Theories of mergers
The takeover process

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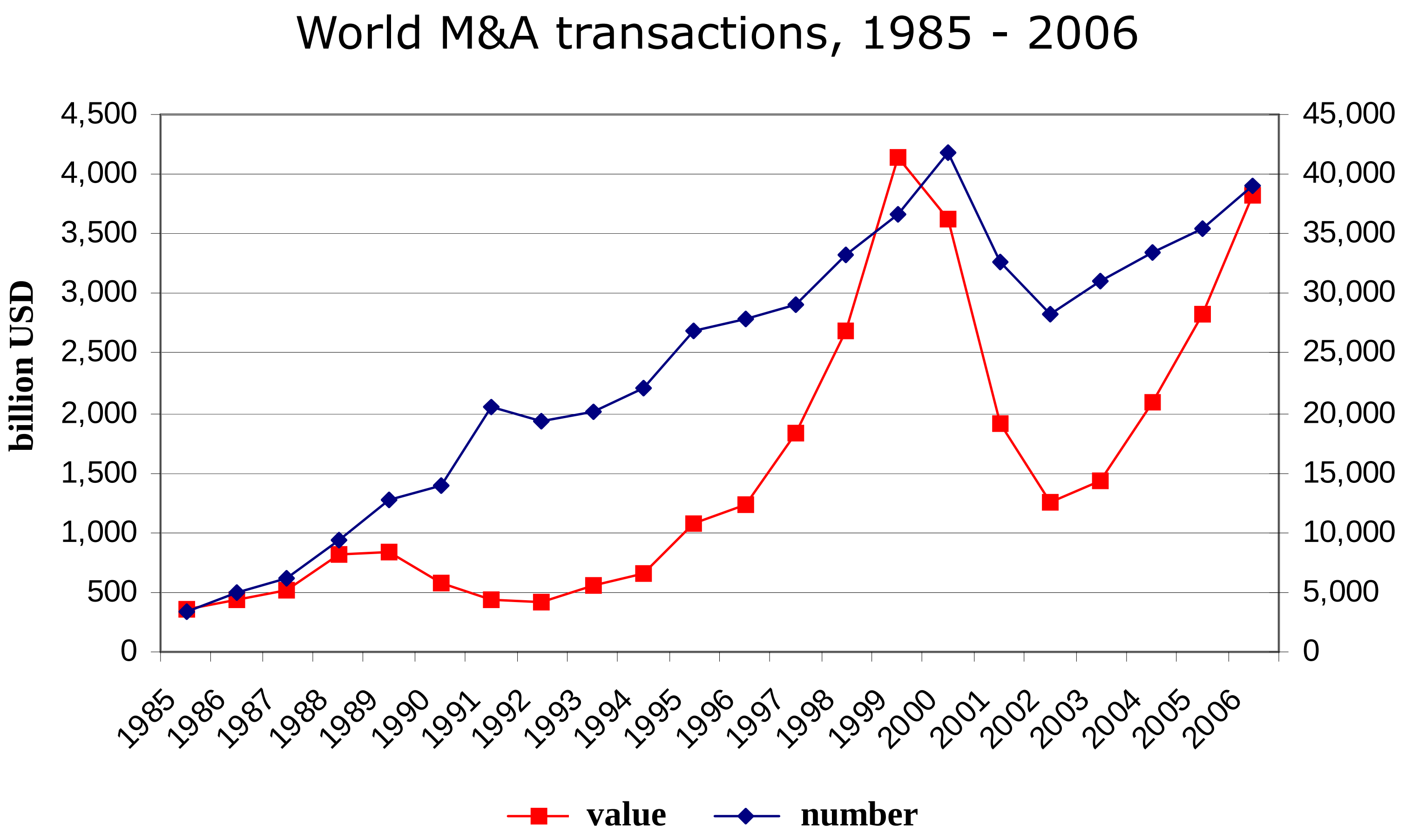
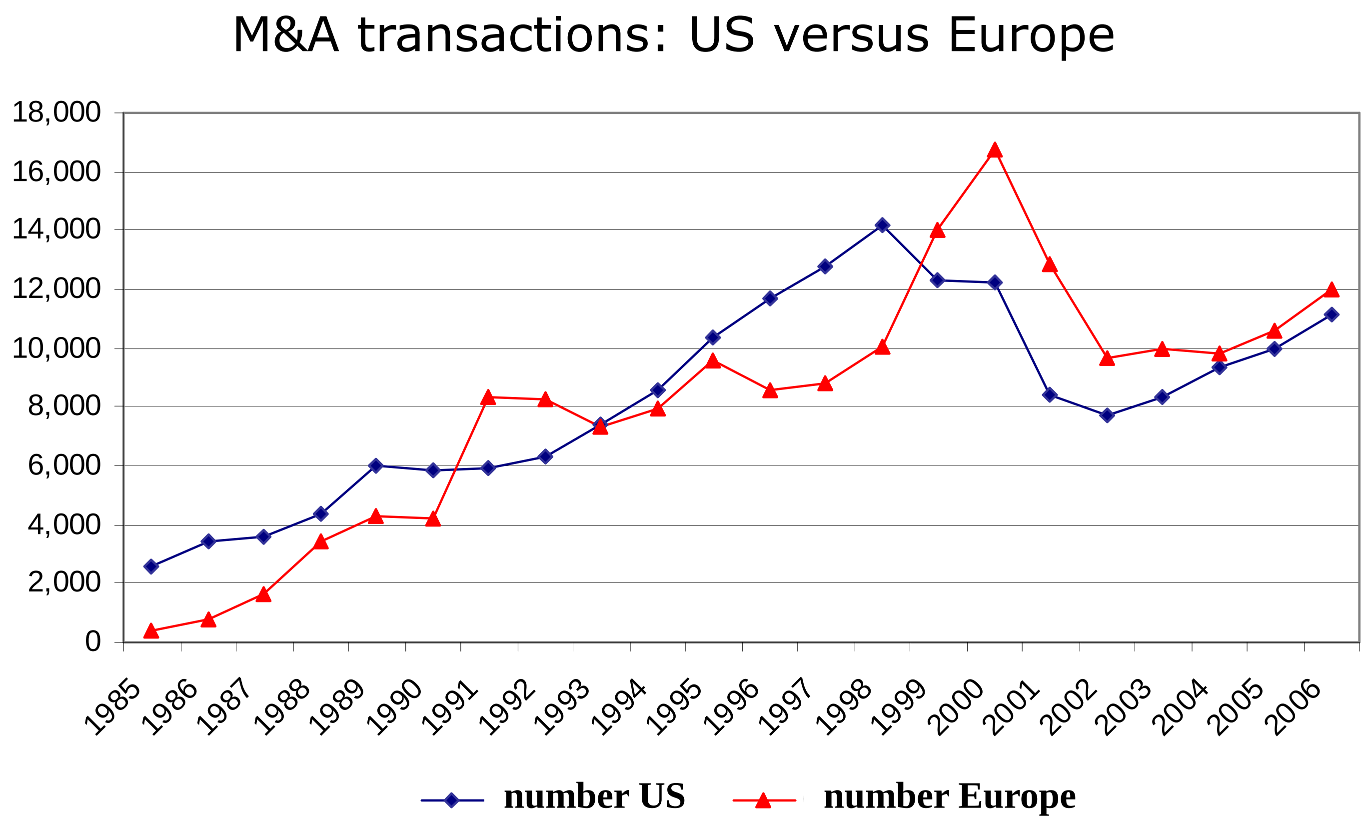
Important economic phenomenon

- Huge expansion over the last decades
  - World:
    - $3 500 billion in 2000 (50% increase relative to year 1999)
    - $3 800 billion in 2006 (multiplied by 3 relative to year 2002)
    - $3 400 billion in 2008
  - In the US (year 1996 constant dollar):
    - $530 billion in 1988 (peak year during the 80')
    - $1 800 billion in 1999 (peak year during the 90')
    - $449 billion in 2002
    - $1 500 billion in 2006
- Major characteristics
  - Individual transactions are becoming larger
  - More and more cross-border transactions
  - M&A activity abroad reaches the US level in 2000

Aggregate merger activity



Aggregate merger activity



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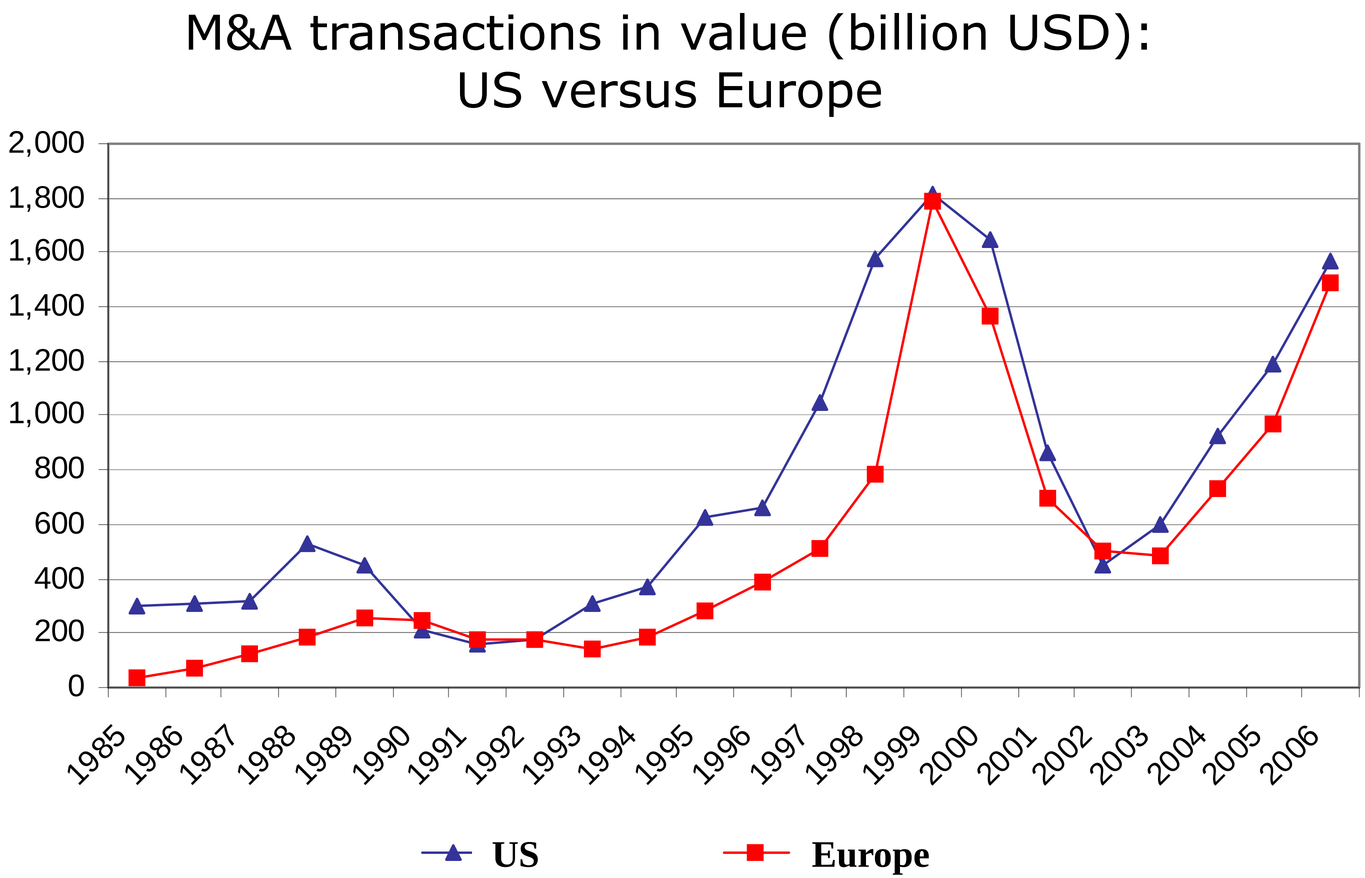

Ten largest merger transactions, 1995-2005

Date				
Announced	**Completed**	**Target Name**	**Acquirer Name**	**Value ($ billion)**
Nov. 1999	June 2000	Mannesmann AG	Vodafone AirTouch PLC	203
Oct. 2004	Dec. 2004	Shell Transport and Trading	Royal Dutch Petroleum	185
Jan. 2000	Jan. 2001	Time Warner	America Online, Inc.	182
Nov. 1999	June 2000	Warner-Lambert Co.	Pfizer, Inc.	89
Dec. 1998	Nov. 1999	Mobil Corp.	Exxon Corp.	86
Jan. 2000	Dec. 2000	SmithKline Beecham PLC	Glaxo Wellcome PLC	79
Apr. 1998	Oct. 1998	Citicorp	Travelers Group, Inc.	73
July 2001	Nov. 2002	AT&T Broadband & Internet Services, Inc.	Comcast Corp.	72
July 1998	June 2000	GTE Corp.	Bell Atlantic Corp.	71
May 1998	Oct. 1999	Ameritech Corp.	SBC Communications, Inc.	70

Source: Thomson Financials' SDC M&A Database.

Source: Table 28.1, Berk & DeMarzo (2007, p. 874)

Merger waves

= peaks of heavy activity followed by quiet troughs of few transactions

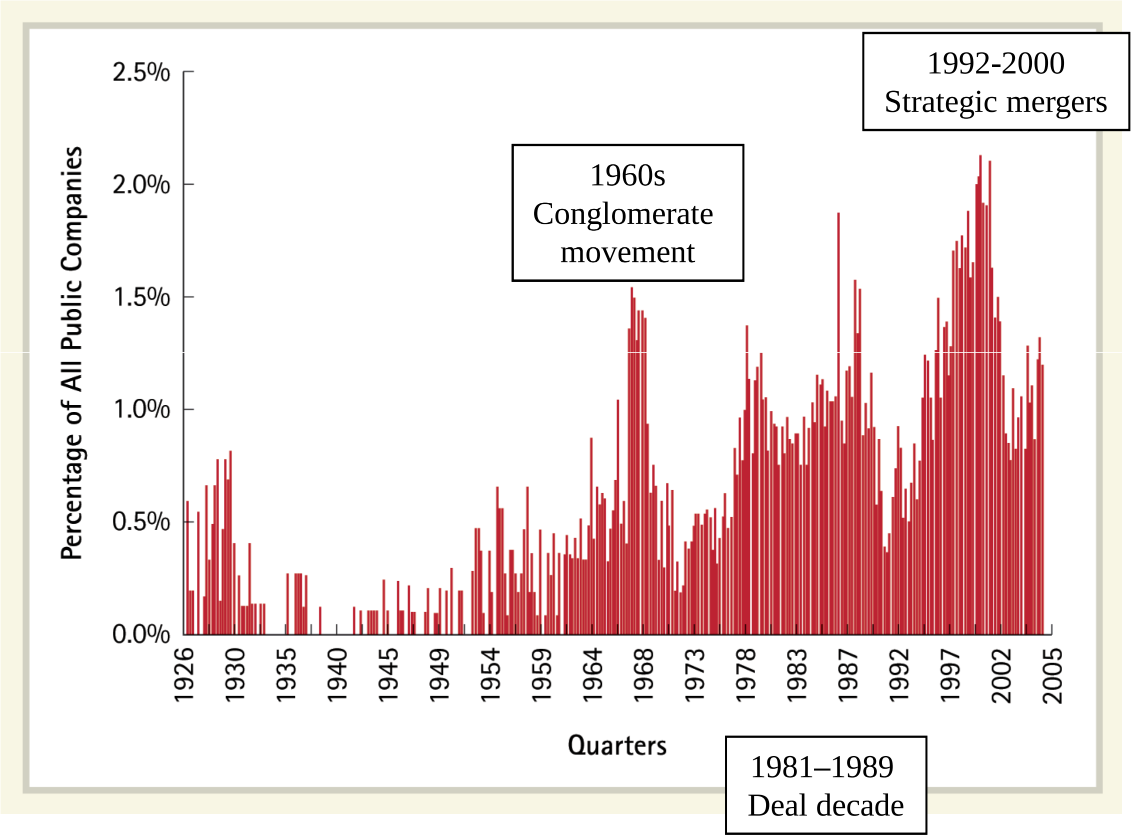

Figure 28.1, Berk & DeMarzo (2007, p. 874)

Forces affecting mergers

1. Technological change
2. Deregulation
3. Globalization and freer trade
4. Changes in industrial organization
5. Economies of scale/scope

6. Favorable economic and financial conditions
7. Relatively high valuations for equities (bull stock market)

Terminology

- Merger
  - Negotiated deals
  - Mostly friendly
- Tender offers or acquisitions
  - Offer made directly to the shareholders
  - Hostile when offer made without the approval of the board
- Buyout
  - LBO, MBO
- Restructuring – changes to improve operations, policies, and strategies

Types of mergers

- Horizontal mergers
  - Combination between firms in the same business activity
  - Rationale: synergies due to economies of scale and scope, and combination of best practices
  - Government regulation due to potential anticompetitive effects
- Vertical mergers
  - Combination between firms in different stages of production operation
    - Oil industry: distinctions are made between exploration & production, refining, and marketing to ultimate consumer
    - Pharmaceutical industry: distinctions between R&D of new drugs, the production of drugs, and the marketing of drug products through retail drugstores
  - Rationale is information and transaction efficiency
- Conglomerate mergers
  - Combination of firms in unrelated types of business activity
  - Three types:
    - (1) Product extension (concentric mergers); (2) Geographic market extension; and (3) Pure conglomerate merger

Reasons to acquire

- Synergies are by far the most common reason to motivate acquisitions and premium paid
- Synergies fall into two categories
  - Cost reductions
  - Revenue enhancement
- According to a recent study that uses 3,935 US M&A deals announced during 1990-2005 (Bernile, 2010)
  - 23% of the deals are accompanied by insiders' forecasts of potential synergies
    - 88% of the cases, the projected synergies are due to cost savings
    - 5% of the cases, the projected synergies are due to revenue enhancement
    - 7% of the cases, the driver of the synergy is not given
- Synergies most often cited are:
  - Size (economies of scale/scope); vertical integration; monopoly gains; efficiency gains; …

Examples of press release with insiders' forecasts

Example 1: Bell Atlantic, GTE Merger: Cost Synergies Within 3 Yrs. 28 July 1998, Dow Jones News Service:

Bell Atlantic and GTE said based on anticipated revenue and cost synergies, the transaction is expected to add to earnings per share [. . .] The companies said in a joint press release Tuesday that they see the transaction producing **cost synergies totaling $2 billion** within three years of the deal's completion. The merged company is also expected to generate **an additional $2 billion in revenue synergies**.

Example 2: Newell Faces a Big Challenge in Rubbermaid Takeover. It Hopes Newellization. Can Revitalize Household-Products Maker. 3 November 1998, The Wall Street Journal:

Newell Co., renowned for squeezing costs out of acquired companies, faces a tough test in its proposed $5 billion acquisition of Rubbermaid Inc. [. . .] Newell Chief Executive John McDonough is promising that the merger plan, announced late last month, will deliver $300 million to $350 million in synergies by 2000, 25% of that from selling Rubbermaid products to Newell customers. [. . .] Newell hopes Rubbermaid will accelerate the combined company's growth. Besides the usual cost savings, Mr. McDonough predicts the merger will produce $70 million to $90 million in new sales by 2000 as Newell introduces its customers to Rubbermaid. [. . .]

Example 3: Food Lion Will Buy Hannaford For About $3.3 Billion, Plus Debt. 19 August 1999, Dow Jones Business News:

Food Lion Inc. Wednesday confirmed it will acquire supermarket operator Hannaford Bros. Co. for about $3.3 billion in cash and stock, a deal that would create the sixth-largest food retailer in the U.S. [. . .] The combined Food Lion and Hannaford will have nearly $14 billion in pro-forma annual revenue. The combined company is expected to result in synergies estimated at about $40 million in the first year and about $75 million annually by the third year. Operations that may be affected include distribution, information systems, training and marketing. [. . .]

Example 4: Hilton to buy Promus Hotel for $4 billion. 7 September 1999, Reuters News:

Hilton Hotels Corp. on Tuesday said it would buy Promus Hotel Corp. for $4 billion in cash, stock and debt, creating a giant with 1,700 hotels and operations in almost every segment of the industry. [. . .] The combined company will have pro forma 2000 EBITDA of $1.3 billion, and result in annual cost savings and operating efficiencies of about $55 million in the first year and $90 million thereafter. [. . .]

Source: Bernile (2010, Appendix A.3)

Value increasing theories

- Size and returns to scale
  - Benefits of size are usual source of "synergies"
  - Economies of scale
    - Average costs decline with larger size
    - Large firms more able to implement specialization
  - Economies of scope
    - Enable a firm to produce related additional products due to experience with existing products

Value increasing theories

- Transaction costs and information efficiency
  - According to Coase (1937) a firm must decide between internal or external production
    - Transaction costs within and outside firm determine decision on firm size and merger
  - Williamson (1985) goes a step further by defining the transaction cost as a function of "transaction frequency" and "asset specificity"
    - Vertical integration is only optimal when "asset specificity" and "transaction frequency" are high
    - Market structure is the best alternative when "asset specificity" is low
  - Bigger is not always better!

Value increasing theories

- Monopoly gains
  - Buying a rival firm might reduce competition and increase industry profits
    - Only the merging firm pays the associated cost (i.e., the cost of managing a larger corporation)
    - Monopoly power from horizontal mergers are limited due to the existence of antitrust laws and regulation
  - Limited evidence in the literature on monopoly gains as a reason to acquire

Value increasing theories

- Disciplinary motives (efficiency gains)
  - Manne (1965) introduces the concept of “market for corporate control”
    - i.e., a market in which different management teams are competing with each other
  - The M&A market is viewed as an alternative control mechanism to internal control
    - Poorly managed companies are taken over by well performing companies
    - The M&A market exerts external control on incumbent managements
  - According to Manne (1965, p. 113), “greater capital losses are prevented by the existence of a competitive market for corporate control”

Value reducing theories

- Agency costs of free cash flow (Jensen, 1986)
  - Free cash flow is a source of value reducing mergers
  - Firms with FCF are those where internal funds exceed investment required for positive NPV projects

- Managerial entrenchment (Shleifer and Vishny, 1989)
  - Managers are reluctant to distribute cash to shareholders
  - Investments may be in form of acquisitions where managers over pay but reduce likelihood of their own replacement

- Remark:
  - "disciplinary mergers" are solutions to these "agency-problem driven mergers"
    - Jensen, 1986, p. 328: "Free cash flow theory predicts which mergers and takeovers are more likely to destroy, rather than to create, value; it shows how takeover are both evidence of the conflicts of interest between shareholders and managers, and a solution to the problem"
    - Mitchell & Lehn (1990) provide empirical evidence that "bad bidders become good targets"

Value neutral theory

- The hubris hypothesis of "corporate takeovers"
  - Merger bids result from managerial hubris – managers are prone to excessive self- or over- confidence
  - Winner's curse
    - Competitive bidding has a distribution of value estimates
    - Manager with most optimistic forecast wins bidding process
    - Cursed by fact that the winning bid more likely overvalues target
  - Mergers can occur even when no **value effects**
    - Target sells when bid is higher than target value
    - No value effects under the hubris hypothesis: wealth transfer from the bidding firm's owners to target shareholders
  - Roll (1986, p. 212): "the hubris hypothesis can serve as the null hypothesis of corporate takeovers"


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But Don't Let it go to Your Head.

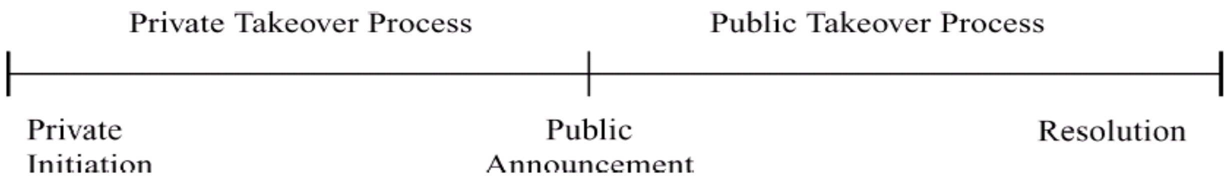
Summary

Principle	Theory
Value Increasing	Transaction cost efficiency – mergers optimize transaction costs Synergy – scale, best practices, etc. Disciplinary – takeovers can be used to replace poor management
Value Reducing	Agency costs of free cash flow – managers reinvest FCF inefficiently back into firm Management entrenchment – firm invests to increase managers’ value to shareholders
Value Neutral	Hubris – winner of takeover contest is firm that most overvalues target

Theoretical predictions

Theory	Combined Gains	Gains to Target	Gains to Bidder
Efficiency/ Synergy	Positive	Positive	Non-Negative
Agency Costs/ Entrenchment	Negative	Positive	More Negative
Hubris	Zero	Positive	Negative

- Valuation
- The offer
  - Offer price (or the bid premium), means of payment (stock, cash or a mix), termination fees,…
- Merger arbitrage
- Board and shareholder approval



Merger arbitrage

- All announced deals are not completed: some uncertainty remains about deal completion
- Some investors (known as risk arbitrageurs) speculate about the outcome of the deal
  - For stock-swap deal, they are long in the target stock and short in the bidder stock
  - For cash deal, they only adopt a (long) position in the target stock
- In merger arbitrage (called also risk arbitrage), arbitrageurs bear the "deal risk", but try to minimize it by taking arbitrage position in a portfolio of merger transactions (between 10 and 20 transactions at a given time)
- Besides arbitrage funds, other funds (called event-driven funds) have emerged during the 90'
  - Identification of companies that the fund manager believes will be target in the subsequent 12 to 18 months
  - Far more risky than traditional arbitrage funds, but potential gains are high!

Merger arbitrage

- Illustrative Example: cash tender offer
  - On May 13, 2002, Sears announced a cash tender offer for Land's End. The offer price is $62 per stock, and the merging parties forecast that the merger will be closed in 45 days
  - On the announcement date, Land's End stock price closes at $61.72
  - Investing at $61.72 would yield 3.7% annual return if the deal closed in the forecasted 45 days

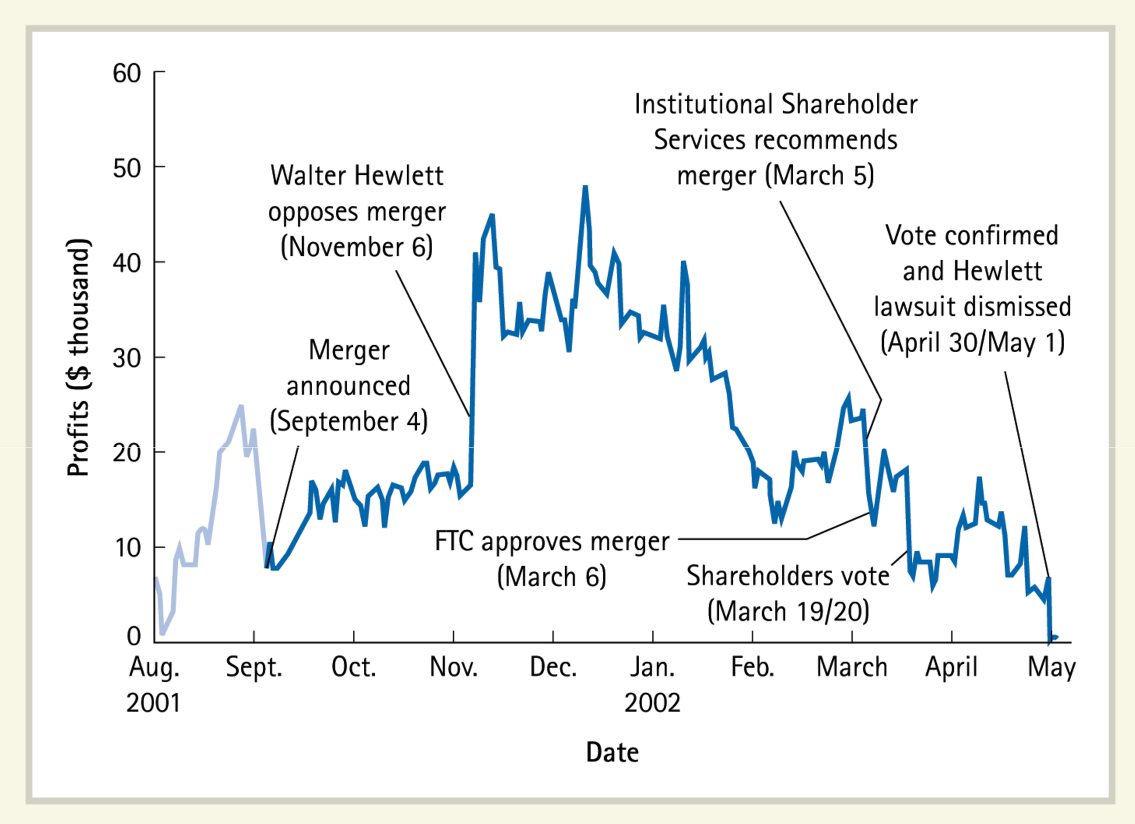
$$\text{Annual return} = 3.7\% = \left[1+\left(\frac{62-61.72}{61.72}\right)\right]^{\left(365/45\right)}-1$$

Source: Weston et al., 2003

Merger arbitrage

- Illustrative example: stock-swap merger
  - In September 4, 2001, HP announced that it would purchase Compaq by swapping 0.6325 share of HP stock for each Compaq stock
  - After the announcement, HP traded for $18.87 per share, and Compaq for $11.08.
  - Questions:
    - Is there an arbitrage opportunity?
    - Assuming that the takeover will be successful, what would be the arbitrage profit of a strategy consisting in buying 10,000 Compaq shares?

Merger arbitrage



The plot shows the potential profit, given that the merger was ultimately successfully completed, from purchasing 10,000 Compaq shares and short selling 6325 HP shares on the indicated date. A risk-arbitrageur who expects the deal to go through can profit by opening the position when the spread is large, and closing the position after it declines.

Source: Berk & DeMarzo (2007, p. 886, Figure 28.2)

Who gets the value added from a takeover?

- Average acquisition premium and stock price reactions to mergers

Premium Paid over Premerger Price	Announcement Price Reaction	
	Target	Acquirer
38%	16%	−1%

Source: Data based on 4256 deals from 1973 to 1998. G. Andrande, M. Mitchell, and E. Stafford, "New Evidence and Perspectives on Mergers," *Journal of Economic Perspectives* 15(2) (2001): 103–120.

Bidder gains

- On average bidder gains tend to be negative and at best zero
- But the recent literature has indentified sub-sample of deals that tend to have positive bidder gains on average
  - Small bidders; private targets; cash deals
- According to Betton, Eckbo and Thorburn (2008), from the bidder shareholders point of view
  - The worst-case scenario
    - The combination of large bidder, payment in all-stock, and the target being a listed company yields **-2.21%** abnormal gains for bidder shareholders (around the announcement)
  - The best-case scenario
    - The combination of a small bidder, payment in all-stock, and the target being a private company yields an average abnormal gains of **6.46%** for bidder shareholders