

International Trade

10. Export Subsidies in Agriculture and High- Technology Industries

Dr. Christa Brunnschweiler

1. Introduction

- In December 2005, WTO members met in Hong Kong to discuss reforms of world trading system.
- Main focus of meetings was trade policy (tariffs and subsidies) on agricultural products.
 - Lower world prices hurt farmers in land-rich developing countries like Brazil, India, and China.
 - Lower world prices benefit land-poor developing countries that import agricultural products.
- Fact that these subsidies are costly to subsidizing governments, and to exporters of land-rich developing countries, has led to pressures in Doha round of WTO negotiations to remove them.
- Discussions are still ongoing.

1. Introduction

- This chapter explains agricultural subsidy policies.
- This chapter also examines how export subsidies can be used strategically by governments to bolster domestic companies and industries.
 - E.g. high-tech industries such as aircraft production.
- Legislators often believe that subsidies to high-tech industries raise profits and benefit exporting countries.
- We examine effects of export subsidies on prices, amount of trade, and welfare.

2. WTO goals on agricultural export subsidies

- Table 10.1 describes agreements made at HK meeting of WTO.
- These have not been ratified by the legislatures in the countries involved so they are goals rather than outcomes.

Agricultural Export Subsidies

- An **export subsidy** is a payment to a firm for every unit exported.
 - A fixed amount or a fraction of the sales price.
- Governments give subsidies to encourage domestic firms to increase production in particular industries.

2. WTO goals on agricultural export subsidies

| Issue | Decision Made in Hong Kong | Unresolved in Hong Kong |
|-------------------------------|--|--|
| Agricultural export subsidies | Abolition by end of 2013, with a “substantial part” scrapped before 2011, and parallel elimination of indirect subsidies. | Must agree [on] value of indirect subsidies and detailed phase-out programs. |
| Domestic farm supports | Agreement to classify WTO members in three bands based on their level of domestic farm support (top—European Union, middle—United States and Japan, bottom—everyone else). | Must agree [on] size of subsidy reduction and rules to stop countries from shifting trade-distorting subsidies into categories sheltered from deep cuts. |
| Agricultural tariffs | Agreement on four tiers (different for rich and poor countries) and on a mechanism allowing poor nations to raise duties to counter import surges. | Must decide size of tariff cuts and number and treatment of “sensitive” and “special” products. |

Table 10.1 Agreements made at HK WTO meeting, December 2005

2. WTO goals on agricultural export subsidies

| Issue | Decision Made in Hong Kong | Unresolved in Hong Kong |
|------------------|---|--|
| Cotton | Agreement to eliminate export subsidies in 2006 and grant unrestricted access for cotton exports from West African producers and other least developed countries (LDCs). | United States will have the “objective” of cutting its \$4 billion subsidies to cotton growers further and faster than the still-to-be-agreed-upon overall reduction for domestic farm supports. |
| Industrial goods | Agreement on formula and on a “comparably high level of ambition” for tariff cuts in agriculture and industrial goods so rich nations do not demand more cuts than they give. | Must agree [on] key elements of formula, how much to cut, flexibilities for developing countries, and role of sectoral negotiations. |
| Services | Some negotiating guidelines for trade in services agreed upon . . . | The European Union is pressing for services liberalization timing targets opposed by developing countries; poor nations want rich ones to accept more temporary service workers. |
| Development | Duty-free, quota-free access extended to 97% of product[s] . . . from least developed countries by 2008, allowing significant exclusions (e.g., U.S. textiles imports). More pledges of aid for trade. | Must agree [on] other measures to strengthen special treatment provisions for poor countries. |

Table 10.1 cont'd

2. WTO goals on agricultural export subsidies

Agricultural export subsidies (cont'd)

- Member countries of WTO agreed to abolish all export subsidies by the end of 2013.
- Europe maintains system of agricultural subsidies known as Common Agricultural Policy (CAP).
 - As a result, sugar beet subsidy makes Europe leading supplier of sugar, even though other countries have natural comparative advantage over Europe.
- Other countries maintain similarly generous subsidies.
 - U.S. pays cotton farmers to grow more cotton and subsidizes agribusiness and manufacturers to buy American cotton.

2. WTO goals on agricultural export subsidies

Agricultural export subsidies (cont'd)

- In Geneva, in July 2004, member countries agreed in principle to cut export subsidies in agriculture, but progress has been slow.
- In meantime, several agricultural exporters, led by Brazil, brought WTO case against sugar subsidies in Europe and cotton subsidies in U.S.
- WTO ruled in favor of Brazil in 2004, which also won appeals brought by Europe and U.S.
- Favorable ruling created additional pressure for HK talks.

2. WTO goals on agricultural export subsidies

Indirect subsidies

- Included in HK agreements is parallel elimination of **indirect subsidies** to agriculture, including food aid from developed countries to poor countries.
- Europe has already eliminated direct food subsidies and argues that cash aid to poor countries is much more effective.
- U.S. continues to export agricultural commodities as aid.

2. WTO goals on agricultural export subsidies

Domestic farm supports

- Any assistance given to farmers, even if not directly tied to exports.
- These programs can still have indirect effect on exports by lowering production costs, and therefore increasing competitiveness, of domestic products.

Cotton subsidies

- Export subsidies in cotton received special attention because that crop is exported by many low-income African countries and is highly subsidized in U.S.
- Although U.S. agreed to eliminate them, it still leaves open other domestic supports to cotton not directly tied to exports.

2. WTO goals on agricultural export subsidies

Other matters from Hong Kong WTO meeting

- Use of tariffs as response to another country's subsidies.
 - Tariffs depress world prices, as do subsidies, so eliminating both is desirable.
- Subsidies also relate to other items on WTO agenda, such as protectionist policies in services sector.
 - Part of negotiation trade off that occurs in WTO negotiations.
 - Richer countries will trade off reductions in subsidies for access to service markets in poorer countries.

2. WTO goals on agricultural export subsidies

Countervailing tariffs in agriculture

- Whenever subsidies are used, exporting countries expect countervailing duties to be applied.
- Agriculture-exporting developing countries tried to get these reduced, but were not successful in Hong Kong.

Issues involving trade in industrial goods and services.

- Although there was agreement to achieve further cuts in tariffs on industrial goods, exact nature of formula to be used has yet to be decided.
- There was also agreement to discuss opening trade in services sectors, which would benefit industrialized countries.

2. WTO goals on agricultural export subsidies

Trade in industrial goods and services (cont'd)

- Developing countries are expected to make offer to open their markets to trade in services.
 - Likely to lead to expectation that wealthy countries accept more temporary immigrant workers in their service sectors.
- Agreement to allow tariff-free access to WTO member markets for 97% of imported products from the world's 50 least-developed countries (LDCs).
 - U.S. already has this for 83% of products. Omitted from this, however, are textile imports into U.S. from LDCs.

3. Agricultural export subsidies in a small Home country

- Small Home country faces fixed world price for exports.
 - Country will export sugar.
- No-trade equilibrium shown in Figure 10.1 at point A.
- At world price of P^W , Home quantity supplied is S_1 , quantity demanded at D_1 , and exports $X_1 = S_1 - D_1$.
- Quantity of exports is point B in panel (b) at free trade price of P^W and export supply curve X .

3. Agricultural export subsidies in a small Home country

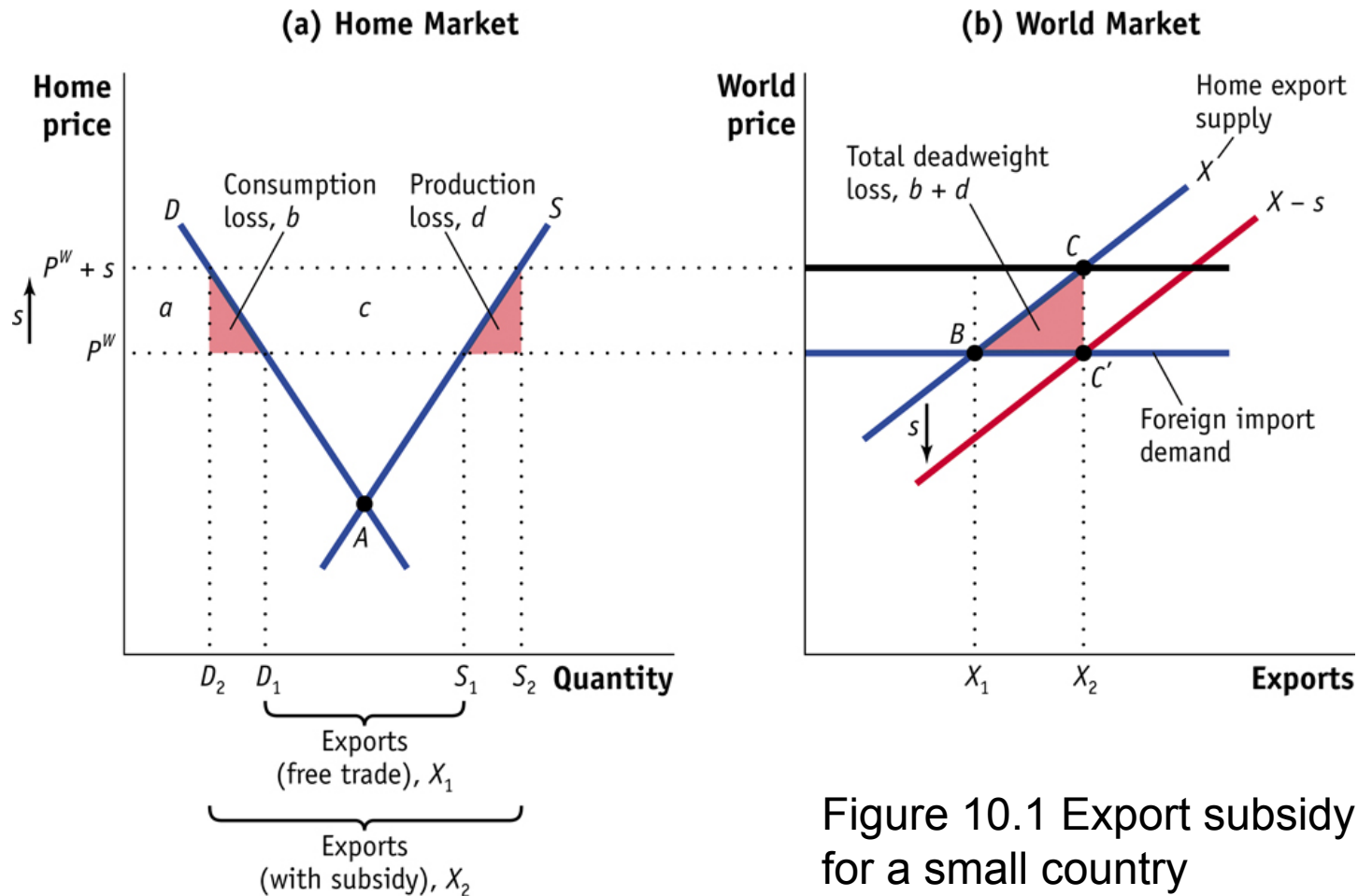


Figure 10.1 Export subsidy for a small country

3. Agricultural export subsidies in a small Home country

Impact of an export subsidy

- Suppose government wants to boost domestic exports of sugar.
 - Each ton of sugar exported receives subsidy s .
- Exporters will receive $P^W + s$ for each ton exported, with no limit on amount of exports.
- Home firms will not accept price less than $P^W + s$.
 - If domestic price was lower than $P^W + s$, the firms would just export their goods instead.
- Domestic price must rise to $P^W + s$.

3. Agricultural export subsidies in a small Home country

Impact of an export subsidy (cont'd)

- Home consumers could import sugar at world price P^W .
- Therefore, Home will impose tariff equal to or higher than amount of export subsidy.
 - This typically happens and is therefore realistic.
- Combined effect of subsidy and tariff is to raise Home price.
- Price is P^W+s , Home supply increases to S_2 , Home demand falls to D_2 , Home exports increase to $X_2=S_2-D_2$.

3. Agricultural export subsidies in a small Home country

Impact of an export subsidy (cont'd)

- Change in quantity of exports can be thought of in two ways, reflected by points C and C' in panel (b).
 - If we measure Home price P^W on vertical axis, C is on original Home export supply curve, showing movement along curve.
 - As Home price has increased, quantity of Home exports has increased from B to C.
 - If we use vertical axis as world price, which is fixed in small country, increase in exports due to subsidy can be interpreted as shift of domestic export supply curve – point C'.

3. Agricultural export subsidies in a small Home country

Impact of an export subsidy (cont'd)

- Export subsidies increase both price and quantity of exports.
 - Movement along domestic export supply curve.
- For world perspective: export subsidy results in increase in export supply.
- Given fixed world price, this means export supply curve shifts down by amount of subsidy s .
- As with tariff, subsidy has driven wedge between what domestic exporters receive ($P^W + s$), and what importers abroad pay (P^W).

3. Agricultural export subsidies in a small Home country

Impact of the subsidy on Home welfare

- Rise in price lowers consumer surplus by $(a+b)$.
 - Rise in price raises producer surplus by $(a+b+c)$.
 - Export subsidy costs government amount of subsidy s times amount of exports X_2 , shown by $(b+c+d)$.
 - Adding up impacts, net effect on Home welfare is $-(b+d)$.
- *The deadweight loss due to export subsidy in a small country is similar to effects of a tariff.*

3. Agricultural export subsidies in a small Home country

Impact of the subsidy on Home welfare (cont'd)

- Areas b and d have particular meanings.
 - Triangle d equals increase in marginal costs for extra unit produced due to subsidy.
→ **Production loss** or *efficiency loss* for economy.
 - Triangle b is drop in consumer surplus for those who can no longer consume units between D_1 and D_2 .
→ **Consumption loss** for economy.

4. Agricultural export subsidies in a large Home country

- Suppose Home is large enough that its export subsidy affects world price of sugar.
- Figure 10.2 shows effects of subsidy.
- Foreign export demand curve M^* is downward sloping since changes in amount exported affect world price.
- As before, in free trade, Home and world price is P^W , Home exports $X_1 = D_1 - S_1$.
- World export market is in equilibrium where Home export supply X and foreign import demand curve M^* cross.

4. Agricultural export subsidies in a large Home country

Effect of the subsidy

- Home export supply curve shifts right by amount of subsidy, X -s.
- New intersection with Foreign import demand gives new equilibrium at P^* and X_2 .
 - Price is lower and exports are higher.
- Note that new world price P^* is less than P^W although new Home price is P^W+s .

4. Agricultural export subsidies in a large Home country

Effect of the subsidy (cont'd)

- Since Foreign consumers pay lower price for Home exports, Home terms-of-trade (ToT) fall but foreign ToT rise.
- Since Home ToT fall, Home country will suffer overall losses.
- Foreign consumers will gain.

4. Agricultural export subsidies in a large Home country

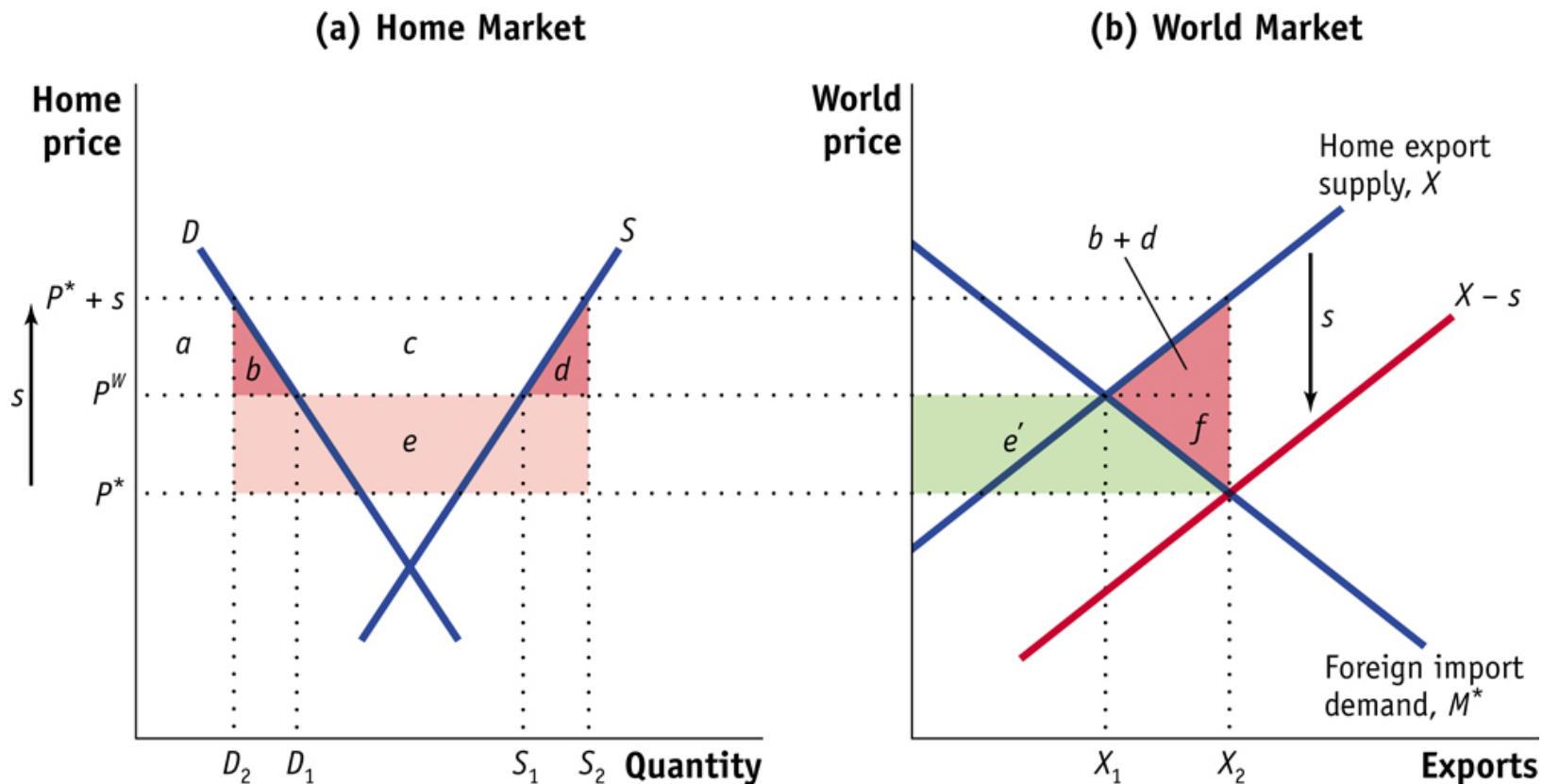


Figure 10.2 Export subsidy for a large country

4. Agricultural export subsidies in a large Home country

Home welfare

- Welfare effects of subsidy shown in Figure 10.2 (b).
- Higher Home price reduces consumer surplus by $(a+b)$.
- Higher price increases producer surplus by $(a+b+c)$.
- Cost of subsidy: amount of subsidy times exports after subsidy, given by area $(b+c+d+e)$.
- Net welfare effect of $-(b+d+e)$.
- Due to reduction in world price of its exported good, a large country loses even more from a subsidy than a small country.

4. Agricultural export subsidies in a large Home country

Home welfare (cont'd)

- Compared to small country there is additional deadweight loss e in large country, from ToT loss to Home: $e = e' + f$ in panel (b).
 - From Home's perspective, ToT loss is just e , but when we move to foreign welfare, it will be useful to break up e into two parts e' and f .

4. Agricultural export subsidies in a large Home country

Foreign and world welfare

- Home definitely loses, and Foreign definitely gains.
- Price of Foreign imports decreases leading to increase in Foreign consumer surplus by e' .
- Fall in price of Foreign imports also improves Foreign's ToT.
- Combining Home welfare loss $(b+d+e)$ and subtracting Foreign ToT gain e' , overall deadweight loss for world is $(b+d+f)$ in panel (b).
- Area f is additional world deadweight loss due to subsidy: it arises from ToT loss in Home which is not completely offset by ToT gain in Foreign.

4. Agricultural export subsidies in a large Home country

Foreign and world welfare (cont'd)

- Transfer of ToT is sometimes used to make subsidies sound like “aid” to poorer countries.
- However, deadweight loss f means using export subsidy to increase exports is inefficient way to transfer gains from trade among countries.
- It would be more efficient to just give cash aid to poorer countries.
 - Cash does not change trade levels so would not have deadweight loss of $(b+d+f)$.
 - This is why European countries eliminated transfers of food as form of aid several years ago.

4.1 Who gains and who loses?

- Let's return to HK meeting of WTO in December 2005 to see which countries will gain and which will lose when export subsidies are eliminated by 2013.
- Gains
 - Obvious winners will be current agricultural exporters in developing countries such as Brazil, Argentina, Indonesia, and Thailand, along with potential exporters such as India and China.
 - These countries will gain even more when and if an agreement is reached on eliminating agricultural tariffs in industrial countries.

4.1 Who gains and who loses?

- Gains (cont'd)
 - These actions will also benefit industrial countries, suffering from deadweight losses and ToT losses from combination of subsidies and tariffs.
 - Clearly farmers in industrial countries who lose subsidies will be worse off.
 - Given that it is usually largest farmers who gain most from subsidy programs, they may be better able to adjust to elimination of subsidies than smaller farmers.

4.1 Who gains and who loses?

- Losses
 - Eliminating subsidies will typically lead to increased world prices, so food-importing countries, typically poorer non-food producing countries, will lose.
 - One study finds that existing pattern of agricultural supports raises per-capita income of two-thirds of 77 developing nations, including most of the poorest countries such as Burundi and Zambia.
 - Figure 10.3 shows some of these results.

4.1 Who gains and who loses?

- Losses (cont'd)
 - Poor countries are net importers of essential food items such as corn, rice, and wheat, and would be harmed by increase in world prices.
 - Many of world's poorest individuals depend on cereal crops for much of their diet and would be especially hard hit by any increase in those prices.

4.1 Who gains and who loses?

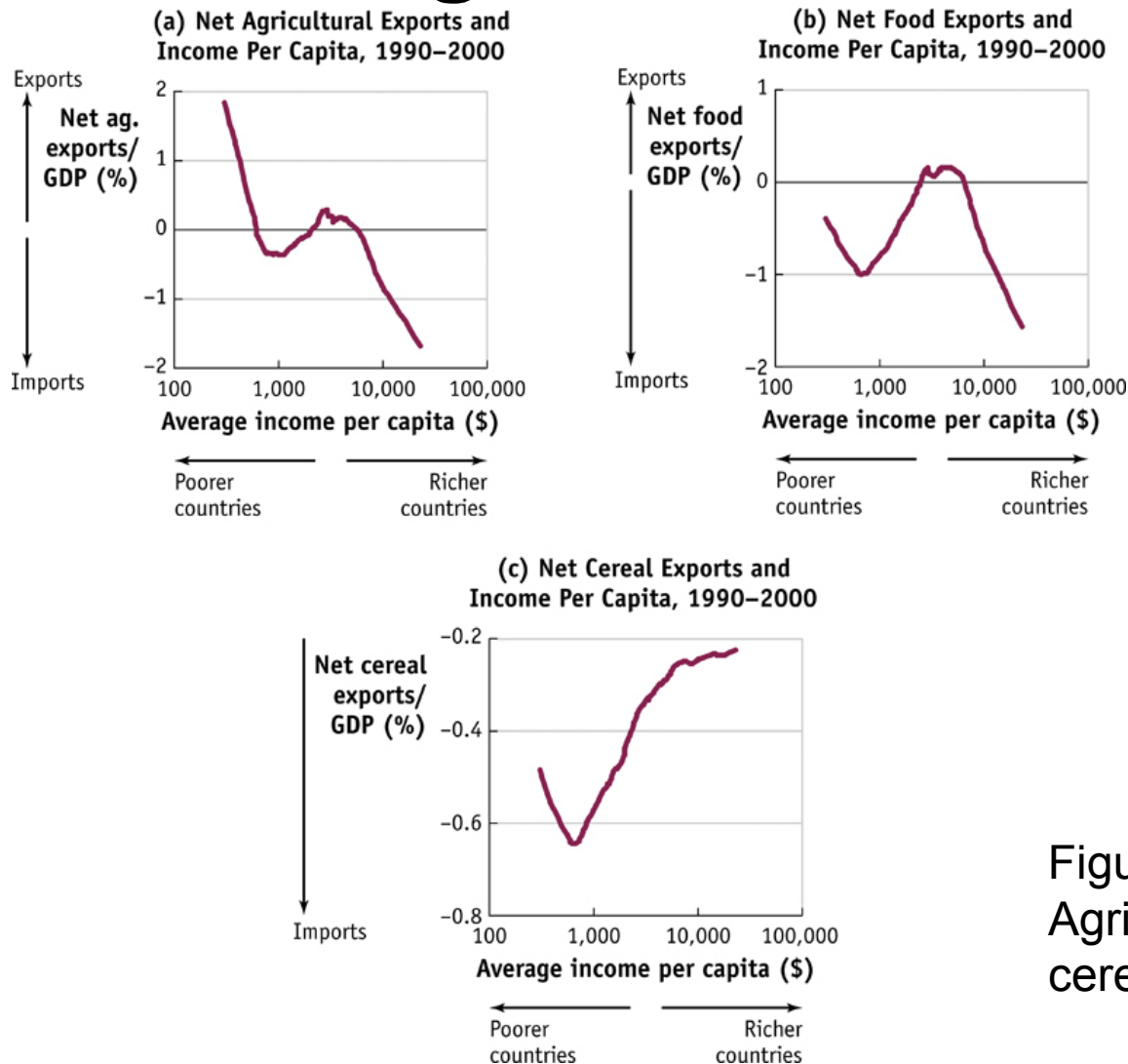


Figure 10.3
Agriculture, food and
cereal exports

4.1 Who gains and who loses?

- Food aid
 - What about indirect subsidies like food aid?
 - U.S. is still principle supplier of food aid.
 - For humanitarian purposes and to eliminate surplus commodities at home.
 - There is clearly need for donations of food in cases of true food shortages.
 - However, U.S. also provides food aid shipments to areas without shortages.
 - This can decrease local prices and harm local producers.

4.1 Who gains and who loses?

- Food aid (cont'd)
 - European countries argue that it is better to have United Nations relief agencies buy food from local farmers in poor regions and distribute it as needed.
 - This boosts production in poor country and helps feed its poorest citizens.
 - EU insisted on elimination of indirect subsidies to regions without shortages by 2013, along with direct export subsidies.
 - Goal has not yet been fully implemented.

5. Agricultural production subsidies

- Agreements reached in HK distinguish between export subsidies in agriculture and all other forms of domestic support that increase production.
 - Tax incentives and other types of subsidies.
- It is expected that other forms have less impact on exports than direct subsidies.
- In this section, we will briefly examine impact of *production subsidy* in agriculture for both a small and a large country.

5. Agricultural production subsidies

- A **production subsidy** is when government provides subsidy of s dollars for *every unit* (for example, tons of sugar) that Home firm produces (vs exports).
- Subsidy can be implemented by government:
 - Guaranteeing minimum price to farmer.
 - Providing subsidies to users of crop to purchase it, thereby increasing demand for crop and price.
- These policies all fall under Article XVI of GATT.
 - Partner countries should be notified of extent of such subsidies, and where possible, these subsidies should be limited.

5. Agricultural production subsidies

- In HK, WTO members further agreed to classify countries according to extent of such subsidies.
- Table 10.1, described earlier, shows level of production subsidies for different countries.

Effect of a production subsidy in a small Home country

- We have a small country with fixed world price P^W .
- Subsidy s increases Home price to producers to $P^W + s$.
- Home quantity supplied increases from S_1 to S_2 in Figure 10.4.

5. Agricultural production subsidies

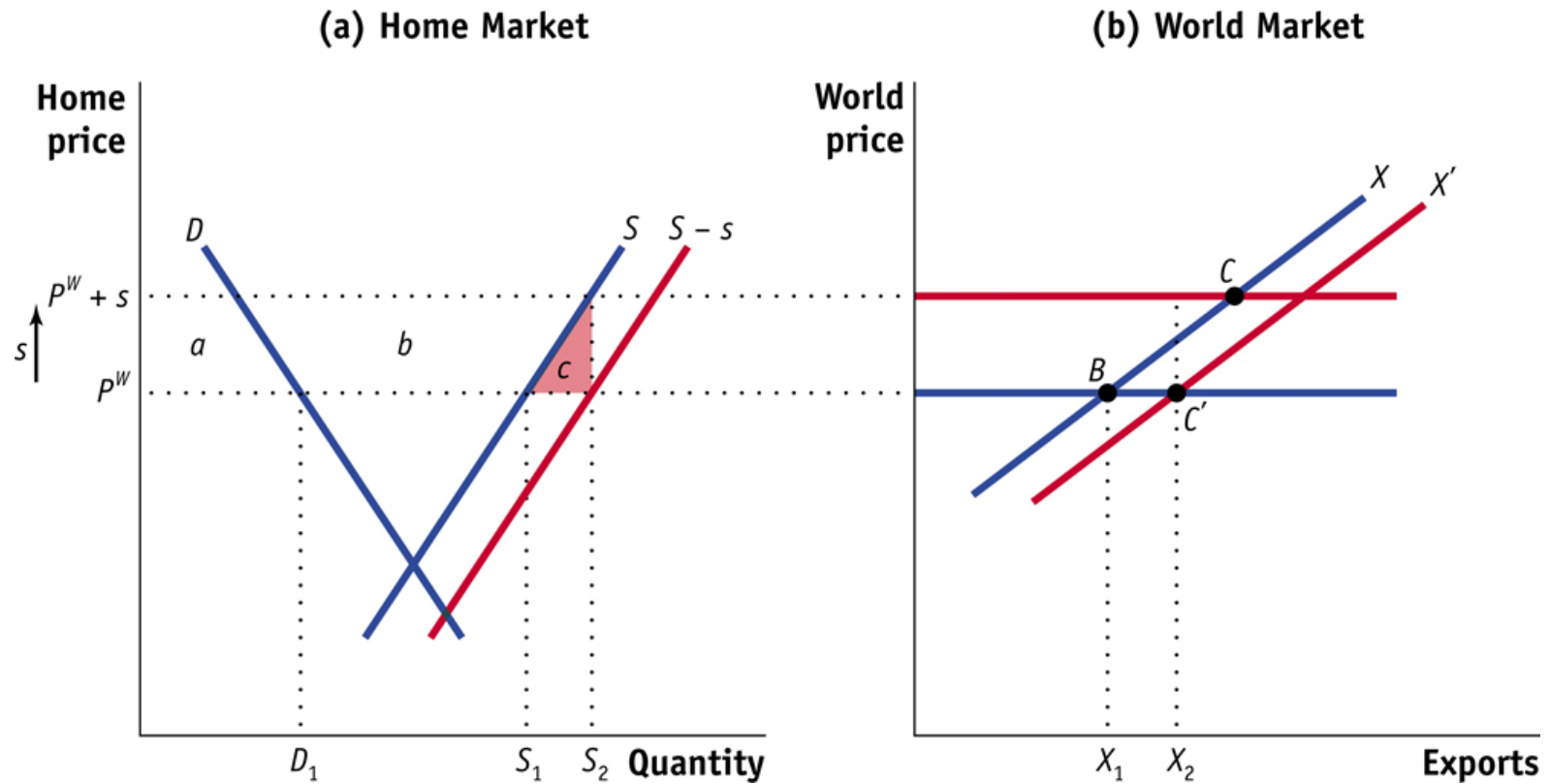


Figure 10.4 Production subsidy for a small country

5. Agricultural production subsidies

Production subsidy in small Home country (cont'd)

- Quantity demanded at home *does not change* since producers still charge world price at Home.
- This happens because Home producers receive subsidy no matter who they sell to.
 - This contrasts with export subsidy where Home firms only receive subsidy for export sales and must sell to Home at higher export price.
- The production subsidy increases exports $X_2 = S_2 - D_1$
 - The production subsidy increases exports by less than an export subsidy.

5. Agricultural production subsidies

Production subsidy in small Home country (cont'd)

- Home Welfare
 - Producer surplus rises by $(a+b)$ due to higher price received.
 - Government cost of subsidy is amount of subsidy s times total production $S_2(a+b+c)$.
 - Consumer surplus is unaffected since price and quantity demanded are constant.
 - There is deadweight loss $(-c)$ caused by production subsidy: less than that caused by export subsidy.
 - The only deadweight loss is in production inefficiency—producers produce at higher than marginal cost.

5. Agricultural production subsidies

Production subsidy in small Home country (cont'd)

- Targeting Principle
 - Since deadweight loss is lower for this subsidy than for export subsidy, it makes better policy instrument for purpose of increasing Home supply.
 - Example of **targeting principle**.
 - To achieve some objective, it is best to use policy instrument that achieves objective most directly.
 - For example, it is better to provide trade adjustment assistance directly to those affected, than to impose a tariff or quota.

5. Agricultural production subsidies

Effect of production subsidy in a large Home country

- Use Figure 10.4 to briefly explain.
- Price rises from P^W to P^W+s , and Home production increases to S_2 .
- Demand has not changed, so exports increase by same amount as change in Home supply.
- Shown by outward shift in export supply curve from X to X' in Panel (b).
- Rise in exports from B to C' is less than increase in exports with export subsidy, from B to C .

5. Agricultural production subsidies

Production subsidy in large Home country (cont'd)

- In export supply subsidy, increase in exports occurred due to increase in supply *and* decrease in demand.
 - Export supply curve shifted down by exact amount of subsidy s (as in figure 10.1).
- With production subsidy, exports increased only due to increase in Home production.
 - Export supply curve shifted down by amount less than s , (as in figure 10.4).

5. Agricultural production subsidies

Production subsidy in large Home country (cont'd)

- Slight increase in export supply would drive down world price (not shown), but by less than with export subsidy.
- Therefore, WTO is less concerned about eliminating production subsidies and other forms of domestic support for agriculture.
 - These other policies have smaller impact on world prices and smaller deadweight loss as compared with export subsidies.

6. High-technology export subsidies

- High-tech sector also receives substantial subsidies from government.
 - Example: subsidies to aircraft industries in U.S. and Europe.
 - In U.S., subsidies take form of low-interest loans provided by *Export-Import Bank* (U.S. government agency that finances export related projects).
 - On European side, support for R&D and other subsidies are given to Airbus directly by government.
 - Japan and South Korea give direct subsidies to high-tech manufacturing firms and reach certain targets for export sales.

6. High-technology export subsidies

- A reason that some governments support high-tech industries is because of possible spillover benefits to other areas of economy.
 - Governments believe there is positive externality that exists from production of high-tech products, so subsidizing them increases production and minimizes externality.
- Similar to infant industry argument for tariffs, but is applied to export instead of import.

6. High-technology export subsidies

- “Strategic” use of high-tech export subsidies
 - Governments argue subsidies might give strategic advantage to export firms, especially when they compete with small number of rivals in international markets (imperfect competition).
 - If high-tech subsidies allow firms to compete more effectively and earn more profits in international market, and if extra profits are greater than subsidy, then exporting country has overall gain.
- Similar to benefit a large country can get from tariff.

6. High-technology export subsidies

Welfare effects

- Under conditions of imperfect competition, a subsidy by one government to its exporting firm might increase welfare for its nation or it might not.
 - There is increase in welfare only if profits rise by more than cost of subsidy.
 - This is more likely satisfied if subsidy leads to exit of other firm.
 - However, if both firms remain in market, it is unlikely that increase in profits for subsidized firm will exceed subsidy cost.

6.1 Subsidies to commercial aircraft

- In large passenger aircraft market, there are now two large firms.
 - Boeing in U.S. (merged with McDonnell-Douglas in 1997).
 - Airbus in Europe.

U.S. and Europe have used various types of subsidies to support respective firms:

1. Indirect subsidies that arise because R&D for military versions effectively subsidizes R&D for civilian aircraft.

6.1 Subsidies to commercial aircraft

2. Government might directly subsidize R&D costs of new aircraft, as Europe subsidizes R&D at Airbus.
3. Government can subsidize interest rates that aircraft buyers pay when they borrow money to purchase aircrafts.
 - Europe and U.S. both provide low interest loans to aircraft purchasers.

6.1 Subsidies to commercial aircraft

1992 Agreement

- Realizing subsidies are costly, U.S. and Europe reached agreement in 1992 to limit them.
- Main features of agreement are in Table 10.2.
- Development subsidies are now limited to 33% of total development costs of new aircraft.
 - It is expected that these subsidies will be paid back at government interest rate.
- Indirect (military) subsidies limited to not more than 4% of any firm's annual sales.
- Prohibits production subsidies.
- Limits ability of government agencies to subsidize interest rate on purchases of aircrafts.

6.1 Subsidies to commercial aircraft

Aircraft Covered

- All aircraft of 100 seats or larger are subject to the provisions of the agreement.

Direct Support Levels

- Funds advanced by governments for aircraft development may not exceed 33 percent of total development costs and are to be provided only to programs in which there is a reasonable expectation of recoupment within 17 years.

Interest Rates

- Airbus will repay the first 25 percent of total development costs at the government cost of borrowing within 17 years of first disbursement; the remaining 8 percent will be repaid at the government cost of borrowing plus 1 percent within 17 years of first disbursement.

Indirect Supports

- Both sides agree that indirect (i.e. military) supports should neither confer unfair advantage on manufacturers of civil aircraft nor lead to distortions in international trade in such aircraft.
- Identifiable benefits from indirect support are limited to 3 percent of the value of industry-wide turnover in each signatory and 4 percent of the value of each firm's annual sales. Benefits will primarily be calculated as cost reductions in the development of a civil aircraft program realized from technology acquired through government R&D programs.

Escape Clause on Emergency Aid

- Either side can temporarily derogate from the agreement, *with the exception of the development support provisions*, if survival and financial viability of an aircraft manufacturer are in jeopardy. Any such withdrawal would require consultations with representatives of the other side, full disclosure of information to justify the withdrawal, and full explanation of the remedy to be used.

Production Supports

- No further production subsidies are allowed.

Dispute Settlement Mechanisms

- Both sides will consult a least twice a year to ensure the functioning of the agreement. Either side may request consultations related to the agreement at any time. Such consultations must be held no later than 30 days after they are requested.

Table 10.2 Provisions of 1992 agreement between U.S. and EC on trade in civil aircraft

6.1 Subsidies to commercial aircraft

- Reducing subsidies led to rise in prices for aircraft by 3.1% and 8.8%.
- Governments benefited from no longer paying subsidy.
- Higher prices helped firms, but led to welfare losses for purchasing countries.
- The Super Jumbo
 - Claims that terms of agreement are being violated by Airbus.
 - It is selling new aircraft, double-decker A380, which is larger than Boeing 747 and competes directly with it.
 - Expenditures to develop A380 are estimated at \$12 billion.
 - European governments provided about \$3.5 billion in low-interest loans to cover development costs.

6.1 Subsidies to commercial aircraft

- The Super Jumbo (cont'd)
 - In 2005, both U.S. and EU filed counter-complaints at WTO regarding illegal subsidies by other party to respective aircraft producers.
 - Europe was accused of “illegally” subsidizing A380, while U.S. was accused of subsidizing development of Boeing’s 787 commercial jet.
 - Complaints charged that these subsidies violate 1992 agreement.
 - U.S. is calling for termination of agreement.

6.1 Subsidies to commercial aircraft

- National Welfare
 - Will subsidies to Airbus increase national welfare?
 - From previous information, more likely to happen if Airbus is only firm producing in that market.
 - Boeing has announced it will not produce double-decker like A380.
 - It will instead modify current 747 and focus R&D on new 787 “Dreamliner” aircraft.

6.1 Subsidies to commercial aircraft

- National Welfare (cont'd)
 - Since Boeing will not enter double-decker market, it is possible profits earned by Airbus will cover subsidy.
 - Of course that assumes Boeing plane is not more of direct competitor to Airbus.
 - Profits earned will depend on how many aircraft are sold and at what price.
 - Airbus says it needs to produce at least 250 planes to cover development costs, but expects to sell 1,500 over next 20 years.
 - So far, it has orders for 200 and delivered 14, and many of those have been discounted at least 10%.

6.1 Subsidies to commercial aircraft

- National Welfare (cont'd)
 - In mid-June 2006, Airbus told buyers it could not deliver as promised—delays of 6 months or more.
 - Several of largest customers entered into discussions to seek compensations for delay.
 - Singapore Airlines announced it would order Boeing 787 “Dreamliner” instead.
 - Stock price of Airbus’ parent company, EADS, fell by more than one-quarter of its value in single day.
 - Singapore Airlines did not cancel order; received first A380 in October 2007.
 - 12 A380s delivered in 2008 as planned; 2009 slow-down in demand and production due to global economic crisis.

6.1 Subsidies to commercial aircraft

- National Welfare (cont'd)
 - These events do not mean Airbus A380 will fail; delays happen often in industry.
 - These events do, however, illustrate intensity of competition in airline industry.
 - Competition benefits consumers who will be traveling on new aircraft.
 - However, competition makes it more difficult for government subsidies to be recovered in profits.

7. Conclusions

- Export subsidy leads to fall in welfare for small exporting country, similar to losses due to import tariffs.
- In large country case, export subsidy lowers price of that product in rest of world.
 - Fall in world prices from export subsidy is terms-of-trade loss for exporting country and terms-of-trade gain for importing country.
- Export subsidies applied by large country create benefit for importing countries in rest of world by lowering their import prices.
- Applying export subsidy in large exporting country leads to even greater losses than applying it to a small country.

7. Conclusions

- The losses due to subsidies, for either small or large country, are less severe when we instead consider production subsidies.
 - Consumer prices do not change from world level and exports increase only because domestic supply increases.
 - Excess supply due to subsidies will indirectly spill over into international markets.
- At Hong Kong meetings of WTO, countries agreed to eliminate export subsidies in agriculture by 2013.

7. Conclusions

- It is common for countries to provide subsidies to high-technology industries because governments believe these subsidies can create strategic advantage for their firms in international markets.
- It is possible for export subsidy to lead to gains for exporting country, if increased profits outweigh cost of subsidy.
 - This, however, usually requires forcing other firm out of business, which does not always occur.
 - If both firms stay in market and both are subsidized, it is unlikely that subsidies are in national interest of countries.
- The countries that buy goods gain from lower prices.