Chapter 3 and 4

Demand

What is the market
When buyer and sellers comes together and happens an economic transaction.
- The market can be both physical or online.

What is demand and how does it work?
Demand is the quantity of a good or service that consumers are willing and able to purchase at different level prices, during a certain period. If they **do not** have the ability to purchase them, then it does not count as demand.

Effective demand:
This is what we discuss when we're talking about demand, it is not consider that a person has demand when they do not have the financial means to purchase the product/service but only the will to purchase it.

Price of soft drinks ($ per can)	Quantity demanded of soft drinks (cans per day)
2.00	100
1.20	150
0.80	225
0.40	400

The law of Demand
When the price of products falls then the demand will increase **ceteris paribus**（其他条件不变的情况下/when other conditions don't change).

Utility and diminishing marginal utility
Utility is the satisfaction that a consumers get from a product.
And diminishing utility is when the satisfaction consumers get from consuming the product reduces, even though it could be the same product at the same price level.

Non-price determinations of the demand
Change in demand curve to shift the demand curve to the left or right.
Change in the quality demanded when the demand changes according to the price the product is selled.

Income
There are two types of products when we consider how income changes the demand for a product.

Normal goods-
The demand for normal goods will increase depending on the income if there is a Higher income than the demand curve will shift to the right and the other way around, depending on the product the shift might be small or big. For example , the demand for salt will have a smaller shift in comparison to cinema tickets or air travels.

Inferior goods-
Inferior good will have a demand curve shift left when the income rises for example , this could be cheap wine when income rising, most people will buy other alternatives that are more expensive.
The consumer will only buy high priced goods and the demand for Inferior products will disappear.

The price of relation goods
There are 3 possible relations between price and goods.

Substitutes-
When a change in price of a product leads to a change in demand for another product, even tho to price of that product hasn't changed.

Complements-
When one product is often purchased together with another product, so a change of price in one of the products will often affect the demand of the other product e.g. ink cartridges and printers

Unrelated goods-
When the change in price of one product does not affect the demanded of the other. E.g. toilet paper and pencils.

Tastes and preferences
If the taste or preferences of consomers change if something becomes more popular then the demand will be higher, and the other way around there are also other factors including marketing, advertising peer pressure and media influence.

Future price exceptions
When customers have an expectation of price changing in the future. For example, the price of a certain product is expected to be increased in the future then the demand of the product in present will be higher and the other way around.
In example Black Friday (there will be a discount on almost all goods and serveces)

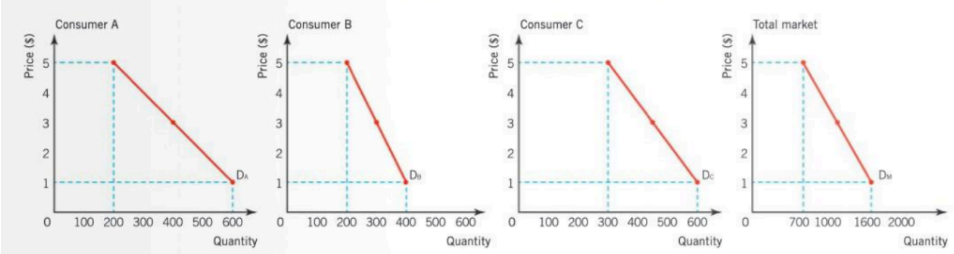
Number of consumers
If there an increasing number of consumers, then the demand the curve will oftenly shift to the right an increase of the numbers of consumers has relations with the size of population and demography change in a country. E.g. if there are more older people in the market or if there's more younger people in the market.

The determination of a movement along the demand curve and shift of the demand curve
A change in the price of a good itself leads to a movement along the existing demand curve since the price of a good is on one of the sides of the axis.

And a change in any of the non-price determinations will lead to a shift off the demand curves to either left or right.

Relationship between individual and market demand
The market demand is the sum of the add up of the individual's demand.

Price ($)	Consumer A demand	Consumer B demand	Consumer C demand	Market demand
1	600	400	600	1600
3	400	300	450	1150
5	200	200	300	700



▲ Figure 3.9 Individual demand curves and the market demand curve – horizontal summing

How economists explain the law of demand?

Income
If the prices fall then people have an increase of real income in a sense that people can buy more things with the same income as before, and consumers are likely to buy more products because they have "more money" to do so.

Substitution
If people can get the same product in less price than before their satisfaction, they will get is going to be the same as before. Which makes people ratio of satisfaction to improve, and those products which the price has fallen will be more attractive to the consumers then the other products which the price hasn't changed.

Determining Marginal utility
Marginal utility is the added satisfaction that a consumer gets from having one more unit of a good or service.

Key assumption behind it

In the neoclassical theory the consumers are rational which means that the consumers will consider every option possible, and then make the choose the one that will get them the most satisficed (maximize utility). But in reality, this is not possible

Elasticity of demand

What is elastic of demand?
It is a measure of how much demand changes when one of the factors for demand changes
And there are two types of elasticity demand
-price elasticity of demand (PED)
-income elasticity of demand (YED)

what is PED and how to measure?
this is the measure of the quantity demand change when there is a change in the price of the product.
It is calculated by:

$$\text{PED} = \frac{\text{Percentage change in quantity demanded of the product}}{\text{Percentage change in price of the product}}$$

The price has fallen by 50¢ from an original price of $5, which is a change of −10%. This is calculated by the equation

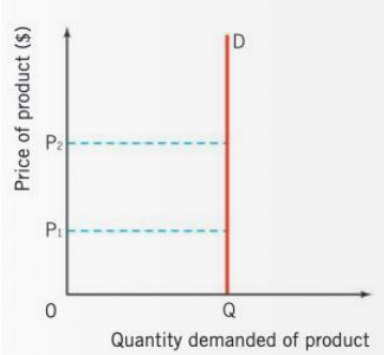
$$\frac{-50}{500} \times 100 = -10\%.$$

The quantity demanded has increased by 30,000 from an original demand of 200,000, which is a change of +15%. This is calculated by the equation

$$\frac{+30{,}000}{200{,}000} \times 100 = +15\%.$$

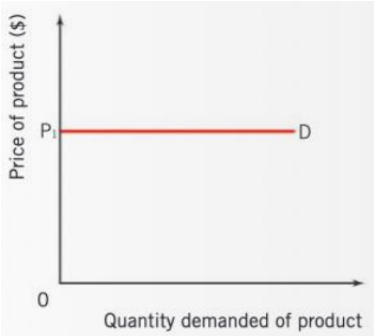
If we put the two values above into the equation for PED, we get PED = +15%/−10%, which gives a value of −1.5.

Range of value – theory
ther is a possible range change of values for PED from 0 to infinity.
if PED equal a 0 then no matter how the price a product changes quantity demanded will always stay the same. This is also called perfect inelastic



▲ **Figure 4.1** A perfectly inelastic demand curve

On the other hand if PED value is infinity then even if the price change is very small the demand will fall to 0. the number on the numerator is infinity
this is known as perfect elastic



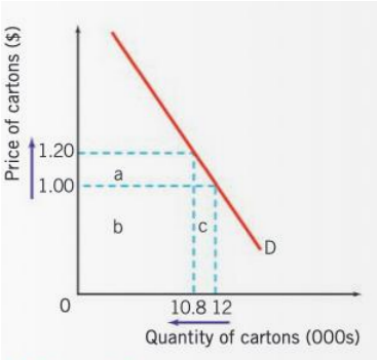
▲ **Figure 4.2** A perfectly elastic demand curve

In the real world there are no extreme PED values, normal products have a value between the two.
There are 3 normal PED values
- inelastic demand
- elastic demand
- unit elastic demand

inelastic demand
when 0<PED<1, when a product is inelastic demand then when there is a change in prices in the product there will only be a small change in the quantity demanded.
If there is a raise in price of a product then the revenue (units sold*price) will increase

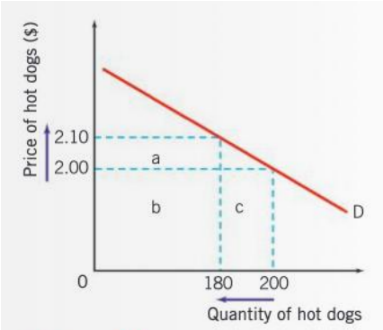
E.g. 20% increase in price that caused 10% fall in the quantity demanded.

$$PED = \frac{\%\ \Delta \text{ in Quantity Demanded}}{\%\ \Delta \text{ in Price}} = \frac{10\%}{20\%} = 0.5 \text{ (Where } \Delta \text{ is "change")}$$



Elastic demand

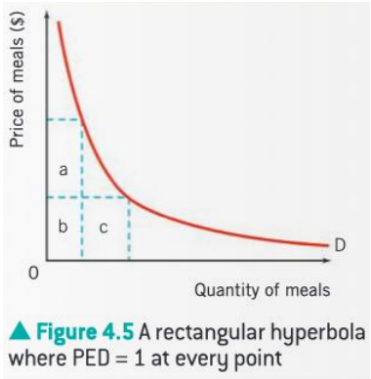
when 1<PED<∞, when there is an elastic demand then if the price of a product raises then the quantity demanded will fall more than the proportion. Which means that the revenue gain from the firm will also fall.



unit elastic demand

PED=1, if the price of a product raises by w certain percent the quantity demanded will fall by the same amount, which means that the revenue made by the company not changing.

PED most be unity if price multiply by quantity equals a constant number or when the revenue boxes always have the same area.



▲ **Figure 4.5** A rectangular hyperbola where PED = 1 at every point

PED values meanings

Price elasticity of demand	Value (ignoring the negative sign)	Meaning	Change in price	Effect on total revenue (TR)
Inelastic	0 < PED < 1	% Δ in price < % change in Qd	Price ↑	TR↑
Inelastic	0 < PED < 1	% Δ in price < % change in Qd	Price ↓	TR↓
Elastic	1 < PED < ∞	% Δ in price > % change in Qd	Price ↑	TR↓
Elastic	1 < PED < ∞	% Δ in price > % change in Qd	Price ↓	TR↑
Unity	PED = 1	% Δ in price = % change in Qd	Price ↑	No change in TR
Unity	PED = 1	% Δ in price = % change in Qd	Price ↓	No change in TR

Determinations of PED

number and closeness of substitutes

the more substitutes and closeness there is for a product the more elastic the product is.

necessity of the product and how widely the product is defined.

The more necessary a product is in our everyday life the less elastic it is. But then there could also be necessary product with alternatives which then make the product more elastic but not by a lot e.g. meat.

proportion of income spent on the good

status quo bias

when a product is very cheap and only stands a very small amount on the person budget then a change in price will normally not affect the quantity demanded.

time period considered

When there is a change in product price, consumers will often need time to change their consumption habits, this means that in the short time PED is more inelastic than in the long period time.

Why is PED important for decision making by government and firms

for firms it is good to know 'cause so then can calculate the revenue

and for the government it is good to know so they would be able to know what products they can higher the taxes and not affect the employment rate.

manufactured products and primary commodities

primary commodities are raw materials and they tend to be inelastic since there are no or few substitutes. And manufacture product tend to be more elastic since there are more substitutes.

what is income elasticity of demand (YED) and how it is measured
This is the measure of demand when the consumers income change.

$$\text{YED} = \frac{\text{Percentage change in quantity demanded of the product}}{\text{Percentage change in income of the consumer}}$$

Her income has risen by $6,000 from an original income of $60,000, which is a change of +10%. This is calculated by the equation $\frac{+6{,}000}{60{,}000} \times 100 = +10\%$.

The quantity demanded of holidays has increased by $500 from an original demand of $2,500, which is a change of +20%. This is calculated by the equation $\frac{+500}{2{,}500} \times 100 = +20\%$.

If we put the two values above into the equation for PED, we get +20%/+10%, which gives a value of 2.

Range of value of YED
YED can tell us is the product we are looking at is normal or inferior, if the income raises and the demand of the product also raises then it's a normal product and the other way around.

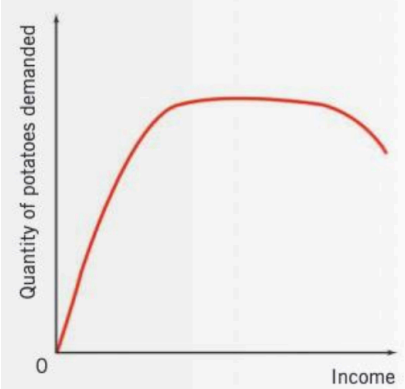
Normal goods
the value of YED is positive, if the increase percentage in quantity demanded is less than the percentage increase in income then value of YED is 0<YED<1 and this is income-inelastic.
If increase in percentage quantity demanded < percentage increase income, then the YED value is greater than 1 and this is income-elastic.

Necessity goods
demand will not have a big change even if the income raises. E.g. bread which means that this is income-inelastic.

superior goods
quantity demanded will increase

inferior goods
YED value is negative, when income increases demand decreases. Ppl will no longer buy inferior goods but instead superior.

engel curve
relationship between income and demand over time



YED value meanings.

Type of good	YED value	Meaning
Inferior	YED < 0	A given increase in income will lead to a proportionately smaller fall in demand
Necessity	0 < YED < 1	A given increase in income will lead to a proportionately smaller increase in demand
Luxury	YED > 1	A given increase in income will lead to a proportionately larger increase in demand

Why is YED important to know?

It helps with decision making by firms such as:

- Showing the effect of a change in income on quantity demanded
- Analyze how changes in consumer income affect the demand for goods and services