

Sources and Implications of Comparative Advantage

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Ohlin Lectures

- Lecture 1:
Defining Comparative Advantage
- Lecture 2:
Sources of Comparative Advantage

Lecture 2: Sources of CA

- Causes of CA in Theory
- Can CA Change?
- Can CA Be Created?
- Policy Implications of CA

Causes of CA

Differences in

- Technology
- Factor Endowments (HO Model)
- Tastes
- Size (with increasing returns)
- Market structure (with imperfect competition)
- Location (with trade costs)
- Initial conditions (agglomeration)

Causes of CA: Technology

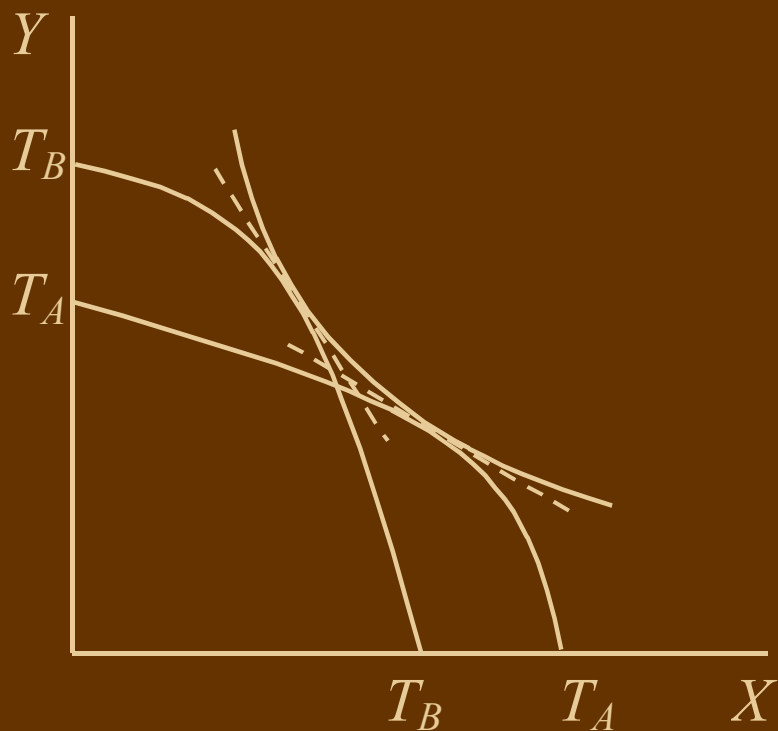
- This is the Ricardian Model
- In more general models (HO)
 - What matters is Hicks-neutral differences
 - Factor bias of differences not so important

Causes of CA: Factor Endowments

- With identical constant-returns-to-scale (CRS) technologies, we have The Heckscher-Ohlin Theorem (HOT):

If countries differ in relative factor endowments, then each has CA in good that makes relatively intensive use of its abundant factor.

- Illustration of Endowments



A=K-abundant, B=L-abundant
X=K-intensive, Y=L-intensive
Identical preferences



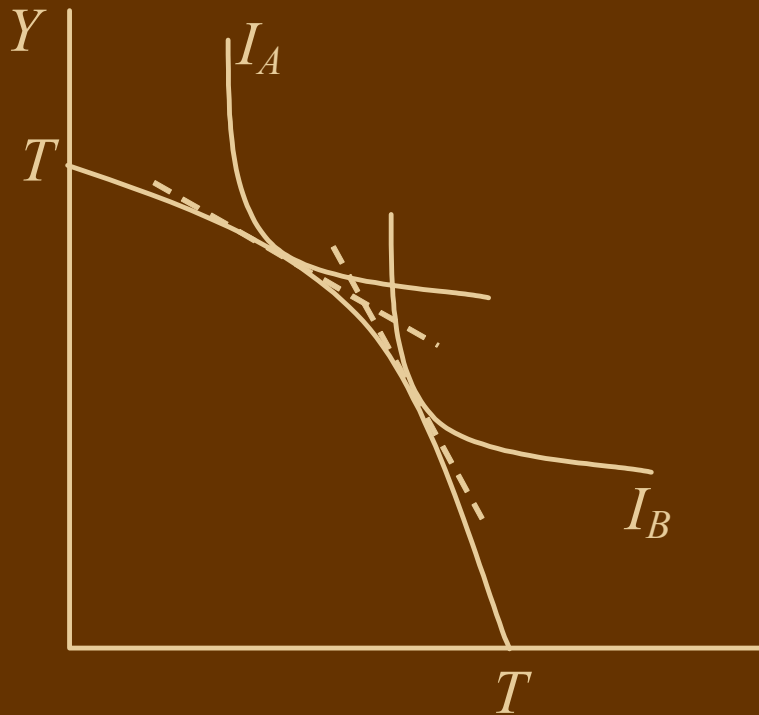
A has CA in X, B has CA in Y

Causes of CA: Tastes

- With identical technologies and relative factor endowments, but different preferences, each country has lower autarky price for the good it less prefers:

Other things equal, countries have comparative advantage in goods that they are *less* inclined to consume.

- Illustration of Tastes



A prefers Y, B prefers X
Identical technologies
Identical factor endowments
↓
A has CA in X, B has CA in Y

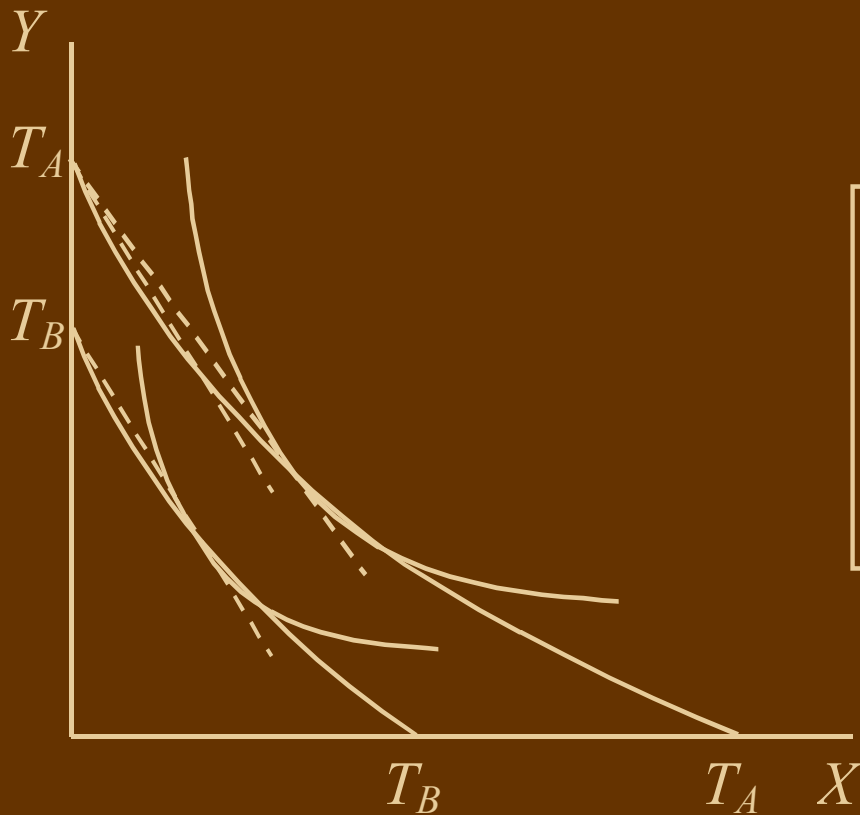
- Notes on tastes:
 - Result is consistent with Ohlin's version of HOT, since autarky factor prices differ indicating version of abundance.
 - If preferences are identical but not homothetic, and if identical relative endowments imply identical per capita incomes, then there is no trade.
 - Non-homotheticity can, however, weaken factor-quantity version of HOT, if non-labor-intensive good is income elastic.

Causes of CA: Country Size

- With identical technologies, factor endowments, and tastes, but with increasing returns to scale (IRS) in one good only, autarky price is lower for that good in the larger country:

Large countries tend to have CA in IRS industries.

- Illustration of Size



A=Large, B=Small

X=IRS, Y=CRS

Identical preferences



A has CA in X, B has CA in Y

- Notes on Size:
 - Result is cleanest with perfect competition, but this requires that IRS be external to firms.
 - Low autarky price now does not necessarily determine exports under free trade, since with trade, cost depends on size of world market, not size of country. But large country has an edge during adjustment from autarky to free trade.
 - With imperfect competition, story depends on market structure, but country size is still likely to lead to exports of IRS industry.

Causes of CA: Market Structure

- Can market structure alone cause CA?
- That is, if 2 countries are identical in all respects except for their (regulated?) numbers of firms, can this cause CA and trade?
- Yes, for CA measured as either autarky prices, or autarky costs (though they are opposite).
- But does this matter for trade?
 - No, if trade is free and frictionless
 - Yes, with trade costs
- Is this really CA?

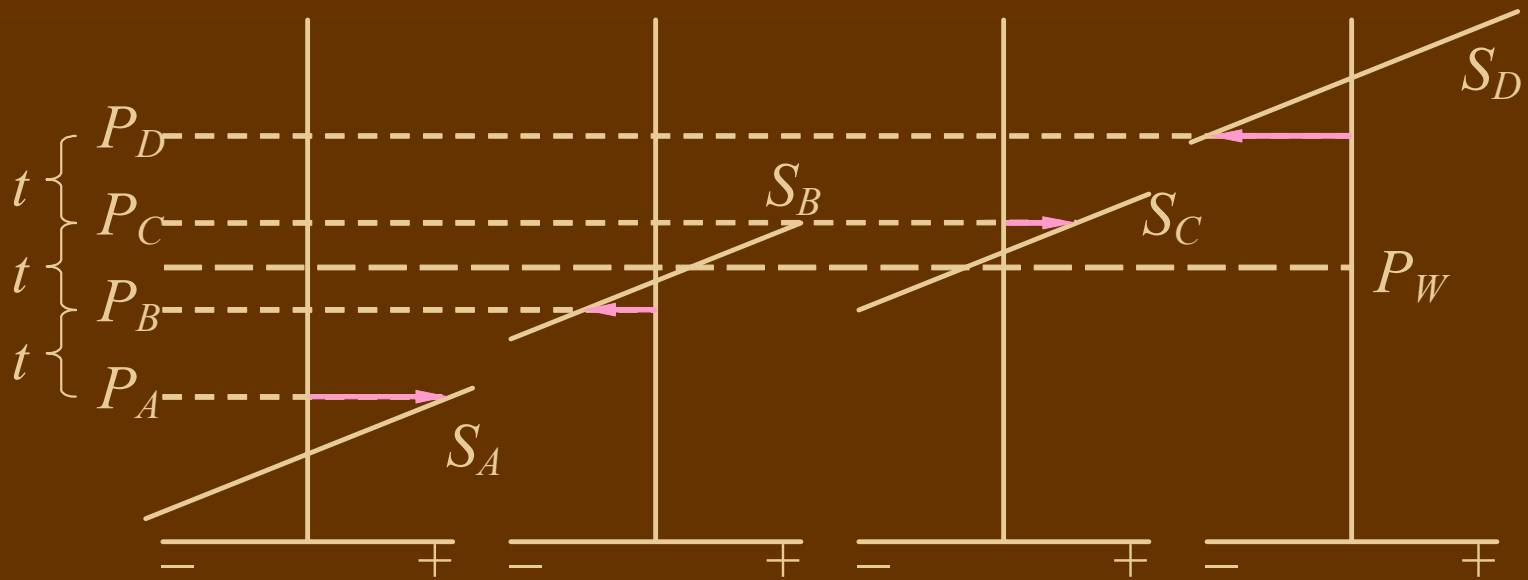
Causes of CA: Location

- Trade costs can matter for trade, and may need to be included in the concept of CA:

With trade costs, CA depends on costs, *not* relative to the world as a whole, but relative to countries with respect to which trade costs are lowest.

- Hence, “Local” CA.

Illustration of local CA:



- Other ways that location can matter:
 - Proximity to cheap imported inputs.
 - Other?

Causes of CA: Initial Conditions

- These matter when
 - Increasing returns and/or externalities yield multiple equilibria.
 - First-mover advantage reduces cost or enhances value.

Can CA Change?

- Clearly, yes. Most of the above causes change over time:
 - Technology
 - Factor endowments
 - Tastes (via incomes, fashion)
 - Size
 - Location (via trade costs, or size of nearby markets)
- Thus CA is not immutable.

- *Propensities for change* may be more nearly constant:
 - High propensity to save (low rate of time preference) causes capital accumulation over time and CA in capital-intensive goods.
 - High cultural value on education causes accumulation of human capital...
 - Cultural inclination toward curiosity or risk-taking may cause technological change, hence CA in new goods and processes (Vernon).

- But much change arises from policy:
 - Deliberate, as in industrial policy
 - Inadvertent, as in military spending and research.

Thus:

*CA can be created by policy,
and it often is.*

Policies that Change CA

- Technology
 - Government sponsored research
 - Defense procurement
 - Intellectual property protection
 - Incentives for innovation
 - Taxes and subsidies
 - Regulation

Policies that Change CA

- Factor Endowments
 - Incentives for saving
 - Incentives for investment
 - Government borrowing
 - Infrastructure investment

Policies that Change CA

- Tastes
 - Public education programs (e.g., smoking)
- Market structure
 - Competition policies
- Initial conditions
 - Subsidies
 - Government procurement

Timing of CA Policies

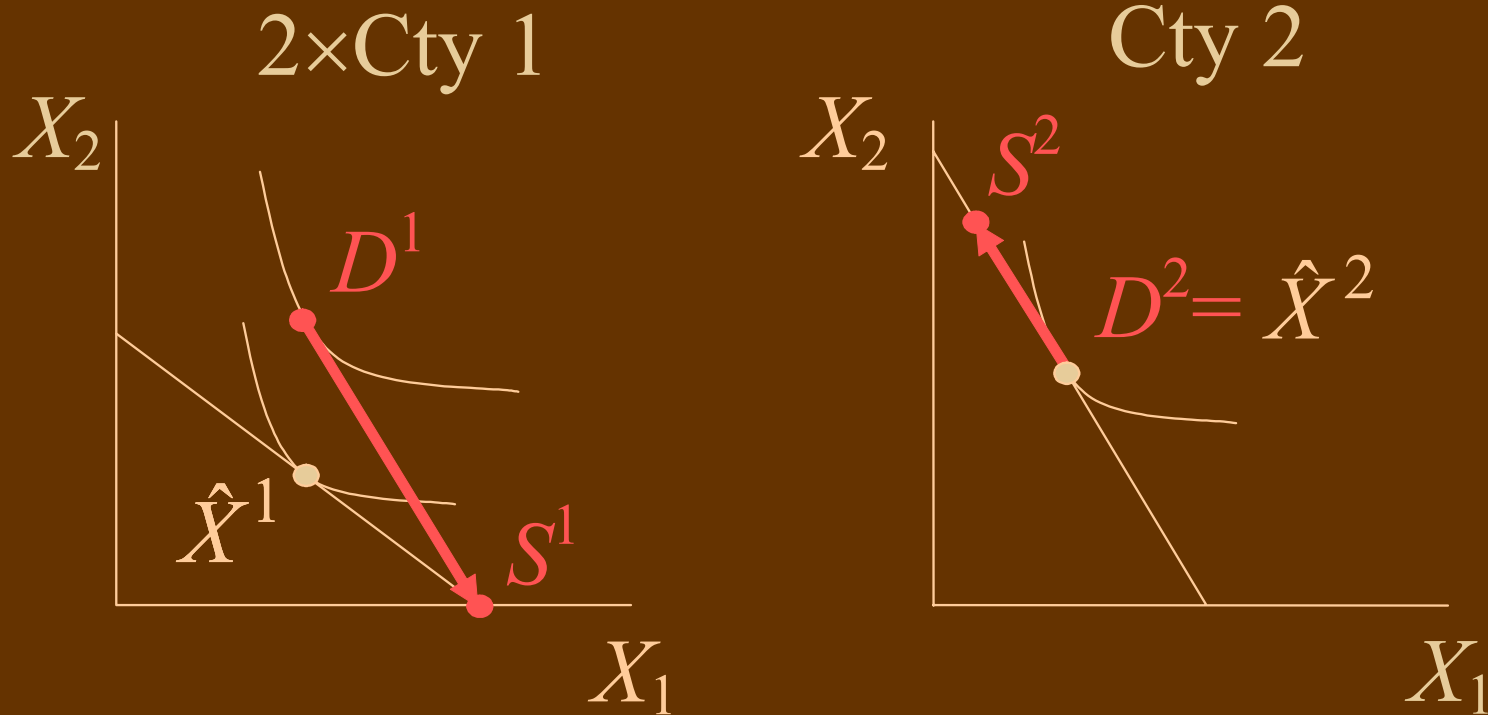
- The idea that policy may create CA seems most acceptable when in the past, not the present.
- Question: Does a production subsidy *today* create CA today?
 - Example: U.S. cotton subsidies.

Production Subsidies and CA

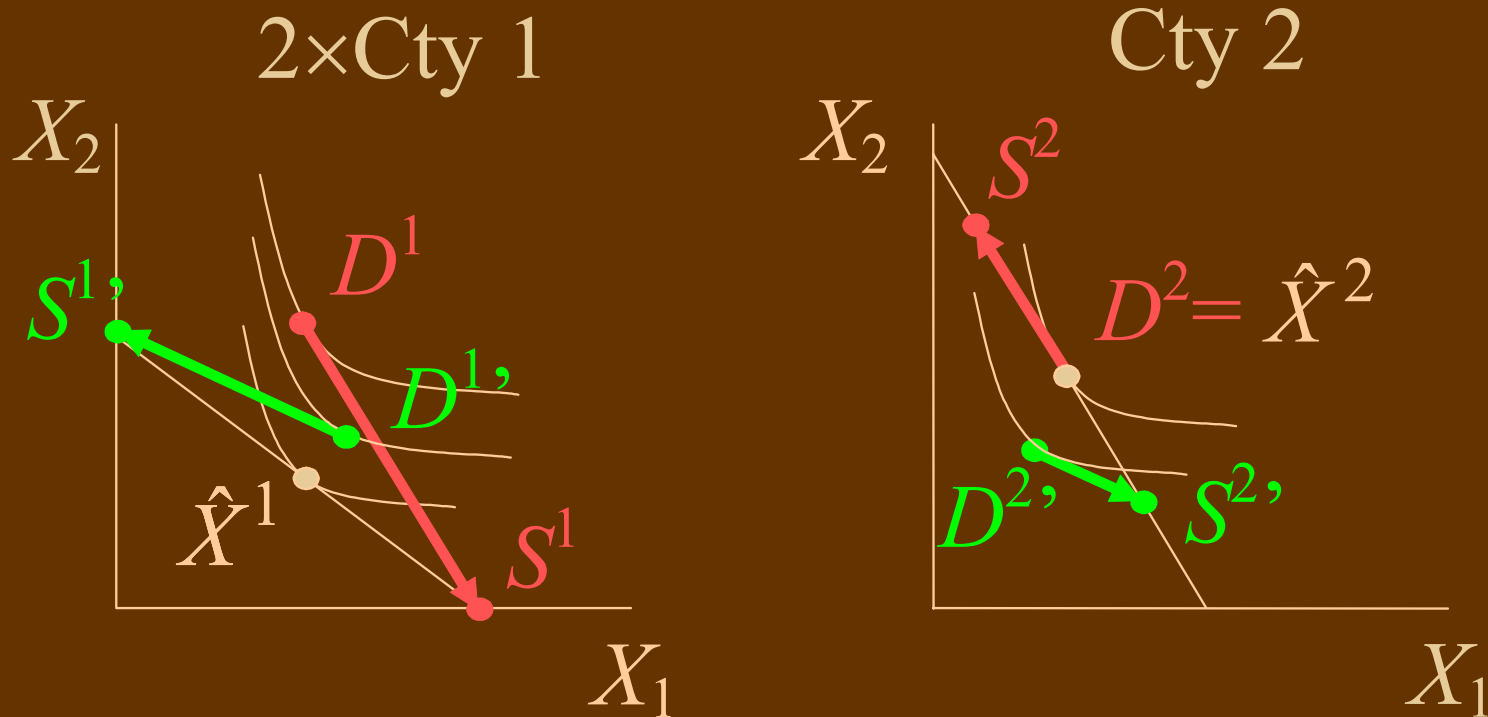
- Most would usually agree:
 - Subsidies are distortions.
 - Trade caused by subsidies is a *violation* of CA, not an example of it.
- I suggest possible exceptions:
 - Effect on CA of other countries
 - Presence of other distortions

- Effect of Production Subsidy on CA of Other Countries
 - Subsidy lowers world price
 - Countries with CA relative to old world price now have comparative disadvantage (CD) w.r.t. the new world price.
 - By this definition, subsidy has altered CA
 - With free trade, such countries will import
 - They will gain from doing so
 - They will gain more if they let resources leave the subsidized sector.

Subsidy in Large Cty 2



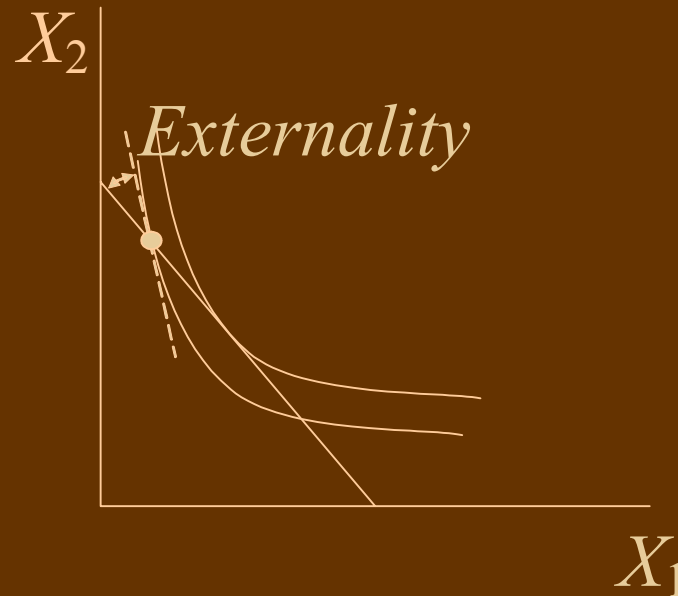
Subsidy in Large Cty 2



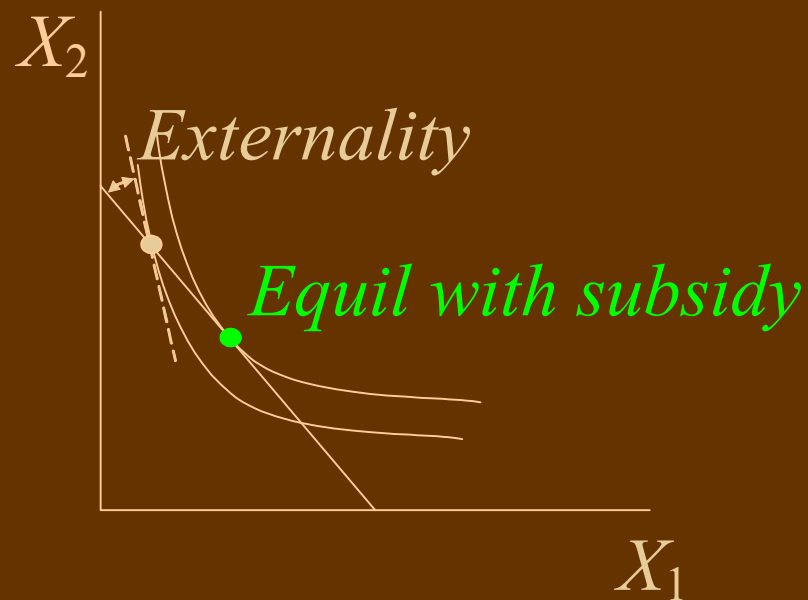
- Subsidies in Presence of Distortions
 - Suppose there is positive externality from production of the particular good.
 - Then subsidy equal to the externality is first-best policy.
 - If subsidy lowers cost enough to cause exports, this is surely true CA.
 - On the other hand, what if everybody has externality, but only high-cost countries correct it with subsidy. Is this CA?

Externality in Autarky

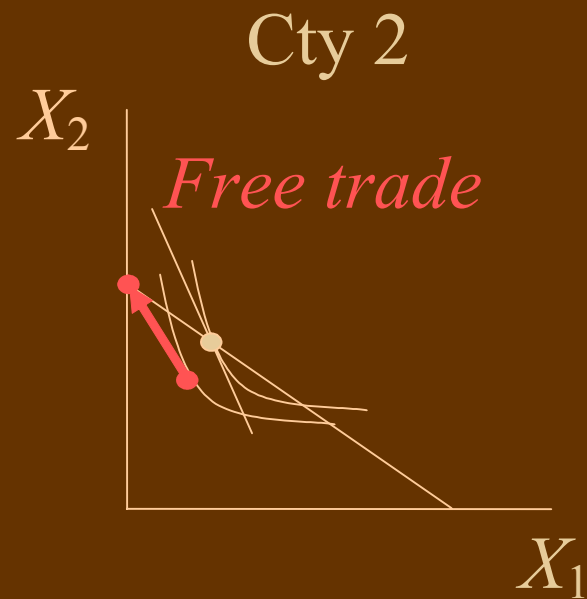
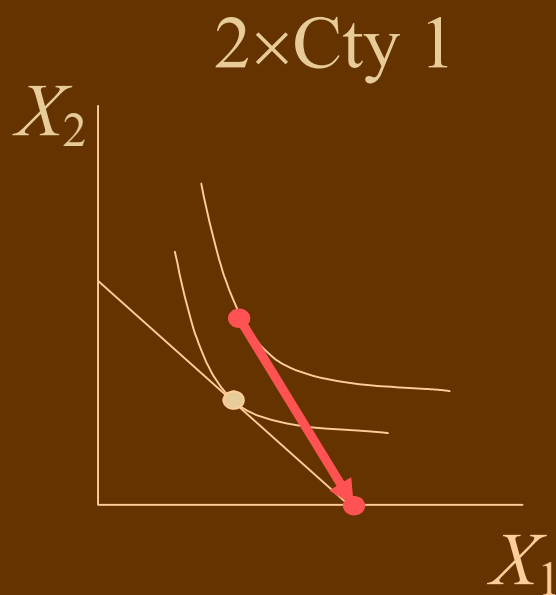
Positive externality in production of X_1 :



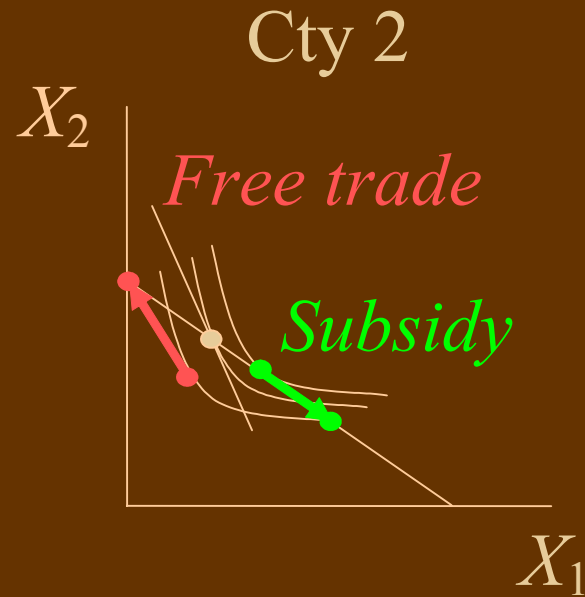
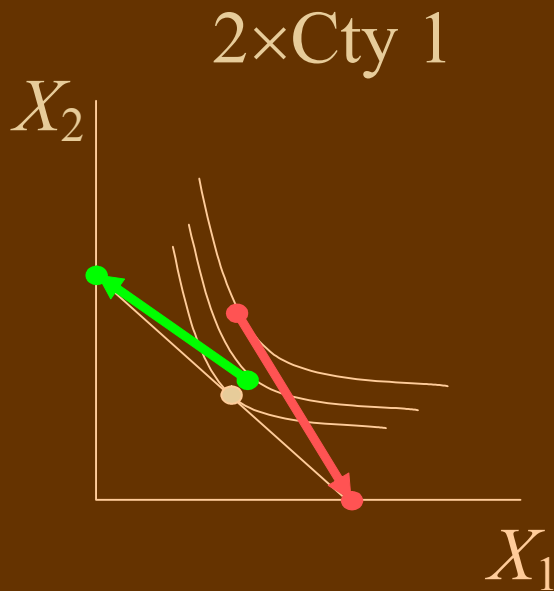
Externality in Autarky



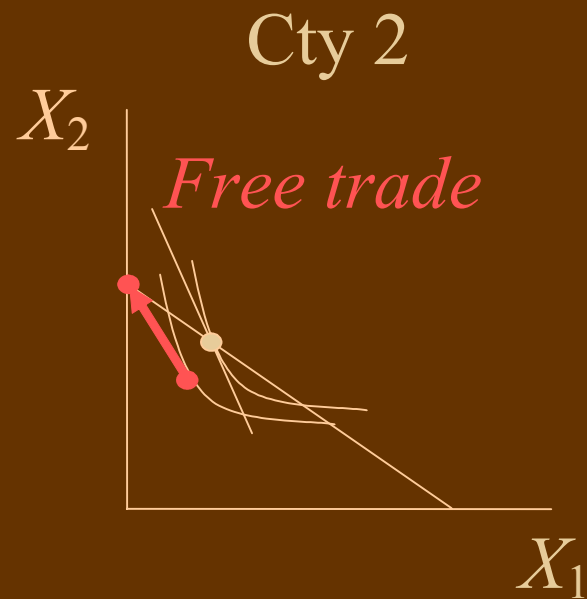
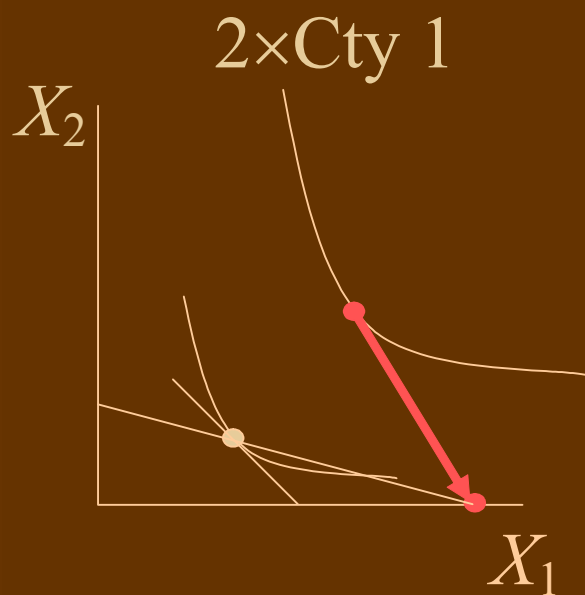
Externality in One Country



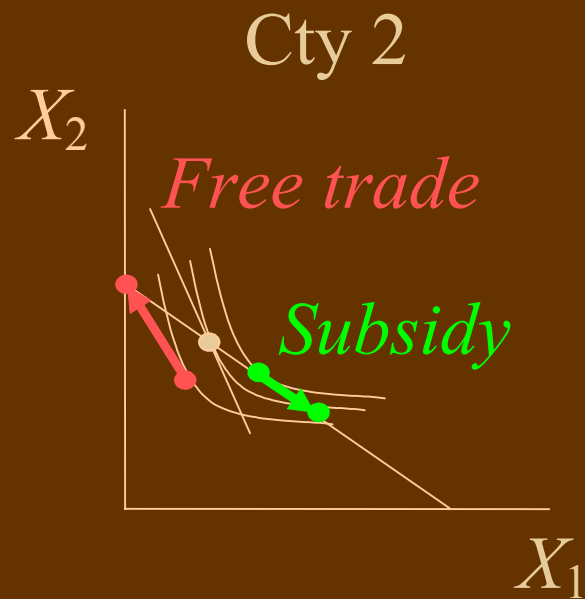
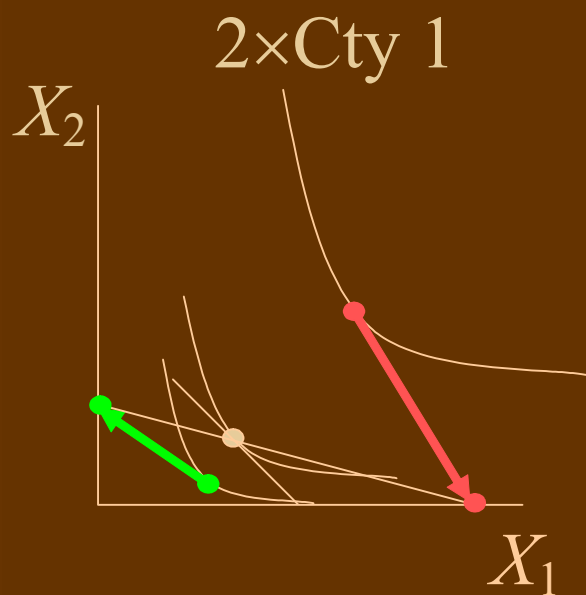
Externality in One Country



Externality in Two Countries



Externality in Two Countries



- Can Subsidy to Create CA Be Welfare-Improving?
 - Absent distortions, no, not for world.
 - Infant industry argument.
 - Strategic subsidies
 - IRS
 - First-mover advantage

Conclusion:

Policy Implications of CA

- Let market guide resource allocation and trade.
- Do this, even if world market is distorted by other countries' policies (if they can't be changed).
- If domestic distortions alter trade or seem to distort CA, use policies to correct distortions.
- If policies may *change* CA, select them based on other objectives, *not* CA.

[Note: above do *not* require knowing CA.]

Policy Implications of CA

- Only in a hopelessly distorted economy, might CA be a guide to policy.
 - But distortions then make it hard to know CA.
 - It may be better to base policy on sources of CA than on CA itself.
- What *is* CA good for?

Arguing against policies that would distort or bypass CA.