Vertical and Conglomerate Effects

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*The views expressed are those of the author and do not necessarily reflect those of DG COMP or the European Commission

Outline

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   - Good things
   - Bad things
     - input foreclosure
     - customer foreclosure
3. Conglomerate mergers
     - foreclosure concerns of tying/bundling/portfolio effects
4. Concluding remarks

1. Introduction

Definitions:

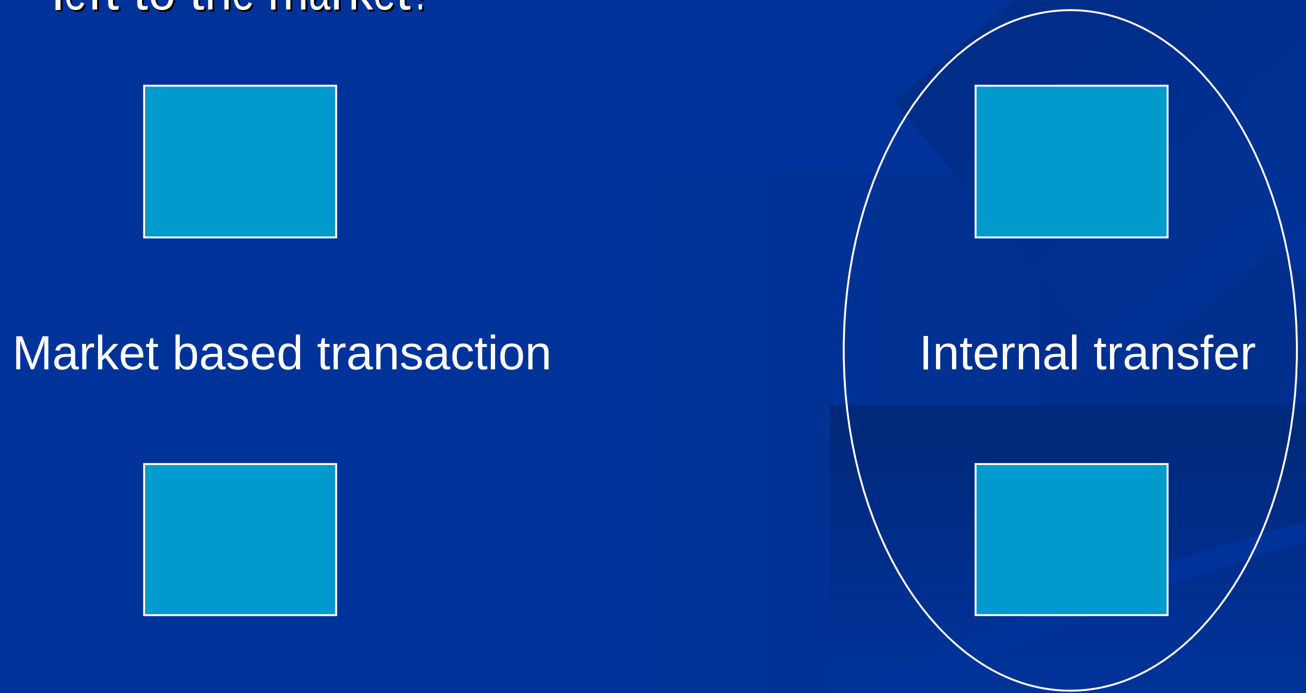
- Horizontal merger
  - a merger between companies are actual or potential competitors in the same relevant market
- Vertical merger
  - a merger between companies that have an actual or potential supplier-customer relationship
- Conglomerate merger:
  - a merger that is neither purely horizontal or purely vertical

2. Vertical mergers

- Examples of a vertical relationship:
  - producer and retailer
  - car parts producer and car producer
  - cement producer and concrete producer
  - electricity producer and distributor
- Vertical mergers have implications which differ from horizontal mergers: a horizontal merger is a merger between competitors, whereas a vertical merger is a merger between players that are complementary

Theory of the firm

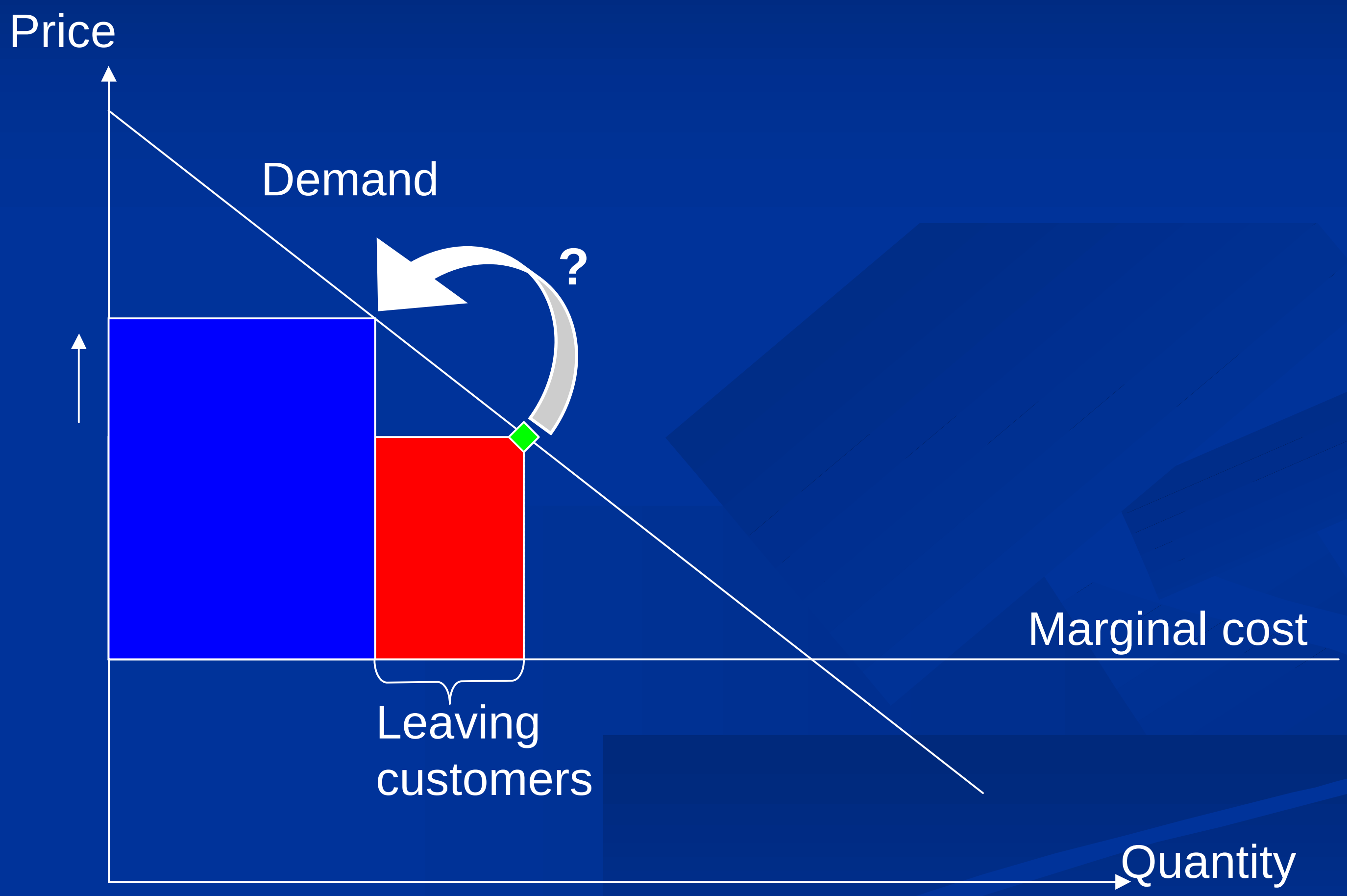
- What decides the boundaries of a firm?
- To get a final product/service to the final customer requires a number of subproducts and subservices.
  - R&D, Raw materials, Combining the raw materials, Feeding the employees, Cleaning the factory, Distribution, Advertising, Accounting
- Which of these activities should a firm do themselves and which should be left to the market?



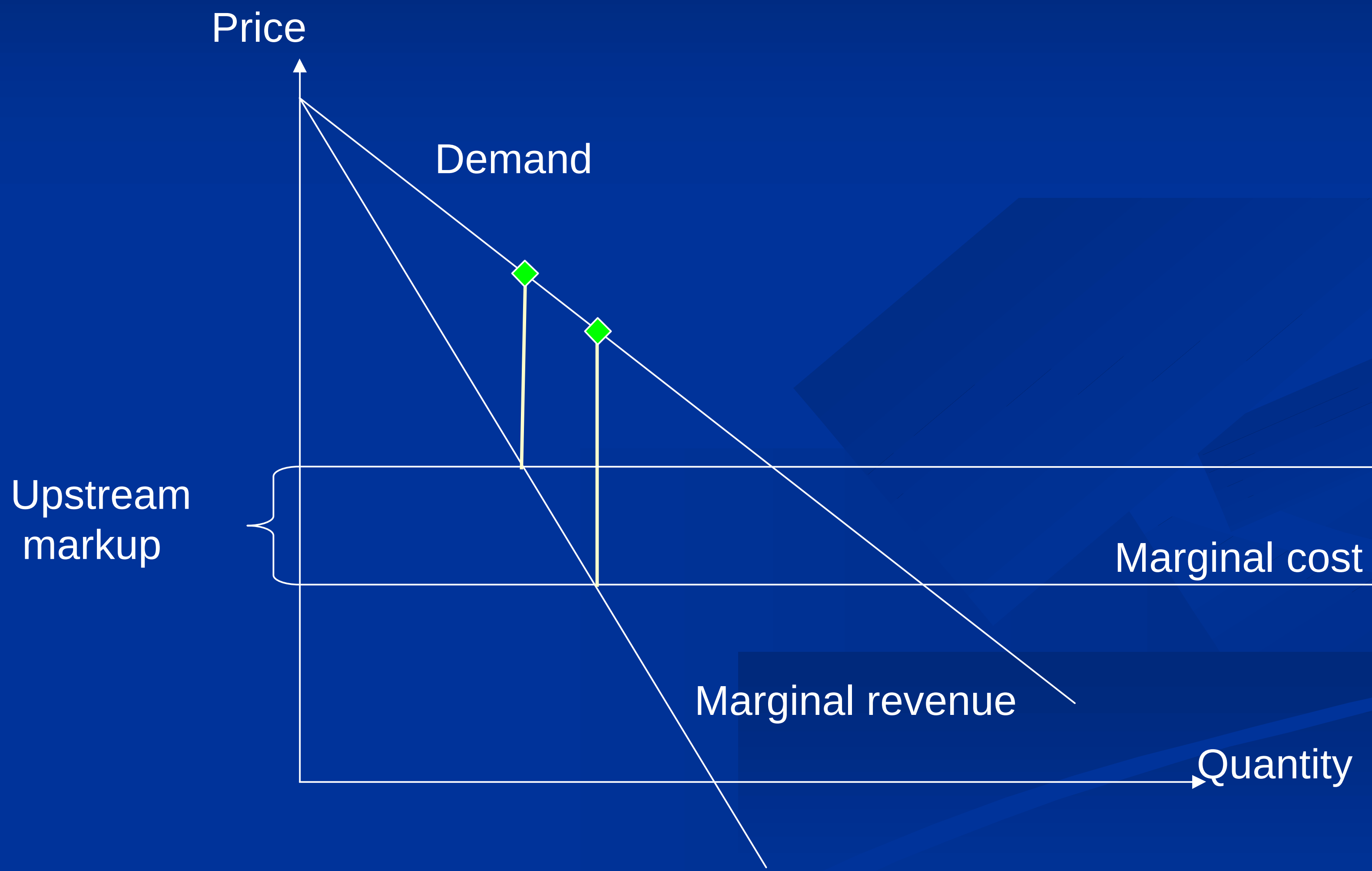
Vertical mergers

- Advantages of being independent:
  - External pressure from competition keeps each entity “on their toes”
  - Easier to handle smaller entities
  - Better focus on core activities
  - ….
- Advantages of being integrated
  - Easier to align activities
  - Internalize externalities

Does it pay to increase prices?



A downstream monopolist



Mobile telephony

Domestic on-net call

Origination
+Termination
+Subscription

Domestic off-net call

Termination

Origination
+Subscription

International call

Origination

Termination

Subscription

Aligned incentives

- M. 3868 DONG/Elsam/E2/KE/FE
  - DONG receives gas in a steady flow
    - but customers mainly need the gas in the winter
    - solution: storage
  - Elsam and E2 use gas to produce electricity
    - But they also use other fuels (coal, oil, wood-pellets and straw)
    - Merger potential: use power plants as virtual storage
    - By using gas in the summer and other fuels in the winter

Vertical mergers

- There are many reasons why vertical mergers may be good for consumers
  - Internal transfers may be better than market based transfers
  - Incentives may be better aligned
  - Double mark-ups may be eliminated

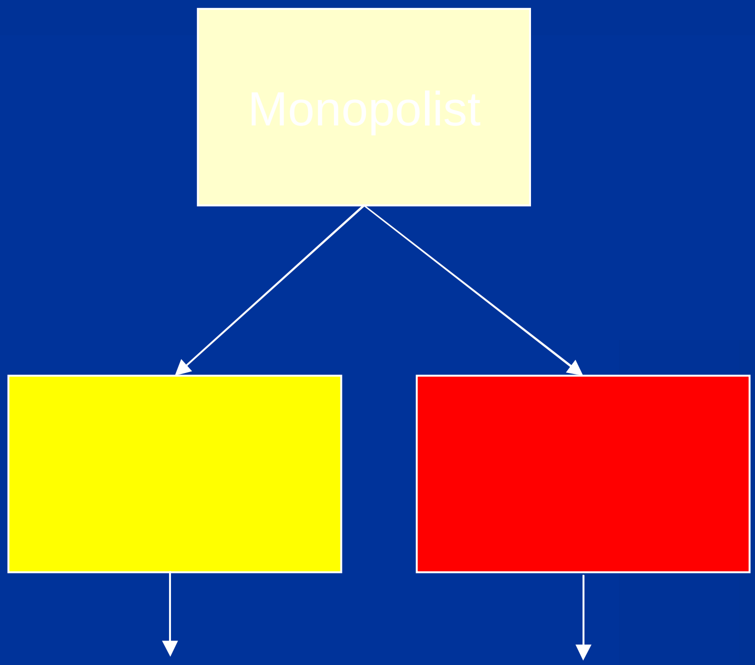
- So what could possibly be wrong with a vertical merger?

Foreclosure

- Vertical mergers may foreclose competition by
  - raising the costs at which competitors can operate on a downstream market (raising rivals' cost); typically associated with <u>input foreclosure</u>
  - and/or lowering the expected revenue streams of upstream competitors (reducing rivals' revenues); typically associated with <u>customer foreclosure</u>

è may affect the ability or incentive of competitors to compete, and thereby negatively affect consumers

Input foreclosure



Net effect?

No reason to offer different prices to the two downstream firms

Elimination of double mark-up

↓

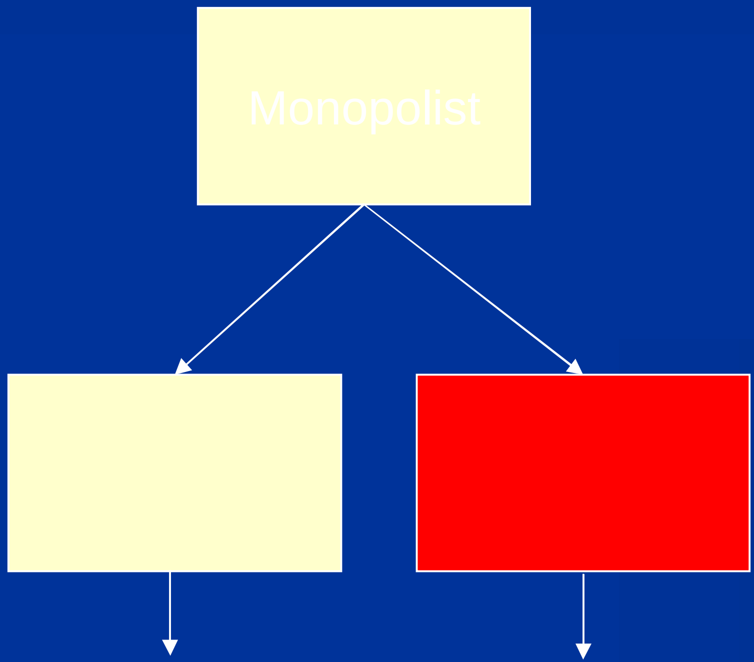
Lower downstream prices

But what about also increasing prices to red?

↓

Higher downstream prices

There is only one monopoly profit!



Except if:

- The monopolist is regulated
- Two-level entry is more difficult than one-level entry
- Entry from one level to the other level is easier than entry for a complete outsider
- There is some competition upstream

Example EDP/GDP

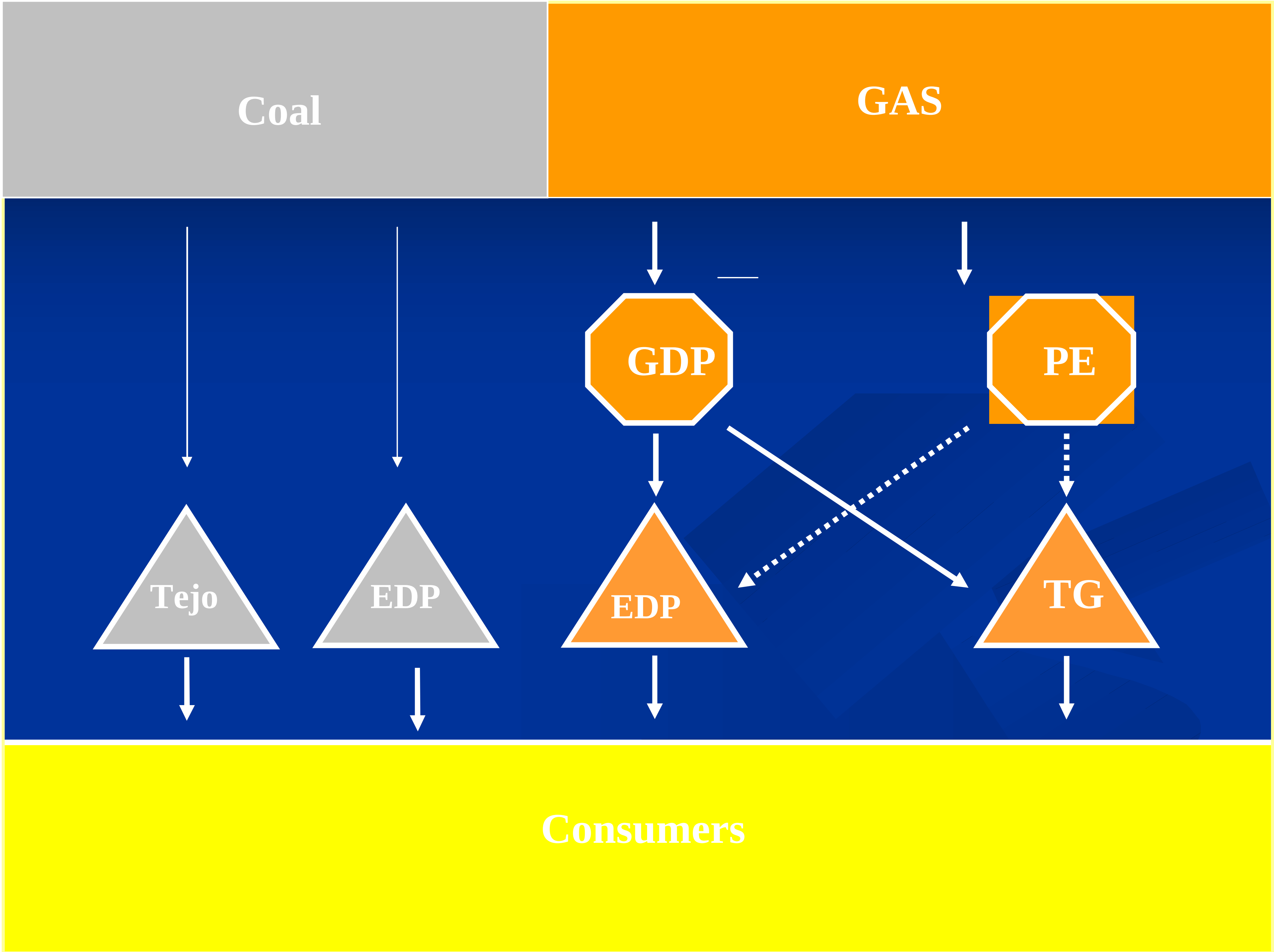
- Acquisition of joint control

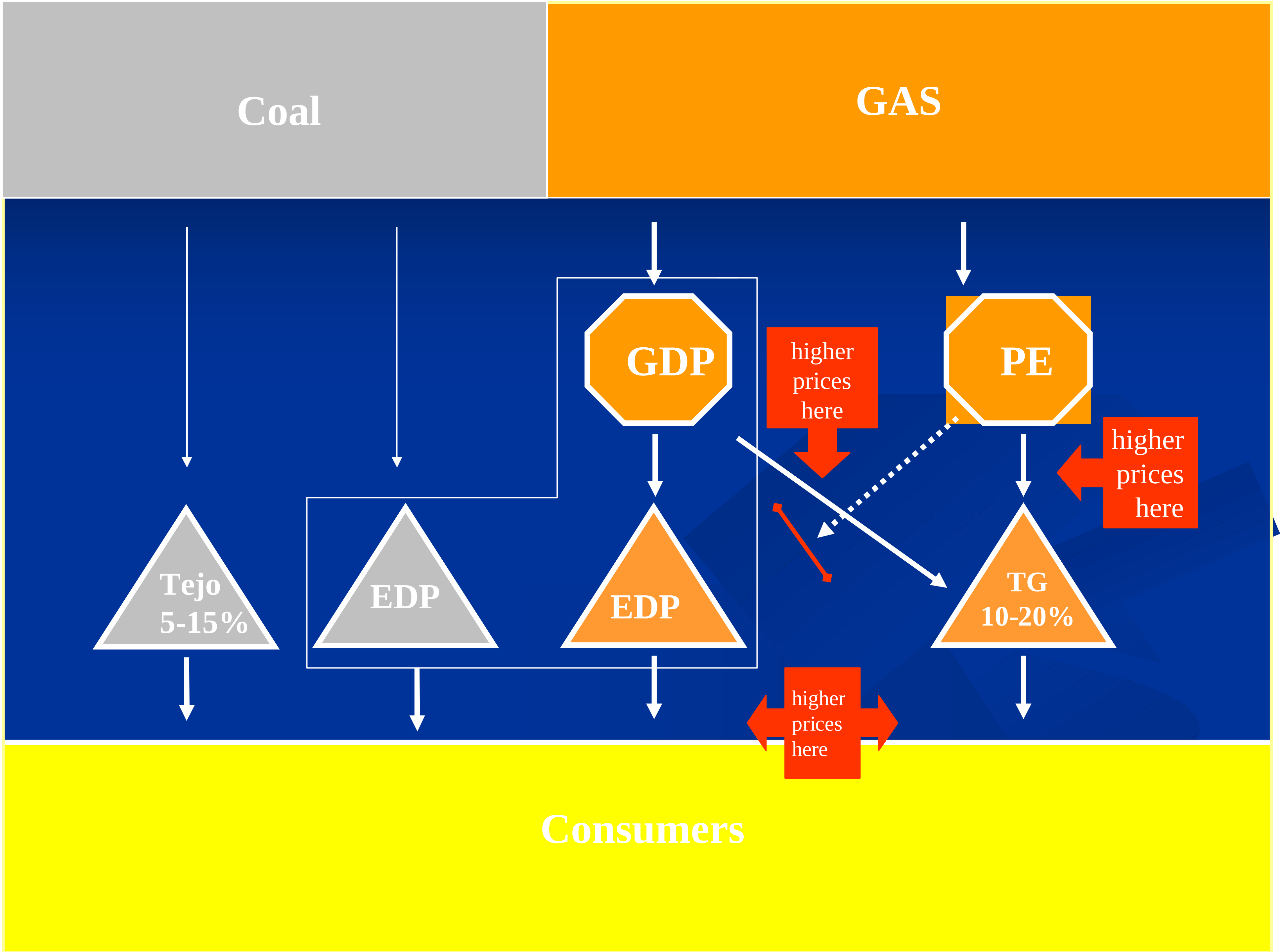
  by ENI and EDP (electricity incumbent)

  over GDP (gas incumbent)

Vertical effects

- A vertically integrated quasi-monopoly could raise entry barriers by:
  - increasing the price of gas or reducing quality of supply to Turbogas and new entrants (input foreclosure)
  - by not purchasing gas from other suppliers than GDP thus depriving them of incentives to enter because of lack of scale economies and of profitability of entry (customer foreclosure)


Coal
GAS
GDP
PE
Tejo
EDP
EDP
TG
Consumers



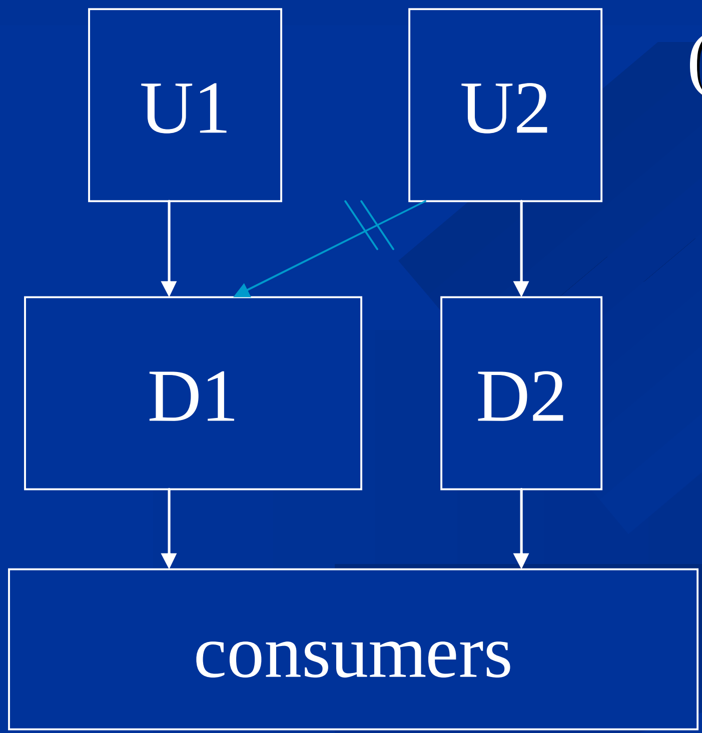
Coal
GAS
GDP
PE
higher prices here
higher prices here
Tejo 5-15%
EDP
EDP
TG 10-20%
higher prices here
Consumers

Input foreclosure may be a concern

- When the merged entity has the ability to raise rivals cost;
  - Input must be important
  - Merged entity must have significant market power in the input market
- Has the incentive to do so;
  - Downstream profits should be significant
  - Upstream prices should translate into higher downstream prices
  - The rival should be a close competitor
- The effect on downstream consumers would be significant
  - The rivals whose cost are raised should constitute an important competitive force
  - The effect on entry barriers should be significant

Customer foreclosure

- Example:



(U1 merges with D1)

Customer foreclosure

- Upstream firm threatened by entry. But entry is only profitable if MES is achieved
- The perspective of reduced revenue streams may reduce the incentive to invest (e.g. in product or process innovation) and remain active, thereby leading to lower competitive pressure in the future
- Integration or exclusive dealing with downstream firm precludes entry and introduces a cost asymmetry downstream
- Conditions
  - Soft competition downstream
  - If entrant is more efficient: Incumbent must have a first mover advantage in negotiations
- Competitive harm generally more delayed and more uncertain: may depend on a sequence of events (absence of counter-strategies, reduced investment levels, ...).

Restoring monopoly power

- A non-integrated upstream monopolist has a serious self-discipline (i.e commitment) problem which limits its ability to exploit its monopoly power (analogous to durable good monopolies).
  - It cannot commit to abstain from secretly discounting to any downstream firm, in a form of post-contractual opportunism.
  - Thus the source of this problem is contractual incompleteness (no contracts contingent on profitability measures and no exclusivity)
- Through vertical integration a monopolist acquires a direct stake on downstream profits which allow it to credibly commit not to offer secret discounts to rivals.
- Integration only imperfectly solves this commitment problem because the monopolist cannot commit not to favour its downstream units when independent units exist.

Policy relevance of RMP

- Vertical integration helps the upstream monopolist to circumvent its commitment problem and to (credibly) maintain monopoly prices.
- Empirical validity requires:
  - Non-linear pricing is assumed to exclude gains from eliminating double marginalisation. Is this always realistic?
  - Contract incompleteness
- Weaknesses:
  - Multiple equilibria
  - No explanation of how vertical integration might foreclose an equally efficient competitor. This narrows its scope.
  - Vertical integration is not necessary: Exclusive agreements also circumvent the problem. Implications for policy.
- Also note that the merger does not restrict competition. It allows the merged entity to commit to a strategy. It is questionable this should be challenged provided the monopoly was achieved legitimately.

Conglomerate Mergers

- Parties are not actual or potential competitors and they have no actual or potential customer-supplier relationship
- Focus: significant degree of commonality in terms of buyers served. (e.g. complementary products – i.e. more valuable to the buyer when consumed together)

Pro-competitive effects

- Conglomerate mergers generally have no negative effects on competition.
- Due to specialization through division of labour it is often more efficient that certain components are marketed together rather than separately.
- More generally bundling or tying can lead to:
  - Cost savings derive from some form of economy of scope (either on the production or the consumption side (e.g. one-stop-shop).
  - Value enhancements can result from better compatibility and quality assurance of complementary components
- But such efficiencies must be merger specific!

Conglomerates are more likely to be neutral than Horizontal Mergers…

- But two reasons to be cautious:
  - Conglomerate effects are more difficult to assess than horizontal effects.
  - It also follows that the deterrence effect is lesser than in horizontal mergers*

*(e.g. assume 50% of HM and 10% of CM are anti-competitive. Merging parties expect most anticompetitive HM will be challenged so only 10% of anticompetitive HM are notified. This implies the proportion of <u>notified</u> HM and CG that are anticompetitive is the same (10%)

Anti-competitive effects

- Increased ability or incentive to:
  - price discriminate (through self-sorting) and thereby extract rents from consumers
  - engage in exclusionary practices (e.g. foreclosure through tying or bundling)
- Example: a conglomerate merger could facilitate bundling and tying or closely analogous practices such as exclusive dealing or full-line forcing.

What is Bundling?

- Selling two products together in fixed proportions.
  - Pure bundling: products are available only as a bundle (technical or commercial)
  - Mixed bundling, the products are available both on a standalone basis and bundled at a discount (consumers can mix and match components of different competitors as long as they are compatible).

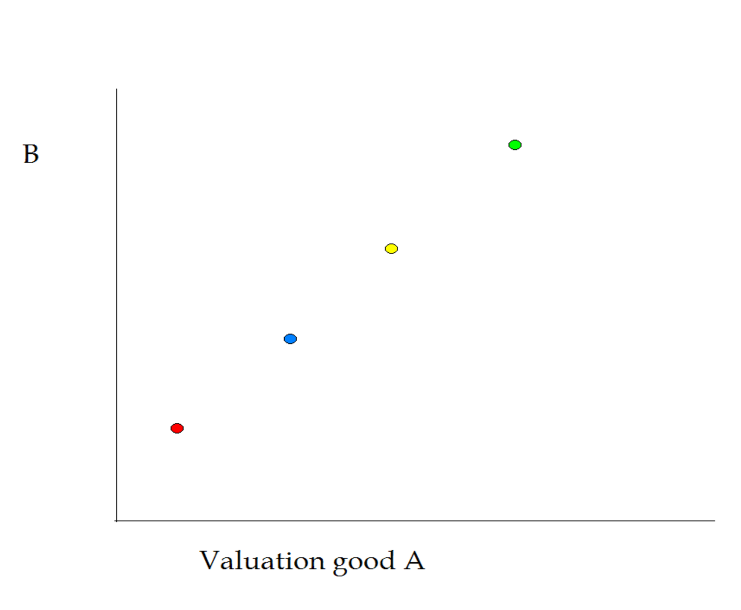
What is Tying?

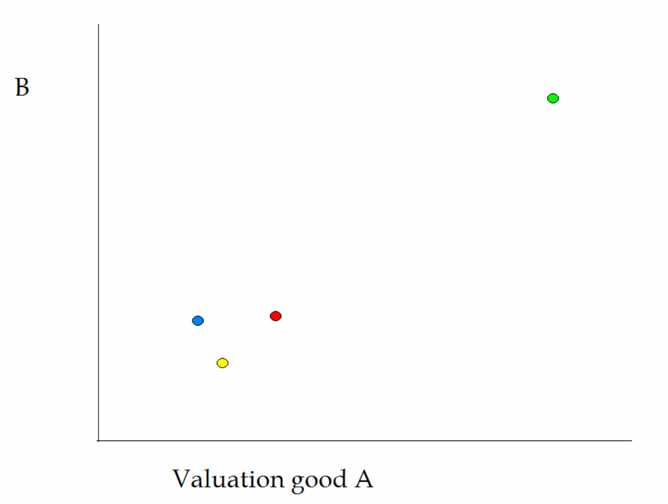
- Selling one product (the tying product) conditional on the purchase of another product (the tied product).
- Tying differs from bundling in that:
  - products are consumed in variable proportions and
  - it is left to the buyer to decide on the respective quantities (thus the tied good is also available on a stand-alone basis).
- (e.g.) a requirements tie-in which occurs when consumers have to purchase all of their tied good requirements in order to buy the tying product. The requirement might be contractual, or technical.

Rent extraction from consumers (Bundling)

- Bundling enables firms to obtain more consumer surplus from consumers who place different valuations on the separate goods
- By offering a bundle as part of the overall mix of options offered to consumers, a firm may be able to smooth out variability in demand and capture more consumer surplus.
- This effect is strongest when consumers' values of the products are negatively correlated

Pattern of valuations





Example

	Willingness to pay			
	Neelie	Philip	Lowri	Emil
Camera	30	25	20	10
Printer	10	15	20	30
Bundle	40	40	40	40

- If the monopolist sells each product separately it maximizes profits by setting the price of cameras at 20 and the price of printers at 15.
- Total profit is 20x3 + 15x3 = 105.
- However it can do much better by selling a bundle at 40. In this case all customers purchase the bundle and the monopolist efficiently extracts the whole consumer surplus and makes 160.
- Note the demand curve for each component is clearly downward sloping but the demand curve for the bundle is perfectly elastic

Rent extraction from consumers (Tying)

- Tying can serve as a metering device (e.g. durable good that requires supplies that vary with usage).
- By marking-up the variable inputs above marginal cost, the seller can price discriminate against intense users of the durable good with the sale of variable inputs as a metering or monitoring device for the intensity of use.
- In most cases of "metering", the tying and tied goods are complements.

Effects on consumers

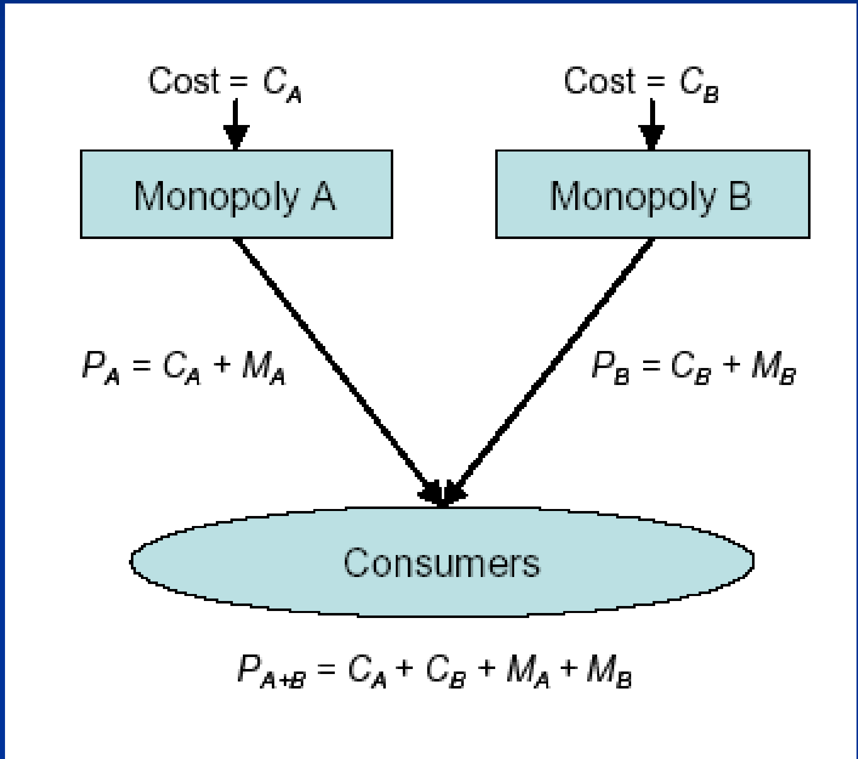
- Not possible to determine whether in general bundling or tying for price discrimination reasons harms or benefits consumers.
  - Consumers with relatively inelastic demand will likely face a higher price if price discrimination occurs
  - But it may increase output by serving consumers that would otherwise have been excluded from the market

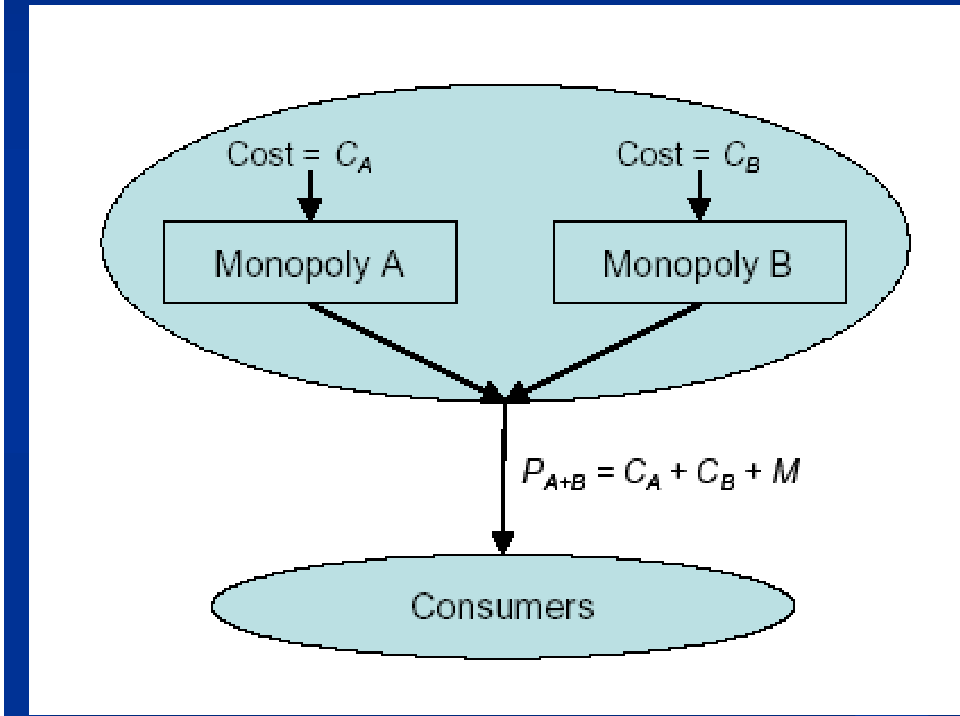
	East Theaters	West Theaters
Titanic	8000	3000
Star Wars	2500	7000

The Cournot effect (internalizing a pricing externality)

- Bundling is more profitable than offering each component separately: lowering the price of one component increases the sale of its own complementary component and not that of rival manufacturers.
- Does not depend on form of demand or cost function
- It does not require for goods to be perfect complements
- Implicit assumption: There are linear prices (reflecting uncertainty about customers' willingness to pay)

Internalising a pricing externality (the Cournot effect)





Importance of the Cournot Effect

- Cournot effect is larger (i.e. static incentives to bundle increase)
  - If system demand is relatively inelastic (but not perfectly)
  - As the *size of the bundle* increases (and/or components have similar weights)
  - With higher levels of *uncertainty about customer valuations* It is difficult to measure this kind of uncertainty but it is likely to be non-negligible:
    - No incentive for customers to reveal their willingness to pay during a negotiation
    - Preferences are affected by multiple factors which differ in intensity and relevance in different situations
    - Exogenous and unpredictable events as well as innovation continuously alter such preferences
- However because there are rival firms, there will also be a response to a price cut (in equilibrium). This response may offset the potential gain to the merging firms. (i.e. cross price elasticities matter)

So is bundling anti-competitive?

- Not if there is fierce competition in the market for one component.
- Chicago School argument in a nutshell:
  - the monopoly price of good A on its own is m
  - the competitive price of good B is c.
  - If the monopolist were to earn higher profits at price x for a bundle of A and B, then consider the implied monopoly price m' = x –c.
  - Since good B is available at c, anyone who buys the bundle is willing to pay an incremental price of x-c for A.
  - Were the monopolist to charge x-c for A alone and eliminate the bundle, its demand and, hence, its profits would be at least as large (as there may be some consumers who do not value good B even at its cost c).

Foreclosure mechanisms of tying/bundling

- Commitment to compete aggressively
- Soften competition by enhancing product differentiation
- Prevent sequential entry into the tied and tying market
- Reduce rivals revenues thereby inducing exit or prevent entry

Commitment to compete aggressively and deter entry or induce exit

- Technical bundling of a monopolised product with another (the tied good) is a commitment to sell in the future only in a bundled form.
- This may increase the intensity of competition with future rivals because the merged entity must sell the bundle in order to make profits on the monopolised product.
- Potential or actual competitor may be unable to reach the necessary scale to operate profitably in the tied good market
  - when scale economies in the tied good are large enough relative to the market and
  - bundling or tying make the difference between achieving or not adequate scale
- Consumers may be worse off:
  - when tied market rivals exit, prices may rise and the level of variety available necessarily falls.
- But commitment (i.e. technical bundling) is necessary as it leads to tougher competition if foreclosure fails.
  - If the competitor has already paid the sunk cost of entry and there is no avoidable fixed cost, bundling cannot be a profitable strategy.

Stark example

- Assumme:
  - Consumers are homogenous + buy a single unit
  - Demand for the two goods A and B is not interrelated
  - A monopolist can realise profits (rA-cA)+(rB-cB)
  - A potential entrant can produce good B at zero marginal costs, while cB>0 for the monopolist.
- If the monopolist sells both goods individually, he will cease to sell good B after entry has occurred.
  - The entrant's profits are then just cB.
- Suppose the monopolist offers only a bundle of A and B.
  - After entry he will prepared to offer the whole bundle for a price as low as cA+cB.
  - If the entrant chooses to sell at all, he will realise only the profit cB-(rA-cA).
  - By reducing the entrant's profits, bundling makes entry less profitable and thus less likely

Soften competition by enhancing product differentiation

- Technical bundling may be a way for two competing firms to better differentiate their products.
- Bundling provides a partitioning mechanism to sort heterogeneous consumers into groups with different willingness to pay.
- This can lead to price increases in the tying market or in both the tied and the tying market if both markets are imperfectly competitive.
  - E.g. Flight tickets + in-flight meals / Fixed phone + ADSL / Skis + Bindings
- Positive correlation in valuations strengthens the differentiation effect of bundling.
- The competition-mitigating effect of bundling is more pronounced the more items are bundled together.
- Consumers that mix-and-match may be harmed as the price of their most preferred system increases.

Pure Bundling of complementary products

- Assume a primary good and a complementary good
- Entry in the primary market is dependent on the success of entry in a complementary market.
- While an incumbent monopolist benefits from a competitor developing a better component, he will try to avoid the replacement of the whole system.
- Technical bundling can reduce the sales of a rival entrant's complement.
- If there are economies of scale this will impede the emergence of serious competitive threats in the primary market

Pure Bundling of complementary products II

- Examples:
  - if consumers' valuations for the complementary good are an increasing function of the number of other users (direct network effects) then bundling can allow the incumbent impose the standard in that market.
  - when the value of the tying good in increasing in the number of varieties of the tied good (indirect network effects) technical bundling can reduce the incentives for rivals to supply varieties of the tied good compatible with independent suppliers of the tying good.
- Consumer welfare may fall if bundling excludes a rival with a cheaper or more valuable good.

Mixed bundling of complementary goods

- Mixed bundling of complementary goods may allow the merged firm to expand market share relative to the situation prior to the merger by internalising the Cournot effect.
- Consumers with a preference for the components of the merging firms may gain in the short run as they pay less for the bundle.
- The merging firms will have an incentive to increase prices of stand-alone components since some consumers will switch from mix-ant-match systems to the bundled system.
- Independent rivals would cut price in order to retain some market share. However, they would not cut their prices as much as the merged firm (i.e. their system will remain more expensive than the bundled system of the merged firm).
- Mixed bundling can thus reduce the profits of rivals unable to counter-merge or team-up to offer a counter-bundle.

Mixed bundling of complementary goods II

- Mixed bundling may also be used strategically as a less costly means to predate.
  - A commitment to pure bundle can also be a powerful means to predate since it has a stronger negative impact on rivals profits.
- Moreover after a predatory period the merging parties shall be able to recoup the initial sacrifice by increasing prices significantly, quickly and durably.
  - Only then may the short-run benefits to consumers in the form of lower prices be more than offset by future price increases in the event of foreclosure.

Challenges

- Need to show:
  - Anti-competitive effect must follows directly from the merger (i.e. it is merger specific). The merger can change conduct (i.e. merger specificity – e.g. merger creates bundling opportunity)
  - Future conduct is profitable (i.e. credible & thus likely)
  - Competition is foreclosed or mitigated
  - Consumers are worse off than in the absence of the merger
- Unfortunately there does not exist a set of observable factors in a constant and robust association with each of the above steps.

Necessary conditions…

1. Market power in at least one of the components in the tie or bundle (tying good)
2. The market for the other component (tied good) has basic conditions that are conducive to market power. For example it might be imperfectly competitive due to economies of scale.
3. There must be a common pool of customers that is large relative to the pool of buyers for either the tying or the tied good separately.
4. The size and profit margins of the tying and tied markets are comparable.
5. The merged entity enjoys a product line unmatched by any competitor.
6. There are no opportunities to resale individual components previously purchased as a bundle or tie.
7. Competitors are unable or unwilling to match the tie or bundle either by counter-merger or teaming-up with each other.

Even then, need to develop a theory of harm

- Following the Courts it must be shown on the basis of convincing evidence that
  - The means and capacities brought together by the transaction may immediately create conditions allowing the merged entity to engage in exclusionary practices.
  - As a result of the merger, the merged entity has an incentive to engage in exclusionary practices. This involves showing that the alleged anti-competitive conduct is profitable for the merged entity, taking relevant incentives and disincentives into account.
  - These practices would in the relatively near future significantly impede effective competition in one or more of the markets concerned leading to consumer harm

What is convincing evidence?

- Evidence of past conduct (but this can not as a rule be determinative
- Internal documents attesting to the intentions to engage in exclusionary practices
- An economic assessment showing that such behaviour would objectively have been in the merged entity's commercial interests
  - Consider (costs; differentiation among rivals, correlation and dispersion in valuations in both tying and tied good markets; commitment mechanism; dynamics (network or learning effects, information asymmetries, innovation incentives etc)

Example GE / Honeywell

1. Naked predation
   - Honeywell's product range would benefit from GE Capital's financial strength to secure exclusive positions
   - Post-merger GE's aircraft leasing arm (GECAS) would buy only (or at least heavily favor) Honeywell products

2. Mixed bundling of an unrivalled range of complementary products
   - If profitable in a static equilibrium (i.e. no strategic profit sacrifice)
   - Predatory mixed bundling (i.e. short term profit sacrifice)

Ê Honeywell would become a dominant supplier of avionics, a market in which it already enjoyed a leading position.

Ê The foreclosure effects would allow GE to strengthen its dominant position in the large and regional engine markets.

Extent and ability to bundle…

- Relative to its competitors GE-Honeywell's ability to bundle is unmatched in terms of:
  - Size: The combined range of aircraft components constitutes about 1/3 of the price of an aircraft
  - Number of components: over which the merged firm would hold a dominant or near-dominant position
  - Additional services: GE-Honeywell can further extend the range of the bundle by adding financial and after-market services
- Bundling can take various forms (technical or commercial; pure or mixed)

Two Incentives (Strategies)

- Static vs. non-strategic
- Dynamic, predatory strategy
  - explicitly taking into account the likely impact of current behavior on future market structure (intensity of product market competition, ability and incentives to invest in R&D)

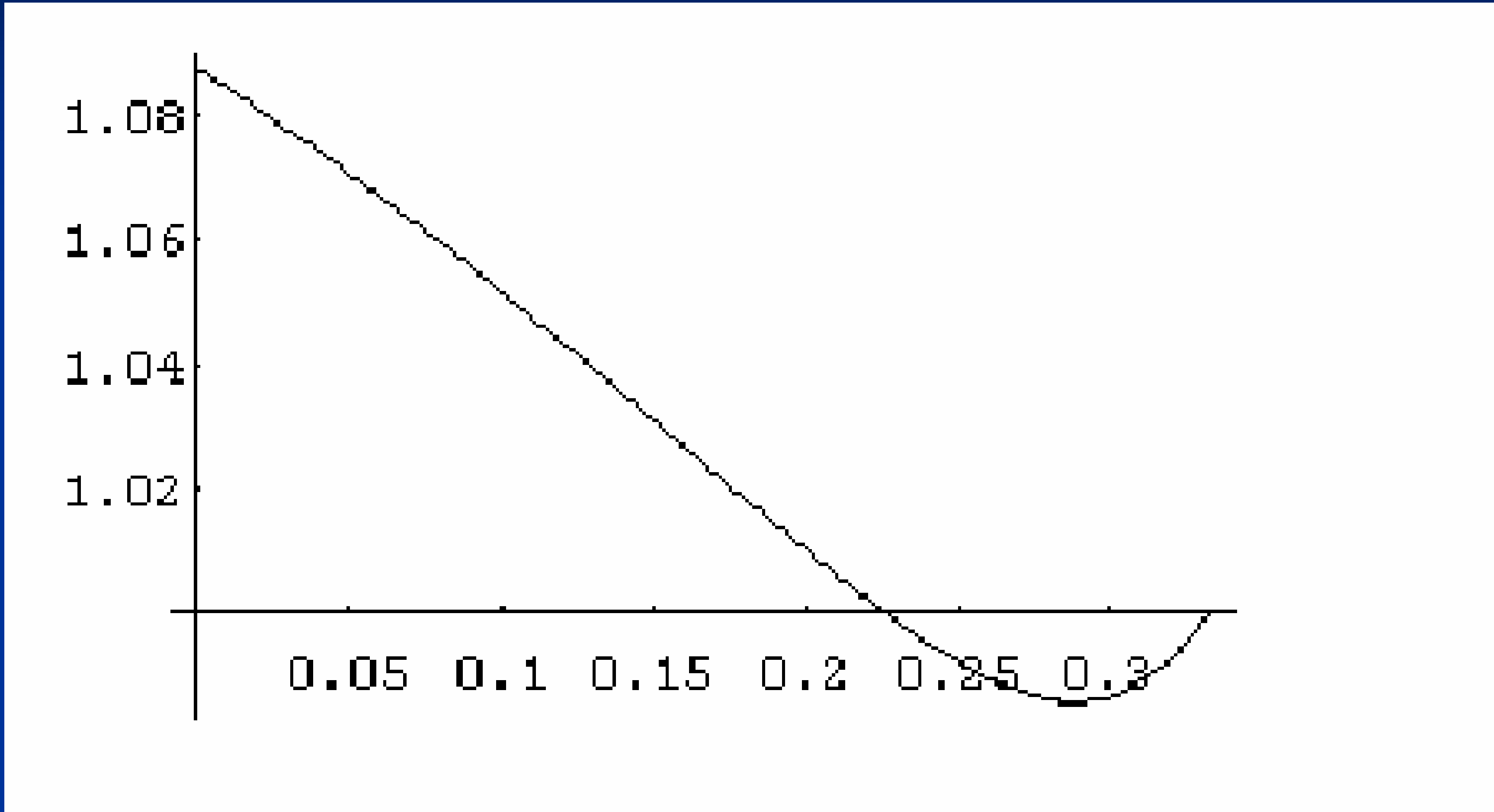
Static Equilibrium Mixed Bundling Effects

- On prices and demand
  - Prices of mixed bundle and outside system decreases (demand increases).
  - Price of GE/HW individual components increases (demand for mix-and-match systems falls)

- On rival profitability: All rivals in all affected markets lose market share to GE-Honeywell. This is a robust result.

Predatory mixed bundling
Incentives

- GE-HW can sacrifice short-term profits by offering discounted bundles to induce rivals to withdraw and stifle competition
- Necessary steps to establish incentives:
  - Likely Exclusion: Rivals will exit the market if the merged entity predates
  - Likely Recoupment: GE/HW will then increase the price of the mixed bundle and thereby recoup the initial sacrifice
- The decision contains all the elements but these are not articulated together.
  - (in particular predatory mixed bundling and naked predation reinforce each other)



(ii) Withdrawal of rivals aggravates the negative effects on consumer welfare.

Likely Exclusion

- Finance is important in the aircraft manufacturing industry:
  - large up-front sunk costs, long lead times (see also §110), informational asymmetry
- Capital markets do not work efficiently due to asymmetric information (about the likely returns of the proposed investment).
  - In this case a firm's ability to raise external funding depends on having a sufficient level of retained earnings (see §204), §403 => asymmetric information
- There are significant differences among competitors in terms of their internal financing capabilities. GE has a comparatively much stronger financial position
  - Generates about USD 15bn annually in cash, Triple A rating, GE capital is not regulated in the same way as other financial and banking institutions, PW (§180-183 & § 190); RR(§200-205) ; RC (§302-304) ; HS (§ 323-324)
- GE-Honeywell can endogenously reduce the funds available to its rivals by (§ 354) :
  - Further reducing the price of the bundle and/or
  - Resorting to (pure) technical bundling (mainly for new generations of products such as Electric Aircraft Engine project)

Likely Recoupment (counter-strategies)

- Competitors: It cannot be expected that rivals would be either able or have the incentive to counter-bundle by teaming-up (or counter-merging)

  No Ability

  - Transaction cost in defining rent-sharing agreement between bundling partners
  - Unmatchable range of products
  - Limited number of uncommitted partners

  No Incentive

  - With a *low market demand elasticity* counter-bundling is not profitable. There is no prisoners' dilemma. Instead, a merger confers a first-mover-advantage.
  - A counter merger may make no overall commercial sense
- Customers:
  - Neither Airlines nor aircraft manufacturers can be expected to pay for the public good of maintaining competition.
  - Cost pressures and a tough competitive environment make cooperation difficult and unsustainable.
- The benefits from increased market power are long-lasting given the low-risk of new or re-entry and thus likely to compensate for any (likely small and temporary) sacrifice in profits.