Gains from Trade

Normative Issue

- Whether trade benefits countries or not

- Essence of Ricardo’s doctrine of comparative cost advantage: trade is a positive-sum game

- Free trade is beneficial for all the trading partners if each country exports the good in which it has a comparative (cost) advantage.

Gains from Trade Theorem

- ***GFT theorem***: International trade according to comparative advantage makes all countries strictly better off in terms of social welfare.

- **Caveats**:

(1)Trade creates both winners and losers in each country and the welfare argument of free trade is based on implicit compensation principle.

(2) Second, the post-trade relative prices in each country at which goods are traded must strictly lie between pre-trade relative prices of trading partners.

- *GFT* does not mean that everyone in a country is better off. trade only ***potentially*** benefits *all* in a trading nation

Trade, Gains and Redistribution: Demand-Supply framework

Pre-trade or Autarchic *Equilibrium*

$$D_j(p_a) = X_j(p_a)\text{, } j = \text{C, T}$$

$$D_j^*(p_a^*) = X_j(p_a^*)\text{, } j = \text{C, T}$$

National budget constraint of home country $pX_T + X_C = pD_T + D_C$

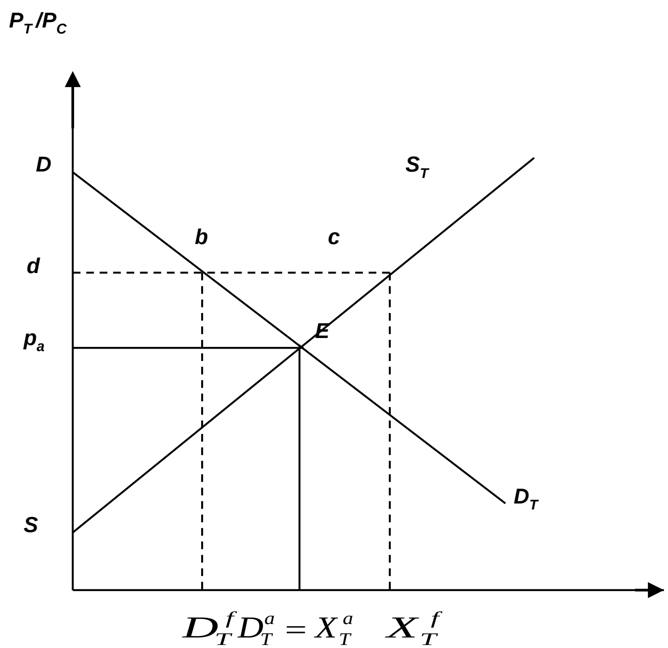
Walras' Law $pE_T + E_C = 0$ **where** $E_j = D_j - X_j$ **excess demand**

The sum of the values of excess demand for all commodities produced and consumed in an economy is zero

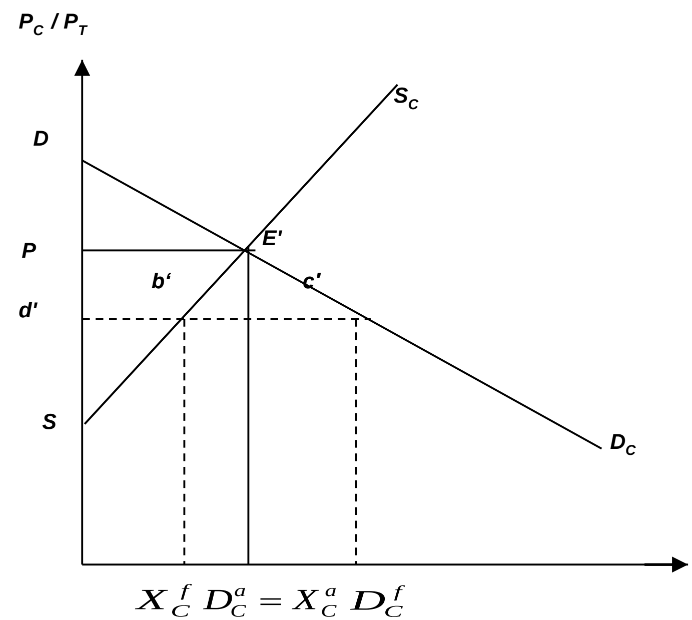
Post Trade: $E_C = -p_f E_T$

Pre and Post trade Equilibrium in Home Country

Net gain after changes in CS & PS



(a) Domestic Market for Textiles



(b) Domestic Market for Computers

Alternative approach: Resource Reallocation and Gains from Trade

- ***Production Possibility Frontier (PPF)*** is the locus of technologically maximum (and efficient) output levels of a commodity that the economy can produce for different levels of output of the other commodity by exhausting all the resources of the economy.

- The absolute slope of the PPF is the ***Opportunity cost*** or the marginal rate of transformation in production (MRT) defined as the units of computers that the economy must forego to produce an additional unit of cotton textiles. This is in fact the ratio of social marginal cost for textiles to that for computers.
- In the absence of externality it is the relative *supply price.*

Shape of PPF

- *Scale effect* at initial factor prices: MRT increases if production technologies in both sectors are DRS, remains constant if CRS and declines if IRS.
- *Technique effect* as factor prices change: MRT increases by diminishing marginal productivity.

- Hence, for CRS and DRS technologies, along with diminishing marginal productivities, the MRT increases. The PPF thus would be strictly concave and the production set strictly convex.

- For IRS, the scale and technique effects move in opposite directions. For weak IRS, the technique effects dominate so that the PPF is concave. But for a strong IRS, the scale effect dominates so that now the PPF is convex.

Summary of shape of PPF & Laws of production

- *Scale effect:*
- DRS:MRT increases
- CRS: MRT increases
- IRS: MRT increases
- *Technique effect:*
- MRT increases by diminishing MP.

- CRS & DRS: MRT rising, hence PPF concave.
- IRS: MRT can be rising (if SE<TE for weak IRS), falling (if SE>TE for strong IRS), hence PPF can be concave, convex.

Community indifference curve (CIC)

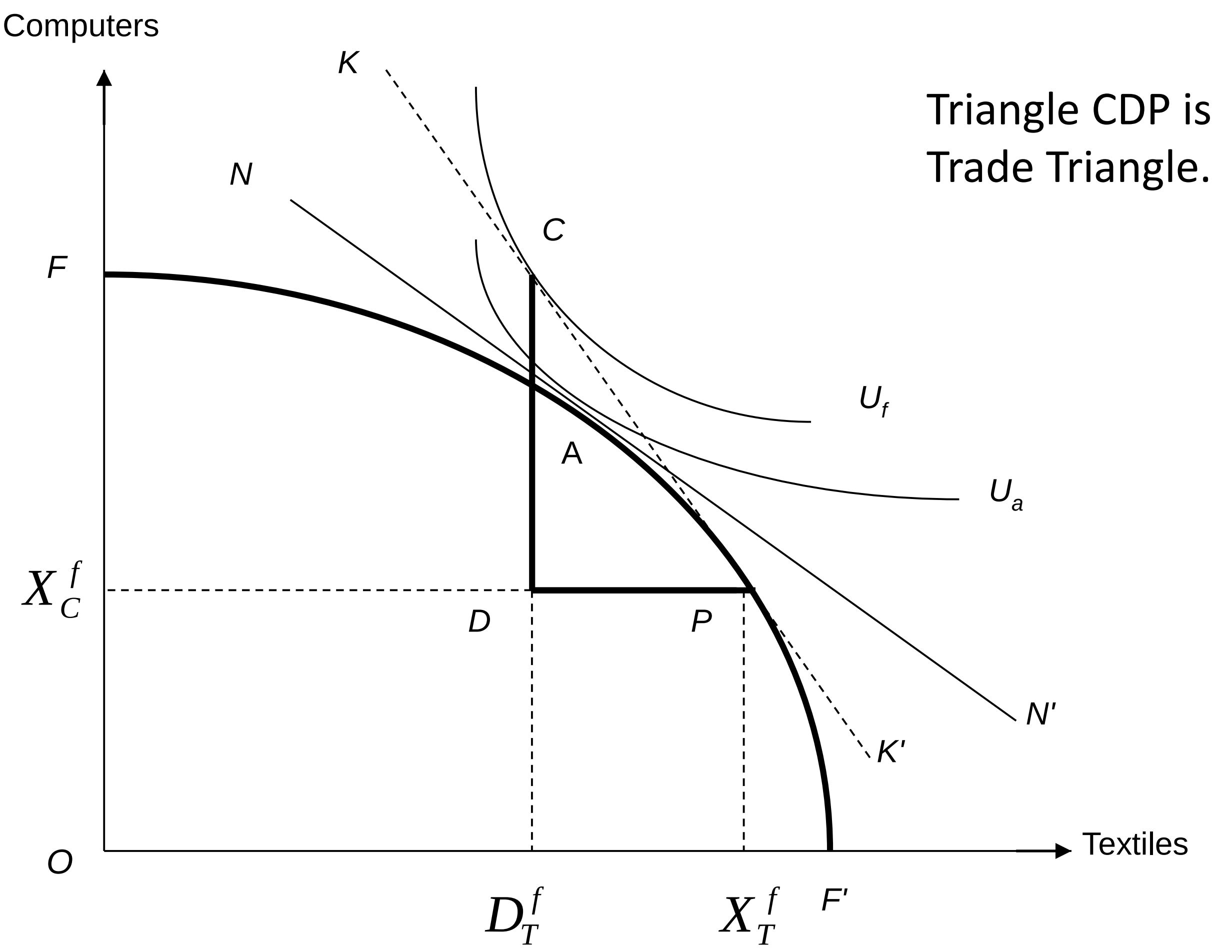
- It is the locus of different bundles of consumption of two goods for which the society attains the same welfare level.

- CICs are negatively sloped and strictly convex to the origin.

- CICs are non-intersecting under identical and homothetic tastes.

- The absolute slope of the CIC is the marginal rate of substitution in consumption across all individuals or the relative *demand price,* i.e., the relative price that the consumers are willing to pay for textiles per unit of computers.

Resource Reallocation and Gains from Trade



Triangle CDP is called Trade Triangle.

Equilibrium condition

- At autarky $MRS(A) = p_d = MRT(A)$

- *Post trade* $MRS(C) = p_f = MRT(P)$

Two Components of GFT

I. **Exchange gain** (*consumption gain)* is realized due to exchange of autarkic production bundles by the trading nations.

International trade expands the feasible set of consumption by allowing a country to consume beyond its production possibility frontier and creating scope for welfare gain.

II. Specialization gain (*production gain)* is realized through production specialization and change in commodity composition according to comparative advantage of nations.

Gains from Trade and Pareto Improvement

Gains from trade is not a Pareto statement.

That is, free trade is not a Pareto improvement over no-trade or autarchy.

Free trade will be a Pareto superior state to no-trade or autarchy provided there is a compensation mechanism.

Implications of GFT theorem

I. Arbitrage by self-interested atomistic agents makes others and the country better off

reiteration of Adam Smith's invisible hand.

II. Trade according to comparative advantage makes *all* trading partners better-off.

need not exploit trading partner to gain from trade.