


# Economies of Scale and Scope



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### Introduction

Adam Smith, a classical economist of the 1770s, identified division of labour and specialisation as the two key ways to achieve a larger return on production (Nooteboom, 2007). Economies of scale are known as a major factor in increasing profitability and contributing to a company's other financial and operational ratios (Cummins and Xie, 2008). The opposite phenomenon, diseconomies of scale, arises when the average production unit costs increase beyond a certain level of output (OECD, 2008). Hindle (2008) offers the following hypothetical example to illustrate economies of scale: imagine it costs US\$3,000 to produce 100 copies of a magazine but only US\$4,000 to produce 1,000 copies. Where resources and market demand permits, it makes more sense to pursue the latter because the average cost has reduced from US\$30 to US\$4 a copy. This is because the main element of cost in producing a magazine (editorial, design, labour, etcetera) are unrelated to the number of magazines produced (Hindle, 2008).

In another example, a report by Forrester Research in 1999 claimed that before the rise of the Internet it cost around US\$100 to make an equity market order. Following this, the price fell 85% to a mere US\$15. Arguably, the Internet has completely reshaped the assumptions underlying economies of scale regarding the relationship between price and volume (Hindle, 2008).

A more recent approach to business strategy is seeking economies of scope which is associated with developments in high technology. Here, the average total cost of production decreases as a result of increasing the number of different goods produced. The minimum efficient scale of a plant or firm is reached when the average costs are at a minimum and the maximum efficient scale is reached just before diseconomies set in (Cummins and Xie, 2008; Dobson and Yano, 2002). While many factors such as technology may explain economies of scope, of particular importance is the presence of common input(s) and/or complementarities in production (OECD, 2008).

### Definition

Economies of scale refer to the phenomenon where the average costs per unit of output decrease with the increase in the scale or magnitude of the output being produced by a firm. Economies of scope exist when it is cheaper to produce two products together (joint production) than to produce them separately (OECD, 2008).

### Successful Application

There are many avenues to achieving economies of scale and scope that touch on a wide range of factors, including supply chain management, internationalisation, localisation, mass production, and task specialisation among others. Achieving economies of scale or scope is a contextual issue firmly tied to the nature of the business and its strategic intent. Identifying a specific strategy to achieve cost savings through these methods can be a complex and time consuming process. However, two basic approaches are: (1) Mass manufacturing for economies of scale (e.g. many firms outsource their call centres to serve a variety of different clients); and (2) Mass customisation for economies of scope (e.g. Dell has long offered customers build-to-order computers) (Barnes, 2008).

### Steps to Successful Application

- Focus on product segment with the highest market potential: Identify market segment with

the largest size and growth; reposition product from a specialty to one that appeals to a mass market; focus on a product category that requires few approvals.

- Conserve resources for mass market development: Avoid heavy investment in R&D by using technologies developed by others; license out technologies to obtain funds; obtain approvals before beginning production and marketing; obtain customer financing in return for delivery priority.
- Reduce production costs quickly: Outsource production to obtain needed volume, price, and quality; invest in production to increase yields; use international production to lower manufacturing costs
- Support mass market push with marketing: Create a recognisable brand for product and company; set a value price to generate volume sales; obtain endorsements for the product; target advertising to increase and sustain primary demand.
- Broaden distribution: Use initial specialty distribution to gain access to mass channels; use multiple channels of distribution; use alliances and acquisitions to hasten entry and market expansion; make deals with large customers and distributors to provide market access.
- Sustain, consolidate and protect position: Develop systems and operating policies that can be extended internationally; empower employees to suggest new product ideas based on customer contact; sell complementary products to generate additional revenues.

*Mascarenhas et al. (2002)*

### Hints and Tips

- Rather than focus directly on achieving economies of scale as the main objective, organisations could perhaps think more broadly about how they can improve organisational performance and profitability.
- While it is true that economies of scale can create entry barriers, it is not impossible for companies to penetrate these barriers and successfully enter an industry. An industry analysis should be one of the first starting points and should be coupled with various other techniques, such as portfolio matrix analysis to assess the viability of a product, and whether the firm can compete on differentiation, if not on cost.
- Building up good supplier relationships is essential to ensure that the lowest cost per unit can be obtained. Organisations need to think carefully about who is involved in supplier negotiations and how skilled they are in this area. While loyalty can be a good thing in building trust with suppliers this should not interfere with obtaining the best price even if it means breaking away from a long-term supplier relationship.
- It is important to maintain the balance between achieving scale and ensuring the quality of the final product.

### Potential Advantages

- The economies that are associated with scale and scope are important driving forces in the expansion and deepening of coordination within companies. They underpin the organisational capabilities required to coordinate activities that are widely dispersed (Bitros, 2005).
- Economies of scale and scope are an important driving force behind many mergers and acquisitions as they are seen as to maximise value (Cummins and Xie, 2008).
- Using the phenomenon of clustering, younger and smaller firms may be able to achieve some of the benefits of economies of scale that larger firms enjoy by strategically

positioning themselves in close proximity to their larger, more established rivals and thus secure greater visibility. This may weaken the position of larger rivals by giving consumers more choice (Hindle, 2008).

### Potential Disadvantages

- Economies of scale do not invariably equal efficiency. For example, Jin et al. (2003) found that although a large number of China's crop breeding institutes implied significant cost savings, the current large number of small crop breeding institutions remains the main source of inefficiency in that industry.
- Mass customisation, which implies broader product lines, may increase market share and allow higher prices to be charged but may also introduce sources of diseconomies of scope, such as setup time (Dobson and Yano, 2002).
- Economies of scale can only be realised if there is sufficient demand for a product in the market, otherwise companies may find that they have overinvested in new capital and are left with costly excess capacity.

### Performance Monitoring

- Return on invested capital (ROIC): A key measure in economies of scale (Hill and Jones, 2008). It is usually calculated as: net income minus dividends, divided by total capital.
- Economic production quantity (EPQ), or similar models: Can be used to balance inventory and holding costs during production of products. When using EPQ, consider running a sensitivity analysis to measure the difference between the average cost rate incurred by the company and the average cost rate that would have been incurred had there been no errors during the estimation.
- Just-in-time inventory management: Can be used to maximise the potential of economies of scale by ensuring costly inventory does not sit in warehouses unnecessarily.

### Case Studies

- Microsoft achieved economies of scale developing its Windows Vista operating system: the company spent US\$5bln developing the master version but then could manufacture CD versions for only a few cents. These were then sold at a large mark-up to the 250m computers running Microsoft's operating systems around the world (Hill and Jones, 2008).
- Prior to Ford introducing its first mass produced car in 1923, the company had relied on an expensive hand-built production method. After introducing greater division of labour and specialisation, worker productivity increased and Ford spread fixed costs over large output volumes. By 1958 the cost of manufacturing a car at Ford had dropped from US\$3,000 to below US\$900 (Hill and Jones, 2008).
- Clear Channel Communications, which owns over 1,200 radio stations, achieved economies of scale by employing popular regional or national DJs to record daily content and used these same DJs to customise the content to suit the needs of local audiences. This saved considerably on hiring lots of local DJs and also provided higher quality, targeted content (Hill and Jones, 2008).



## Further Reading/References

### Web Resources

- Harvard Business Review article introduction <http://hbr.org/1992/05/manufacturings-new-economies-of-scale/ar/1>
- Overview of the concept <http://www.economist.com/node/12446567>
- Economies of scale, economies of scope  
<http://www.ribbonfarm.com/2012/10/15/economies-of-scale-economies-of-scope/>
- Long-run increases in scale  
[http://economicsonline.co.uk/Business\\_economics/Economies\\_of\\_scale.html](http://economicsonline.co.uk/Business_economics/Economies_of_scale.html)
- A Bitesize guide to economies of scale  
<http://www.bbc.co.uk/schools/gcsebitesize/business/production/productioncostsvid.shtml>

### Books

- Economies of Strategy, David Besanko, David Dranove, Mark Shanley & Scott Schaefer, ISBN 978-0470373606
- Business Economics, Maria Moschandreas, ISBN 978-1861523990
- International Capital Markets 2001: Developments, Prospects and Key Policy Issues, Donald J. Mathieson, Garry J. Schinasi and International Monetary Fund, ISBN 978-1589060562
- The Economics of Health and Health Care, Sherman Folland, Allen C. Goodman & Miron Stano, ISBN 978-0132279420

### References

- Ang, J.S. and Lin, L.W. (2001) A Fundamental Approach to Estimating Economies of Scale and Scope of Financial Products: The Case of Mutual Funds. *Review of Quantitative Finance and Accounting*, Vol. 16(3), pp. 205-21.
- Barnes, D. (2008) *Operations Management: An International Perspective*. Thomson, London.
- Bitros, G.C. (2005) Scale, Scope and Entrepreneurship. In Y. Cassis and I. Pepelasis-Minoglou (Eds.), *Entrepreneurship in Theory and History*. Palgrave, London.
- Cummins, J.D. and Xie, X.-Y. (2008) Mergers and Acquisitions in the US Property-liability Insurance Industry: Productivity and Efficiency Effects. *Journal of Banking and Finance*, Vol. 32(1), pp. 30-55.
- Dobson, G. and Yano, C.A. (2002) Product Offering, Pricing, and Make-to-stock/Make-to-order Decisions with Shared Capacity. *Production and Operations Management*, Vol. 11(3), pp. 293-312.
- Hayes, F. (1998) Thoughts on Scale, Scope and Bureaucracy. [Online] Available at: <http://arnoldkling.com/~arnoldsk/scale.htm>.
- Hill, C.W.L. and Jones, G.R. (2008) *Strategic Management: An Integrated Approach*. Houghton Mifflin Company, Boston, MA.
- Hindle, T. (2008) *Guide to Management Ideas and Gurus*. The Economist/Profile Books Ltd, London.
- Howell, H.J. (2003) Adapting GM Research to a New Corporate Strategy. *Research Technology Management*, Vol. 46(3), pp. 14-20.

- Jin, S., Alston, J.M., Rozelle, S.D. and Huang, J. (2003) Economies of Scale and Scope, and the Economic Efficiency of China's Agricultural Research System. Agricultural and Resource Economics Working Paper, University of California [Online], available at: <http://repositories.cdlib.org/are/arewp/>
- Mascarenhas, B., Kumaraswamy, A., Day, D. and Baveja, A. (2002) Five Strategies for Rapid Firm Growth and How to Implement Them. Managerial and Decision Economics, Vol. 23(4/5), pp. 317-330.
- Nooteboom, B. (2007) Service Value Chains and Effects of Scale. Service Business, Vol. 1, pp. 119-39.
- OECD (2008) OECD Glossary of Statistical Terms. OECD Publishing, Paris.

### Video

Economies of scale

[https://www.youtube.com/watch?feature=player\\_embedded&v=JY21EiHeWQs](https://www.youtube.com/watch?feature=player_embedded&v=JY21EiHeWQs)

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