

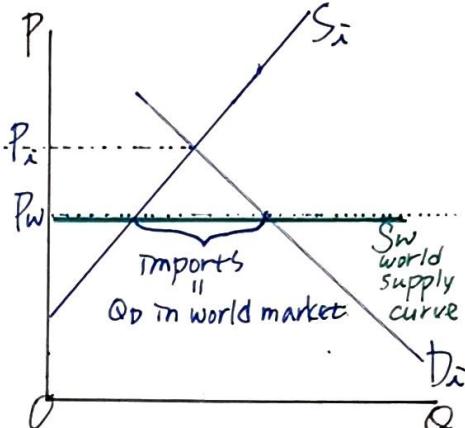
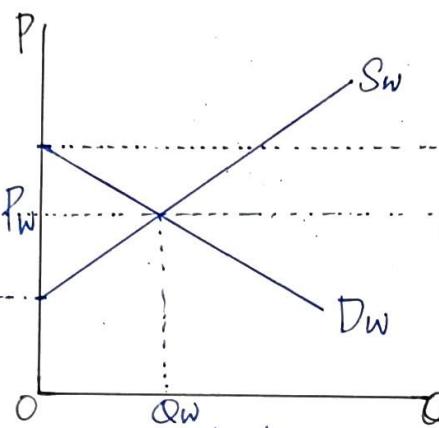
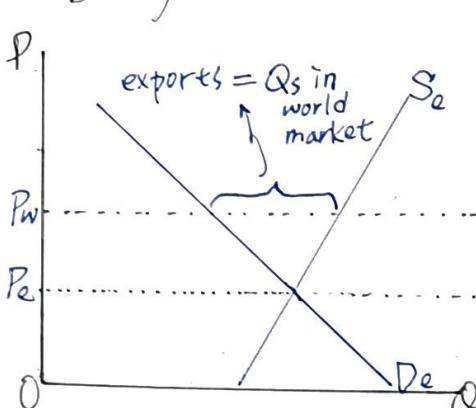
14.1 Benefits of international trade

1. Increased competition - domestic firms vs foreign firms/goods.
2. Greater efficiency in production -
greater competition forces firms to be more efficient.
For firms remaining high cost, sales decrease or shut down.
3. Lower Prices for consumers
efficient production → lower prices.
Imports comes from efficient firms, thus usually cheap.
4. Greater choice for consumers.
5. Acquiring needed resources.
Importing ress and capital not available domestically
6. Source of foreign exchange (foreign \$).
exports makes firms get foreign exchange, which helps further increase their ability to import.
7. Access to larger markets.
8. Economies of scale in production
larger market (foreign) → firms can increase scale, cost ↓
9. Increase domestic consumption/production due to specialization.
each country produces goods it can efficiently produce and as countries produce more in specialization, and trade for other goods from other countries. and as imports were being efficiently produced elsewhere, thus consumption increases because imports are also cheap.
10. More efficient allocation of resources.
Global specialization makes each country production more efficient. thus less waste of resource.
11. Trade facilitates flow of new ideas and technology.
12. Trade make countries more interdependent, reduces conflicts.
13. Trade as an "engine for growth"
competition ↑ efficiency ↑ market ↑ production ↑ technology ⇒ domestic consumption ↑ share domestic output ↑

14.1

14-2

*Diagrams and free trade: International trade without gov intervention



Exporting countries (All)

- Domestic price without trade is lower than world market price
- Quantity of excess supply under world market price becomes Q_s of world supply under P_w
- Exports

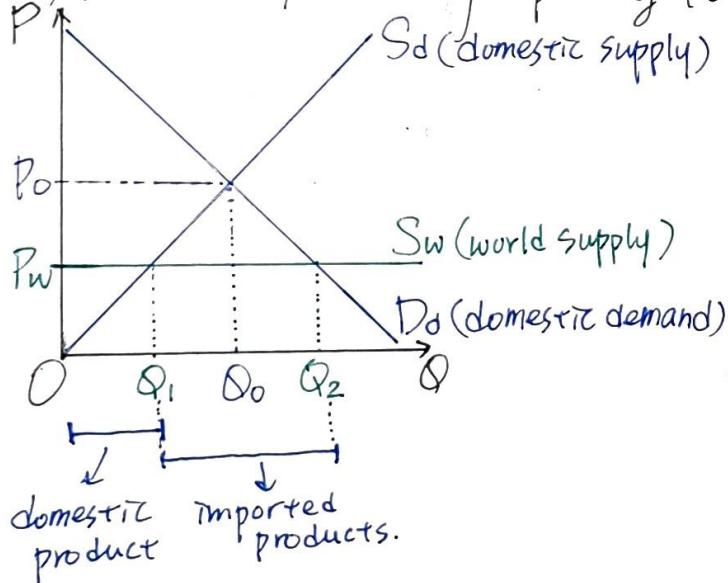
World Market.

determines the world market price (P_w) and equilibrium quantity (Q_w)

Importing countries (All)

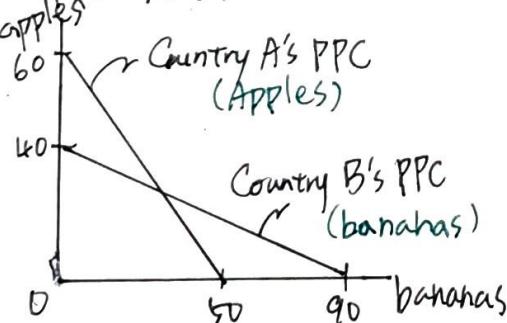
- Domestic price without trade is higher than world market price.
- Quantity of excess demand under world market price becomes Q_d of world demand under P_w "Imports"
- S_w shown as horizontal, being perfectly elastic. (world price is fixed)

*Individual country opening to exports



- before opening international trade domestic market determines price = P_o and quantity = Q_o
- after opening international trade imports enter the domestic market selling at world price (P_w)
- former domestic price (P_o) is no longer applicable, domestic producers must sell at P_w , and Q_s reduces: $Q_o \rightarrow Q_1$

14.2 Absolute advantage VS Comparative advantage

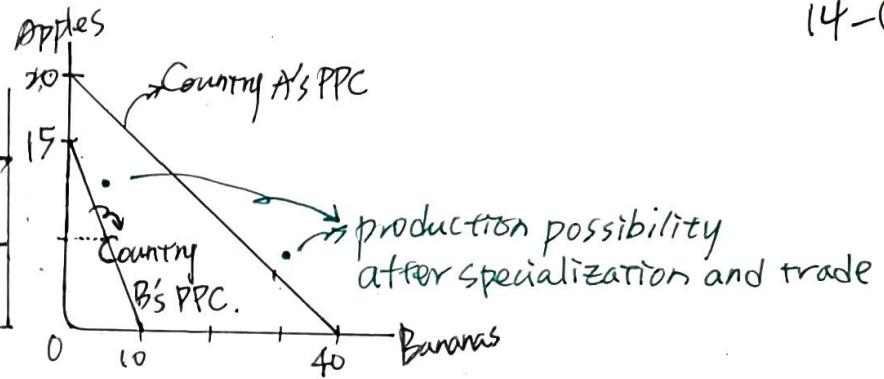


Theory of absolute advantage (Adam Smith)

- Country produces goods which they have absolute advantage (produce more or with fewer resources), would result in increased production and consumption.
- Country A: apples
- Country B: bananas

14.2.

Monthly production	Country A	Country B
Apples	20	15
Bananas	40	10



Production Possibilities of apples and bananas of Country A and B
(All ress used in only one product)

- Country A has absolute advantage in production of apples & bananas.
- Specialization between Country A & B cannot be determined by absolute advantage, thus we use "comparative advantage" to see which country has "lower opportunity cost" in production

→ Opportunity cost = $\frac{\text{Sacrifice of one good}}{\text{Gain of the other good}}$

	Country A	Country B
Apples	2 banana	$\frac{2}{3}$ banana
Bananas	$\frac{1}{2}$ apple	$\frac{3}{2}$ apple

⇒ Country B has "lower" opportunity cost in producing apples

⇒ Country A has "lower" opportunity cost in producing bananas

⇒ Thus Country A should specialize in producing apples
and Country B should specialize in producing bananas.

and both countries would result "gains from trade"

<1 Month production without specialization>

	A	B
Apple	20/2	15/2
Bananas	40/2	10/2

Total 17.5 apples
25 bananas

<1 Month production under specialization>

	A	B
apples	X	15
bananas	40	X

Total 15 apples
40 bananas

→ production of country A, B would remain on original PPC.

→ Country A & B trade

→ production of country A, B can fall outside of original PPC

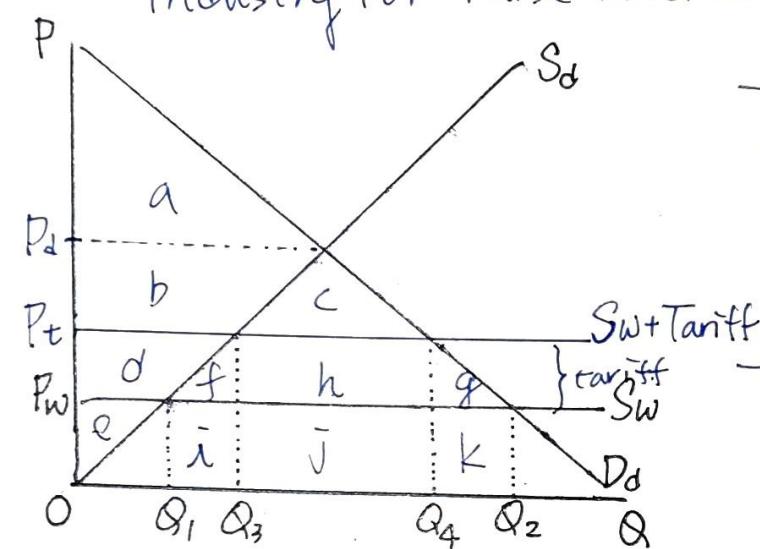
∴ trade breaks the original substitution rate between apples and bananas on PPC.

14.3 Trade protection (Protectionism) - restriction on free trade. 14-5

→ Government interventions in international trade
to restrict / prevent free entry of imports

I Tariff (custom duties)

Tax on imported good, and the most common form of trade restriction, with the purpose of protecting domestic industry, or raise revenue for the government



→ Under free trade

Country accepts world price P_w which is lower than domestic price P_d (= having comparative disadvantage)

→ Imposing tariff raise the price from P_w to P_t . Import quantity is reduced from $\overline{Q_1 Q_2}$ to $\overline{Q_3 Q_4}$. Domestic production thus increased from Q_1 to Q_3 .

Stakeholder Analysis

Domestic consumers

$P \uparrow: P_w \rightarrow P_t \times$

$Q_d \downarrow: Q_2 \rightarrow Q_4 \times$

Consumer surplus $\downarrow: abc \text{ dfhg} \rightarrow abc (-dfhg) \times$

} Consumers worse off.

Domestic producers

$P \uparrow: P_w \rightarrow P_t \checkmark$

$Q_s \uparrow: Q_1 \rightarrow Q_3 \checkmark$

Producer surplus $\uparrow: e \rightarrow ed (+d) \checkmark$

Workers better off

$Q_s \uparrow: Q_1 \rightarrow Q_3$

} Producers worse off.

Government better off

receive tax revenue of $h (\overline{Q_3 Q_4} \times \text{tariff per unit})$.

Foreign Producer: worse off

revenue $\downarrow: ijk \rightarrow hj - h = j$ ("is collected by gov")

Society

Consumer surplus change by $-dfhg$	Social welfare decrease by $(f+g) \rightarrow DWL$
Producer surplus change by $+d$	
Government change by $+h$	

Society worse off.

Effect of tariff.

Winners: Domestic producers of protected industry
 Domestic workers of protected industry
 Government gains tariff revenue.

Losers: Domestic consumers.

Foreign producers

Domestic income distribution worsens

Tariff doesn't increase for rich people → regressive.

Increased inefficiency in production

: Tariff makes inefficient domestic producers increase their output. (more resource is inefficiently used)

Increased Misallocation of resource (Globally/domestically)

1. decreased consumption.

2. more production shifted away from efficient foreign producers to less efficient domestic producers.

Welfare effects - as tariff imposed or tariff increase

Consumer Surplus ↓

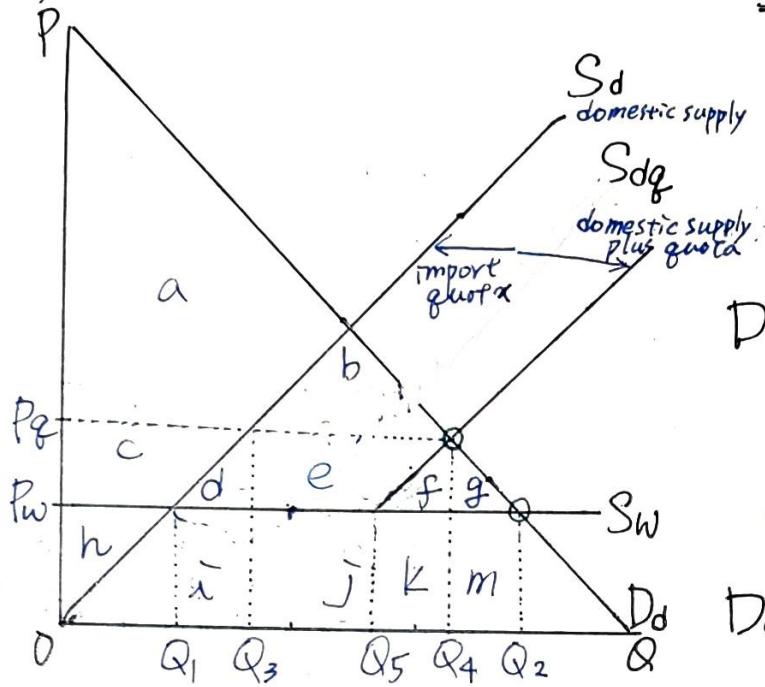
Producer Surplus ↑.

Government revenue exist, but doesn't necessarily increase as tariff increase.

DWL ↑.

II Import quota → legal limit to the quantity of goods that can be imported over a particular time.

→ Decreases imports but doesn't create revenue for government.

Stakeholder analysis

Consumers worse off

 $P \uparrow: P_w \rightarrow P_q \times$ $Q_D \downarrow: Q_2 \rightarrow Q_4 \times$

Consumer surplus ↓: abcdefg → abx

Domestic Producers better off.

 $P \uparrow: P_w \rightarrow P_q \checkmark$ $Q_S \uparrow: Q_1 \rightarrow Q_3 \checkmark$

Producer surplus ↑: h → ch ✓

Domestic Workers better off

 $Q_S \uparrow: Q_1 \rightarrow Q_3$

Social welfare [Consumer surplus (-cdcfg)] decreased by worse off. Producer surplus (+c) decreased by defg (DWL).

Foreign Producer decreased Import quantity ×

Increased price for imports: $P_w \rightarrow P_q \checkmark$

Revenue change ijkm → efjk gain and loss (either worse off or better off) gains and losses.

Explain the market change

① Initially without quota (free trade)

 $P = P_w$, domestic $Q_s = Q_1$, foreign imports = $\overline{Q_1 Q_2}$
 domestic demand = Q_2 .

② Implement import quota (issue "import licence")

foreign imports decreased to $\overline{Q_1 Q_5} (= \overline{Q_3 Q_4})$ → creating shortage of $\overline{Q_5 Q_2}$ for domestic producers to join in, creating new supply S_{dq} → the shortage is closed as S_{dq} creates new equilibrium (Q_4, P_q) thus the price for all goods, including imports and domestic produced goods, increase from P_w to P_q , while equilibrium quantity decrease from $Q_2 \rightarrow Q_4$.

Effects of import quota

Winners: Domestic producers of protected industry

Domestic workers of protected industry

Neutral: Government has no gains and losses.

Losers: Domestic consumers

Domestic income distribution worsens

Increased price due to quota, has same regressive effect as increased price due to tariff.

Increased inefficiency in production

more production by relatively inefficient domestic producers.

Exporting country may be worse off or better off

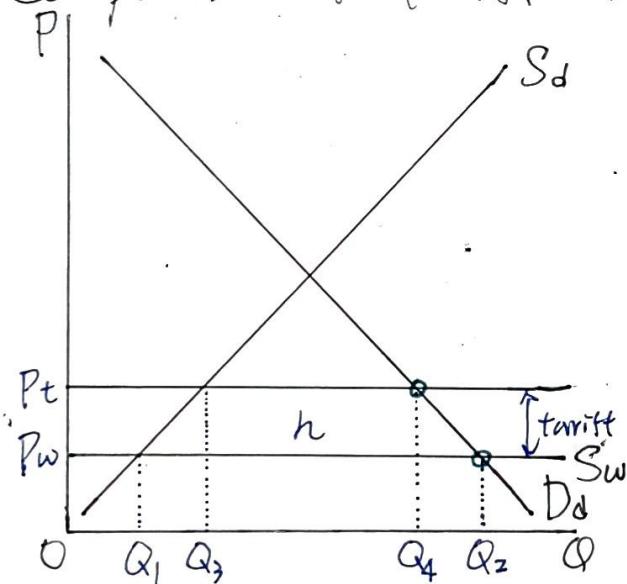
less good exported, but higher price.

Global/Domestic misallocation of resource

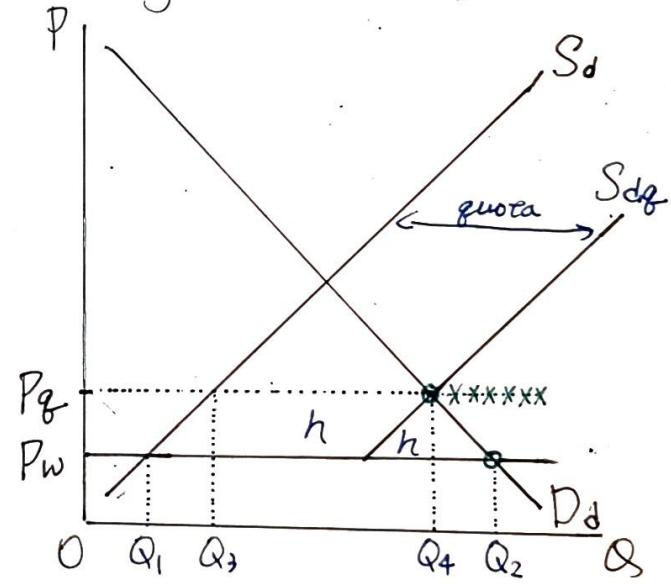
decrease in consumption

production shifted more to inefficient domestic producers.

Comparison of Tariff vs Quota diagram



Tariff Diagram



Quota Diagram.

Similarities: Lower imports, Higher domestic production & price

Difference: area h in tariff is collected by government.

area h in quota is collected by foreign producer

causing leakage (buy import) and part of DWL.

Horizontal Line of P_t and P_q

→ Intersecting points with D_d , S_d ($\overline{Q_3 Q_4}$) refer to import quantity.

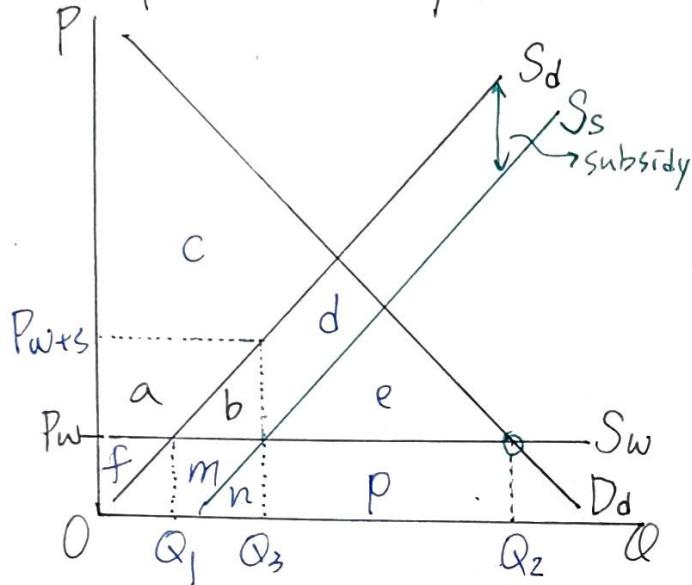
→ world supply curve after quota (P_q line) doesn't extend beyond Q_4

III Production Subsidy.

In International trade protection

Production Subsidy: Protect domestic firms to compete with imports

Export Subsidy: Protect domestic firms that export



Stakeholder Analysis

Consumers Price unchanged: P_w

Not affected Q_D unchanged: Q_2

Consumer surplus unchanged
= abcde

Domestic Producers better off.

Producer receive price

= Market price (P_w) + Subsidy = $P_{w+\text{sub}}$

$\therefore P \uparrow: P_w \rightarrow P_{w+\text{sub}}$ ✓

$Q_S \uparrow: Q_1 \rightarrow Q_3$ ✓

Producer Surplus: $f \rightarrow f+a$ ✓

Producing at Q_3 , domestic producer initially get surplus of $f-b$, but government subsidy added at b thus $(f-b)+(a+b)=f+a$

Workers better off

$Q_S \uparrow: Q_1 \rightarrow Q_3$

Government worse off

Increase expenditure of subsidy area $a+b$

Tax Payer worse off

Subsidy expenditure crowd out budget spent on other public service and if other expenditure is not cut down, possible tax raise.

Foreign Producer Worse off

Import quantity decrease from $\overline{Q_1 Q_2} \rightarrow \overline{Q_3 Q_2}$

and as price stays at $P_w \rightarrow$ revenue decrease $mnp \rightarrow p$

Society Welfare loss = b

Consumer surplus: unchanged	}	worse off.
producer surplus: +a		
government : -ab		

14.3

Effects on Production subsidies.

Winners: Domestic Producers of protected industry
Domestic workers/employment

Neutral: Consumers are not affected.

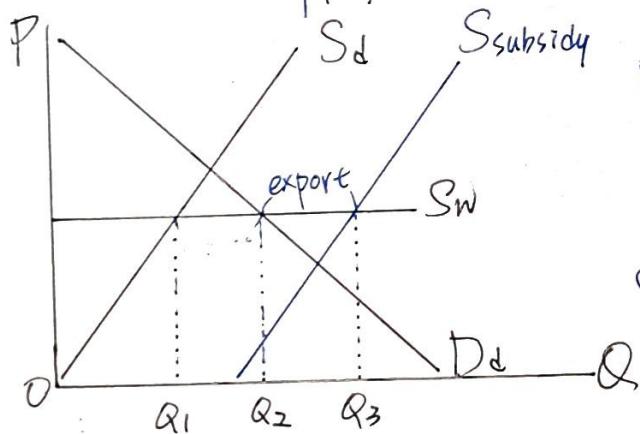
→ production subsidies does not change market equilibrium

Losers: Government budget } subsidy expenditure crowd out other
Tax payers } public service spending, or lead to tax raise.

Foreign producer/Exporting countries Exports ↓

Increased inefficiency in production } production is shifted
Global misallocation of resources. } to less efficient local producers.

* When subsidy is too much as to let domestic production (Q_s) exceed domestic quantity demanded (Q_d)
→ excess supply would be exported



before production subsidy (free trade)

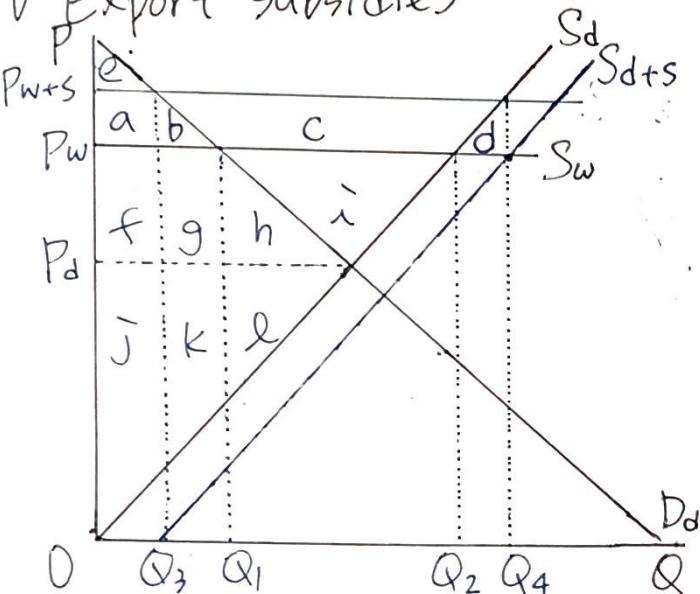
$$\text{domestic } Q_s = Q_1$$

$$\text{imports} = \overline{Q_1 Q_2}$$

after over subsidizing

COUNTRY change from importing to exporting the goods with Q_2 being supplying to domestic country, and $\overline{Q_2 Q_3}$ being exported.

IV Export Subsidies



→ Exporting country have a domestic market price (P_d) lower than world price (P_w) before opening to free trade.

→ After free trade, price increase to P_w .

domestic Q_d fall to Q_1 ,
export quantity = $\overline{Q_1 Q_2}$
price = P_w

→ Gov provide subsidy on "exports" raising price to P_{w+s} .
domestic Q_d fall to Q_3 .
producers would produce at Q_4 (subsidy covers loss of d)
and exports increase quantity to $\overline{Q_3 Q_4}$

Stakeholder Analysis

Consumers $P \uparrow: P_w \rightarrow P_{w+s}$, $Q_d \downarrow: Q_1 \rightarrow Q_3$

worse off Consumer surplus : $abe \rightarrow e (-ab)$

Domestic Producers Producer receive price $\uparrow: P_w \rightarrow P_{w+s}$

Better off $Q_s \uparrow: Q_2 \rightarrow Q_4$

Producer surplus: $fghijkl \rightarrow fghijkl - d + \overbrace{bcd}^{(+abc)}$

Workers better off $Q_s \uparrow: Q_2 \rightarrow Q_4$

Government increase expenditure on subsidy ($-bcd$)

worse off

Tax Payers → gov expenditure on subsidy, either crowd out budget for other public services, or lead to tax raise if other public service remain unchanged.

Society $\left[\begin{array}{l} \text{Consumer surplus} - ab \\ \text{Producer Surplus} + abc \end{array} \right] \quad abc - abcd = -bd$

$\left. \begin{array}{l} \\ \\ \text{Government} \end{array} \right] \quad \text{Welfare loss} = bd$

$\left. \begin{array}{l} \\ \\ \end{array} \right] \quad \text{Society is worse off}$

Effects on export subsidies.

Winners: Domestic producers (Exporting country)

Domestic Employment (workers)

Losers: Domestic Consumers paying higher price

enjoying less of the product.

{ Negative effect on government budget
Tax payers

Domestic Income distribution

{ Increased inefficiency in production

{ Global misallocation of resource

Other exporting countries worse off

→ foreign producers lose a share of global market.

due to increased exports due to the export subsidy.

Administrative Barriers.

To impose obstacles to imports so as to decrease its quantity, countries increase the procedures such as red tape checks, or adding more requirements that imports must fulfill such as, various technical standards which would block out a range of imports.

15.1 Arguments for & against trade protection.

I. Arguments for trade protection

1. Infant Industry — new domestic industry that hasn't established itself and achieve efficiencies in production, thus it will not be able to compete with "mature" firms from abroad.

→ theoretical justification :: economies of scale.

Infant industries cannot achieve once the industry matures the protection must be eliminated.

① → potential danger: gov might not know which industry could develop into low cost producers.

② Once being protected, industries lose the incentive to increase efficiency.

③ even when industry "matured" gov may still continue protection.

2. National Security —

Certain industries are essential for national defence

ex Aircraft, weapons, chemical, water?

thus should be protected so country can produce itself in times of war or a national emergency.

→ Problem: should industries having indirect relation to defence be protected (ex steel) for this reason?

<Case> 2018 US imposed high tariffs on imported aluminium from some countries, and later led to trade war.

3. Health, safety and environmental standards.

Each country setup standards, to protect consumers or ensure quality for commodities.

→ Problem: sometimes these standards serve as hidden protection ex Administrative barriers.

4. Diversification for developing country

Increasing Variety of goods/serv produced ↲ specialisation

(ELDC) Economically least developed countries often specialises and export a few primary commodities, this excessive specialisation carries dangers. thus they would be better off diversifying their production. <this applies only to developing countries>

→ Question: which industry is most appropriate to protect for successful diversification, gov might not know.

II Argument which economist find questionable

1. Anti-dumping (selling a good at a price below production cost in international markets; oftentimes is related to export subsidies)

Argument: Trade protection should be imposed when a trading partner is practicing dumping.

→ Question: How/Where is proof of dumping

2 Unfair Competition (measures that helps industries become more competitive, thus increases its exports.)

- dumping
- production/export subsidies (cost decreased "artificially")
- administrative barriers (hidden protection)
- undervalued currencies (making exports more competitive)
- violation of intellectual property

→ Question: proof for above occasions is time costly & difficult.

3 Correcting a balance of "payment deficit".

when outflow of money in a country is greater than its inflow, usually when importing more than exporting, limiting imports can help correct the deficit, but might induce **retaliation** from other countries.

→ can be used as an emergency measure in short-term.

→ in the long run, there are more effective solutions.

4 Tariff as a source of government revenue

this is frequently seen in "developing countries" or "early stages of development", as tariffs constitute more than 1/2 gov revenue.

Disadvantage: Tariffs is regressive → worsen income distribution

- a. Overdependent on tariff gives gov excuse to postpone tax system reform.

5 Protection of domestic jobs.

Argument: Restriction of imports increases domestic production and increases domestic employment.

- Problems
- ① If limited imports applies to "inputs of production" production cost thus increases. $\rightarrow S \downarrow \rightarrow \text{unemployment} \uparrow$
 - ② other exporting country may get hurt by worsened unemployment, and would **retaliate** by imposing similar restrictions.

Suggestion: Apply fiscal, monetary or supply side policies instead.

III Arguments against trade protection.

\rightarrow Compare the effects of all trade protection measures

1. Domestic producers and workers are the only ones who always benefit
2. The gains of producers comes with a cost of maintaining higher production cost, and reduced efficiency.
(as being protected, firms lose the incentive to lower cost).
3. Consumers lose in most cases.
4. Income distribution in most cases worsens
↳ regressive effect due to price increase or tariff tax.

5 Foreign producers worse off in all cases (maybe NOT in quotas)

6. Domestic and global resource allocation worsens in all cases

\rightarrow Other effects beyond stakeholder gains/losses.

1. Trade protection may negatively impact rGDP, PL, employment if protected goods is used in production \rightarrow high price \rightarrow higher cost.
 \rightarrow SRAS \downarrow cost push inflation (rGDP \downarrow , price level \uparrow , unemployment \uparrow).
2. Trade protection may negatively impact competitiveness of exports. if protected goods is used in producing exports \rightarrow high price result in higher cost of export \rightarrow less competitive in world markets.
3. Trade protection may lead to **retaliation**, and **trade wars**. Exporting countries that suffer losses would impose same measure or other retaliation measures.
4. Trade protection creates potential for corruption/smuggling.