Raising capital

Class 14
Financial Management, 15.414

Today

Raising capital

- Overview
- Financing patterns and the stock market's reaction

Reading

- Brealey and Myers, Chapter 14 and 15

Road map

Part 1. Valuation

Part 2. Risk and return

Part 3. Financing and payout decisions

Balance sheet

Net Assets	Debt and Equity
Net Working Capital	Long-Term Debt
Fixed Assets 1. Tangible 2. Intangible	Shareholders' Equity

Types of questions

- Your firm needs capital to finance growth. Should you issue debt or equity or obtain a bank loan? If you choose debt, should the bonds be convertible? Callable? If you choose equity, should you use common or preferred stock? How will the stock market react to your decision?

- In 1998, IBM announced that it would repurchase $2.5 billion in stock. How should it structure the stock repurchase? IBM's price jumped 7% after the announcement. Why? How would the market have reacted if IBM increased dividends instead? Suppose Intel made the same announcement. Would we expect the same price response?

Raising capital

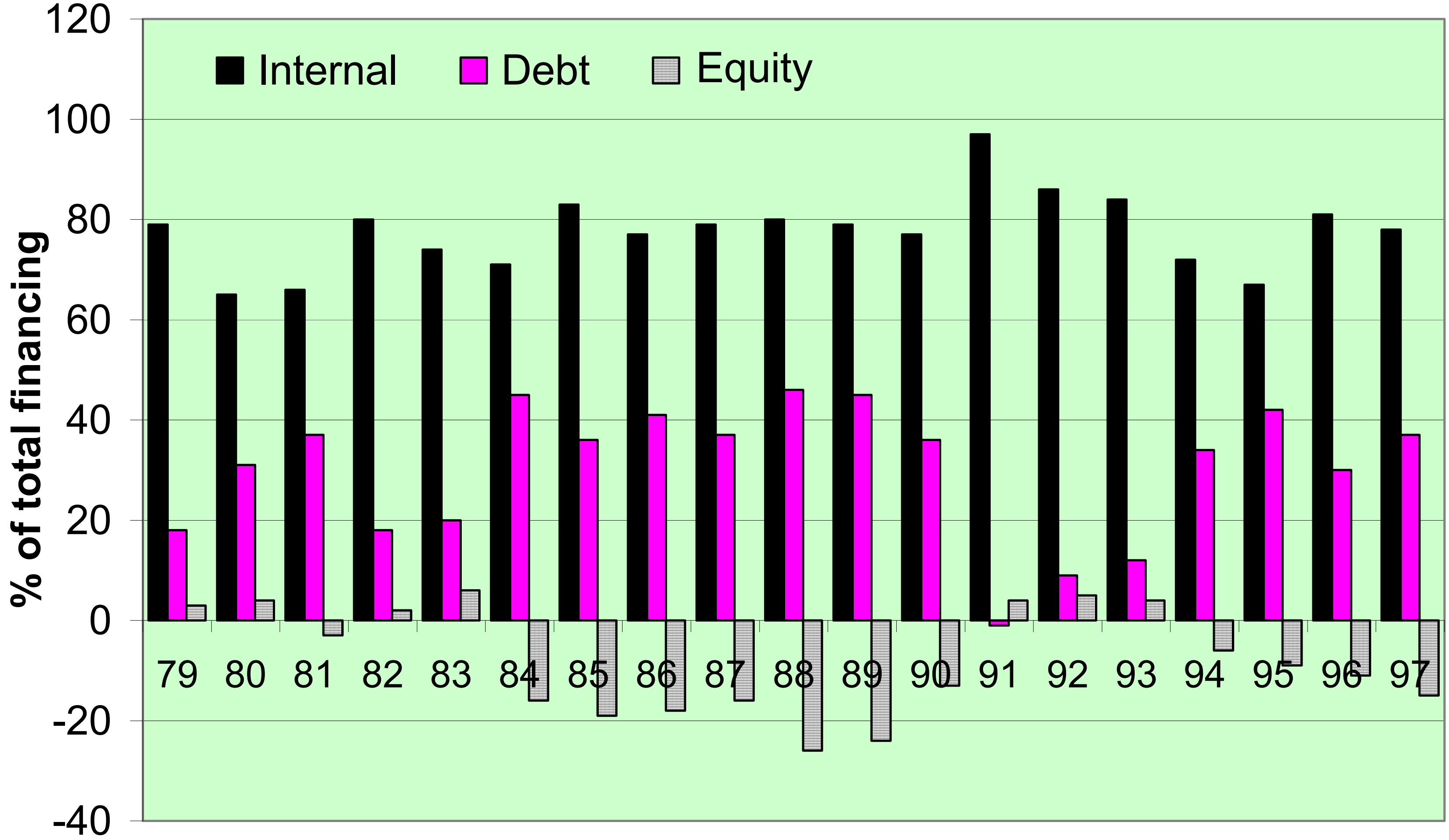
Sources of funds

- **Internal financing**
  Internally generated cashflows (retained earnings)

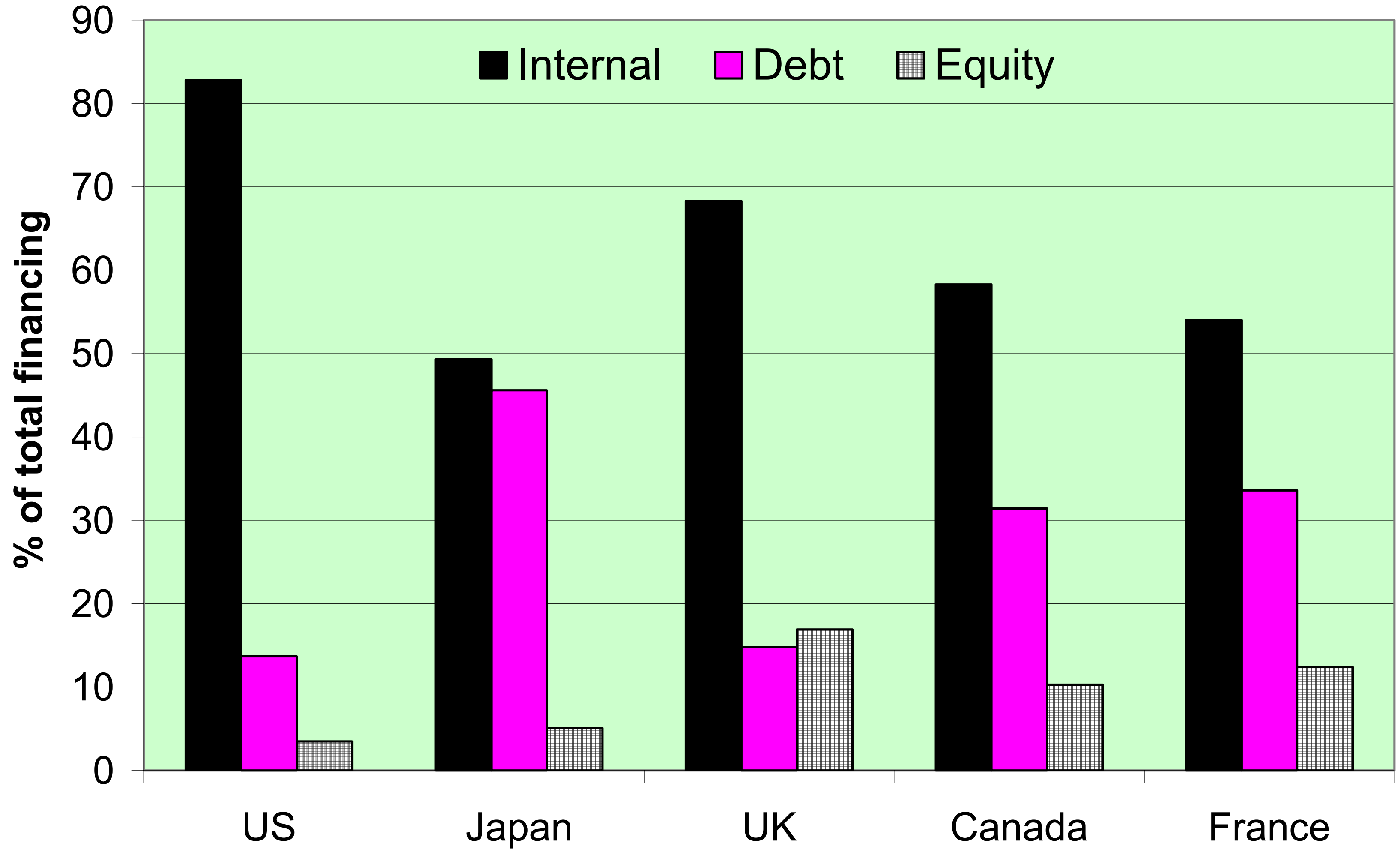
- **Debt (borrowing)**
  Bonds and commercial paper
  Bank debt (loan commitments, lines of credit)
  Private placements
  Leases

- **New equity**
  Common or preferred stock
  Rights offering
  Private placements

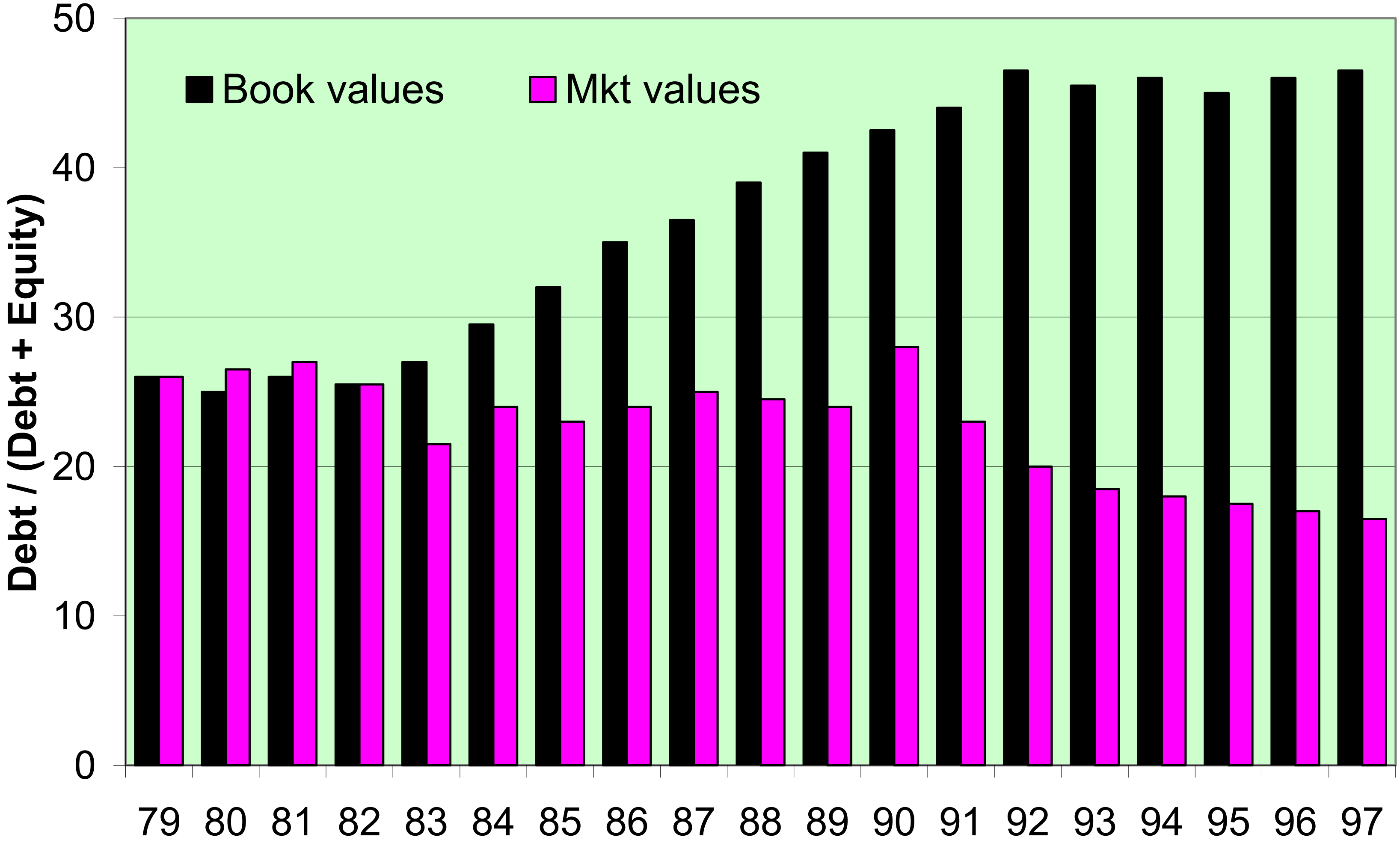
Sources of funds, U.S. corporations, 1979 – 1997



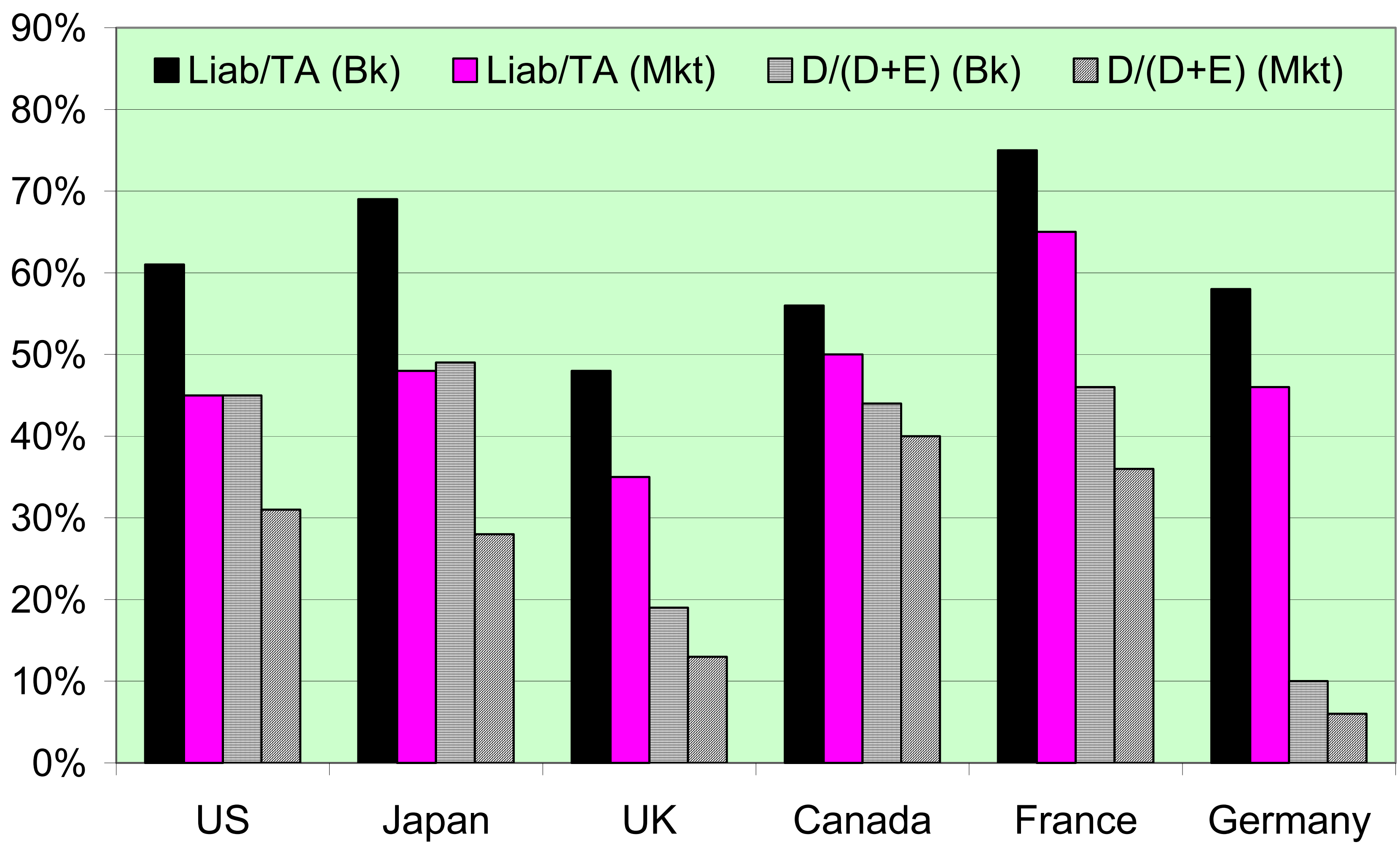
Sources of funds, International 1990 – 1994



Capital structure, U.S. corporations 1979 – 1997



Capital structure, International 1991



Raising capital

Terminology

- **Convertible, callable bonds and preferred stock**
- **Zero-coupon, or pure-discount, bonds**
- **Junk bonds**
- **Secured debt vs. unsecured debt (debentures)**
- **Priority / seniority**
  Senior debt (60% recovery in bankruptcy)
  Subordinated or junior debt (< 30% recovery in bankruptcy)

Bond ratings

Moody's and Standard and Poor's

Moody's	Standard and Poor's	
Aaa	AAA	Investment grade
Aa	AA	
A	A	
Baa	BBB	
Ba	BB	Junk bonds
B	B	
Caa	CCC	
Ca	CC	
C	C	

Bond ratings

Default probabilities for S&P ratings

	Percent defaulting within …		
Original rating	1 year	5 years	10 years
AAA	0.00	0.06	0.06
AA	0.00	0.67	0.74
A	0.00	0.22	0.64
BBB	0.03	1.64	2.80
BB	0.37	8.32	16.37
B	1.47	21.95	33.01
CCC	2.28	35.42	47.46

Bond ratings

Adjusted Key Industrial Financial Ratios

U.S. Industrial Long Term Debt
Three-Year (1998 to 2000) Medians
Source: Standard and Poor's

	AAA	AA	A	BBB	BB	B	CCC
EBIT int. cov. (x)	21.4	10.1	6.1	3.7	2.1	0.8	0.1
EBITDA int. cov. (x)	26.5	12.9	9.1	5.8	3.4	1.8	1.3
Free oper. cash flow/total debt (%)	84.2	25.2	15.0	8.5	2.6	(3.2)	(12.9)
FFO/total debt (%)	128.8	55.4	43.2	30.8	18.8	7.8	1.6
Return on capital (%)	34.9	21.7	19.4	13.6	11.6	6.6	1.0
Operating income/sales (%)	27.0	22.1	18.6	15.4	15.9	11.9	11.9
Long-term debt/capital (%)	13.3	28.2	33.9	42.5	57.2	69.7	68.8
Total debt/capital (incl. STD) (%)	22.9	37.7	42.5	48.2	62.6	74.8	87.7
Companies	8	29	136	218	273	281	22

Financing decisions

What is the goal?

How can financing decisions create value?

Capital structure decisions

Observations

- **Pecking order**
  Firms prefer internal to external financing. If financing is external, firms prefer debt to equity.

- **Target capital structure**
  Mean reversion in leverage ratios and systematic differences across industries.

Capital structure, 1997

Industry	Debt / (Debt + Equity)
High leverage	
Building construction	60.2%
Hotels and lodging	55.4
Air transport	38.8
Primary metals	29.1
Paper	28.2
Low leverage	
Drugs and chemicals	4.8
Electronics	9.1
Management services	12.3
Computers	9.6
Health services	15.2

2: The process

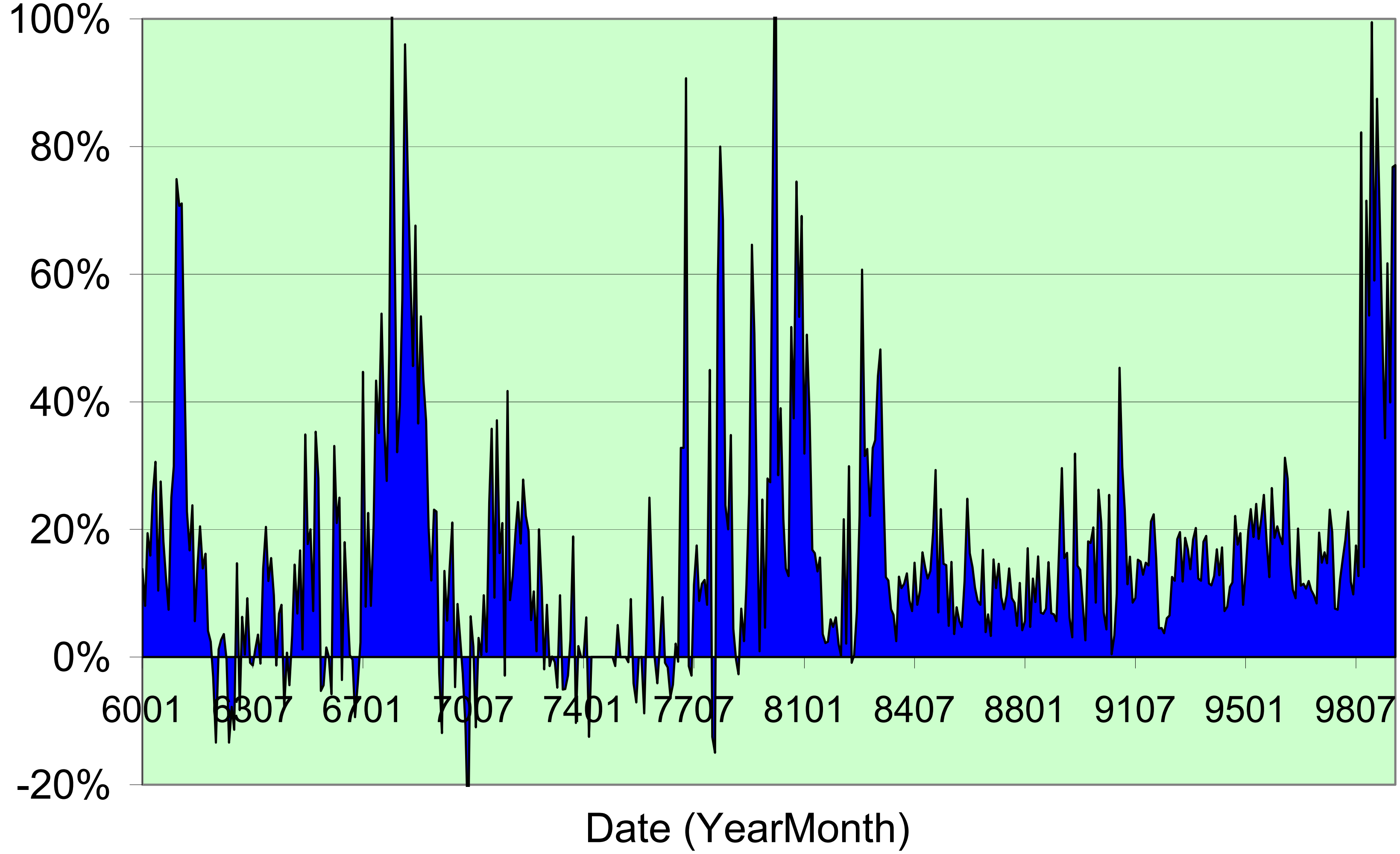
Mechanics

- Underwriters
- Firm commitment vs. best efforts
- Rights offerings

Direct costs of a public offering, 1990 – 1994

	IPOs			SEOs		
Proceeds ($ mill)	Gross spread	Other costs	Total direct	Gross spread	Other costs	Total direct
2 – 10	9.05%	7.91%	16.96%	7.72%	5.56%	13.28%
10 – 20	7.24	4.39	11.63	6.23	2.49	8.72
20 – 40	7.01	2.69	9.70	5.60	1.33	6.93
40 – 60	6.96	1.76	8.72	5.05	0.82	5.87
60 – 80	6.74	1.46	8.20	4.57	0.61	5.18
80 – 99	6.47	1.44	7.91	4.25	0.48	4.73
100 – 200	6.03	1.03	7.06	3.85	0.37	4.22
200 – 500	5.69	0.86	6.53	3.26	0.21	3.47
500 +	5.21	0.51	5.72	3.03	0.12	3.15
Average	**7.31**	**3.69**	**11.00**	**5.44**	**1.67**	**7.11**

Underpricing of IPOs, 1960 – 1997



International comparison of underpricing

Country	Data Source(s)	Average Initial Return (%)	Sample Size	Years
Australia	Lee et al.	11.9	266	1976-89
Belgium	Rogiers et al.	10.1	28	1984-90
Brazil	Aggarwal et al.	78.5	62	1979-90
Canada	Jog & Riding; Jog & Srivastava	5.4	258	1971-92
Chile	Aggarwal et al.	16.3	19	1982-90
Finland	Keloharju	9.6	85	1984-92
France	Husson & Jacquillat; Leleux & Muzyka; Palliard & Belletante	4.2	187	1983-92
Germany	Ljungqvist	10.9	170	1978-92
Hong Kong	McGuinness	17.6	80	1980-90
Italy	Cherubini & Ratti	27.1	75	1985-91
Japan	Fukuda; Dawson & Hiraki; Hebner & Hiraki	32.5	472	1970-91
Korea	Dhatt et al.	78.1	347	1980-90
Malaysia	Isa	80.3	132	1980-91
Mexico	Aggarwal et al.	33.0	37	1987-90
Netherlands	Wessels; Eijgenhuijsen & Buijs	7.2	72	1982-91
New Zealand	Vos & Cheung	28.8	149	1979-91
Portugal	Alpalhao	54.4	62	1986-87
Singapore	Koh & Walter	27.0	66	1973-87
Spain	Rahnema et al.	35.0	71	1985-90
Sweden	Ridder; Rydqvist	39.0	213	1970-91
Switzerland	Kunz & Aggarwal	35.8	42	1983-89
Taiwan	Chen	45.0	168	1971-90
Thailand	Wethyavivorn & Koo-smith	58.1	32	1988-89
U.K.	Dimson; Levis	12.0	2133	1959-90

3: Price impact

How do stock prices react to security offerings?

- Debt issues?
- Seasoned equity offerings?

Stock price reaction

	Type of issuer	
Type of security	Industrial	Utility
Common stock*	**-3.14%**	**-0.75%**
Preferred stock	-0.19	0.08
Convertible preferred	**-1.44**	**-1.38**
Straight debt	-0.26	-0.13
Convertible bonds	**-2.07**	--
Private placements of debt	**-0.91**	--
Bank loan agreements	**1.93**	--

*Approximately 30% of issue size

Stock price reaction

Stated purpose	Loan agreement	Private placement	Public straight bonds
Repay debt	1.14%	0.51%	-0.35%
Cap expenditure	1.20	-0.23	0.55
General purpose	**4.67**	0.26	0.07
Repay bank loans	**3.10**	**-2.07**	**-1.63**
No purpose given	**1.74**	--	0.69

Stock price reaction

Transaction	Security issued	Security retired	Announce return
Leverage increasing			
Stock repurchase	Debt	Common	**21.9%**
Exchange offer	Debt	Common	**14.0**
Exchange offer	Preferred	Common	**8.3**
No leverage effect			
Exchange offer	Debt	Debt	0.3
Leverage decreasing			
Call exercise	Common	Debt	**–2.1**
Exchange offer	Common	Preferred	**–2.6**
Exchange offer	Preferred	Debt	**–7.7**
Exchange offer	Common	Debt	**–9.9**

Stock price reaction

Observations

- Stock prices react negatively to stock issues
- Stock prices react positively to bank loans, but very little to public debt issues
- Leverage-increasing transactions are good news, but leverage-decreasing transactions are bad news

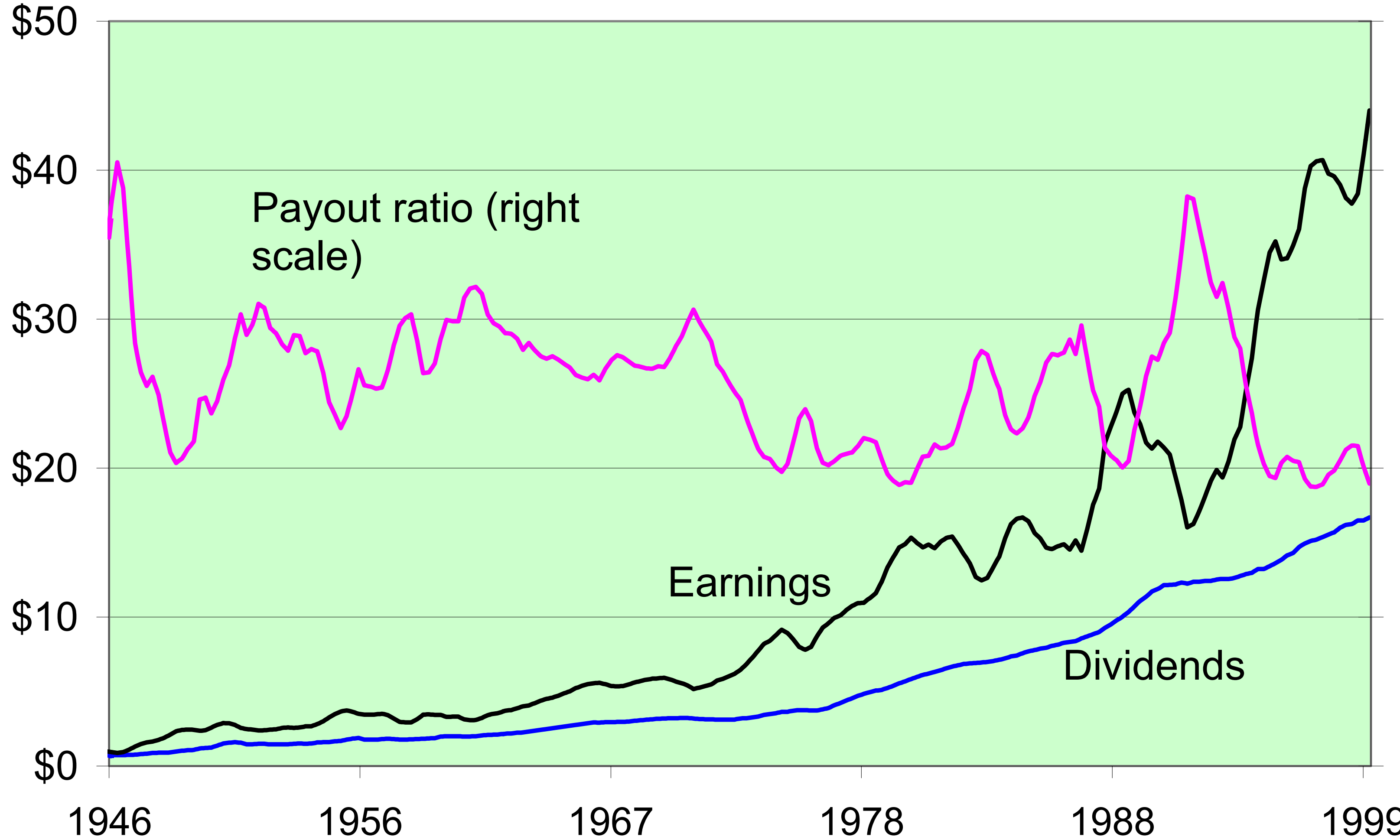
Why?

Payout policy

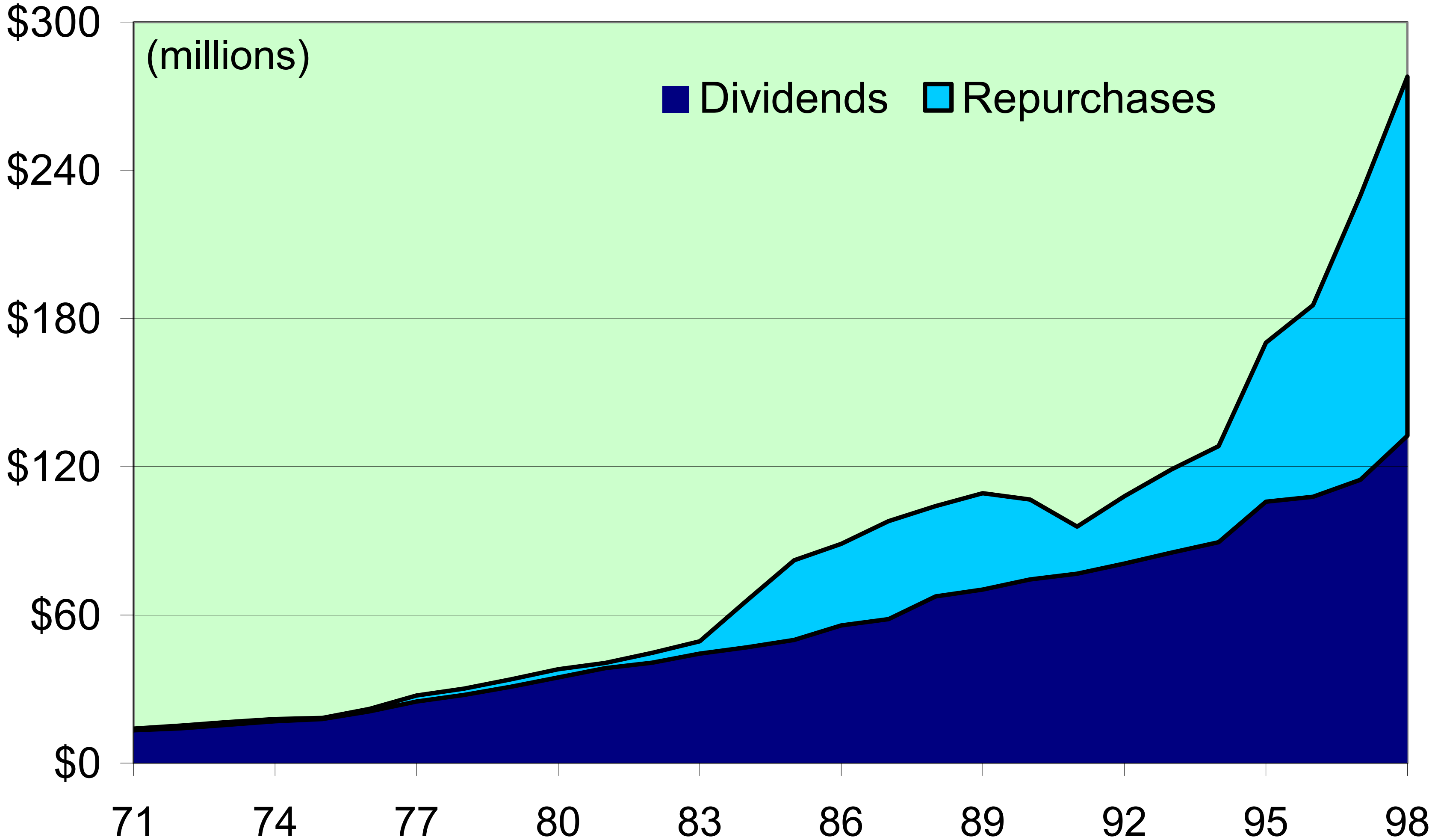
Questions

- How do firms payout cash?
- What are the advantages and disadvantages of each method?
- How much cash should a firm hold?

S&P 500, earnings and dividends



S&P 500, dividends and repurchases



Stock price reaction

Event	Announcement return
Increases	
Repurchase: open market	3.6%
Repurchase: tender offer	16.2
Dividend increase	0.9
Dividend initiation	3.7
Special dividend	2.1
Decreases	
Dividend omission	-7.0%
Dividend decrease	-3.6