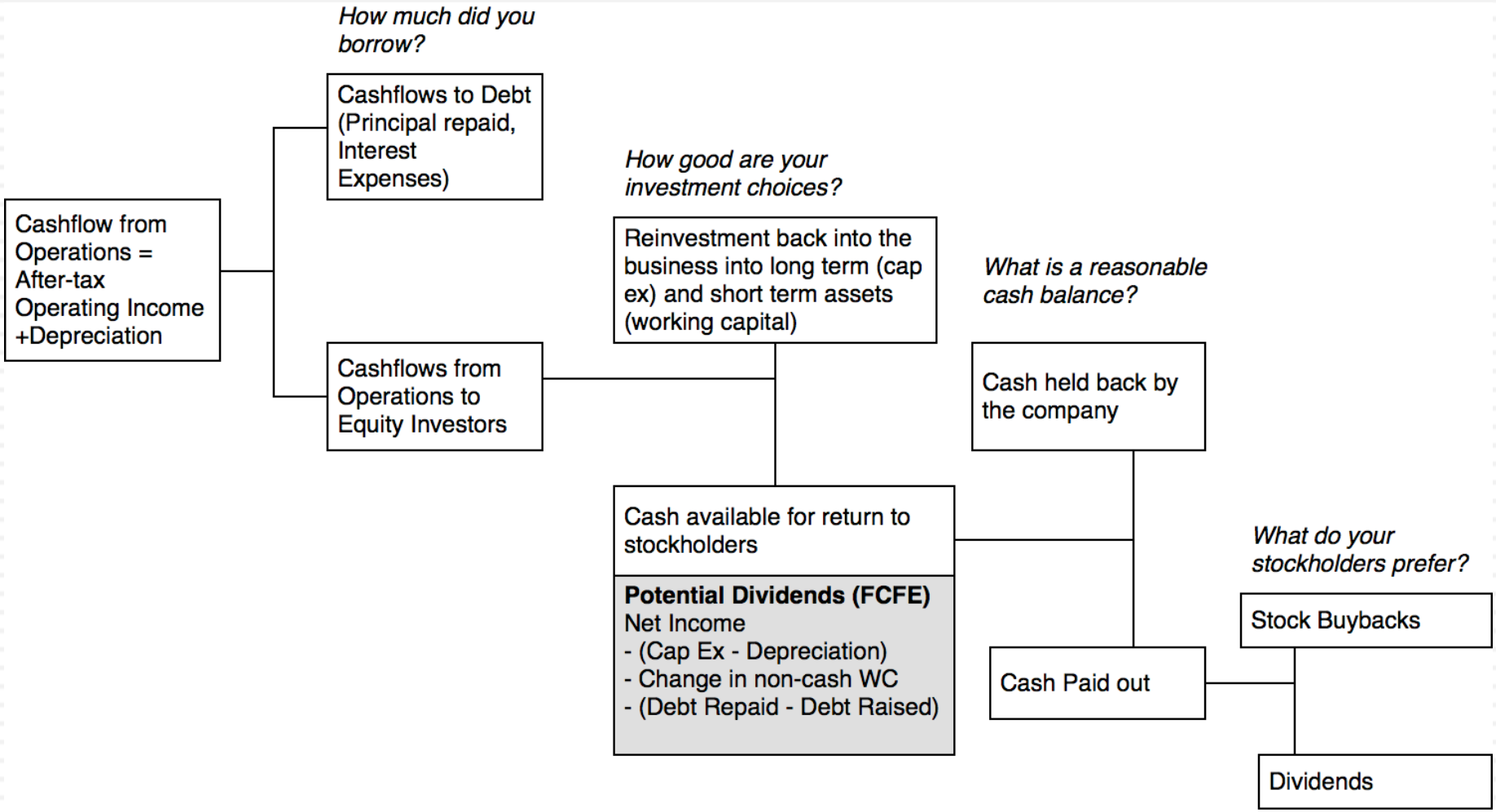
Steps to the Dividend Decision… if equity is treated as a residual claim

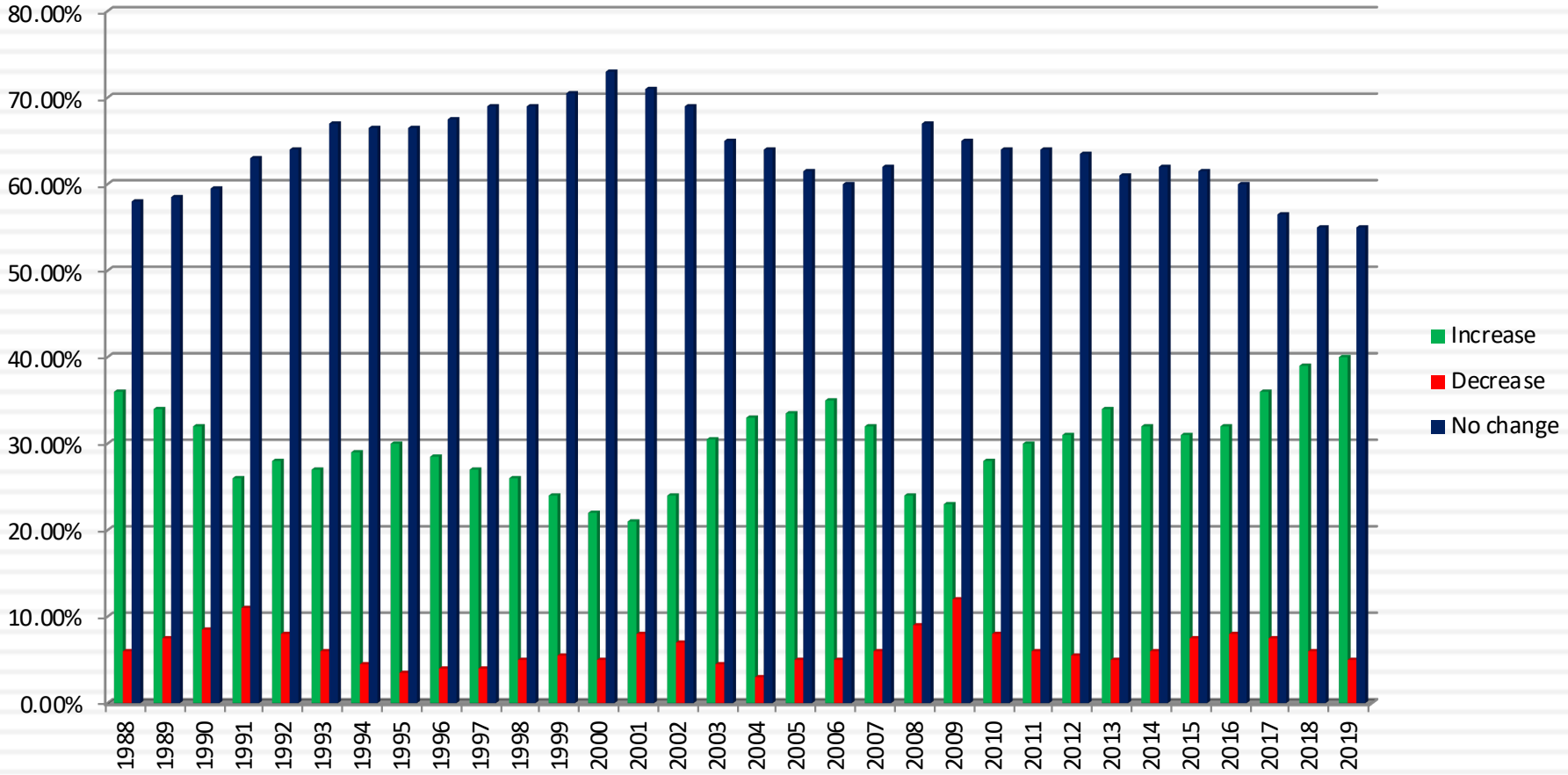


The Roots of Dividend Dysfunction

- In practice, dividend policy is dysfunctional and does not follow the logical process of starting with your investment opportunities and working your way down to residual cash.
- The two dominant factors driving dividend policy around the world are:
  - Inertia: Companies seem to hate to let of their past, when it comes to dividend policy.
  - Me-too-ism: Companies want to behave like their peer group.

I. Dividends are sticky

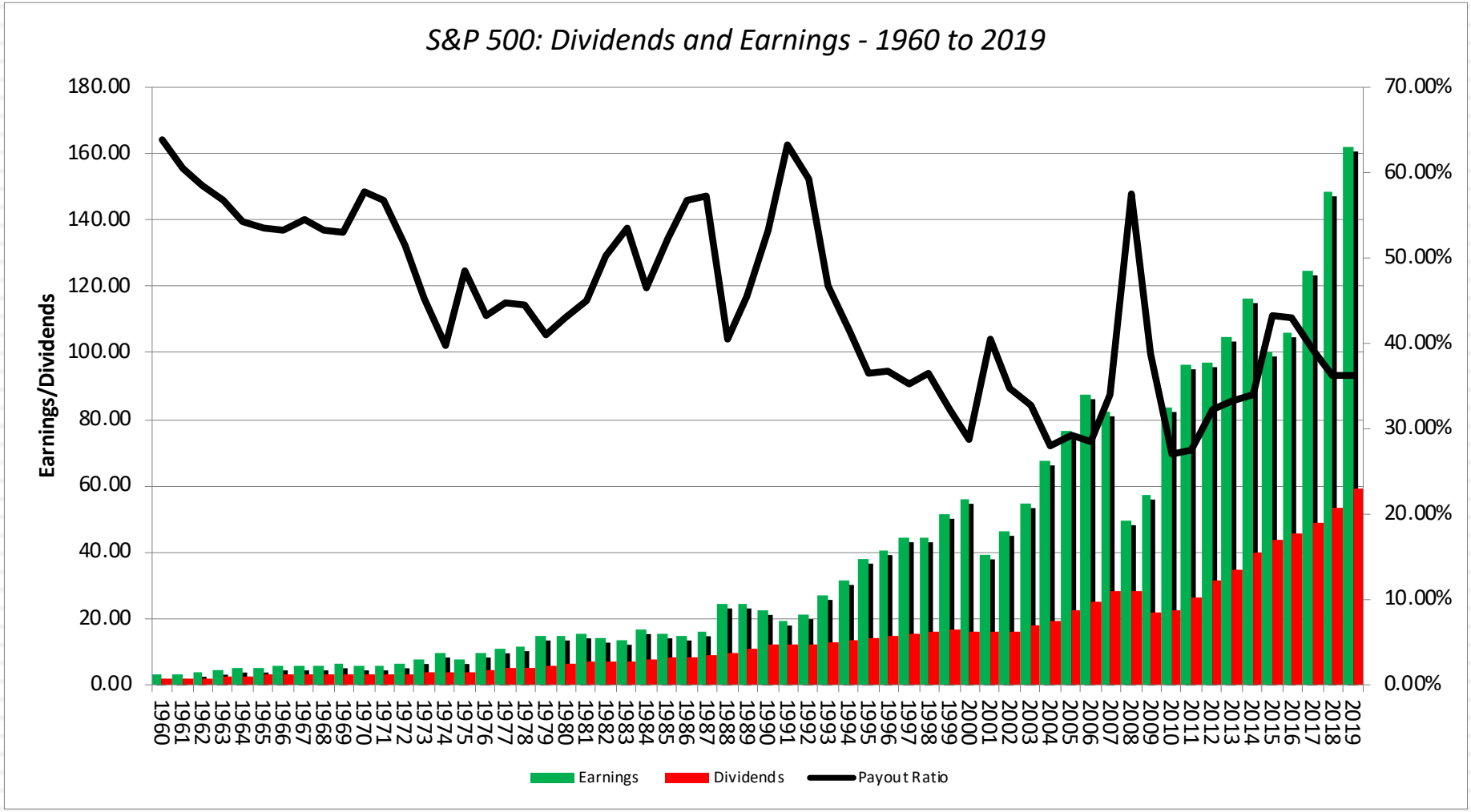
Figure 10.6: Dividend Changes at US companies



The last quarter of 2008 put stickiness to the test.. Number of S&P 500 companies that…

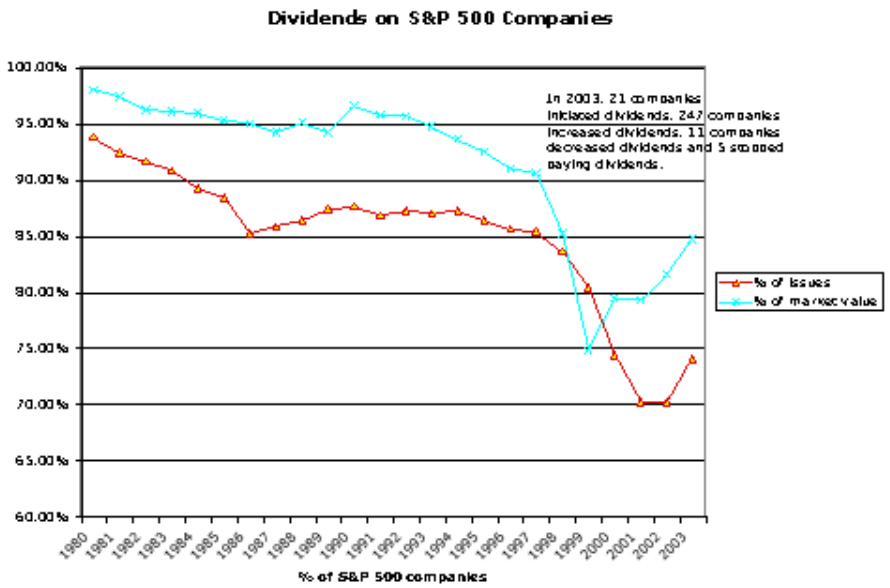
Quarter	Dividend Increase	Dividend initiated	Dividend decrease	Dividend suspensions
Q1 2007	102	1	1	1
Q2 2007	63	1	1	5
Q3 2007	59	2	2	0
Q4 2007	63	7	4	2
Q1 2008	93	3	7	4
Q2 2008	65	0	9	0
Q3 2008	45	2	6	8
Q4 2008	32	0	17	10

II. Dividends tend to follow earnings



III. Are affected by tax laws…

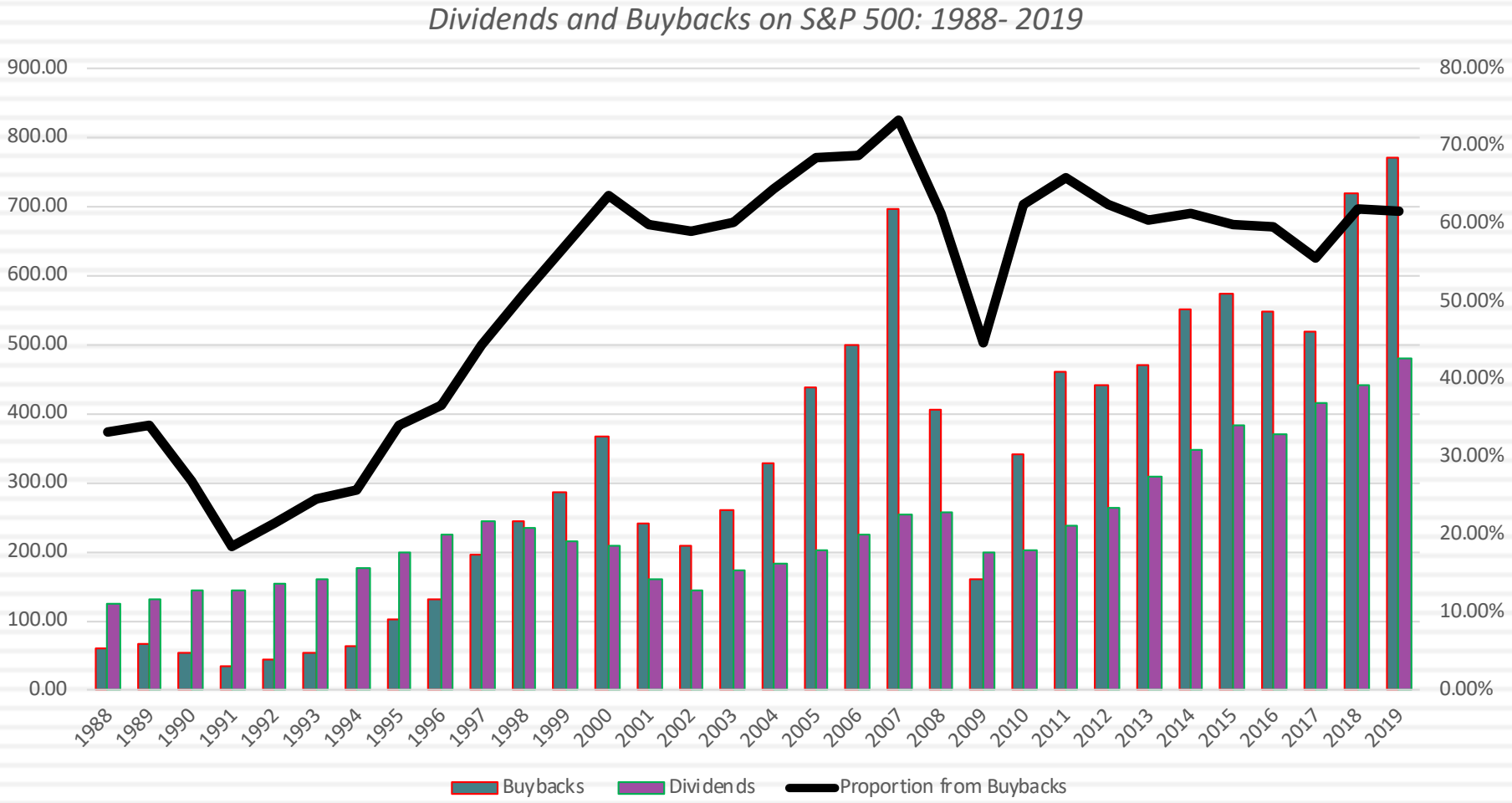
In 2003



In the last quarter of 2012

- As the possibility of tax rates reverting back to pre-2003 levels rose, 233 companies paid out $31 billion in dividends.
- Of these companies, 101 had insider holdings in excess of 20% of the outstanding stock.

IV. More and more US firms are buying back stock, rather than pay dividends...



And its going global..

Sub Region	# of firms	Market Cap	Net Income	Dividends	Buybacks	% Cash from Buybacks	Payout Ratio	Cash Return/Net Income
Africa and Middle East	2,217	$3,855,023.96	$238,787.80	$145,870.94	$8,414.73	5.45%	61.09%	64.61%
Australia & NZ	1,676	$1,450,171.74	$68,689.96	$49,963.54	$12,800.44	20.39%	72.74%	91.37%
Canada	2,707	$2,262,795.13	$99,280.87	$57,483.80	$53,500.73	48.21%	57.90%	111.79%
China	6,199	$12,856,854.61	$750,165.61	$383,120.58	$21,853.67	5.40%	51.07%	53.98%
EU & Environs	5,537	$13,325,629.37	$693,957.50	$352,809.88	$140,636.60	28.50%	50.84%	71.11%
Eastern Europe & Russia	515	$572,241.23	$86,132.99	$33,809.42	$5,898.64	14.86%	39.25%	46.10%
India	3,589	$2,176,461.23	$64,561.21	$28,009.23	$6,760.59	19.44%	43.38%	53.86%
Japan	3,854	$6,162,897.66	$396,037.01	$128,484.79	$77,562.15	37.64%	32.44%	52.03%
Latin America & Caribbean	928	$1,896,882.73	$89,882.88	$48,011.04	$7,884.51	14.11%	53.42%	62.19%
Small Asia	8,876	$5,219,729.46	$328,942.20	$141,139.07	$15,159.54	9.70%	42.91%	47.52%
UK	1,243	$3,170,789.38	$147,585.89	$95,403.27	$39,341.33	29.20%	64.64%	91.30%
United States	7,053	$33,887,561.22	$1,282,384.71	$570,044.01	$859,747.59	60.13%	44.45%	111.49%

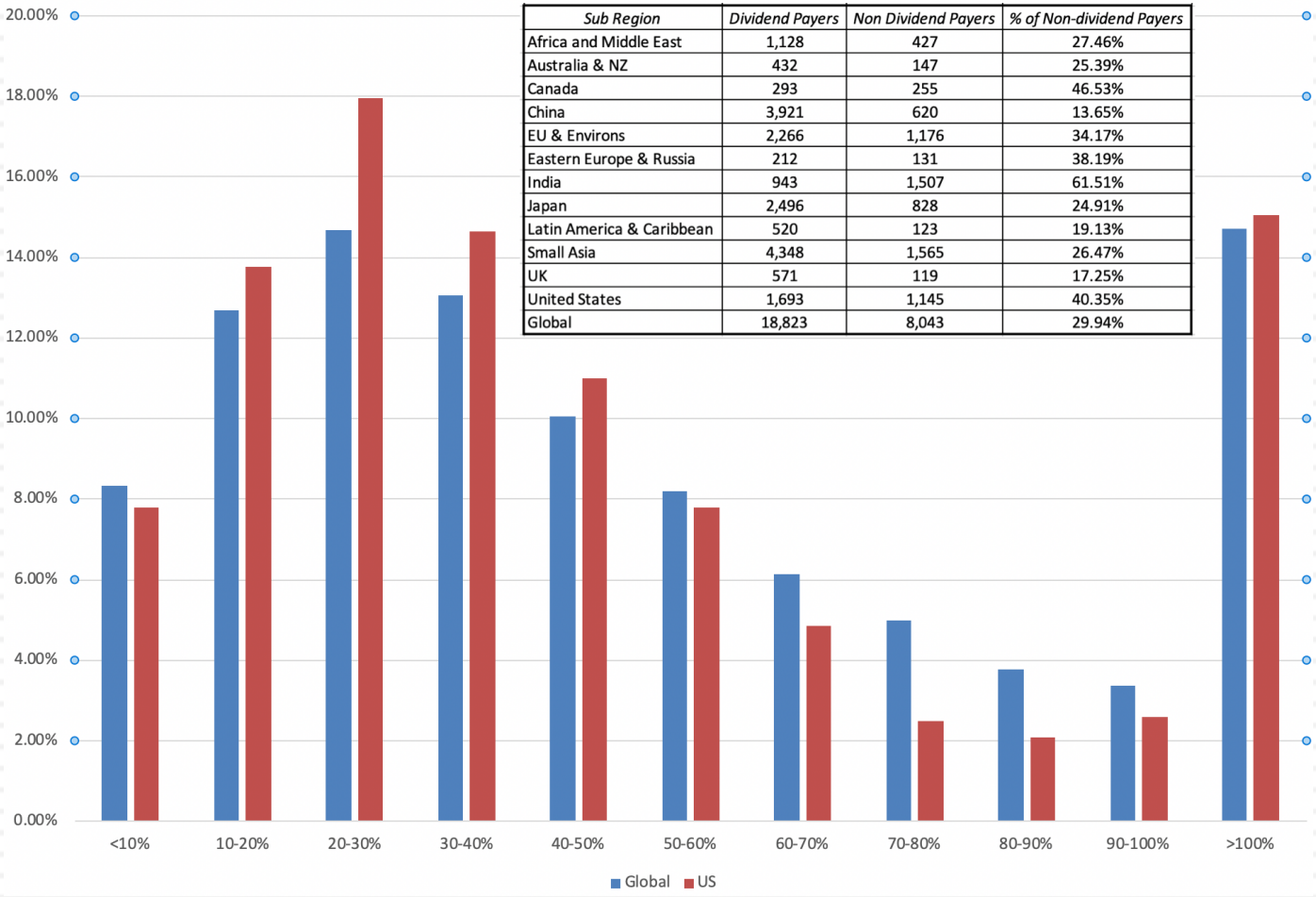
Measures of Dividend Policy

- Dividend Payout = Dividends/ Net Income
  - Measures the percentage of earnings that the company pays in dividends
  - If the net income is negative, the payout ratio cannot be computed.
- Dividend Yield = Dividends per share/ Stock price
  - Measures the return that an investor can make from dividends alone
  - Becomes part of the expected return on the investment.

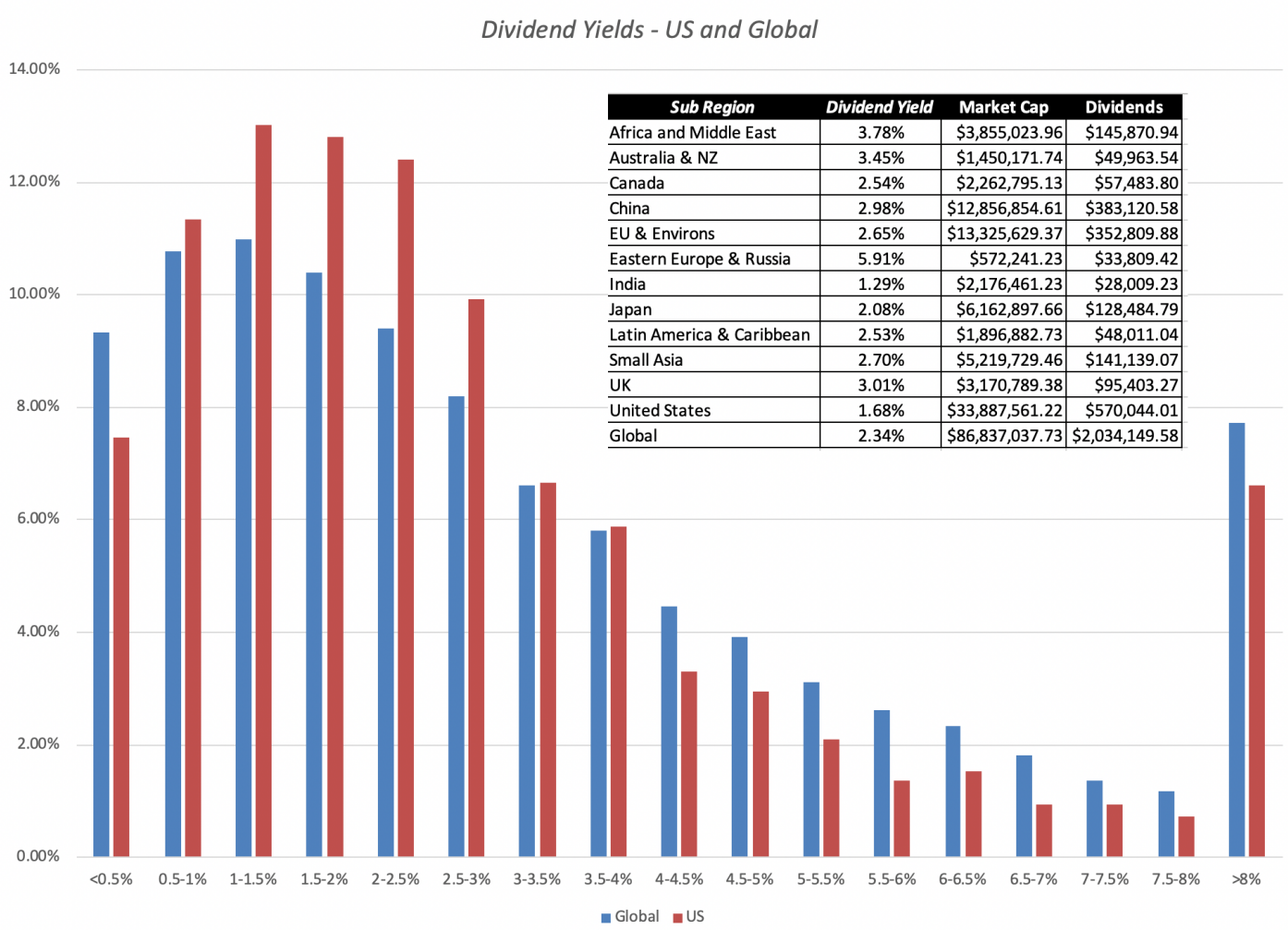
Dividend Payout Ratio: January 2020

Divdend Payout Ratios - Just Dividend Paying firms: US and Global

Sub Region	Dividend Payers	Non Dividend Payers	% of Non-dividend Payers
Africa and Middle East	1,128	427	27.46%
Australia & NZ	432	147	25.39%
Canada	293	255	46.53%
China	3,921	620	13.65%
EU & Environs	2,266	1,176	34.17%
Eastern Europe & Russia	212	131	38.19%
India	943	1,507	61.51%
Japan	2,496	828	24.91%
Latin America & Caribbean	520	123	19.13%
Small Asia	4,348	1,565	26.47%
UK	571	119	17.25%
United States	1,693	1,145	40.35%
Global	18,823	8,043	29.94%

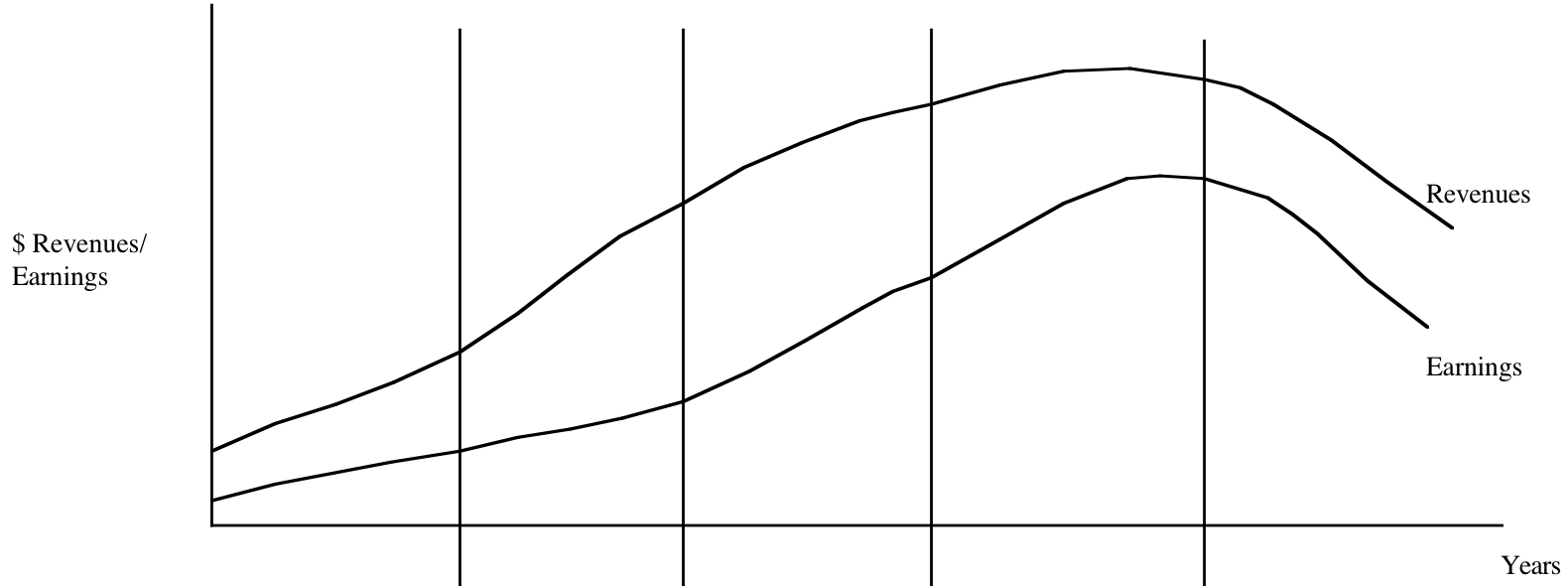


Dividend Yields: January 2020



Sub Region	Dividend Yield	Market Cap	Dividends
Africa and Middle East	3.78%	$3,855,023.96	$145,870.94
Australia & NZ	3.45%	$1,450,171.74	$49,963.54
Canada	2.54%	$2,262,795.13	$57,483.80
China	2.98%	$12,856,854.61	$383,120.58
EU & Environs	2.65%	$13,325,629.37	$352,809.88
Eastern Europe & Russia	5.91%	$572,241.23	$33,809.42
India	1.29%	$2,176,461.23	$28,009.23
Japan	2.08%	$6,162,897.66	$128,484.79
Latin America & Caribbean	2.53%	$1,896,882.73	$48,011.04
Small Asia	2.70%	$5,219,729.46	$141,139.07
UK	3.01%	$3,170,789.38	$95,403.27
United States	1.68%	$33,887,561.22	$570,044.01
Global	2.34%	$86,837,037.73	$2,034,149.58

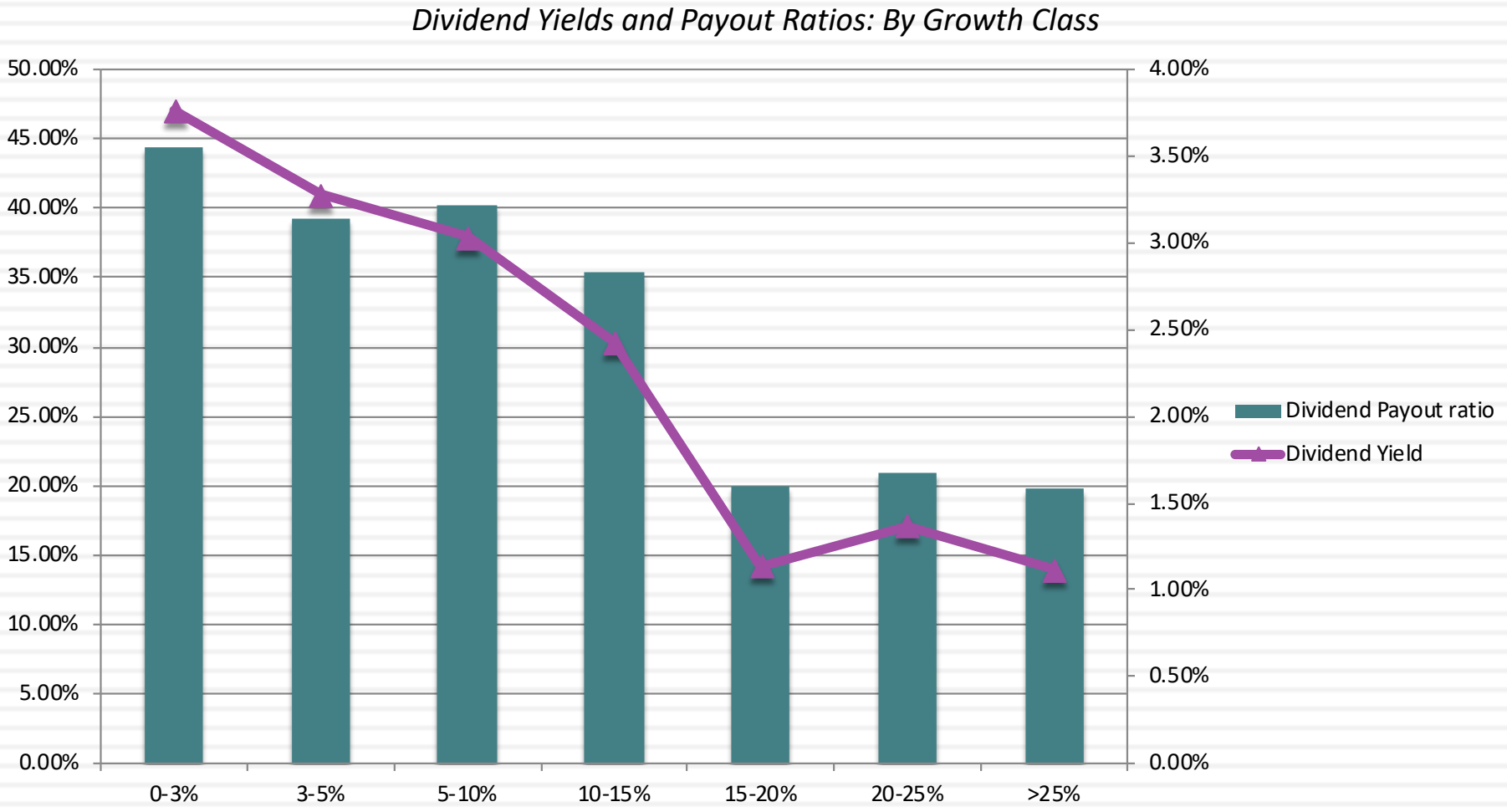
Figure 10.7: Life Cycle Analysis of Dividend Policy



External funding needs	High, but constrained by infrastructure	High, relative to firm value.	Moderates, relative to firm value.	Low, as projects dry up.	Low, as projects dry up.
Internal financing	Negative or low	Negative or low	Low, relative to funding needs	High, relative to funding needs	More than funding needs
Capacity to pay dividends	None	None	Very low	Increasing	High
Growth stage	Stage 1 Start-up	Stage 2 Rapid Expansion	Stage 3 High Growth	Stage 4 Mature Growth	Stage 5 Decline

Years

Dividend Yields and Payout Ratios: Growth Classes



Dividend Policy: Disney, Vale, Tata Motors, Baidu and Deutsche Bank

	Disney	Vale	Tata Motors	Baidu	Deutsche Bank
Dividend Yield - Last 12 months	1.09%	6.56%	1.31%	0.00%	1.96%
Dividend Payout ratio - Last 12 months	21.58%	113.45%	16.09%	0.00%	362.63%
Dividend Yield - 2008-2012	1.17%	4.01%	1.82%	0.00%	3.14%
Dividend Payout - 2008-2012	17.11%	37.69%	15.53%	0.00%	37.39%

Three Schools Of Thought On Dividends

1. If there are no tax disadvantages associated with dividends & companies can issue stock, at no issuance cost, to raise equity, whenever needed

Dividends do not matter, and dividend policy does not affect value.

2. If dividends create a tax disadvantage for investors (relative to capital gains)

Dividends are bad, and increasing dividends will reduce value

3. If dividends create a tax advantage for investors (relative to capital gains) and/or stockholders like dividends

Dividends are good, and increasing dividends will increase value

The balanced viewpoint

- If a company has excess cash, and few good investment opportunities (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 investment opportunities (NPV>0), returning money to stockholders (dividends or stock repurchases) is bad.

The Dividends don't matter school
The Miller Modigliani Hypothesis

- The Miller-Modigliani Hypothesis: Dividends do not affect value
- Basis:
  - If a firm's investment policies (and hence cash flows) don't change, the value of the firm cannot change as it changes dividends.
  - If a firm pays more in dividends, it will have to issue new equity to fund the same projects. By doing so, it will reduce expected price appreciation on the stock but it will be offset by a higher dividend yield.
  - If we ignore personal taxes, investors have to be indifferent to receiving either dividends or capital gains.
- Underlying Assumptions:

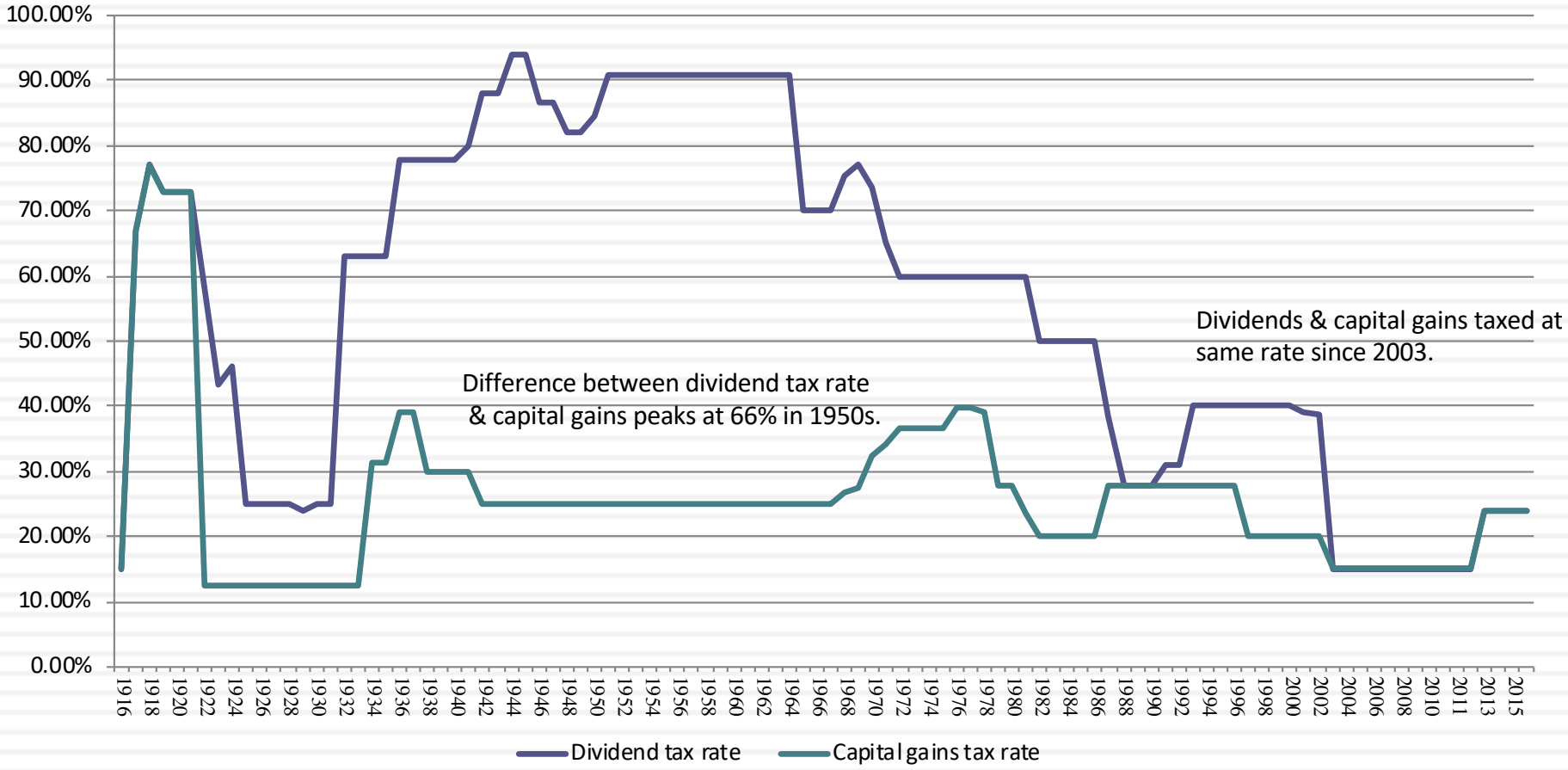
(a) There are no tax differences to investors between dividends and capital gains.

(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.

II. The Dividends are "bad" school: And the evidence to back them up…

Figure 10.10: Tax rates on Dividends and Capital Gains- US



What do investors in your stock think about dividends? Clues on the ex-dividend day!

- Assume that you are the owner of a stock that is approaching an ex-dividend day and you know that dollar dividend with certainty. In addition, assume that you have owned the stock for several years.

P = Price at which you bought the stock a "while" back

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 ex-dividend day are:

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

- The cash flows from selling after 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 -

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

- Some basic algebra leads us to the following:

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

Intuitive Implications

- The relationship between the price change on the ex-dividend day and the dollar dividend will be determined by the difference between the tax rate on dividends and the tax rate on capital gains for the typical investor in the stock.

Tax Rates	*Ex-dividend day behavior*
If dividends and capital gains are taxed equally	Price change = Dividend
If dividends are taxed at a higher rate than capital gains	Price change < Dividend
If dividends are taxed at a lower rate than capital gains	Price change > Dividend

The empirical evidence…

1966-1969

- Ordinary tax rate = 70%
- Capital gains rate = 28%
- Price change as % of Dividend = 78%

1981-1985

- Ordinary tax rate = 50%
- Capital gains rate = 20%
- Price change as % of Dividend = 85%

1986-1990

- Ordinary tax rate = 28%
- Capital gains rate = 28%
- Price change as % of Dividend = 90%

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?
  a. Invest in the stock for the long term
  b. Sell short the day before the ex-dividend day, buy on the ex-dividend day
  c. Buy just before the ex-dividend day, and sell after.
  d. _____

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

Two bad reasons for paying dividends
1. The bird in the hand fallacy

- Argument: Dividends now are more certain than capital gains later. Hence dividends are more valuable than capital gains. Stocks that pay dividends will therefore be more highly valued than stocks that do not.
- Counter: The appropriate comparison should be between dividends today and price appreciation today. The stock price drops on the ex-dividend day.

2. We have excess cash this year…

- 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 not just repurchase stock? If this is a one-time phenomenon, the firm has to consider future financing needs. The cost of raising new financing in future years, especially by issuing new equity, can be staggering.

The Cost of Raising Capital

Figure 10.12: Issuance Costs for Stocks and Bonds