# Supply & Demand

## Chapter 4

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In this chapter we will:

- evaluate the economic role of consumers in an economy, explaining how positive and negative incentives influence consumer activity
- critique the assumption that consumers taking part in economic activity behave rationally
- investigate and interpret data patterns in Irish consumers' current expenditure
- evaluate the economic role of firms in an economy, explaining how positive and negative incentives influence economic activity
- construct a graphical representation of demand and supply in a market economy and critically analyse the role of the price mechanism in a market economy
- demonstrate how a change in the main determinants of demand and supply can affect changes in the price and quantity of goods and services
- examine how advances in technology can impact the market economy

# The Economic Role of Consumers

1. Consumers drive **demand** in markets. Household spending signals what goods/services are wanted, influencing what firms produce and how much they produce. Rising demand for electric vehicles encourages more to be produced and more infrastructure to charge them.

2. Consumers influence **prices** through demand changes. When demand rises (falls), market prices tend to rise (fall), affecting inflation and living costs. A surge in demand for concert tickets pushes prices up and encourages more events.

3. Consumers shape **business decisions and competition**. Firms compete for customers through price, quality, convenience and advertising. Consumer switching forces firms to improve. If shoppers move to cheaper supermarkets, rivals may cut prices or run promotions.

4. Consumers are central to **economic growth and employment**. Higher consumer spending raises firms' revenues, encouraging investment and hiring; weak spending can reduce output and jobs. If households cut discretionary spending, retail and hospitality employment may fall.

5. Consumers affect the economy through **saving and borrowing**. Saving funds investment via banks; borrowing supports spending but can create debt problems if excessive. Higher savings rates give banks more funds for mortgages and business loans.

# Incentives and Consumer Activity

**Positive incentives** encourage more of a behaviour.

1. They reduce the cost or increase the reward of an action, making consumers more likely to do it. A grant for home insulation lowers the effective price, so more households retrofit.
2. Price reductions and promotions act as **positive incentives**. Lower prices raise quantity demanded (law of demand), especially for price-sensitive goods. "3 for 2" offers increase purchases of snacks.

**Negative incentives** discourage a behaviour.

1. They raise the cost or reduce the benefit, so consumers buy less or change habits. Higher tobacco excise increases price and reduces smoking, particularly among young people.
2. Taxes on harmful goods help reduce **negative externalities**. By making the private cost closer to the social cost, consumption falls toward a more efficient level. A carbon tax makes fossil-fuel use more expensive, encouraging lower-carbon choices.

# Incentives and Consumer Activity

As outlined in the last slide, incentives are broadly used to:

1. Move consumption towards merit goods
2. Move consumption away from demerit goods

**Merit goods**

Merit goods are those considered socially desirable and beneficial, but people tend to under-consume them in a free market as they might not fully understand their benefits or can't afford them, leading to government intervention like subsidies or free provision to boost consumption.

**Demerit goods**

Demerit goods are products or services considered harmful to consumers and society, leading to over-consumption because people underestimate the long-term negative effects (like addiction, health issues, or social costs) or focus only on short-term pleasure.

Incentives work best when consumers can **switch easily**. If substitutes exist and information is clear, people respond more strongly to incentives. A bus fare reduction works better when services are reliable.

Incentives can have **unintended effects**, so policy design matters. A fuel tax can hit rural households harder; if people must drive to work, consumption may not fall much.

# Assumptions of Consumer Behaviour

Economics is **social science** & studies behaviour of humans. So we must make a number of assumptions.

## Consumers act rationally

Its assumed that consumers behave rationally in accordance with their preferences – if a 1L bottle of water is priced differently in separate shops, the consumer will buy the cheaper one every time.

## Consumers have limited income

Consumers earn a finite income but their needs and wants are unlimited. Thus, we say consumer income is not sufficient to satisfy all outcomes.

## Opportunity Cost exists

Given limited income yet unlimited needs and wants, consumers are forced to choose between needs & wants they want to satisfy most – opportunity cost exists as consumers must forgo purchases they can't afford.

# Assumptions of Consumer Behaviour Cont'd

## Law of Diminishing Marginal Utility takes Effect

Its assumed that as a consumer consumes more and more of a particular product, the additional utility (benefit) derived from the consumption of each additional unit will eventually begin to fall.

## Equi-Marginal Principle of Consumer Behaviour Applies

Consumers are expected to spend their limited income in such a way as to achieve maximum satisfaction from the goods and services they buy.

$$\frac{MU_X}{P_X} = \frac{MU_Y}{P_Y}$$

Given limited income, a consumer will distribute spending across goods so that each euro spent gives the same marginal gain in utility – thereby maximising total satisfaction.

# 2021 Exam Paper – Section A Q8

John always spends his income in the following ratio of price to marginal utility:

$$\frac{MU_X}{P_X} = \frac{2500}{200} = \frac{MU_Y}{P_Y} = \frac{1250}{100} = \frac{MU_Z}{P_Z} = \frac{75}{?}$$

Calculate the price John would pay for one unit of good Z. (7 marks)

$$\frac{MU_Z}{P_Z} = \frac{75}{?} = 12.50 \quad \Rightarrow \quad 75 = 12.50 \cdot ? \quad \Rightarrow \quad ? = \frac{75}{12.50} = 6$$

Explain **why** John would pay this price. (8 marks)
He would pay this price in order to maximise his utility as he spends his income in line with the equi-marginal principle of consumer behavior i.e. the ratio of marginal utility to price is the same for every unit of every good consumed.

# Do consumers always behave rationally?

It may sound obvious that consumers would always seek to get the best value for money. However, this is not always the case. Here are some examples:

1. Consumers often have **limited information:** people may not know the true quality, long-run cost, or best alternative, so choices can be sub-optimal. A cheaper appliance looks best today, but higher electricity use makes it more expensive over time (hidden running costs).
2. Consumers face **bounded rationality** (limited time and brainpower). Instead of maximising utility perfectly, people use shortcuts (rules of thumb) and choose what is "good enough". Picking the first phone plan that seems reasonable rather than comparing all providers and contract terms.
3. **Habit, routines and brand loyalty** can override rational choice. Past behaviour and advertising can shape preferences, so consumers keep buying the same product even if better value exists, eg, always buying same coffee brand despite cheaper own-brand options with similar quality.
4. **Self-control problems** can lead to choices that conflict with long-run interests. Consumers may value immediate satisfaction more than future wellbeing, so they under-save or over-borrow. Eg, using Buy-Now-Pay-Later for non-essential purchases and then struggling with repayments later.
5. **Social pressure and trends** can shape demand. People may buy to fit in or signal status rather than maximise value for money, eg, paying extra for branded clothes because "everyone has them".

# What Causes Demand to Change?

**Demand Function**

$$D_x = f(P_x, P_{os}, P_{oc}, Y, E, T, U, G)$$

**Price of the good itself ($P_x$):** As the price of a good falls demand for that good will rise, and vice versa, according to the law of demand.

**Price of substitute goods ($P_{os}$):** If the price of a substitute good rises relative to the price of another good, demand for that other good will fall – for example, a fall in the price of orange juice would lead to higher demand for milk.

**Price of complementary goods ($P_{oc}$):** Complementary goods are goods in joint demand, i.e., the use of one requires the use of another. Consider two complementary goods: bread and butter. If the price of butter increases, demand for bread will decrease in response. In the case of complementary goods, a rise in the price of one will lead to a fall in demand for another.

**Consumer Income ($Y$):** When consumer income rises, consumers demand more normal goods and less inferior goods. When consumer income falls, they demand less normal goods and more inferior goods.

**Consumer Expectations ($E$):** If consumers expect prices to rise further in the future, they will buy more now at each price to avoid paying more in the future, and vice versa.

# What Causes Demand to Change? Cont'd

**Consumer Tastes ($T$):** Goods may become more or less appealing to consumers over time. If consumer tastes change in favour of a product, its demand will rise and vice versa.
Advertising, social media influencers and public campaigns can shape a consumer's tastes/attitudes towards a particular good.

**Unplanned factors ($U$):** Unplanned factors are those which consumers cant control. Coronavirus led to a surge in demand for masks and PPE. However, it also created a large fall in demand for airline tickets and foreign holidays – hence, unplanned factors can increase or decrease demand for a good.

**Government regulation ($G$):** The State can impose laws to shape consumer behaviour. If the government put a ban on underage smoking, there would be a fall in demand for cigarettes and lighters. A charge on plastic bags in Ireland has led to reduced demand for plastic bags.

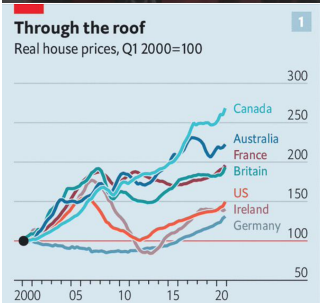
# Exceptions to the Law of Demand

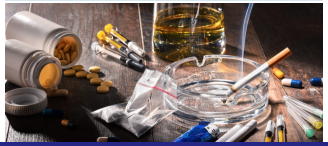
**Snob Goods:** Exclusive goods like Yachts & Ferraris attract greater demand than cheaper alternatives because of their perceived exclusivity. If the price of a yacht fell by €1,000, its unlikely many more people would be able to afford it. In fact, the lower price may reduce exclusivity leading to lower demand.

**Speculative Goods:** If prices are rising and consumers speculate a further rise in price in the future, they may increase current consumption – in the housing market for example, if house buyers think property prices will rise further in future, they may buy (to trap the gains of rising prices) now even though prices are increasing.

**Addictive Goods:** When suffering from an addiction, humans lose the ability to act rationally – drug addicts don't worry about the price of narcotics because they depend on them regardless of price.

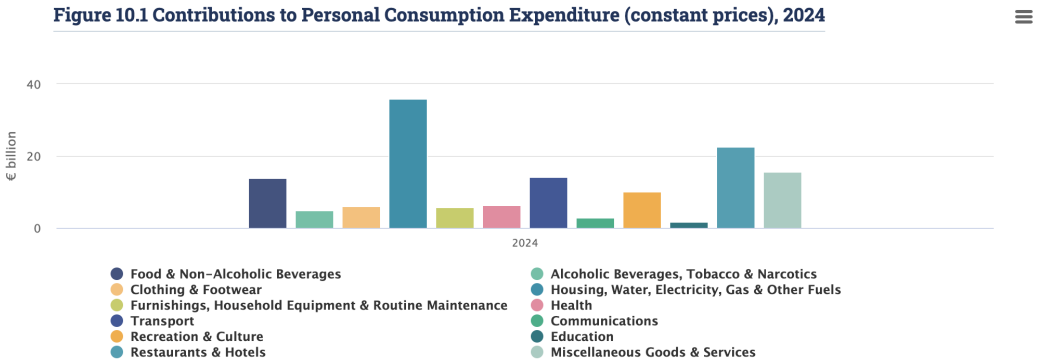
**Giffen Goods:** Giffen Goods are goods with a positive income effect. This means that more of the good is bought as prices rise. However, as income decreases, consumers buy more of the good. Examples include rice and bread for impoverished African families.



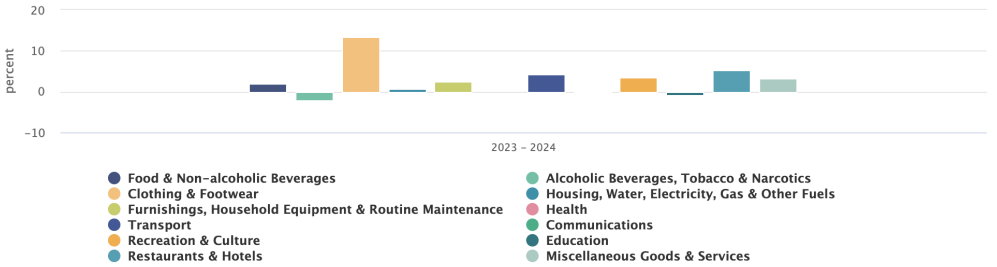
# Consumption patterns in the Irish economy

# Consumption Patterns in the Irish Economy



# Consumption Patterns in the Irish Economy

**Figure 10.2 Percentage Change in the Components of Personal Consumption Expenditure from 2023 to 2024**

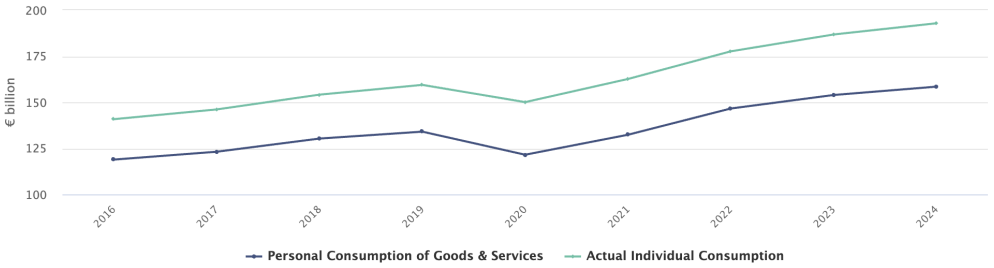



*Source: CSO Ireland*

Highcharts.com

# Consumption Patterns in the Irish Economy

**Figure 10.3 Personal Consumption Expenditure and Actual Individual Consumption, constant prices**




*Source: CSO Ireland*

Highcharts.com

# Consumption of Personal Income at Current Market Prices (million)

| Coicop_code | Description | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|
| **CP01** | **Food and non-alcoholic beverages** | **9,826** | **10,283** | **11,041** | **11,992** | **13,681** | **14,289** |
| CP011 | Food | 8,897 | 9,397 | 9,967 | 10,891 | 12,436 | 12,950 |
| CP012 | Non-alcoholic beverages | 929 | 886 | 1,073 | 1,101 | 1,246 | 1,339 |
| **CP02** | **Alcoholic beverages, tobacco and narcotics** | **5,087** | **5,657** | **5,653** | **5,422** | **5,081** | **5,165** |
| CP021 | Alcoholic beverages | 2,186 | 2,888 | 2,694 | 2,690 | 2,533 | 2,530 |
| CP022 | Tobacco | 1,996 | 1,841 | 2,041 | 1,803 | 1,573 | 1,612 |
| CP023 | Narcotics | 906 | 928 | 919 | 929 | 975 | 1,023 |
| **CP10** | **Education** | **1,667** | **1,703** | **1,765** | **1,816** | **1,850** | **1,872** |
| CP101 | Pre-primary and primary education | 158 | 159 | 159 | 162 | 163 | 166 |
| CP102 | Secondary education | 170 | 169 | 164 | 172 | 183 | 197 |
| CP103 | Post-secondary non-tertiary education | 16 | 16 | 15 | 15 | 14 | 15 |
| CP104 | Tertiary education | 1,239 | 1,285 | 1,359 | 1,420 | 1,444 | 1,449 |
| CP105 | Education not definable by level | 84 | 75 | 67 | 47 | 46 | 46 |

# Economic Role of Firms in Creating Supply

1. To Provide Various Options to a Market Need: given that different consumers, want different goods and services, firms must cater for this. Most consumers may like jetting off to a sunny holiday destination like Malaga, some may prefer a ski trip in the Winter, while others want a guided Safari tour in the wilderness. Could you imagine a single body trying to provide all these services? Different companies can provide a wide range of choice to the consumer.
2. To Facilitate Specialisation: companies generally focus on selling what they are good at and outsourcing the rest, e.g., a hotel owner would pass on any legal work to a solicitor – this way, firms become skilled in the provision of their product.
3. To Create Employment: firms provide consumers with the necessary income to purchase goods and services by providing wages to employees.

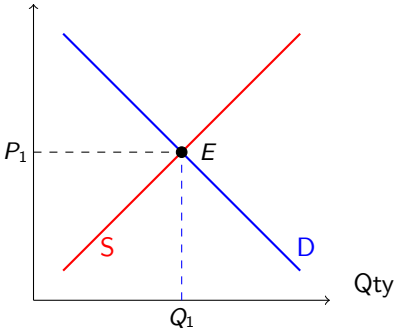
# What Causes Supply to Change?

## Supply Function

$$S_x = f(P_x, P_r, C, U, Tch, Tx, O, N)$$

**Price of the good itself ($P_x$):** by the law of supply, as price of a good rises, there's a rise in the quantity supplied of that good & vice versa. When prices are higher, there is a better prospect of making profits.
**Price of Related Goods ($P_r$):** If the price of a tablet rises, the supply of computers may also increase if they are substitutes in production – for example, if a factory can switch from making tablets to computers, it may do so to take advantage of higher profits. Conversely, if two goods are jointly produced (like beef and leather), a change in the price of one will affect the supply of the other.
**Cost of production ($C$):** When the cost of producing a goods increases, it becomes more expensive for producers to supply that good, so supply decreases, ceteris paribus.
**Unplanned factors ($U$):** Factors outside the control of suppliers can have a positive or negative influence on supply – workers strikes will likely reduce supply while good weather would increase supply of crops.
**State of Technology ($Tch$):** Improvements in technology generally enable firms to produce more efficiently (more goods at lower cost) which leads to greater availability of goods and services
**Level of Taxation ($T_x$):** Higher taxes (e.g., VAT, excise duties) increase the cost of production, reducing supply. Conversely, lower taxes reduce costs and increase the willingness of firms to supply goods.
**Objectives of the Firm ($O$):** Not all firms aim solely to maximise profit – some may prioritise market share, social impact, or sustainability. These differing goals affect how much a firm is willing to supply.

# Bringing Supply & Demand Together: Price Mechanism




At equilibrium point $E$, supply equals demand. The price mechanism ensures resources are allocated efficiently: price $P_1$ signals producers and consumers, rations quantity $Q_1$, and incentivises market responses.

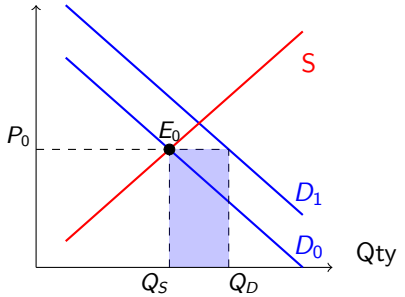
**The Price Mechanism – Definition**

The price mechanism is the way decisions are taken by consumers and business people to allocate scarce resources between competing uses.

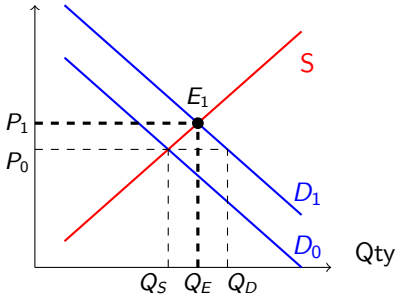
# Role of Price Mechanism in Market Economy

1. **Signalling function**: prices are a vital piece of information which act as 'signals' when changes occur in market conditions. A sudden rise in the price of hoodies acts as a signal to suppliers to produce more hoodies.
2. **Rationing function**: basic economic theory reminds us that when shortages occur in the market, prices rise to ration/conserve the commodity to ensure only those who are willing to pay high prices will receive the commodity – for instance when droughts occur, the price of water surges to allocate water to those who need it most.
3. **Transmission of preferences function**: when a consumer makes a purchasing choice, they are showing their preference or fondness for one product over another. If a consumer displays preference for a particular product they, generally speaking, will be more willing to pay more for it. Thus, producers can charge higher prices – if consumers are willing to tolerate the higher prices, they have demonstrated a preference for that product.

# The Price Mechanism in Action: Dealing with a Market Shortage




Imagine we have an initial equilibrium position in the market for ice-cream at point $E_0$ where the supply curve ($S$) intersects the original demand curve ($D_0$). Say demand for ice-cream then rises at all prices, perhaps on a sunny day. The demand curve to shift from $D_0$ to $D_1$. At the existing market price ($P_0$), the quantity supplied is $Q_S$ and the quantity demanded is $Q_D$. Because $Q_S < Q_D$ there is a shortage of ice-creams at current price, shown by the blue region.




At $P_0$ there aren't enough ice-creams for those who demand them, so there's no equilibrium. So, there is upward pressure on prices to correct the market shortage. This causes us to arrive at a new price, $P_1$, higher than $P_0$. At $P_0$, $Q_E$ ice-creams are demanded and $Q_E$ ice-creams are supplied. This higher price induces more ice-creams to be made and those who don't really want an ice-cream to withdraw their demand. So, the market is now in equilibrium at $E_1$.

# The Price Mechanism in Action

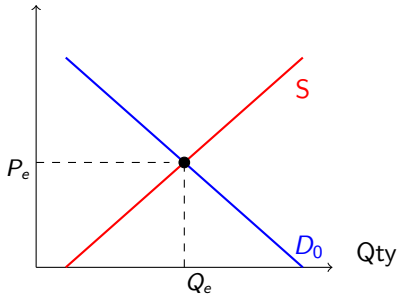
When explaining a market mechanism graph (like the one on the last slide) in your exam, you should touch on each of these points:

1. an unplanned factor (sunny weather) has caused demand for ice-creams to increase ✔
2. as a result the demand curve shifts right from $D_0$ to $D_1$ ✔
3. the market price increases from $P_0$ to $P_1$ ✔
4. the market quantity increases from $Q_S$ to $Q_E$ ✔
5. the market equilibrium moves from $E_0$ to $E_1$ ✔

In this context, you would NOT say the curve 'moves up' from $D_0$ to $D_1$. This implies a movement along a single demand curve rather than shifting from one demand curve to an entirely new demand curve. Its important that your language is precise. You must identify the direction that each item (price, qty, equilibrium, d/c). Is there an increase or a decrease? Does the curve shift left or right? It's likely you'll lose a lot of marks if you don't mention this very clearly in your answer. Also, on your graph, use arrows to clearly indicate the direction of each item. Not only will this help you gain marks, it can remind you to include the directions in your written answer too.

# The Price Mechanism in Action

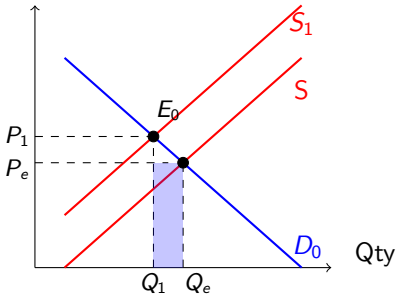
Lets look at another example. This is taken from Section A Q7 (a) of the 2023 SEC exam paper.




"Landlords are leaving the Irish housing market in their thousands, blaming excessive taxation, rent control and constantly changing laws."

Adapted from Sunday Business Post

Show on the diagram below how this development will alter the rental market equilibrium position. Explain your answer.




1. landlords leaving the rental market will cause supply of rental properties to fall ✔
2. the supply curve shifts left from $S$ to $S_1$ ✔
3. the market price increases from $P_e$ to $P_1$ ✔
4. the market quantity falls from $Q_e$ to $Q_1$ ✔
5. market equilibrium moves from $E_0$ to $E_1$ ✔

# Role of Technology in The Marketplace

1. **Ecommerce**: many companies now have a digital website as well as physical storefront, like Eason, Tesco and McDonald's. Its normally cheap and convenient to set up websites, while allowing companies to access a much wider market.
2. **Booking platforms**: these allow industries such as hotels, bars and theatres to create a direct link to the consumer. In the past, hotels, bars and theatres sent out flyers or ads in newspapers to encourage consumers to buy their services. Booking platforms act as marketing for these industries while giving consumers more choice.
3. **Price Comparison Websites**: you may have seen ads for apps like Trivago who list the prices of accommodation at various holiday resorts to give you the best value for money. Rather than spending time and effort to shop around, consumers can find the cheapest holiday at the click of a button.

# Revision

- Learn off the definitions on the definition sheets.
- State and explain the assumptions of consumer behaviour.
- Discuss the factors that influence supply and demand.
- Outline exceptions to the law of demand.
- Describe the economic role of firms.
- Discuss the role of the price mechanism and technology in the marketplace
- Practice drawing out the graphs of supply curves, demand curves and markets, annotating and explaining your graphs clearly.