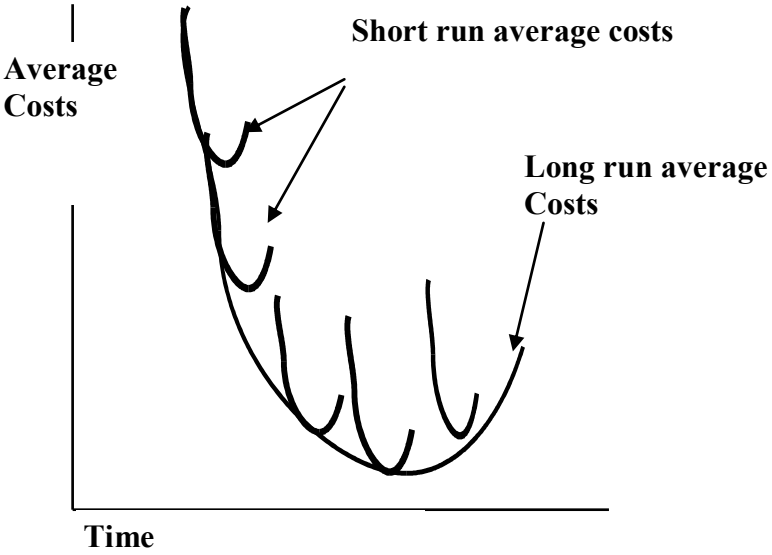
Economies of Scale

As businesses grow and their output increases, they commonly benefit from a reduction in average costs of production. Total costs will increase with increases in output, but the cost of producing each unit falls as output increases. This reduction in average costs is what gives larger firms a competitive advantage over smaller firms. **This fall in average costs as output increases are known as Economies of Scale.**



Economies of Scale are an important aspect of efficiency in production. Economies of scale can be defined as:

'the reduction in average costs of production, that occur as a firm increases it's scale of production'.

Costs in the short and long run

When examining economies of scale it is worth looking at both the short run and long run average costs of the firm. In the short run costs can be both variable or fixed, but in the long run all costs become variable. It is this switch to all costs becoming variable that separates the short run from the long run.

To understand this division between short and long run, we can look at a simple example. Jenkins Carriers, are a local delivery firm, they run 2 vans both of which are leased, with 2 years to run. The leasing charges of £300 per month are fixed for the term of the lease. For the firm (assuming that they have no other longer term commitments), the short run will be two years, as part of theircosts are fixed for this period of time. If at the end of he two year period they are able to negotiate better leasing terms because they have established the company as a good risk, or because they now wish to lease 6 vans, they are benefiting from economies of scale. Alternatively they may wish to buy the new vans or, if things have not gone well, even withdraw from the business. The fixed costs, until they commit themselves to a new agreement, become variable.

Each firms long run average cost curve is made up of a series of short run average cost curves.
As a business grows it moves and from one short run average cost curve to another short run average cost curve, each one being progressively lower and so reducing average costs of output - e.g. cheaper leasing of vans. This is shown in the diag. above.

If we look at a second example we can see how average costs are reduced in the short run.

Imagine a building site with one foreman and one worker. The workers role is digging trenches the foreman's role is to oversee the digging of trenches. The foreman earns £10 an hour the workers wage is £5 an hour. The worker is capable of digging 5 metres of trench in an hour. With one worker each metre of trench would therefore cost £3, that is the £5 wages of the worker and the £10 wages of the supervisor divided by 5 meters dug, = £3 per metre.

If another worker was taken on then we would now have 10m of trench per hour at a total cost of £20, therefore the cost per metre of the trench is now £2. With three workers we now have 15 m of trench at a total cost of £25 which gives is a cost of £1.66 per metre. We therefore see decreasing average costs in the short run.

In the long run the building site could instead of using workers and spades use a digger. This would allow a move on to a second average cost curve and therefore lower potential average costs. This is how economies of reduce average costs of production.

Internal and external economies of scale.

We can break down economies of scale into two broad groups, these are Internal and External.

Internal Economies of Scale. Reductions in average or unit cost because of increasing internal efficiencies of the firm.

External Economies of Scale. Reductions in average or unit cost because of increasing efficiencies of the firm that have resulted from external factors.

Internal Economies of Scale

Internal economies of scale include:

- purchasing
- technical
- financial
- managerial economies
- advertising

Purchasing. As firms grow, they increase the size of orders for raw materials or components. This will then result in discounts being given, and the cost of each individual component purchased will fall. This will therefore reduce the average cost of production.

Technical. As businesses grow they are able to use the latest equipment and incorporate new methods of production. This increases efficiency and productivity, reducing average costs of output.

Financial. As firms grow they will have access to wider range of capital, such as equity capital (share issues), this reduces the cost of borrowing for investment. Also as the assets of the firm grow, businesses are able to offer more security for borrowing, reducing the risk to the lender and reducing the cost of borrowing.

Managerial. As businesses grow they are able to employ specialist managers. These managers will know how to get the best value for each £ spent, whether it is in production, marketing or purchasing. This will increase efficiency, reduce the average costs of producing goods and selling the goods produced.

Advertising. As firms grow each £ spent on advertising will have greater benefit for the firm. Imagine a chain of local supermarkets, a TV advertisement is placed to cover the

region. If there were 10 stores in the chain, the cost of the advert must be borne by each of the 10 stores, but if they have 20 stores, then the cost of the advert would be spread across each of the 20 stores and the benefit of the advert applies to each of the 20 stores.

External Economies of Scale.

The largest firms often benefit from external economies of scale. These include:

The setting up locally of supplier firms, often in competition with one another, this reduces buying costs and allows the use of systems such as Just-in-Time.
Local colleges will set up training schemes suited to the largest employers needs, giving an available pool of skilled labour, this reduces recruitment and training costs.
Financial services can improve, with banks and other financial institutions providing services, such as factoring, that reduce costs and improve cash flow.

These economies of scale can be regarded as quantitative in nature i.e. they can be measured using financial methods. We know exactly how much is saved on purchasing raw materials, we know exactly how much is saved when a loan is renegotiated at a lower interest rate.

Diseconomies of scale.

Firms can also suffer from diseconomies of scale.
When diseconomies occur, the average costs of production rise with output. Let's go back to the example of the building site.
Maybe the foreman is capable of looking after 10 workers effectively and ensuring that each digs 5m per hour, but if there were 15 workers average output may start to fall. This happens because the supervisor isn't able to supervise all the workers and ensure that each is working at maximum capacity. Efficiency of production falls and there are increasing average costs of output. We now have diseconomies of scale.

Like economies of scale, diseconomies can also be internal and external.

Internal diseconomies include:

Problems with communication. as a firm grows and levels of hierarchy increase the efficiency and effectiveness of communication breaks down this leads to increasing inefficiency and therefore increasing average costs.

Motivation. With larger firms it is harder to satisfy and motivate workers. This means they do not give of their best, and again as the firm grows average output falls, and average costs increase. These diseconomies of scale are often qualitative in nature, hard to measure financially, but still reduce the efficiency of the business.

External diseconomies include:

Traffic congestion - the firm grows, suppliers move in, the area becomes an industrial centre, the roads are clogged with cars, vans and lorries. Deliveries are late, drivers spend time stuck in traffic jams etc.

Breakdown of relationships with suppliers and buyers. When a firm is small, there is often a direct relationship between owner managers and customers or suppliers. As the firm grows, these relationships are hard to maintain as the

owner manager finds his time is taken up with administration or problem solving.

Competition for labour. More firms means increased demand for labour, making the best workers harder to recruit and keep.

Increasing employment costs. More firms means increased demand pushing up the price of labour - wages.

Notes