

Competitive Markets - Demand

IB Section 1: Microeconomics



Demand for Goods and Services

- **Basic definition of demand:**
- Demand for a good or service is the quantity that purchasers are **willing and able to buy** at a given price in a given period of time.
- **Effective demand:**
- Only if demand for a product is backed up by a **willingness and ability to pay** the market price does demand becomes effective or realized or actual.
- The **basic law of demand** is that demand varies inversely with price – lower prices make products more affordable for consumers.

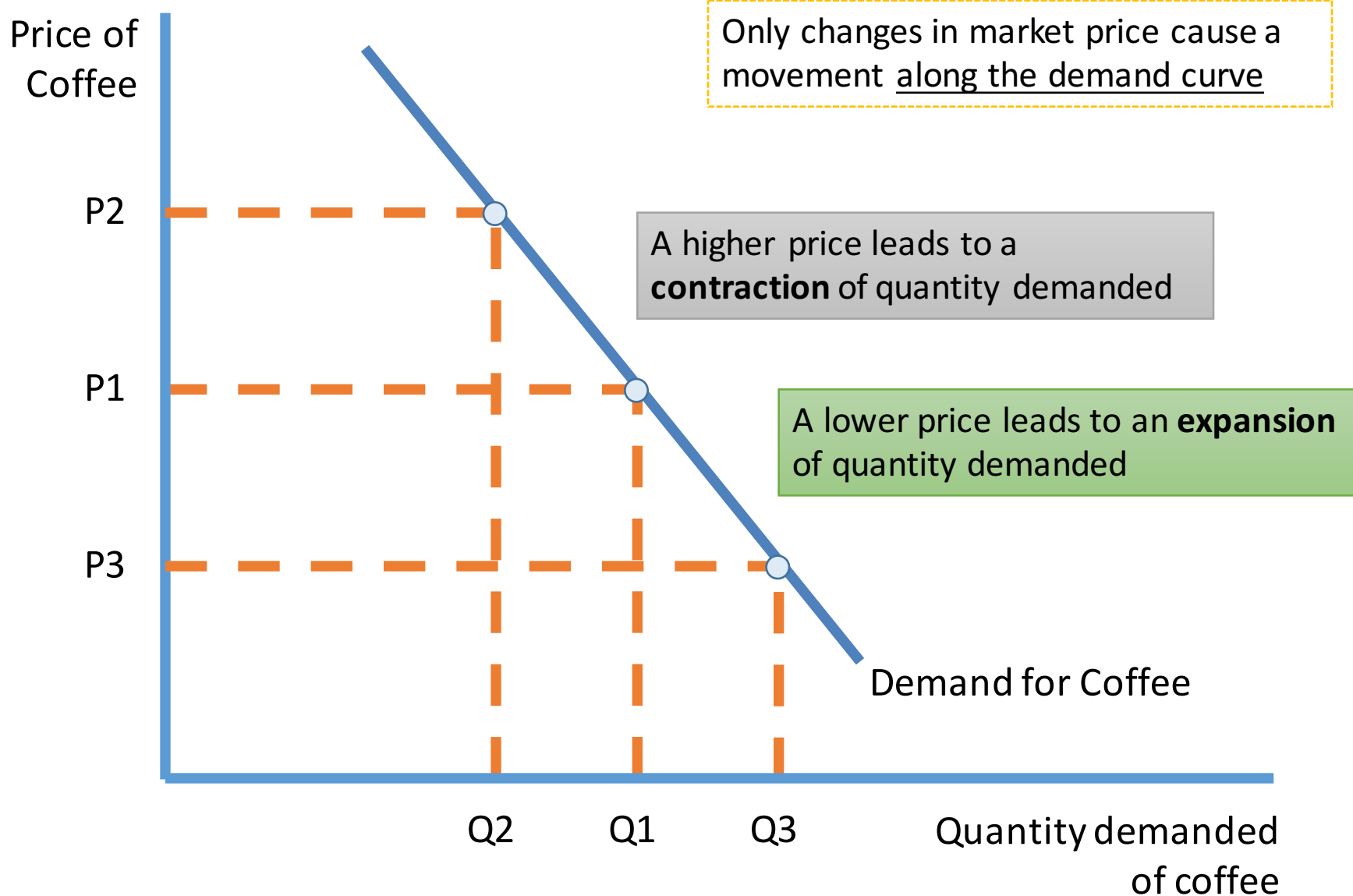


Effective demand is backed up with an ability to pay



Potential (latent) demand is not yet expressed in the market

The Demand Curve: Price & Quantity Demanded



Income and Substitution Effects of a Price Change

Income effect

- A fall in price increases the real purchasing power of consumers
- This allows people to buy more with a given budget
- For normal goods, demand rises with an increase in real income

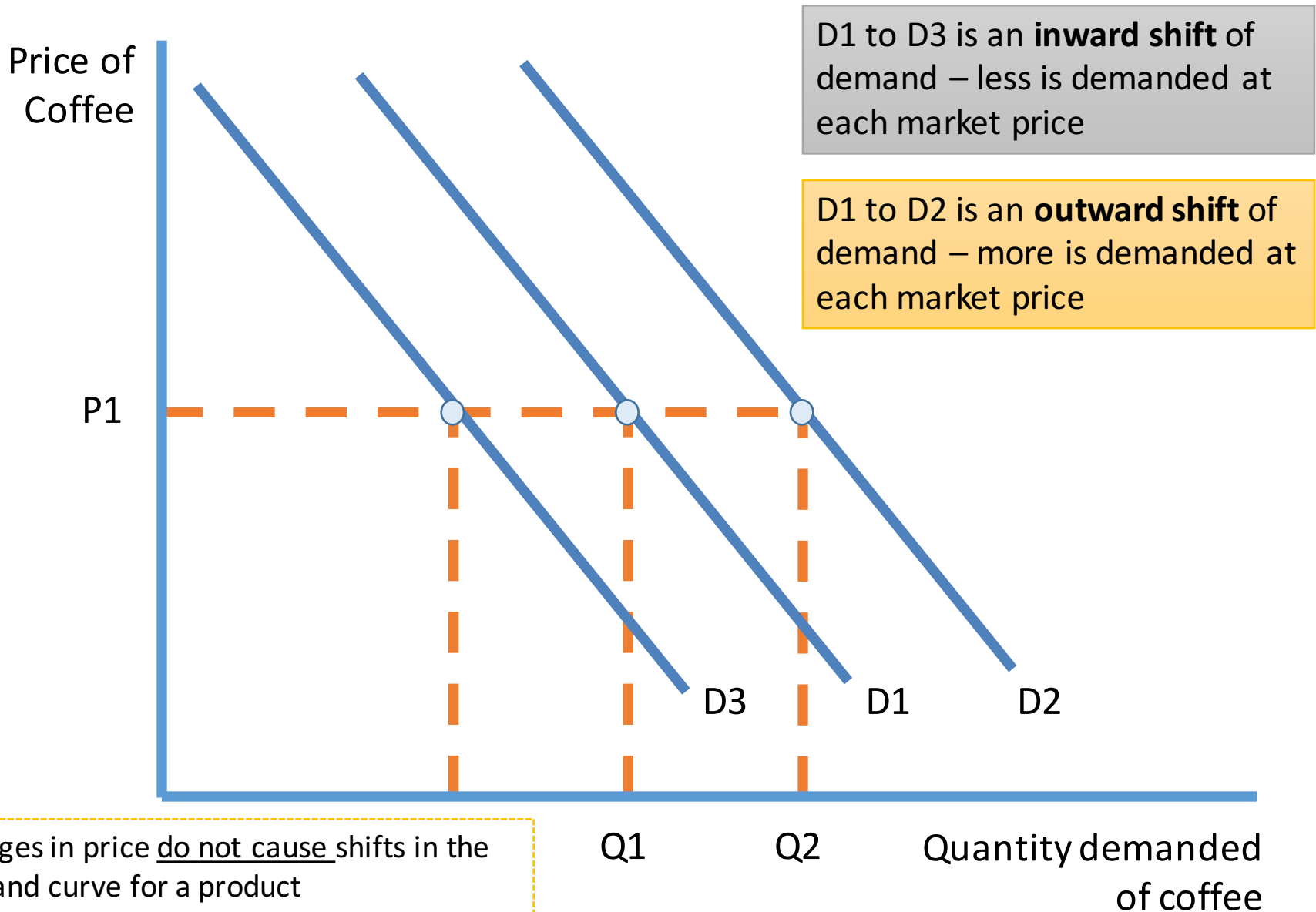
Substitution effect

- A fall in the price of good X makes it relatively cheaper compared to substitutes
- Some consumers will switch to good X leading to higher demand
- Much depends on whether products are close substitutes

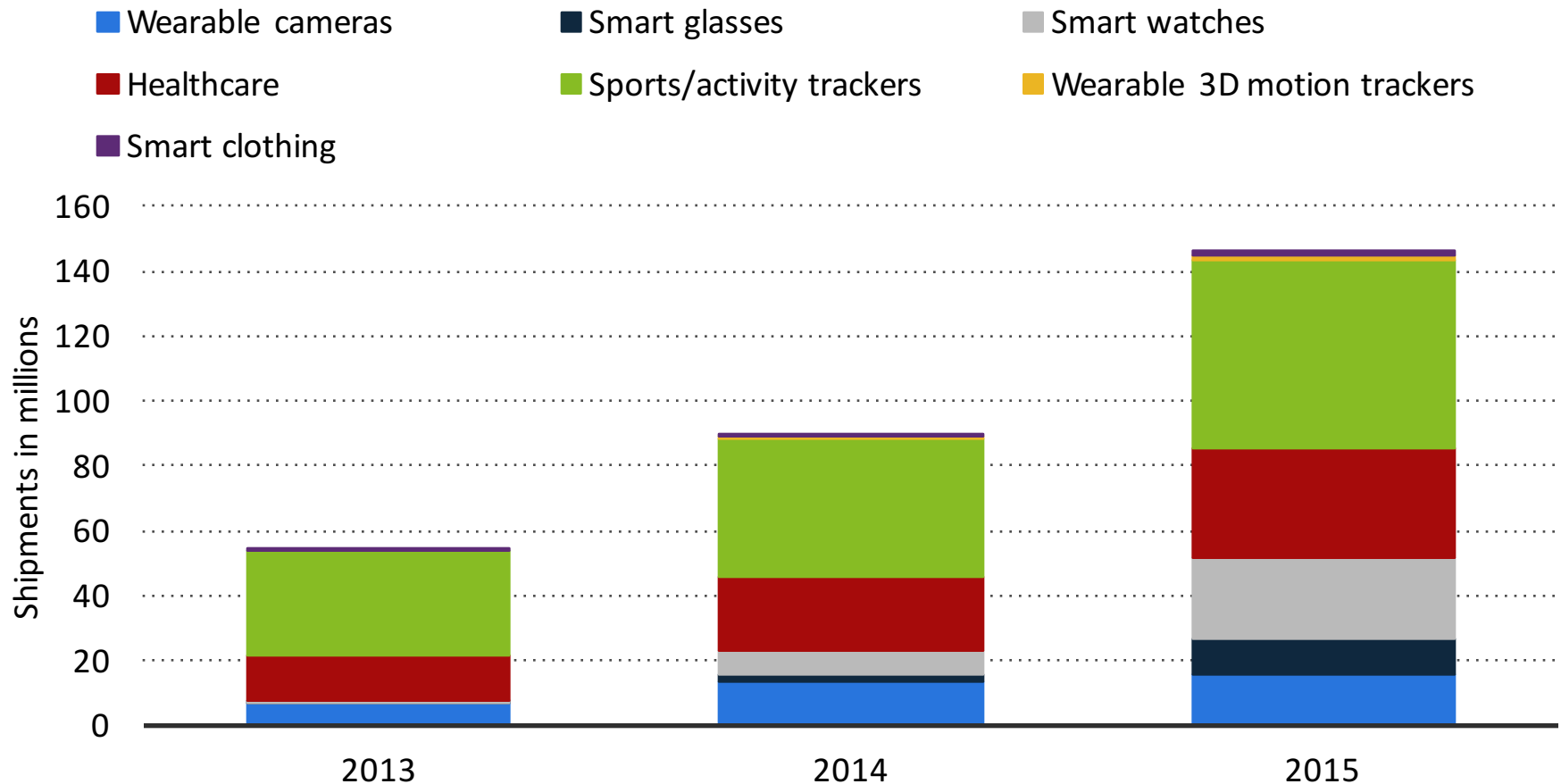
Causes of Shifts in the Demand Curve

1. Changing prices of **substitutes** in **competitive demand**
2. Changing price of a **complements** – i.e. products in **joint demand**
3. Changes in the **real income of consumers**
 - When real income goes up, our ability to purchase increases, and this causes an outward shift in the demand curve.
 - But when incomes fall there will be a decrease in demand, except for inferior goods
4. Changes in the distribution of income - a more equal distribution of income can increase total demand because relatively poorer consumers spend a higher proportion of their income
5. The effects of **advertising and marketing**
6. **Interest rates** and demand (e.g. affecting the cost of credit)
7. Changes in the **size and age structure of a population**
8. **Seasonal factors** for some goods and services
9. **Social and emotional factors** influencing preferences and choices

Illustrating Shifts in the Demand Curve

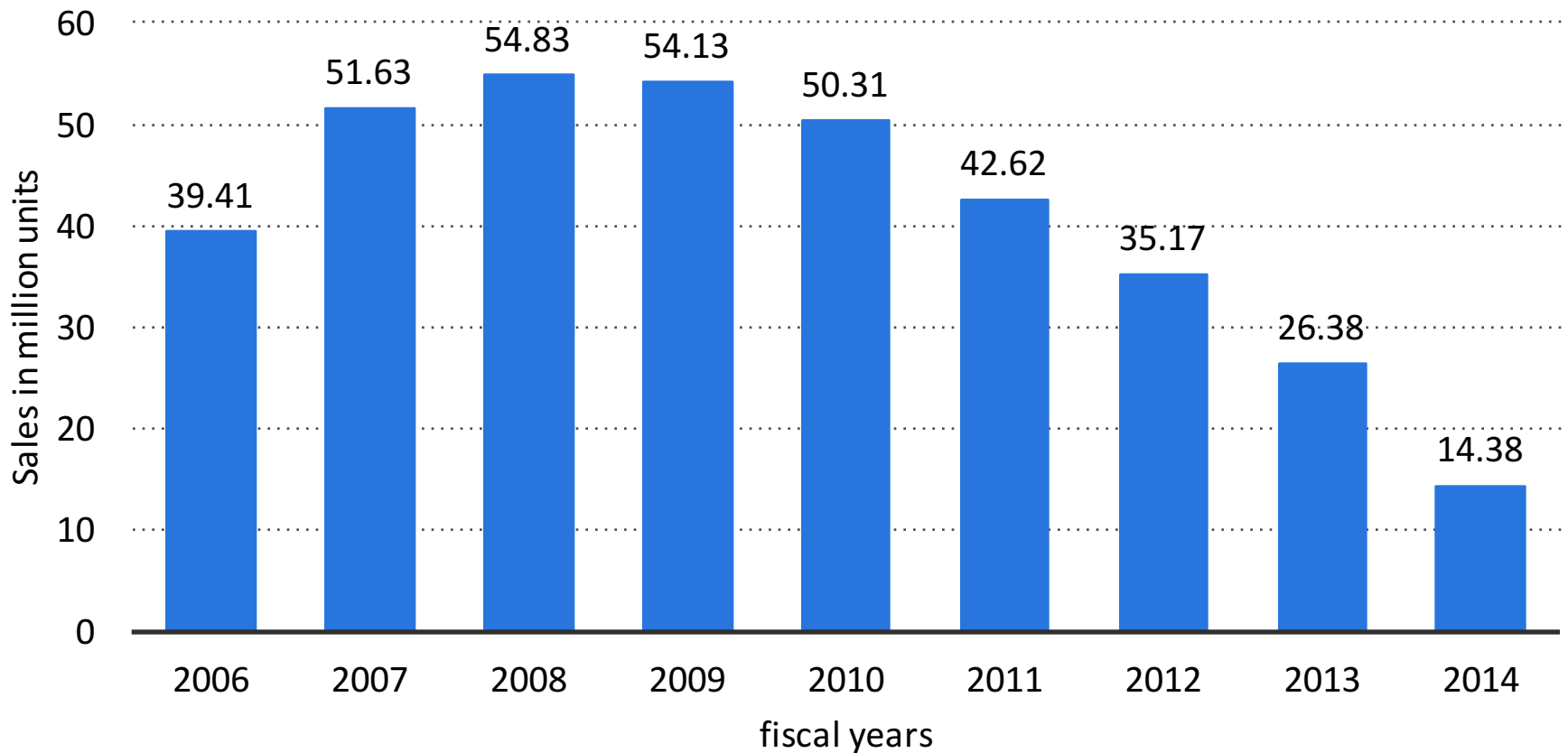


Market Demand: Global Sales of Wearable Devices



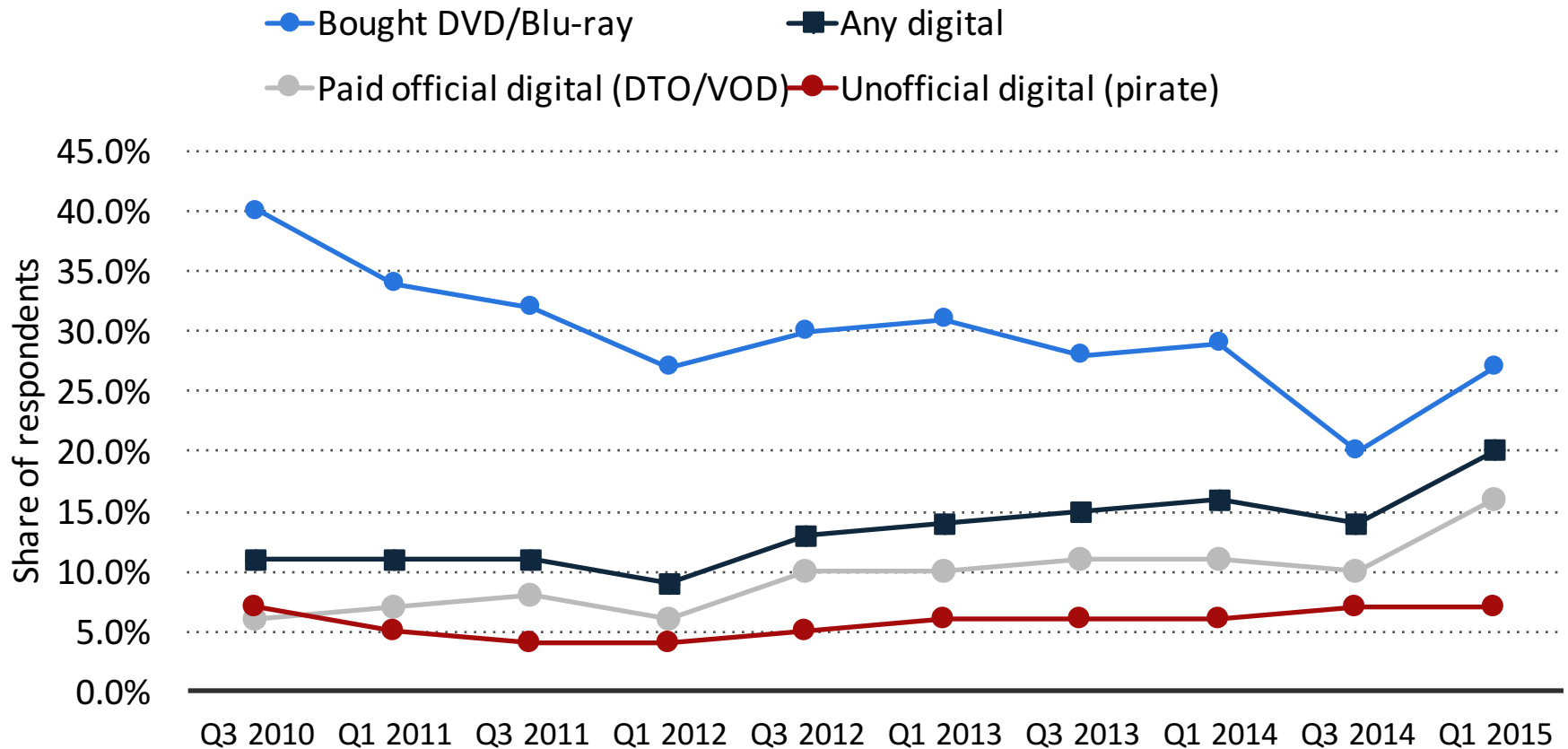
Global market demand for wearable devices is soaring – to what extent are social factors more important than factors such as income?

Falling Demand: Global Sales of Apple iPods



Rising demand for superior technology products has caused Apple's global sales of the iPod to collapse in recent years

Changing Preferences – Movie Consumption in the UK



The pattern of demand for movies is changing! Digital sales now account for 20% of sales and the share from physical sales is falling.

The Concept of Utility

- Utility is a measure of the **satisfaction** that we get from purchasing and consuming a good or service
- Total utility:
 - The total satisfaction from a given level of consumption
- Marginal utility
 - The change in satisfaction from consuming an extra unit
- Standard economic theory believes in the idea of **diminishing returns** i.e. the marginal utility of extra units declines as more is consumed



Utility is a measure of satisfaction from consumption



Does the utility we get affect our willingness to pay?

Diminishing Marginal Utility and Demand Curve

- **Marginal utility** is the change in satisfaction from consuming an extra unit of a good or service
- Beyond a certain point, marginal utility may start to fall (diminish)
- This happens with the 4th unit where MU falls to 12
- The 8th unit carries zero marginal utility i.e. total utility is constant
- If marginal utility is falling, then consumers will only be prepared to pay a lower price
- This helps to explain the downward sloping demand curve for a good or service

Quantity Consumed	Total Utility (TU)	Marginal Utility (MU)
1	10	10
2	24	14
3	40	16
4	52	12
5	61	9
6	68	7
7	72	4
8	72	0

The Paradox of Value



Cheap water



Expensive jewelry

- The **Paradox of Value** is also known as the **diamond-water paradox**
- We understand that water is necessary to sustain life and that ornaments such as diamonds are just that – certainly life sustaining.
- But water typically has a low price, while a piece of diamond jewelry has a high market price.
- One reason is that water is abundant relative to demand whereas diamonds are scarce relative to demand
- **Value in use** i.e. drinking water to satisfy your thirst
- **Value in exchange** – what a resource can be sold for in exchange for other products. Nothing is more useful than water: but it will purchase scarce any thing. The reverse is usually true for expensive jewelry

Seasonal Demand for Goods and Services

- Seasonality refers to fluctuations in output and sales related to the seasonal of the year.
- For most products there will be seasonal peaks and troughs in production and/or sales
- Demand for slippers peaks in the run up to Christmas
- Demand for plants at garden centres is linked to the planting season
- There is high demand for decorating materials before the Easter weekend
- High street retailers such as jewelry companies may sell as much as 80-90% of their products over Xmas
- Theatres take a high % of their income during pantomime season

Some examples of seasonal demand



Easter chocolate



Summer fruits

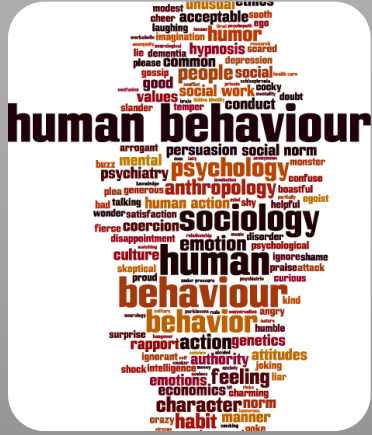


Winter clothing



Ski season products

Social & Emotional Factors Influencing Demand



Social factors:

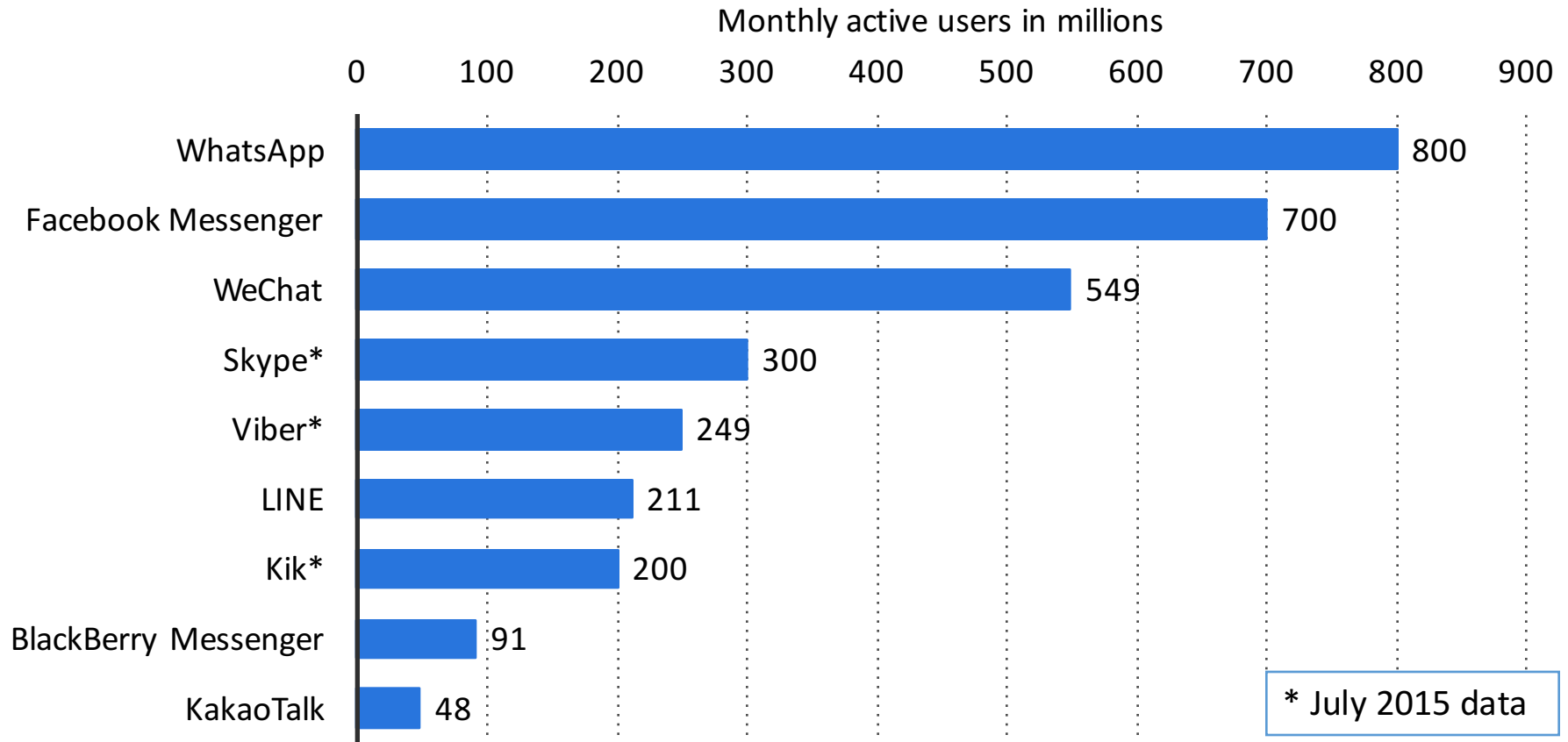
- **Social awareness** e.g. awareness of health risks from smoking, gambling
- **Social norms** - changing norms of behaviour e.g. demand for recycled bags
- **Social pressures** e.g. peer pressures affecting demand for legal highs & other drugs



Emotional factors:

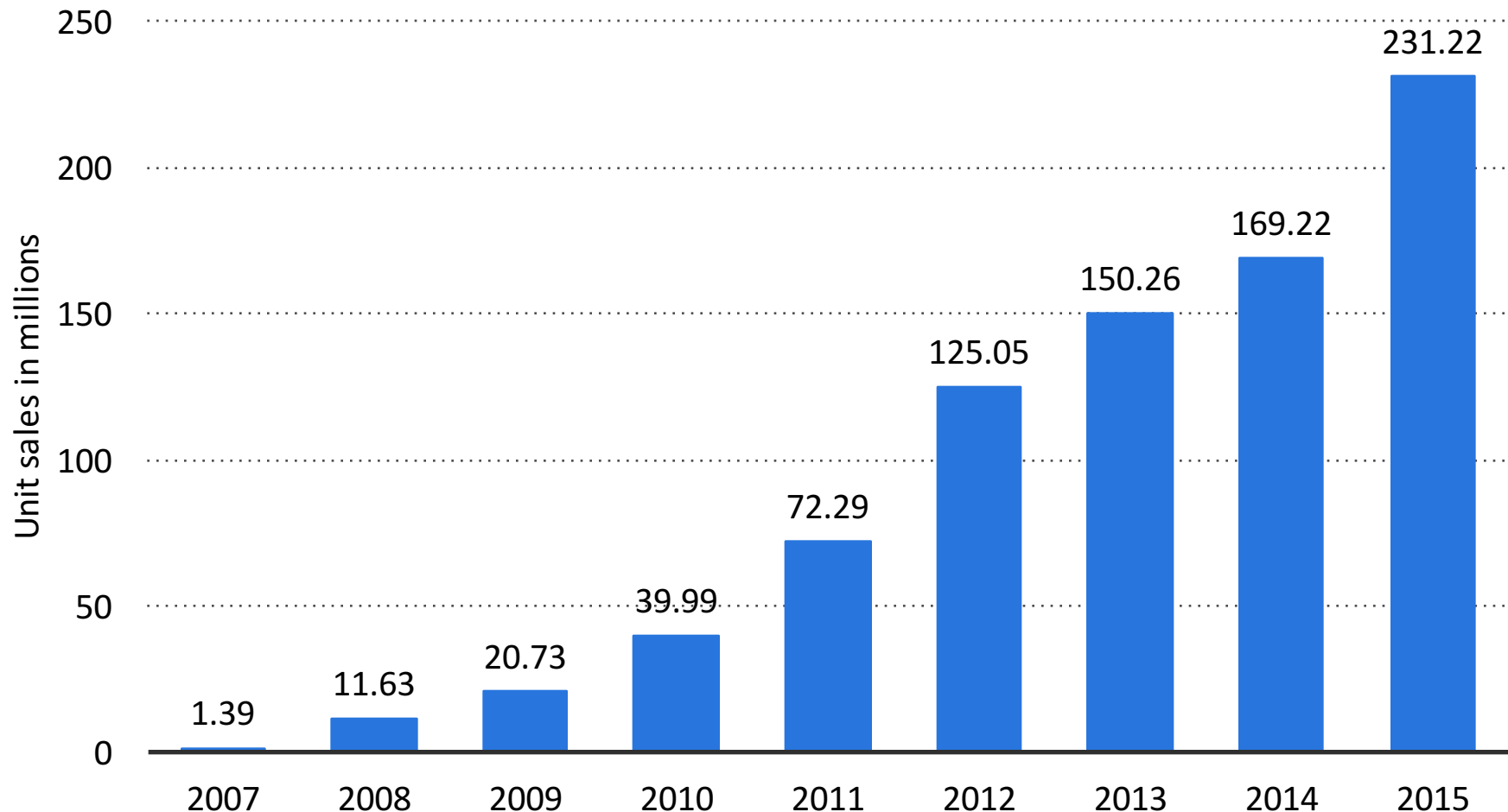
- Emotional arousal can affect the demand for health insurance after major incidents
- Binge drinking and eating at times of personal insecurity
- Demand for products such as football season tickets and antiques also has a strong emotional attachment

Networks and Demand Choices



Increasingly in the digital economy, the choices made by consumers are **influenced by the decisions of others**. A good example is the decision about which messenger app to use.

Market Demand – the Rise of the iPhone!



The Apple iPhone was launched in 2007 and in 2015 annual sales are expected to climb above 230 million units. (Source: Apple). In the first three quarters of 2015, Apple claimed 92 percent of the smartphone industry's aggregate profits

Derived Demand

- **Derived demand** is the demand for a **factor of production** used to produce another good or service
- **Steel**: The demand for steel is strongly linked to the market demand for cars and the construction of new buildings.
- **Wood**: Wood is a product where much of the demand comes from the uses to which it can be put.
 - The end use of wood in the UK is: Construction: 60%, Furniture: 15%, Packaging: 15%, Fencing: 7%, Other: 3%
- **Labour**: In **factor markets**, the demand for labour is derived
- **Transport**: An increase in the demand for air travel will lead to a rise in the demand for airplane pilots.

The idea of derived demand is important to use when discussing inter-relationships between markets. Many questions consider two or more markets.

Composite Demand

- **Composite demand** exists where goods **have more than one use** - an increase in the demand for one product leads to a fall in supply of the other
- An example is **milk** which can be used for cheese, yoghurts, cream, butter and other products including fertilizer!
- Another example is **land** – e.g. farmland can be developed in many different ways, urban land has different uses etc.
- Oil is used in many different industries such as plastics.

Unprocessed milk has many final uses



Butter



Yoghurt

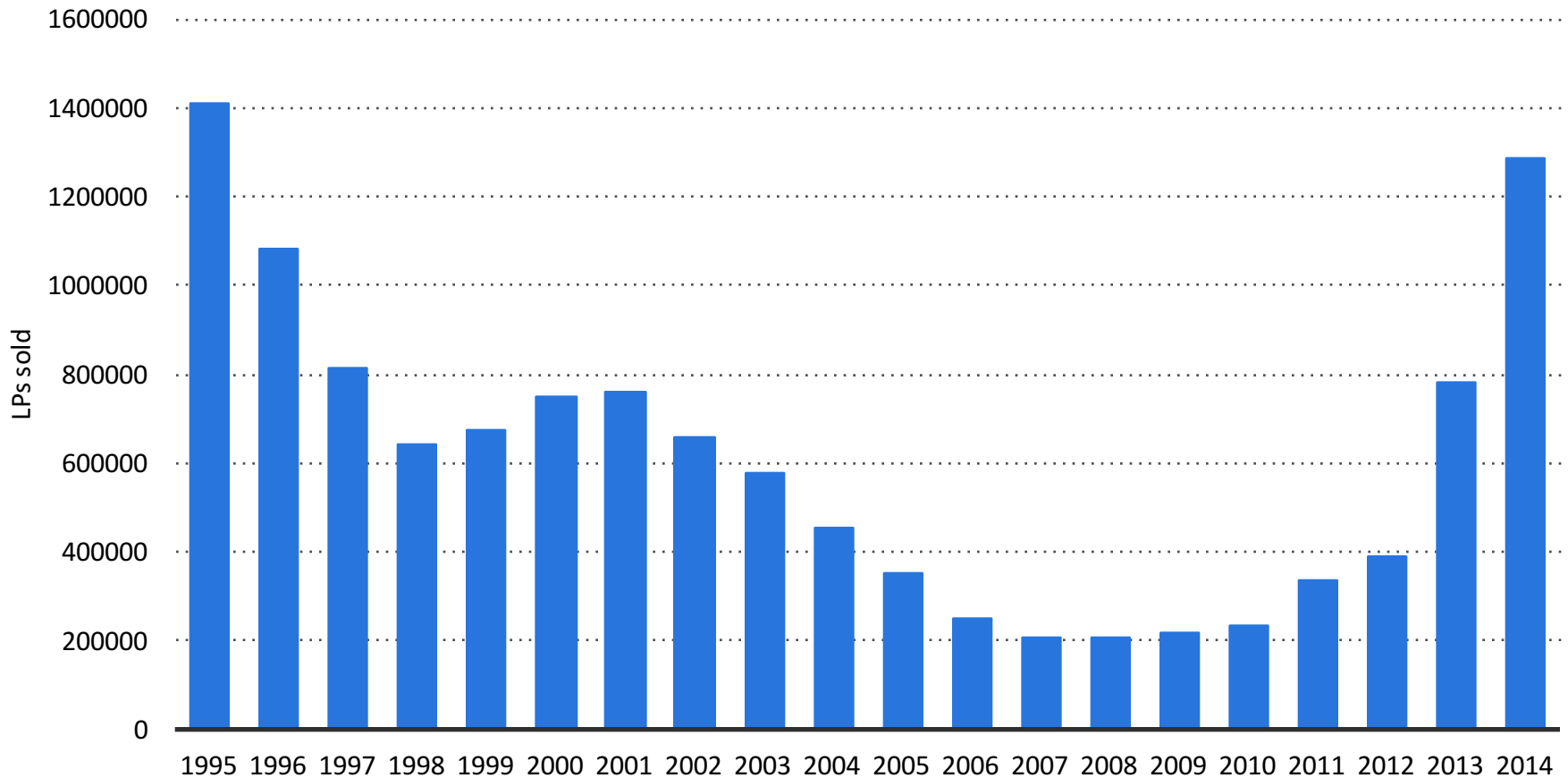


Milk Chocolate



Cheese

The Fall and Rise of Vinyl Album Sales in the UK



In 2014, over 1.2 million vinyl LPs were sold in the UK, up from just 205,000 sold in 2007. What might explain this rebound?

Linear Demand Functions

- The demand function can be written in the form of an equation
- $Q_d = a - bP$ where Q_d is quantity demanded
- a is a constant – determined by non-price factors
- P is the price of the product
- For example:
- Demand for Product Y = $200 - 4P$
- Therefore if the market price is £40, then $Q_d = 200 - 160 = 40$
- If the market price falls to £20, then $Q_d = 200 - 80 = 120$
- I.e. a fall in market price causes an expansion of demand

Linear Demand Function – Changes in Market Price

- The demand function for daily sales of takeaway pizza is estimated to be
- $Q_d = 500 - 5P$ (where P is the \$ price of pizza)
- Initially the business sets a price of \$20 for a takeaway pizza
- $Q_d = 500 - 5(20) = 400$ units per day
- Following a rise in costs, the pizza company raises their price to \$25, other conditions of demand remaining the same (*ceteris paribus*)
- Now: $Q_d = 500 - 5(25) = 500 - 125 = 375$
- Higher market price causes a contraction of demand

Linear Demand Function – Changes in Non-Price Factor

- The demand function for daily sales of takeaway pizza is estimated to be
- $Q_d = 500 - 5P$ (where P is the \$ price of pizza)
- Initially the business sets a price of \$20 for a takeaway pizza
- $Q_d = 500 - 5(20) = 400$ units per day
- Following a change in real incomes of consumers the new demand function is
- $Q_d = 800 - 5P$
- At a price of \$20, demand for pizzas = $800 - 5(20)$
- New demand = 700. A rise in real income has caused an outward shift of demand for pizza.

Linear Demand Function – Changes in Coefficient

- The demand function for daily sales of takeaway pizza is estimated to be
- $Q_d = 500 - 5P$ (where P is the \$ price of pizza and 5 is the coefficient of P)
- If the market price of pizza is \$20 then $Q_d = 400$
- If there is a change in the coefficient of P this will affect the steepness of the demand curve
- Thus if the new linear demand function is $Q_d = 500 - 8P$
- At a price of \$20, then $Q_d = 500 - 8(20) = 340$

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