

## Agricultural Marketing Orders (AMO)

- AMO is legislation that allows producers to withhold output from a certain market in order to raise market price.
- Can be instituted for various commodities with 2/3 producer support.
- 1933 – milk (and also for some horticultural products)
  - Congress adopted MO for milk in order to give farmers an opportunity to act collectively against monopsony power of milk processors
  - Sets the minimum price milk processors (in primary market) must pay
  - So the price of fluid milk is higher than the price of industrial milk (that is used to produce cheese or butter, in the secondary market)
- 1934 – cotton and tobacco
  - E.g., each tobacco producer was allocated a marketing quota and any sales above the quota were taxed at a prohibitive rate
  - Vegetable and fruit marketing orders aim to control quality (grade and size) and flow (quantity) of the product that can enter the fresh product market

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## Agricultural Marketing Orders (AMO)

- We will study AMO as an example of price discrimination
- AMO
  - allows producers to withhold output from the primary market (with lower elasticity) in order to raise market price in that market or
  - sets a minimum price in primary market and not in secondary market (with higher elasticity)
  - In most MO primary market (with higher price) is fresh food and secondary market is processed food. Since processed food cannot be converted back into fresh food resale is not possible
- AMO allows farmers to engage in price discrimination
- What are the efficiency and welfare effects of AMO?

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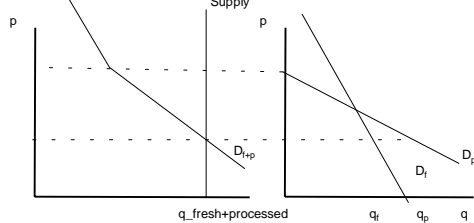
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## AMO's Efficiency and Welfare Effects

Fixed supply and no restrictions on the output that can be sold in the primary market




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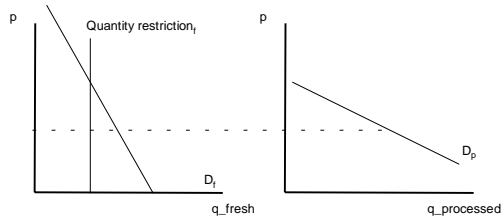
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## AMO's Efficiency and Welfare Effects

Quantity restriction on the output that can be sold in the primary market



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## AMO's Efficiency and Welfare Effects

- Consumers in fresh market lose and firms win
- Consumers in processed market win and producers lose
- Price is higher than competitive price in fresh market and lower than competitive price in processed market
- Consumers lose more (net) than producers gain (net) so welfare is lower under AMO than under competition
- The above was for when supply is fixed (that is, not responding to price changes, and so AMO transfers product from fresh to processed market)
- If supply not fixed (supply not vertical) then the social loss can be even greater than above: After AMO the price for the product (as an average of fresh and processed price) increases and so producers respond to AMO by raising production. Since there is a quota on fresh market the additional supply goes to processed market where price is lower than costs already (costs exceed extra value to consumers)

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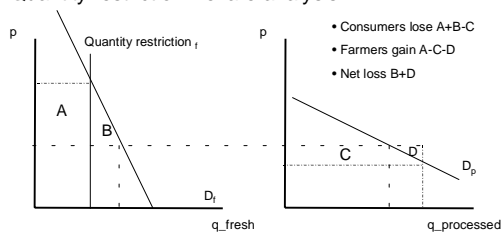
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## AMO's Efficiency and Welfare Effects

Quantity restriction welfare analysis



- Consumers lose A+B-C
- Farmers gain A-C-D
- Net loss B+D

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## Utah Pie v. Continental Baking Co. (1967)

- Primary line price discrimination
- **Issue:** Is below-cost pricing by large firms (such as Continental Baking Co) enabling them to enter new geographic markets (such as the Salt Lake City frozen pie market) already occupied by smaller firms (like the petitioner Utah Pie, with 18 employees and family owned) illegally discriminatory?
- Continental Baking Co. (a large company) was engaging in predation, charging a lower price in the market where it faces rivals (Utah) and a higher price where not.
- During the period when Continental entered Salt Lake city market, the prices decreased and moreover, the price it charged in the Salt Lake city market was lower than the prices he charged for similar pies of like grade and quality in other markets closer to its plants.
- Prices of Continental Pies ranged from \$5.00 to \$2.85.

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## Tie-in Sales

- A consumer to buy a good has to buy another good as well
- A tie-in can be used to
  - Price discriminate: that is, a tie-in sale enables the monopolist to earn higher profits than if the two goods were sold separately at constant prices.
  - Other reasons:
    - To increase efficiency (example: lace shoes sold with laces already, skate boards sold with wheels on)
    - Evade regulations (tie a regulated product to the purchase of a non-regulated product)
    - Secret price discounts (tie-ing a gift worth the amount it wishes to discount the original product – that way rivals are unaware of discount of original product)
    - Assure quality (example Kodak film sold only with development included – problem of independent developer making a mistake and consumers not knowing whether it was a problem of the developer or of the film)

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## Tie-in as a method of price discrimination

- Two types of tie-in sales:
  - Bundling (two or more products are sold in fixed proportions)
    - Does not work if consumers can break the package and resell
  - Requirement tie-in sale
    - Does not work if consumers can purchase the tied (required good) elsewhere at the competitive price
- Purpose to increase monopoly profits by causing different consumers to pay different prices
- Tie-in of
  - independent products (value that consumer places on the product does not depend on the consumption of the other product)
  - interrelated products (whose demands are related)

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### Package Tie-in of Independent Products

- Both products monopolized profitable tie-in (Tables 10.1, 10.2)?

	Type 1 Consumer	Type 2
Amount willing to pay for A	9000	10000
Amount willing to pay for B	3000	2000
Amount willing to pay A+B	12000	12000
Amount willing to pay for A	9000	10000
Amount willing to pay for B	500	2000
Amount willing to pay A+B	9500	12000

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### So... Conditions for profitable bundling

- No resale possible
- Have some market power
- Consumers' tastes are such that the following condition is met: Consumers who put relatively high valuation on one good place a relatively low value on the other good.

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### Package Tie-in of Independent Products

- There are in principle three pricing schemes:
  - Individual good pricing
  - Pure bundling
  - Mixed bundling: Some firms give consumers a choice between a bundle and buying goods separately (e.g. season tickets as well as individual game tickets, fixed price meal and `a la carte menu)
- Which of the above pricing schemes earn the firm highest profits depends on
  - How much consumers are willing to pay for the goods
  - Costs of production of the goods

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## Tie-in of Independent Products

- Suppose now only one of the products monopolized
- Does the monopolist in product A have an incentive to package its product in fixed proportions (package tie-in) with another good, B, that is competitively produced?
- Short answer: No
  - By packaging A with B together the monopolist is throwing away sales by forcing some consumers to buy a package that includes a product that they do not value highly (B). As a result some consumers that value A reasonably high do not buy A+B.
- Requirements tie-in in this context could still be profitable
  - (Mathewson and Winter (1997) – example: a gasoline supplier that sells to gas stations gasoline tied to batteries and other accessories (these last two with a mark-up). Objective is to spread out the distortion of the mark-up across several products instead of one.

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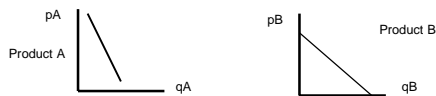
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## Profit Maximization with Interrelated Products

- Suppose now demands are interrelated
  - Example: Product A is complementary to product B



- The monopolist profits is the sum of the profits from selling the two products:
  - Profit of product A =  $(p_A - c_A) D_A(p_A, p_B)$
  - Profit of product B =  $(p_B - c_B) D_B(p_A, p_B)$

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## Package Tie-in of Interrelated Products

- Does the monopolist have an incentive to package its products in fixed proportions (package tie-in)? YES.
  - The key idea: It would be a way to induce efficient behavior by its consumers.
    - Example: Aluminum and steel are both used in the production of cars. There is an efficient combination of their usage based on the ratio of marginal costs of aluminum and steel. If aluminum is sold by a monopolist then price of aluminum is greater than its marginal cost and so the car manufacturers would use relatively too little aluminum and relatively too much steel in the car production, which is an inefficient input combination. The monopolist could tie the purchase of aluminum to steel such that the relative usage would be equal to the efficient one.

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## Requirement Tie-in of Interrelated Products

- Examples:
  - HP printer requires HP toner and recommends HP transparencies.
  - A.B. Dick that had a monopoly on selling mimeograph machines required that ink (where it did not have a monopoly) was to be purchased also from A.B. Dick.

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## Requirements Tie-in of Interrelated Products

- What about requirements tie-in in this context ?
  - The key idea: The firm sets a price for the first good and sets a high price (above the competitive price) for the tied good. This way the monopolist is able to get the whole willingness to pay for the first good from different consumers (that have different usage of the tied good), that is, the monopolist is able to perfectly price discriminate in the first good market.
  - For example: Shirt buttons cost 5 cents to produce. A monopolist develops a new machine to sew buttons automatically. Before buttons were sewn by hand at one cent/button. There are large manufacturers of buttons and small manufacturers and their willingness to pay for the machine is equal to the labor costs they would save by using the machine:
  - Shirt manufacturers Button usage Willingness to pay for machine
    - small 1000 \$10.00
    - large 10000 \$100.00

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## Package Tie-in of Interrelated Products

- Suppose now the monopolist makes a requirement that shirt producers can use the machine for free but have to buy the buttons from him at 6 cents (1 cent higher than competitive price)
  - As a result by being charged a one cent premium for the buttons, large shirt manufacturers pay a higher effective price for the machine, \$100.00 and the small manufacturers pay \$10.00
  - This example assumed that by being charged a higher button price that the same number of shirts was still being produced. Therefore the monopolist could extract the whole surplus from the machine valuation, i.e. make perfect price discrimination.
  - If, on the other hand, firms reduce their shirt production because they are being overcharged on buttons (6 cents instead of the competitive 5 cents) then the tie-in cannot achieve perfect price-discrimination.

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## Next lecture

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Problem set 3  
Some practice exercises

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