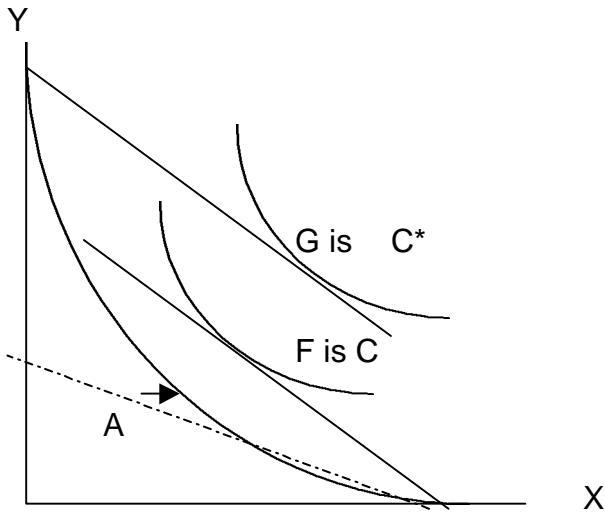
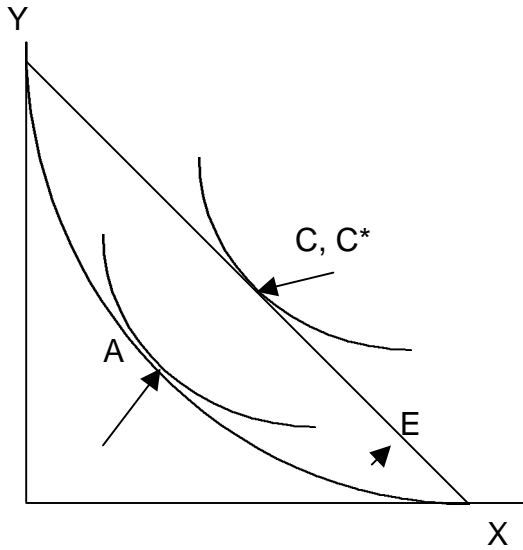


INCREASING RETURNS AND MARKET STRUCTURE: EFFECTS ON INTERNATIONAL TRADE

- A. Imperfect competition as a Determinant of Trade and the Gains from Trade
1. Evidence suggests that imperfect competition produces larger gains from trade for small economies than for larger ones
 2. If there is a monopoly producer in autarky, then equilibrium is not tangency of indifference curve and PPF. $P > MC$, Q produced and consumed "too small", etc. \rightarrow welfare loss.
 3. Trade can help: foreign competition \rightarrow **pro-competitive gains from trade**. (Non-comparative advantage gains from trade)
 4. Simplest case: small economy, single firm in 1 sector in autarky. Open to trade, faces given P_w . Decompose gains into comparative advantage and pro-competitive.
 5. If 2 identical economies, each single producer, then Cournot-Nash (take output as given, compute best result). Q produced/consumed higher than monopoly levels, so both comparative advantage and pro-competitive advantage.
 6. Relates to welfare economics: trade improves welfare if production expands for (formerly) monopoly good. This is sufficient condition for gains from trade, but not necessary condition.
 7. Note that no reason to refuse to trade if foreign supplier is monopolist. Losing from trade comes from domestic distortion, not from foreign distortions.
- B. Heckscher-Ohlin and Ricardian Worlds versus Reality
1. Stylized facts of H-O and R worlds
 - a. Countries concentrate production on a few commodities
 - b. Demand for factors of produced commodities reflects factors available in country (K-intensive countries produce K-intensive goods)
 - c. If tastes are same across countries, then capital-intensive countries import capital and labor-intensive goods, and vice versa. There is a wider dispersion in factor intensities of goods consumed than of goods produced in a given country that engages in world trade. But on average, capital-abundant countries import labor-intensive goods.
 - d. Growth in physical and human capital results in higher wage rate, which changes the optimal K/L ratio toward higher use of K. So range of goods produced for export changes as a country grows.
 1. Product variety and Intra-Industry Trade
 - a. Demand for variety (also demand for characteristics: Kelvin Lancaster) supports many types of same goods. So trade may

- occur within industry for different types of goods (blue vs brown shirts, etc.)
- b. If single countries' markets are too small to reach constant returns to scale, they will be producing under increasing returns to scale in autarky.
 - c. Observed: In autarky, larger countries produce a larger range of goods (more products) than smaller countries
 - d. Observed: Tendency for greater amounts of US intraindustry trade with in complex, differentiated goods for which US has no obvious comparative advantage or disadvantage.
 - e. Monopolistic competition: high degree of competition, so firms' profits driven to zero with free entry of firms, but products distinguished from each other, so facing downward-sloping demand. (Chamberlin, Robinson)
 - a. Theory of monopolistic competition is controversial. See Stigler: *Organization of Industry*, "Monopolistic Competition in Retrospect" pp.309-321 for a devastating counter.
 - i. Logical flaws in monop. Compet → use either monopoly or competition analyses as questions/problems require. Trade results in chapter 8 generally are consistent with increasing returns to scale, and do not require monopolistic competition. Note that Ricardian differences in technology are ignored under monopolistic competition discussion
 - f. Observed: Gross trade= Sum of (X+M) for each good > Net trade=Total X - total M. H-O and Ricardian models say that specialization means these should be close. So puzzle is explained (in part) by intraindustry trade and economies of scale.
 - g. Increasing returns to scale means gains from trade between identical economies. This is another non-comparative advantage gain from trade.
 - h. Sources hard to disentangle in practice.
 - i. Gains from trade from (1) pro-competitive gain from increased production of underproduced goods (measured by excess of price over marginal cost; but watch out -- in the presence of fixed costs, prices must exceed marginal costs to break even. This is a recurrent problem in these measures) and from reduction in average cost of producing existing output (scale effect)
 - j. G from t (2): Exit of some firms, freeing resources used in fixed costs
 - k. G from t (3): Increased diversity of goods available (contrasts same goods at lower prices gain with more goods at same prices)
2. Modeling increasing returns to scale. Assume 2 goods, 2 factors, increasing returns to scale in 1 or both goods
- a. If scale economies in production outweigh factor-intensity effects, then PPF is bowed inward toward origin (production set is non-

convex). Autarky production/consumption point still tangency between PPF and IC of consumers (point A)



- b. Now 2 identical economies can have gains from trade: each specializes in different good, price is line connecting 2 intercepts, IC's of both countries tangent at midpoint, C,C*. This is a possible, but unlikely equilibrium. Why?
- c. What if tangency is at E, between midpoint and X axis?
- d. Final solution is at F and G, with home country producing X and star country producing Y and unequal gains from trade in 2 identical economies under scale economies. Note that it is possible for the price of X to fall so far that welfare under trade is less than autarky.
- e. Also unequal effects on factor prices. If Y is k-intensive good, the country specializing in X will have higher w/r than the other. Factor price ratios driven apart by trade. (But this is relative: does not

imply labor is necessarily worse off in country specializing in Y. If absolute productivity rises, W may increase even as w/r falls.)

3. Sources of gains from trade with increasing returns to scale
 - a. Pro-competitive gains
 1. Profit effect: $p-MC$ is profit per unit, and if $P > AC$, then if quantity produced goes up with trade, the part of profits due to more units is profit effect
 2. Decreasing average cost effect: as Q rises, AC falls so in addition to more units increasing profits, there is higher profit per unit, so total profits rises.
 - b. Firm-exit effect: if trade's increased competition leads to losses and exit, then smaller number of firms can operate and lower average costs (if started from monopolistic competition, for example)
 - c. Increased product diversity
 - d. Specialized plants and inputs.
- C. Monopolistic Competition (Krugman in B, chapter 9 gives straightforward, simple model)
 1. Again, trade between identical economies possible (noncomparative advantage reason for trade, also trade is not caused by differences in factor endowments or technologies) by "extending the market" and allowing for scale economies
 2. Free trade has similar effects to growth in labor force or to regional areas.
- D. Effects of increasing returns and imperfect competition on trade policies
 1. May encourage governments to "assist" firms in international markets through subsidies (direct or indirect) to exports. Subsidies improve domestic welfare if $P > MC$, especially if MC is falling with higher production levels. But Cournot (firms take competitors' quantity as given, then choose own optimal policies) is key for result.
 2. Imperfect competition may mean monopoly profits from foreign consumers that can be captured through output subsidies for domestic firms
 3. Bertrand competition (take price instead of quantity of rival as given) results in "too many" exports so the welfare-maximizing result is an export or import tax, not subsidy.
 4. Free entry and exit if policies change may also give different optimal policies (subsidy hurts subsidizing country and helps foreign country)

5. Consumers' welfare versus producers' welfare: VERs help producers (reduce competition in markets) at expense of consumers
6. More goods means substitutes/complements to domestically-produced goods can matter for foreign trade policies like tariffs or subsidies. Improving terms of trade but simultaneously increasing the price of a complement does not improve welfare, since domestic production of complement also falls, especially if economies of scale.