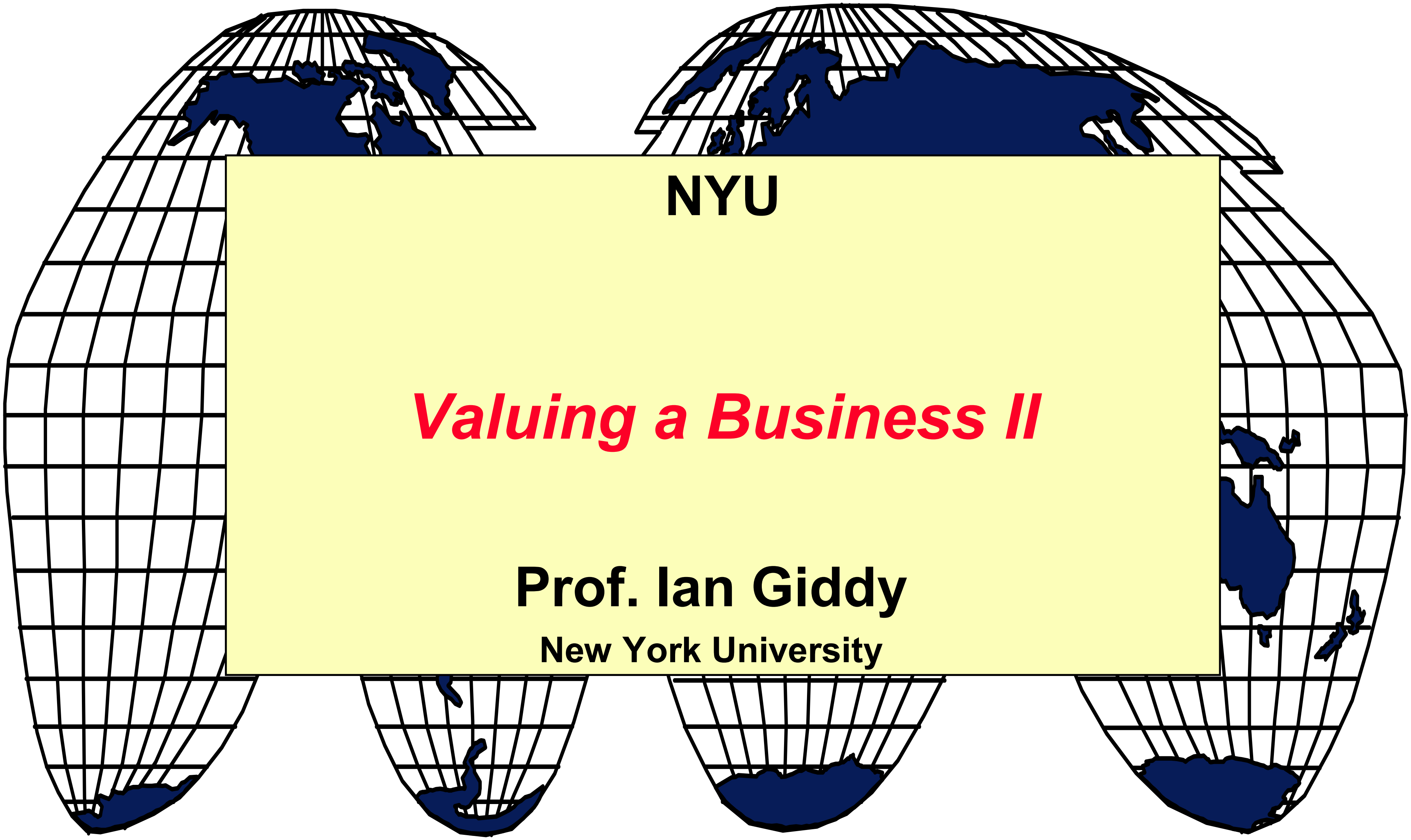


NYU

Valuing a Business II

Prof. Ian Giddy
New York University

What's a Company Worth?

- Acquisition
- LBOs
- Restructuring

Flexics

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?

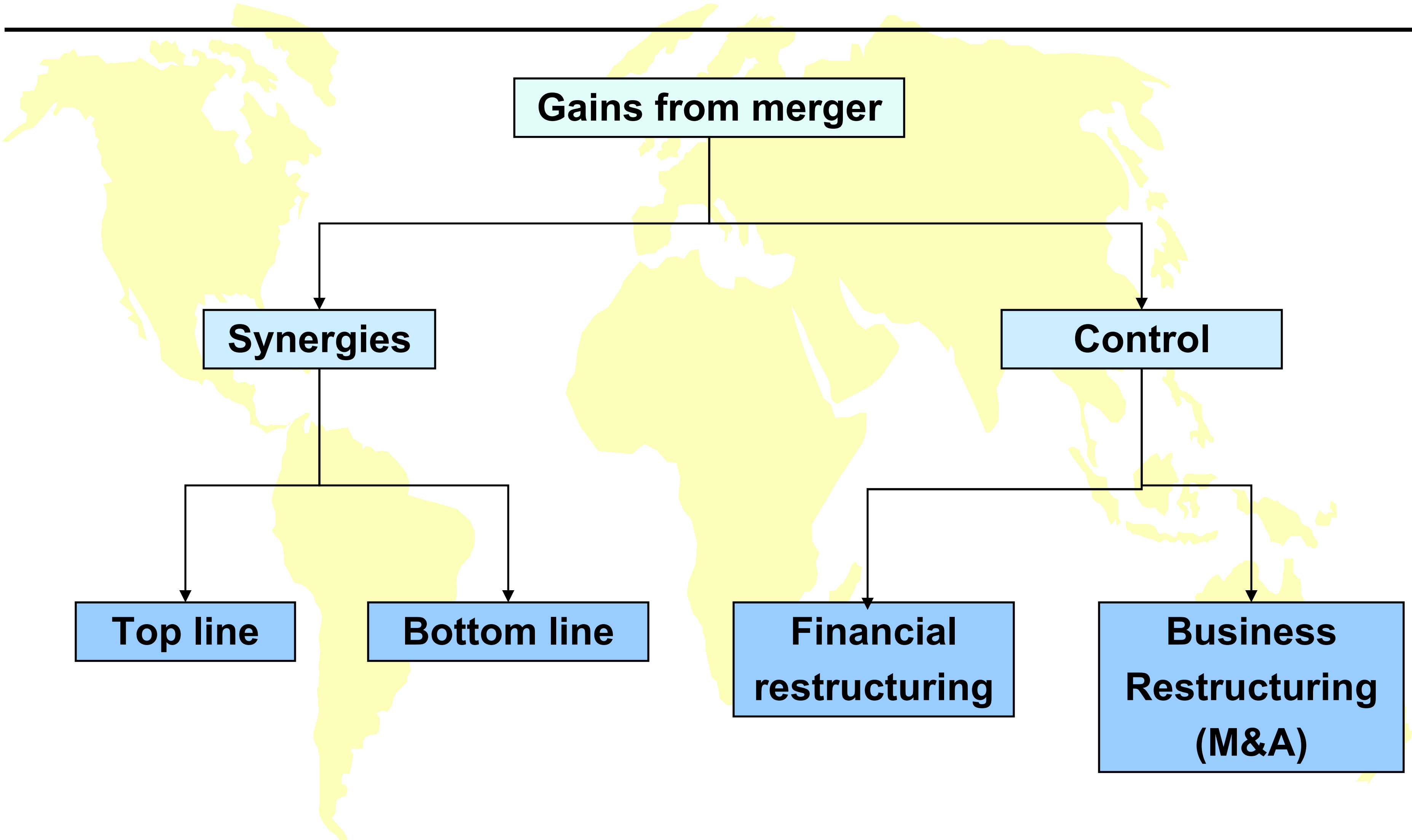
Applying the discounted cash flow approach, we need to know:

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)

Equity Valuation in Practice

- Estimating synergies
- Estimating business restructuring
- Estimating financial restructuring
- Application to Basix
- Valuation in a bidding context

The Gains From an Acquisition



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

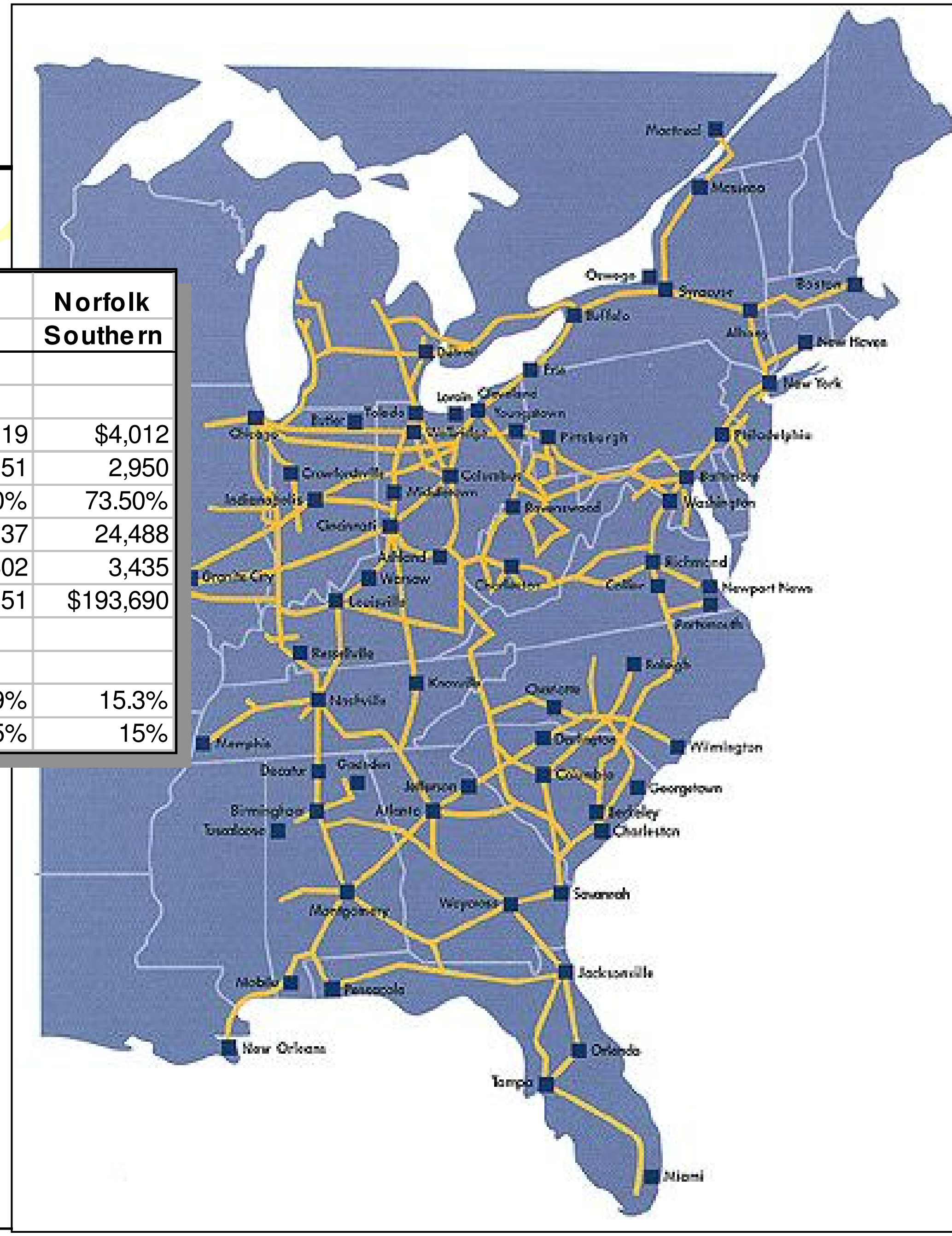
Use constant growth model		
	Before	After
Earnings	$ 1.93	$ 1.93
Next year	$ 2.00	$ 2.00
Growth rate	3.6%	5.5%
Risk free rate	4.50%	4.50%
Beta	1.3	1.30
Market return	11.50%	11.50%
Req ret on equity	13.60%	13.60%
Value	$20.05	$24.69
P/E	10.4	12.8
Price	$21.23	16%

Source: basix.xls

Valuation in a Bidding-War Context

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%



How Much Premium Can a Buyer Pay?

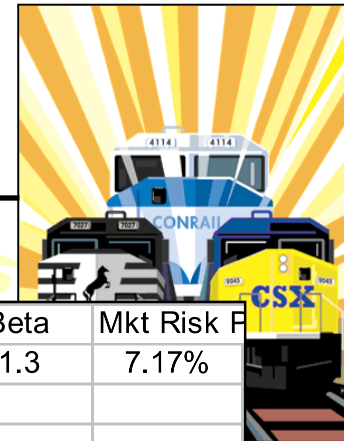
Applying the discounted cash flow approach, we need to know:

- 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!

What is Conrail Worth?

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

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?

RailwayAge

January 2001

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.

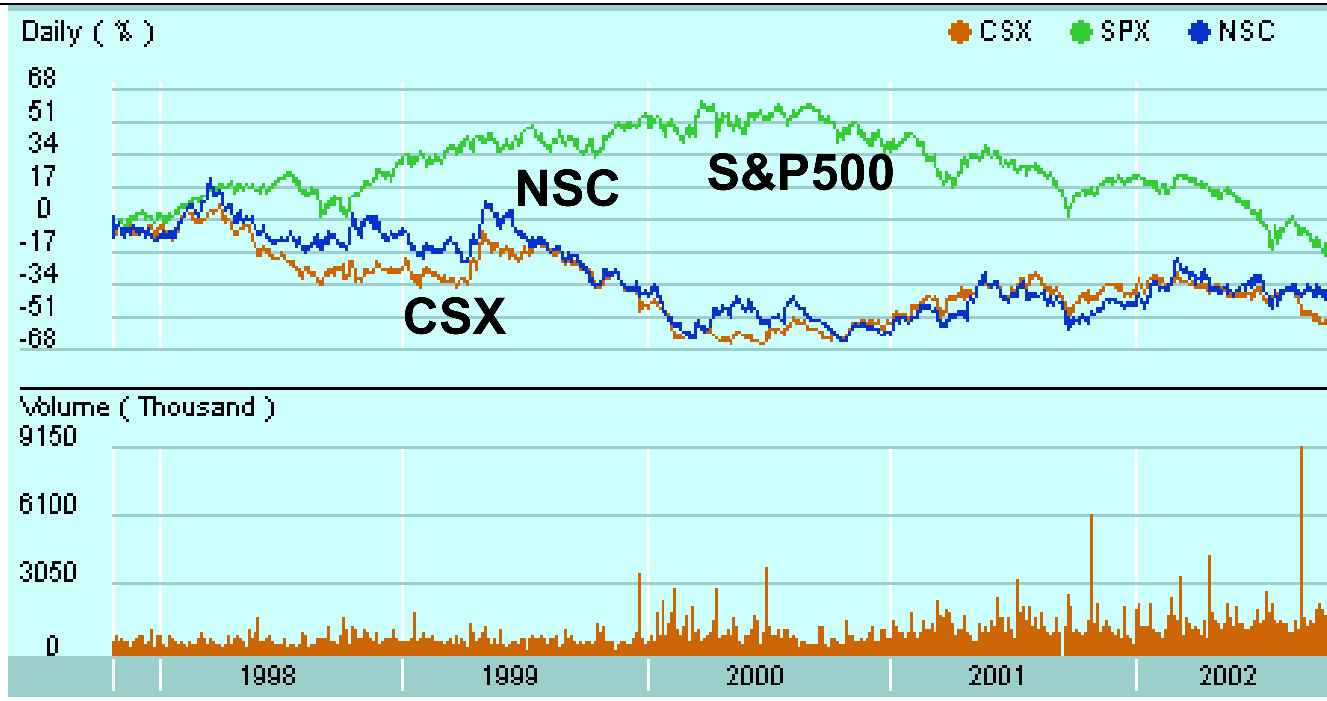
What they have not been able to overcome is the lack of profits stemming from their joint $10 billion cash purchase of Conrail. Both need more revenue and income to pay down the huge debt they took on in the 1997 purchase.

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

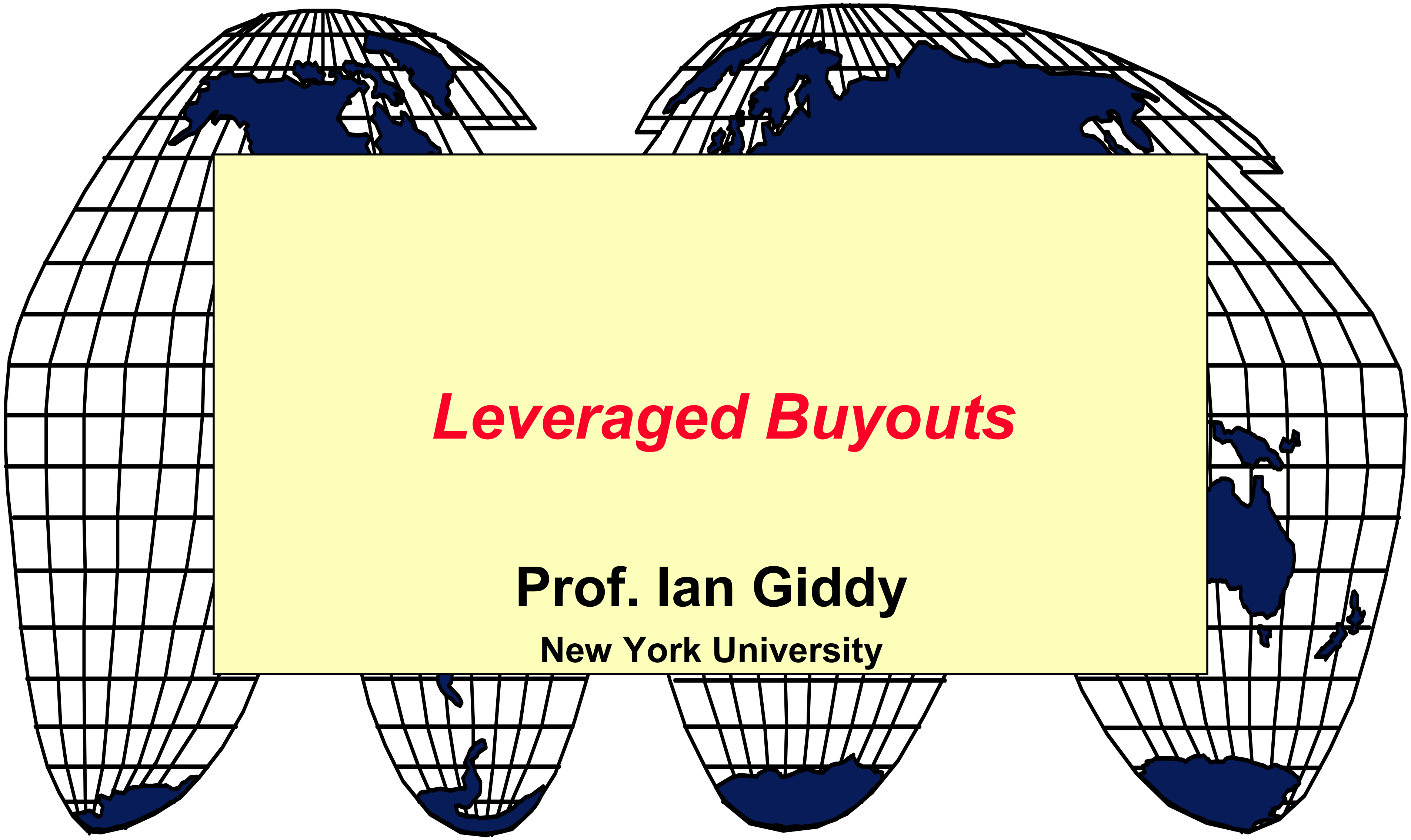
But Where Are the Profits?



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

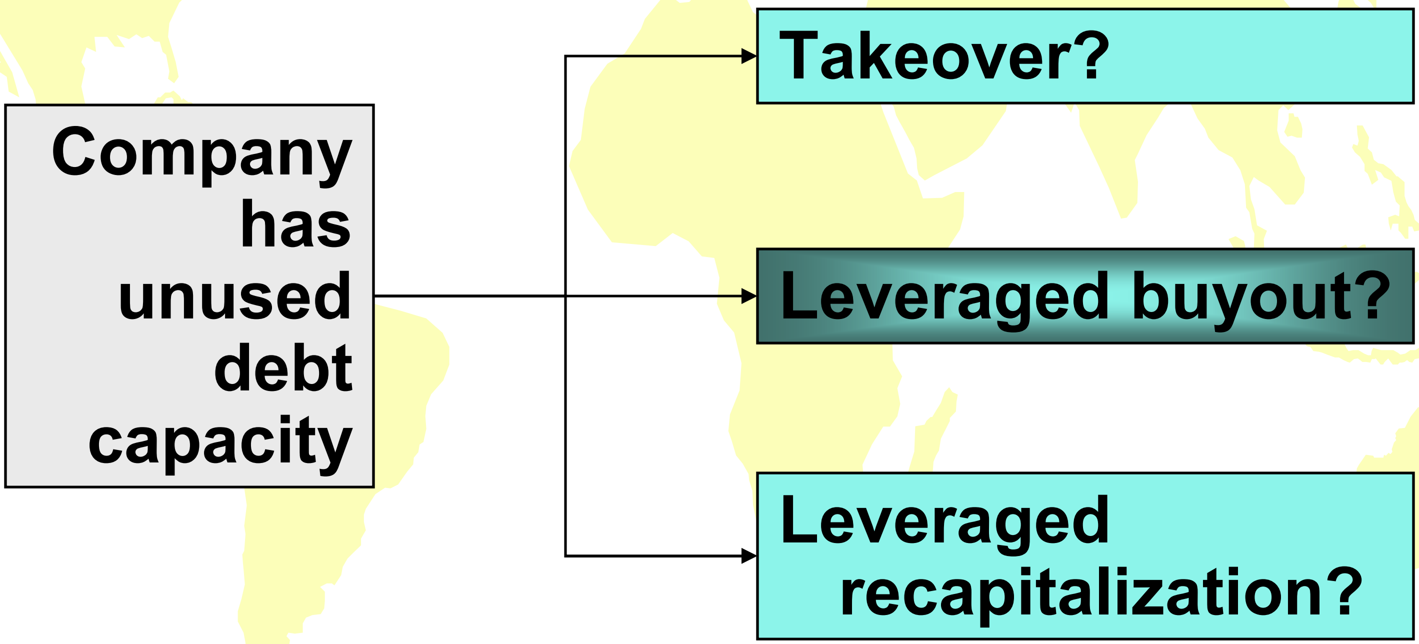


Leveraged Buyouts

Prof. Ian Giddy

New York University

M&A and Leverage



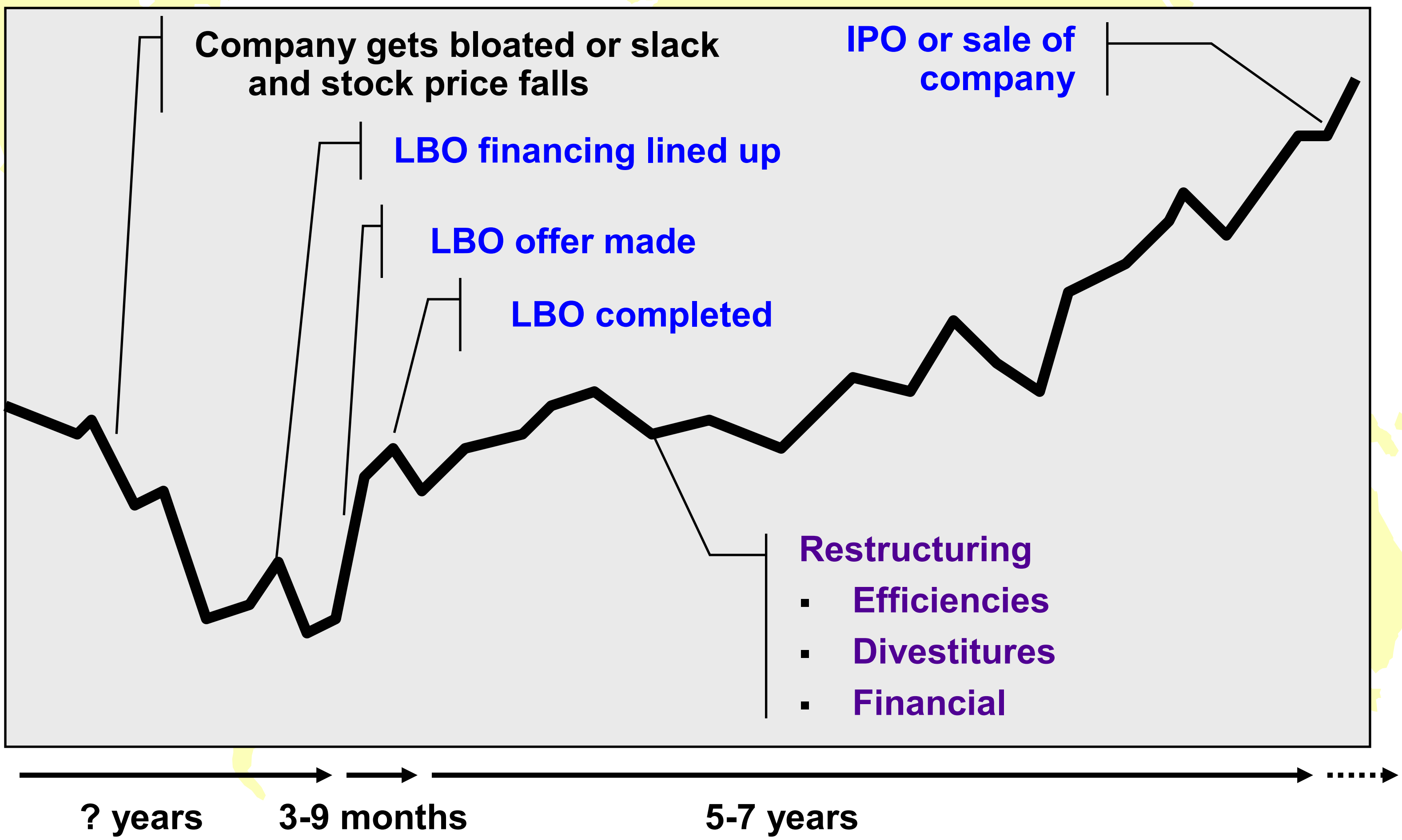
Private Pitfalls

- ❑ Methods: same
- ❑ Problems:
- ❑ No market price
- ❑ No history of reported information
- ❑ Data provided can be distorted

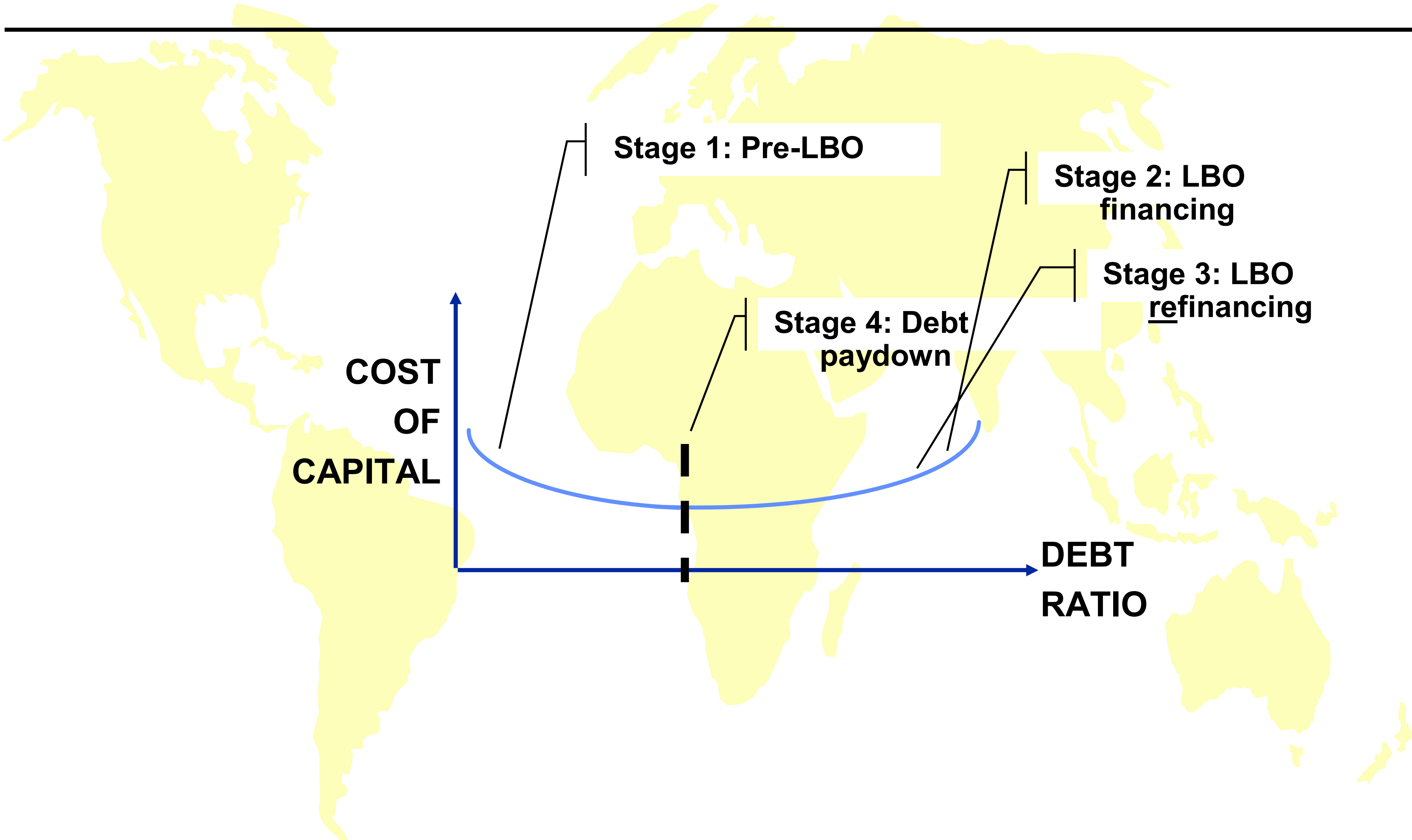
Private Pitfalls

- Revenue overstated?
- Costs understated? Overstated?
- New costs that will be incurred?
- Intangible value?

Typical LBO Sequence



LBO: A Temporary Capital Structure



12-Step Method

- Evaluating cost of deal
- Estimating borrowing capacity
- Estimating cash costs of funding
- Estimating growth rates of sales, expenses, etc
- Projecting cash flows (FCFF and FCFE)
- Projecting debt amortization
- Calculating terminal value of FCFE and FCFF
- Estimating costs of capital to find PV
- Making sense of the deal

Cost of the Deal

Estimating cost of deal			
Shares			10
Price			$ 45
Premium			15%
Equity cost			$ 518
Debt cost			$ 55
Fees		5%	$ 29
Capex & restructuring		10%	$ 57
Total cost of deal			$ 658

lbocapacity.xls on giddy.org

Borrowing Capacity

Estimating borrowing capacity			
Given:			
EBIT			$ 95
Min EBIT int coverage ratio			1.3
Interest capacity			$ 73
Interest rate			16.00%
Debt capacity			$ 457

From table

lbocapacity.xls on giddy.org

Capital Structure

Preliminary capital structure			
Debt			$ 457
Missing			$ 177
Mgt equity			$ 25
Total financing			$ 658

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LBO Financing

NEWCO

Cost of purchasing the business	
	Senior debt $457
	Mezzanine
	Equity $25

What securities?
What returns?
What investors?

Cash Flows and Debt Repayment

Cash Flows and debt repayment			1	2	3	4	5
NOI	95	5%	$ 99.75	105	110	115	121
Principal		$ 457					
Interest	16%		73	55	51	46	40
Tax	35%		9	17	21	24	28
Add depr of	57		11.4	11.4	11.4	11.4	11.4
Less capex	10%		$ 10.0	$ 10.5	$ 11.0	$ 11.5	$ 12.1
Cash avail to repay debt			19	33	39	45	52
Remaining debt			**438**	**405**	**366**	**321**	**269**

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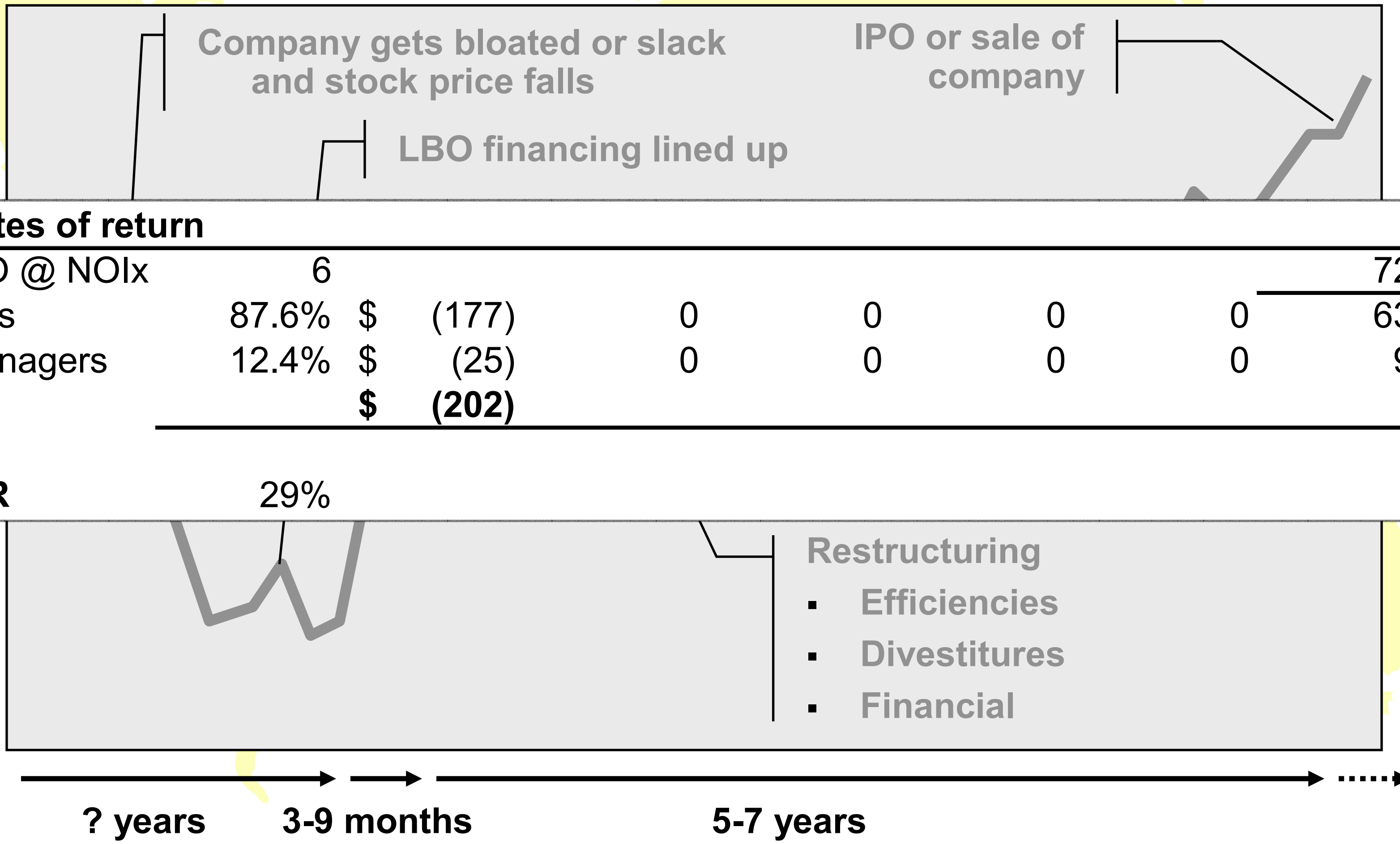
Exit



Rates of return								
IPO @ NOIx	6							727
VCs	87.6%	$	(177)	0	0	0	0	637
Managers	12.4%	$	(25)	0	0	0	0	90
		$	**(202)**					
IRR	29%							

Equity Valuation: Application to Restructuring

Prof. Ian Giddy
New York University

Corporate Financial Restructuring

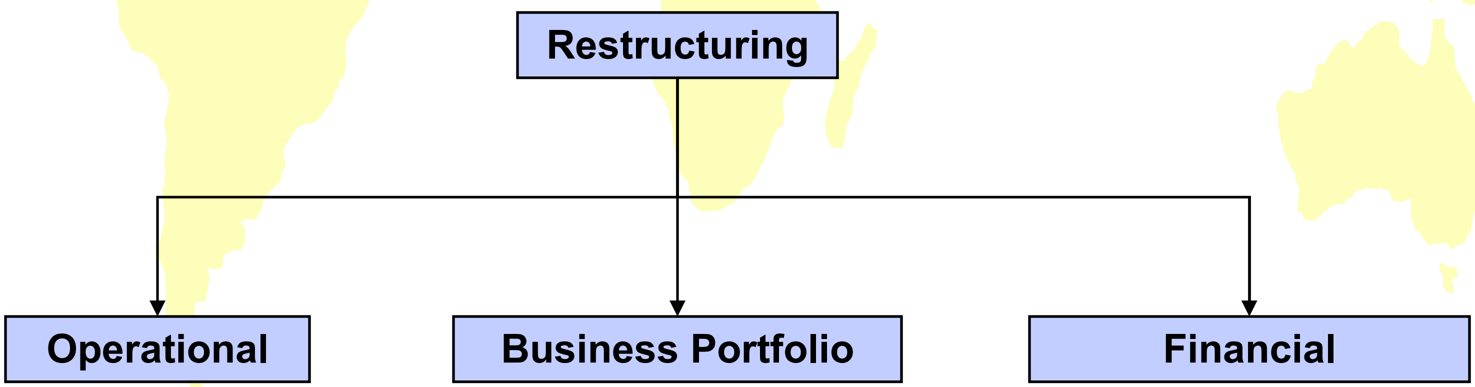
Why Restructure?

Proactive	**Defensive**	**Distress**
Example:	***Example:***	***Example:***
Sealed Air	***Loewen 1996***	***Loewen 1999***

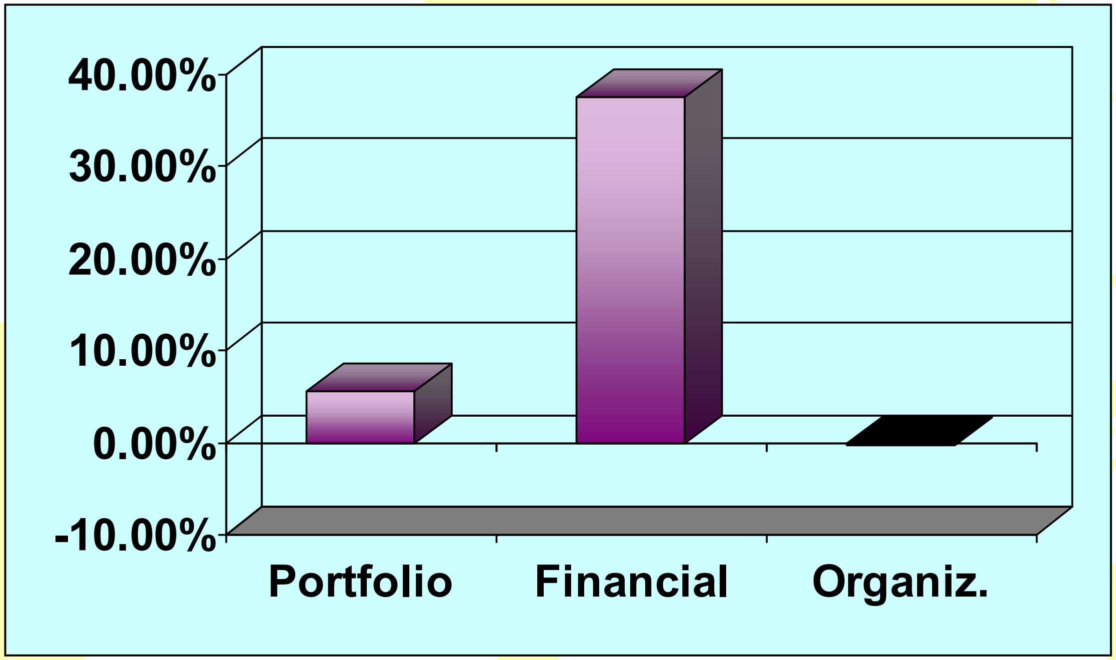
- **Management acts to preserve or enhance shareholder value**
- **Management acts to protect company, stakeholders and management from change in control**
- **Lenders and shareholders lose, but try to work out best way to minimize loss**

Restructuring

- Restructuring: Any substantial change in a operational structure, business portfolio, financial structure, or ownership and control.
- Designed to increase the value of the firm

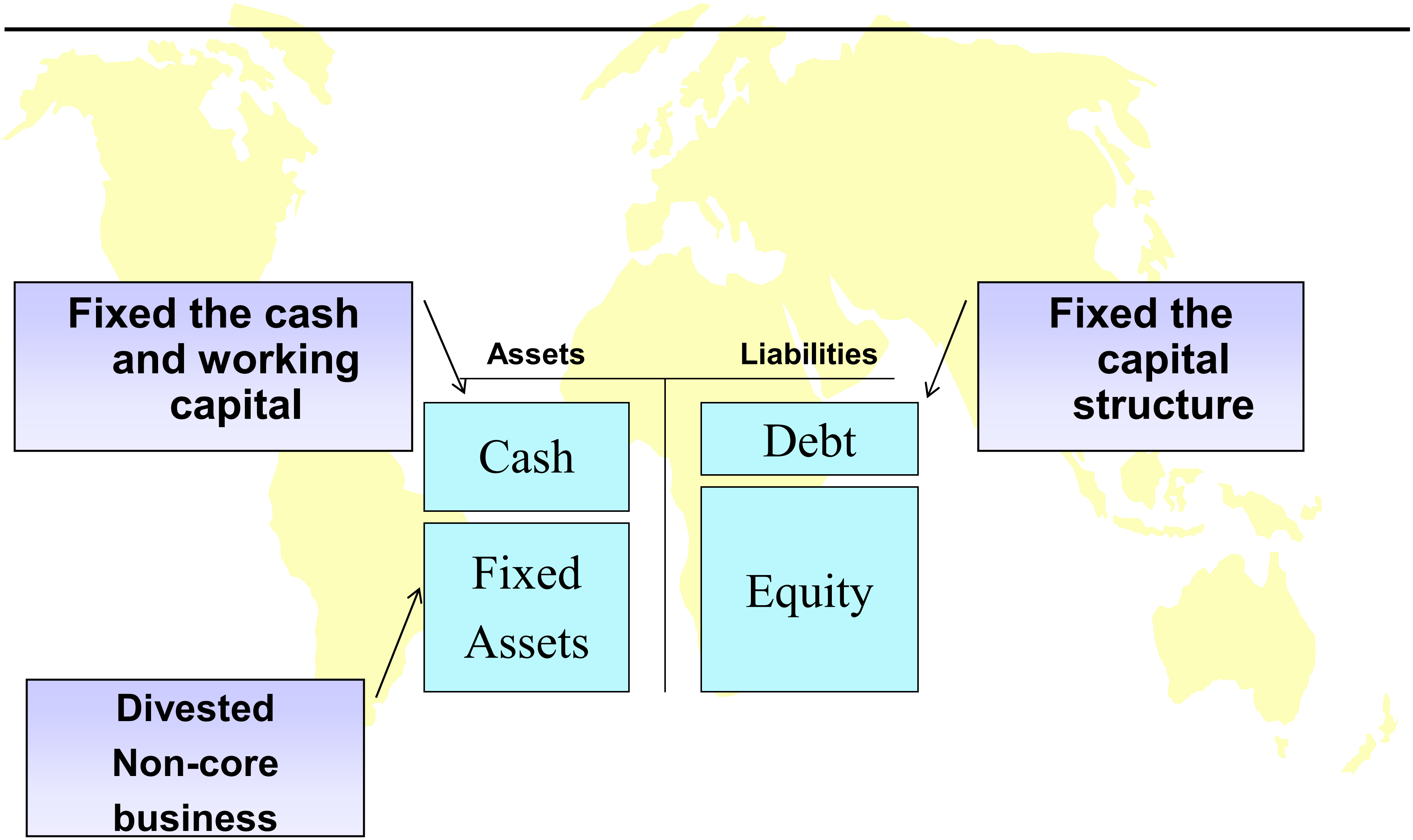


Average Impact of Restructuring on Company Performance



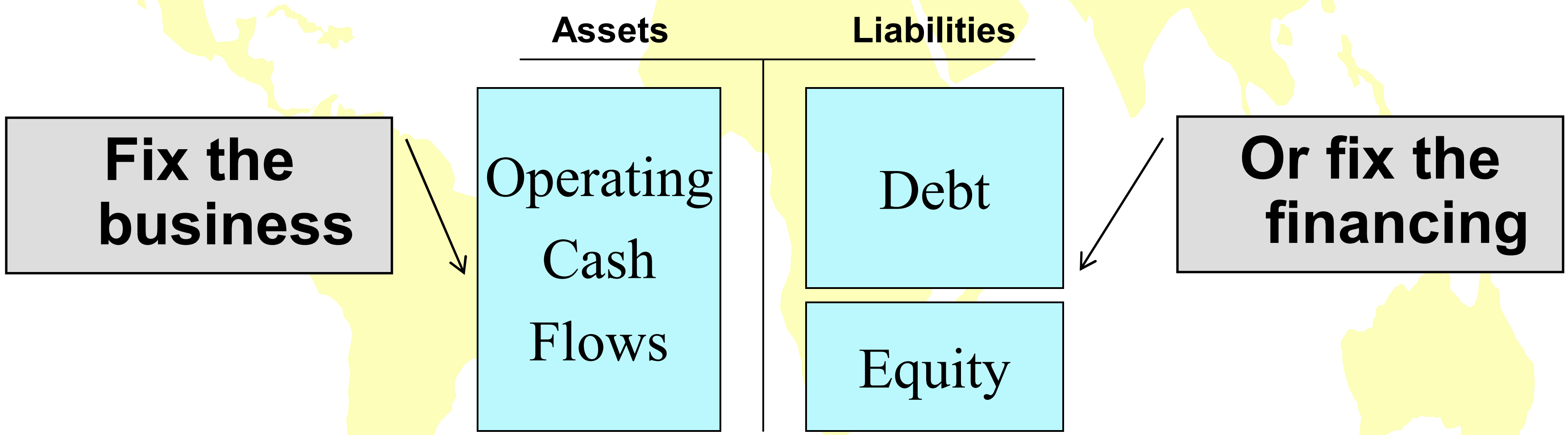
Source: Bowman et al, "When Does Restructuring Improve Economic Performance?"

Novartis: Financial Restructuring



Corporate Restructuring: It's All About Value

- How can corporate and financial restructuring create value?

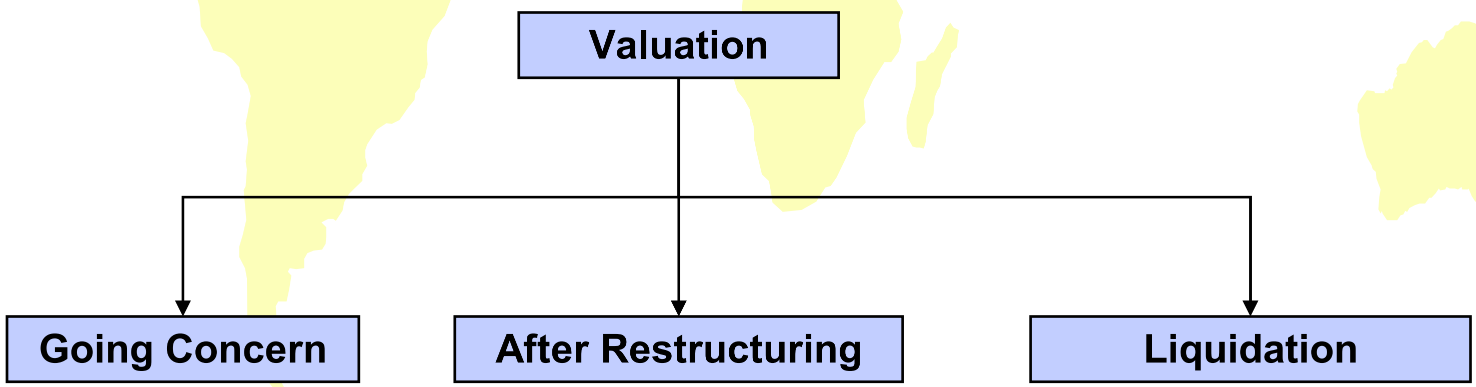


Restructuring Checklist

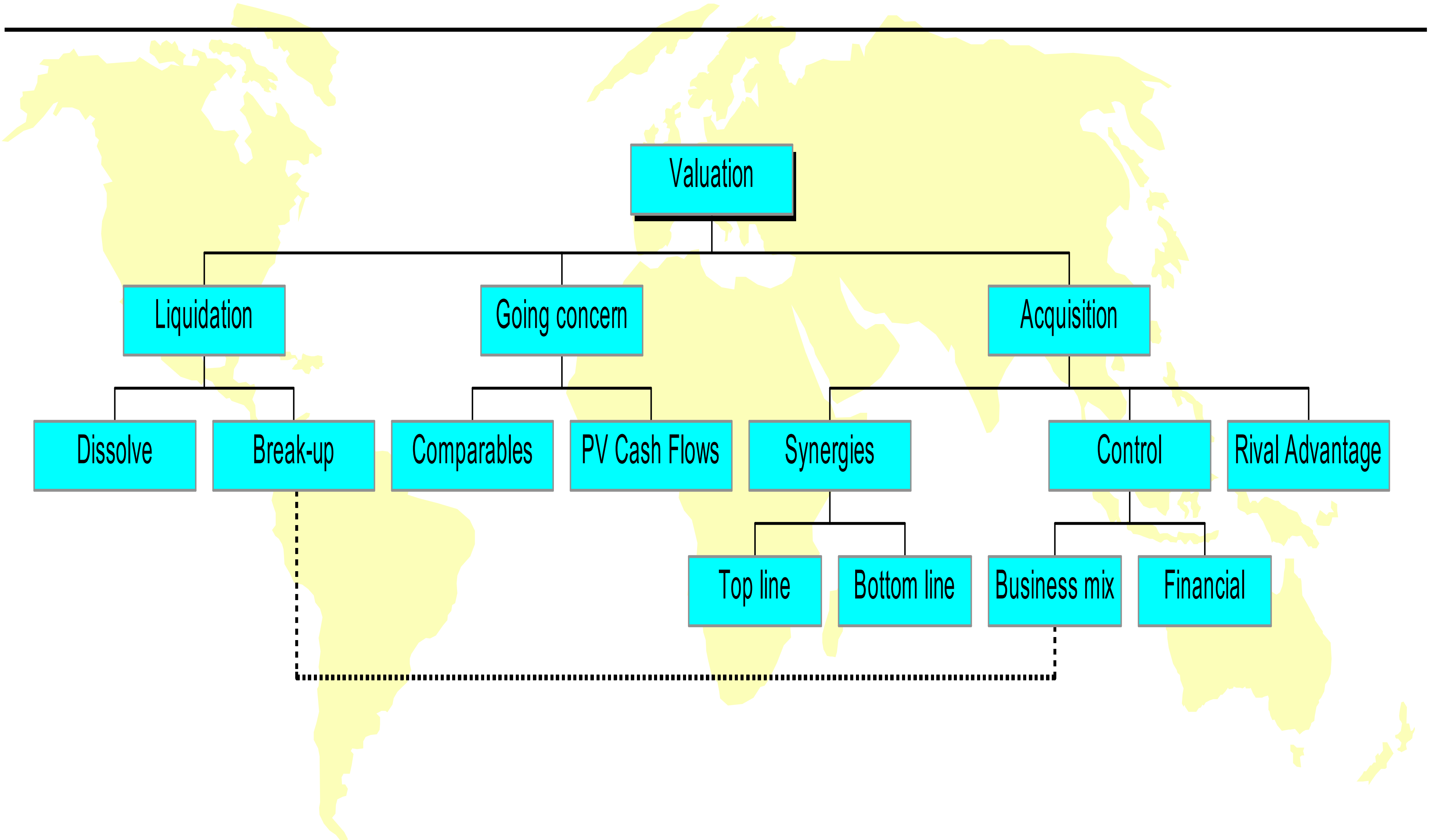
Figure out what the business is worth now	Use valuation model – present value of free cash flows
Fix the business mix – divestitures	Value assets to be sold
Fix the business – strategic partner or merger	Value the merged firm with synergies
Fix the financing – improve D/E structure	Revalue firm under different leverage assumptions – lowest WACC
Fix the kind of equity	What can be done to make the equity more valuable to investors?
Fix the kind of debt or hybrid financing	What mix of debt is best suited to this business?
Fix management or control	Value the changes new control would produce

Valuation is a Key to Unlock Value

- Value with and without restructuring
- Consider means and obstacles
- Who gets what?
- Minimum is liquidation value



Summary: What's It Worth?



Conclusion?

- ***Valuation techniques force the recognition of assumptions – cost of capital, risk, growth rates, and which numbers matter***
- ***Valuation is an essential management tool***
- ***Can these approaches be used to change the way your company evaluates its investment decisions? How?***

Further Reading

- Books:
  - Damodaran on Valuation
  - DePamphilis: Mergers, Acquisitions, and Other Restructuring Activities
- Web Site:
  - Damodaran Online: http://pages.stern.nyu.edu/~adamodar
- Cheat sheets: www.barcharts.com

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