

The nature of markets

Historically, a market was a physical place where people got together to buy and sell goods. These markets still exist – like a fish market, a fruit and vegetable market or a cattle market.

Today, the definition of a market is much broader. It is where people who are willing and able to purchase a good, service or resource can carry out an exchange with those who are willing and able to provide that same good, service or resource. It is not always a physical place; it can be local, national or international.

The market may be in a specific place (such as the spice market shown in **Figure 1**) and involve the exchange of goods and/or services for money. However, a market can also exist in many different places at the same time, where buyers and sellers may never meet, communicating instead via the internet, phone or any other method that allows them to agree on price and quantity of goods.



Figure 1. Traditional market.

Credit: SM Rafiq Photography Getty Images

We can distinguish between:

- Product markets where goods and services are sold
- Factor markets where resources are sold
- Labour markets where people offer their services in exchange for a salary
- Financial markets where foreign currencies, company shares or other financial contracts are traded

Competitive markets

Competition occurs when there is a large number of buyers and sellers acting independently. An individual seller has very little, or no, market power to influence the price of the product.

Markets are considered free and competitive when private individuals and firms are free to decide for themselves what they buy and sell, and at what price. Freely competitive markets encourage sellers to meet consumers' needs and wants through the quality and price of their goods. Free markets enable consumers to satisfy their needs and wants by making choices among competing goods and services.

Competition is the opposite of market power or monopoly power, which is when a dominant firm has control over the price of the good it sells. The greater the market power, the more control the firm has over the price.

In this subtopic, we will assume that markets are perfectly competitive: that they are composed of a large number of sellers and buyers acting independently. We will analyse how consumers make decisions, assuming that they are rational and seek to gain the maximum benefit from their transaction.

The law of demand



Figure 1. How do consumers react to price changes?

Credit: Michele Constantini/PhotoAlto Getty Images

Consumers are people or organisations who buy goods and services in a market. Consumers may be firms who buy intermediate goods, raw materials and resources in factor markets or hire workers in labour markets. Even the government and other countries can be consumers who purchase goods, services and materials, and hire workers.

Consumers demand goods and services in the market. Demand is the quantity of a good or service that consumers are willing and able to purchase at various prices during a specific time period, *ceteris paribus*.

It is important to point out the 'willing and able' part of the definition. It is not enough only to want something, and therefore be *willing* to buy a good or service. Consumers also need to be *able* to purchase it; they need to have the financial means to purchase it. This is known as *effective demand* and it is what a *demand curve* shows.

Ceteris paribus is a Latin expression that means 'all other things equal'. In the case of demand, everything other than the price of the goods is assumed to remain the same. The demand is what the consumer is willing and able to purchase when they only consider the price of the goods.

For the time being, we will leave out the other factors that can affect demand, to focus on the relationship between the price of a good or service and the quantity that a consumer is willing and able to buy.

Individual demand

Individual demand is the demand of one person for a product.



Figure 2. A tasty-looking bowl of ramen.

Credit: Jimin Shi-Longo / EyeEm Getty Images

Table 1. Consumer A's demand for ramen, based on the price in Japanese yen (JPY).

Price of ramen	Quantity demanded by consumer A (bowls per week)
JPY 1000	1
JPY 900	2
JPY 800	3
JPY 700	4
JPY 600	5

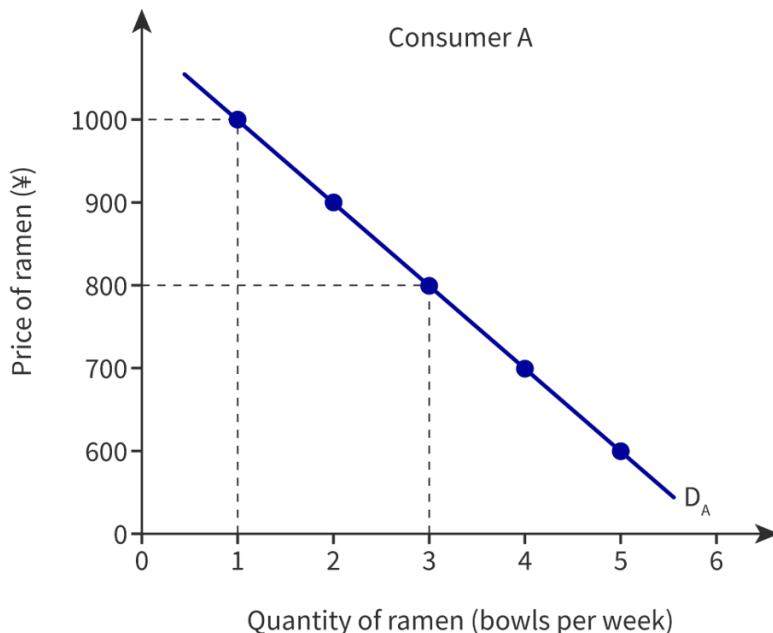


Figure 3. Individual demand for ramen.

[More information for figure 3](#)

The graph represents Consumer A's demand curve for ramen. The X-axis denotes the quantity of ramen, measured in bowls per week, ranging from 0 to 6. The Y-axis represents the price of ramen in Japanese Yen (¥), ranging from 0 to 1000, increasing in intervals of 100.

There is a downward sloping demand curve, labeled as D_A , which indicates the inverse relationship between the price and the quantity demanded. The curve passes through significant points: when the price is ¥1000, the quantity demanded is 1 bowl per week; at ¥800, the demand is 3 bowls per week, and when the price is ¥600, the demand rises to 5 bowls per week. This illustrates that as the price decreases, the quantity of ramen bowls demanded per week increases for Consumer A.

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A consumer's demand can be presented in a demand schedule, as shown in **Table 1**. There you can see that at a price of JPY 800 per bowl, consumer A is willing and able to buy three bowls per week. However, if the price increases to JPY 1000 per bowl, consumer A would only be willing and able to buy one bowl per week. This can also be plotted in a graph to give us an individual demand curve, as shown in **Figure 3**.

This negative relationship between the price of the good or service and the quantity demanded of it is stated by the law of demand, and explains the downward slope of the curve of demand.

The law of demand simply states that: as the price of a product decreases, the quantity demanded of it increases, ceteris paribus. **Table 1** and **Figure 3** both illustrate the effective demand for ramen for consumer A. The price of ramen

falling from JPY 1000 to JPY 800 leads to an increase in the quantity demanded from one to three bowls per week.

Theory of Knowledge

Economics is a social science that studies human behaviour. It is premised on the notion that humans are rational. If two goods are identical, we assume that consumers will always choose the cheaper one. However do you think that this is always the case? As consumers can we be tricked by advertising and marketing?

Watch this video  (<https://www.youtube.com/watch?v=SkzvEvLjjsU>) which explores the effect of marketing on the law of demand. Are we sometimes prepared to pay more for some products than others? Will we pay more for a 'brand name' handbag or watch? Does the Law of the Demand really describe our consumption patterns well? Does price always have a strong relationship with quantity demanded?

Knowledge question: To what degree can we view the Law of Demand with the same authority as Laws in the natural sciences?

Market demand

The market demand is the sum of all the individual demands for a product at every price.

For example, **Table 2** shows the market demand for ramen composed of consumers A and B. If consumer A were to buy one bowl of ramen per week at a price of JPY 1000 per bowl, and consumer B were to buy two bowls at that same price, then the market demand for ramen at a price of JPY 1000 would be three bowls per week – the sum of consumer A and B's quantities (1 + 2). This is a very simplified example. Markets are usually composed of many consumers.

Table 2. Market demand schedule for ramen per week.

Price of ramen	Quantity demanded by consumer A (bowls per week)	Quantity demanded by consumer B (bowls per week)	Market demand ramen (bowls per week)
JPY 1000	1	2	3
JPY 900	2	4	6
JPY 800	3	6	9
JPY 700	4	8	12

Price of ramen	Quantity demanded by consumer A (bowls per week)	Quantity demanded by consumer B (bowls per week)	Market demand ramen (bowls per week)
JPY 600	5	10	15

The market demand for any good can be constructed from individual demand data as shown in a demand schedule in **Table 2** or from individual demand graphs as shown in **Figure 4**.

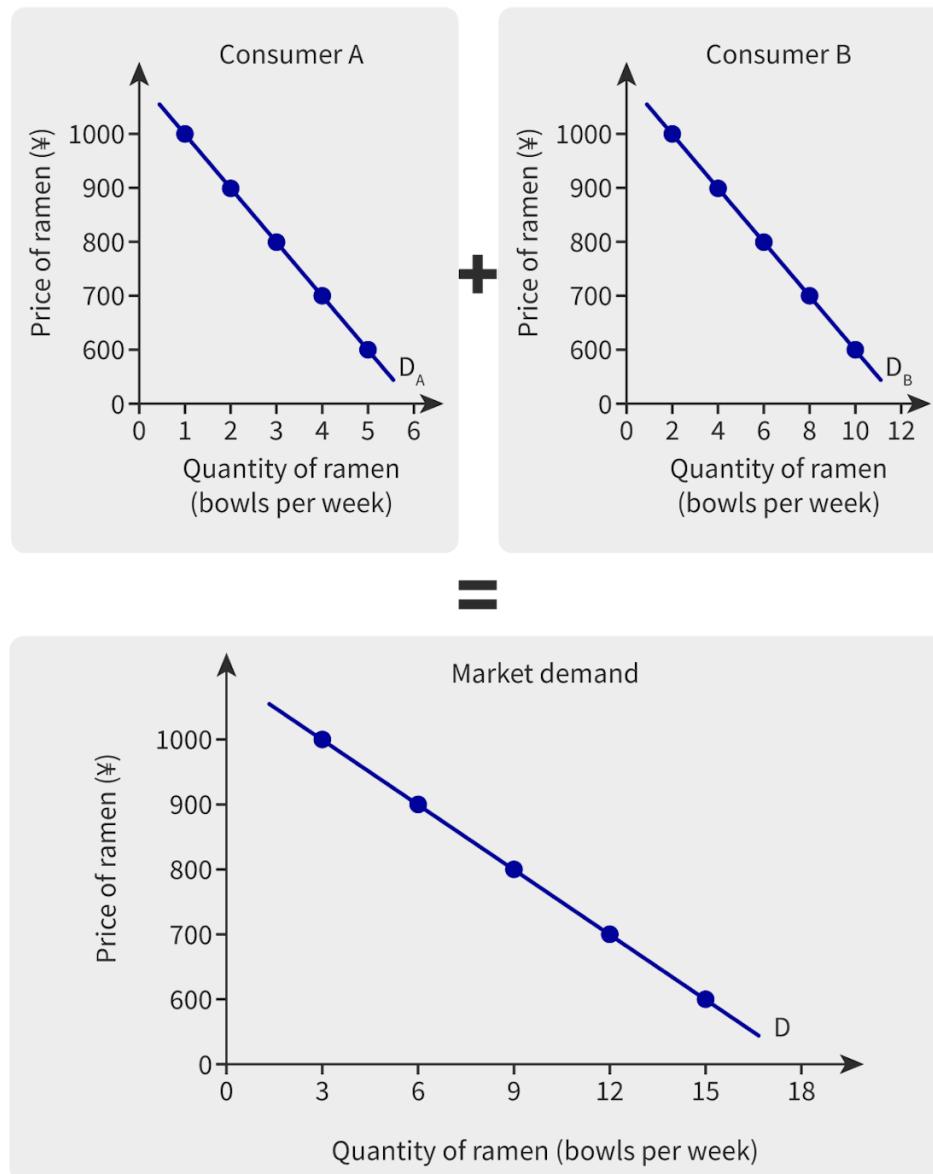


Figure 4. Market demand as the sum of individual demand curves.

🔗 More information for figure 4

The image consists of three graphs demonstrating the combination of individual demand curves into a market demand curve for ramen.

Top Left Graph (Consumer A):

- **X-Axis:** Quantity of ramen (bowls per week), ranging from 0 to 6.

- **Y-Axis:** Price of ramen in yen (¥), ranging from 600 to 1000.
- The graph displays a downward-sloping linear demand curve with data points plotted at (0, 1000), (1, 900), (2, 800), (3, 700), and (4, 600).

Top Right Graph (Consumer B):

- **X-Axis:** Quantity of ramen (bowls per week), ranging from 0 to 12.
- **Y-Axis:** Price of ramen in yen (¥), also ranging from 600 to 1000.
- The graph shows a similar downward-sloping linear demand curve with data points at (0, 1000), (2, 900), (4, 800), (6, 700), and (8, 600).

Bottom Graph (Market Demand):

- **X-Axis:** Quantity of ramen (bowls per week), ranging from 0 to 18.
- **Y-Axis:** Price of ramen in yen (¥), with the same scale as the individual graphs.
- The market demand curve is a downward-sloping line combining the individual curves, with data points at (0, 1000), (3, 900), (6, 800), (9, 700), (12, 600), and (15, 600).

Together, these graphs illustrate how the individual demand of two consumers for ramen is aggregated to form the market demand curve, showcasing linear demand relationships.

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Exam tip

It is very important to be accurate with titles and labels when drawing diagrams and graphs. You will lose marks in an exam question if labels are absent or incorrect.

For market graphs like the ones we are using in this section, the vertical axis should always be labelled *Price of (good/service)*, with a currency label. The horizontal axis should always be labelled *Quantity of (good/service)*, with an indication of quantity per time period. The demand curve should always be labelled D and a title should appear above the graph indicating what the graph is illustrating.

The short video below may help you review the basic information about demand.

Episode 11 - Demand



Video 1. Episode 11 - Demand.

More information for video 1

Narrator: The Law of Demand states,
More of a good will be bought the lower its price,
less will be bought the higher its price,
ceteris paribus.
What does it mean?
All the Law of Demand really says
is that, there's an inverse relationship between price and the quantity demanded.
Price goes up, amount bought goes down.
At a low price,
people are much more willing to buy, at a high price,
people don't wanna buy much.
What about that last part, the Latin *ceteris paribus*?
Well, *ceteris paribus* means all else being equal
or other things the same.
So the Law of Demand says
that there will be an inverse relationship between price and quantity demanded
as long as nothing else changes.
Look at it this way.
If you are a consumer,
what makes you willing to buy or not willing to buy a product or service?
Of course, price affects your willingness or unwillingness to purchase,
but what else?
Income. Sure!
The amount of income, particularly or disposable income,
will affect your willingness and or ability to buy.
Luxury or necessity.
Absolutely!
What about differing tastes and preferences?
Naturally, your tastes and preferences help to determine your willingness
or unwillingness to purchase.
But what determines your tastes and preferences?
Of course, your personal tastes and preferences have been a lifetime

in the making and are always changing.
But a few determining factors are age, gender,
religion, social status.

What else affects your willingness to buy?
How about weather or climate?

What about expectations for the future?
How many factors are there
that affect an individual's willingness to buy or not?
The number of factors is endless, and I for one,
don't like to think about an infinite number of things at once.

If I'm going to model the willingness to purchase,
I wanna narrow my focus to only two factors.

What will the two factors be?
Well, think back to the Law of Demand.

The focus is on quantity demanded and price.
Quantity demanded,
or what you buy, of course depends on all the factors just mentioned.
Quantity demanded as a function of price of the product,
price of substitute products, price of complimentary goods.

It depends on the income, it depends on the weather,
politics, all this stuff.

But if I wanna focus just on quantity demanded in price,
what do I do with everything else?

Well, remember that all else constant part.
We recognize that all of these other factors
are important to the decision, but for right now,
we'll assume that they're constant and unchanging.

How does this work?
Well, imagine that you are in the market to buy a house.
You consider a lot of variables, right?
Your income, mortgage rates,
which neighborhoods have good schools and other amenities.
Is this just a starter home or will you be there for a long time?
And of course, you'll look at home pricing.
Suppose you've already given thought to your budget,
mortgage rates, neighborhood amenities,
whether Walmart's being built nearby, et cetera.
And you also find that right now
housing is going for \$150 a square foot.
At this price, and given all those other factors,
you have determined that you would be willing to purchase
a 1500 square foot house.

What if the market slows down
and price per square foot drops to a hundred dollars?
Keep in mind that all the other variables will be unchanged.
Same income, same mortgage rate,
same neighborhood amenities, same everything,
except that the price per square foot has changed.

The Law of Demand
says you would then be willing to purchase more square footage.
Well, wouldn't you?
Perhaps 2000 square feet.

What if the market headed up again
such that the price per square foot increases to \$200?
All else constant.
You would not be willing or able to buy as much house as before.
Maybe at \$200 per square foot.
Everything else remaining the same.
The quantity demanded would be more like a thousand square feet.

In the end, if you were to plot out each of these price quantity combinations,
you would start to see the inverse relationship
described by the Law of Demand.

Now, of course, there are more possible prices than just these three, but we can see the general pattern now and other prices would fit in with that existing pattern. Do you notice that these points are starting to trace out a line? Well, this line really, this collection of all possible price, quantity, demand, accommodations is the demand curve. Next time, change in demand versus change in quantity demanded.

Assumptions underlying the law of demand (HL)

All economic models have assumptions behind them. Assumptions are necessary to simplify models so that we can make generalisations about how economic stakeholders behave in response to important variables, like price.

There are a number of assumptions behind the law of demand. You have already been introduced to one assumption. When we write *ceteris paribus*, we are highlighting that the inverse relationship between price and quantity demanded assumes that there is no factor, besides price, influencing consumers' behaviour.

Human nature and behaviour

There are also assumptions made about human nature and behaviour:

- Human beings are assumed to have clear preferences that are stable over time, *ceteris paribus*.
- Human beings are assumed to have highly developed analytical skills and perfect knowledge to make rational choices.
- Rational behaviour for human beings means maximising personal satisfaction (utility) at all times.

Based on this understanding of human nature, there are several further assumptions we make about human behaviour when faced with changing prices in markets.

Income effect

When the price of a product falls, and if consumers' incomes have not changed (which means that they have the same amount of money to spend), we assume that consumers can buy more of that good. This means that their real income in terms of this good has increased, and therefore they can demand a larger quantity of it.

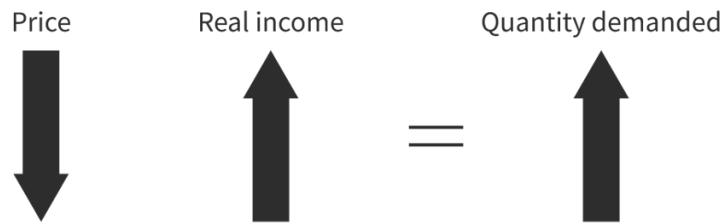


Figure 1. The impact of lower prices on real income and quantity demanded.

 More information for figure 1

The diagram illustrates the relationship between price, real income, and quantity demanded. It consists of three main components. On the left, the word 'Price' is accompanied by a downward arrow, indicating a decrease. In the middle, 'Real income' is labeled with an upward arrow, showing an increase. On the right side, 'Quantity demanded' is paired with an upward arrow, also indicating an increase. An equal sign connects the middle and right segments, illustrating that an increase in real income leads to a greater quantity demanded when prices fall.

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Substitution effect

When the price of a product such as train travel falls, consumers will reevaluate their choices. If the price of substitutes such as plane travel have stayed the same, consumers may be more willing to substitute air travel for train travel. We assume that consumers are willing and able to switch their purchases between goods with the same use when relative prices have changed. This is called a substitution effect.



Figure 2. Decline in prices for train travel may cause people to substitute air travel for train travel.

Credit: Meinzahn / George Pachantouris Getty Images

Law of diminishing marginal utility

Another assumption behind the law of demand is the law of diminishing marginal utility. Marginal utility is the benefit gained from consuming one additional unit of a product or service. The law of diminishing marginal utility states that as people consume additional units of a good or service, the marginal utility declines. Consumers get less and less satisfaction from each additional unit.

Consider a time when you ate multiple pieces of food, such as pizza. Imagine that you had to rate your utility, or satisfaction, when you ate the first piece on a scale of one to 10. If you are very hungry, you might rate your utility for the first slice at 10. Your utility or satisfaction is very high. When you eat the second slice, you may not feel quite as hungry, so your utility might be eight. With the third slice, you are even less hungry, so perhaps your utility declines to six.

You are still gaining utility by eating the slices, so your total utility (all utility added together) is rising, as shown in **Table 1**. But each slice brings you less satisfaction than the previous one, so your marginal utility is declining. You can even imagine that if you eat too many slices, that your marginal utility could be negative. You could feel sick to your stomach!

Table 1. Marginal and total utility from eating slices of pizza.

Slices of pizza	Marginal utility	Total utility
1	10	10
2	8	18
3	6	24
4	4	28
5	2	30
6	0	30
7	-2	28



Figure 3. Marginal and total utility from eating slices of pizza.

 More information for figure 3

The graph illustrates the relationship between marginal utility and total utility from eating slices of pizza. The X-axis represents the number of slices of pizza consumed, ranging from 1 to 7. The Y-axis represents utility, with values from -10 to 40.

A pink curve indicates total utility, which increases from 10 to a peak of 30 between 4 to 5 slices, before slightly declining as more slices are consumed. This illustrates that total utility rises as more pizza slices are eaten, reaching a maximum point and then declining.

A blue curve represents marginal utility. The curve starts at a positive value at 10 for 1 slice, then steadily declines, crossing zero between 4 to 5 slices, becoming negative as additional slices are eaten. This shows that the additional satisfaction (marginal utility) from eating each extra slice gradually decreases and eventually becomes negative, where additional slices decrease total utility.

[Generated by AI]

Figure 3 shows that marginal utility declines as more slices of pizza are consumed. Total utility from eating pizza increases until marginal utility is zero. When marginal utility becomes negative, total utility declines. You are less satisfied in total from eating seven slices of pizza than when you ate five or six slices.

Making connections

HL students will see the relationships between total and marginal values in HL subtopic 2.11. It is important to understand that when marginal values are equal to zero, total values are at their maximum. This holds true for utility, as you see in

this section, but also for product, revenues and costs, all of which will be explored later.

The relevance of the law of diminishing marginal utility for the law of demand is that a lower marginal utility should indicate a lower willingness to pay a particular price for goods as more and more of them are consumed. If a consumer gets a lower marginal utility from the fifth slice of pizza than from the fourth slice of pizza, she would be willing to pay less for the fifth slice than for the fourth slice. This indicates an inverse relationship between price and quantity demanded.

Of course, there are also cases where marginal utility does not decline as quantity demanded increases. For example, consider what happens with social media, where marginal utility may increase as more social media is consumed. The value of the media is directly related to the number of users and consumption of the product; if there are more users, the marginal utility increases.

Because there are cases where the assumptions we make in economics do not hold true, it is important to understand the assumptions behind the models, so that we can better judge when the models may be limited.

The video below may help you review the law of diminishing utility.

Episode 17: Diminishing Marginal Utility



2.1 Demand

Movements along the demand curve and shifts in the demand curve

In the section [The law of demand](https://app.kognity.com/study/app/pp/sid-186-cid-754025/book/the-law-of-demand-id-29856/) (<https://app.kognity.com/study/app/pp/sid-186-cid-754025/book/the-law-of-demand-id-29856/>), we focused only on how price changes affect the quantity of a good or service that consumers buy. We did not examine the effect of any other factor; we kept other factors constant (*ceteris paribus*). The price is a determinant of the *quantity demanded* of a product.

All factors, other than price, that influence demand are called non-price determinants of demand. These are variables that will cause the entire demand of a good or service to increase or decrease, across a range of prices.



Figure 1. A consumer in a supermarket deciding what to buy.

Credit: vgaic Getty Images

Be aware

It is not the same to say 'demand' and 'quantity demanded'.

The term **demand** is usually used to refer to the entire demand curve of a good or service. In mathematical terms, it is a function: a set of relationships between the variables price and quantity.

Quantity demanded refers to a specific quantity purchased by consumers at a specific price. It is a number, represented by Q on the horizontal axis of a market graph.

However, you should be aware that in the media the term 'demand' is used more loosely. Thus, when preparing your internal assessment commentaries, you need to pay close attention to terminology.

Before going into the non-price determinants of demand, it is important to distinguish between a *movement along* the demand curve and a *shift* of the demand curve.

Movement along the demand curve — changes in price

Whenever the price of a good changes, *ceteris paribus*, it leads to a movement along the demand curve of that good. In the interactive **Figure 2**, you can observe a movement from point A on the curve to point B. When the price of electric cars in Norway declines from P_1 to P_2 Norwegian kroner (NOK), the quantity demanded of electric cars increases from Q_1 to Q_2 , *ceteris paribus*. This is a *movement along the demand curve* from A to B. This movement shows an *increase* in the quantity demanded. On the other hand, an increase in price from P_2 to P_1 would produce a *decrease* in the quantity demanded from Q_2 to Q_1 , and a movement from point B to point A.

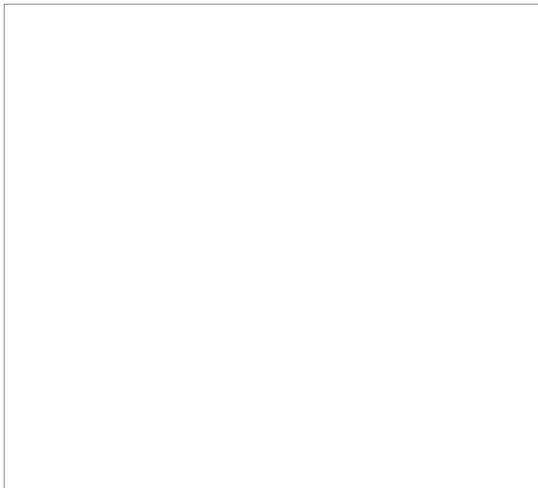


Figure 2. A movement along the demand curve for electric cars in Norway, caused by a change in price. Use your mouse to drag down along the y-axis from P1 to see the movement and point B appear.

 More information for figure 2

Shift in the demand curve — changes in factors other than price

A change in *any other factor* that is not the price of the good itself is called a non-price determinant and will result in a *shift* of the entire demand curve. The factor will change the entire relationship between price and quantity, represented by the demand curve.

The interactive diagram in **Figure 3** shows a *shift* (change) in demand. For example, if there is an increase in people's income because the Norwegian economy has improved, then the demand for electric cars should increase, as can be seen in the interactive diagram.



Figure 3. Increase in demand (shift/change of the demand curve) for electric cars caused by Norway's growing economy.

ⓘ More information for figure 3

The demand curve for electric cars will shift outwards (to the right), from D_1 to D_2 , ceteris paribus. Even if price remains the same at P_1 , there will be an increase in quantity demanded from Q_1 to Q_2 . This is an *increase in demand* because at every price of electric cars, consumers will now be willing and able to buy more of them because of the improved Norwegian economic conditions.

If, instead, Norway's economy worsened, and people feared that they might lose their jobs, the demand for electric cars would decline, as shown in **Figure 4**.

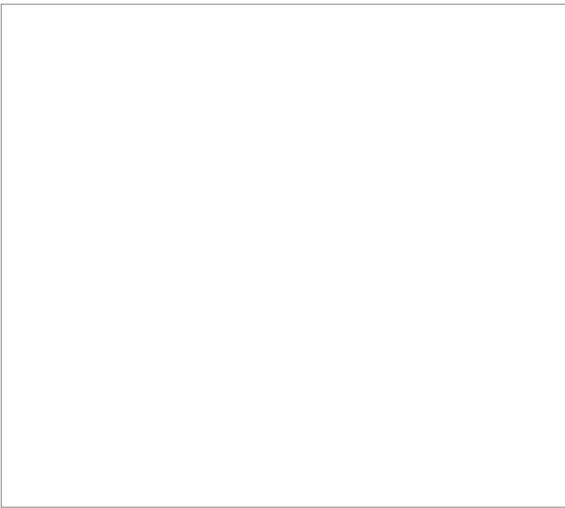


Figure 4. Decrease in demand (shift/change of the demand curve) for electric cars caused by Norway's worsening economy.

ⓘ More information for figure 4

Demand for electric cars declines from D_1 to D_2 . This is a *decrease in demand* because at every price of electric cars, consumers will now be willing and able to buy less of them.

Exam tip

Again, it is very important to be accurate with titles and labels when drawing diagrams and graphs. You will lose marks in an exam question if labels are absent or incorrect.

In addition to the title and correct labelling of axes that were discussed in the previous section, it is also important to label the two demand curves correctly.

The demand curve that represents the original demand should be labelled D_1 . The demand curve that represents the new demand, after the factor mentioned in the text prompt, should be labelled D_2 . It is also helpful to use an arrow, drawn parallel to the horizontal axis, to show the direction of the shift.

Worked Example 1

1. Draw an appropriate diagram to explain how an increase in the price of kimchi in South Korea would affect the quantity demanded. Be sure to label the diagram completely, with prices in South Korean won (KRW). Then check the example in the answer and compare it to yours.
1. An increase in the price of kimchi would cause the quantity demanded of kimchi to decline, according to the law of demand, ceteris paribus. This is a movement along the demand curve, as shown in **Figure 5**.

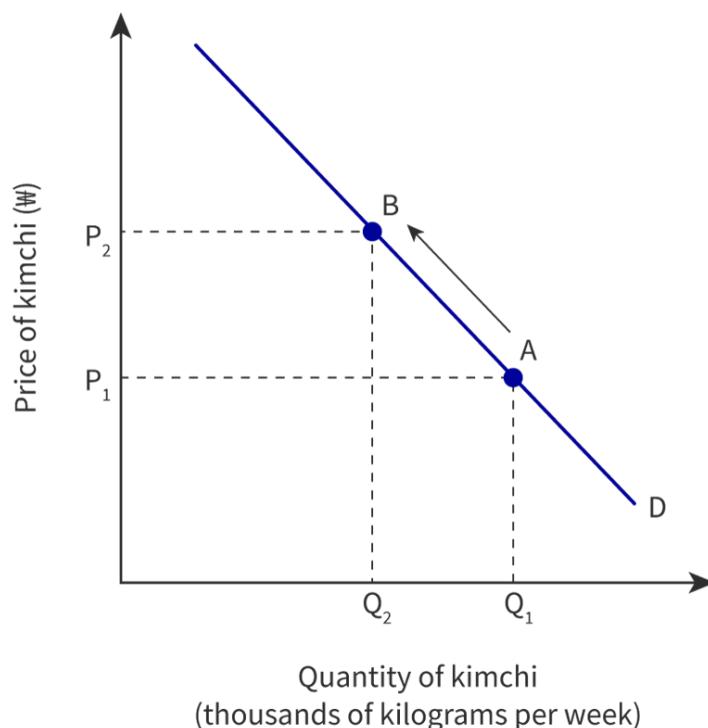


Figure 5. Impact of an increase in the price of kimchi on quantity demanded.



If the price of kimchi increases from P_1 to P_2 South Korean won (KRW), the quantity demanded of kimchi declines from Q_1 to Q_2 . This is a movement along the demand curve from point A to point B.

Double check! Have you:

- labelled the axes completely?
- labelled both prices?
- labelled both quantities?
- given the diagram an appropriate title?
- shown the movement from point A to point B on the demand curve?
- explained what happened above the diagram, and described the diagram with specific references to the Ps, Qs and points below it?

Non-price determinants of demand: changes in income

Any factor that shifts the entire demand curve is called a non-price determinant of demand. Whenever we look at a change in one of these factors, we assume *ceteris paribus* for all other factors. In this way we simplify the analysis, because otherwise it is almost impossible to identify the effect of a change in any one factor.

Making connections

If you are taking the IBDP Business Management course, you may be familiar (or soon will be) with STEEPLE analysis, the external factors that frame opportunities and threats for a firm in the SWOT analysis. The STEEPLE factors are all non-price determinants of demand.

The amount of income people have, and changes in their income, is an important factor influencing the demand for a good or service. The effect on the demand curve will depend on the type of good considered: normal goods and inferior goods.

Normal goods

Normal goods are goods whose demand increases as people's incomes increase. This is what happens with most goods and services. An increase in income leads to a rightward (outward) shift of the demand curve, while a fall in income leads to a leftward (inward) shift. Most goods and services are considered normal goods, as we tend to see an increase in demand for most items when incomes increase.

Inferior goods

Inferior goods are goods whose demand decreases as people's income increases. These types of goods tend to be lower-quality, less expensive goods, which people use as substitutes for higher-priced equivalents when their income falls. Therefore, as people have more money to spend, the demand for inferior goods decreases. In this case, an increase in income leads to a leftward (inward) shift of

the demand curve, while a fall in income leads to a leftward (inward) shift. Examples of inferior goods are 'own brand' supermarket products and second-hand clothes.

Worked Example 1

China's economy has been growing at more than six per cent per year for the last 10 years. This has resulted in more employment, more people earning an income and more people earning a higher income over that time.

1. Use an appropriate diagram to explain the impact of increasing incomes on demand for cars in China over this period, ceteris paribus.
2. Explain whether the increase in income may have a different effect on demand for used cars than for new cars in China.

Check the examples below and compare them to yours.

1. Increasing incomes should increase demand for normal goods. Consumers tend to buy more of these goods as their incomes increase. Cars are considered a normal good, so increasing incomes should increase demand for cars, as can be seen in **Figure 1**.

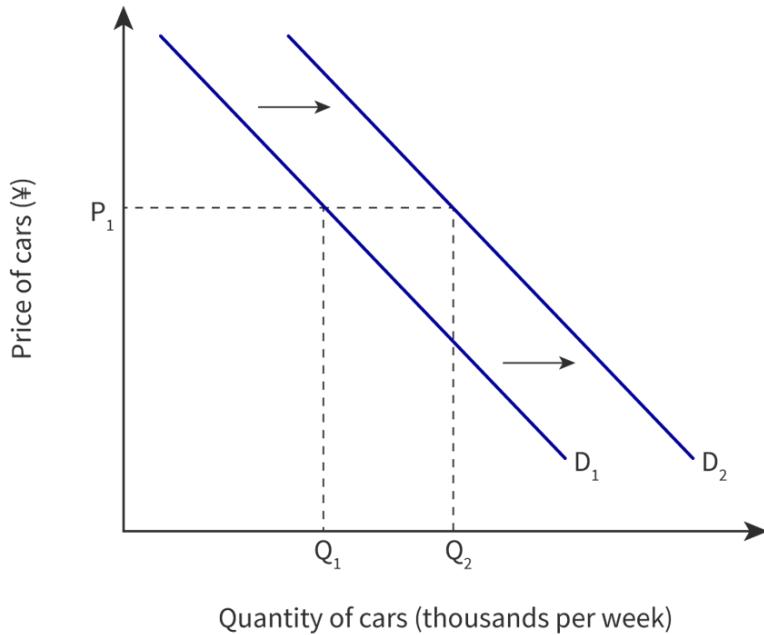


Figure 1. Impact of increasing incomes in China on demand for cars



Demand for cars increases from D_1 to D_2 . Even if the price remains the same at P_1 , the quantity demanded of cars in China will increase from Q_1 to Q_2 .

1. Used cars may be considered an inferior good. Consumers are expected to buy fewer inferior goods when their incomes increase. Consumers may buy fewer used cars as they choose to purchase new cars with their higher incomes. So it could be that when incomes increase, the demand for used cars declines and the demand for new cars rises .

However, it is not clear that used cars in China are an inferior good. Given that cars are a relatively expensive

means of travel and average incomes in China are rising, but still not at a very high level, it could be that used cars in China are a normal good. In fact, it could be that used cars everywhere are a normal good.

Just because a good (such as used cars) is a less expensive alternative to a particular good does not necessarily mean that the good is classified as an inferior good. You would have to investigate the data on used car purchases as average national incomes change to determine whether there is a negative correlation.

International Mindedness

Note that an inferior good in one country is not always considered inferior in another country. The same happens for normal goods. The impact of income on demand for a good has to be analysed in its own context and market .

Non-price determinants of demand: changes in the price of related goods

Goods can be substitutes for each other, complementary to each other or not related at all. When they are related in some way, a change in the price of one will result in a change in the demand of the other.

Substitutes

Substitute goods (substitutes) are goods that have similar characteristics and uses for consumers. For example, different brands of the same good will be considered substitutes for one another, like the brands Madécasse and TCHO fair trade certified chocolate. Substitutes could also be different goods that are consumed in similar circumstances, so that consumers often see them as replacing one another, like tea and coffee.

We learned in [section 2.1.2 \(<https://app.kognity.com/study/app/pp/sid-186-cid-754025/book/the-law-of-demand-id-29856/>\)](https://app.kognity.com/study/app/pp/sid-186-cid-754025/book/the-law-of-demand-id-29856/) that when the price of a good declines, the quantity demanded of it increases. When this happens, consumers will demand less of that good's substitutes. The demand curve for the substitute will shift leftward (inward) as shown in **Figure 1**.

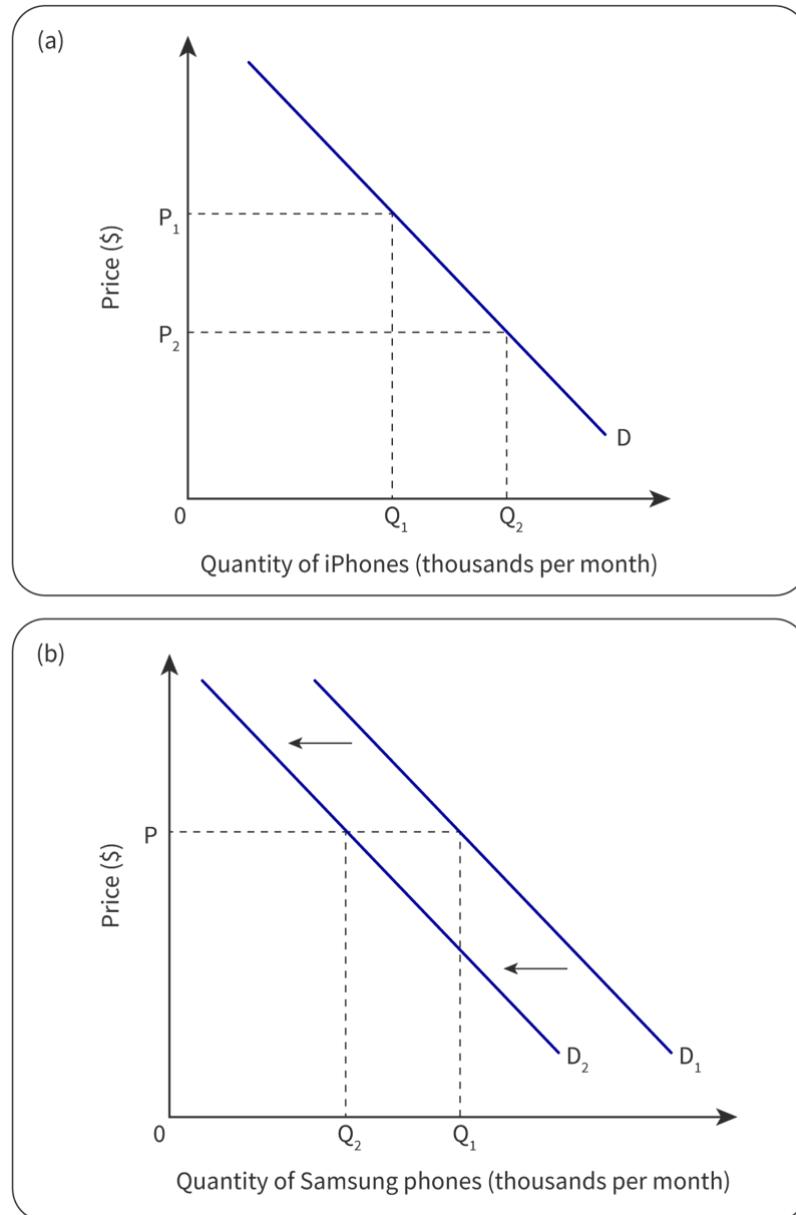


Figure 1. The impact of a decline in the price of iPhones on the demand for Samsung phones.

🔗 More information for figure 1

The image consists of two graphs labeled (a) and (b), illustrating the impact of a price decline in iPhones on the demand for Samsung phones.

Graph (a) focuses on iPhones: - The X-axis represents the "Quantity of iPhones" in thousands per month. - The Y-axis represents "Price (\$)." - Initially, at price P_1 , the quantity demanded is at Q_1 . As the price declines to P_2 , the quantity demanded increases to Q_2 , following the demand curve labeled D.

Graph (b) focuses on Samsung phones: - The X-axis represents the "Quantity of Samsung phones" in thousands per month. - The Y-axis represents "Price (\$)." - The initial price level is marked as P , and two demand curves are shown: D_1 and D_2 . The

demand shifts left from D₁ to D₂, indicating a decline in the quantity demanded from Q₁ to Q₂ as a result of increased consumption of iPhones.

[Generated by AI]

In **Figure 1 (a)**, as the price for iPhones declines from P₁ to P₂, consumers are likely to consume more iPhones, increasing the quantity demanded from Q₁ to Q₂. This is a movement along the demand curve of iPhones.

At the same time, in **Figure 1 (b)**, because Samsung cell phones have become relatively more expensive compared with iPhones, the demand for Samsung cell phones should decrease, shifting leftwards (inwards) from D₁ to D₂. At any price of Samsung phones, consumers will tend to consume fewer of them, as many will switch to purchasing iPhones because they have become relatively cheaper.

Be aware

It is the change in the prices of substitutes **relative to one another** that matters for the impact. The fact that some iPhones are still more expensive than some Samsung phones is irrelevant.

There are many everyday examples of substitutes. Some are close substitutes like Coca-Cola and Pepsi, which are almost identical goods, but different brands. Others are remote substitutes, which are not so close but still substitutes on some level, like coffee and orange juice, because they are both beverages.

When the goods are close substitutes, the shift of the demand curve of the substitute will be greater than when they are remote substitutes, because with close substitutes, consumers will be more willing to shift their consumption to the substitute good in reaction to a price change of the original good.

Complements

Complementary goods (complements) are goods that are consumed together. When two goods are complementary, the decline in the price of one good will result in an increase in the quantity demanded of it (movement along the demand curve), and this will cause an increase in the demand for the complementary good whose price hasn't changed (shift of the demand curve) as shown in **Figure 2**.

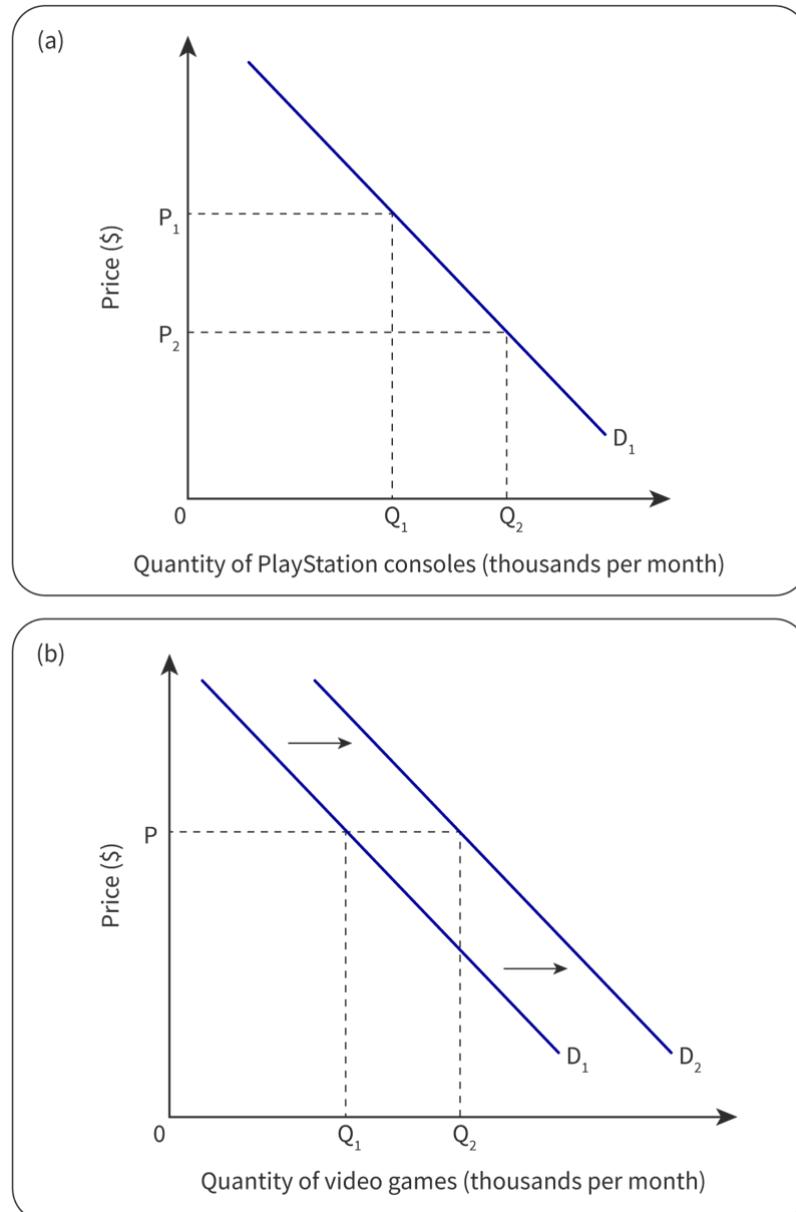


Figure 2. Impact of a decline in the price of PlayStation consoles on the demand for video games.

🔗 More information for figure 2

The image consists of two graphs, labeled (a) and (b), illustrating the impact of price changes on demand for complementary goods, specifically PlayStation consoles and video games.

Graph (a) highlights the effect of a price decline on PlayStation consoles. The X-axis represents the quantity of PlayStation consoles in thousands per month, with values noted as Q_1 and Q_2 . The Y-axis represents the price in dollars, marked as P_1 and P_2 . The downward-sloping demand line, D_1 , shows that as the price drops from P_1 to P_2 , the quantity demanded increases from Q_1 to Q_2 .

Graph (b) focuses on the resulting demand shift for video games, a complementary good. The X-axis indicates the quantity of video games in thousands per month, labeled as Q₁ and Q₂, while the Y-axis displays constant price P in dollars. The initial demand curve, D₁, shifts rightward to D₂, indicating an increase in demand from Q₁ to Q₂ due to the price drop in PlayStation consoles inferred in graph (a).

[Generated by AI]

In **Figure 2 (a)**, as the price for PlayStation consoles declines from P₁ to P₂, consumers should purchase more PlayStations, increasing the quantity demanded from Q₁ to Q₂. This is a movement along the demand curve of PlayStations.

At the same time, in **Figure 2 (b)**, because video games and PlayStation consoles are purchased together, the demand for video games will also increase, shifting rightward (outward) from D₁ to D₂. At any price of video games, people will tend to purchase more of them.

There are many examples of complementary goods. Some are close complements, like ink cartridges and printers, because one cannot function without the other. Others are remote complements, which are not so close, but are still complements to some degree, such as sushi and soy sauce.

A change in the price of one good will affect the demand of the complementary good. When the goods are close complements, the shift of the demand curve of the complementary good will be greater than when the two goods are remote complements.

Worked Example 1

Imagine the case of two vegan restaurants in Cape Town, South Africa: Plant and The Kind Kitchen.

1. Use an appropriate diagram to explain the impact on the demand for Plant's beetroot and oat burger if The Kind Kitchen increases the price of its beetroot and quinoa burger.
2. Use an appropriate diagram to explain the impact on demand for The Kind Kitchen's lemonade drink, if The Kind Kitchen

decreases the price of its burrito.

Check the examples below and compare them to yours.

1. If The Kind Kitchen increases the price of its beetroot and quinoa burger, the quantity demanded of that burger will decline, according to the law of demand, ceteris paribus. Consumers may switch to Plant's beetroot and oat burger, because it is now relatively less expensive than previously. Demand for Plant's beetroot and oat burger should increase, as shown in **Figure 3**.

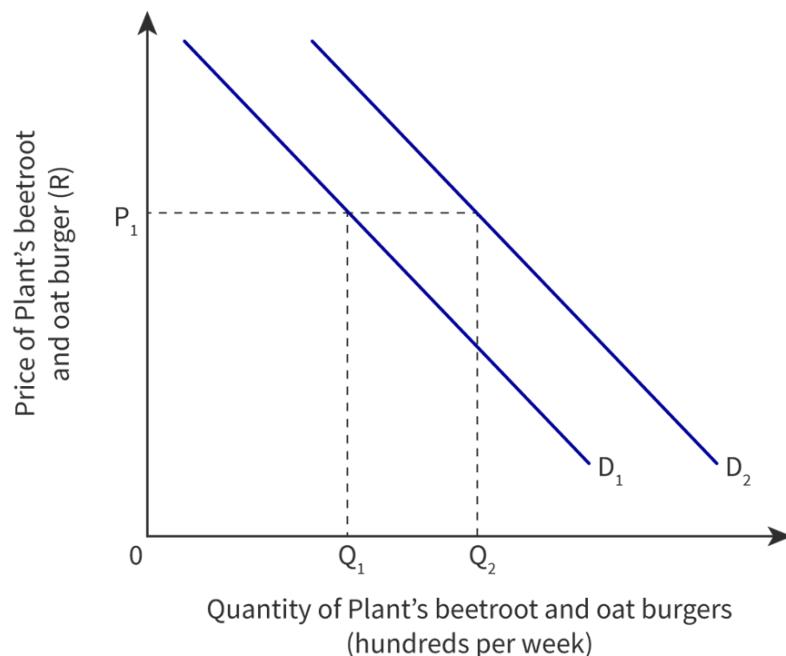


Figure 3. Impact of an increase in the price of The Kind Kitchen's burger on demand for Plant's burger



Demand for Plant's beetroot and oat burger increases from D_1 to D_2 . Even if the price of Plant's burger remains the same at P_1 , the quantity demanded of the burger will increase from Q_1 to Q_2 .

Double check! Have you:

- labelled the axes completely?
 - labelled the original demand curve D_1 and the new demand curve (after The Kind Kitchen raised the price of its burger) D_2 ?
 - labelled one price?
 - labelled two quantities, Q_1 corresponding to D_1 and Q_2 corresponding to D_2 ?
 - given the diagram an appropriate title?
 - explained what happened above the diagram, and described the diagram with specific references to the Ds, P, and Qs below it?
2. If The Kind Kitchen decreases the price of its burrito, consumers will buy more burritos; the quantity demanded of burritos should increase, ceteris paribus. If consumers are buying more burritos, they may also buy more complementary goods that are normally consumed with burritos, like lemonade. Demand for lemonade should increase, as shown in **Figure 4**.

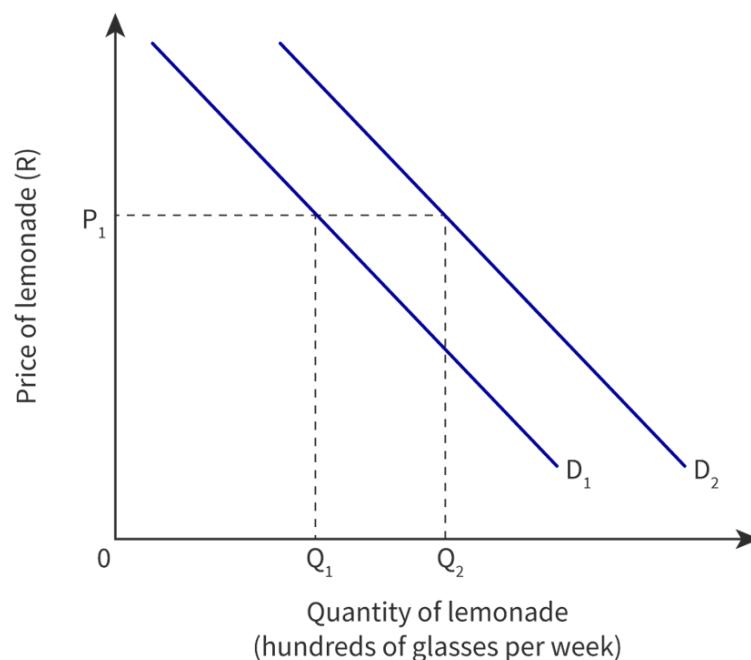


Figure 4. Impact of a decrease in the price of The Kind Kitchen's burrito on demand for its lemonade



Demand for The Kind Kitchen's lemonade increases from D_1 to D_2 . Even if the price of the lemonade remains the same at P_1 , the quantity demanded of the lemonade will increase from Q_1 to Q_2 .

Double check! Have you:

- labelled the axes completely?
- labelled the original demand curve D_1 and the new demand curve (after The Kind Kitchen lowered the price of its burrito) D_2 ?
- labelled one price?
- labelled two quantities, Q_1 corresponding to D_1 and Q_2 corresponding to D_2 ?
- given the diagram an appropriate title?
- explained what happened above the diagram, and described the diagram with specific references to the Ds, P, and Qs below it?

Be aware

Note that both Plant and The Kind Kitchen (the two restaurants in the Worked Example above) offer goods on their menus that are substitutes within their own product range. The wraps and sandwiches that they offer are substitutes within their own restaurant and for each other's goods.

This means that a restaurant, or any other producer, has to be careful when making changes to the prices of the different goods it sells. Changing prices will affect not only the demand for other producers' goods, but also the demand for its own substitute products.

Unrelated goods

When goods are unrelated, the change in the price of one good will have no effect on the demand of the other. For example, T-shirts and eggs: if the price of T-shirts increases, it is unlikely that the demand for eggs will be affected.

Non-price determinants of demand: tastes and preferences, future expectations, number of consumers, seasonal changes



Figure 1. Got milk? ad campaign to influence tastes and preferences.

Source: "Got milk? (https://commons.wikimedia.org/wiki/File:Got_milk.svg)", by

Got milk? is under Public Domain

(https://commons.wikimedia.org/wiki/Category:PD_text)

Tastes and preferences

When goods become more or less popular because of fashion, current events or promotion campaigns, demand is affected and the demand curve may shift to the right or to the left. Firms, interest groups, news media, social media, peer groups and governments can all affect the tastes and preferences of consumers.

Making connections

Promotion is one of the four Ps of the Marketing topic in the Business Management course. In that unit, students learn about the various methods that firms, interest groups and governments can use to encourage consumers to buy products and services or change their purchasing behaviour.

For example, in recent years milk producers in the United States have seen demand for liquid (drinking) milk decline significantly. According to the US Department of Agriculture, per capita consumption of milk in the United States has declined from 247 pounds per person in 1975 to 146 pounds per person in 2018. Even though the population has increased significantly during that time,

Non-price determinants of demand: tastes and preferences, future expectations, number of consumers, seasonal changes | IB DP Economic... and the dairy industry heavily promoted milk drinking through its popular [Got Milk?](https://www.gotmilk.com/) (<https://www.gotmilk.com/>) ad campaign, the total demand for liquid milk has declined, as shown in **Figure 2**.

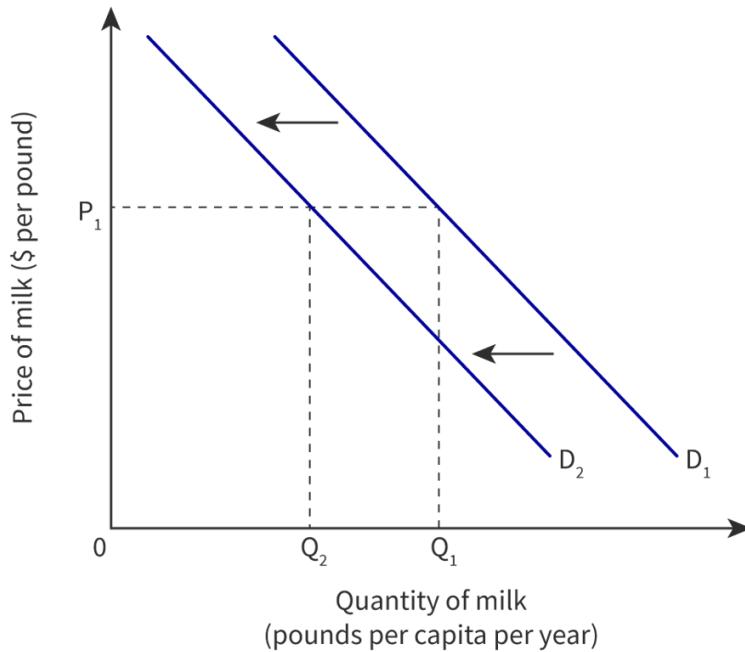


Figure 2. Impact of changing tastes and preferences on demand for milk in the United States.

[More information for figure 2](#)

The graph illustrates the impact of changing tastes and preferences on the demand for milk in the United States, using two demand curves, D_1 and D_2 . The X-axis represents the quantity of milk in pounds per capita per year, and the Y-axis represents the price of milk in dollars per pound. The initial demand curve, D_1 , shows higher demand at a given price level. The graph shows a shift to a new lower demand curve, D_2 . Both curves are downward sloping, indicating the inverse relationship between price and quantity. An arrow shows the shift from D_1 to D_2 , while keeping the price constant at P_1 , indicating that demand has decreased from Q_1 to Q_2 over time.

[Generated by AI]

Demand for milk in the United States has declined from D_1 to D_2 . Even if the price remains the same at P_1 , the quantity demanded of milk declines from Q_1 to Q_2 . (Note: the US Department of Agriculture measures consumption of milk in pounds. This is quite unusual. In most of the rest of the world, milk consumption is measured in litres. One pound of milk equals approximately $\frac{1}{2}$ litre.)

The role of changing tastes and preferences in the decline in milk demand is explored in the investigation in [section 2.1.9](#) (<https://app.kognity.com/study/app/pp/sid-186-cid-754025/book/investigation-id-29866/>).

Future expectations

Expectations about the future can also affect the demand for goods and services.

Expectations about future prices

For example, if people expect prices of goods and services to increase in the near future, they may decide to purchase more of the good now, in the hope of avoiding higher prices later. They may also want to sell the good again later at a higher price, to make a profit from the expected price rise.

Expectations about the future of the economy

Consumer and business expectations about the future of the economy can also affect their demand for goods and services. If consumers expect the economy to do well, meaning consumers expect to keep their jobs and increase their incomes in the near future, they may increase their consumption of goods and services.

Similarly, if businesses expect to sell more goods, they may increase consumption of resources for production. High consumer and business confidence can therefore increase demand for many goods, services and resources in the economy.

Be aware

Changes in consumers' demand that reflect expectations about future prices can actually cause the price changes they expect. For example, if consumers increase demand now in anticipation of higher prices in the future, this can cause price increases to happen in the market. Conversely, if consumers decrease demand in expectation of future price declines, this may cause prices to decline.

Thus, consumer expectations about future prices can be a self-fulfilling prophecy and the positive feedback loop associated with future expectations can result in a market bubble. A market bubble is a situation where the price of a product rises above reasonable assessments of its value, often rapidly. A market bubble will often be followed by a market crash, where prices rapidly decline. Feedback loops are discussed later in section 2.3.4

(<https://app.kognity.com/study/app/pp/sid-186-cid-754025/book/functions-of-the-price-mechanism-id-30308/>).

Case study

Brexit and Future Expectations for Housing Prices in Frankfurt, Germany



Figure 3. Housing in Frankfurt, Germany.

Credit: ollo Getty Images

In June 2016, the United Kingdom (UK) voted to leave the European Union (EU). Many banks who had their European headquarters in London would need to set up operations on the European continent to maintain unrestricted access to European clients. Many people believed that Frankfurt would see a major influx of banks and their employees because it is a major banking hub in continental Europe.

Almost immediately, there was an impact on demand in the housing market. Demand for housing started to rise substantially, not because people were already moving to Frankfurt, but because people expected demand and prices to increase in the future. This is an example of future expectations actually causing the anticipated price increases, as mentioned in the 'Be aware' box before this case study. According to a Deutsche Bank property market report (the first web link below), 'Brexit was a positive demand shock for Frankfurt. Between 2016 and 2018, prices for existing homes rose by an accumulated 44 per cent, which is considerably more strongly than between 2009 and 2015 (32 per cent).'

Source: Adapted from [Germany property and metropolis market outlook 2019, Deutsche Bank](#) (https://www.dbresearch.com/PROD/RPS_EN-PROD/PROD0000000000488315/German_property_and_metropolis_market_outlook_2019.pdf) and [C or pie? How much will Frankfurt's property market benefit from BREXIT?](#) (https://www.dbresearch.com/PROD/RPS_EN-PROD/PROD0000000000441818/Crumbs_or_pie_%E2%80%93_how_much_will_Frankfurt%27s_property_market_benefit_from_BREXIT.pdf) Deutsche Bank Research

Questions to consider:

- How could an economist research whether increases in demand for housing are occurring because consumers are buying for their own use, or because consumers are buying in anticipation of future price increases?
- What might you expect to happen to the demand for housing in Frankfurt if the expectations for higher future demand and prices are not met?
- Is there a difference in the nature of demand from consumers who are buying housing for their own use and demand from consumers who are buying in anticipation of future price increases? For example, think about how volatile demand might be in each case.

Read more:

Germany property and metropolis market outlook 2019, Deutsche Bank

(https://www.dbresearch.com/PROD/RPS_EN-PROD/PROD00000000000488315/German_property_and_metropolis_market_outlook_2019.pdf)

Crumbs or pie? How much will Frankfurt's property market benefit from BREXIT? (https://www.dbresearch.com/PROD/RPS_EN-PROD/PROD00000000000441818/Crumbs_or_pie_%E2%80%93_how_much_will_Frankfurt%27s_prop)

Number of consumers

Changes in market size can increase or decrease the number of consumers demanding goods and services. Market size can be affected by many factors, including the ones already mentioned in previous sections. We will now look at two important factors that affect the number of consumers.

Demographic changes

Demographic changes are changes to the size, structure and distribution of groups of people. These changes can have a significant impact on the number of consumers demanding goods and services.

For example, Japan's population is ageing. This will cause an increase in demand for health care and elder care services, as seen in **Figure 4**.

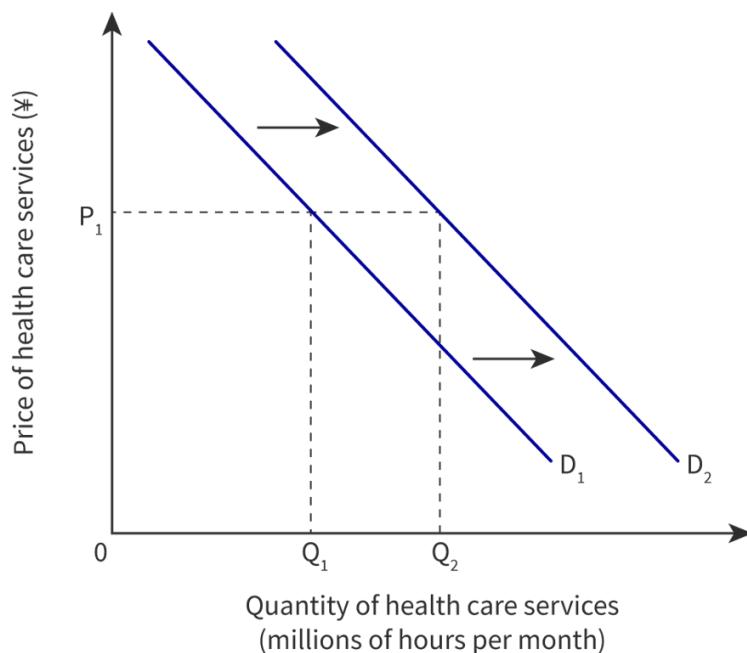


Figure 4. Impact of Japan's aging population on the demand for healthcare.

[More information for figure 4](#)

The image is a graph illustrating the impact of an aging population on the demand for healthcare services in Japan. The X-axis represents the 'Quantity of health care services' measured in 'millions of hours per month,' ranging from 0 onward. The Y-axis indicates the 'Price of health care services' (in Japanese Yen, ¥).

The graph contains two downward-sloping demand curves labeled as D1 and D2, depicting a rightward shift. The initial demand curve (D1) intersects the price level (P1) and quantity (Q1). As the demand shifts to curve D2, the quantity demanded increases from Q1 to Q2, suggesting increased demand due to the aging population. Arrows indicate the direction of the shift.

This rightward shift of the demand curve illustrates how Japan's aging demographic is projected to lead to higher demand for healthcare services over time.

[Generated by AI]

At the same time, low birth rates in Japan have led to lower numbers of young people, which will cause a decline in demand for goods and services associated with children, such as childcare.

Government policy

The government can also affect the number of consumers for goods and services in many ways.

For example, in response to the COVID-19 pandemic, governments around the world enacted policies that required physical distancing and temporarily closed many businesses. As a result, demand for restaurant meals, as well as many other goods and services, declined significantly.

Government policies can also increase the number of consumers demanding particular goods and services. For example, in some cities and countries, governments have banned the use of, or required charges for, single-use plastic shopping bags. As a result, there has been an increased demand for cotton shopping bags. The policy increased the number of consumers of cotton bags. The impact would be the same as shown in **Figure 4**.

Seasonal changes

People purchase some goods and services at certain times of the year. For example, demand for warm clothing like jackets and sweaters will increase as winter approaches and decrease when spring arrives. Demand for ice cream increases during warmer months and decreases in winter. Demand for mooncakes in China will increase around the time of the Mid-Autumn Festival.



Figure 5. Demand for mooncakes increases at the time of the Mid-Autumn Festival.

Credit: Wong Sze Fei / EyeEm Getty Images

Activity

Now that you know a number of determinants of demand, make yourself a mind map to practise retrieving and organising the information, including appropriate examples.