Module 56 Long-Run Costs and Economies of Scale

Consider the long run for a fruit fly (for whom 48 hours is a lifetime) versus that for an elephant (with a gestation period of 22 months and a life span of more than 70 years).

Discussion Questions:

1.) Define the "long run." Is it a week, a month, a year, a decade?
2.) How long would it take to open a nuclear power plant?
3.) How long would it take to open up a T-shirt business for the school?

Think about two different kinds of hardware stores-the small, local, family-owned store and the large chain stores (Lowe's, Home Depot).

Discussion Questions:

1.) What advantages do you see for each kind of store?
2.) What are the benefits of becoming large?
3.) What are the drawbacks of becoming too large?

Numerical Example:

Auto Nation is a small car maker, and it can vary the size of the plant it is considering building. The table shows Auto Nation's average total cost.

Quantity of Cars	LRATC (per car)
1	$40,000
2	30,000
3	20,000
4	15,000
5	13,000
6	13,000
7	15,000
8	20,000

1.) For which levels of output does Auto Nation experience economies of scale? (From 1-5 cars)
2.) For which levels of output does Auto Nation experience diseconomies of scale? (From 6-8 cars)
3.) Does Auto Nation experience constant returns to scale? (Yes From 5-6)

Numerical Example:

This example, which gives specific average total cost amounts for three firms, helps to differentiate between economies of scale and constant returns to scale.

Quantity	Firm A TC	Firm A ATC	Firm B TC	Firm B ATC	Firm C TC	Firm C ATC
1	$60	$60	$11	$11	$21	$21
2	70	35	24	12	34	17
3	80	26.7	39	13	49	16.3
4	90	22.5	56	14	66	16.5
5	100	20	75	15	85	17
6	110	18.7	96	16	106	17.7
7	120	17.1	119	17	129	18.4

1.) Which firm has economies of scale as output increases? (Firm A)
2.) Which firm has diseconomies of scale as output increases? (Firm B)
3.) Which firm has economies of scale first, and then diseconomies of scale, as output increases? (Firm C)

Discussion Questions:
1.) Why does snowfall in Washington DC create chaos, while the same snowfall is no big deal in Chicago?
2.) What is the output in this case?