? In this session, we will also explore the theoretical argument that a payout policy does not affect shareholders' wealth.

* In what form should be paid as dividend?

Fundamentals of Dividend Policy

How do we define or measure a dividend policy? Two widely used measures are *dividend yield* and *payout ratio*.

make sure to use same frequency when compare
semi-annual

The first one is Dividend Yield calculated as: $\text{DY} = \dfrac{\text{Annual dividends per share}}{\text{Share price}}$.

Dividend yield is important since it represents one of the *two* components of *total return* to shareholders:

$$r_e = \frac{\text{Dividends} + P_t - P_{t-1}}{P_{t-1}} = \frac{\text{Dividend}}{P_{t-1}} + \frac{P_t - P_{t-1}}{P_{t-1}}$$

r_e: total return to shdr

from net profit (free CF) = DY

price yield = Capital Gain

* should concern about tax

Another is the Payout Ratio calculated as: $\text{Payout} = \dfrac{\text{Dividends}}{\text{Earnings}}$.

↳ can be use to estimated future dividend (D_1)

for optimal reinvestment

In valuation, the payout ratio in the current period can also be used as a way of estimating *future dividends*. This can be done by estimating *earnings growth* via the retention ratio: calculated as [Retention = 1 – Payout Ratio]. The next-period earnings can then be estimated as the product of the retention ratio and expected growth rate. Naturally, firms with a *higher retention* ratio (a lower payout ratio) tend to have a *higher expected growth* rate than do firms with a lower retention ratio (a higher payout ratio).

higher growth → lower yield

Figure 1 displays the relation between a typical dividend yield and forecast earnings growth for a sample of U.S. firms. Firms that typically pay a relatively large (small) dividend are expected to experience relative low (high) growth. ↳ growth : ROE × (1 - payout x)

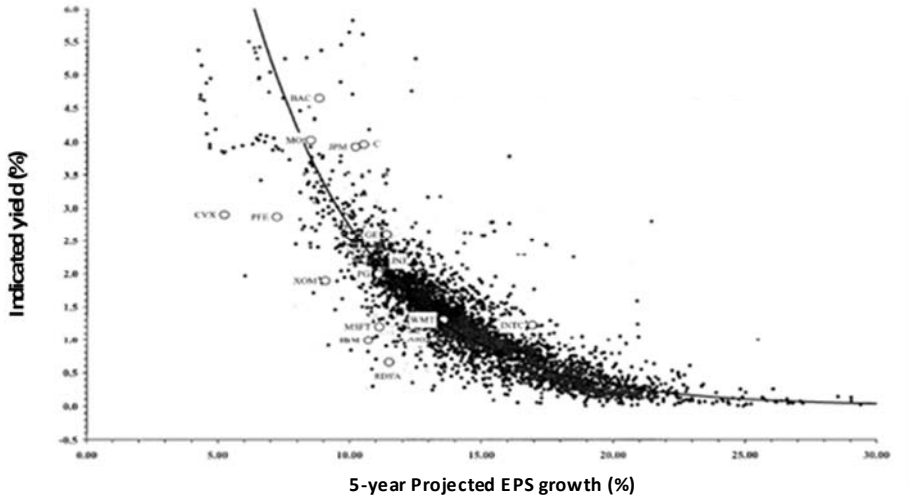

Figure 1: Dividend yield (%) and forecast EPS growth (%) of U.S. firms

The payout ratio also reflects the stage a firm is going through in its *life cycle*. For example, under certain assumptions, firms going through the *growth* stage tend to have a *zero payout* ratio whereas *mature* or *declining* firms tend to have a *high payout* ratio [more of this below]. ↳ to reinvest

> What could these assumptions be? Managers of mature firms paying cash back to their shareholders rather than hoarding it in the firm?

Stock dividend → more share with same pie
↳ net effect to shdr → is natural

Important Dates (in order of time)

Declaration date: the date on which the board of directors *announces* its intention to pay, or to increase or decrease, dividends as well as how dividends are to be paid. On this date, *what* do you think is likely to happen to the share price?

max ภาคที่ผู้ซื้อยอม
min ภาคที่ผู้ขายยอม
ใน equilibrium

pay same div as last yr → price change ?! → price increase at least from 100 to 100 + $ dividend

Ex-dividend date: by this date investors need to have bought the shares in order to receive the dividend. That is, investors have to buy shares *cum-div*. → รวมปันผล

after this date, not entitle to declared dividend, buy share before ex-date & hold it through ex-date

Since investors buying stock after the ex date (i.e., buying shares *ex-div*) do not receive the dividend, share price generally *drops* on that date by the amount of dividend. Is this price drop a capital loss on the Ex date?

ราคาปันผล

payment date → equilibrium price is 100 on ex-date ; price drop
bc structure of payoff

ซื้อหุ้นที่ขึ้น XD → ไม่ได้เงินปันผล
ถือหุ้นที่ขึ้น XD → ได้ dividend

cum ex-div
ex-div

no new information, no price change

Holder-of-record date: the date on which the firm closes its stock-transfer book and finalizes the list of its shareholders to date. How do you think the market reacts on this date?

Dividend payment date: the date on which dividend cheques are mailed out to the shareholders. Surely, the payment date is an important day. But again, how do you think the market reacts on this date?

Known Dividend Patterns

Several patterns of dividends have been *empirically* observed over the years.

(1)

First, dividends tend to follow earnings. Firms tend to increase dividends *only if* they are certain that they can maintain higher dividends. One plausible explanation is that managers are more concerned with *changes* in dividends than with levels of dividends.

> Why would managers be concerned more with 'changes' than with 'levels' of dividend?

To the extent that insiders raise dividends only if they are confident that they can maintain the higher payout level, does it mean that a dividend increase implies a new and higher level of earnings? Does a dividend increase signal that the firm has pushed its production frontier outwards? If the answer is a yes, then do dividends really *follow* earnings? The importance of this enquiry is that if dividends do follow earnings as such, then dividend *changes* should not have any systematic information content. From easyJet's recent statement, do dividends follow earnings or indicate future earnings?

easyJet raises ordinary dividends as annual profit rises

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Reuters
November 17, 2014

LONDON: British low-cost airline easyJet yesterday shrugged off concerns about an increasingly competitive European travel market, saying it was positioned to deliver further growth after annual profit jumped.

Cheap fares have helped easyJet and rival Ryanair win market share in the European short-haul travel sector, against traditional airlines like Air France-KLM and Lufthansa who have recently announced plans to compete more aggressively.

easyJet reported pre-tax profit of £581 million ($909 million) for the year ended September, in line with upgraded company guidance in the range of £575 million to £580 million, compared to the £478 million it made in the prior year.

The company said it would lift its ordinary dividend per share by 35.5% to 45.4 pence, in line with a proposal made earlier this year to reward shareholders with 40% of pretax profit, above the previous one-third distribution.

"easyJet is successfully executing its strategy of offering its customers low fares to great destinations with friendly service so that it will continue to win in a more competitive market. This means easyJet is well placed to continue to deliver sustainable returns and growth for shareholders," the company said in a statement.

The company, Europe's No. 2 low-cost carrier after Ryanair, said forward bookings for the winter season were slightly ahead of last year, and its exposure to Europe's primary airports, where new slots are not readily available, would help attract more customers.

Ireland's Ryanair has recently been moving into space traditionally occupied by easyJet — improving its formerly much criticised customer service and planning to expand into primary airports used by business travellers.

That strategy and a surge in winter bookings helped Ryanair raise its annual profit forecast by almost 20% earlier this month. REUTERS

(2)

Second, dividends are sticky.

Specifically, firms are reluctant to change dividends. Managers are usually worried about not being able to maintain a high level of dividends once they have increased it.

By and large, firms that change their dividend policy tend to increase dividends rather than decrease them.

> What if a dividend-paying firm needs cash to capitalize on its newly identified growth opportunities—should it not cut dividend instead of incurring expensive issuance costs to raise external cash?

Figure 2 below shows dividend behavior across almost 30 countries during 1999 and 2001. First, a notable of portion of firms across countries—U.S., European and Asian—maintain the same payout policy. Interestingly, the figure also reveals that when firms make a change to their payout policy, they tend to increase rather than cut dividends. In other words, managers are reluctant to cut dividends, and this pattern is common across countries. Indeed, it appears that dividend cuts are more likely than increases only in two out of 28 countries, i.e., Taiwan and Thailand.

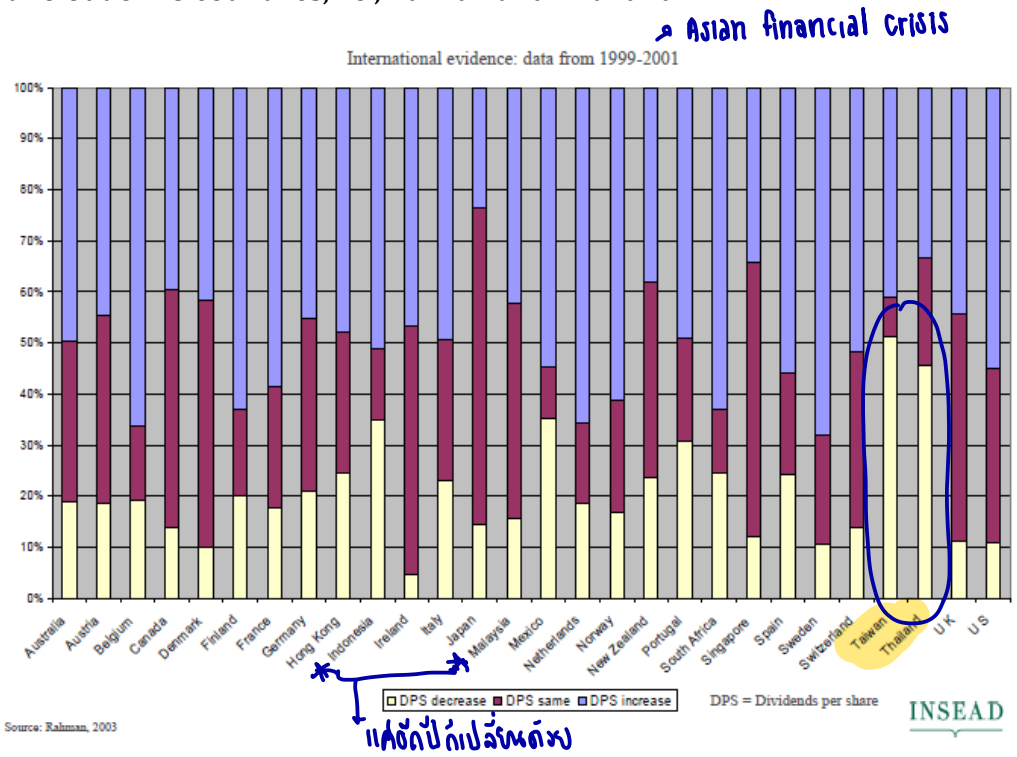

Figure 2: Dividend behavior across countries during 1999-2001

Due to managers' reluctance in changing their dividend policy, dividends are much less volatile than earnings. In other words, earnings yield (e.g., a P/E ratio) varies much more than dividend yield. Figure 3 below empirically displays this pattern for U.S. firms during 1972-1999.

$\sigma^2_{EIP} > \sigma^2_{DPS}$

It has also been observed that firms' dividend policy tends to follow their life cycle.

During the *start-up* and *high-growth* phases, firms usually pay no dividend. Some firms may start paying minimal dividends during their growth phase. As their growth levels off and firms reach their *maturity*, they have greater capacity to increase the amount of dividends. As firms' investment opportunities *decline* and their free cash flows are in big surplus, they are able to pay large dividends.

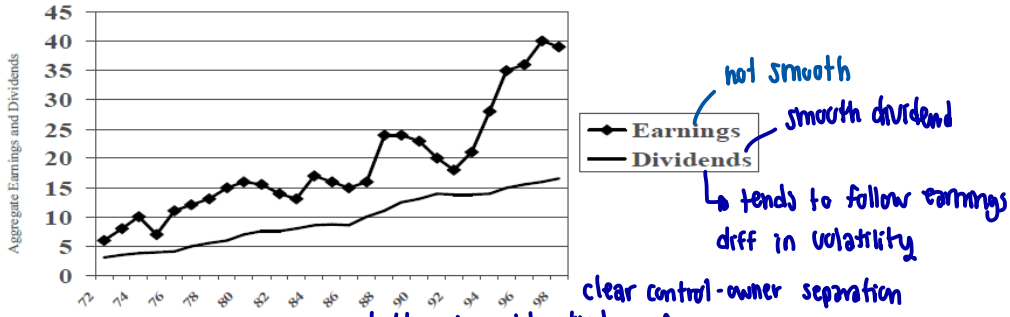

Figure 3: Aggregate earnings and dividends of U.S. firms during 1972-1999

Given that firms' payout capacity varies across different stages in their life cycle, their choice of dividend policy can be viewed as a *trade-off* between the costs and benefits of each policy.

- start-up & high growth phrases : zero or only minimal dividend
- maturity phrase: increase dividend
- Decline phraje : pay large dividend

> Provided that a dividend policy is essentially a financial policy, what should be a reasonable or logical a payout ratio during the start-up, growth, mature and decline phases?

Recently, it has been reported that firms in the U.S. have been paying less and less cash dividends (see Fama and French, 2001). This pattern is also observed among U.K. firms. Figure 4 shows a pattern consistent with disappearing cash dividends for U.S. firms—a notable number of U.S. firms are non-payers in 1999 and the vast majority of the firms have become non-payers in 2003. Ferris et al (2006) documented a similar pattern for U.K. firms during 1998-2002 (see Figure 5).

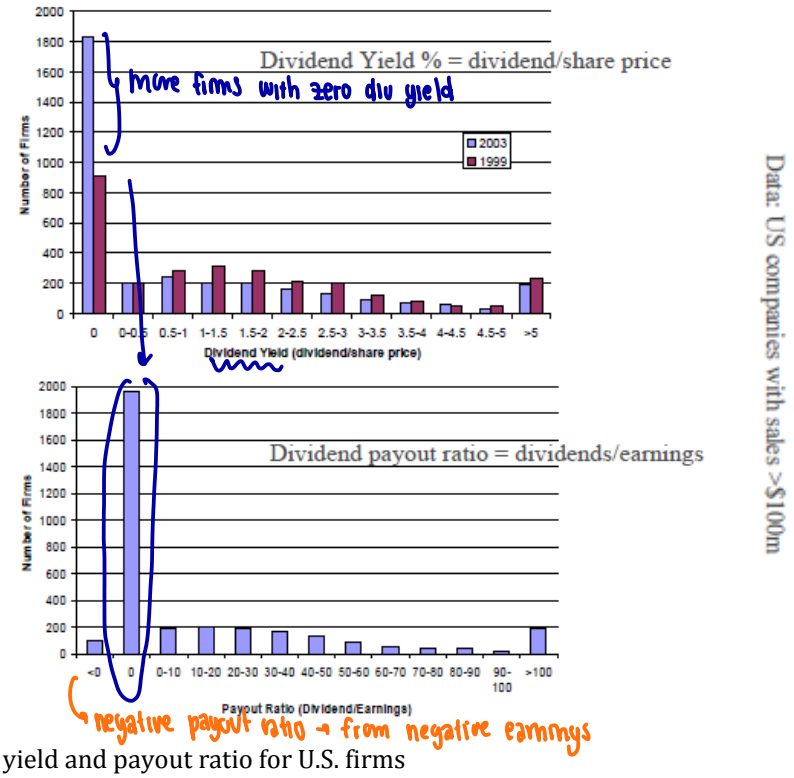

Figure 4: Dividend yield and payout ratio for U.S. firms

> Have firms in Thailand and other East Asian markets been paying less and less dividend as well? Alternatively, have cash dividends been disappearing from

emerging markets as well? Also importantly, have firms recently been returning cash to their shareholders in a different form, i.e., in the form of share repurchases? Is it possible that the benefits of cash dividends have been declining over time? Has it become significantly less costly for individual investors to sell stocks (for capital gain) to meet their consumption needs?

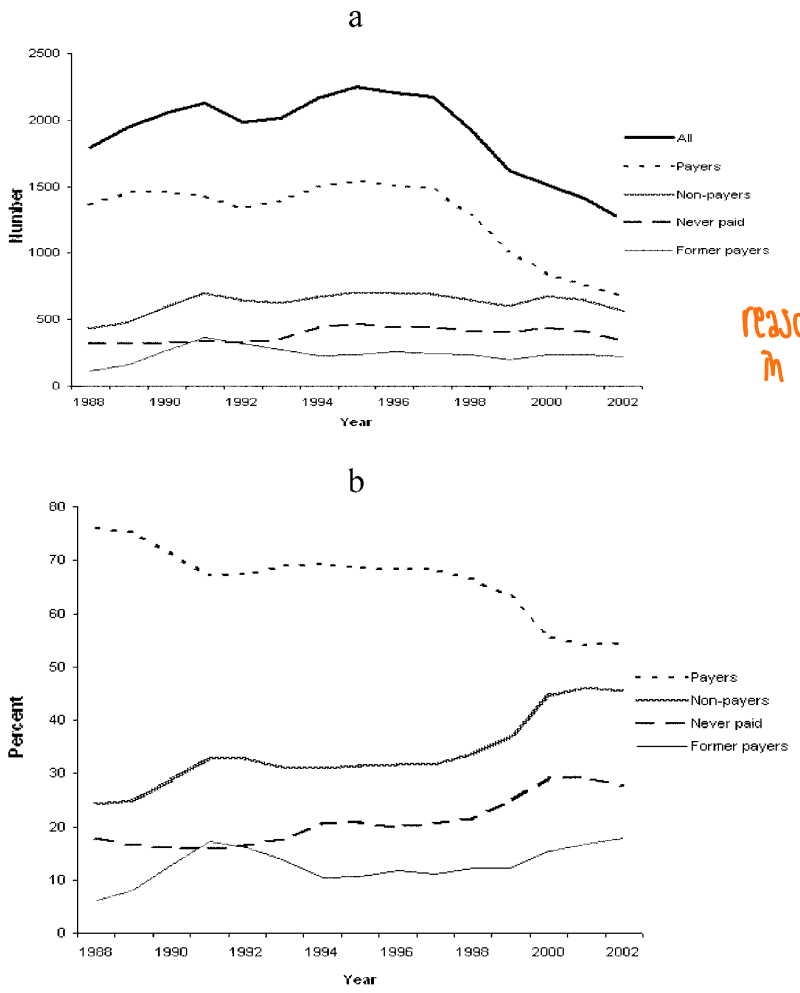

Figure 5: Dividend behavior of U.K. firms during 1988-2002 reported by Ferris et al. (2006, p. 1153)

Miller & Modigliani Irrelevance of Dividend Policy

Given our discussion so far, it seems that a dividend policy varies across firms. Does this imply that the choice of a payout policy matters to firm valuation?

Miller and Modigliani (1961, p. 411-433) put forward one important argument that the value of the firm is unaffected by its dividend policy. As with their irrelevance theorem of capital structure, this argument relies on a number of simplifying assumptions, either explicitly or implicitly.

In their dividend irrelevance argument, MM (1961) assume the following:

(a) Frictionless capital markets;

(b) The only form of tax is corporate tax (i.e., no personal taxes);
(c) All firms belong to the same risk class and are identical in every aspect except for their payout ratio in the current time period;
(d) All future dividend payments from the second time period onwards are also identical;
(e) There is no adverse selection (thus, any signaling opportunities?); and
(f) There is no moral hazard.

The implications of these assumptions can be summarized as follows:

$E(NOI)_{1,t} = E(NOI)_{2,t}, \quad t = 0, 1, \ldots, \infty,$
$E(I)_{1,t} = E(I)_{2,t}, t = 0, 1, \ldots, \infty,$
$E(Div)_{1,t} = E(Div)_{2,t}, \quad t = 1, \ldots, \infty,$
$E(Div)_{1,0} \neq E(Div)_{2,0},$

$E(Div)_{i,t}$ = Expected dividend payout for firm i during time t,
$E(Div)_{i,0}$ = Expected dividend payout for firm i during time 0 (current period).

Similar to their proof for capital structure irrelevance, MM (1961) base their proof for dividend policy irrelevance on investors' ability to create ***homemade dividend***. With arbitrage and hence room for homemade dividend, the total value that accrues to shareholders must be *identical* across a section of firms described by the MM assumptions. Should the stocks of such firms be priced in the way that the total value they offer to shareholders varies, arbitrage will occur such that their total value will revert back to being identical (i.e., back to the equilibrium value).

For simplicity (but without loss of generality), let's start by assuming that that there are three firms, all with *zero* debt in their capital structure. Table 1 shows what should be the equilibrium total value accrued to shareholders in these three firms.

Lines (a) through (g) show that all three firms are in the *same risk class*. Lines (h) and (i) show that these three firms all have *different* payout policies. Line (j) shows the amount of proceeds to be raised to finance the payout that is greater than the internally generated cash [the case of HighDiv].

Line (m) then shows the amount of *capital* value for existing shareholders. This amount is largest for NoDiv as it keeps all of the free cash flow within the firm. The existing shareholders in HighDiv get the smallest amount as a fraction of the firm's value [line (k)] will have to be given up to *new* shareholders when raising equity in line (l). MedDiv offers to its existing shareholders the capital value that is equal to its expected value in line (g) — the firm's payout is exactly the same as its free cash flow, neither accumulated cash nor capital dilution. The capital value per share (i.e., share price) for each firm is reflected on line (n). Consistent with line (m), line (n) varies across firms as a result of varying dividend policies. However, as shown in line (o), the total value [i.e., capital plus income] that accrues to shareholders is identical across firms. For NoDiv, this is \$11.33. For MedDiv, it is \$10.63 + \$0.71, and \$9.92 + \$1.42 for HighDiv.

It should be noted that while the *total value* must be *identical*, stock price may well vary across firms. Less dividend income to investors means more of capital gain to them and

vice versa — making the total value accruing to them identical across firms. [Recall Fundamentals of Dividend Policy]

Table 1: *Equilibrium* expected firm values (total value that accrues to shareholders)

			NoDiv	MedDiv	HighDiv
			$mil	$mil	$mil
	E(NOI)(1 − τ_c)	(a)	150	150	150
	E(I)	(b)	65	65	65
a − b	E(FCF)	(c)	85	85	85
	No. of existing shares (mil)	(d)	120	120	120
	WACC (ρ)	(e)	12%	12%	12%
	Growth	(f)	5%	5%	5%
$\frac{c \times (1+f)}{(e-f)}$	Firm value	(g)	1,275	1,275	1,275
	Total amount of dividends	(h)	0	85	170
h ÷ d	Dividend per share	(i)	0	0.71	1.42
	Proceeds from new issue	(j)	0	0	85
= j	Amount of wealth given up to new shareholders	(k)	0	0	85
c − h + j	Cash balance	(l)	85	0	0
g + l − k	*Capital* value for existing shareholders	(m)	1,360	1,275	1,190
m ÷ d	Price per share	(n)	11.33	10.63	9.92
n + i	*Total value* per share	(o)	11.33	11.33	11.33

The above example demonstrates that, in a frictionless capital market, the choice of dividend policy does not affect the *total* value of firms that accrues to shareholders. If a firm wants to pay out more than the cash it internally generates in any given period, it will have to raise external financing so that it can maintain the *required* investment. Similarly, if shareholders want more dividend than what is paid (e.g., in the case of NoDiv), they can create dividend for themselves by costlessly selling a fraction of their holdings. That is, to substitute the required income with capital gain.

Should the stocks of these three firms be priced in such a way that their total value deviates from $11.33 per share, *arbitrage* will occur such that the total value of these firms will revert back to $11.33 per share. [Recall our discussion on the MM (1958) capital structure irrelevance.]

Of course, the equilibrium result above rests on a set of restrictive assumptions.

How realistic do you think the MM assumptions are?

Regardless of how realistic the MM assumptions are, the irrelevancy argument is vastly important. By studying when dividend payouts have no impact on the valuation of the firm, we can say more conclusively what conditions can cause a dividend policy to

signal

become relevant in valuing firms. The dividend irrelevance theory offers one further important central message (especially for practitioners):

> Firms that invest in bad projects cannot hope to enhance their value by simply making a higher dividend payout. By the same token, firms that invest in superior-return projects are likely to be able to sustain their value even with a zero-payout dividend policy.

but in reality we have friction

Does this central message mean that firms can cut dividend if they can show to their shareholders the new growth opportunities? Telling your shareholders about your firm's new growth opportunities? How would you go about doing it?

valuation remains high as long as they invest as they should

Recommended Reading

Fama, E.F., French, K.R., 2001. Disappearing dividends: changing firm characteristics or lower propensity to pay? Journal of Financial Economics 60, 3-43

Ferris, S.P., Sen, N., Yui, H.P., 2006. God save the Queen and her dividends: Corporate payouts in the United Kingdom. Journal of Business 79, 1149-1173.

Miller, M.H., Modigliani, F., 1961. Dividend policy, growth, and the valuation of shares. Journal of Business 34, 411-433.