



School of Business,
Economics and Law
GÖTEBORG UNIVERSITY

Mergers

Emphasis on horizontal mergers

Importance of mergers

Notable recent deals

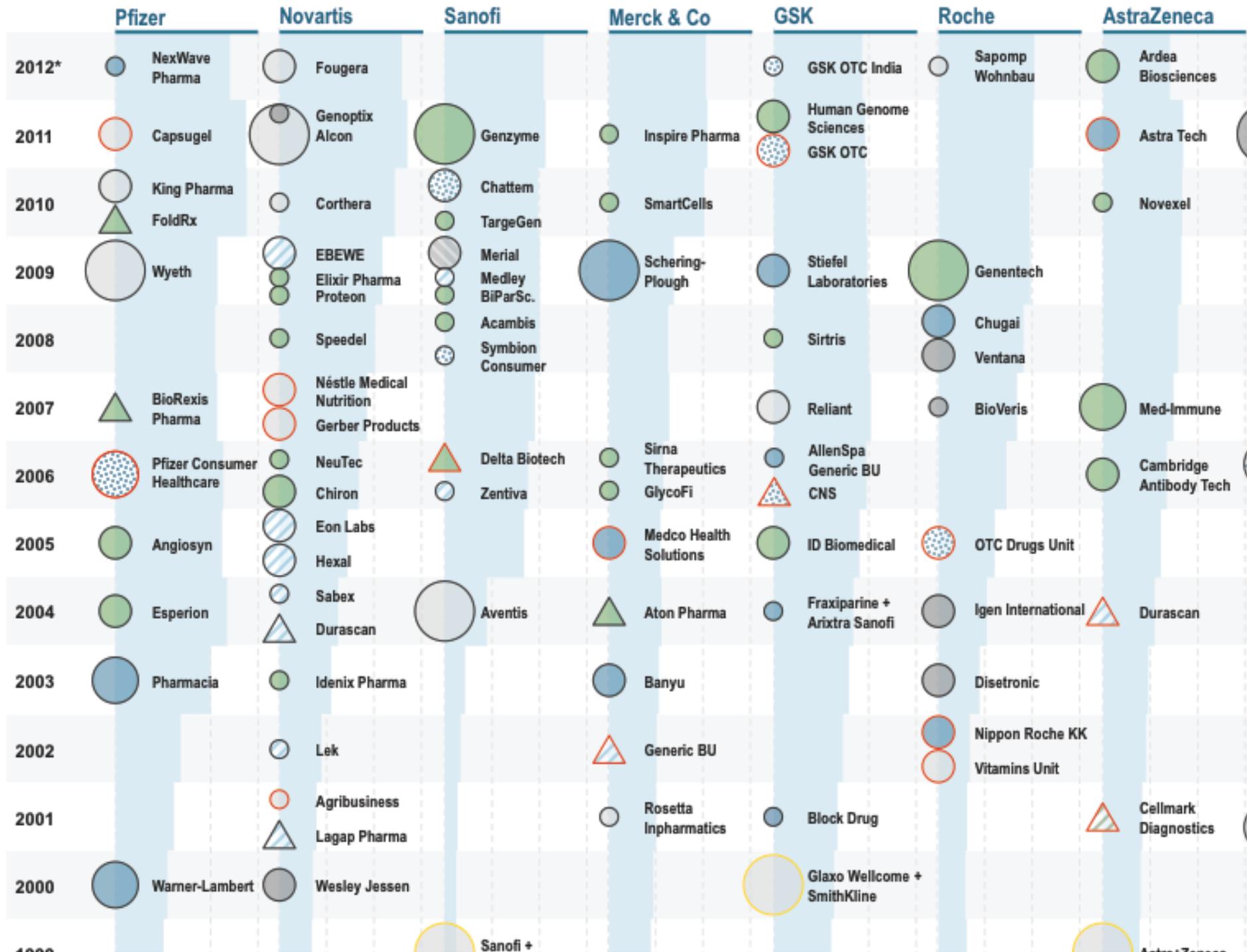
Top 10 M&A deals worldwide by value from 2011 to 2020 (correct as of 31 December 2015):

Rank	Year	Purchaser	Purchased	Transaction value (in billions USD)	Inflation adjusted (in billions 2016 USD)
1	2013	 Verizon Communications ^[13] ^[N 1]	 Verizon Wireless	130	134
2	2015	 Dow Chemical ^[14] ^[N 2]	 DuPont	130	131
3	2015	 Anheuser-Busch InBev ^[N 3]	 SAB Miller	117.4	119
4	2016	 AT&T Inc.	 Time Warner	108.7	109
5	2015	 Heinz ^[15] ^[N 4]	 Kraft	100	101
6	2015	 Charter Communications ^[16] ^[N 5]	 Time Warner Cable	78.7	80
7	2015	 Actavis	 Allergan, Inc	70.5	71
8	2015	  Royal Dutch Shell ^[17]	 BG Group	70	71
9	2015	 Dell ^[N 6]	 EMC Corporation	67	68
10	2016	 Bayer	 Monsanto	66	66

Source: Wikipedia

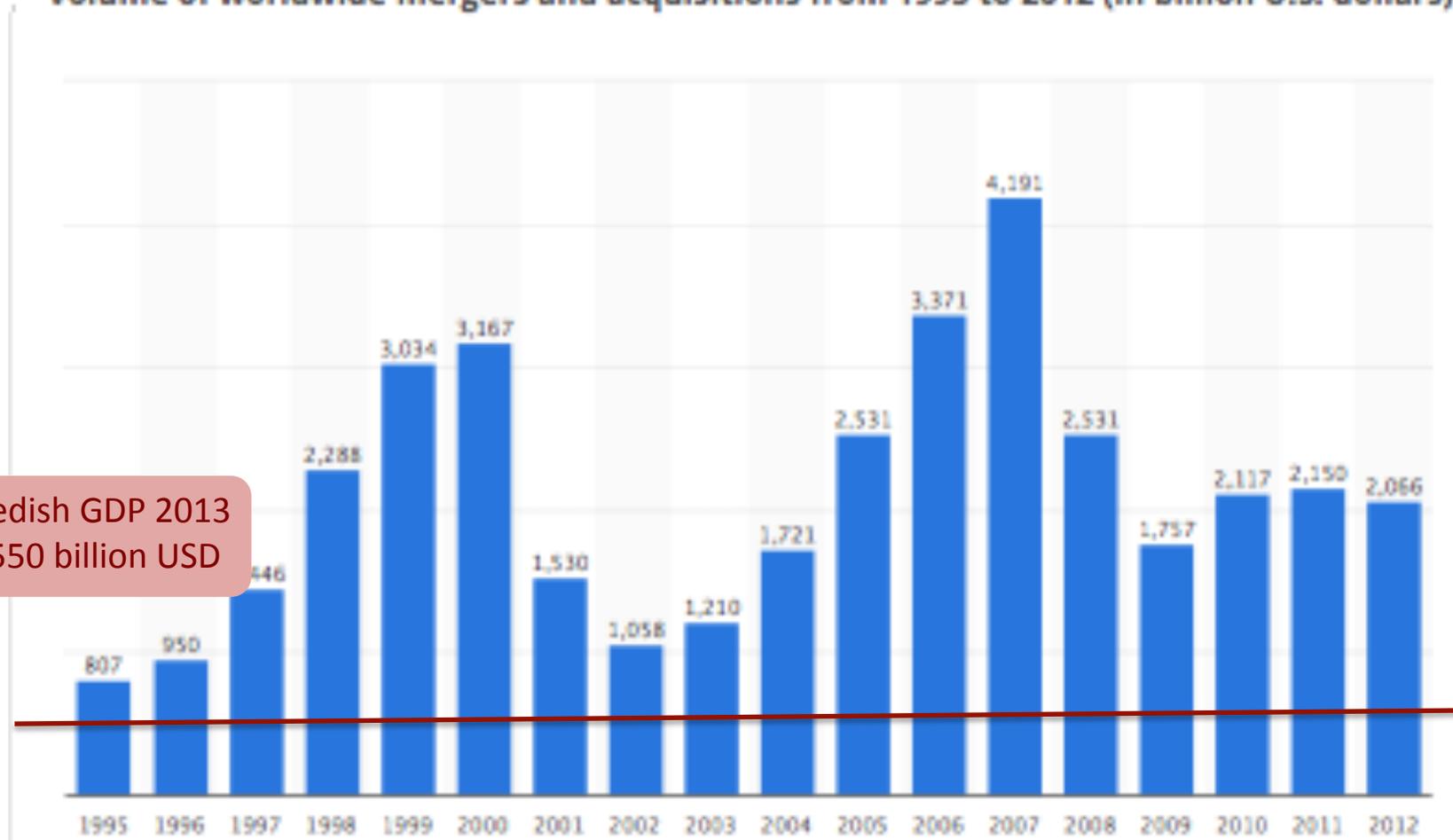
Industries are reshaped

- Big Pharma in troubles
 - Patents expire
 - Low R&D productivity
- M&A pattern 1998-2012 (top 20 companies)
 - 991 transactions between 1998 and 2012
(Source: CEPTON Strategies)



Aggregate activity

Volume of worldwide mergers and acquisitions from 1995 to 2012 (in billion U.S. dollars)



Swedish GDP 2013
ca 550 billion USD

Conclusion

- Merger activity
 - Individual deals are substantial
 - Entire industries are reshaped
 - Aggregate volume is huge
- In sum
 - Mergers reshape/adapt economy

Motives for mergers

Motive 1: Efficiencies

- Horizontal coordination
 - Economies of scale and scope: e.g. central purchasing
 - Rationalization: produce parts where cheapest
- Vertical coordination
 - Avoid holdup of investments
- Take over of underutilized assets

Motive 1: Efficiencies

- An efficiency “externality”
 - Market for corporate control
 - Take over of underutilized assets
 - Threat of takeover important disciplining force on managements

Motive 2: Market power

- **Horizontal effects**
 - Definition: Between competitors
 - Problem: Unilateral or coordinated
- **Vertical effects**
 - Definition: Between buyer and seller
 - Problem: Foreclosure
- **Conglomerate effects**
 - Definition: Between “unrelated” firms
 - Problem: probably none

Other motives for mergers

- Management driven
 - Management prestige (empire building)
 - Hubris
- Industrial policy
 - “National champions” – prestige
 - Employment

Basic Elements of Mergers Policy

Richard Whish & David Bailey: Competition Law, Seventh Edition,
Oxford University Press, 2012.

Goals

- Consumer welfare
 - Anticompetitive effects
 - Cost efficiency, but only if beneficial to consumers
- Disregard
 - Employment
 - National security?

Meaning of “merger”

- Definition of “concentration”
 - Previously independent businesses come under common control
- Examples
 - Acquisition of **minority shareholding** may be sufficient, if it gives “decisive influence”
 - Acquisition of **assets** (ex: plants, brands, patents)
 - Merger of parts of businesses into **joint venture**

Notification

- Mergers with Community dimension pre-notified to Commission
 - Combined worldwide turnover > €5000 mn
 - EU-wide turnover > €250 mn of each company
- Other big mergers pre-notified to Member State

Notification

- **Extra-territorial**
 - Does not matter if all companies are e.g. American
- **One-stop-shop**
 - Mergers with Community dimension cannot be tried by Member States
 - Still, many big mergers have to be notified to 10 – 20 different competition authorities

Notification

- Notification contains information on e.g.
 - Affected markets
(preliminary market definitions by the parties)
 - Parties market shares
 - HHI

Decision rights

- EU
 - Commission decides
 - Firms can appeal to courts
- Sweden
 - KKV = “prosecutor”
 - Courts decide

Time limits

- Phase I
 - 25 working days
- Phase II (3 % of cases)
 - 90 working days

Competition test

- Now: “Significant impediment of competition”
 - Typically: creates or strengthens dominant position (= high level of market power)
 - Includes:
 - Single firm dominance = “similar to monopoly”
 - Joint dominance = “similar to cartel”
 - But also regular oligopoly
- Previously: Dominance
 - Unclear if regular oligopoly was included

Competition test

- Define markets
 - Product market/geographical markets
- Estimate effect on competition
 - Market shares and concentration (very important)
 - Diversion ratios (= measure of substitutability)
 - Strength of brand (a well-known brand is more likely to be people's second choice)

Competition test

- **Presumption: No problem if**
 - Parties market share < 25%
 - Post-merger HHI < 1000
 - Post-merger HHI < 2000 & $\Delta\text{HHI} < 250$
 - $\Delta\text{HHI} < 150$
- **Recall**
 - HHI max = 10 000 (= 100^2)
 - 1000 = ten symmetric firms (= 10×10^2)

Entry and Buyer Power

- **Entry**
 - Likely = assessment of entry barriers
 - Timely = normally within 2 years
 - Sufficient = eliminate price increase
- **Buyer power**
 - Size of buyer
 - Ability to integrate
 - Sponsor upstream entry

Efficiencies

- **Benefit consumers**
 - Lower prices
 - Large reductions in marginal cost
 - Incentive to pass on
 - New or improved products
- **Merger specific**
 - Cannot be achieved without reduction in competition
- **Verifiability**
 - Firms must be able to ensure Commission

Failing firm defense

- No impediment to competition if
 - One firm would become bankrupt
 - Assets would exit the market
 - No less anti-competitive alternative to the merger

Remedies

- Usual solution solution if problems
- Types of remedies
 - Divestiture of overlapping businesses
 - Access to an essential facility
 - Licensing of technology

Evidence

- Burden of proof
 - Commission has burden to prove
 - Anti-competitive effects
 - No buyer power
 - No entry
 - Firms have burden to prove
 - Efficiencies
 - Failing firm defense

Evidence

- Different standards of proof
 - “On the balance of probabilities” or
 - “Beyond reasonable doubt”
- Merger policy
 - Convincing evidence (= balance of probabilities, if I understand it right)

Statistics

1990 - 2017

- Notifications: 6522
- OK
 - Phase I: 5803
 - Phase II: 62
- Interventions
 - Withdrawn: 177
 - OK with commitments: 121
 - Prohibitions: 26

Use of economics in merger policy

Theory of competitive harm

- Fundamental difficulty
 - Assessing notified mergers = predicting the future
 - Must build on economic theory
 - Competition authorities must present a theory of competitive harm in every case

Theory of competitive harm

- Theory of competitive harm
 - Unilateral effects
 - Coordinated effects
 - Vertical effects

Counterfactual

- Effect = Difference between
 - Market outcome with merger
 - Market outcome without merger = Counterfactual
- Possible counterfactuals
 - Most often: Status Quo
 - Sometimes: Failing firm
 - Possible: Alternative mergers (Volvo/Scania)

Economic evidence

- Competition authority must present evidence in support of its “theory of harm”
- Examples of sophisticated economics
 - Estimation of cross-price elasticities
 - Price correlations
 - Merger simulations

Welfare Tradeoff

(some details)

Unilateral effects

Two aspects

- “Internalization”
 - Merging firms’ initial incentive to increase prices
 - To study this incentive assume that competitors keep their prices fixed
- Outsider response
 - Competitors’ reaction to initial price change

Internalization

Internalization

- Increased price before merger
 - + Increased markup ($p_A - c_A$)
 - Some customers leave the market
 - Some customers buy product B instead
 - Increased price after merger
 - + Increased markup ($p_A - c_A$)
 - Some customers leave the market
 - 0 Some customers buy product B instead
- More beneficial to increase price

Internalization

Before merger

$$\pi_A = (p_A - c_A) \cdot D_A(p_A, p_B)$$

FOC

$$\frac{\partial \pi_A}{\partial p_A} = D_A(p_A, p_B) + (p_A - c_A) \frac{\partial D_A}{\partial p_A} = 0$$

Internalization

After merger

$$\pi_A + \pi_B = (p_A - c_A) \cdot D_A(p_A, p_B) + (p_B - c_B) \cdot D_B(p_A, p_B)$$

FOC

$$\frac{\partial \pi_A + \pi_B}{\partial p_A} = D_A(p_A, p_B) + (p_A - c_A) \frac{\partial D_A}{\partial p_A} + (p_B - c_B) \frac{\partial D_B}{\partial p_A} = 0$$

Internalization

Before merger

$$\frac{\partial \pi_A}{\partial p_A} = D_A(p_A, p_B) + (p_A - c_A) \frac{\partial D_A}{\partial p_A} = 0$$

After merger

$$\frac{\partial \pi_A + \pi_B}{\partial p_A} = D_A(p_A, p_B) + (p_A - c_A) \frac{\partial D_A}{\partial p_A} + (p_B - c_B) \frac{\partial D_B}{\partial p_A} = 0$$

Q: What is the effect of merger on p_A ?

Explain how you can deduce this from FOC

Internalization

Before merger

$$\frac{\partial \pi_A}{\partial p_A} = D_A(p_A, p_B) + (p_A - c_A) \frac{\partial D_A}{\partial p_A} = 0$$

After merger

$$\frac{\partial \pi_A + \pi_B}{\partial p_A} = D_A(p_A, p_B) + (p_A - c_A) \frac{\partial D_A}{\partial p_A} + (p_B - c_B) \frac{\partial D_B}{\partial p_A} = 0$$

At old equilibrium price:

$$\frac{\partial \pi_A + \pi_B}{\partial p_A} = (p_B - c_B) \frac{\partial D_B}{\partial p_A} > 0$$

Internalization

At old equilibrium price:

$$\frac{\partial \pi_A + \pi_B}{\partial p_A} = (p_B - c_B) \frac{\partial D_B}{\partial p_A} > 0$$

Strength of effect

Market power before merger :

$$(p_B - c_B)$$

How close competitors are A and B :

$$\frac{\partial D_B}{\partial p_A}$$

Internalization

- Diversion Ratio (from A to B)
 - Definition: How much of the displaced demand for product A switches to product B, when the price of A is increased

$$\delta_{AB} \equiv -\frac{p_B \cdot \frac{\partial D_B}{\partial p_A}}{p_A \cdot \frac{\partial D_A}{\partial p_A}} \in [0,1]$$

- Intuitive: Fraction of product A:s consumers who have product B as a second choice

Internalization

After merger

$$\frac{\partial \pi_A + \pi_B}{\partial p_A} = D_A(p_A, p_B) + (p_A - c_A) \frac{\partial D_A}{\partial p_A} + (p_B - c_B) \frac{\partial D_B}{\partial p_A} = 0$$

$$\left(\frac{p_A - c_A}{p_A} \right) - \left(\frac{p_B - c_B}{p_B} \right) \delta_{AB} = -\frac{1}{\epsilon_{AA}}$$

Symmetry

$$\frac{p_A - c_A}{p_A} = -\frac{1}{\epsilon_{AA}} \frac{1}{1 - \delta_{AB}}$$

Hence

$$\Delta \frac{p_A - c_A}{p_A} = \left(-\frac{1}{\epsilon_{AA}} \right) \left(\frac{\delta_{AB}}{1 - \delta_{AB}} \right)$$

Internalization

After merger

$$\frac{\partial \pi_A}{\partial c_A}$$

Market power increases much if

- **Demand elasticity low**
(high market power already before merger)
- **Diversion ratio high**
(products close substitutes compared to other products)

Symmetric

$$\frac{p_A - c_A}{p_A}$$

$$\frac{1}{\epsilon_{AA} (1 - \delta_{AB})}$$

Hence

$$\Delta \frac{p_A - c_A}{p_A} = \left(-\frac{1}{\epsilon_{AA}} \right) \left(\frac{\delta_{AB}}{1 - \delta_{AB}} \right)$$

Outsiders' Response

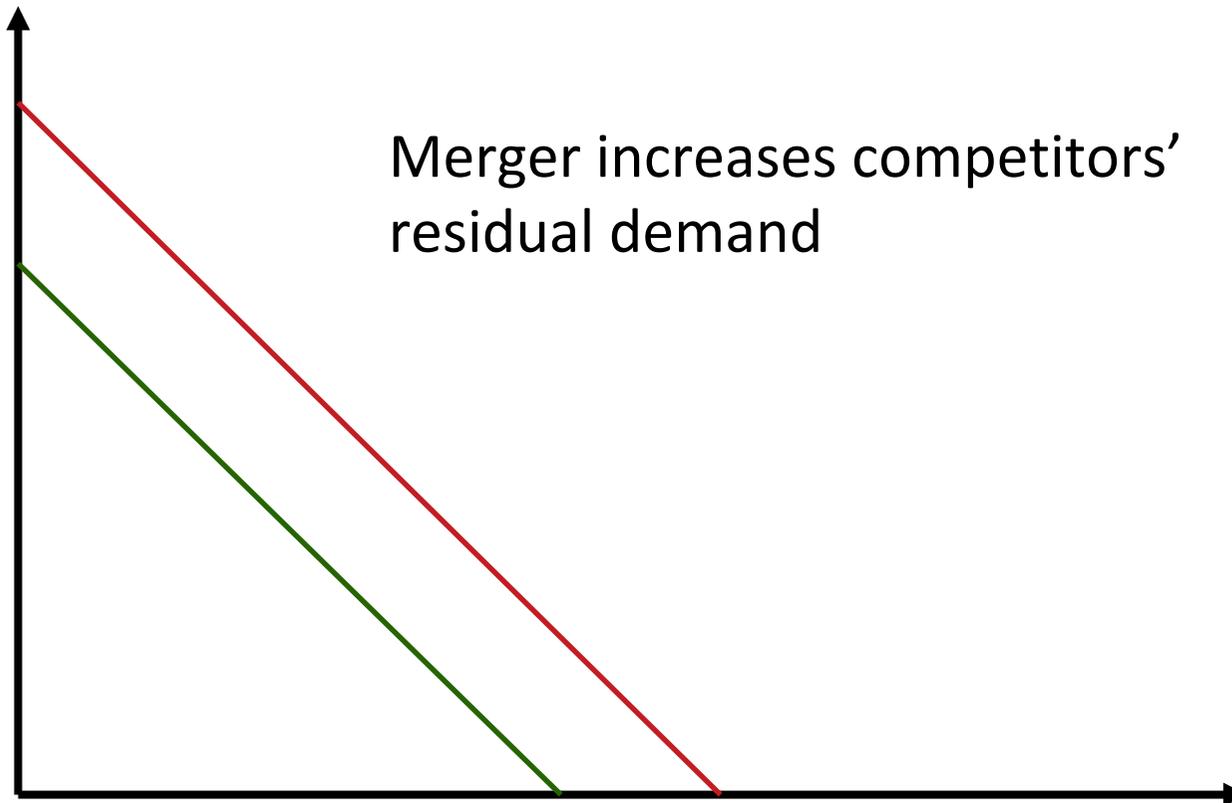
Outsiders' Response

- Response
 - Insiders increase price and reduce output
 - Outsiders' residual demand increase
 - Outsiders respond by
 - Increasing price
 - Increasing output
- Key issue
 - Will outsiders mainly increase price or output?

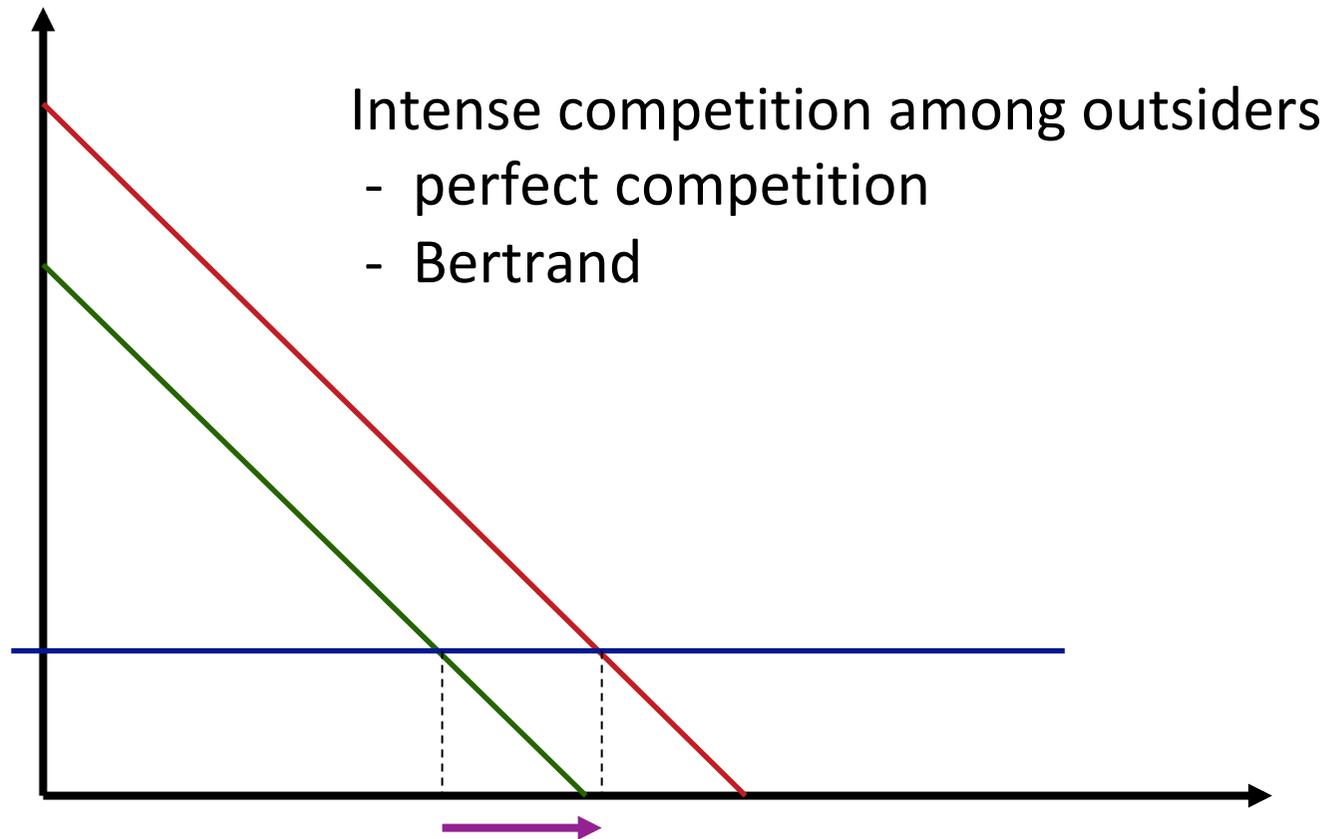
Outsiders' Response

- Outsiders increase output much if
 - Outsiders' conduct competitive

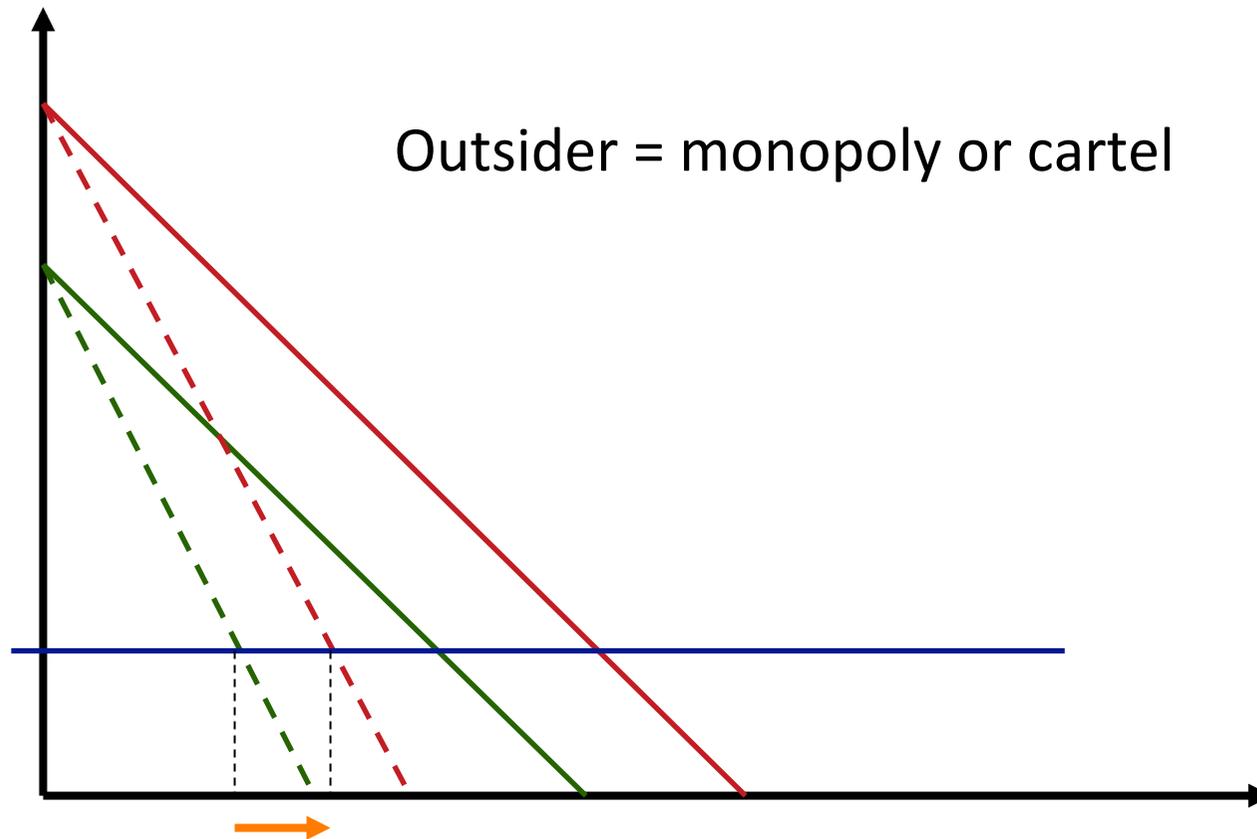
Outsiders' Response



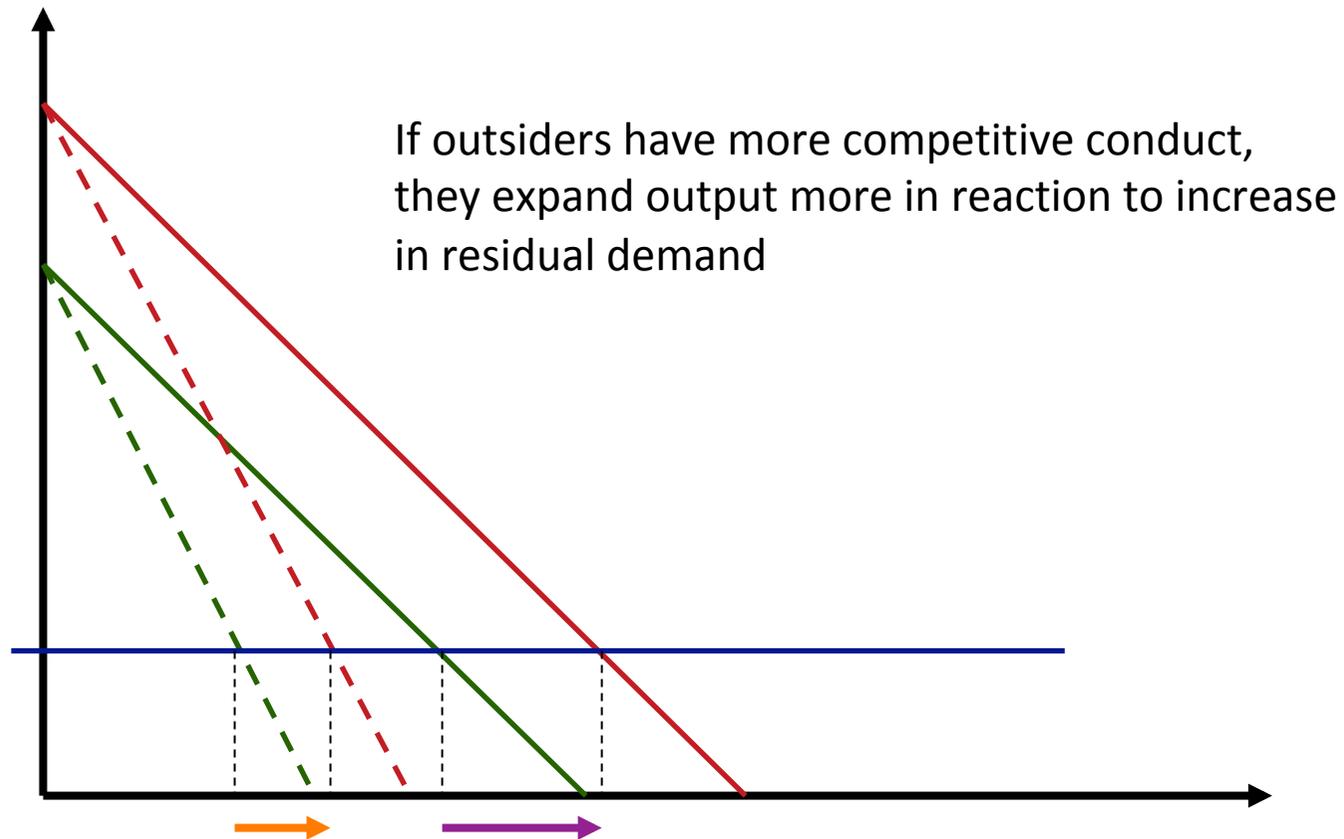
Outsiders' Response



Outsiders' Response



Outsiders' Response



Outsiders' Response

- Outsiders increase output much if
 - Outsiders' conduct competitive
 - Outsiders' costs low
 - Outsiders have no capacity constraints
 - Easy to switch between geographical markets
 - Entry costs low

Unilateral Effect

- Two aspects
 - Internalization
 - Increase price & reduce output
 - Outsiders' response
 - Increase price & increase output
 - Need formal model to study both at the same time

Efficiencies

Efficiencies

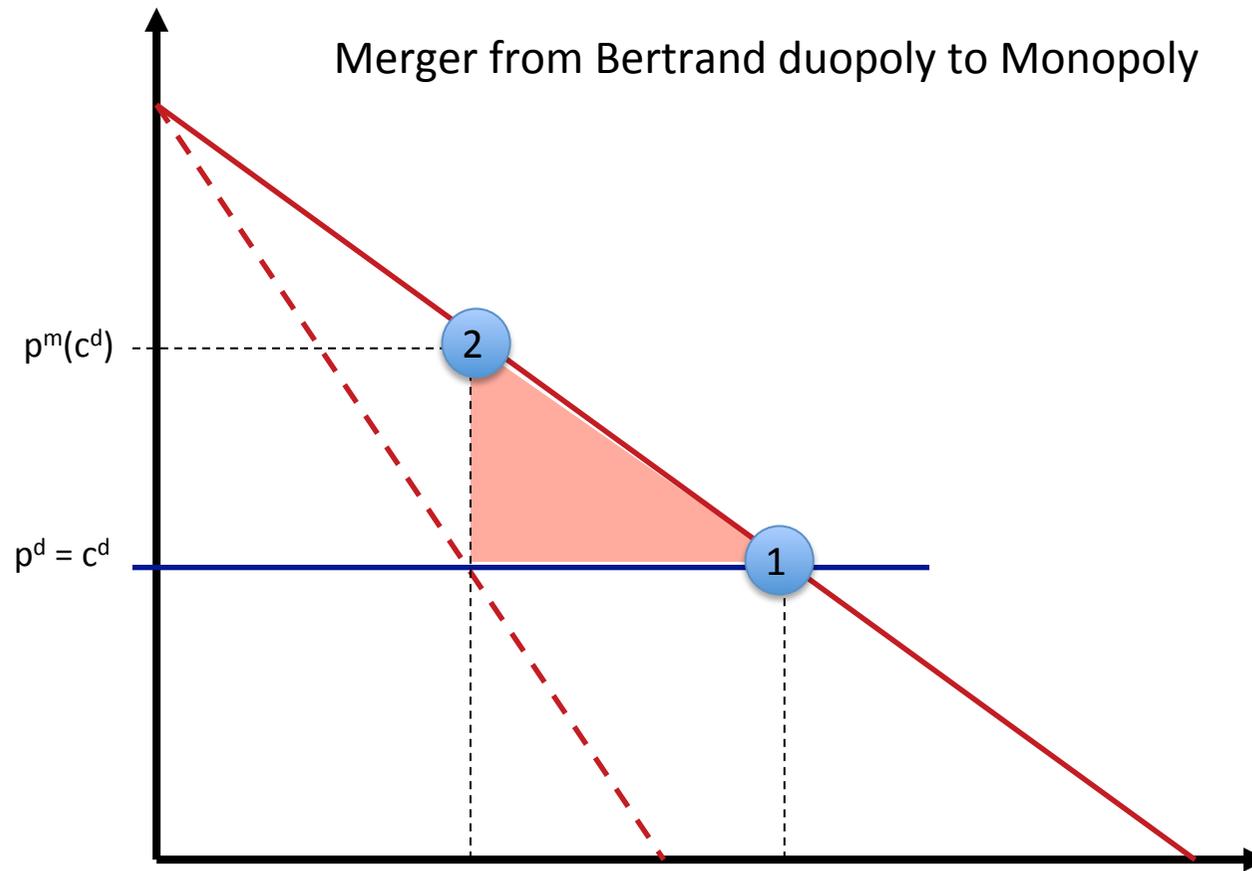
- Rationalization
 - Reallocate production to efficient plants
- Economies of scale
 - Avoid duplication of various activities
 - Coordination of new investments
 - Specialization - lengthen production runs
- Technological progress
 - Pooling existing know-how
 - Coordinate R&D
- Reducing slack
 - Replace inefficient management

Efficiencies

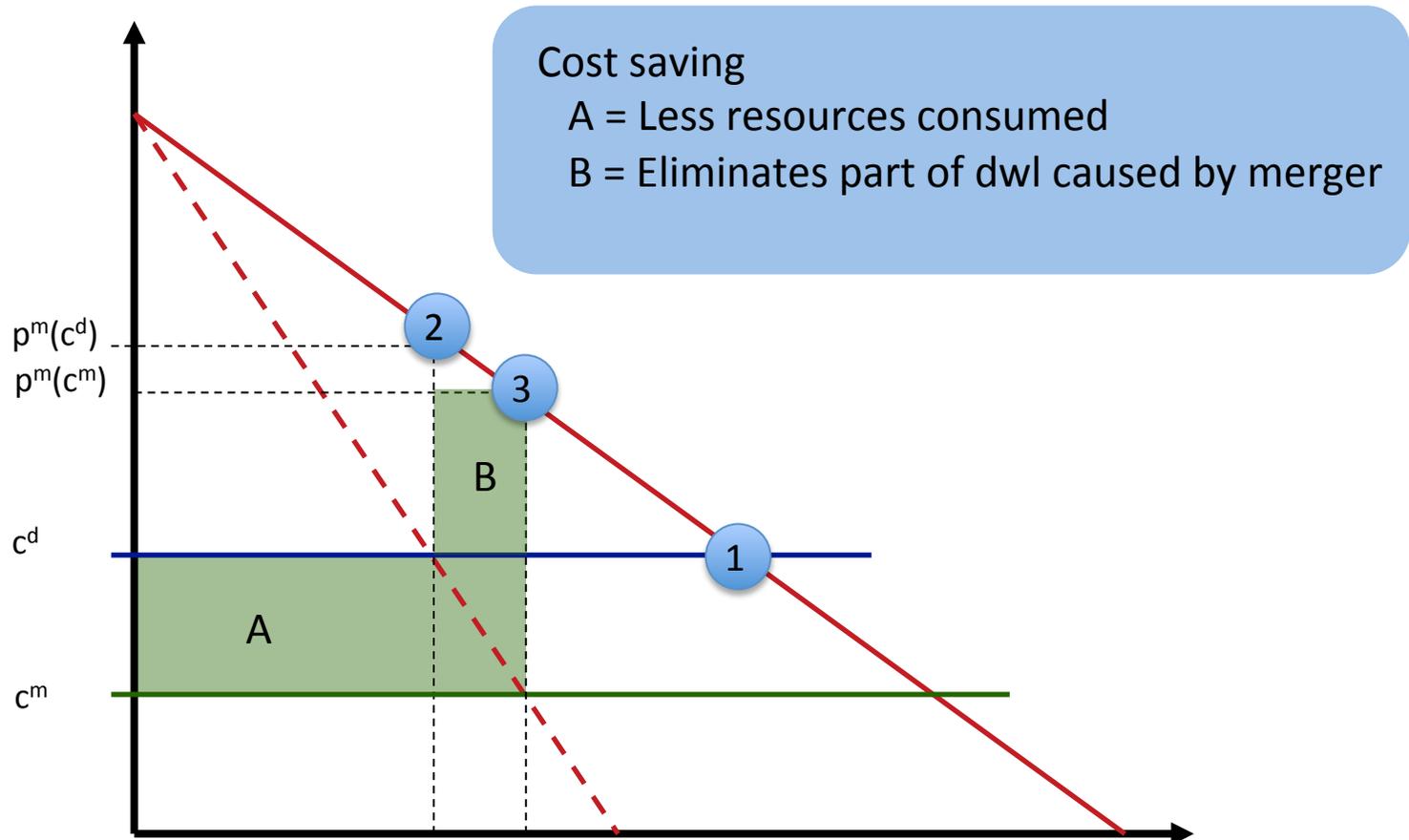
- But mergers may also cause inefficiencies
 - Less competition may lead to more slack
 - Larger organization may be more difficult to control
 - Problems melting cultures together

Total welfare and consumer welfare

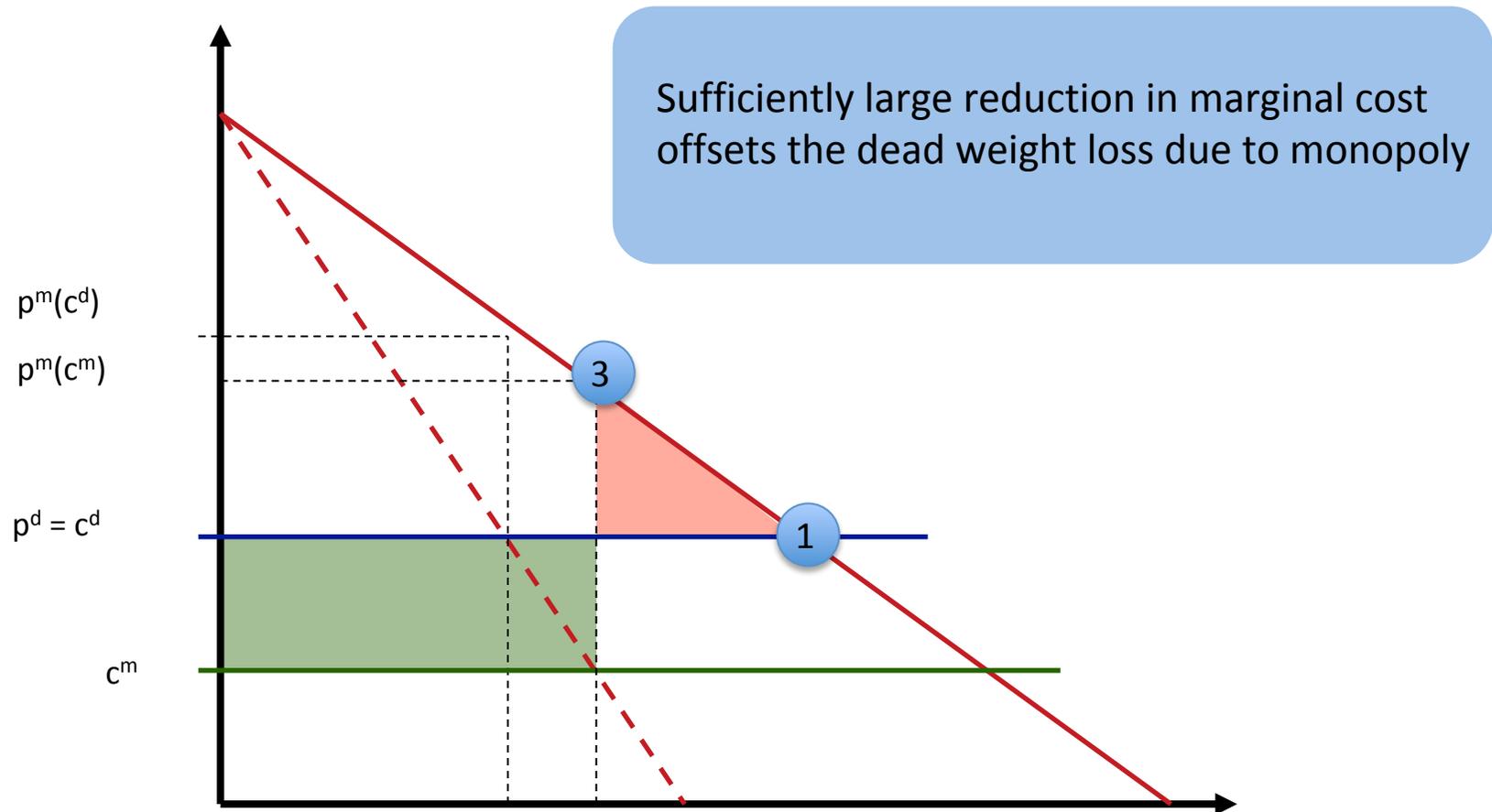
Total welfare



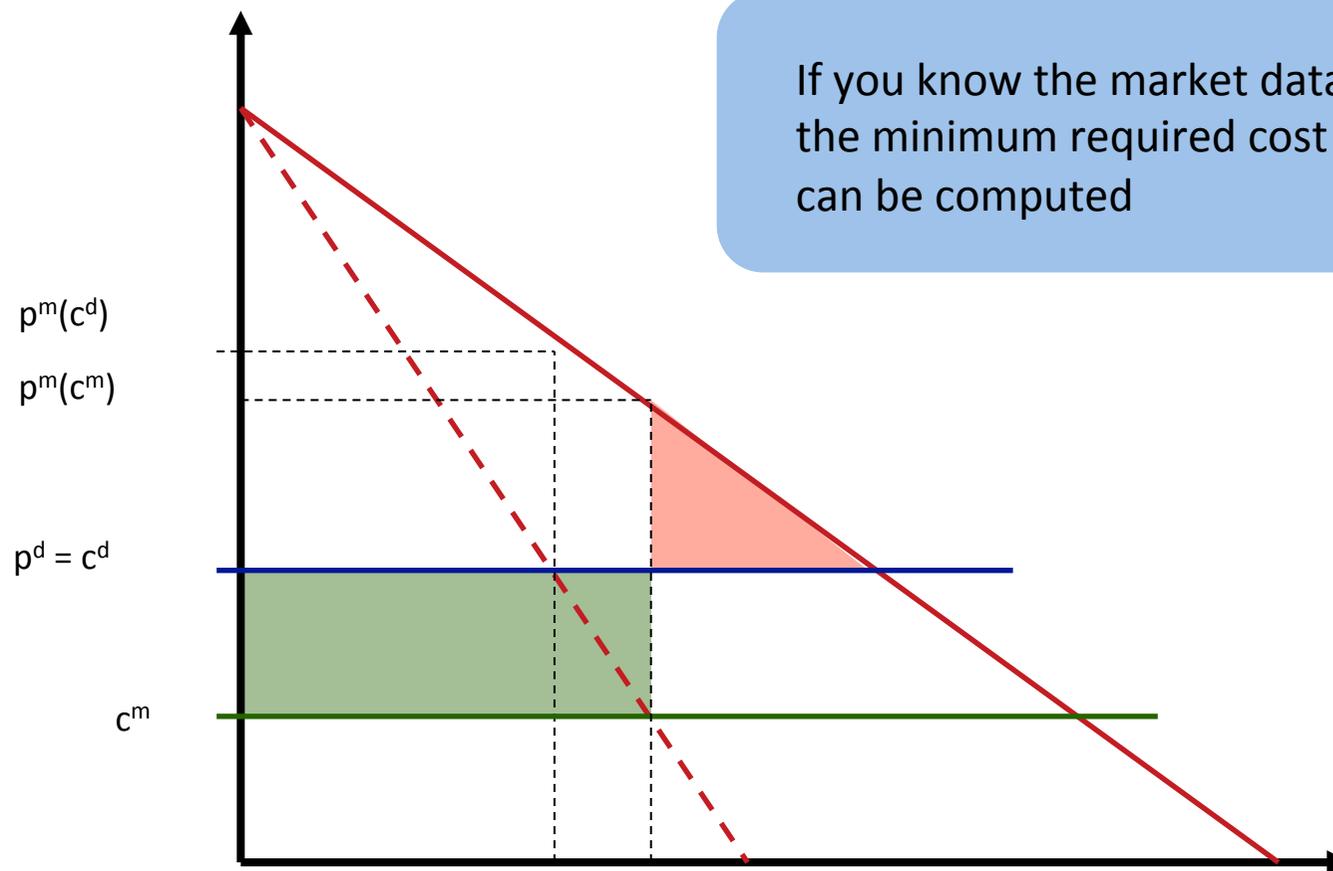
Total welfare



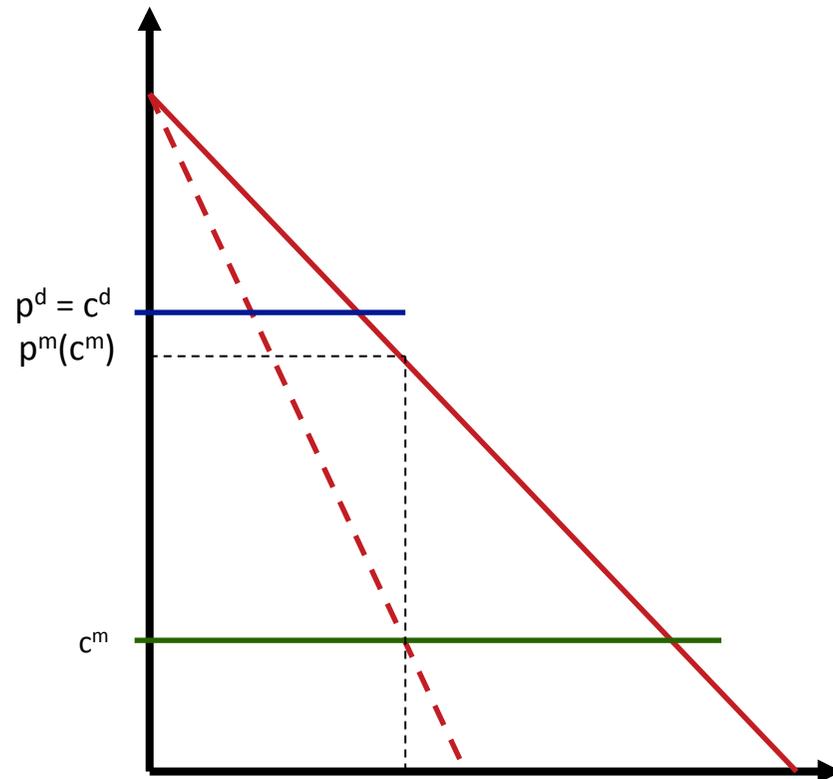
Total welfare



Total welfare



Consumer welfare



- Price may go down
- ΔMC must be large
- Marginal cost, not fixed
- Can be computed, if we know demand

Economic issues in merger policy

Issues

- **Appropriate goal**
 - Consumer welfare standard
 - Total welfare
- **Is merger control necessary?**
 - Anticompetitive mergers often unprofitable
 - Better to be outsider
 - Other policies: abuse of dominance; fight cartels
- **Can merger policy be evaluated, I**
 - Deterrence of anticompetitive mergers => only good or “marginally bad” mergers proposed
 - Deterrence cannot be observed
- **Can merger policy be evaluated, II**
 - Cannot observe the effects of blocked mergers
 - Counter-argument: event studies