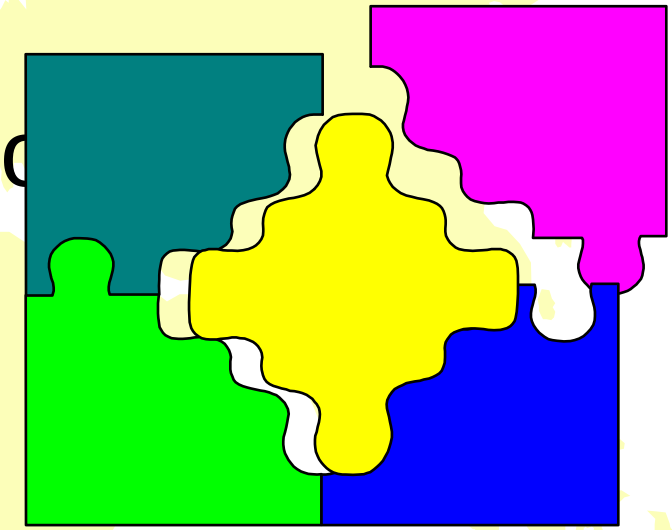
Restructuring Ownership: Mergers & Acquisitions

Prof. Ian Giddy

New York University

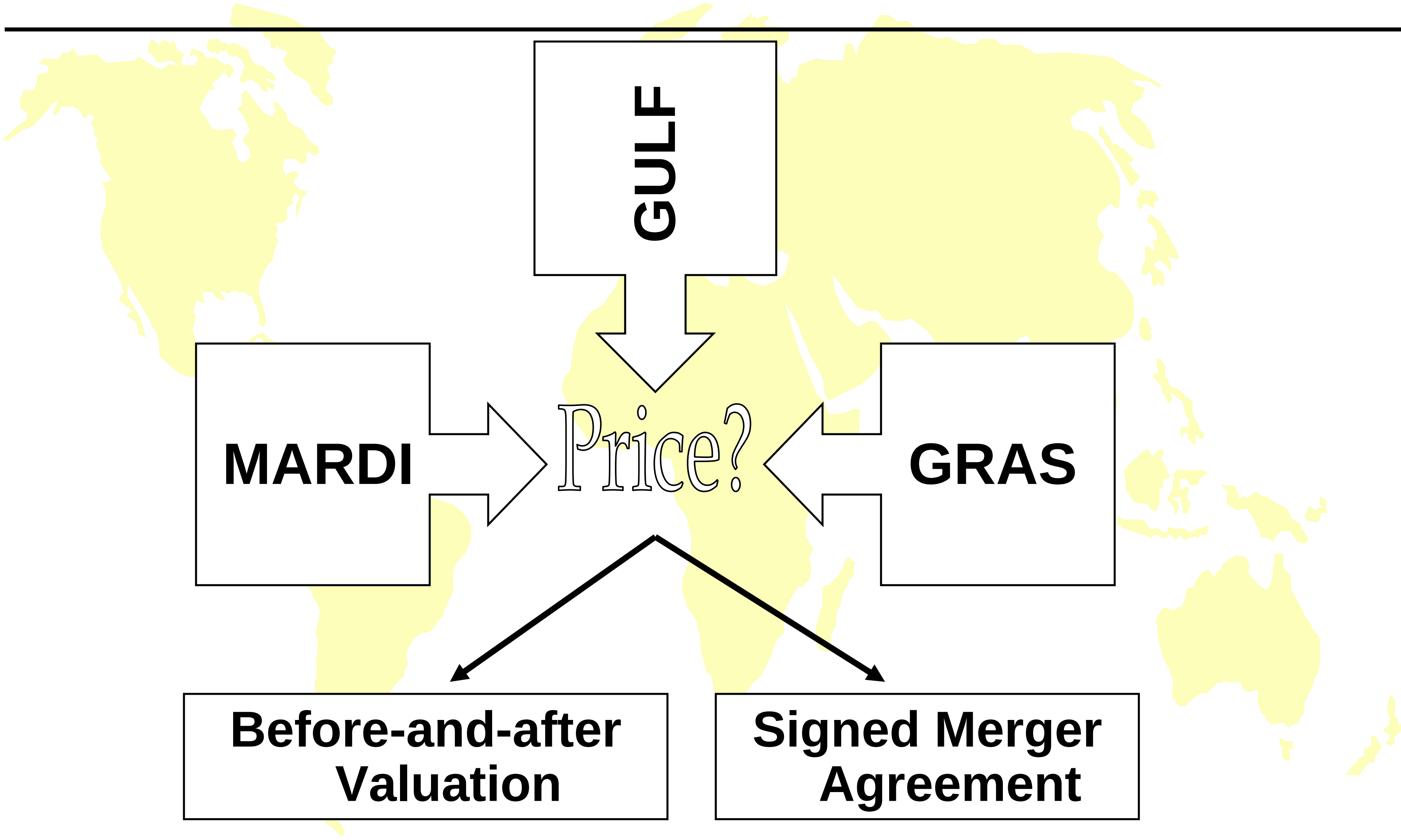
Mergers and Acquisitions

- Mergers & Acquisitio
- Divestitures
- Valuation



Concept: Is a division or firm worth more within the company, or outside it?

Mardi-Gras Negotiation



The Basics

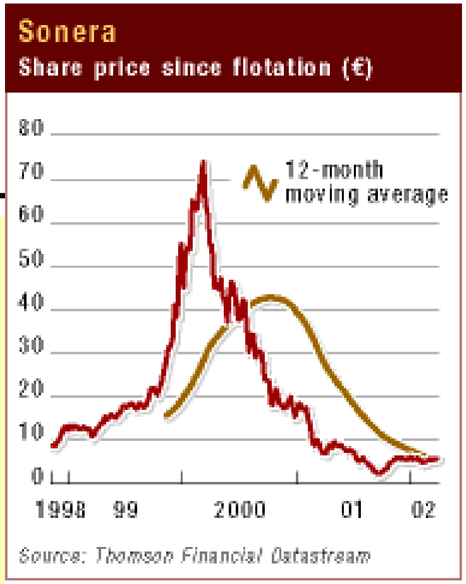
IBM is considering the acquisition of Basix, Inc. The shares are trading at a P/E of 11, far below IBM's P/E of 18. Based on past performance the company is expected to earn $2 per share next year, an increase from the current EPS of $1.93. If IBM acquires Basix, the long-run EPS growth rate could be raised to 5.5%. The Treasury bond yield is 4.5%, the company's beta is 1.3 and the long run market return is 11.5%. Is the company worth buying at a P/E of 12? At how much of a premium should we say *fugedaboudit*?

Basix

Use constant growth model		
	Before	After
Earnings	$ 1.93	$ 1.93
Next year	$ 2.00	$ 2.00
Growth rate	3.6%	5.5%
Risk free rate	4.50%	4.50%
Beta	1.3	1.30
Market return	11.50%	11.50%
Req ret on equity	13.60%	13.60%
Value	$ 20.05	$ 24.69
P/E	10.4	12.8
Price	$ 21.23	16%

Source: basix.xls

Telia/Sonera



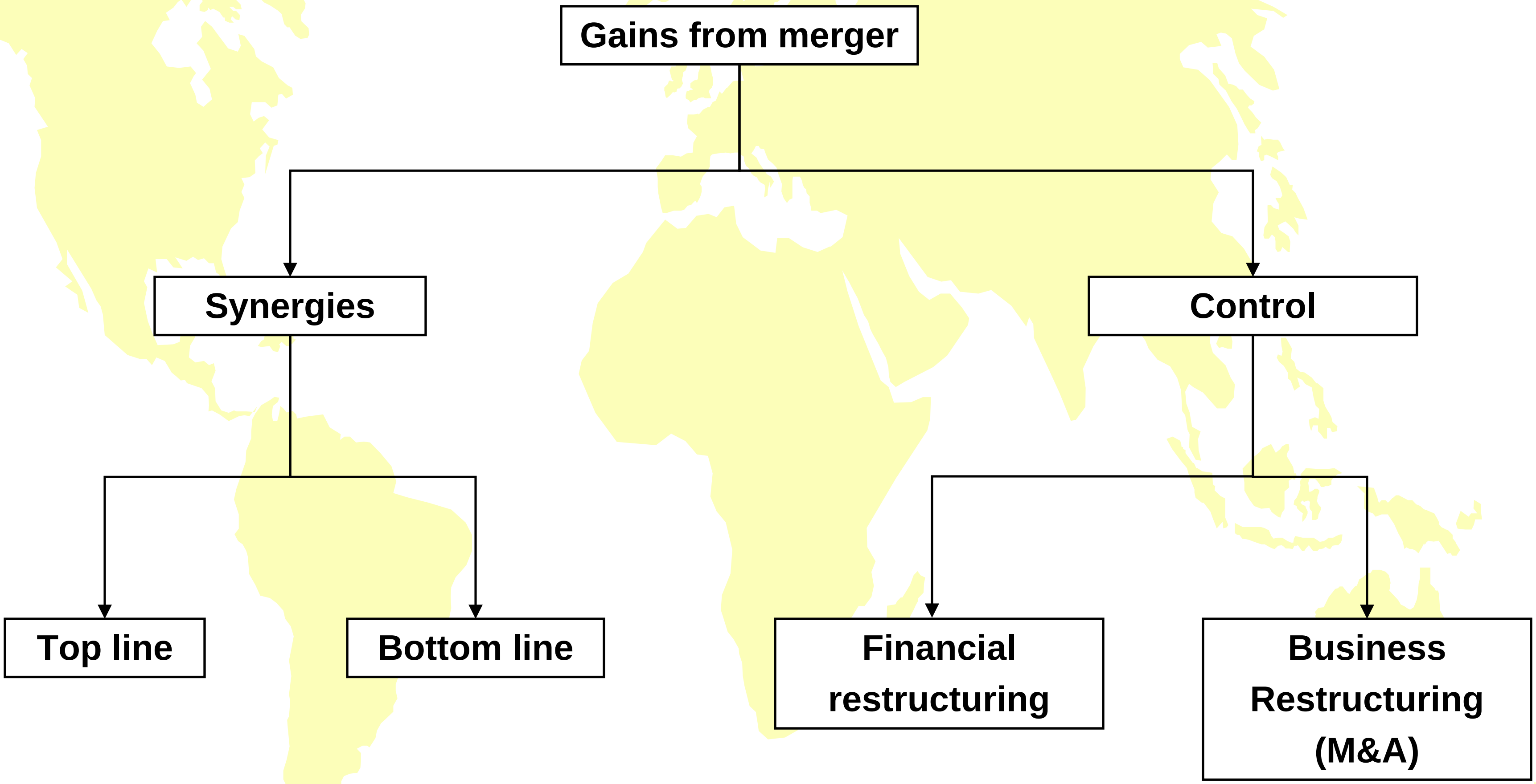
March, 2002, FT. Sweden's Telia is merging with Finland's Sonera. Under the deal, Telia will offer 1.51 of its shares for each Sonera share, a premium of 15.8 per cent to Sonera's closing price. This gives Telia shareholders 64 per cent of the new company, and Sonera's 36 per cent. Adding the present value of E300m synergies promised annually from 2005 to the companies' combined market capitalization, and dividing by the increased number of shares, suggests a value of roughly SKr41 per Telia share, against yesterday's close of SKr35.4. But execution risks are high. The expected growth of this sector is 6-7% pa.

Those risks mean Sonera ends up with a miserly premium. But although it is back from the brink of disaster, it has nowhere else to go. Governance arrangements look promising. Yet while bringing in an outside chief executive ensures neutrality, it leaves strategic questions unanswered. What happens to Telia's loss-making international carrier business, Sonera's 3G ventures and its interests in Turkey and central Asia?

The strategic fit is not bad. Telia would acquire Sonera's market leadership in Finland, plus Sonera's interests in their joint ventures in the Baltic states and Russia.

The biggest problem may be price. There are synergies on offer - Telia could shut down its loss-making Finnish mobile venture, and crunch head office costs. But they appear rather limited. The merged entity would not gain economies of scale in mobile to compare with a Vodafone or an Orange. Telia may find it hard to make an offer that does not destroy value for its shareholders, but is still worth Sonera bothering to accept.

The Gains From an Acquisition



The Market for Corporate Control

When you buy shares, you get dividends; and potential control rights

There is a market for corporate control—that is, control over the extent to which a business is run in the right way by the right people.

This market is constrained by

- Government
- Management
- Some shareholders

Example:
Allied Signal's attempts to acquire AMP, which is located in Pennsylvania

Goal of Acquisitions and Mergers

- Increase size - easy!
- Increase market value - much harder!

Goals of Acquisitions

Rationale: Firm A should merge with Firm B if [Value of AB > Value of A + Value of B + Cost of transaction]

- Synergy
- Gain market power
- Discipline
- Taxes
- Financing

AOL-Time Warner

Now..when did the merger take place?

- Motivations?
- Lessons?

AOL-Time Warner

Possible motivations

- Economies of scale and scope
- Diversification
- Access to new technology
- Regulatory arbitrage
- Hubris

Possible problems

- Overestimating synergy
- Slow pace of integration
- Poor strategy
- Payment in stock
- Overpaying
- Poor postmerger communication
- Conflicting corporate cultures
- Weak core business
- Large size of target company
- Inadequate due diligence
- Poor assessment of technology

Who Gains What?

- Target firm shareholders?
- Bidding firm shareholders?
- Lawyers and bankers?
- Are there overall gains?

Changes in corporate control <u>increase</u> the <u>combined market value</u> of assets of the bidding and target firms. The average is a 10.5% increase in total value.

Gains to Bidding Firm Shareholders

- There are positive returns to successful bidders in *tender offers*
- For successful bidders in *mergers*, evidence is mixed. It seems that returns are around zero.
- For *unsuccessful bidders* in both tender offers and mergers, returns are *negative*.

Do Acquisitions Benefit Shareholders? Successful Bids

Technique	Target	Bidders
Tender offer	30%	4%
Merger	20%	0
Proxy contest	8%	na

- **Note: Abnormal price changes are price changes adjusted to eliminate the effects of marketwide price changes**

Do Acquisitions Benefit Shareholders? Unsuccessful Bids

Technique	Target	Bidders
Tender offer	-3%	-1%
Merger	-3%	-5%
Proxy contest	8%	na

The Price: Who Gets What?

	Daimler	*Chrysler*	*Combined*
Market value before deal leaked	$52.8	$29.4	$82.2
Value added by merger			$18.0
Merged Value			$100.2
Shareholders get	57.2%	42.8%	100%
Which is now worth	$57.3	$42.9	$100.2
Shareholders' shares of the gain	$4.5	$13.5	$18
Premium, as %	9%	46%	

AMP/AlliedSignal/Tyco

- What defenses did AMP employ?
- Who won? Who lost?

NEWS > Deals

Tyco to rescue AMP

November 23, 1998: 8:53 a.m. ET

White knight bid could top $11.3B, fend off AlliedSignal interest

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NEW YORK (CNNfn) - Industrial acquisitions dynamo Tyco International Ltd. said Monday it intends to buy AMP Inc. for at least $11.3 billion, fending off a protracted hostile AMP takeover attempt from AlliedSignal Inc.

Tyco will swap 0.7839 of a Tyco share for every AMP share outstanding if Tyco is trading at between 60 and 67 during the lead-up period. The ratio could change if Tyco shares fluctuate outside that trading range, but will not exceed a value of $55.95 per AMP share.

Electrical component supplier AMP has been fending off an unwelcome takeover attempt by AlliedSignal for the last four months, but did not give up hope of remaining independent until a recent court decision gave AlliedSignal the green light for a $10 billion mail-in proxy bid.

Hamilton, Bermuda-based Tyco, a diversified manufacturing and service company, has been on a buying spree in recent

Equity Valuation: Application to M&A

Prof. Ian Giddy

New York University

What's It Worth?

Valuation Methods

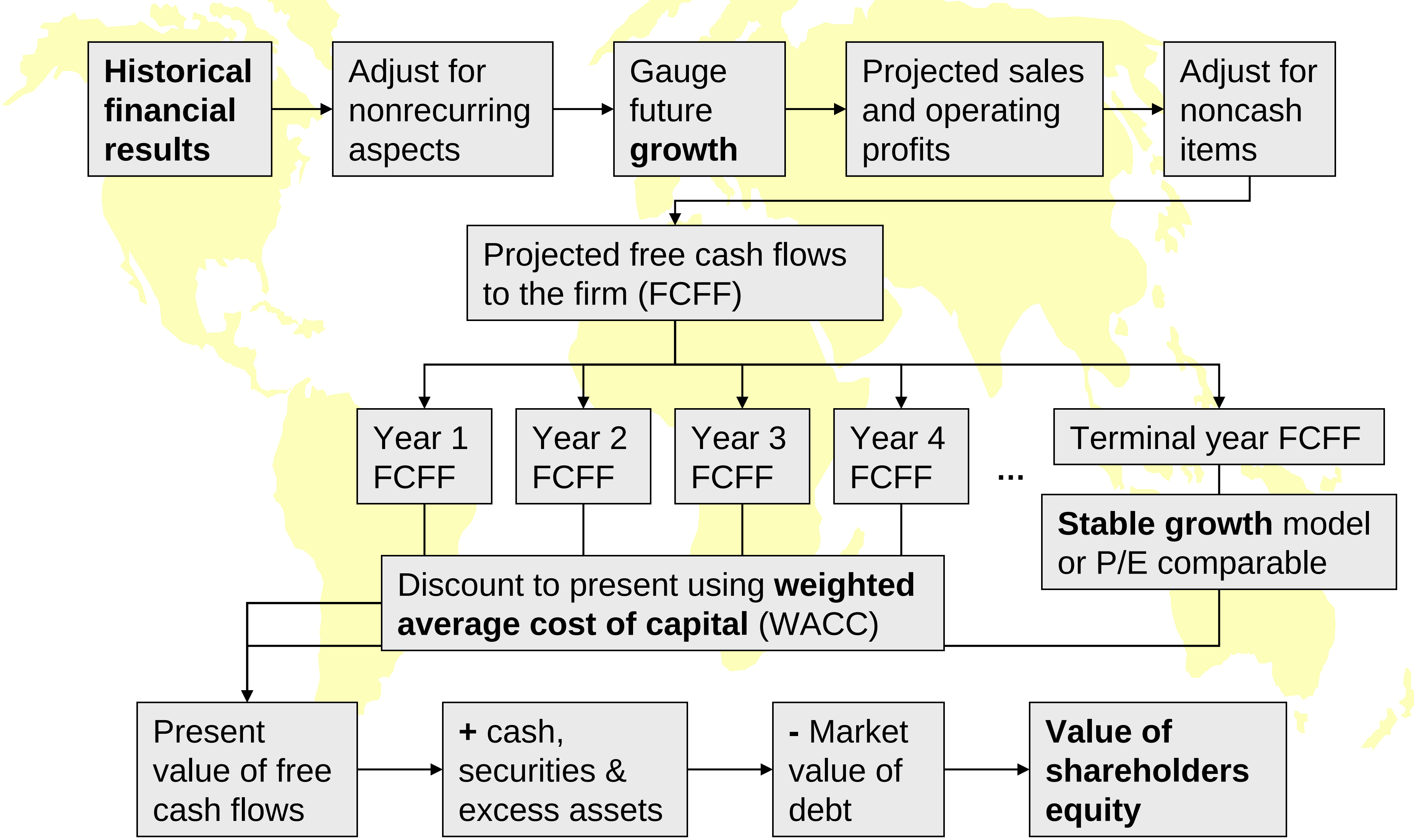
- Book value approach
- Market value approach
- Ratios (like P/E ratio)
- Break-up value
- **Cash flow value -- present value of future cash flows**

How Much Should We Pay?

Applying the <u>discounted cash flow</u> approach, we need to know:

1. The incremental cash flows to be generated from the acquisition, adjusted for debt servicing and taxes
2. The rate at which to discount the cash flows (required rate of return)
3. The deadweight costs of making the acquisition (investment banks' fees, etc)

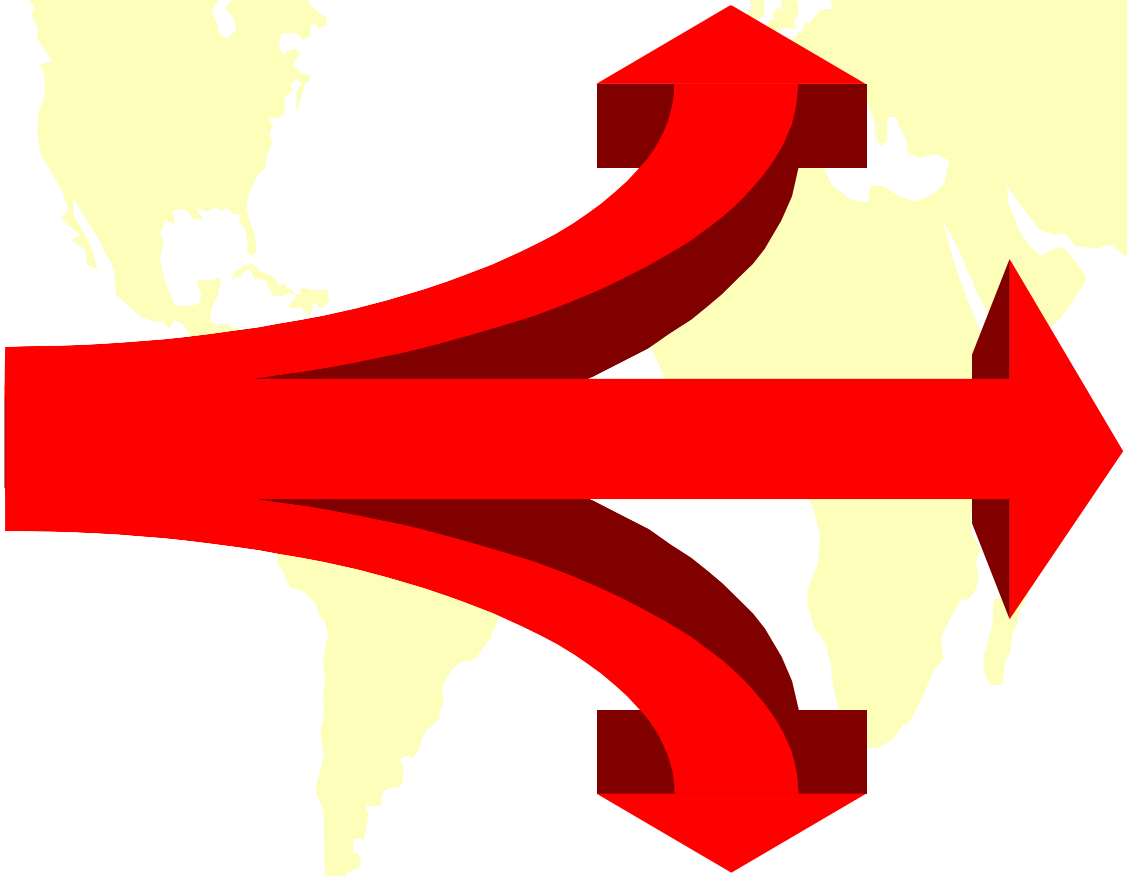
Valuing a Firm with DCF: An Illustration



Equity Valuation in Practice

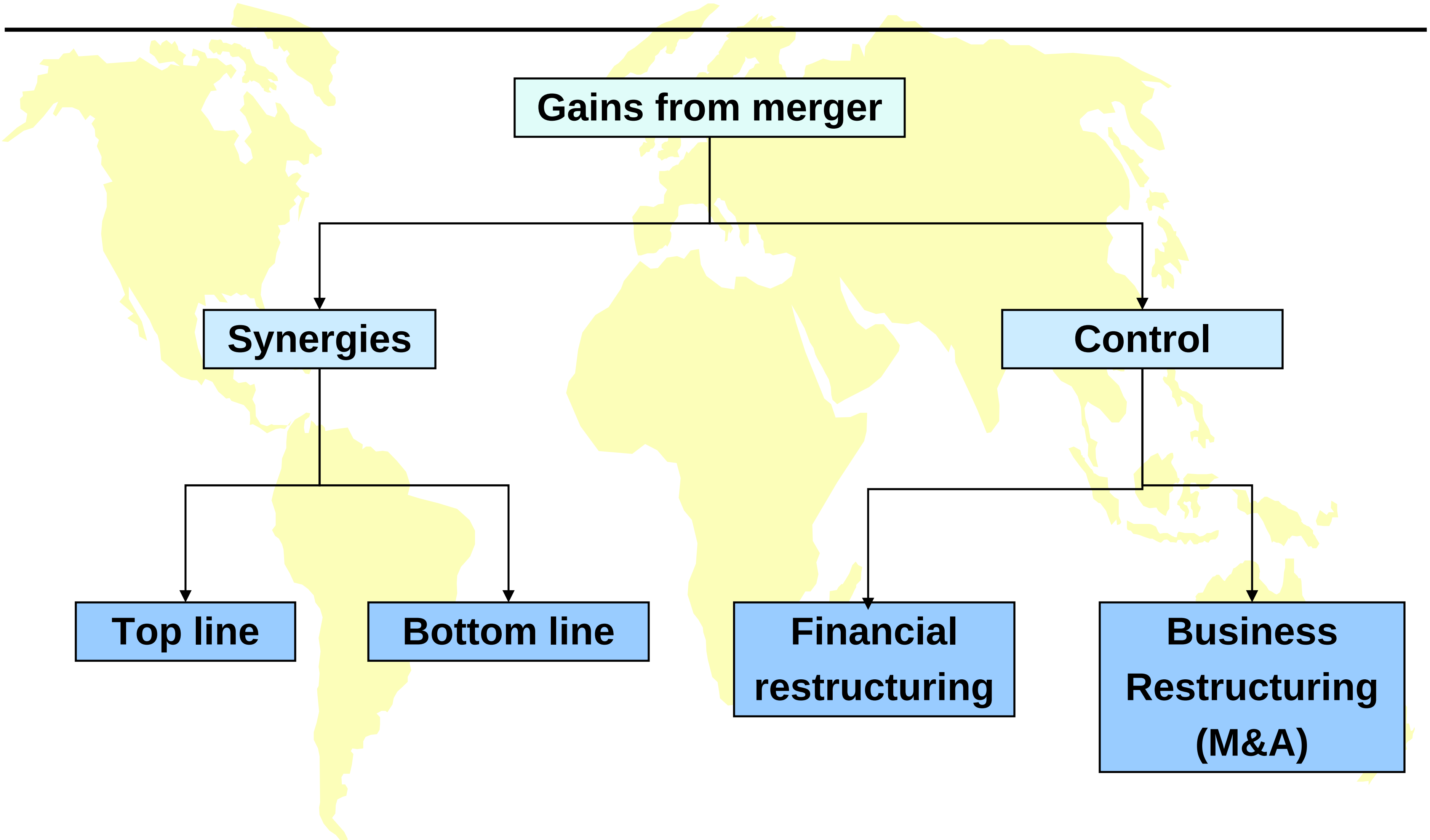
- Estimating discount rate
- Estimating growth rate and cash flows
- Application to Optika
- Estimating synergies
- Application in M&A: Schirnding-Optika

Estimating Future Cash Flows



- Dividends?
- Free cash flows to equity?
- Free cash flows to firm?

The Gains From an Acquisition



Optika

	Optika
Growth	5%
Tax rate	35%
Initial Revenues	3125
COGS	89%
WC	10%
Equity Market Value	1300
Debt Market Value	250
Beta	1.0
Riskfree rate	7%
d	1.5%
spread	5.5%
	T+1
Revenues	3281
-COGS	2920
-Depreciation	74
	287
)	187
WC	16
Flow to Firm	171
uity (from CAPM)	12.50%
Cost of Debt	5.53%
WACC	11.38%
Firm Value	**2681**

WACC:

ReE/(D+E)+RdD/(D+E)

Value:

FCFF/(WACC-growth rate)

Equity Value:

Firm Value - Debt Value

= 2681-250 = 2431

CAPM:

7%+1(5.50%)

Debt cost

(7%+1.5%)(1-.35)

Optika & Schirnding

	Optika	Schirnding	Combined
Growth	5%	5%	5%
Tax rate	35%	35%	35%
Initial Revenues	3125	4400	7525
COGS	89%	87.50%	
WC	10%	10%	10%
Equity Market Value	1300	2000	3300
Debt Market Value	250	160	410
Beta	1.0	1.0	1.0
Riskfree rate	7%	7%	7%
Debt spread	1.5%	1.5%	1.5%
Market risk spread	5.5%	5.5%	5.5%
	T+1	T+1	
Revenues	3281	4620	7901
-COGS	2920	4043	6963
-Depreciation	74	200	274
=EBIT	287	378	664
EBIT(1-Tax)	187	245	432
-Change in WC	16	22	38
-Free Cash Flow to Firm	171	223	394
Cost of Equity (from CAPM)	12.50%	12.50%	12.50%
Cost of Debt	5.53%	5.53%	5.53%
WACC	11.38%	11.98%	11.73%
Firm Value	**2681**	**3199**	**5859**

Optika-Schirnding with Synergy

	Optika	Schirnding	Combined	Synergy
Growth	5%	5%	5%	**5.5%**
Tax rate	35%	35%	35%	35%
Initial Revenues	3125	4400	7525	7525
COGS	89%	87.50%		**86.00%**
WC	10%	10%	10%	10%
Equity Market Value	1300	2000	3300	3300
Debt Market Value	250	160	410	410
Beta	1.0	1.0	1.0	1.0
Riskfree rate	7%	7%	7%	7%
Debt spread	1.5%	1.5%	1.5%	1.5%
Market risk spread	5.5%	5.5%	5.5%	5.5%
	T+1	T+1		T+1
Revenues	3281	4620	7901	7939
-COGS	2920	4043	6963	6827
-Depreciation	74	200	274	274
=EBIT	287	378	664	837
EBIT(1-Tax)	187	245	432	544
-Change in WC	16	22	38	41
-Free Cash Flow to Firm	171	223	394	503
Cost of Equity (from CAPM)	12.50%	12.50%	12.50%	12.50%
Cost of Debt	5.53%	5.53%	5.53%	5.53%
WACC	11.38%	11.98%	11.73%	11.73%
Firm Value	**2681**	**3199**	**5859**	**8074**

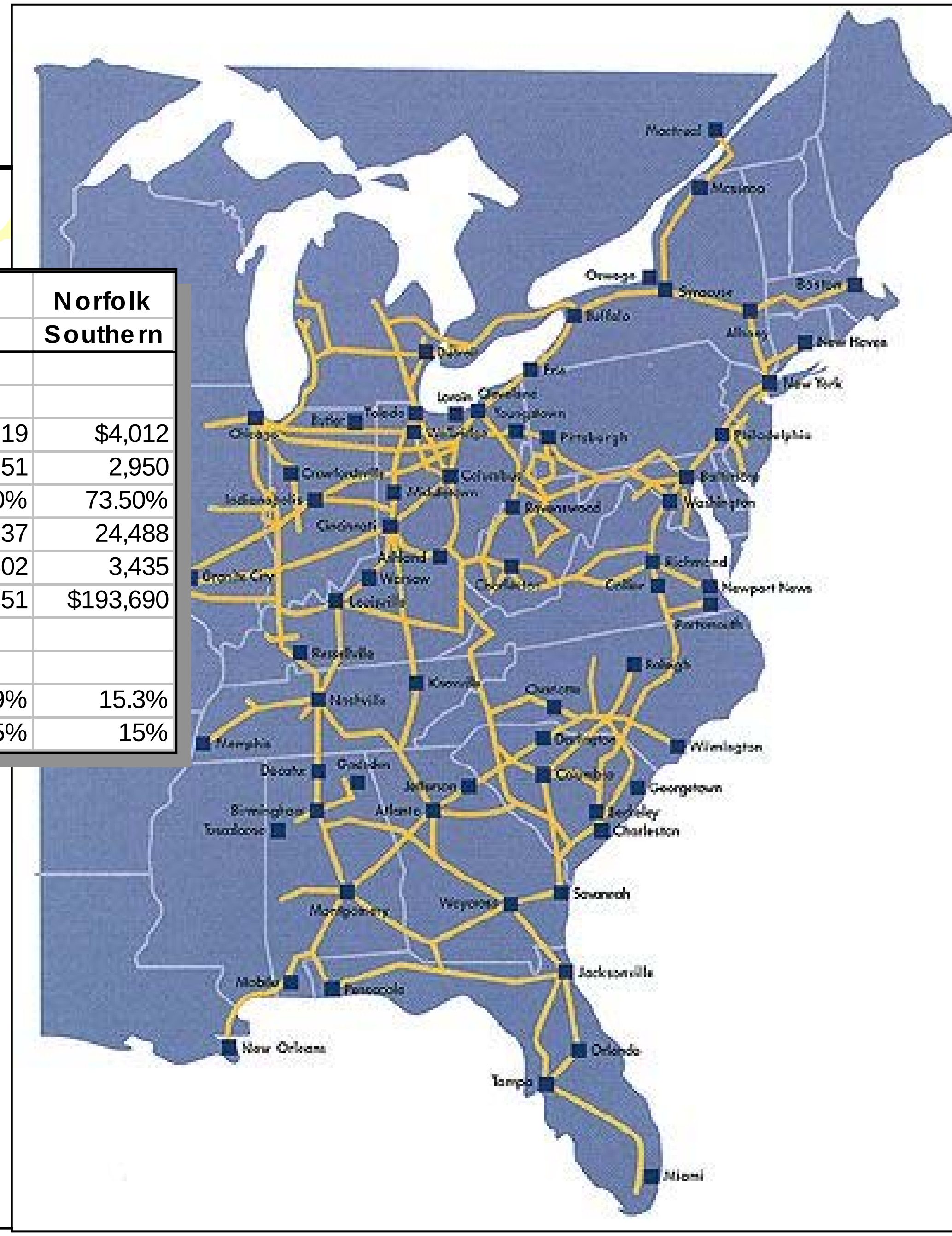
Valuation in a Bidding-War Context

Case Study: The Acquisition of Conrail

- Why merge Conrail and CSX?
- How was the CSX offer structured?
- How was Conrail's resistance to an unfriendly bid structured?
- How would you, as a Conrail shareholder, react to the offer?
- What's Conrail worth?

The Network

	Conrail	CSX	Norfolk Southern
Railroad Operations			
Operating Revenues	$3,686	$4,819	$4,012
Operating Expenses	3,230	3,951	2,950
Operating Cost Ratio (%)	87.60%	82.00%	73.50%
Railroad Employees	23,510	29,537	24,488
Total Carloads Originated (thousa	2,531	4,402	3,435
Revenue per Employee	$156,784	$163,151	$193,690
Financial Ratios (%)			
Return on Sales	11.4%	6.9%	15.3%
Return on Average Equity	9%	15.5%	15%



Conrail: Obstacles to an Unfriendly Takeover

- Pennsylvania
  - “Fair Value” statute: bids >20% all get same price
  - Bidder’s voting rights maxed at 20% unless management approves
  - “Constituency” statute: protect unions
- Conrail
  - Break-up fee to CSX
  - CSX has “lock up” option to buy 16m new shares
  - Poison pill (suspended for CSX): shareholders get new shares at half price if outsider buys 10%
  - 6-month “no talk” clause

Takeover Defenses

- Poison Pills
  - Preferred flip-over stock
  - Flip-over rights
  - Flip-in rights
  - Poison put bonds
- Shark Repellants
  - Limitations on board changes
  - Limitations on shareholder actions
  - Supermajority rules
  - Anti-greenmail limits on share repurchases
  - Fair-price provisions
  - Supervoting stock exchange offers
  - Reincorporation
- Golden parachutes

Post-Takeover Bid Responses

- "Just Say No"
- Litigation
- White Knight
- Greenmail
- ESOP
- Pac-Man
- Restructuring, including
  - Leveraged Recapitalization
  - Share Buybacks
  - Using cash for acquisitions
  - Divestitures
  - Going private
  - Liquidation

What is Conrail Worth?

- Stand-alone value
  - Market value: $71.00
  - Comparables P/E ratio)
    - **Conrail: $89/4.91=18x**
  - Discounted present value
- Value to acquirer
- Value in bidding-war context

Comparables

Value Indicator
- **Earnings**
- **Cash Flow**
- **Revenues**
- **Book**

Average Comparable
- **Industry**
- **Firms**
- **Deals**

Target Company Numbers or Projections

Estimated Value of Target

What is Conrail Worth?

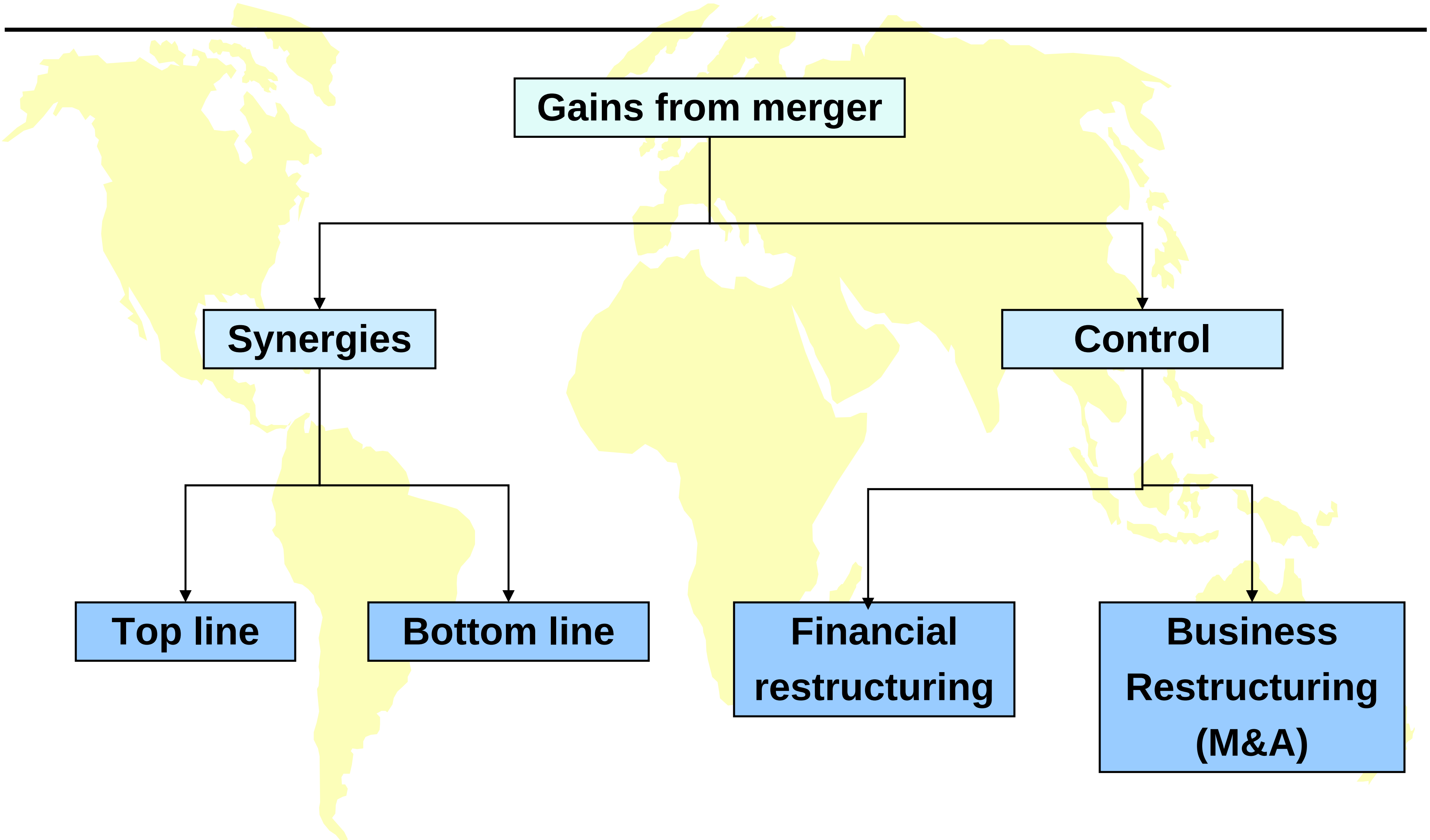
Conrail Valuation Multiples							
	Average multiple	Number	Firm value	Debt value	Equity valu	Equity Value per shar	
Price/Earnings	17.19	$ 5.69				97.81	
Price/EBITDA	10.57	1017	10749.69	2094	8655.69	93.58	
Price/Sales	2.41	3722	8970.02	2094	6876.02	74.34	
Price/Book	3.63	32.46				117.83	

How Much Premium Can a Buyer Pay?

Applying the discounted cash flow approach, we need to know:

- The incremental cash flows to be generated from the acquisition, adjusted for debt servicing and taxes
- The rate at which to discount the cash flows (required rate of return on equity)
- The deadweight costs of making the acquisition (investment banks' fees, etc)
- Cost of losing out!

Gains From an Acquisition of Conrail?



What is Conrail Worth?

Conrail Valuation					Re	=	Rf	+	Beta	Mkt Risk Prem	
CSX Valuation 1			Required return		16.15%	=	6.83%	+	1.3	7.17%	
			1997	1998	1999	2000	2001				
Gain in Operating Income			0	188	396	550	567				
TV w. const growth n		3%					4441				
After tax		35%	0	122	257	358	3255				
PV			0	91	164	196	1540				
NPV		1990.995									
Shares		90.5									
NPV per share		**$ 22.00**									
Pre-merger		**$71.00**									
Total		**$ 93.00**									

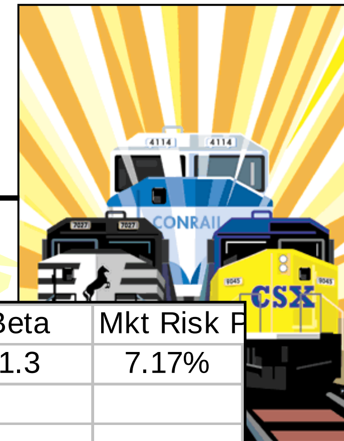
What is Conrail Worth?

- Stand-alone value
  - ◆Market value: $71.00
  - ◆Comparables
  - ◆Discounted present value
- Value to acquirer
- Value in bidding-war context

A Higher Price for Conrail

- Could Norfolk Southern make a bid?
- How? How much?
- Does this change what CSX has to pay?
- Answer: Yes!

What is Conrail Worth?



Conrail Valuation					Re	=	Rf	+	Beta	Mkt Risk P
CSX Valuation 2			Required return		16.15%	=	6.83%	+	1.3	7.17%
Gain			1997	1998	1999	2000	2001			
Gain in Operating Income			0	240	521	730	752			
TV w. const growth m		3%					5890			
After tax		35%	0	156	339	475	4317			
PV			0	116	216	261	2042			
NPV		2634.565								
Shares		90.5								
NPV per share		$ 29.11								
Opportunity Cost			1997	1998	1999	2000	2001			
Loss if rival gets target			0	-66	-123	-189	-196			
TV w. const growth m		3%					-1535			
After tax		35%	0	-43	-80	-123	-1125			
PV			0	-32	-51	-67	-532			
NPV		-682.571								
Shares		90.5								
NPV per share		$ (7.54)								
Pre-merger		**$71.00**								
Gain		**$ 29.11**								
Opp cost		**$ 7.54**								
Total		**$107.65**								

But Where Are the Profits?

January 2001

RailwayAge

But where are the profits?

Norfolk Southern and CSXT operations are back to normal after the flawed implementation of a costly merger. The challenge now is to increase business, reduce debt, and reward investor patience.

By Lawrence H Kaufman, Contributing Editor

CSX Transportation and Norfolk Southern are finally operating about as well as they did since before the June 1, 1999, Conrail split date. Customer service complaints are down sharply, and many shippers grudgingly admit that service has become "pretty good." Of course, some customers, particularly those who had better service from Conrail than they now get from its successors, still complain that they are not seeing benefits from the most expensive railroad merger in history.

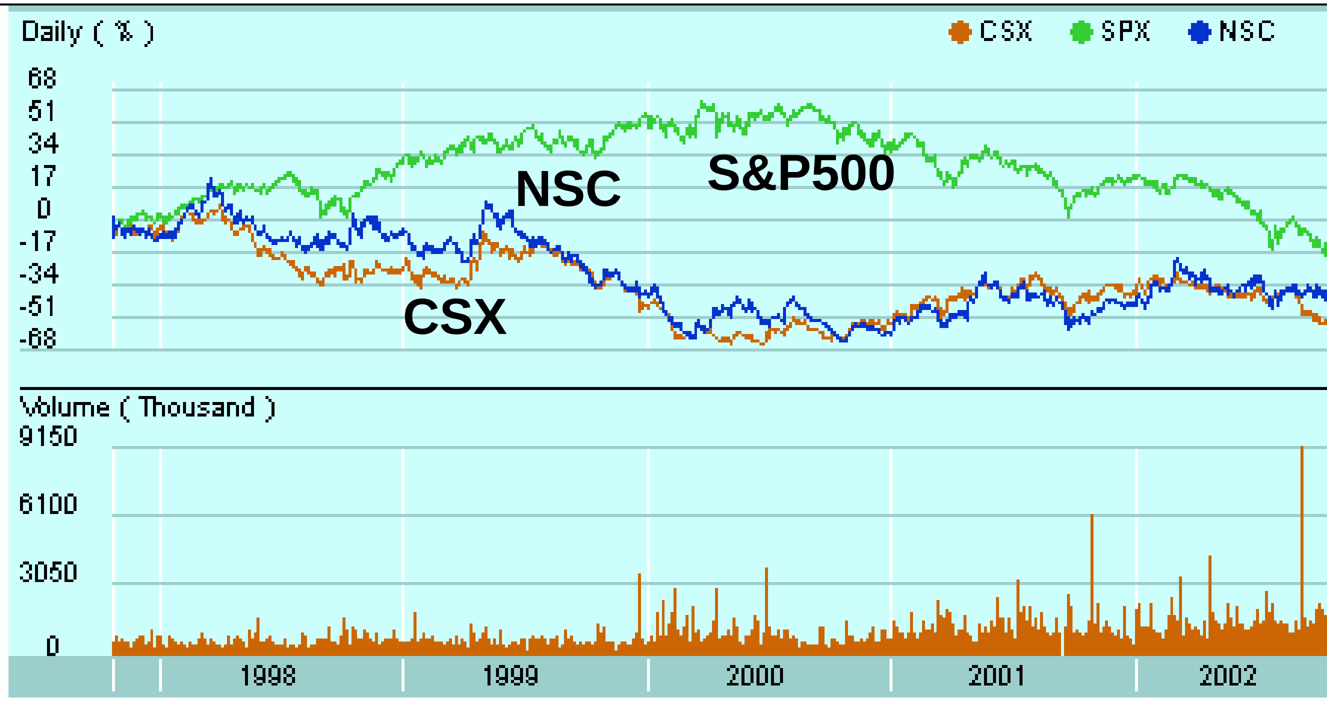
What they have not been able to overcome is the lack of profits stemming from their joint $10 billion cash purchase of Conrail. Both need more revenue and income to pay down the huge debt they took on in the 1997 purchase.

The near collapse of NS service, which spilled over to CSXT in mid-1999, is history. Briefly, the failure to test information technology systems thoroughly and to verify that Conrail databases had been migrated properly to NS's IT systems led to a first-day collapse that forced the proud railroaders of NS to run their railroad manually and "in the dark" for weeks that stretched into months. Shippers that had a choice of NS or CSXT service-mostly in the shared assets areas of Northern New Jersey, South Jersey/Philadelphia, and Detroit-scrambled to switch as much traffic to CSXT as they could.

This overloaded the CSXT system, which initially had been operating relatively well. CSXT service tanked in the face of on-line car inventories in excess of the railroad's physical ability to handle traffic. Congestion led to trains being held out of terminals and a sharply higher re-crew rate as crews ran out of their legal on-the-job time limits before their trains reached their d

http://www.railwayage.com/jun01/conrail_split.html

But Where Are the Profits?

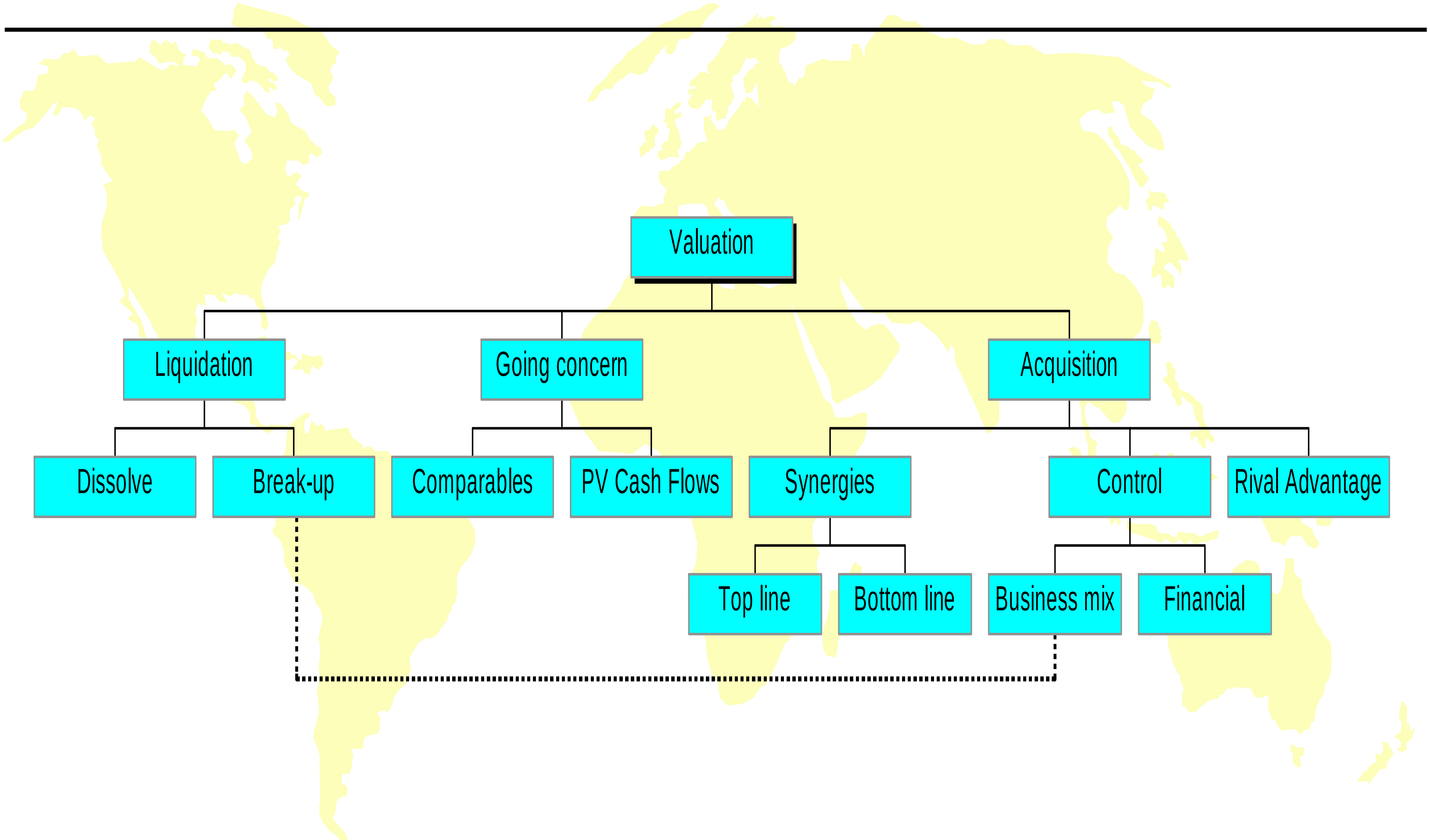


Quotes for Nasdaq securities are delayed 15 minutes. Quotes for NYSE and Amex securities are delayed 20 minutes, and are supplied by S&P Comstock. Graph Times are Eastern Standard.

Total Returns %

	1997	1998	1999	2000	2001	YTD
Stock	30.5	-21.2	-22.3	-13.0	38.2	-20.0
+/- Industry	-8.9	-10.7	-23.3	-5.1	-5.6	-22.7
+/- S&P 500	-2.9	-49.8	-43.3	-3.9	50.1	0.7

Summary: What's It Worth?



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