

EPFL

ECOLOGICAL ECONOMICS

Env-610

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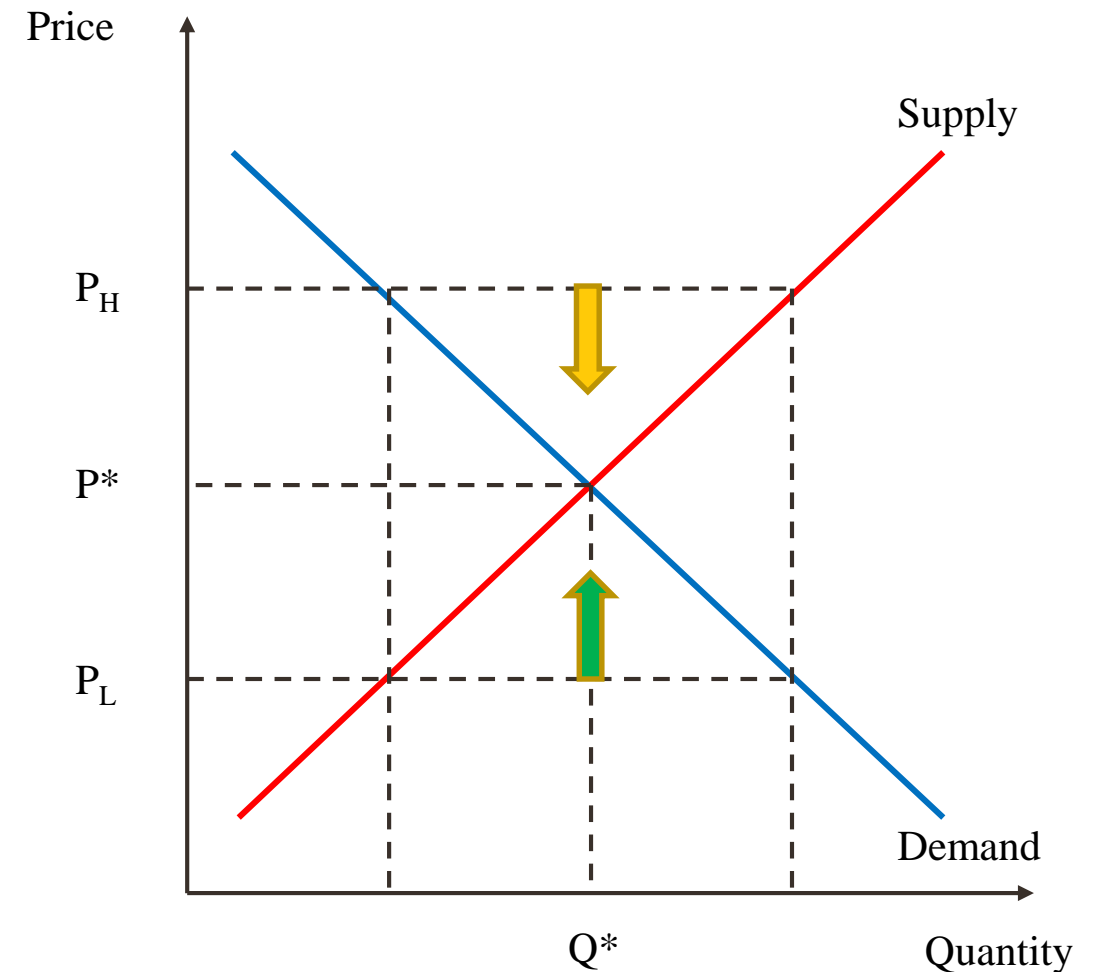
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Basics – Market

DEMAND MEETS SUPPLY MARKET EQUILIBRIUM

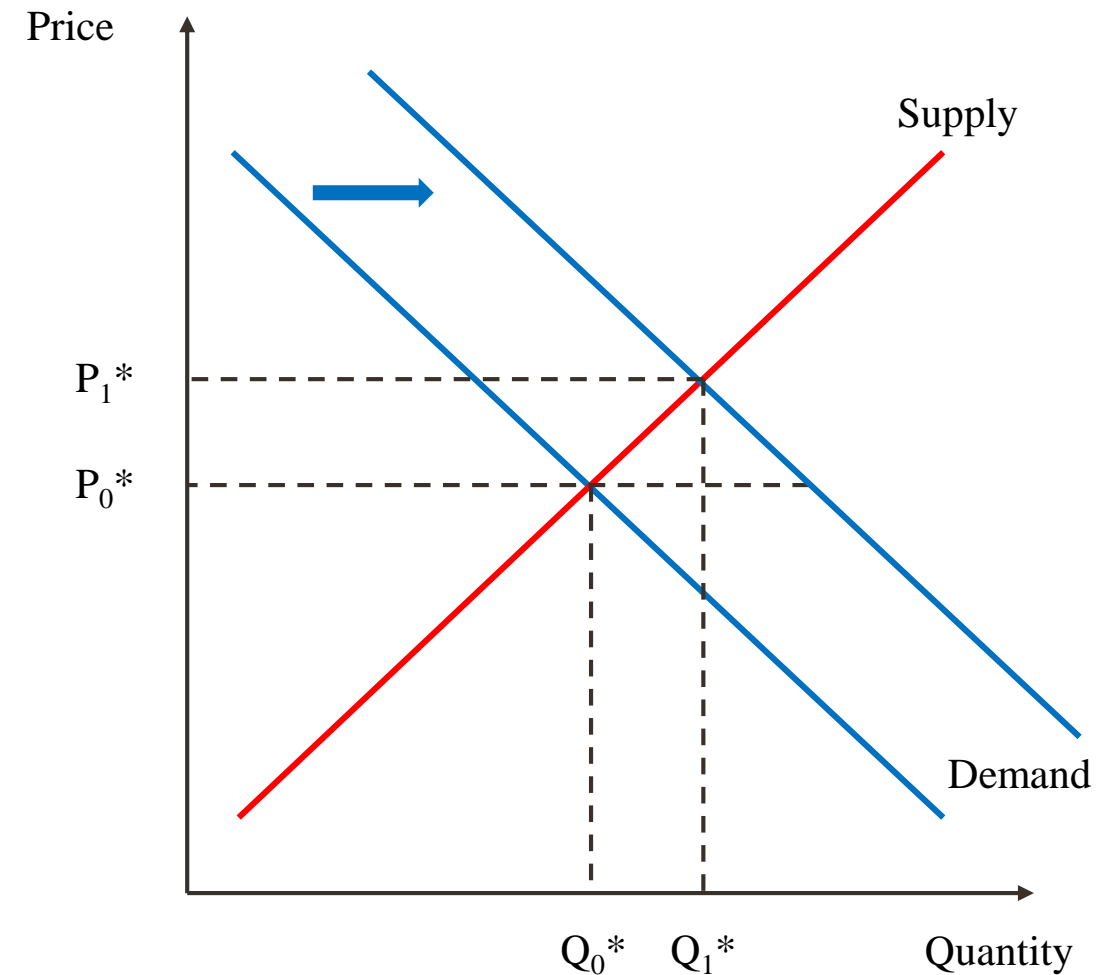
Market equilibrium

- Too high price: Supply exceeds demand, which pushes the price down
- Too low price: demand exceeds supply, which pushes the price up
- The price adjusts to clear the market
- **Market equilibrium:** pair (P^*, Q^*) such that $Q^D(P^*) = Q^S(P^*) = Q^*$



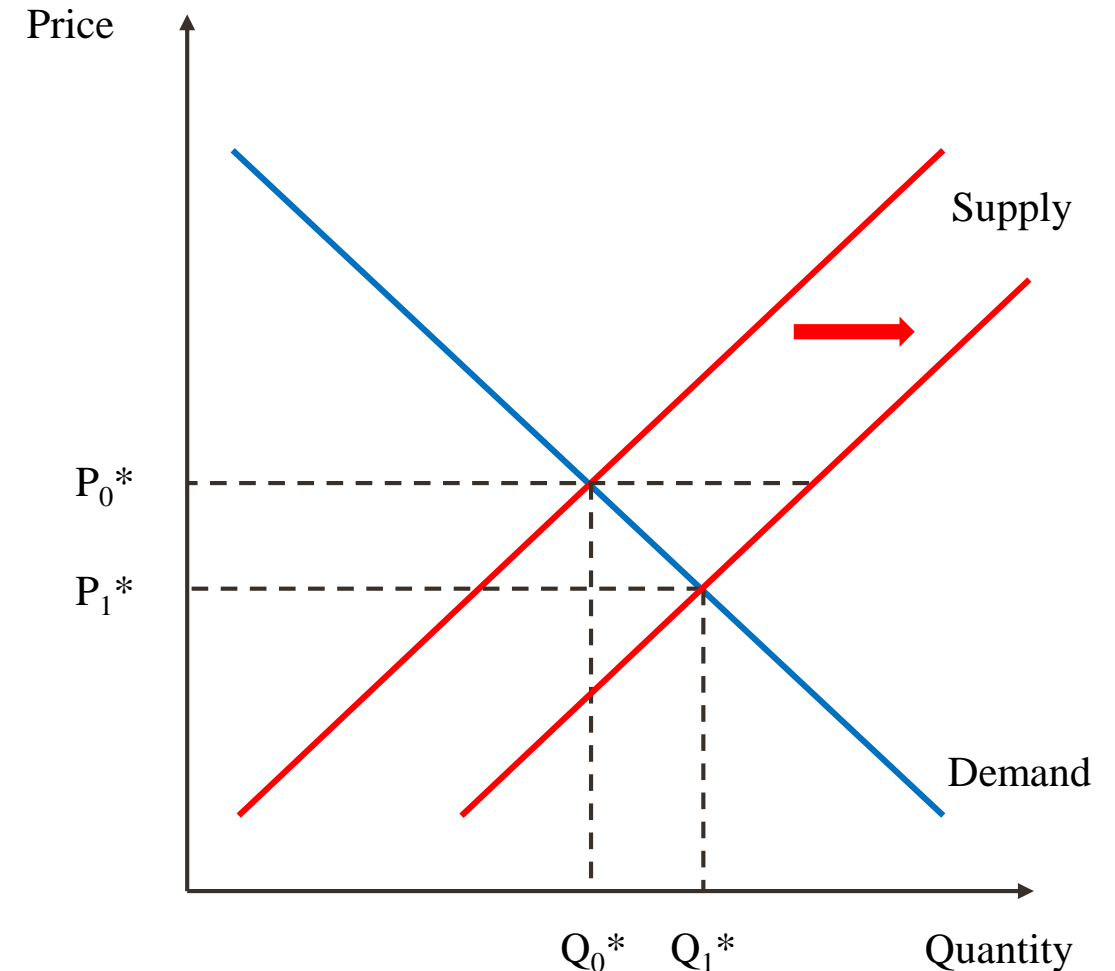
Increase of demand

- An increase of demand is a rightward shift (more quantity demanded for same price) or, equivalently, an upward shift (higher willingness to pay for same quantity) of the demand curve
- The new equilibrium has a higher price and a higher quantity
- A decrease of demand would have the opposite effect



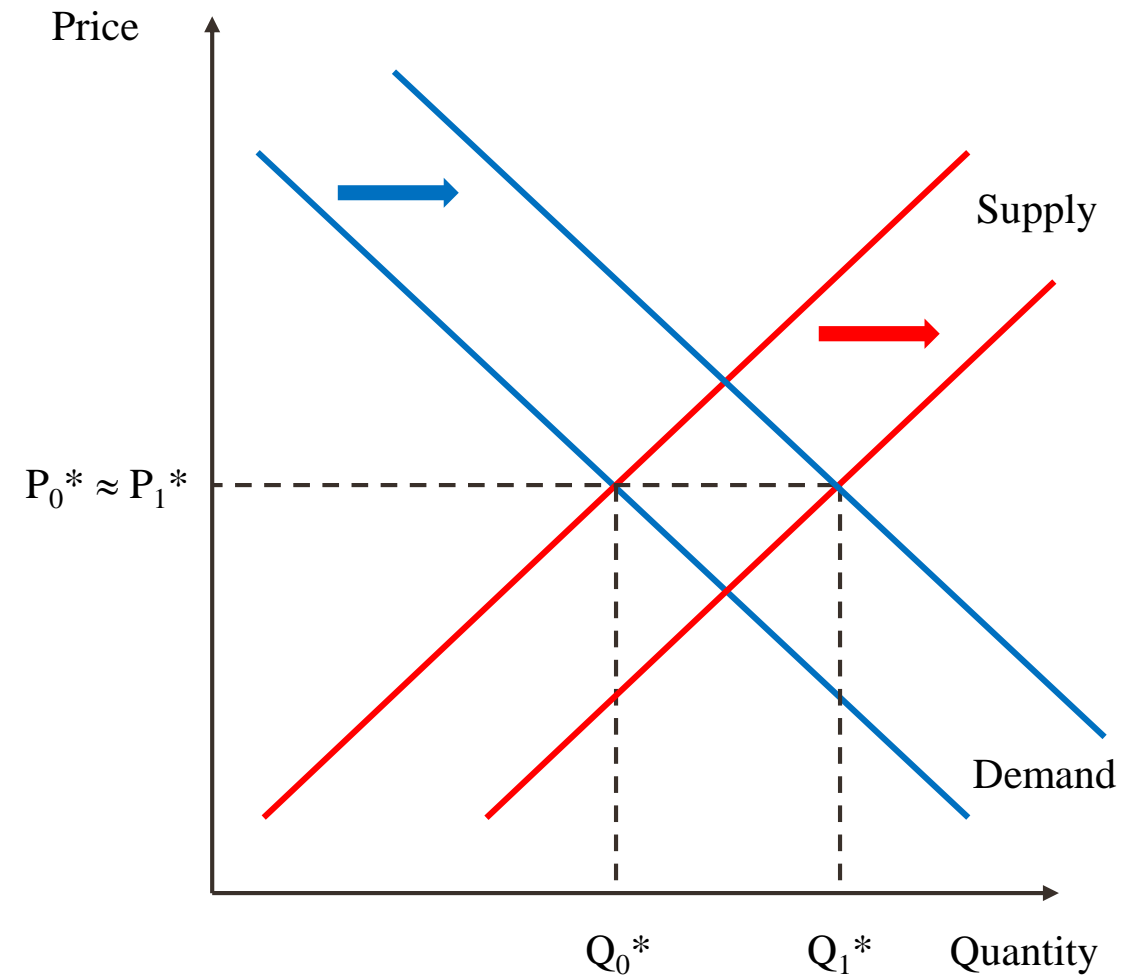
Increase of supply

- An increase of supply is a rightward shift (more quantity supplied for same price) or, equivalently, a downward shift (lower willingness to accept for same quantity) of the supply curve
- The new equilibrium has a lower price and a higher quantity
- A decrease of supply would have the opposite effect



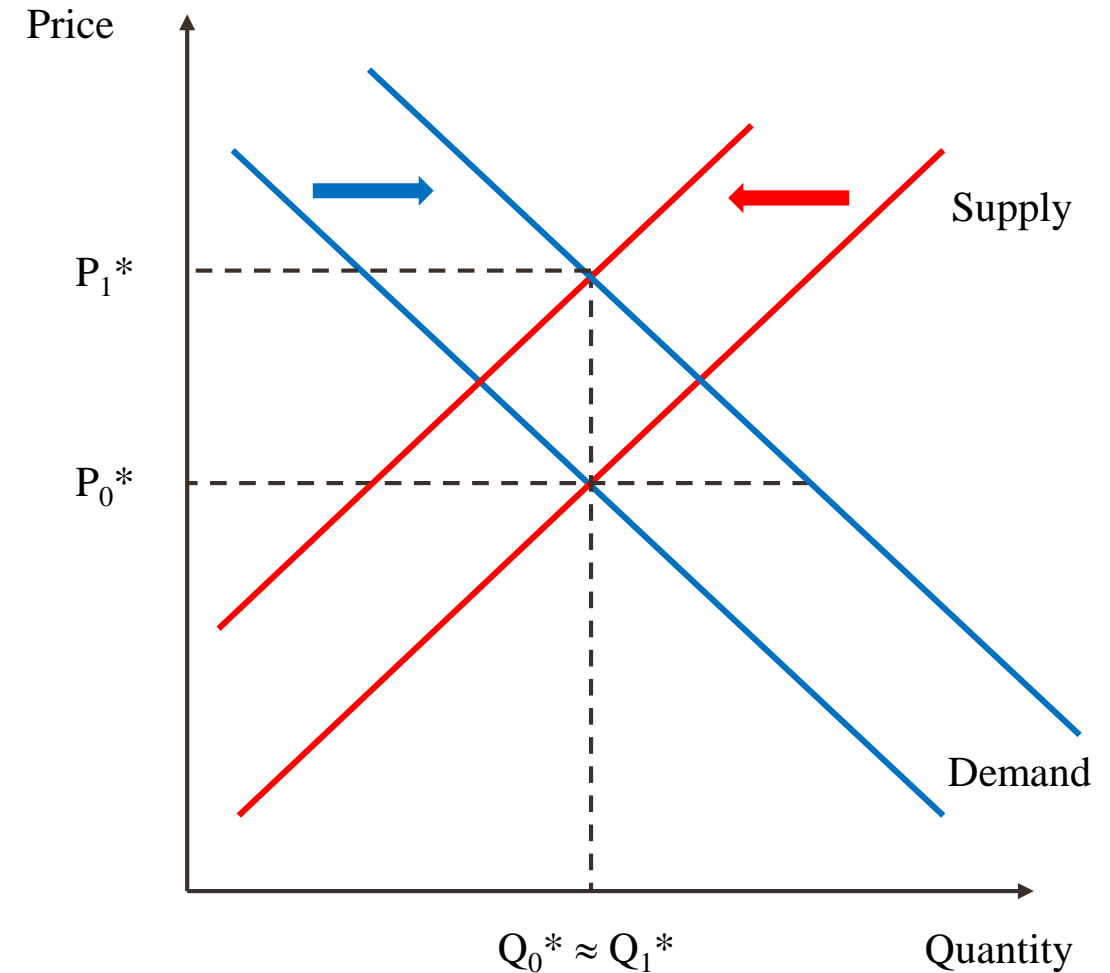
Supply and demand move in same direction

- When supply and demand both increase, the quantity traded can increase strongly with stable price
- When supply and demand both decrease, the quantity traded can decrease strongly with stable price



Supply and demand move in opposite directions

- When demand increases but supply decreases, the price can increase strongly while the quantity traded is essentially unchanged
- When demand decreases but supply increases, the price can decrease strongly while the quantity traded is essentially unchanged



Modifications of market equilibrium explained

DEMAND	SUPPLY	QUANTITY	PRICE
+	=	+	+
-	=	-	-
=	+	+	-
+	+	++	↑↓
+	-	↓↑	++

Observing markets

		Price		
		Decrease	Stable	Increase
Quantity	Decrease			
	Stable			
	Increase			

From the change in price and quantity, we can infer which side of the market changed most



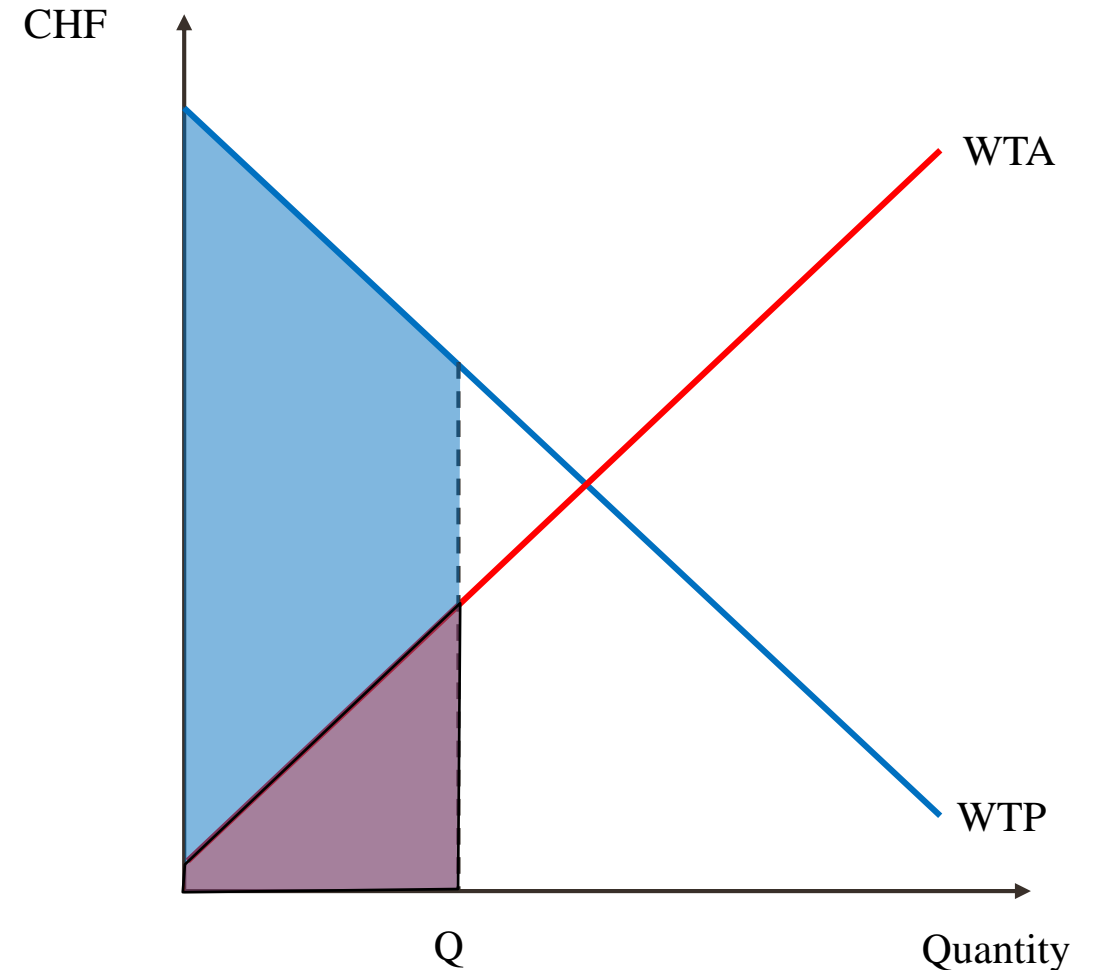
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Basics – Market

NORMATIVE VIEWS ON THE (COMPETITIVE) MARKET

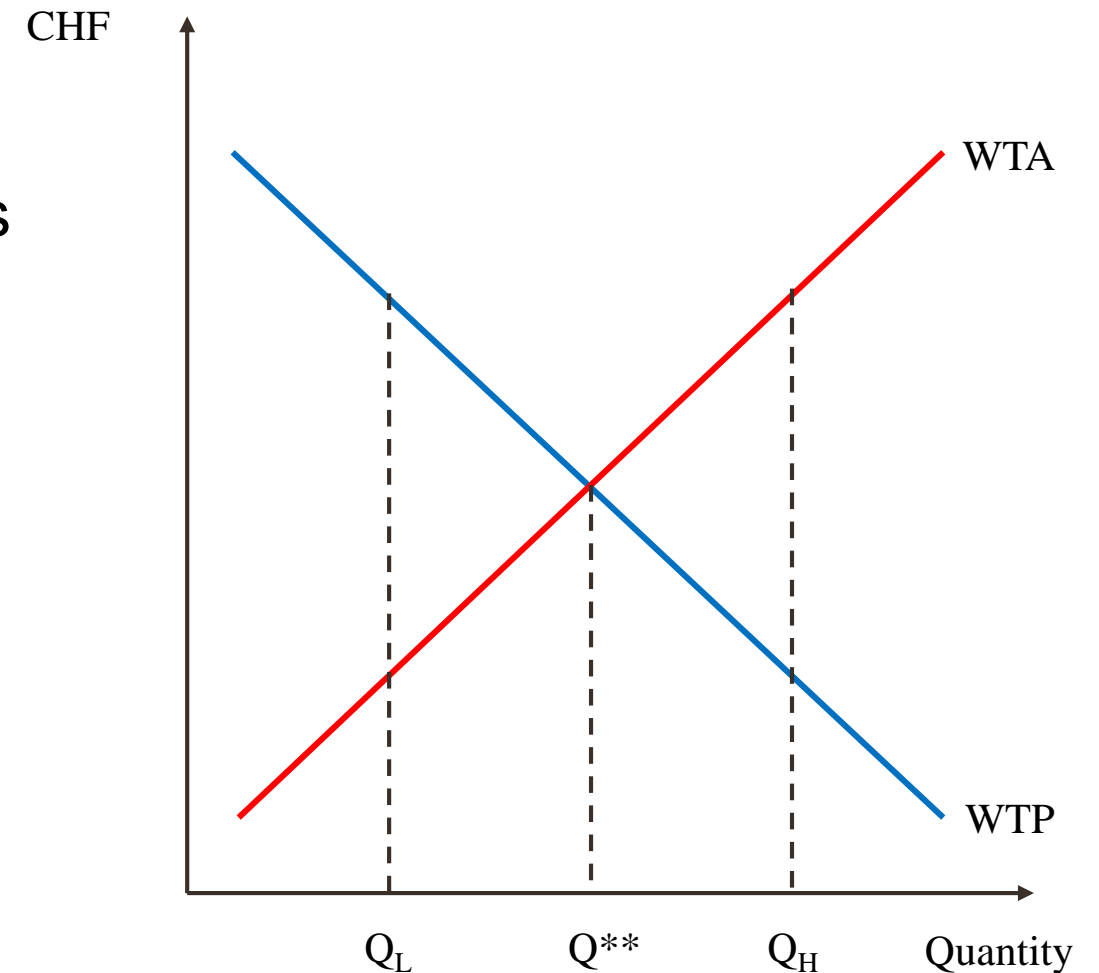
Social welfare

- Willingness-to-pay measures the welfare that buyers derive from the good
- Willingness-to-accept measures the cost of providing the good
- Net total welfare is equal to WTP of all buyers minus WTA of all sellers
- If the WTP and WTA are 'acceptable' from the point of view of society, then net total welfare = social welfare



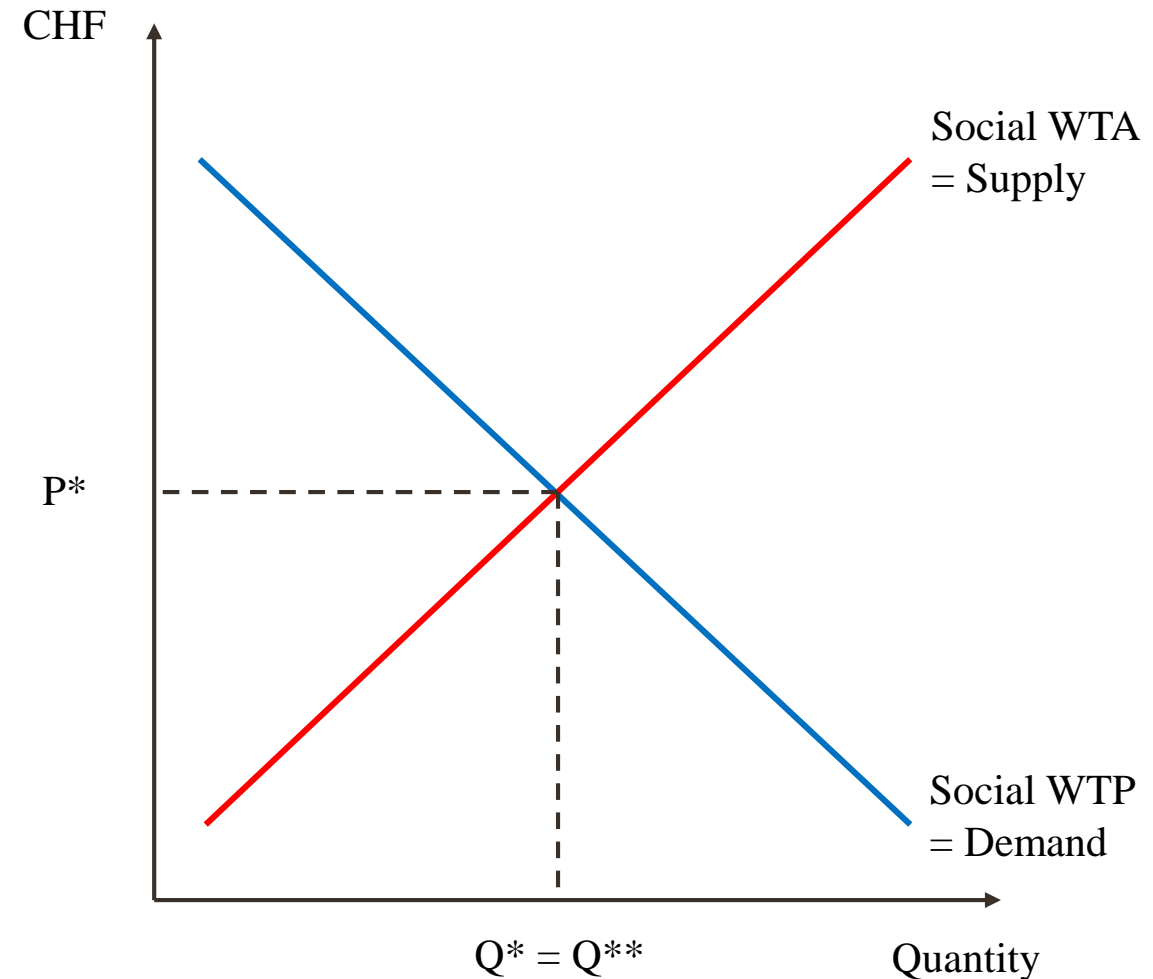
Maximum social welfare

- As long as an additional unit traded has $WTP > WTA$, trading it increases social welfare
- Social welfare is maximised for a quantity such that marginal WTP equals marginal WTA
- I.e. the WTP of the 'last' buyer is equal to the WTA of the 'last' seller



Social optimum and market equilibrium compared

- If...
 - social WTP = private WTP
 - social WTA = private WTA
 - the market is perfectly competitive
- ..., then, the market equilibrium maximises social welfare
- The price coordinates supply and demand in perfect decentralisation
- Perfectly rational producers and consumers, no external costs and benefits, perfect markets...



Conclusion

- In theory, markets maximize social welfare from trade
- This requires, however, a set of unrealistic assumptions
- Market actors strive to break the assumptions: cost externalisation, anti-competitive behaviour, short-cuts in decision making, etc.
- In theory, public authorities have the power to offset these imperfections and align markets with welfare maximisation
- If only the authorities were 'perfect' themselves...



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Basics – Market

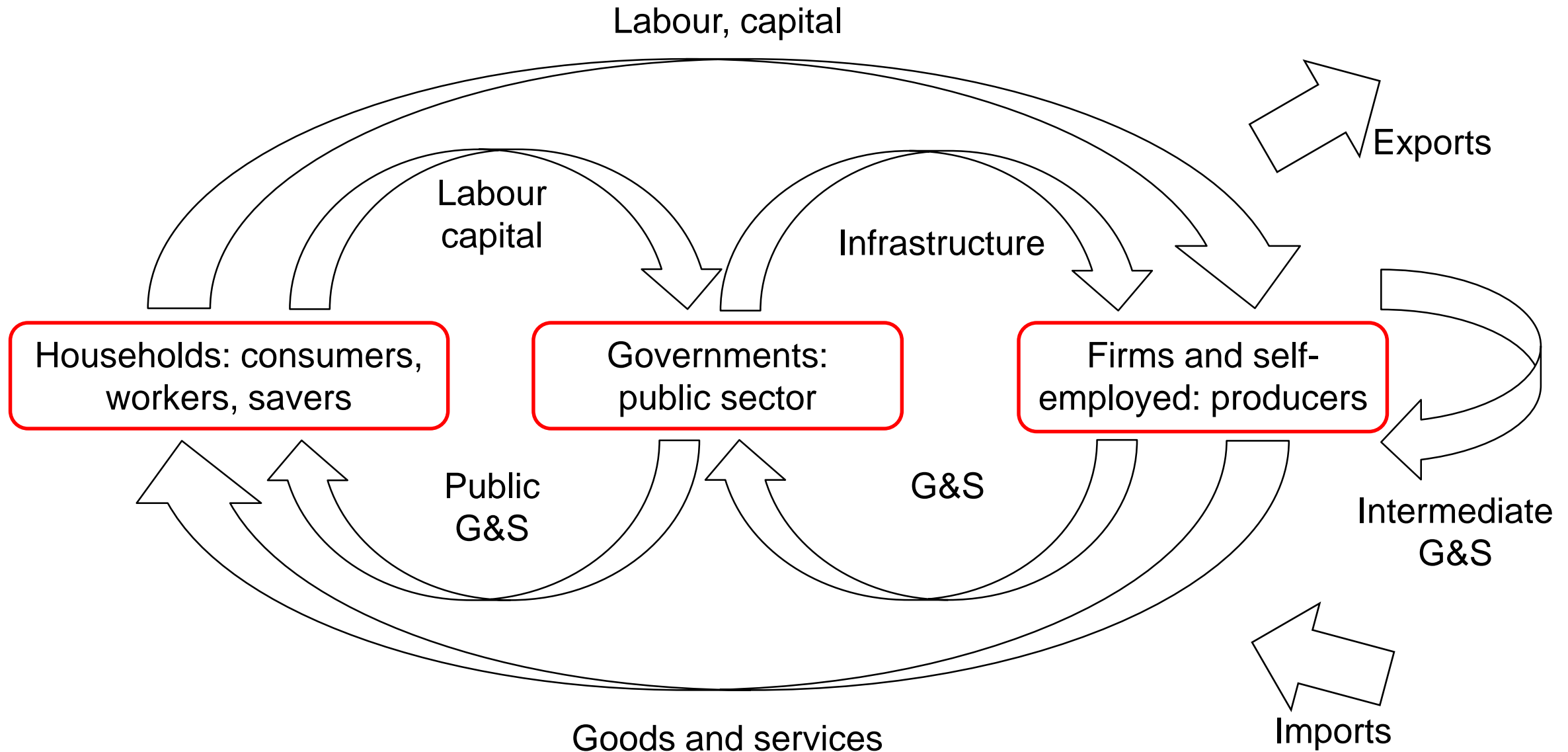
THE IMPORTANCE OF THE MARKET MODEL

Why is the market model so important in economics?

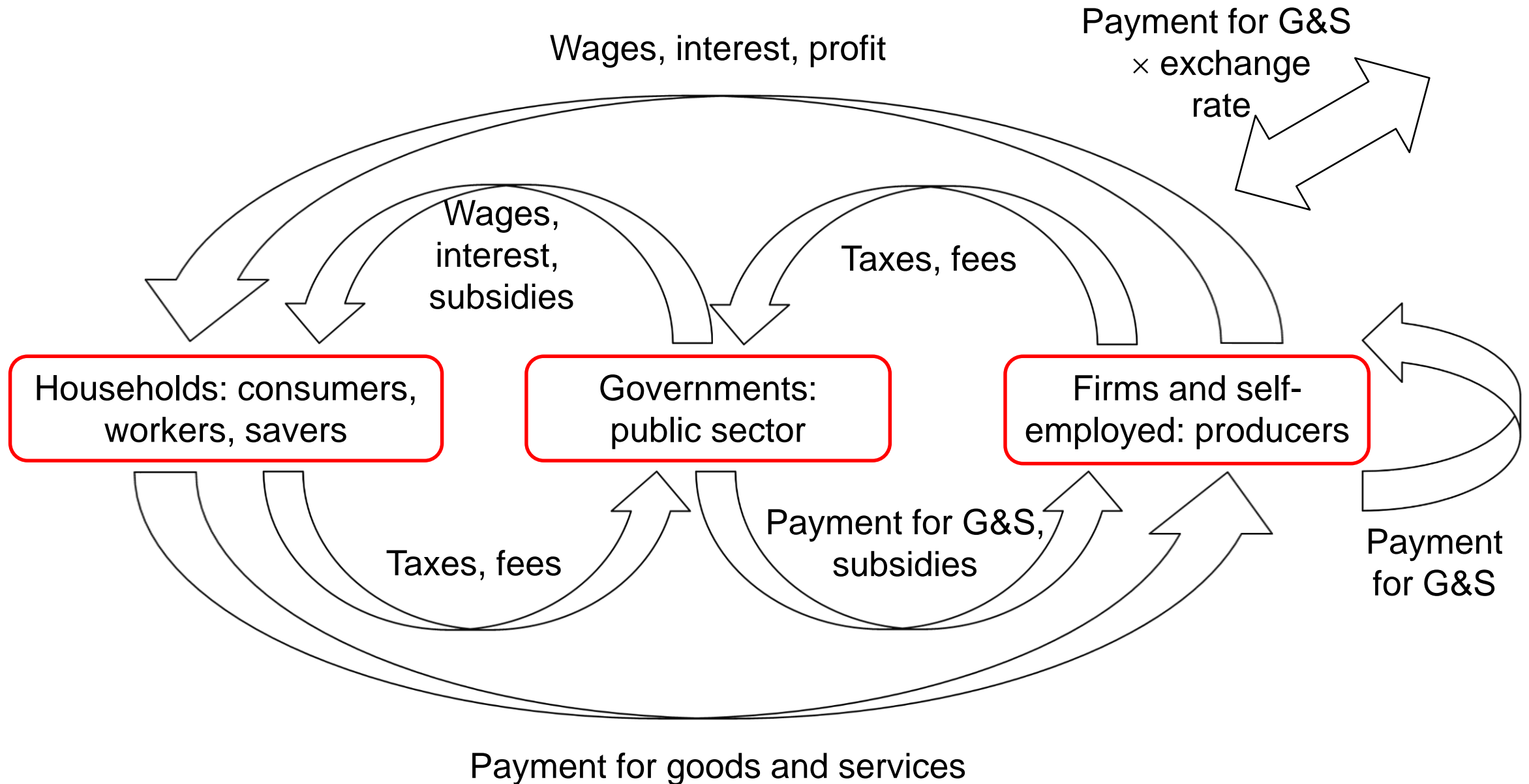
Many day-to-day and many important societal questions can be answered with the help of this model. E.g.:

- Why does this item sell for a higher price than that other item?
- Why did this price increase / decrease?
- Why is unemployment so high? Why do these people not find a job?
- Why are these people poor? Why can they not afford adequate housing or food?
- Why is there not more investment in renewable energy generation? Why is there still so much investment in coal mining?
- Why is the general price level rising (inflation) or falling (deflation)?

Main actors – economic circuits – real trades



Economic circuits – monetary flows



Basics – Market

NON-MARKET GOODS

Goods that escape the logic of the market

- **Definition:** goods that are used by producers or enjoyed by consumers, but that are not traded on markets
- Non-exclusionary goods: non-payers cannot be prevented from enjoying them (e.g. fireworks, security, **many environmental goods**)
- Ethical goods: goods, that society does not want to see subject to the "laws of the markets" (e.g. organs)
- Public sector goods: goods that are allocated by the public sector on other criteria than WTP and whose costs are (partly) covered by tax revenue
- Care goods: goods that are provided free of charge by individuals or firms, driven by other motives than income and profit