Returning Cash to the Owners: Dividend Policy

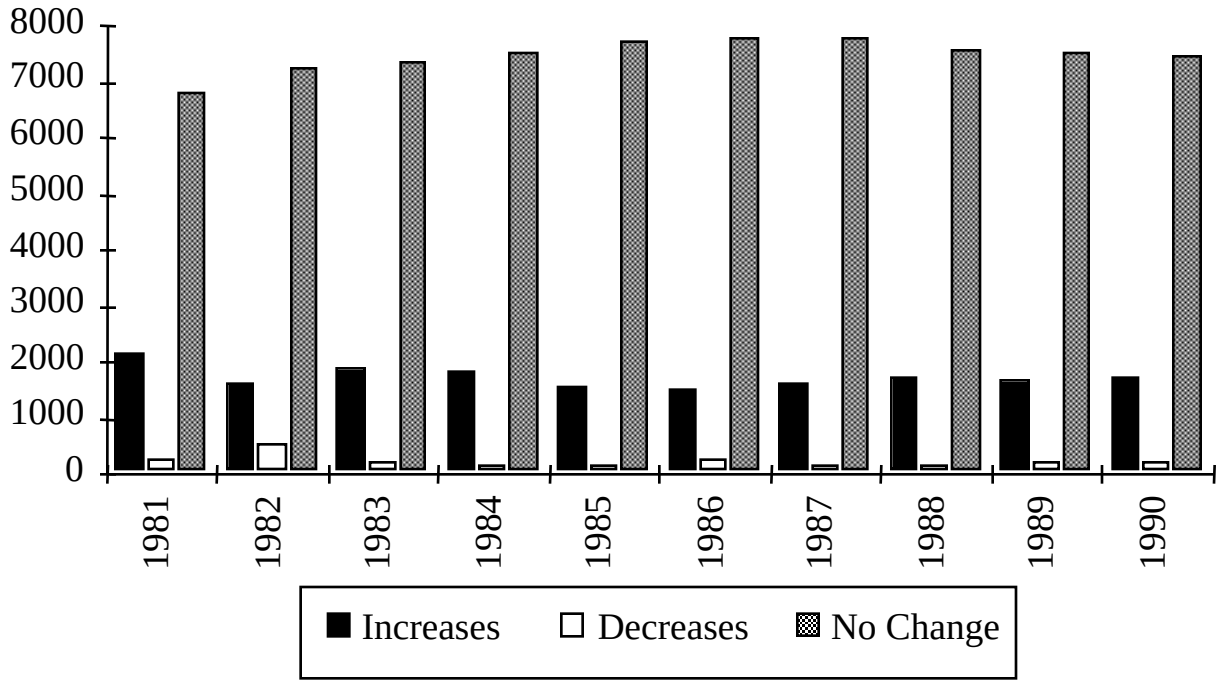
Aswath Damodaran

First Principles

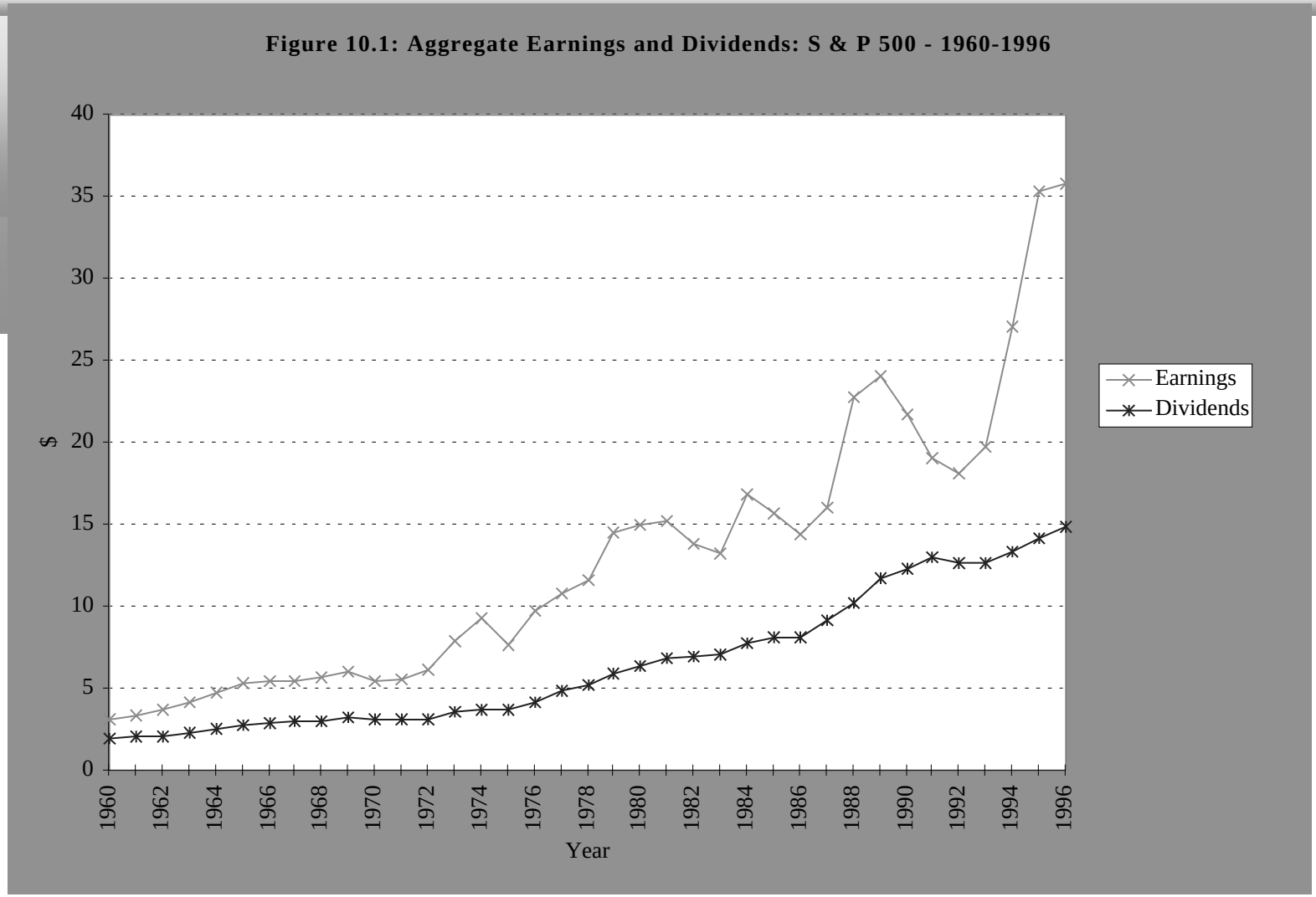
- Invest in projects that yield a return greater than the minimum acceptable hurdle rate.
  - The hurdle rate should be higher for riskier projects and reflect the financing mix used - owners' funds (equity) or borrowed money (debt)
  - Returns on projects should be measured based on cash flows generated and the timing of these cash flows; they should also consider both positive and negative side effects of these projects.
- Choose a financing mix that minimizes the hurdle rate and matches the assets being financed.
- **If there are not enough investments that earn the hurdle rate, return the cash to stockholders.**
  - **The form of returns - dividends and stock buybacks - will depend upon the stockholders' characteristics.**

Dividends are sticky

Dividend Changes: Publicly owned firm - 1981-90



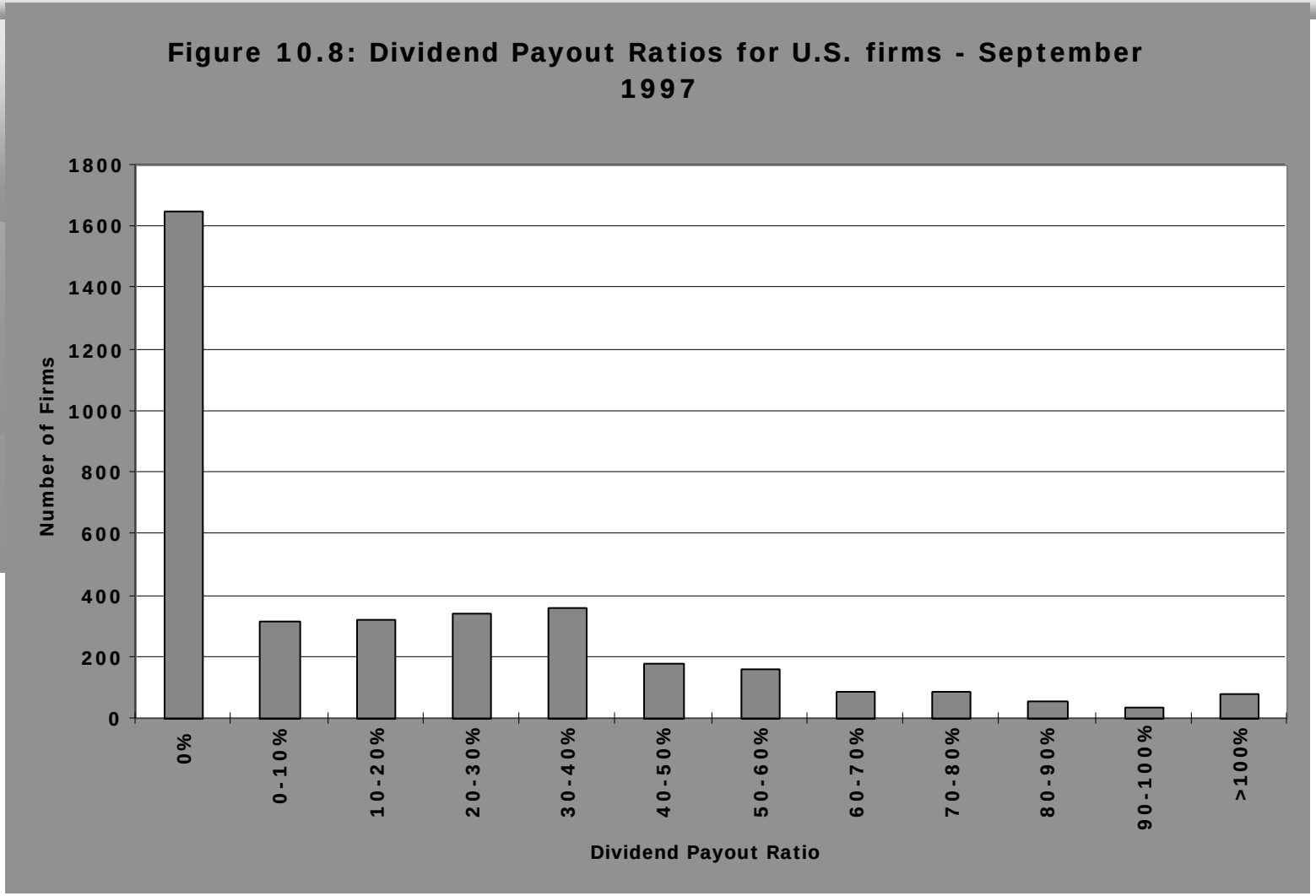
Dividends tend to follow earnings



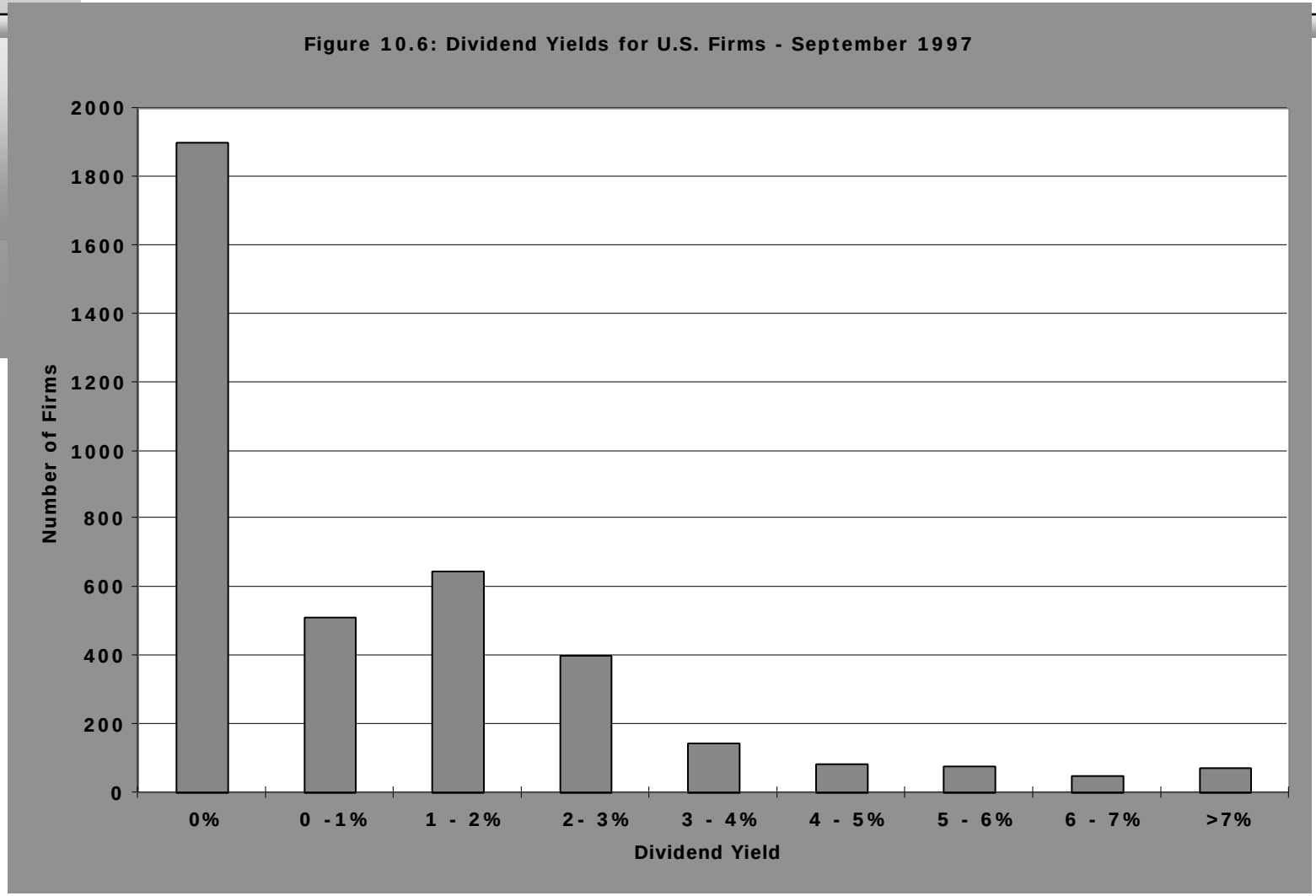
Measures of Dividend Policy

- Dividend Payout:
  - measures the percentage of earnings that the company pays in dividends
  - = Dividends / Earnings
- Dividend Yield :
  - measures the return that an investor can make from dividends alone
  - = Dividends / Stock Price

Dividend Payout Ratios in the US



Dividend Yields in the US



Three Schools Of Thought On Dividends

- 1. If
  - (a) there are no tax disadvantages associated with dividends
  - (b) companies can issue stock, at no cost, to raise equity, whenever needed
  - **Dividends do not matter, and dividend policy does not affect value.**
- 2. If dividends have a tax disadvantage,
  - **Dividends are bad, and increasing dividends will reduce value**
- 3. If stockholders like dividends, or dividends operate as a signal of future prospects,
  - **Dividends are good, and increasing dividends will increase value**

The balanced viewpoint

- If a company has excess cash, and few good projects (NPV>0), returning money to stockholders (dividends or stock repurchases) is GOOD.
- If a company does not have excess cash, and/or has several good projects (NPV>0), returning money to stockholders (dividends or stock repurchases) is BAD.

PAYMENT PROCEDURES

- Declaration date: The dividend is declared at a board of directors meeting.
- Ex-dividend date: This is the date by which the stock has to be bought by to receive dividends.
- Payment date: The company mails the checks to the recorded holders.

WHY DO FIRMS PAY DIVIDENDS?

- The Miller-Modigliani Hypothesis: **Dividends do not affect value**
- Basis:
  - If a firm's investment policy (and hence cash flows) don't change, the value of the firm cannot change with dividend policy. If we ignore personal taxes, investors have to be indifferent to receiving either dividends or capital gains.
- Underlying Assumptions:
  - (a) There are no tax differences between dividends and capital gains.
  - (b) If companies pay too much in cash, they can issue new stock, with no flotation costs or signaling consequences, to replace this cash.
  - (c) If companies pay too little in dividends, they do not use the excess cash for bad projects or acquisitions.

The Tax Response: Dividends are taxed more than capital gains

- Basis:
  - Dividends are taxed more heavily than capital gains. A stockholder will therefore prefer to receive capital gains over dividends.
- Evidence:
  - Examining ex-dividend dates should provide us with some evidence on whether dividends are perfect substitutes for capital gains.

Price Behavior on Ex-Dividend Date

Let P_b= Price before the stock goes ex-dividend

P_a=Price after the stock goes ex-dividend

D = Dividends declared on stock

t_o, t_{cg} = Taxes paid on ordinary income and capital gains respectively

Cashflows from Selling around Ex-Dividend Day

- The cash flows from selling before then are-

$$P_b - (P_b - P)\, t_{cg}$$

- The cash flows from selling after the ex-dividend day are-

$$P_a - (P_a - P)\, t_{cg} + D(1-t_o)$$

Since the average investor should be indifferent between selling before the ex-dividend day and selling after the ex-dividend day -

$$P_b - (P_b - P)\, t_{cg} = P_a - (P_a - P)\, t_{cg} + D(1-t_o)$$

Moving the variables around, we arrive at the following:

Price Change, Dividends and Tax Rates

$$\frac{P_b - P_a}{D} = \frac{(1-t_o)}{(1-t_{cg})}$$

If	$P_b - P_a = D$	then	$t_o = t_{cg}$
	$P_b - P_a < D$	then	$t_o > t_{cg}$
	$P_b - P_a > D$	then	$t_o < t_{cg}$

The Evidence on Ex-Dividend Day Behavior

	Ordinary Income	Capital Gains	$(P_b - P_a)/D$
Before 1981	70 %	28 %	0.78 (1966-69)
1981-85	50 %	20 %	0.85
1986-1990	28 %	28 %	0.90
1991-1993	33 %	28 %	0.92
1994...	39.6 %	28 %	?

Dividend Arbitrage

- Assume that you are a tax exempt investor, and that you know that the price drop on the ex-dividend day is only 90% of the dividend. How would you exploit this differential?
  - Invest in the stock for the long term
  - Sell short the day before the ex-dividend day, buy on the ex-dividend day
  - Buy just before the ex-dividend day, and sell after.
  - _____

Example of dividend capture strategy with tax factors

- XYZ company is selling for $50 at close of trading May 3. On May 4, XYZ goes ex-dividend; the dividend amount is $1. The price drop (from past examination of the data) is only 90% of the dividend amount.
- The transactions needed by a tax-exempt U.S. pension fund for the arbitrage are as follows:
  - 1. Buy 1 million shares of XYZ stock cum-dividend at $50/share.
  - 2. Wait till stock goes ex-dividend; Sell stock for $49.10/share (50 - 1* 0.90)
  - 3. Collect dividend on stock.
- Net profit = - 50 million + 49.10 million + 1 million = $0.10 million

The wrong reasons for paying dividends
The bird in the hand fallacy

- **Argument**: Dividends now are more certain than capital gains later. Hence dividends are more valuable than capital gains.
- **Counter:** The appropriate comparison should be between dividends today and price appreciation today. (The stock price drops on the ex-dividend day.)

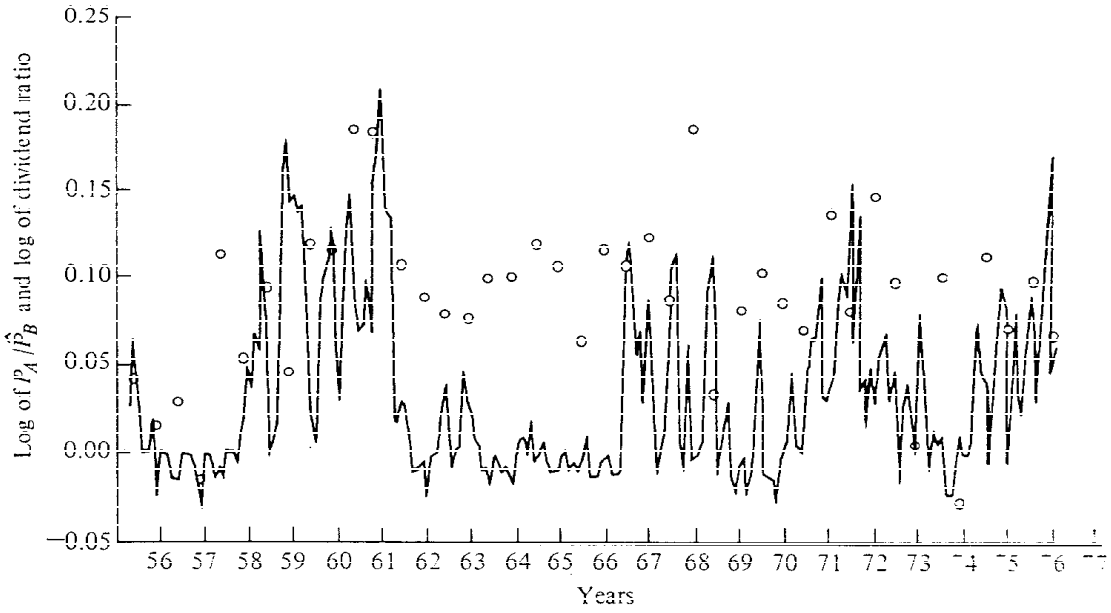
The excess cash hypothesis

- **Argument**: The firm has excess cash on its hands this year, no investment projects this year and wants to give the money back to stockholders.
- **Counter**: So why does not it just repurchase stock? If this is a one-time phenomenon, the firm has to consider future financing needs. Consider the cost of issuing new stock:

The Cost of Raising Funds

- Issuing new equity is much more expensive than raising new debt for companies that are already publicly traded, in terms of transactions costs and investment banking fees
- Raising small amounts is much more expensive than raising large amounts, for both equity and debt. Making a small equity issue (say $ 25-$ 50 million might be prohibitively expensive)

Are firms perverse? Some evidence that they are not



The natural log of $P_A/\hat{P}_B$ (the connected monthly observations) and the natural log of the semi-annual ratio of Series A to Series B dividends (the unconnected 0's) for the period 1956–1976. $\hat{P}_B$ is the price per share of Series B stock with dividends reinvested during each half-year prior to payment of the semi-annual Series A dividend. The unconnected points representing the log of the dividend ratio are placed in the figure at the end of the half-years to which they refer.

Evidence from Canadian Firms

Company	*Premium for Cash dividend over Stock Dividend Shares*
Consolidated Bathurst	19.30%
Donfasco	13.30%
Dome Petroleum	0.30%
Imperial Oil	12.10%
Newfoundland Light & Power	1.80%
Royal Trustco	17.30%
Stelco	2.70%
TransAlta	1.10%
Average	**7.54%**

Dividend Clientele

Clearly some investors like dividends. What types of investors do you think are most likely to fall into this category? (You can pick more than one)

- Wealthy investors
- Institutional Investors
- Less well-off investors
- Tax-exempt investors

A clientele based explanation

- **Basis**: Investors may form clienteles based upon their tax brackets. Investors in high tax brackets may invest in stocks which do not pay dividends and those in low tax brackets may invest in dividend paying stocks.
- **Evidence**: A study of 914 investors' portfolios was carried out to see if their portfolio positions were affected by their tax brackets. The study found that
  - (a) Older investors were more likely to hold high dividend stocks and
  - (b) Poorer investors tended to hold high dividend stocks

Results from Regression: Clientele Effect

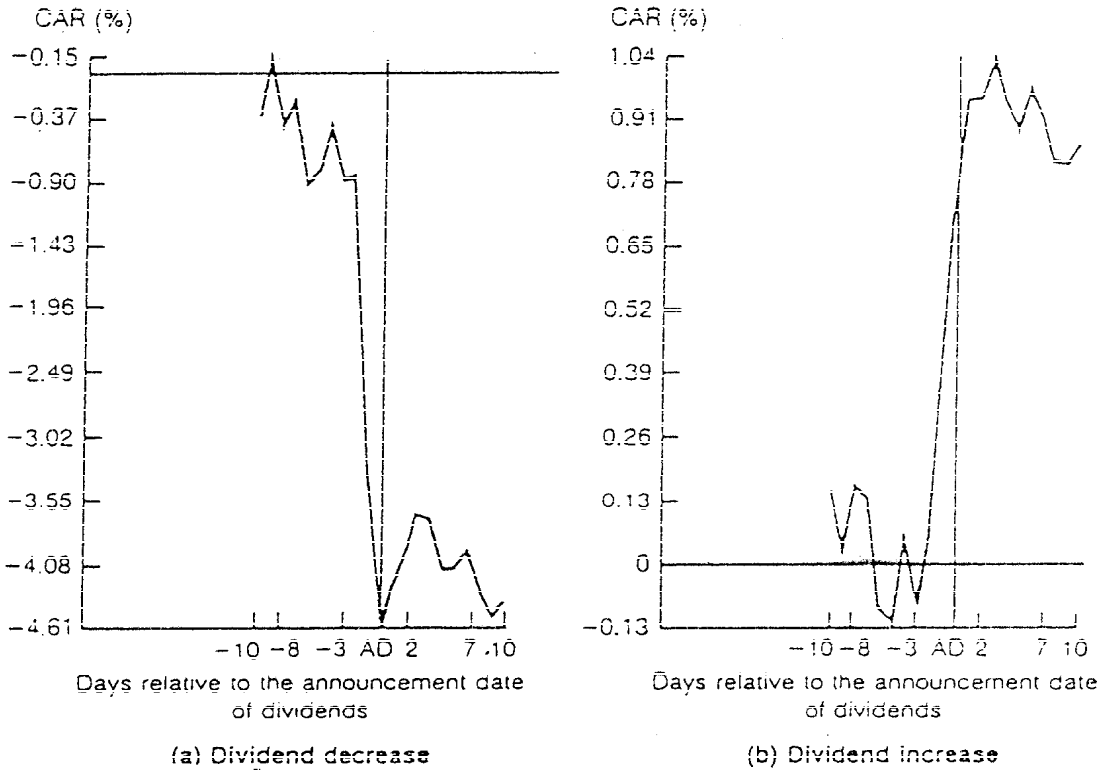
$$\text{Dividend Yield}_t = a + b\,\beta_t + c\,\text{Age}_t + d\,\text{Income}_t + e\,\text{Differential Tax Rate}_t + \varepsilon_t$$

Variable	Coefficient	Implies
Constant	4.22%	
Beta Coefficient	-2.145	Higher beta stocks pay lower dividends.
Age/100	3.131	Firms with older investors pay higher dividends.
Income/1000	-3.726	Firms with wealthier investors pay lower dividends.
Differential Tax Rate	-2.849	If ordinary income is taxed at a higher rate than capital gains, the firm pays less dividends.

Dividend Policy and Clientele

- Assume that you run a phone company, and that you have historically paid large dividends. You are now planning to enter the telecommunications and media markets. Which of the following paths are you most likely to follow?
  - Courageously announce to your stockholders that you plan to cut dividends and invest in the new markets.
  - Continue to pay the dividends that you used to, and defer investment in the new markets.
  - Continue to pay the dividends that you used to, make the investments in the new markets, and issue new stock to cover the shortfall
  - Other

The Signaling Hypothesis



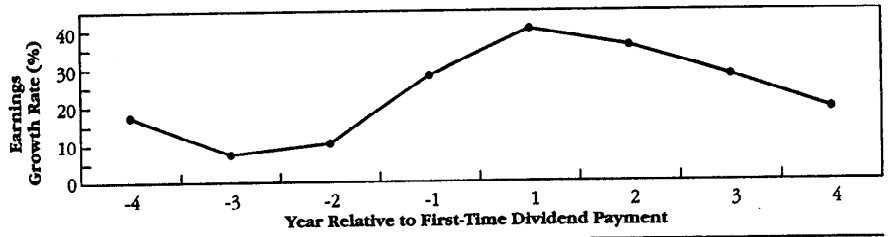
An Alternative Story..Dividends as Negative Signals

TABLE 1
EARNINGS GROWTH RATES IN YEARS SURROUNDING FIRST-TIME DIVIDEND PAYMENTS BY 131 FIRMS IN THE PERIOD 1970 TO 1979*

Year Relative to Dividend Initiation	Number of Firms	Mean Earnings Growth Rate	Median Earnings Growth Rate
−4	130	14.9%	17.4%
−3	129	−7.1	7.6
−2	128	12.9	10.5
−1	131	42.7**	28.0
1	130	55.0**	40.2
2	130	22.0**	35.9
3	130	35.0**	28.2
4	128	3.5	19.5

* In our original research we compute earnings performance as earnings changes standardized by stock prices. Here we convert these values to earnings growth rates by assuming that the average price earnings ratio for the sample firms is ten.
** Significantly different from zero at the 10% level or lower.

FIGURE 1
MEDIAN EARNINGS GROWTH RATES IN YEARS SURROUNDING FIRST TIME DIDIDEND PAYMENTS*



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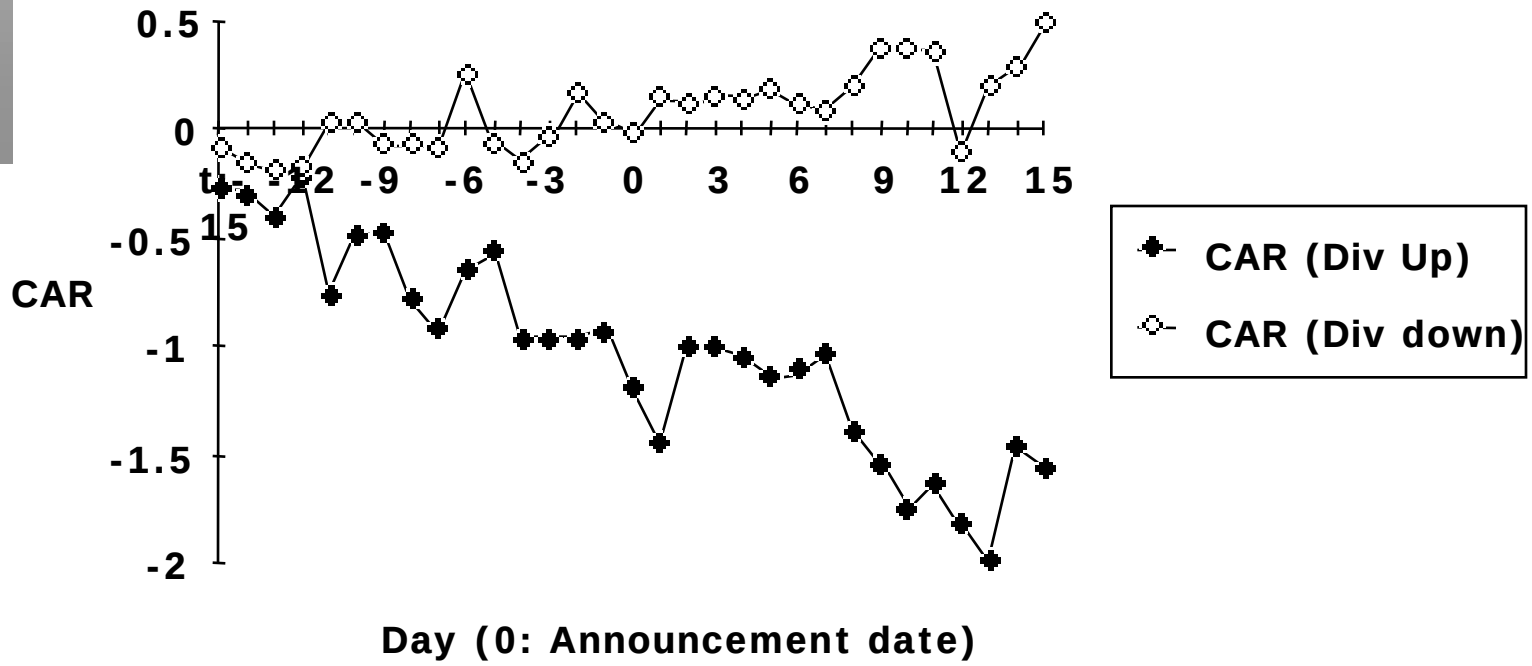
The Wealth Transfer Hypothesis

EXCESS RETURNS ON STRAIGHT BONDS AROUND DIVIDEND CHANGES



Management Beliefs about Dividend Policy

- A firm's dividend payout ratio affects its stock price.
- Dividend payments operate as a signal to financial markets
- Dividend announcements provide information to financial markets.
- Investors think that dividends are safer than retained earnings
- Investors are not indifferent between dividends and price appreciation.
- Stockholders are attracted to firms that have dividend policies that they like.

Determinants of Dividend Policy

A. Investment Opportunities: More investment opportunities - > Lower Dividends

B. Stability in earnings: More stable earnings -> Higher Dividends

C. Alternative sources of capital: More alternative sources -> Higher Dividends

D. Constraints: More constraints imposed by bondholders and lenders -> Lower Dividends

E. Signaling Incentives: More options to supply information to financial markets - Lower need to pay dividends as signal

F. Stockholder characteristics: Older, poorer stockholders -> Higher dividends