



GOVERNMENT INTERVENTION

Why governments intervene in markets

1. Earn revenue for the government from indirect taxes.

- Value-added tax, tariff, consumption tax
- Usually imposed on goods with price inelastic demand. ($0 < PED < 1$)
- Cigarettes, alcohol, gasoline, etc.

2. Provide support to firms:

- Financial assistance to **small start-up firms**
- Offer subsidies or other kinds of help to support **special firms/industries** (e.g., environmentally friendly products, wind power and solar power, etc.)
- Protect **domestic firms** from foreign competition arising from imports. (e.g., tariffs, quotas)



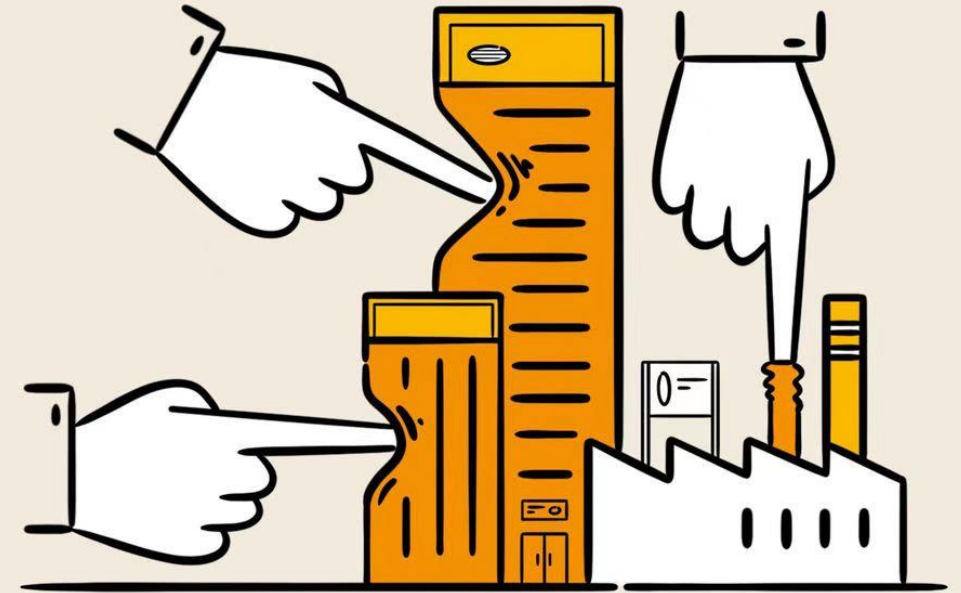
Why governments intervene in markets

3. Provide support to households on low incomes

- Subsidies
- Price ceilings (a maximum price set below the equilibrium price, in order to make goods more affordable to people on low incomes)
- Direct provision of services (free education, free health care)
- Transfer payments (unemployment benefits, child benefits, maternity benefits, etc.)

4. Influence the levels of production of firms

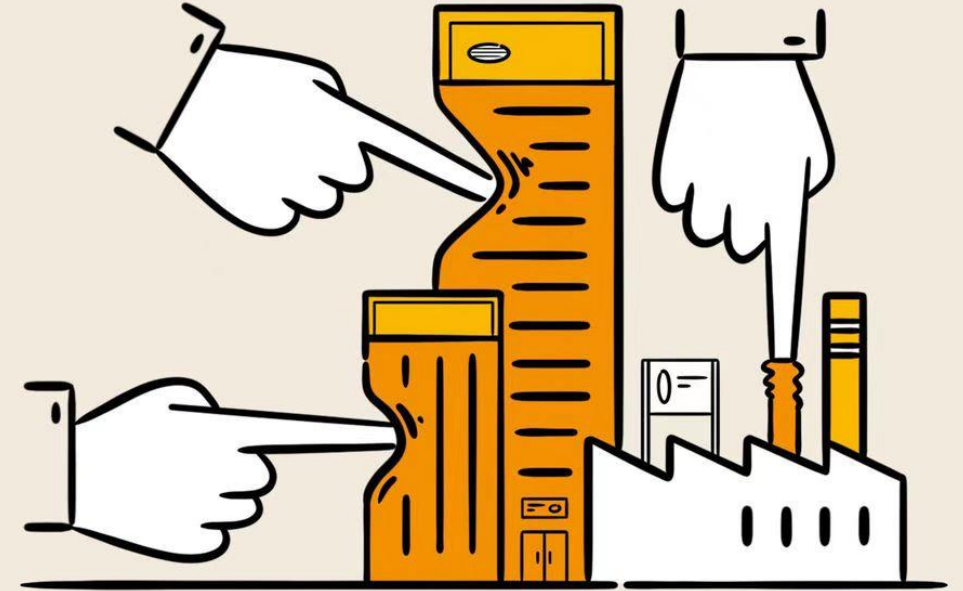
- Increase the firm's level of production by different approaches.



Why governments intervene in markets

5. Influence levels of consumption of households/consumers

- Encourage the consumption of merit goods (education, health care, etc.)
 - ✓ Encouragement approaches: subsidies, direct provision of services, nudges, command and control methods.
 - Reduce consumption of demerit goods (cigarettes, fatty foods)
 - ✓ Discouragement approaches: indirect taxes, nudges, command and control methods.
- * Command and control is the government laws and regulations that must be followed.



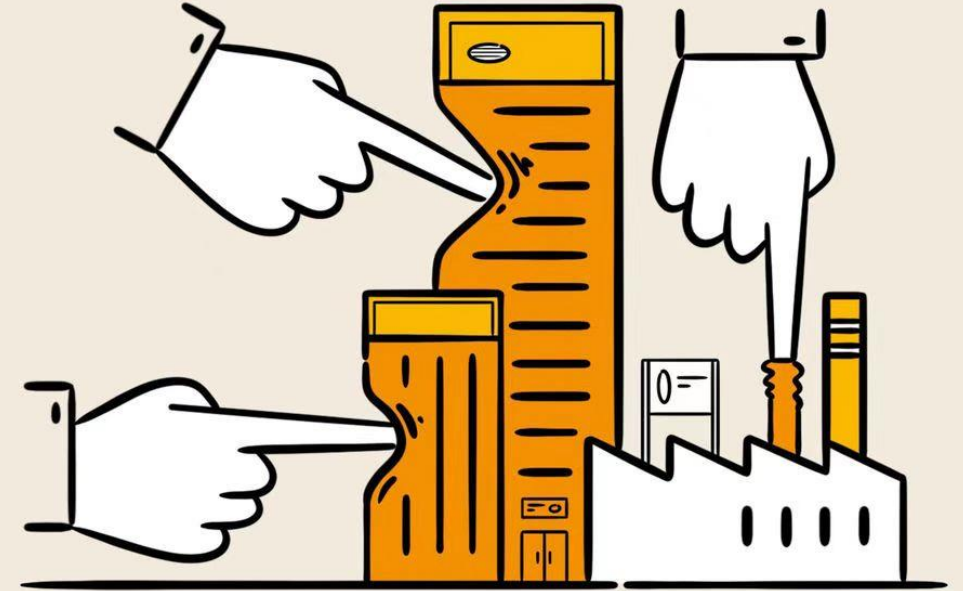
Why governments intervene in markets

6. Correct market failure

- Market failure is the failure of the market to achieve allocative efficiency. (too large or too small quantities of goods/services)

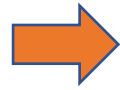
7. Promote equity (equality)

- Income and wealth distributions



Government intervention approaches in Microeconomics:

1. Indirect taxes
2. Subsidies
3. Price controls:
 - Price ceilings
 - Price floor



Approaches we focus in this chapter

4. Direct provision of services
5. Command and control regulation and legislation
6. Consumer nudges

➤ **Purpose:** try to influence demand or supply for a good or service, thus affecting market outcomes.





Price Control

Price Control

- **Price control** refers to the setting of minimum or maximum prices by the government (or private organisations) so that prices are unable to adjust to their equilibrium level determined by demand and supply.
 - Price controls result in **market disequilibrium**, and therefore in shortages(excess demand) or surpluses(excess supply).
- **Persisting market disequilibrium**

Government Approaches:

- Price ceilings
- Price floors



Price Ceiling

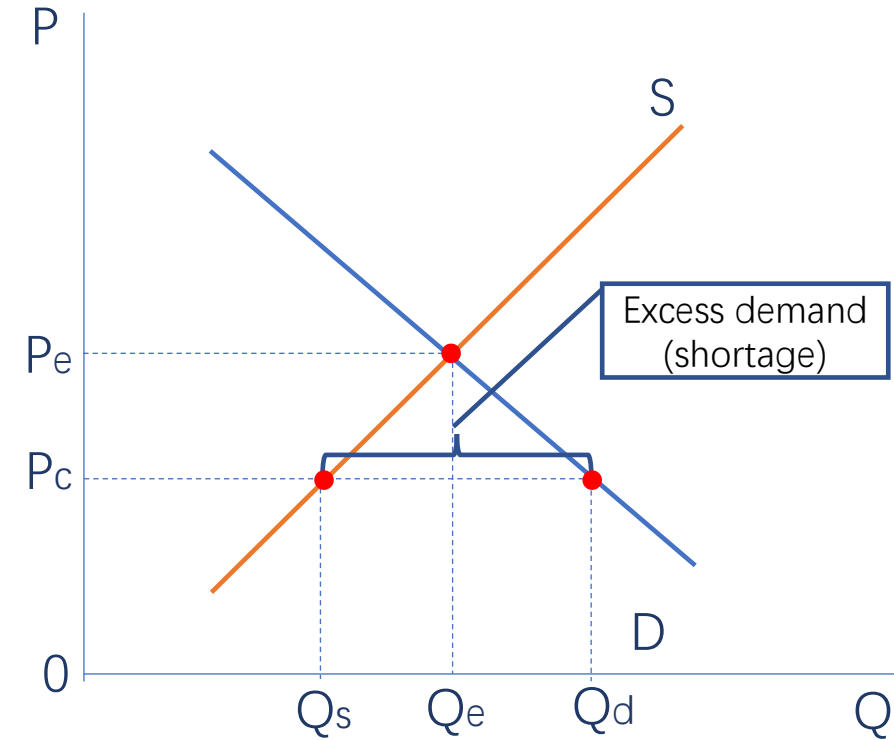
Price ceilings

- **Price ceiling** is a **maximum price** set **below** the equilibrium price, in order to make goods more affordable to people on low incomes.
- It must be below the equilibrium price, otherwise the price ceiling would have no effect.



Illustration of price ceiling

- Initial equilibrium point with P_e and Q_e determined by demand and supply.
- Government set the P_c (price ceiling) at a level below P_e .
- At P_e with $Q_d > Q_s$, leading to a **shortage (excess demand)**.
- Persisting market disequilibrium since the market cannot force the price up to P_e , the price hits the legally set price ceiling.
- **Lower Q_s supplied and sold** than at the equilibrium price.



Consequences

– for markets

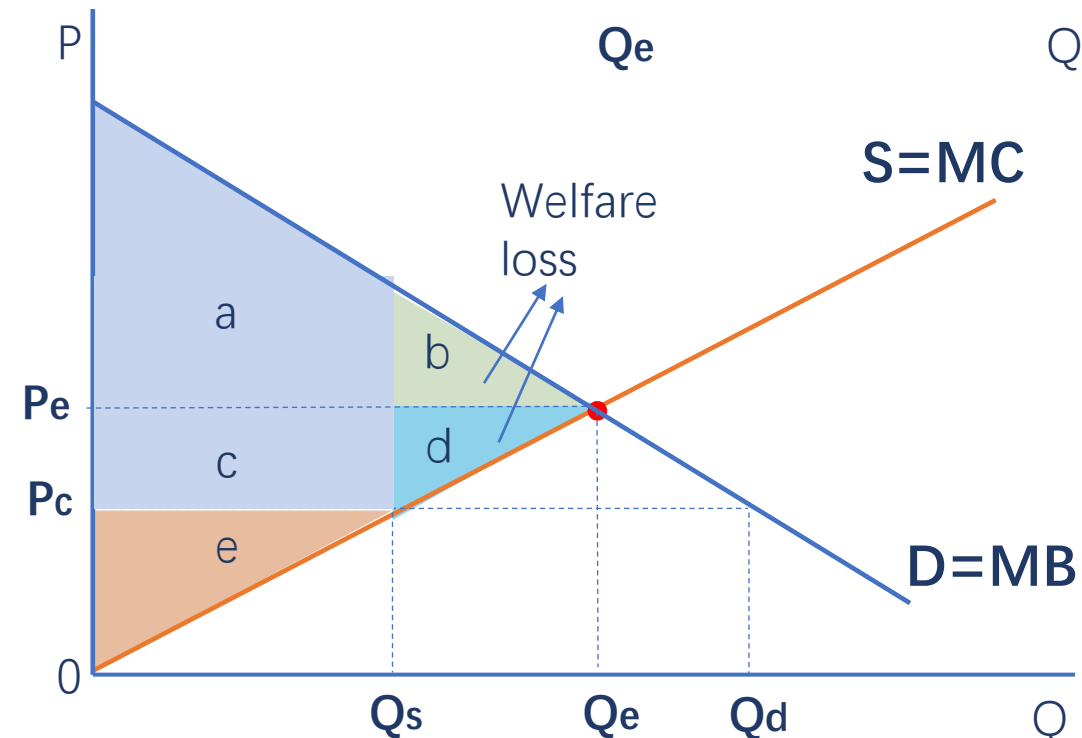
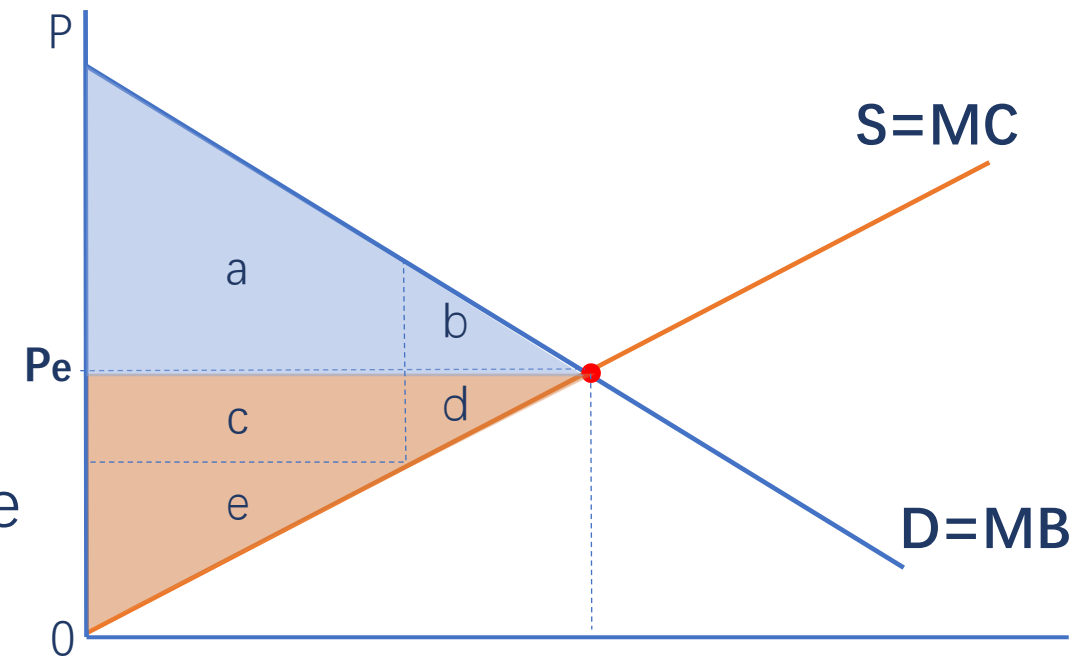
5. Negative welfare impacts

In free market, allocative efficiency with consumer surplus and producer surplus. P_e & Q_e

- Consumer surplus = $a+b$
- Producer surplus = $c+d+e$
- **Social surplus = $a+b+c+d+e$**

If a price ceiling, P_c is imposed, Q_s is produced and consumed.

- Consumer surplus = $a+c$
- Producer surplus = e
- **Social surplus = $a+c+e$**
- Welfare loss due to price ceiling = $b+d$



Consequences

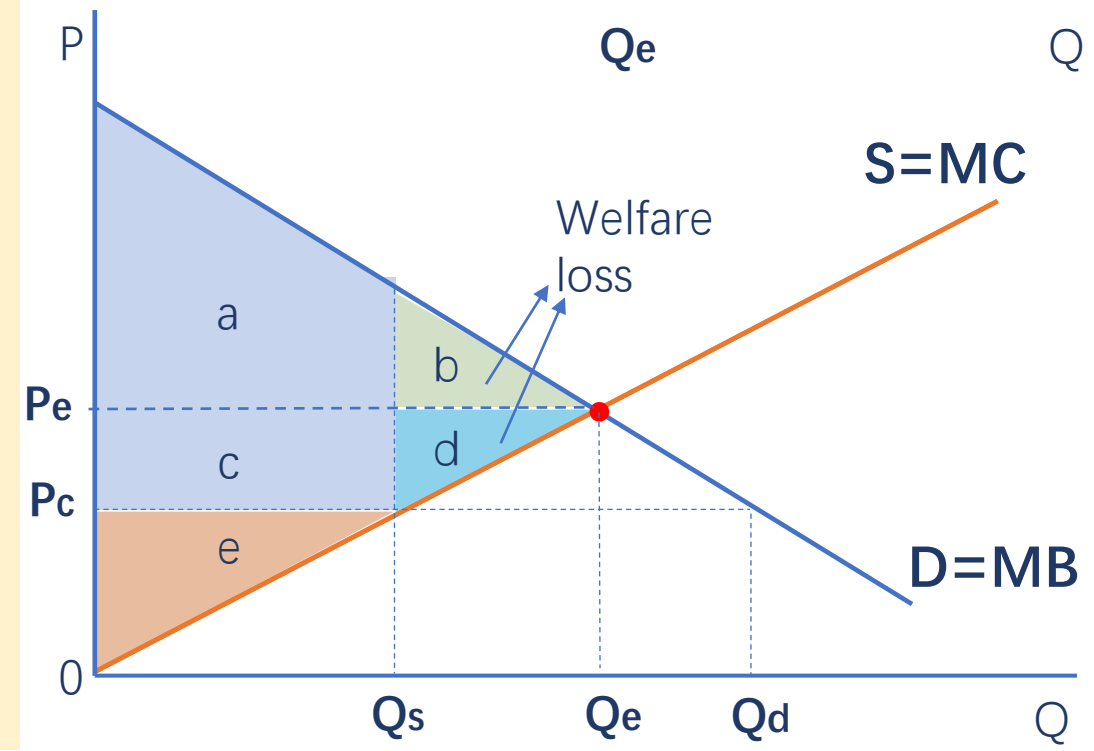
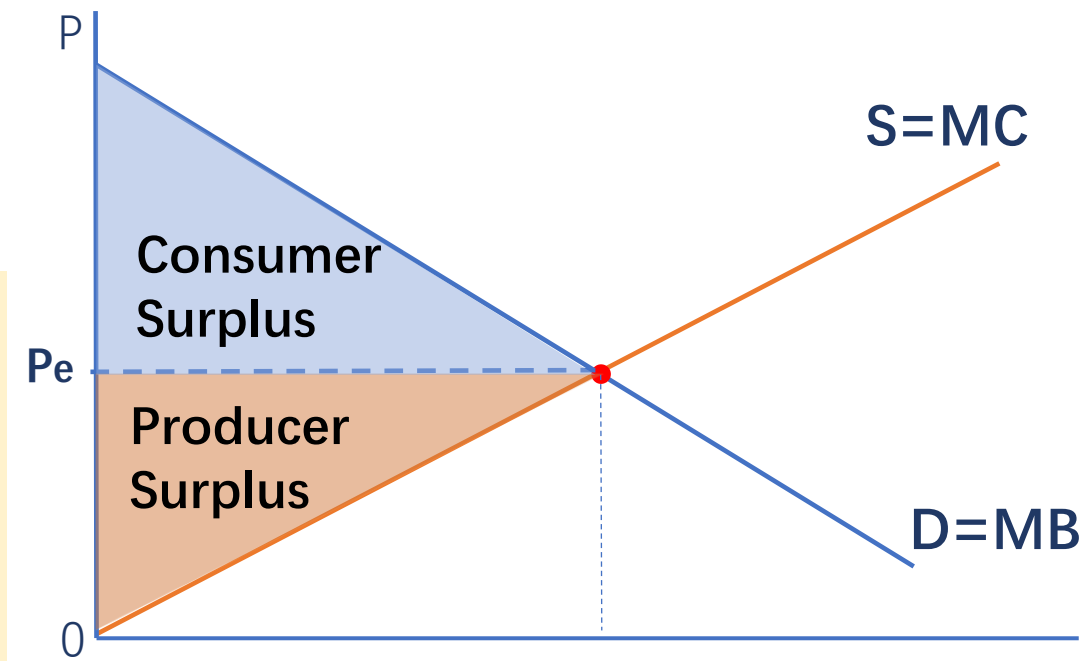
– for markets

Welfare loss (deadweight loss) represents social surplus or welfare benefits that are lost to society because resources are not allocated efficiently.

Allocative inefficiency $\rightarrow MB > MC$ at Q_s .

The benefit consumers receive from the last unit of the good they buy is greater than the marginal cost of producing it.

\rightarrow **Underallocation of resources** to its production.



Consequences – for markets

1. Shortages

Since at the lower price P_c , $Q_d > Q_s$, not all interested buyers are able to buy the product. The shortage = $Q_d - Q_s$

2. Non-price rationing

- Rationing: a method of dividing up something among possible users.
- Free market use price rationing approach. But for products with price ceiling, **the price mechanism no longer achieves its rationing function.**
- Non-price rationing:
 - Waiting in line, first-come-first-served
 - Distribution of coupons
 - Favouritism



Consequences – for markets

3. Underground (or parallel) markets

- Underground markets involve buying/selling transactions that are unrecorded, and are usually illegal.
- With price ceiling, scalpers buy a big amount of goods at the maximum legal price, and then illegally reselling it at a price above the legal maximum.

4. Underallocation of resources to the good and allocative inefficiency.

- Not enough resources are allocated to the production of the good, resulting in underproduction relative to the social optimum.
- Society is worse off due to underallocation of resources and allocative inefficiency.

Consequences – for stakeholders

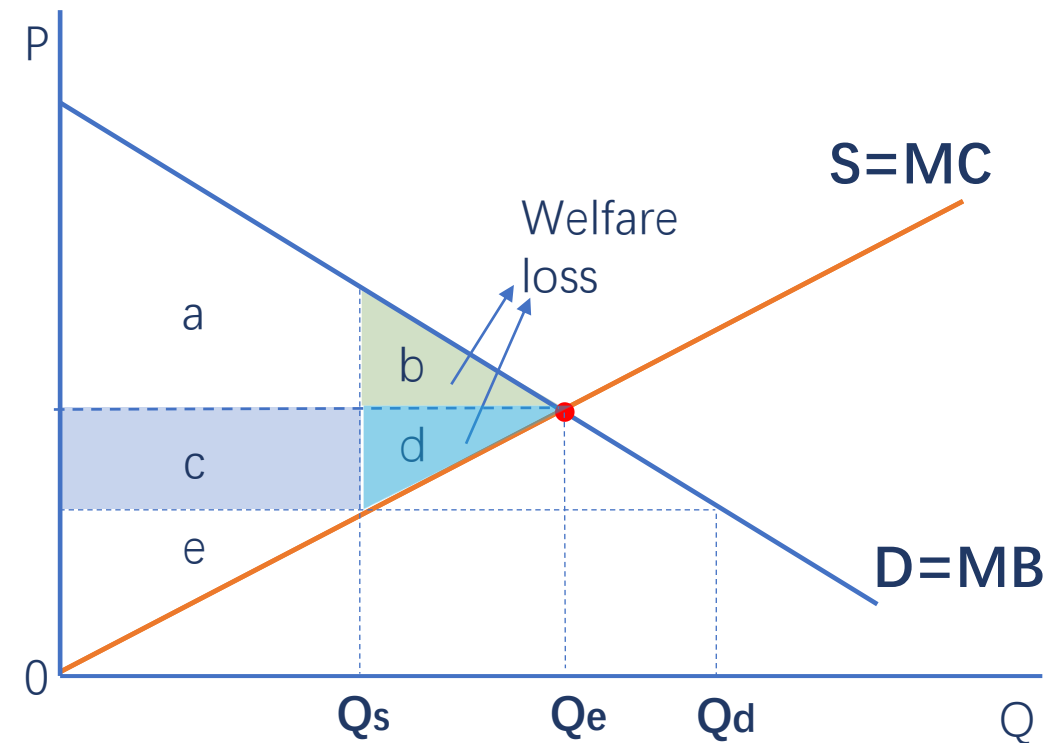
Stakeholders are individuals or groups of individuals who have an interest in something and are affected by it.

1. Consumers

- Shortage
- Gain area c (buy goods at lower price)
- Lose area b (unsatisfied buying needs)

2. Producers

- Worse off – sell a smaller quantity of the good at a lower price.
- Total revenue ↘
- Transfer producer surplus (area c) to consumers, Lose area d (welfare loss)
- Non-price rationing
- Degradation of quality



Consequences – for stakeholders

3. Workers

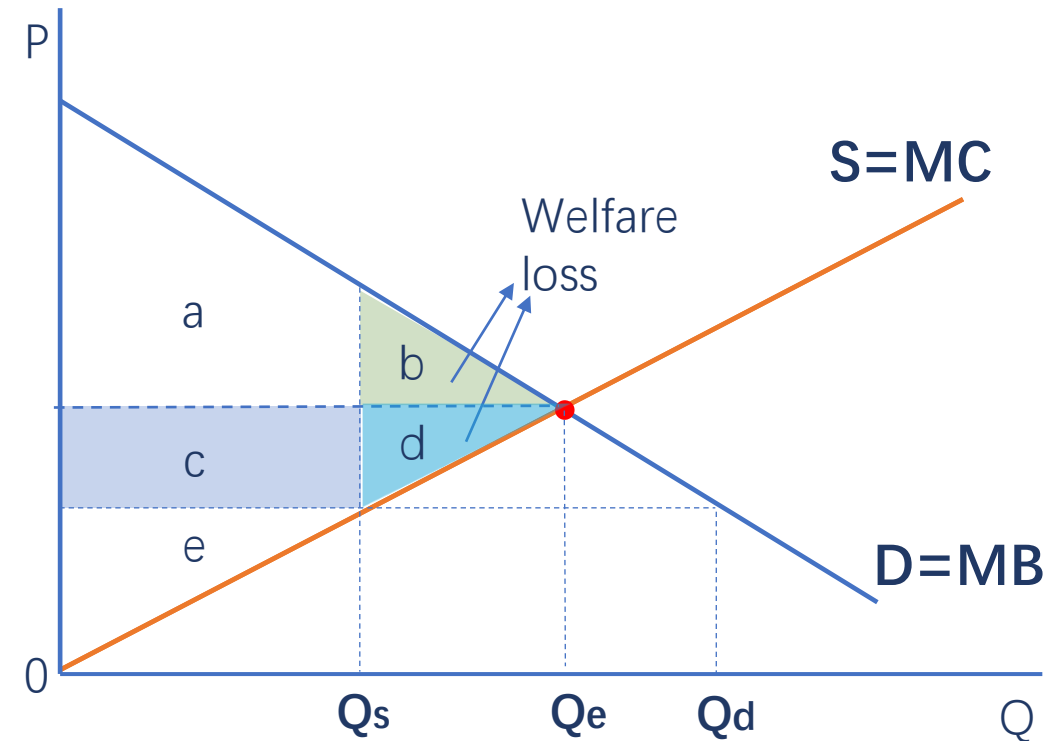
- Output ↘ → employment ↘
- Worse off

4. Government

- For government budget: no effect.
- Cost of pricing evaluation and supervision.
- Gain political popularity.

5. Society

- Underground market
- Allocative inefficiency & welfare loss, resource under-allocation.



Example of rent control



photo credit: Angela Rowlings

In a time of rising rents,
evictions, and
homelessness...

**We need
#rentcontrol.**

#RenterStateOfEmergency

Rent control:
maximum legal rent
on housing, which is
below the market-
determined level of
rent.

Consequences of rent control (price ceiling)

For tenants:

- Lower price, Housing become more affordable to low-income earners.
- Shortage of housing (no flat to live)
- For those tenants already have place to live → lower rental cost
- For people who are searching for place to live → hard to find flat/house to live.
- Long waiting list of interested tenants.

For landlord:

- Low rent results in low rental revenue → run-down and poorly maintained rental house.
- Non-price rationing (e.g. favoritism, “key money” “shoe money”, etc.)

Short-run vs long run

- Short-run: relatively inelastic of demand and supply, landlord have to rent out their flat/house, most tenants have flat to live.
- Long-run: more landlord sell their flat/house, or change it for commercial usage, etc. → leave the market;
- lower price attract more people to seek flat/house. (move to city with rent control, move out from their parent's house)



Consequences of rent control

For Government:

- Gain political popularity
- Cost of pricing evaluation
- Supervision cost

For society:

- Underground market where tenants sublet their apartments at rents above the legal maximum.
- Potential social insecurity

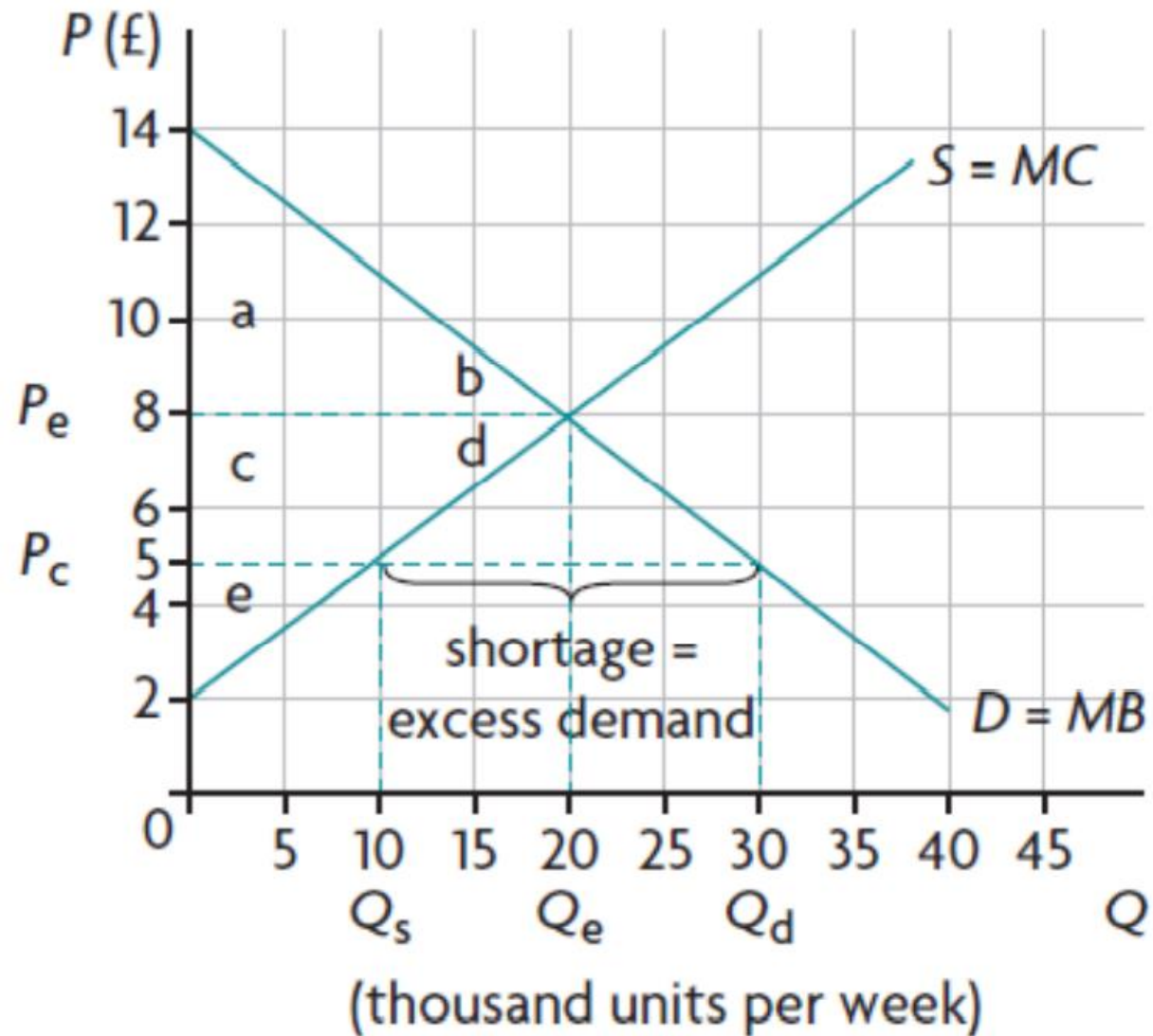


Other examples of price ceiling

- Gasoline price ceiling
- Food price control
- Price ceiling on Prescription drugs
- Wartime pricing



Calculating the effects of price ceiling



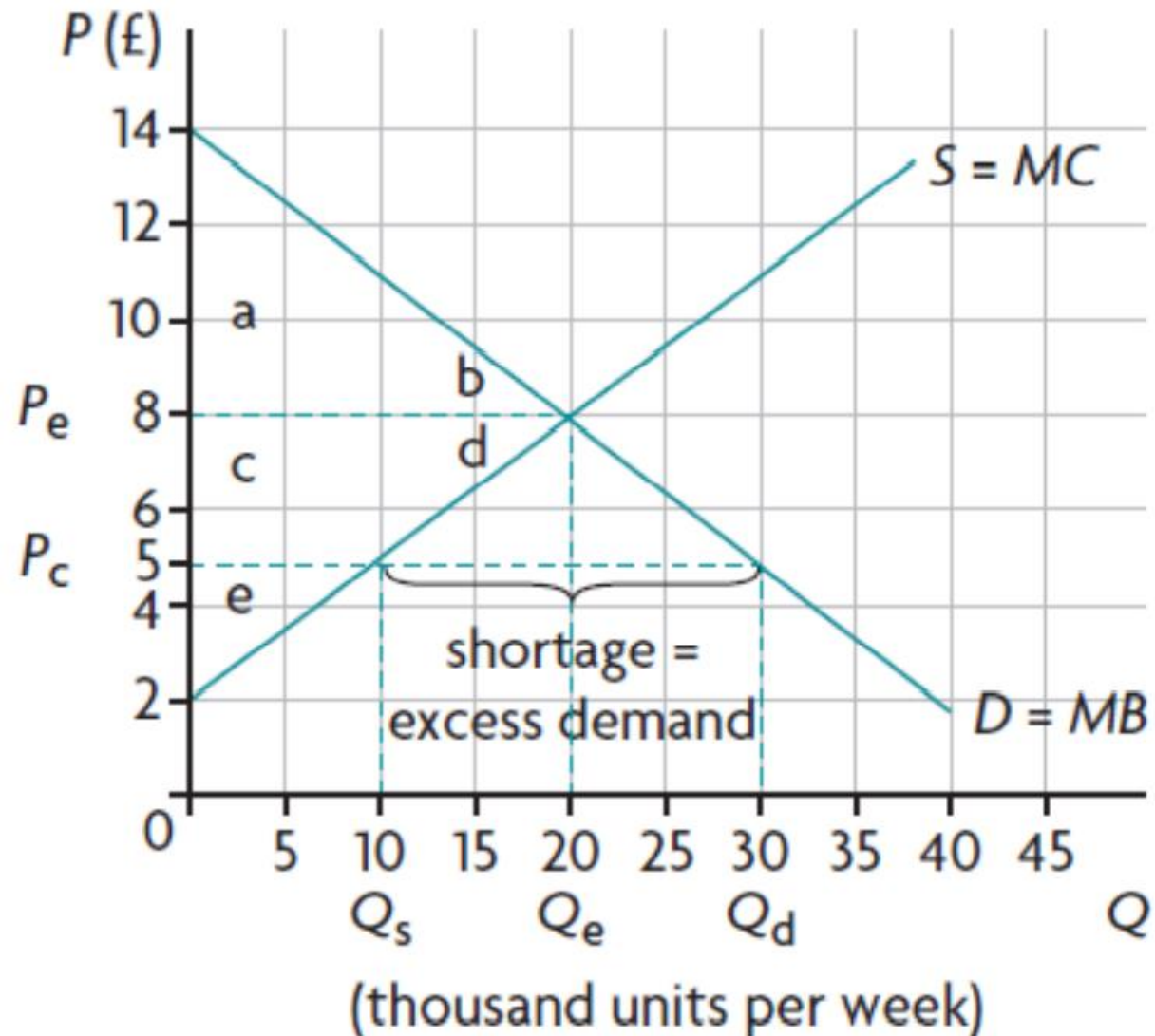
Consumer expenditure:

- Before: $P_e \times Q_e = 8 \times 20,000 = \text{£}160,000$
- After: $P_c \times Q_s = 5 \times 10,000 = \text{£}50,000$

Producer revenue:

- Before: $P_e \times Q_e = 8 \times 20,000 = \text{£}160,000$
- After: $P_c \times Q_s = 5 \times 10,000 = \text{£}50,000$

Calculating the effects of price ceiling



- Consumer surplus:

- Before: $(P_{\text{intercept of } D} - P_e) \times Q_e/2$
 $= (14 - 8) \times 20,000/2 = \text{£}60,000$

- After (trapezium): $(11 - P_c) + (14 - P_c) \times Q_s/2$
 $= 15 \times 10,000/2 = \text{£}75,000$

- Producer surplus:

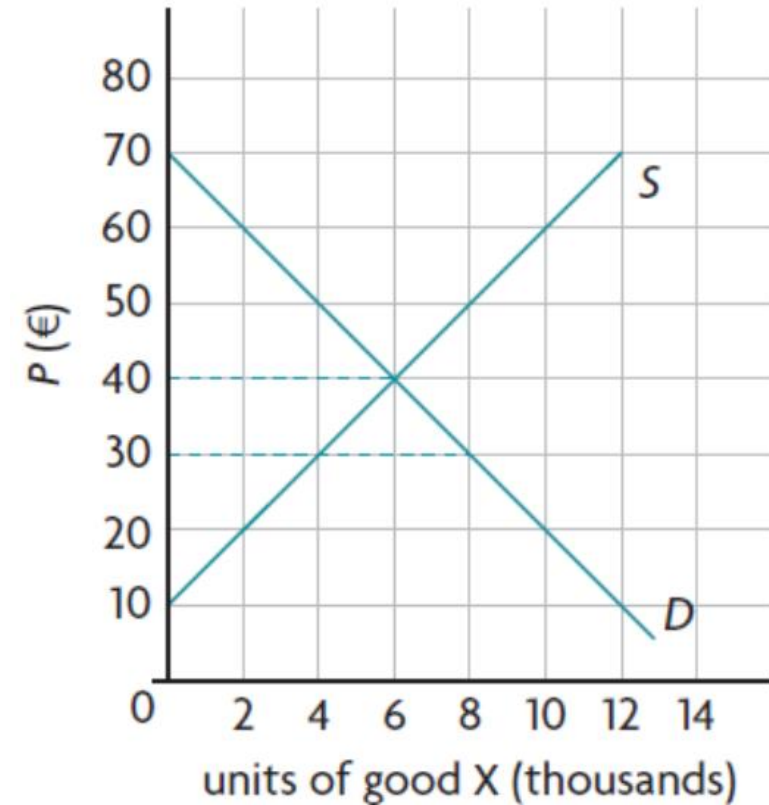
- Before: $(P_e - P_{\text{intercept of } S}) \times Q_e/2$
 $= (8 - 2) \times 20,000/2 = \text{£}60,000$

- After: $(P_c - P_{\text{intercept of } S}) \times Q_s/2$
 $= (5 - 2) \times 10,000/2 = \text{£}15,000$

- Welfare loss:

$= 60,000 + 60,000 - 75,000 - 15,000 = \text{£}30,000$
 $= \text{Area of triangle } (11 - 5)(Q_e - Q_s)/2 = \text{£}30,000$

1. The diagram shows a price ceiling of €30 that has been set for good X. Calculate:
- The shortage (excess demand)
 - The change in consumer expenditure
 - The change in producer revenue
 - The change in consumer surplus
 - The change in producer surplus
 - Welfare loss



1. The diagram shows a price ceiling of €30 that has been set for good X. Calculate:

a. The shortage (excess demand)

$$Q_d - Q_s = 8000 - 4000 = 4000 \text{ units}$$

b. The change in consumer expenditure

$$\text{Original consumer expenditure} = P * Q = 40 * 6000 = \text{€}240,000$$

$$\text{Consumer expenditure after price ceiling} = P * Q = 30 * 4000 = \text{€}120,000$$

$$\Delta \text{ in consumer expenditure} = 240,000 - 120,000 = \text{€}120,000 \text{ (decreased)}$$

c. The change in producer revenue

$$\text{Original producer revenue} = P * Q = 40 * 6000 = \text{€}240,000$$

$$\text{Producer revenue after price ceiling} = P * Q = 30 * 4000 = \text{€}120,000$$

$$\Delta \text{ in producer revenue} = 240,000 - 120,000 = \text{€}120,000 \text{ (decreased)}$$

d. The change in consumer surplus

$$\text{Original CS} = 6,000 * (70 - 40) / 2 = \text{€}90,000$$

$$\text{CS after price ceiling} = [(50 - 30) + (70 - 30)] * 4000 / 2 = \text{€}120,000$$

$$\Delta \text{ in CS} = 120,000 - 90,000 = \text{€}30,000 \text{ (increased)}$$

e. The change in producer surplus

$$\text{Original PS} = 6,000 * (40 - 10) / 2 = \text{€}90,000$$

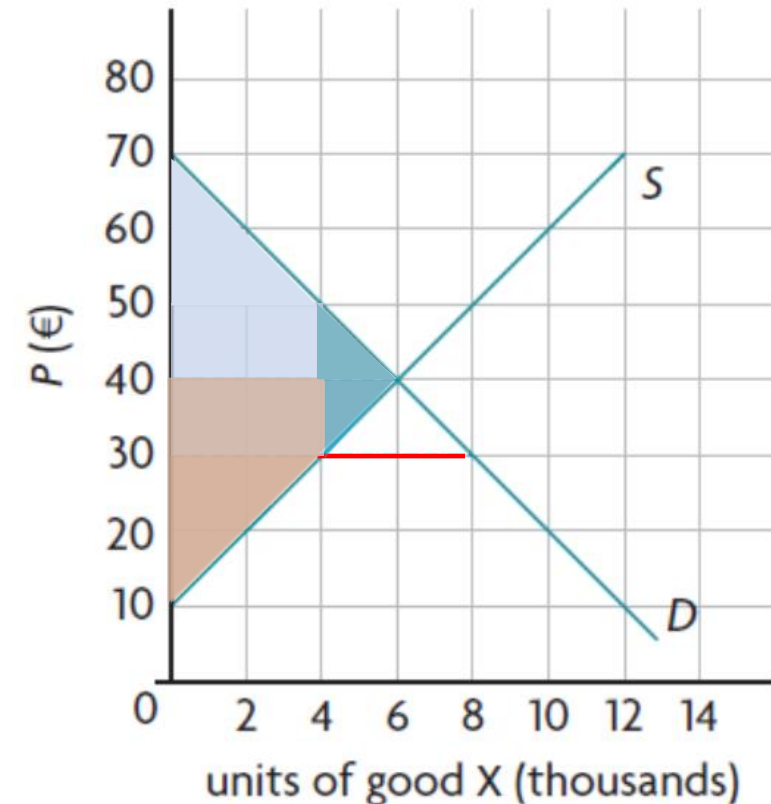
$$\text{PS after price ceiling} = 4,000 * (30 - 10) / 2 = \text{€}40,000$$

$$\Delta \text{ in PS} = 90,000 - 40,000 = \text{€}50,000 \text{ (decreased)}$$

f. Welfare loss

$$\begin{aligned} \text{Welfare loss} &= \text{Original social welfare} - \text{current social welfare} \\ &= (90,000 + 90,000) - (120,000 - 40,000) = \text{€}20,000 \end{aligned}$$

$$\text{OR Welfare loss} = (50 - 30) * (6000 - 4000) / 2 = \text{€}20,000$$





Price Floor

Price floors

A **price floor** is a **minimum price** set **below** the equilibrium price, in order to provide income support to farmers or to increase the wages of low-skilled workers.

- If it were below the equilibrium price, the price floor would have no effect.
- **Reasons:**
 1. Provide income support for farmers.
 2. Protect low-skilled, low-wage workers by offering minimum wage.



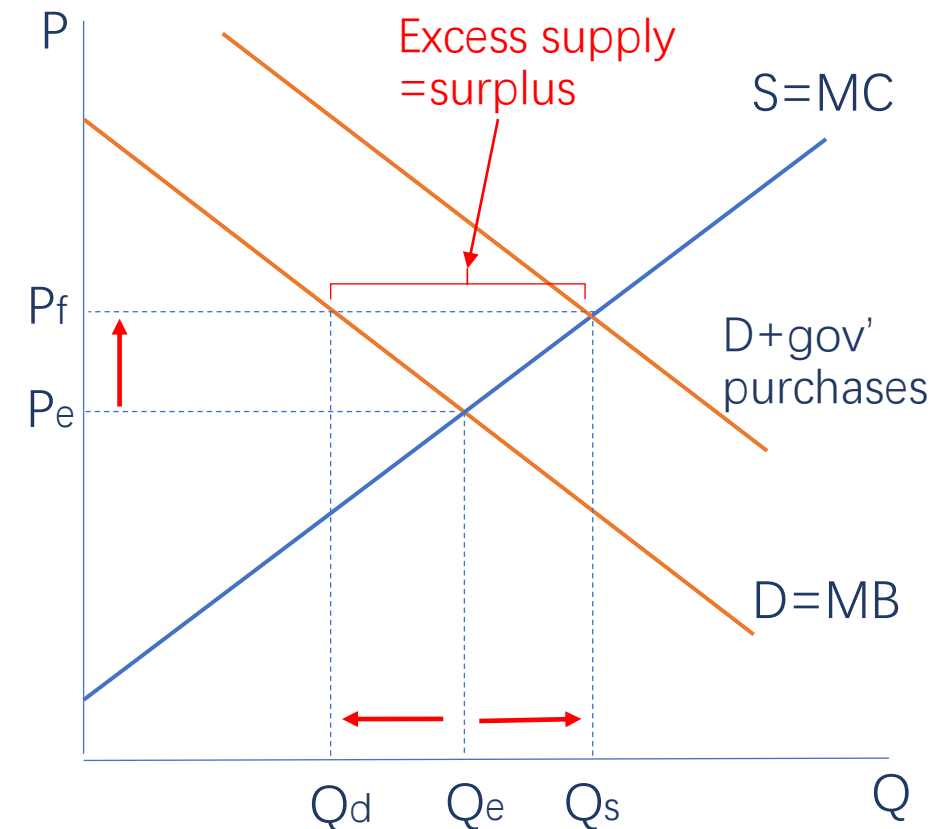
Consequences for market

1. Surpluses

- Original equilibrium at P_e and Q_e .
- Government set the price on P_f above the market equilibrium price.
- Quantity demand fall to Q_d , Quantity supply increase to Q_s , leads to excess supply (surplus) of $Q_s - Q_d$.

Sometimes, the government **buys up** the excess supply to maintain the price floor at P_f .

- Demand curve shift to **D+gov' purchases**.
- Problematic consequences for Government to deal with those surplus:
- a. Store it. (additional storage cost)
 - b. Sell it abroad (subsidy to the producer to lower the price)



Consequences for market

2. Firm inefficiency.

- Inefficient firms with high costs of production do not face incentives to cut costs by using more efficient production methods.

3. Overallocation of resources to the production of the good and allocative inefficiency.

- Larger than optimum quantity produced.

Consequences for market

4. Negative welfare impacts

Under free market:

- Consumer surplus = $a+b+c$
- Producer surplus = $d+e$
- $MB = MC$

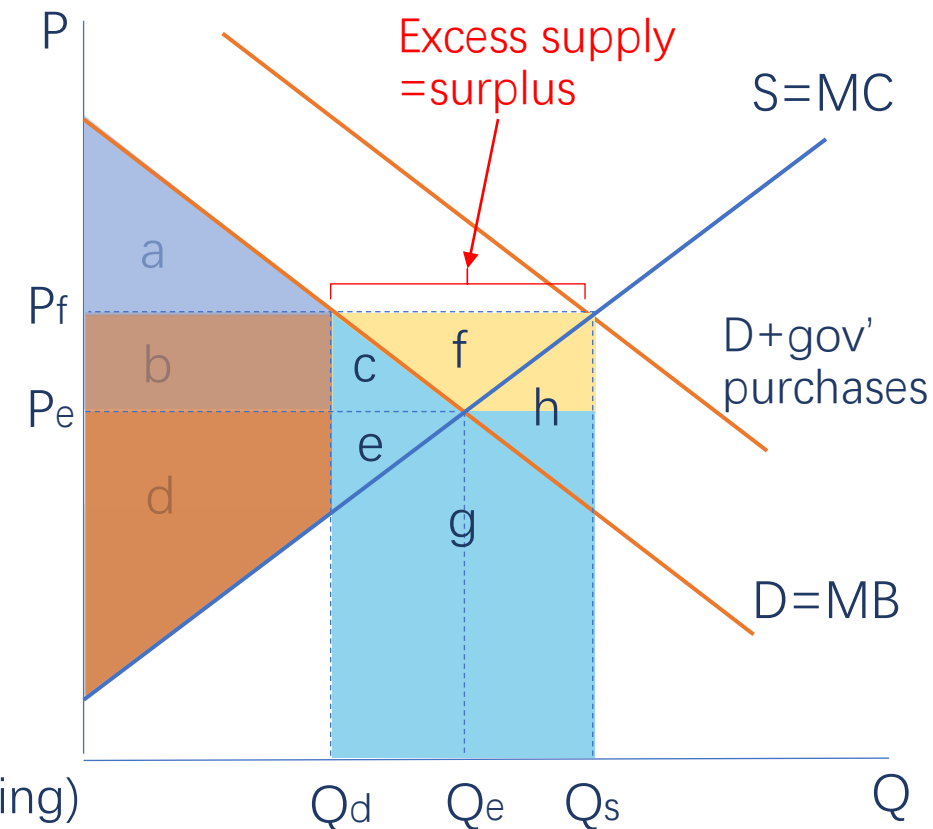
After setting price floor:

a. Without government purchasing

- Consumer surplus = a
- Producer surplus = $b+d$
- Welfare loss = $c+e$

b. With government purchasing:

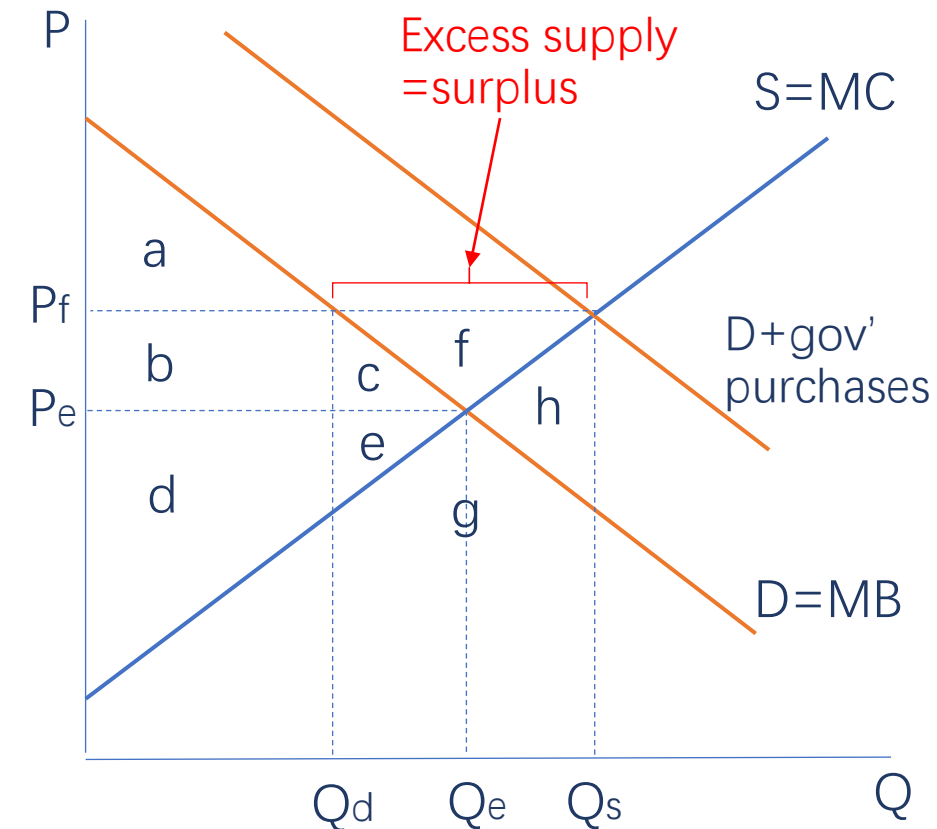
- Consumer surplus = a
- Producer surplus = $b+c+d+e+f$
- Government spending = $P_f \times (Q_s - Q_d) = c+e+f+g+h$
- Welfare loss = $(\text{original CS+PS}) - (\text{current CS+PS} - \text{Gov. spending})$
 $= (a+b+c+d+e) - [(a+b+c+d+e+f) - (c+e+f+g+h)]$
 $= c+e+g+h$ (blue area)



Consequences for market

Overallocation of resources (overproduction) or **Allocative inefficiency**.

- **$MB < MC$** : too much of the good is produced.



Consequences for stakeholders

For consumers:

- Price paid ↗, Quantity demanded ↘
- Transfer CS b,c to producers.
- Worse off

For producers:

- Price sold ↗, Quantity demanded ↗
- Total revenue ↗
- Better off

For workers:

- More workers being employed.

For government:

- Less government funds to spend on other desirable activities in the economy.
- Further cost of storing the surplus or subsidizing it for export.

For stakeholders in other countries

- Lower world price lead to underallocation of resources.
- Waste of resources

