pix

Learning scenario: the Kiwis market

school subject: economic science

related digital skill: data processing

How prices are determined on a market ?

Knowing how to illustrate the concept of market with examples.

Understand that in a simple market model of goods and services, demand decreases with price and supply increases with price and be able to illustrate this.

Understand how price is set and adjusted in a simple market model and be able to represent a graph with demand and supply curves that identifies the equilibrium price and the equilibrium quantity.

Using an example, understand the effects on the equilibrium of introducing a tax or subsidy.

Learning objectives

Learning objectives regarding the use of quantitative data and graphical representations

- Graphical representation of simple functions (supply, demand, cost) and interpretation of their slopes and movements.

Relevant skill within Pix framework : Data processing

Applying data processing to analyse and interpret them with a spreadsheet, program, survey processing software, calculation query in database, etc.)
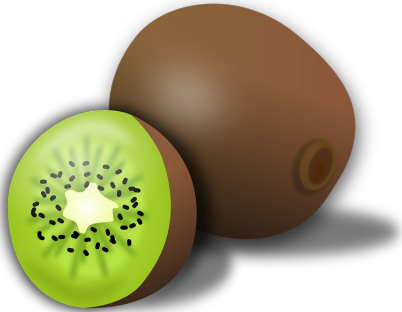
The demand for kiwis
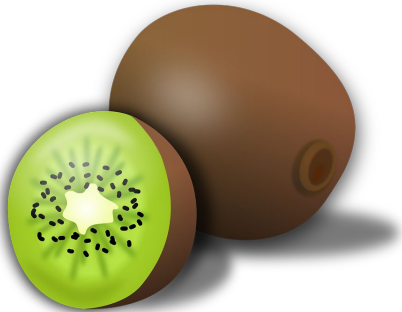
The market demand line indicates, for each price level, the total quantity of a good or service that consumers wish to acquire.

Here we focus on the kiwi market. The kiwi demand line is the number of kilograms of kiwi that will be purchased by all consumers for each price level. It is obtained by adding up, for each price, the quantities demanded by each consumer.
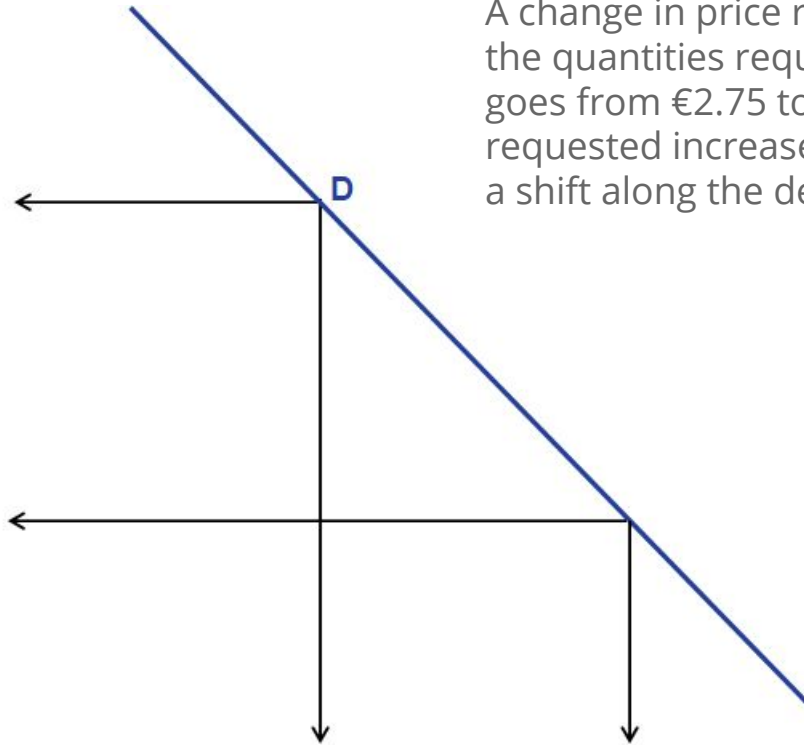
2019	Price for a kilogram of kiwis (in euros)	Quantity requested (in millions of kilos/year)
	3,0	54
	2,75	60
	2,5	66
	2,25	72
	2,0	78

The demand line

A change in price results in a change in the quantities requested. If the price goes from €2.75 to €2.25, the quantity requested increases from 60 to 72, with a shift along the demand line (point D).
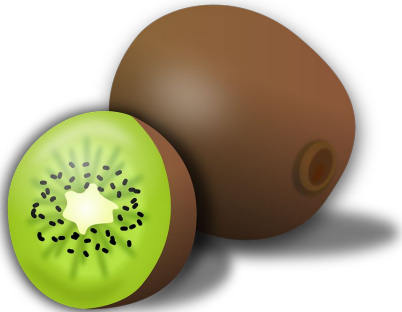
At a price of €2.75, consumers are willing to buy 60 million kilos of kiwis per year.

At a price of €2.25, consumers are willing to buy 72 million kilos of kiwi per year.

D

The kiwis supply

The market supply line represents the quantity of a good that all companies on the market are willing to offer for sale at each price level.

The Kiwi supply line is the number of kilograms of kiwis that will be offered for sale by the producers of this fruit for each price level. The supply line is normally increasing, i.e. the higher the price, the more companies offer a larger quantity of a good or service. This is because higher prices increase a company's profits, which in turn increases its incentive to produce more.

2019	Price for a kilogram of kiwis (in euros)	Quantity offered (in millions of kilos/year)
	3,0	78
	2,75	72
	2,5	66
	2,25	60
	2,0	54

The offer line

At a price of €2.75, the producers are ready to sell 72 million kilos of kiwi per year.

At a price of €2.25, the producers are ready to sell 60 million kilos of kiwi per year.
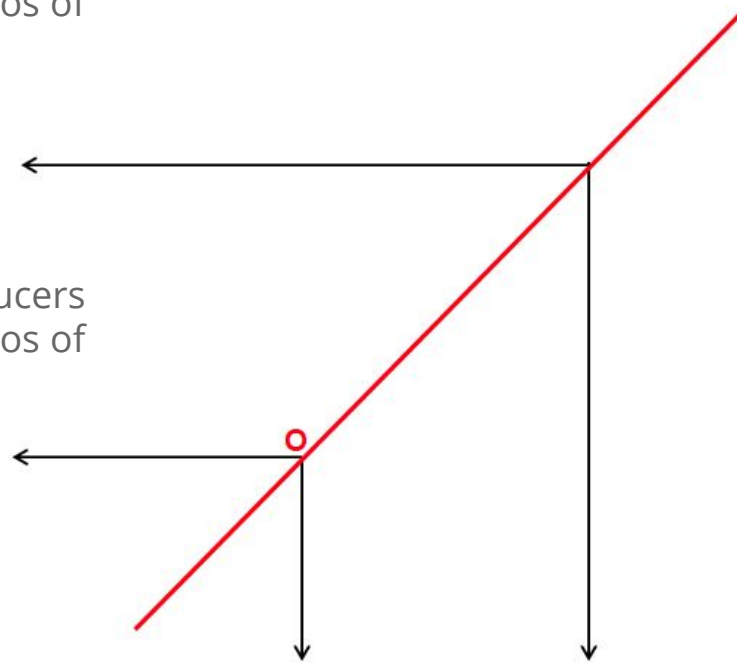
A change in price results in a change in the quantities offered. If the price goes from €2.25 to €2.75, the quantity offered increases from 60 to 72.
There is a shift along the offer line (point O).

Equilibrium

€2.5
=
equilibrium price

Supply

Demand
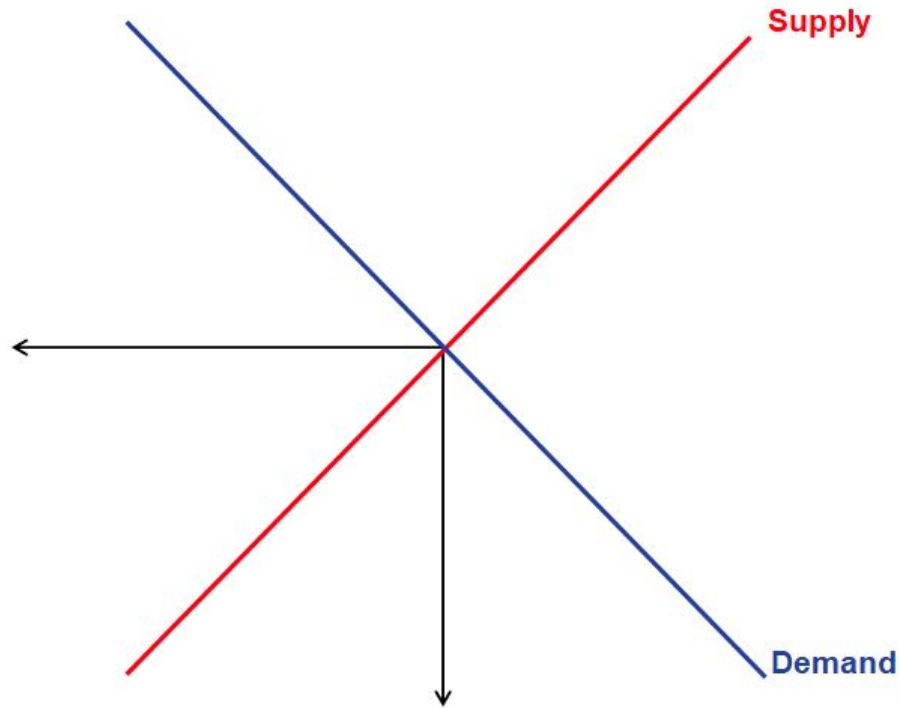
66 million kilos =
equilibrium quantity

The effects of a subsidy on the equilibrium

Let's imagine that on 1st January the government decides to pay kiwi producers a subsidy for every kilo of kiwi sold.
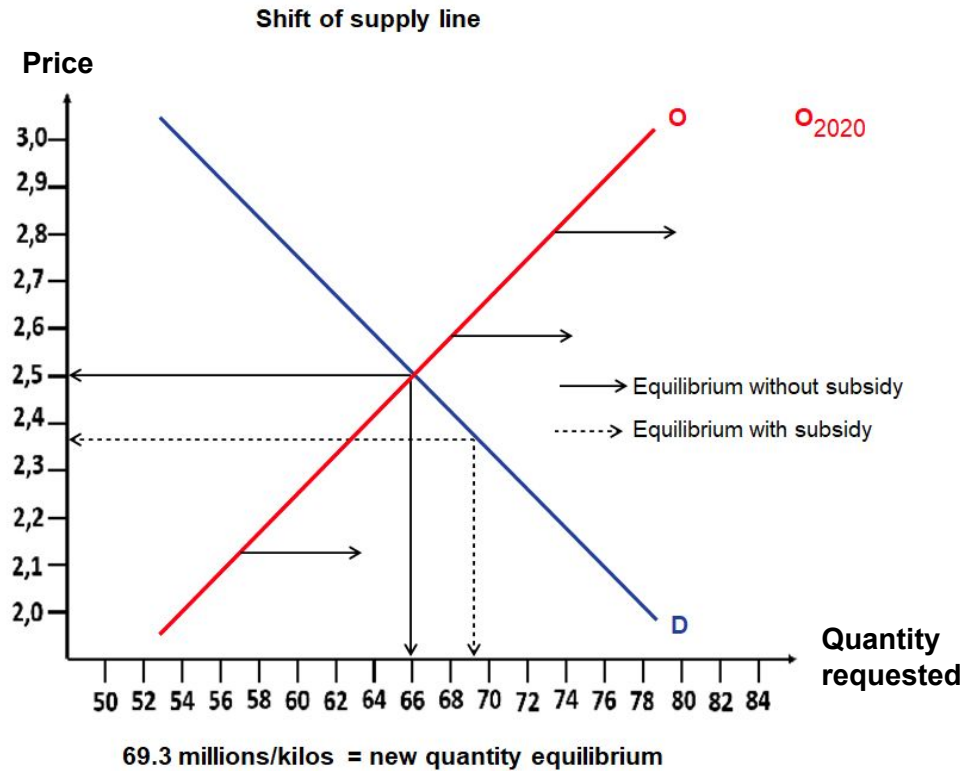
How does this subsidy affect the market equilibrium?
For the same market price, the subsidy reduces the cost of producing kiwi fruit, which encourages suppliers to offer a larger quantity at all price levels.
In 2020, the kiwis offered to consumers would then be distributed according to the data in the table.

2020	Price for a kilogram of kiwis (in euros)	Quantity offered (in millions of kilos/year)
	3.0	84
	2.75	78
	2.5	72
	2.25	66
	2.0	60

Effect on the lines

Shift of supply line

Consequence of a consumption tax

Let's imagine that on 1 January the government taxes kiwi buyers 0.2 euros per kilo of kiwi sold.

How does this tax affect the market equilibrium?

For the same market price, the tax makes the purchase of kiwis more expensive, which pushes buyers to buy a quantity below all price levels.

In 2020, the demand for kiwis to producers would then be distributed according to the data in the table.

2020	Price for a kilogram of kiwis (in euros)	Quantity requested (in millions of kilos/year)
	3,0	45
	2,75	54
	2,5	64
	2,25	70
	2,0	80

Consequence of a consumption tax on the market equilibrium

The decrease in the quantity requested for all given prices leads to a shift from the line of demand to the left.

New equilibrium price = €2.4

This shift in the demand line changes the intersection point between supply and demand. There is both a decrease in price and an increase in the quantity traded.

Shift of the demand line

→ equilibrium without tax
---→ equilibrium with tax
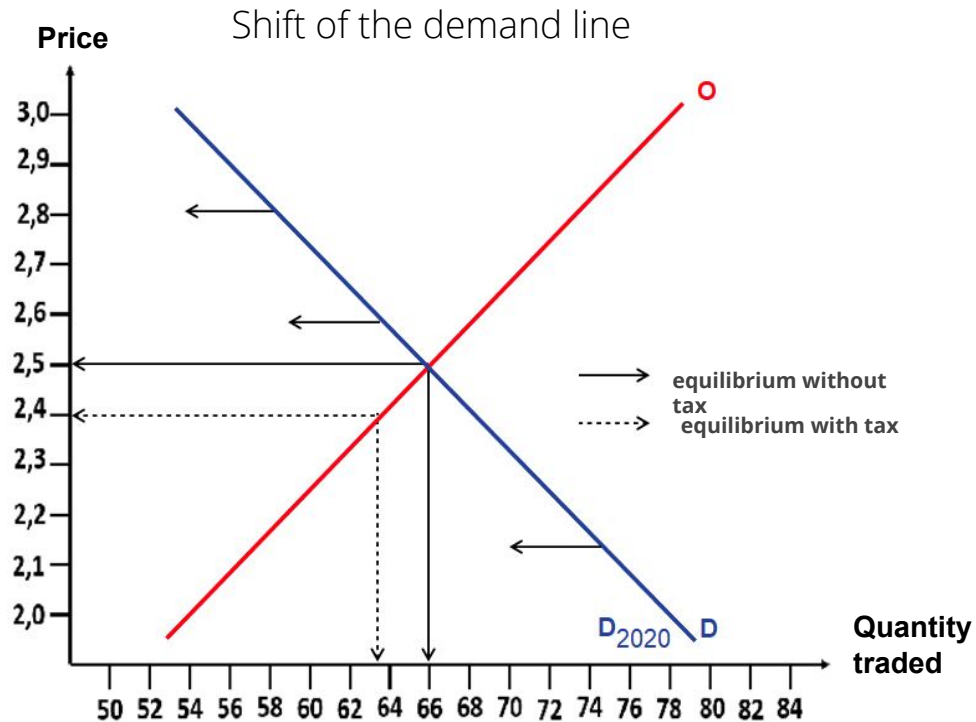
63,8 millions/kilos = new equilibrium quantity

Consequence of a consumption tax on the market equilibrium

The equilibrium price decreased from €2.5 to €2.4.

In the new equilibrium, buyers consume less and producers sell less. The quantities traded went from 66 to 63.8 million tons.

Price

Drop in price

→ **Equilibrium with tax**

---→ **Equilibrium without tax**

Quantity traded

Drop in quantity traded
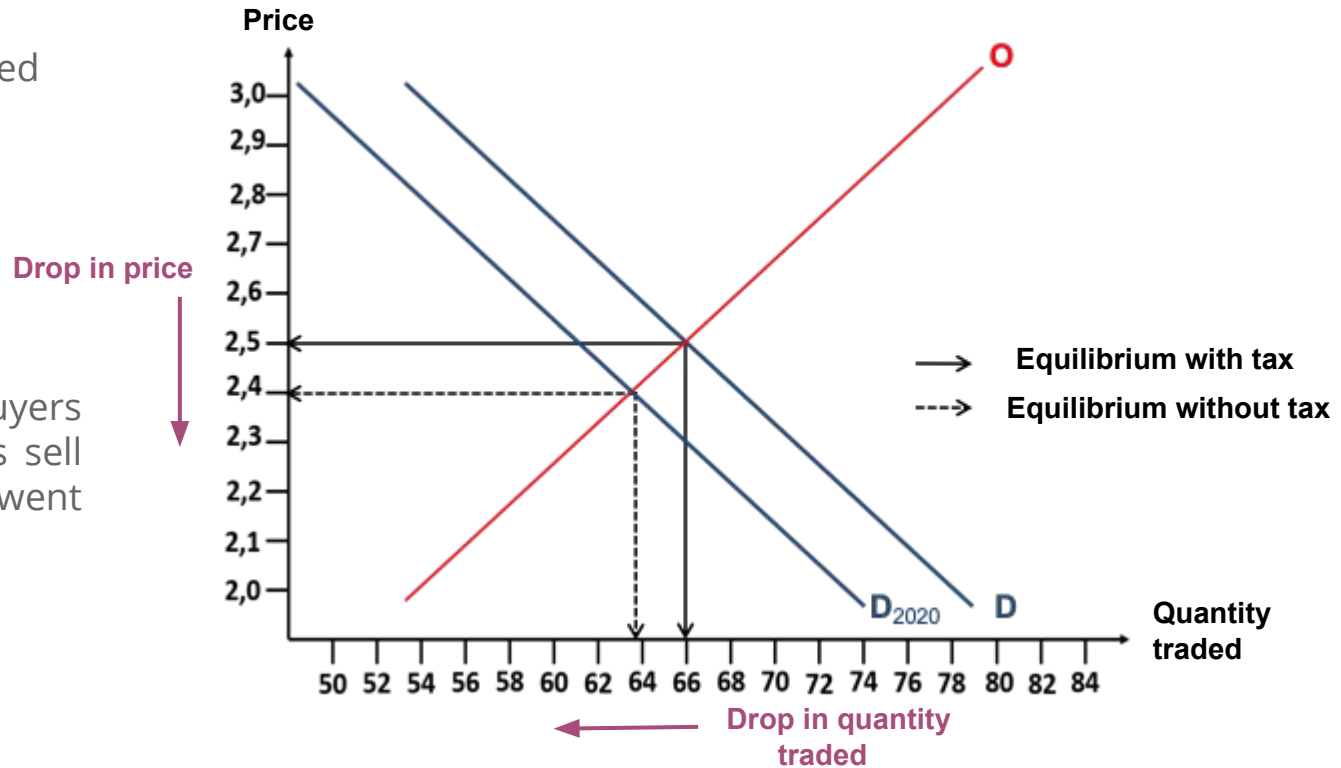
Consequence of a consumption tax on the market equilibrium
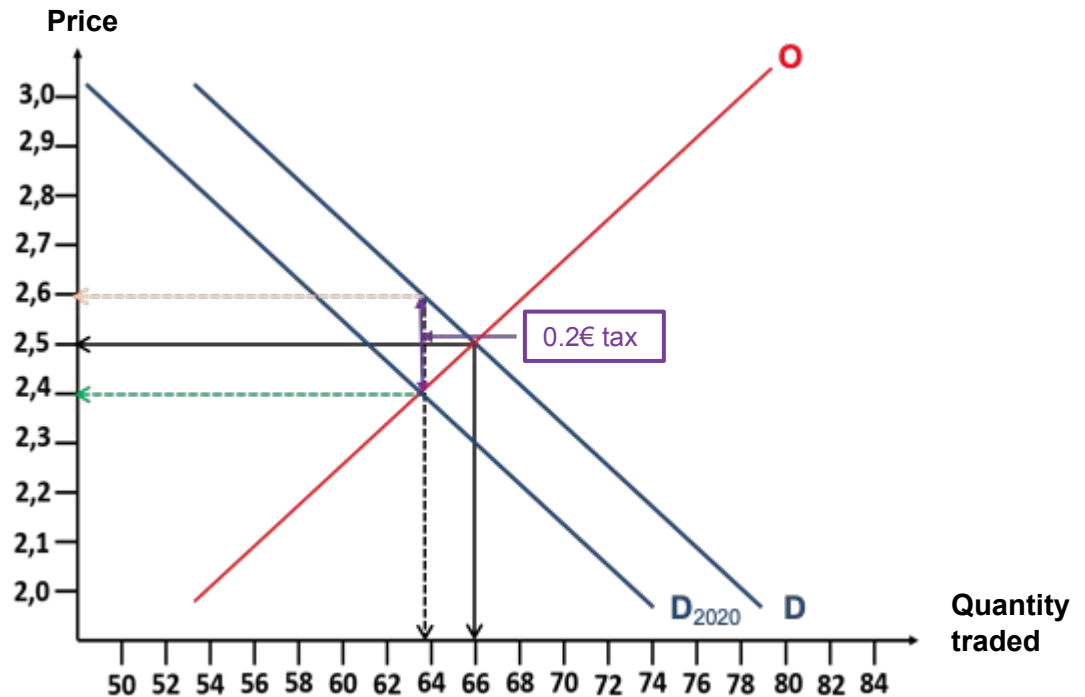
The price consumers have to pay is higher (€2.5 + €0.1), so their situation has worsened.

Price paid by the consumer: €2.6

Price without tax: €2.5

Price received by the producer: €2.4

The situation of producers is also deteriorating as they earn less per kilo of kiwi sold (€2.4 instead of €2.5).

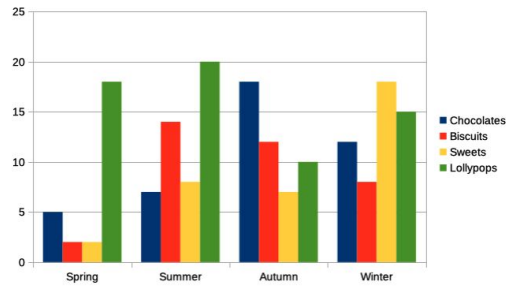# Related Pix digital skill: processing data

Every year, Eleonor looks at her sales of sweets for the season.

Last year, she obtained the diagram below.

Note that the bars for spring form the letter **J**.

Make the diagram for this year with the download data.

Four letters are shown. Which ones?

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◉ fichier .xlsx   ○ fichier .ods

TÉLÉCHARGER

Besoin d'aide pour ouvrir, modifier ou retrouver ce fichier ↗ ?

The 4 letters are: [   ]

Know how to
reproduce a graph
using a spreadsheet

pix