



Berner Fachhochschule
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Bern University of Applied Sciences

Economics – lecture 1

Demand and supply, trade offs and the basics of micro economics

After today's (and next week's) lecture you will

- have created a demand and supply curve
- understood opportunity costs
- be able to show graphically the effects of shifts in demand and supply
- calculate sensitivity of quantity demanded to price changes (elasticity)

Economics – the allocation of «scarce» resources to our «infinite» wants.

- ▶ As with many things in life there are trade-offs
- ▶ Work / Leisure
- ▶ Produce X / Produce Y
- ▶ Expand here / Expand there

Opportunity costs

- ▶ Work - can't have leisure
 - ▶ Opportunity cost of work is leisure
- ▶ Produce X - can't produce Y
 - ▶ Opportunity cost of X is product Y
- ▶ Expand here - can't expand there
 - ▶ Opportunity cost of expanding here is can't expand there

Opportunity costs

- ▶ You can start your own falafel stand. You buy and.....and hire.... this all costs you 30,000 Chf all this will be picked up by your accountant.

Some of your costs though, will not be picked up by your accountant.

But you could be a computer programme or systems architect. You would miss out on what? Would your accountant pick that up?

- ▶ You win 10,000 Chf in the lottery. You can save it or spend it now. What's the opportunity cost of spending the money now?
- ▶ This is the job of financial economists to use the cost of capital (interest rate) as the opportunity cost

Opportunity cost, economic cost, economic rent

- ▶ A Taylor Swift concert in Zürich costs 160
- ▶ You are a Swifty, how much would you be willing to pay for the concert?

Let's say: 260.

Cost 160 Benefit 260

Net benefit 100

But you could be playing your synthesizer in a small jazz club that night and earn 40.

- ▶ **Opportunity cost** of TS concert is 40.
- ▶ **Economic cost:** direct cost + opportunity cost = $160 + 40 = 200$

Decision rule: Economic cost vs benefit ($200 < 260$; cost < benefit) Go Swifty!

- ▶ **Economic rent:** Net benefit - opportunity cost

Decision rule: economic rent > 0 ($100 - 40 = 60$; rent > 0) Get Swifty in here!



Opportunity cost,

- ▶ Use the information on university costs to calculate the opportunity cost of a year at uni for a student on full time programme. The student could earn full time 48,000 CHF a year in a basic office job. Assume that the student can work part-time in the office for 3 months of the year (pro rata).
- ▶ Fees 1 000 per semester
- ▶ Books 500 per year

University or work? – What are the benefits/costs of each option

	Uni	Work
Total		



Mankiw – Page 5 – Opportunity cost or [Khan Academy link](#)

Opportunity cost of good Y = sacrifice of good X / gain in Y

Imagine an economy can produce either 24000 iThings **or** 25200 Instawidgets.

What is the opportunity cost of the 24000 iThings? Easy! 25200 Instawidgets.

What is the opportunity cost 1 iThing? $= 24000/24000 = 25200/24000 = 1.05$

To make 1 iThing you give up 1.05 Instawidgets.

Task – scan for opportunity cost

- Read one of the two articles posted on Moodle (I will assign you A or B)
 - [Student A: https://www.economist.com/feast-and-famine/2012/10/30/a-dollar-now-or-a-hundred-dollars-later](https://www.economist.com/feast-and-famine/2012/10/30/a-dollar-now-or-a-hundred-dollars-later)
 - [Student B: https://www.economist.com/finance-and-economics/2022/05/19/offset-markets-struggle-in-the-face-of-surging-commodity-prices](https://www.economist.com/finance-and-economics/2022/05/19/offset-markets-struggle-in-the-face-of-surging-commodity-prices)
- ▶
- ▶ Find the reference to opportunity cost
- ▶ Explain it to your neighbour.

Let's create a demand curve



Source: <https://www.littlezurichkitchen.ch/swiss-apple-day/>

Demand

1. stand up if you eat apples
2. You will bid for an apple.
3. Look at the Excel spreadsheet this will display the price of an apple
4. When the price has risen above the price you are willing to pay sit down
5. The rest wait to be counted

Let's create a supply curve



Source: <https://www.littlezurichkitchen.ch/swiss-apple-day/>

Supply

1. Imagine you have an apple and someone wants to buy it.
2. You will be asked to sell your apple
3. Look at the market price on the Excel spreadsheet
4. When the price has fallen below the price you are willing to receive for the apple sit down
5. The rest wait to be counted

We now have our demand and supply curves

Look at the space between the market price and the demand curve. Think about what that represents for all the people who were willing to pay more than the market price.

Consider what would happen....

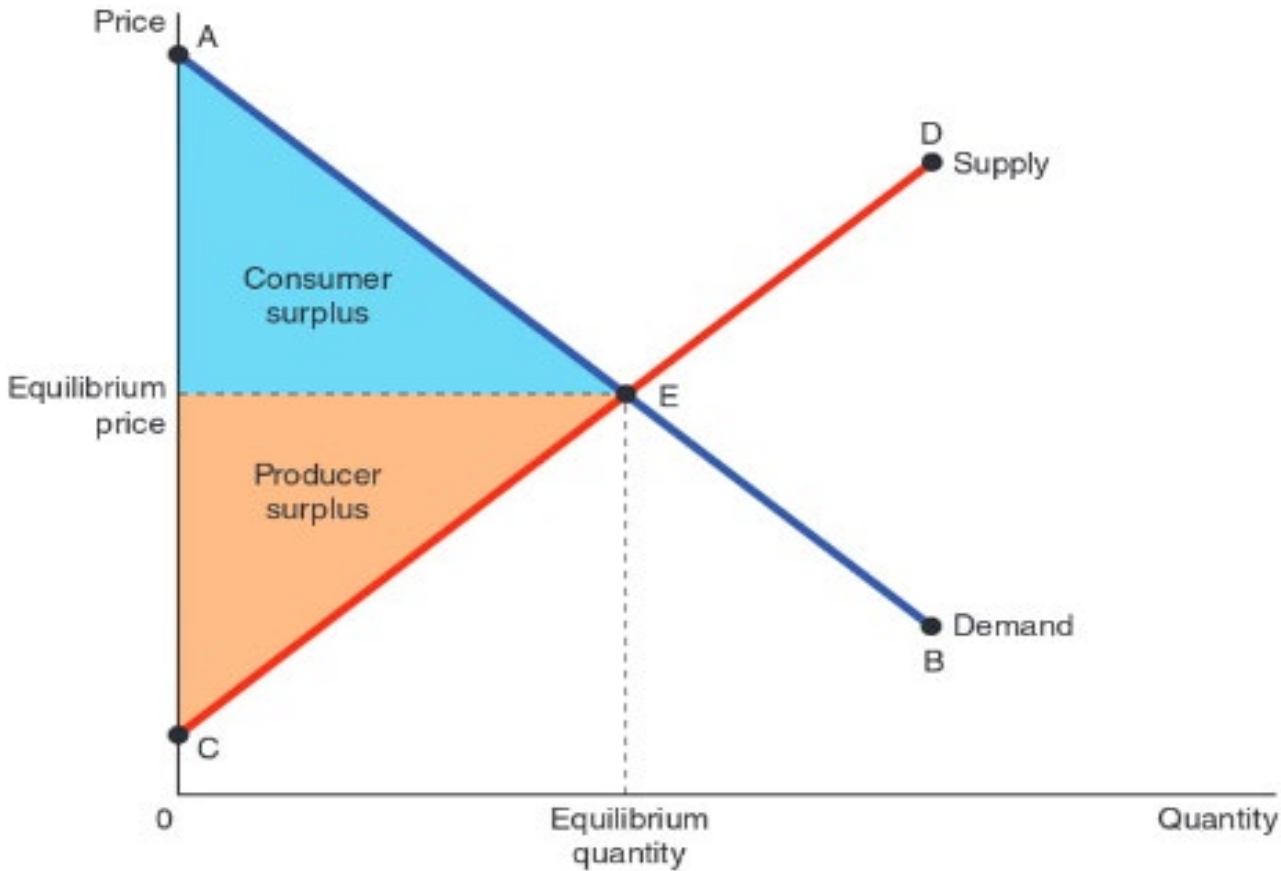
- ▶ if I offered you an organic apple
- ▶ if the price of pears decreases
- ▶ if there are not enough insects to pollinate the apples
- ▶ if Micheal Jordan teams up with Mala Yousafazi, Taylor Swift, Kim Kardashian, Billie Eilish, the Daltai Lama and Dave Grohl start promoting apples

How would you represent all these things on our supply and demand diagram?

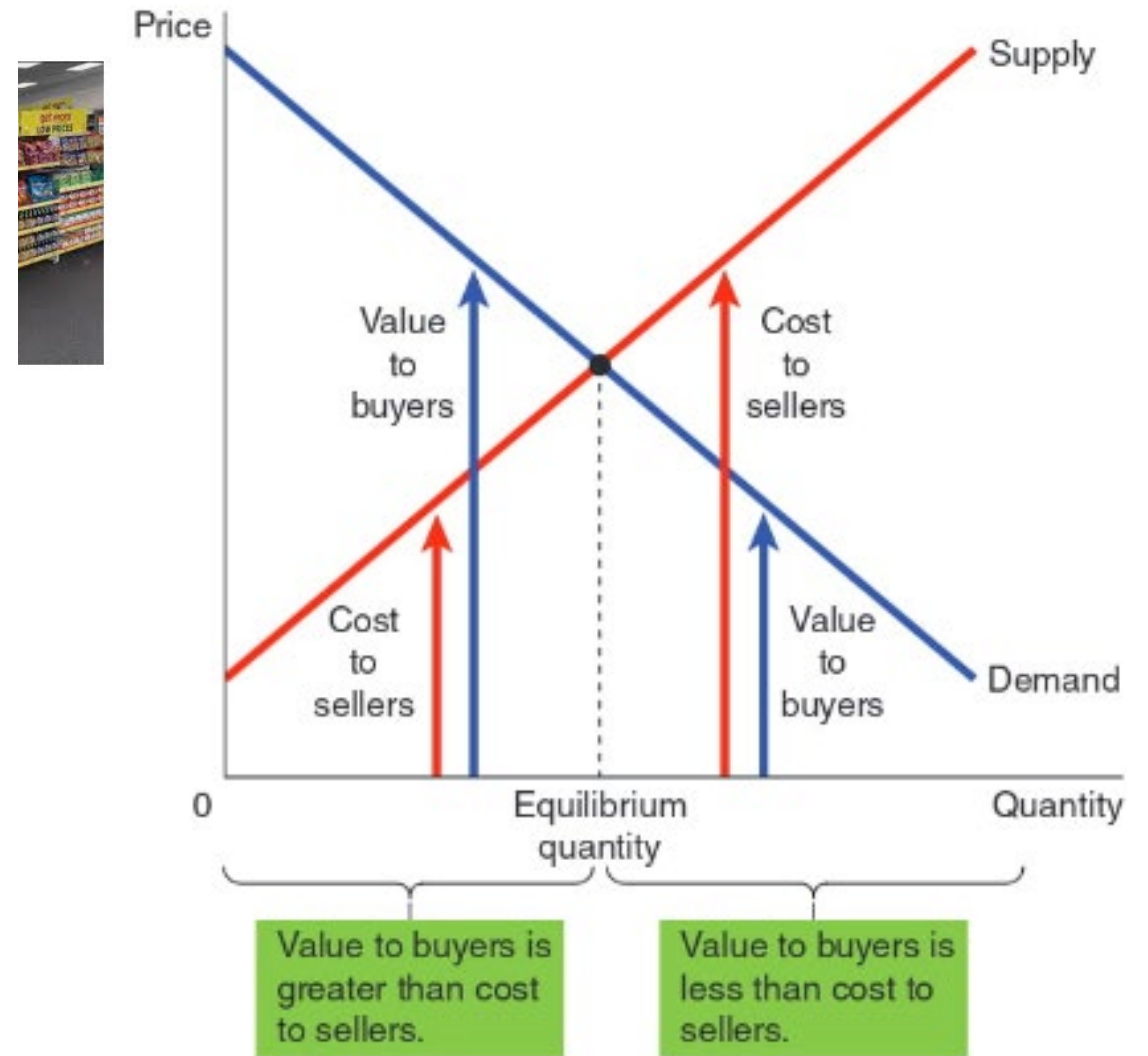


A rapper – Probably called Lil Something or \$ whatever.

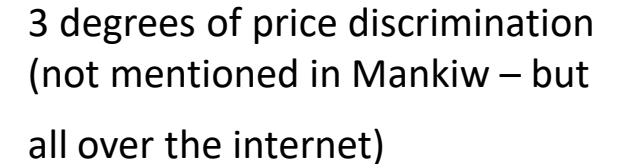
Consumer surplus – That bargain feeling



Reference – Mankiw chp 7



Price discrimination – different prices according to different characteristics of the consumer



2nd degree – Based on quantity

3rd degree – grouping

Dynamic pricing

- ▶ How do ski resorts implement dynamic pricing?

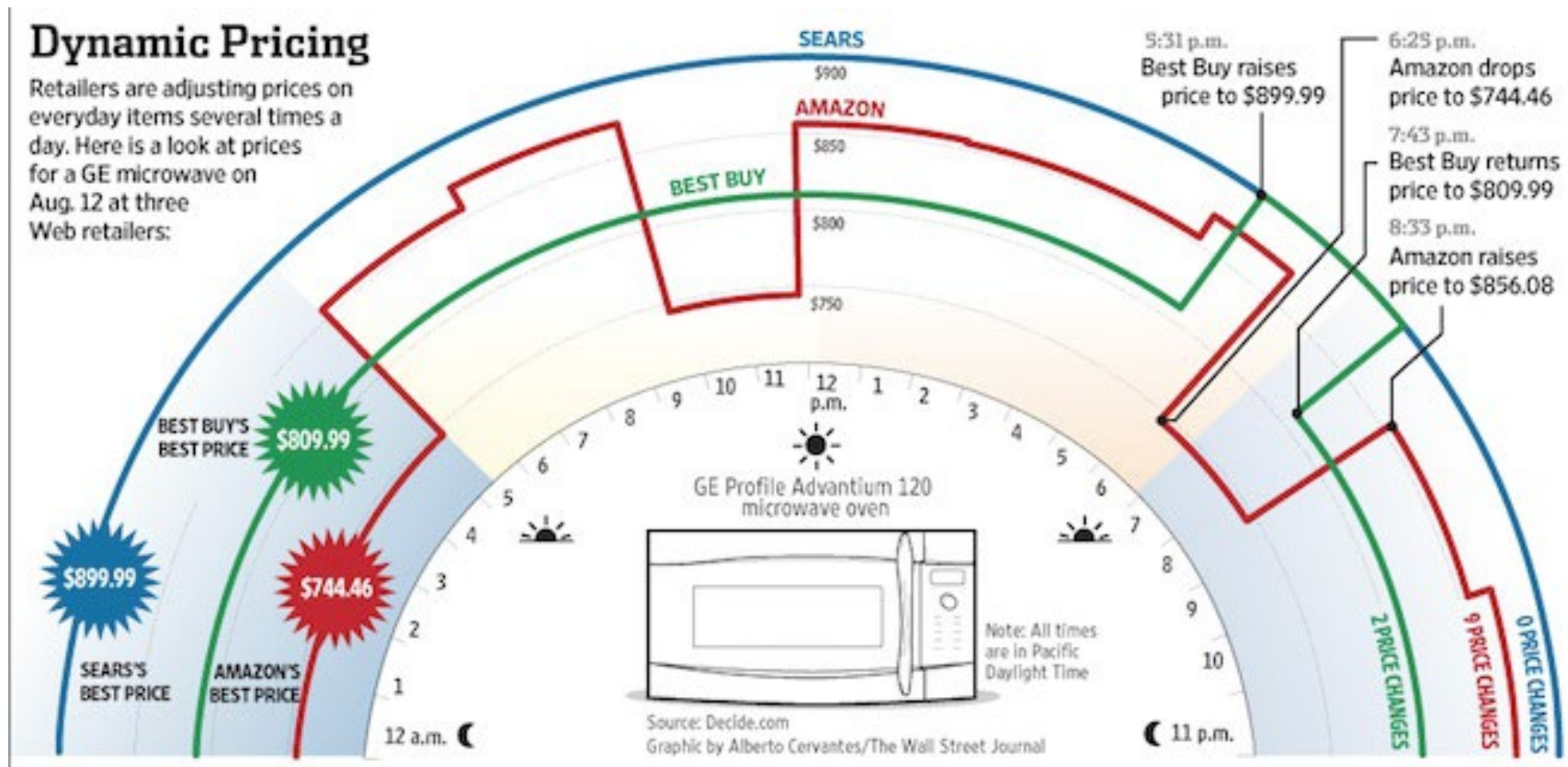


Dynamic pricing definition – **the price of a product changes in price according to level of demand**

<https://www.smart-pricer.com/dynamic-pricing-for-ski-lifts-current-status-benefits-and-models/>

Many websites employ advanced dynamic pricing

<https://econlife.com/2015/12/how-retailers-use-dynamic-pricing/>



Put it all together and...personalised pricing

https://www.consumersinternational.org/media/369070/personalized_pricing.pdf

<https://www.theguardian.com/money/blog/2010/aug/07/computer-cookies-booking-online>

<https://www.gov.uk/government/publications/personalised-pricing-and-disclosure>

Measuring sensitivity to price changes

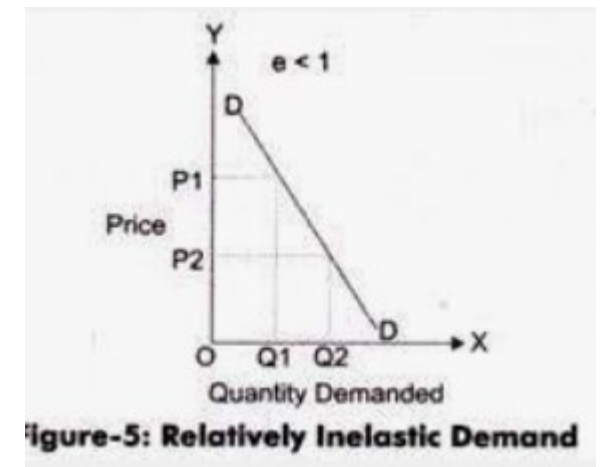
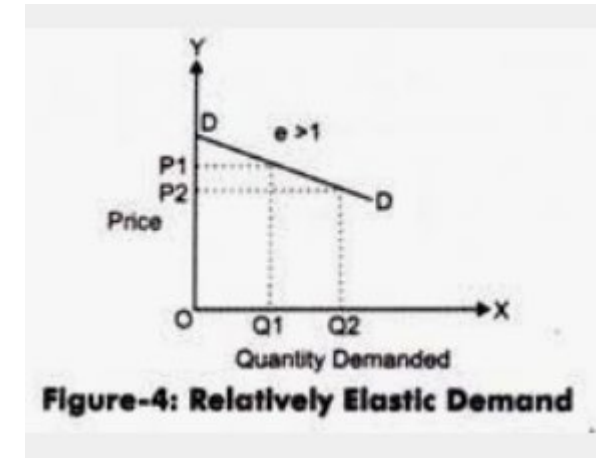


Changes in price, changes in other goods' prices, changes in income – how much does Q change?

- ▶ What happens if the price of apples falls, how much more will be bought?
- ▶ What happens if the price of petrol increases? How much less will be bought?
- ▶ What happens if income increases? How will the demand for bus journeys change?
- ▶ What happens if the price of flights increases? How much will the demand for night trains change?

Price elasticity of demand

- ▶ Change price 10% ; demand changes by $>10\%$ = Elastic ; Elasticity >1
- ▶ Change price 10% ; demand changes $<10\%$ = Inelastic ; Elasticity <1
- ▶ Change price 10% : demand changes 10% = Unit elastic ; Elasticity = 1



WATCH OUT!! – The PED is usually negative but it is reported in most places in an absolute value. ! !

Diagram Source - <https://www.economicdiscussion.net/elasticity-of-demand/5-types-of-price-elasticity-of-demand-explained/3509>

What influences PED? (what makes it more or less elastic)

Compare the two goods and think about their elasticities

- ▶ Apples with respect to pears, kiwi fruit, cabbages _____
- ▶ Commuting costs for poorer and richer _____
- ▶ Bread and croissants _____
- ▶ Petrol over 1 year, 5 years, 10 years

- ▶ Yoghurt vs strawberry yoghurt

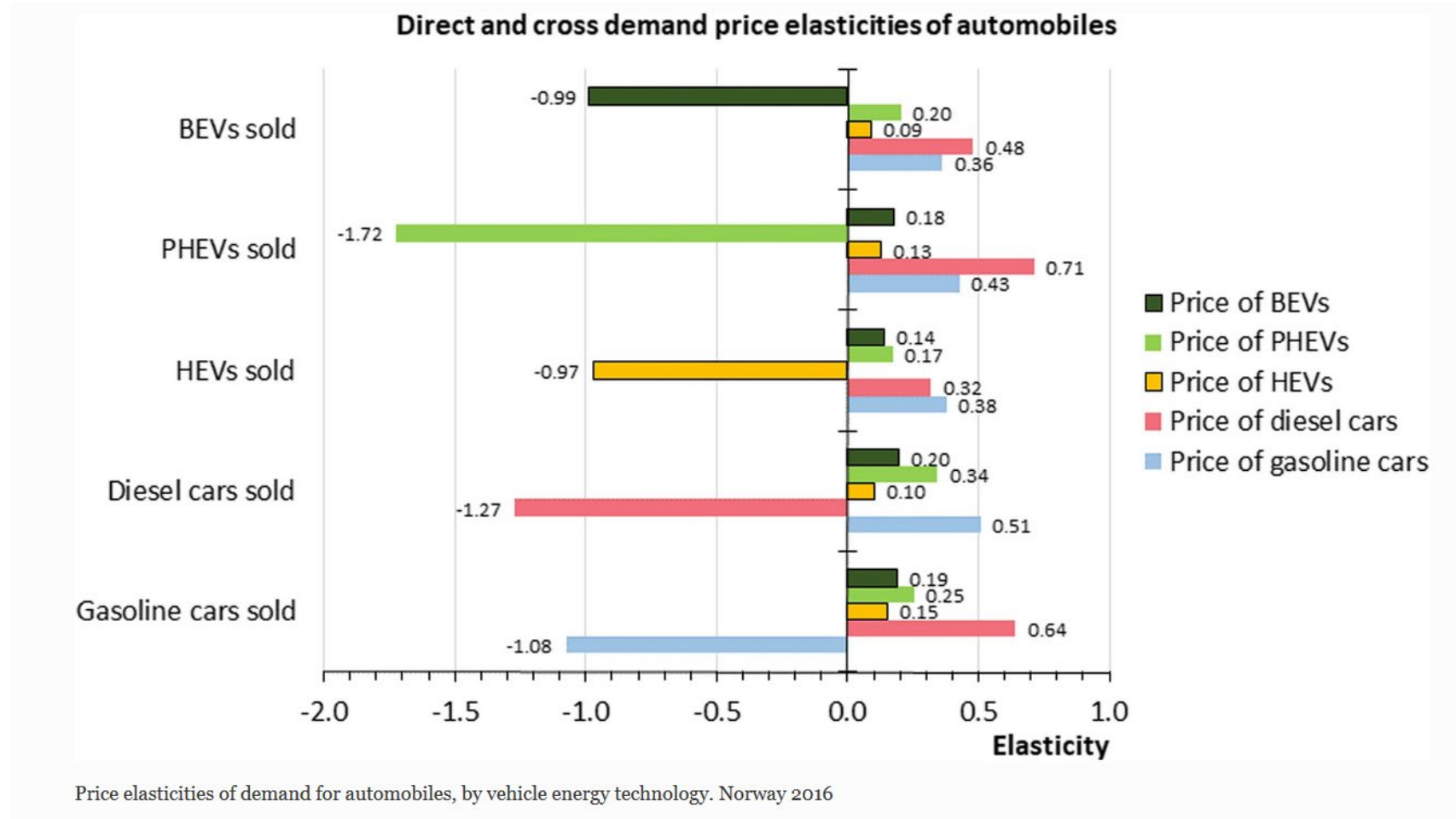
Complete the summary worksheet on elasticities

- ▶ Price elasticity of supply -
Housing Dallas 38.6
Housing New Orleans 0.9
- ▶ Income elasticity of demand
Education -6.9
Clothing and footwear 9.8
- ▶ Cross price elasticity of demand
D for Diesel w.r.t*. P of Petrol = 0.51

Source: Mankiw & Taylor (2017) Economics, Cengage Learning, 4th edition

*with respect to

Own and cross price elasticities of Demand (Fridstrøm, L., Østli, V. 2021)



Fridstrøm, L., Østli, V. Direct and cross price elasticities of demand for gasoline, diesel, hybrid and battery electric cars: the case of Norway. *Eur. Transp. Res. Rev.* 13, 3 (2021). <https://doi.org/10.1186/s12544-020-00454-2>

Summary

- ▶ Opportunity cost
- ▶ Further questions on Moodle
- ▶ How demand/supply curve are formed
- ▶ What they represent
- ▶ What influences them
- ▶ Read Mankiw 3 & 6
- ▶ Surpluses
- ▶ Elasticities of demand, supply, income and cross price elasticity of demand

Appendix – Elasticities from Manikiw 4th edition

Economists have attempted to place some estimates on the price elasticity of demand for certain goods – these do vary depending on which source you are looking at and the methods used by the researcher but Table 4.1 provides a summary of some of these estimates.

TABLE 4.1

Estimates of the Price Elasticity of Demand for a Selection of Goods

Product	Price Elasticity of Demand
Bread	- 0.25
Milk	- 0.3
Tobacco	- 0.4
Fuel	- 0.4
Wine	- 0.6
Shoes	- 0.7
Movies	- 0.9
Entertainment	- 1.4
Cars	- 1.9
Furniture	- 3.04
Particular brand of car	- 4.0

If you change price by 1%. What will happen to Q_d ?

TABLE 4.2

Estimates of the Income Elasticity of Demand for a Selection of Goods and Services

Good/Service	Income Elasticity of Demand
Education	-6.9
Alcoholic drinks, tobacco and narcotics	-6.6
Transport	-2.8
Food and non-alcoholic drinks	-1.0
Household goods and services	-0.5
Restaurants and hotels	0.4
Health	1.7
Housing, fuel and power	2.7
Recreation and culture	5.0
Communication	6.4
Clothing and footwear	9.8

$$1\% \cdot 1 = 1\% \Delta Q_d$$

$$1\% \cdot 9.8 = 9.8\%$$

TABLE 4.3

Estimates of Price Elasticity of Supply

Good	Price Elasticity of Supply Estimate
Public transport in Sweden	0.44 to 0.64
Recycled aluminium	0.5
Natural gas (short-run)	0.5
Labour in South Africa	0.35 to 1.75
Beef	
• Zimbabwe	2.0
• Brazil	0.11 to 0.56
• Argentina	0.67 to 0.96
Corn (short run in US)	0.96
Housing, long-run in selected US cities	Dallas: 38.6 San Francisco: 2.4 New Orleans: 0.9 St Louis: 8.1
Uranium	2.3 to 3.3
Oysters	1.64 to 2.00
Retail store space	3.2

$$10\% \Delta P \rightarrow 4-6\% \Delta S$$