Elasticity and Export Risk

Elasticity: the change in sales due to a change in price. If elasticity is negative, price and sales move in opposite directions; lower the price, increase sales. Increase the price, reduce sales. If elasticity is positive, price and sales move in the same direction; lower the price, reduce sales; increase the price, increase sales.
The amount of change is indicated by the number. Therefore, elasticity (E) of -1 means that the change will be the same. A 10% increase in price will lead to a 10% loss of sales. With E-2, then sales will change twice as much as price. Reduce the price by 10% and sales will increase by 20%.

Exercise A
What happens in the following cases when I change the sales price in € of my product? (production in € and sales in €)

Elasticity	Sales	Unit Price	Revenue	Change in Price	New Sales	New Revenue
-1	150	35€	150*35 = 5,250	+10% 35+3.5=38€50	150-10% 150-15 = 135	135*38€50 = 5,197€50
-2	3,500	12€50	43,750€	+5% 12€50 + 0€63 = 13€13	2 * 5% = 10% 3,500 – 350 = 3,150	3,150 * 13€13 = 41,359€50
-2.5	25,750	8,350€	215.0125m€	-15% 8,350€ - 1,252€50 = 7,097€50	2.5 * 15% = 37.5% 25,750 * 37.5% = 9,656 25,750 + 9,656 = 35,406	35,406 * 7,097.5 = 251.294m€
-3	450	3,000	1.35m€	-20% 3,000€ – 600€ = 2,400€	3 * 20% = 60% 450 * 60% = 270 450 + 270 = 720	720 * 2,400 = 1.728m€
+1	13,300	167€	2.2211m€	+12% 167 + 20 = 187€	1 * 12% = 12% 13,300 * 12% = 1,596 13,300 + 1,596 = 14,896	14,896 * 187€ = 2.786m€

Line 1. The 10% price increase leads to a small loss of revenue
Line 2. The 5% price increase leads to a small loss of revenue
Line 3. The 15% price decrease leads to a considerable increase in revenue
Line 4. The 20% price decrease leads to a considerable increase in revenue
Line 5. The 12% price increase leads to a considerable increase in revenue due to positive elasticity

For further explanation of elasticity, go to https://investinganswers.com/dictionary/e/elasticity

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Export example
Example of what happens in following export cases when I **do not change** the price of my product in €s but, due to a change in the exchange rate between the €
and the $, the **sales price in $ changes.** The Elasticity of my product is 0.8. The value of the € in dollars are the real rates for 2000 and 2008.
October 2000: 1€ = 0$84
January 2008:1€ = 1$48

Unit Price (does not change in €)	Sales 2000	Export Revenue (€)	Change in Price in $ (%)	Sales 2008	Export Revenue (€)
850€	750,000	750,000*850 = 637.5m€	1.48 / 0.84 = 1.76. (check: 0.84*76%+ = 1.4784) 76% increase	E=0.8 Price increases by 76% Sales decrease by 76% * 0.8 76% *0.8 = 60.8 750,000 * 60.8 = 456,000 750,000 – 456,000 = 294,000	294,000 * 850€ = 249.9m€

Exercice B

(Real and forecast exchange rates)
June 2020: 1€ = 1$10
Jan. 2024: 1€ = 1$25
Elasticity = 0.8

Unit Price (does not change in €)	Sales 2020	Export Revenue (€)	Change in Price in $ (%)	Sales 2024	Export Revenue (€)
100€	5,000	100 * 5,000 = 500,000	1.25 / 1.1 = 1.136 (check: 1.1 * 13.6% = 1.25) 13.6% increase	E = 0.8 Price increases by 13.6% Sales decrease by 13.6 * 0.8 13.6 * 0.8 = 10.88 5,000 * 10.88% = 544 5,000 – 544 = 4,456	4,456 * 100 = 445,600

Elasticity and Export Risk

Exchange rates. Company value and takeover risk

If we go back to our 2000 and 2008 Euro / dollar exchange rates
October 2000: 1€ = 0$84
January 2008:1€ = 1$48
We can see that the Exporter from the Eurozone to the USA has a massive loss of sales (60.8% down) due the increase of value of the Euro against the dollar. His goods now cost much more in dollars.
Whaty can he do? Well one problem of a weak currency (the dollar in this case) is that it can lead to your US company being bought by its competitors (which is what happened around 2008 with a weak dollar)

Exercise C
Your company: EuroPC (laptop computers)
Company value 12m€ (unchanging from 2000 to 2008 to keep things simple)

What is the value of your company in $ in 2000: 12 * 0.84 = 10.08m$ What is the value of your company in $ in 2008 12 * 1.48 = 17.76m$

Your competitor: USPC (laptop computers)
Company value 15m$ (unchanging from 2000 to 2008 to keep things simple)
To help you: If 1€ = 0$84, then 1$ = 1€19
If 1€ = 1$48, then 1$ = 0€67

What is the value of your company in € in 2000. 15 * 1.19 = 17.85m€

What is the value of your company in € in 2008. 15 * 0.67 = 10.05m€

Question 1: If we go from 1€ = 0$84 to 1€ = 1$48, is the € strengthening or the $ weakening? You need to triangulate with another currency

Question 2: Can we foresee currency value changes and hence exchange rate changes? (N.B. 2000-2008 a 76% exchange rate change in 7 years!). Yes. Following inflation levels means you can predict Interest Rate changes that change the currency value. Also, check on currency volume and growth rate predictions. To learn about currency trading, try IFOREX (https://www.iforex.com/)

Note: A weakened currency gives you export advantage but import weakness and capital weakness

Note: The double whammy: If your currency value increases, you lose exports **and** your home market as imports become cheaper

Note: Your production is probably based on multiple currency imports and your exports on multiple currency exports. It is essential to follow currency changes.