Economies, Diseconomies and False Economies of Scale

By Mason Gaffney

Advantages of large-scale

1. Engineering indivisibilities.

a. Simple geometrical laws: the circle, the cube, etc. Difference of indivisibility and discontinuity. Land and labor more divisible than capital.

b. Specialization of capital.

c. Other.

2. Labor specialization and teamwork.

3. Reducing transaction costs: substituting intra-mural for extra-mural transactions.

4. More objective, non-familial personnel evaluation and leadership succession.

5. "Massed reserves" to meet peak needs for capital, e.g., to finance a large, durable plant when it is new, taking full advantage of integrated, coordinated, synchronized "one-stroke" construction; or to win a takeover battle; or to seek future rents, e.g., by premature water development, use of radio spectrum, placing branches in growing suburbs, etc.

6. Bulk receiving and deliveries: fuel, utilities, raw materials, products.

7. Bulk storage. "Economy-size" containers.

8. Bulk transactions: purchases and sales.

9. Internalizing transactions. Bypassing middlemen. Integrating and synchronizing internal transactions to lower storage needs, e.g., with "just-in-time" deliveries.

10. Normalizing, to avoid bulges, get even flow.

11. Advertising; brand recognition; marketing; e.g., use of the name *TIME-LIFE* to market audio cassettes, history books, etc.

12. Diversifying:

a. To pool risk, stabilize returns.

b. To permit assuming greater risks (e.g., oil exploration, avoiding "gambler's ruin": safety in large numbers).

c. Diversifying products, supply sources, plants, regions.

d. Diversified merchandise on hand for customers. You can't sell it if you don't stock it (unless you produce customized goods to order).

13. Vertical integration to protect sources and outlets.

14. "Internalize externalities": capturing and bottling your own fragrance; minimizing your own stenches. Malls, planned-unit developments, etc.

14-A. Creating consumer dependency by having networks of dealers, repair stations, etc.; by creating interdependencies among complex products, e.g., Microsoft, IBM.

15. Superior credit rating: lower borrowing rate; longer terms; less collateral per dollar borrowed; lines of credit; less transaction-cost per $ borrowed; etc. Exaggerated need for credit caused by high values of "good-will" and land. Lower cost of "carrying" durable assets.

16. Reserves for price wars ("predatory" pricing, promotional pricing, invading old markets, preempting new markets by absorbing early losses, etc.).

17. Full use of tax losses.

18. Political influence. Subsidies; military and other public contracts; tax preferences; sweetheart leases and other deals; bail-outs (RFC and its tradition; Continental Illinois Bank; Chrysler Corp.); dealing on equal or superior terms with governments, from small towns to first-class sovereign powers; "chosen instruments"; utility rate discrimination; support from social climbers and yokels; dependence of candidates on large contributors; etc., etc. The long, sad history of governmental bias against small business.

19. Use of subsidiaries to avoid regulations (e.g., against trading with the enemy).

20. Preferential access to markets when access is rationed by cartels and/or governments based on capacity (e.g., to produce corn from 300 acres you have to own 400 acres, because there is a 25% acreage cutback).

21. Market Power. Ability to monopolize markets; "throw weight around" when dealing with small suppliers and contractors and customers; dominate trade associations, etc.

Question: which of the above are net social benefits; which are zero-sum or negative-sum benefits? There is a difference: we have anti-trust laws, the Federal Trade Commission, the Anti-trust Division of the Justice Dept., and other agencies trying to sort this out.

Disadvantages of large-scale

1. Space. Long hauls within the firm: example of farm layout. Long hauls for supplies and markets and waste disposal.

After exhausting scale economies in capital, mitosis sets in, new nuclei needed—then where are the scale economies?

2. Gravity vs. geometry. Larger buildings need heavier footings, have longer spans to support, etc. Russia's ideological fixation on giant machines and the disaster of Russian farming.

3. Loss of "edge effect." Superior productivity of edges: e.g., in parks, hotels, retailing; accessibility of edges for maintenance and repair.[1]

4. Time. Big things are slow to assemble and disassemble, start and stop: e.g., long trains. Long building period, preceded by longer period of land assembly or reservation. Once built, many big hulks don't get used all the time: long build-up period to full utilization, if built ahead of demand (e.g., many power plants); low load factors unless prevented by costly connections to market; kept around after demand has subsided or changed, wasting their sites. "The case of the traveling demand curve," and the plant that is always too large or too small.

Waste and spoilage and space demands of bulk purchases, e.g., the economy-size container hogging space in your fridge: the container takes just as much space when it is only 5% full.

Inflexibility.

5. Land and space requirements. Big trucks and turning areas; ocean vessels and harbor dredging; jumbo airplanes and airports (and reduced frequency of flights).

Land assembly time for large capital: either assemble small units; or go to cheap land in bad location; or hold for decades in advance: all are expensive. Increasing cost of land as neighbors get crowded.

Limited selection of locations. Example of the niche store, Smart and Final, small enough to be able to fit into small spaces. Thus they get much lower land prices. They attract people to out-of-way places by being a wholesaler as well as a retailer.

6. Absentee ownership. Separating owners and managers—crossed incentives. Tenants vs. owners; workers vs. managers vs. owners. Pilferage, loss of surveillance. Effect of absentee ownership on attitudes toward property, theft and maintenance. Managers' internalizing profit against wishes of owners, investing captive capital for low returns.

7. Cross-subsidy, the growth of parasites. Winners carry losers; past successes carry present failures; good risks cover bad risks (the seamy side of pooling risk); waste concealed by accumulated wealth; insiders get to use resources that do not appear in budget; line workers carry swollen staff; growth of frills, hobbies, indulgence of uneconomic ideologies.

8. Excessive land and capital-intensity to minimize management problems. No new jobs are coming from the big firms. Surplus funds go questing for outlets, and the slower the turnover the longer before the "problem" of placing the funds returns. Slow turnover, slow replacement, obsolescence and senility. Historical success of GM in offsetting this weakness. Management genius of Du Pont and Donaldson Brown. (Has it finally run out its string?)

9. Long lines of communication; loss of contact:

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[1]Re urban economics, note that city "centers" benefit both from centrality *and* edge effect, paradoxical as it seems. That is because the center is originally located near the city's window on the world: port, railhead, etc.

a. Owners and managers;

b. Managers and workers;

c. Salesmen and customers;

d. Engineers and everybody: the propensity to play with other people's money and rationalize on "technical" grounds. Replacement of profit motive by "professional fundamentalism": examples from medicine, education, forest management, research, nuclear power. Capturing pension funds; etc.

10. Goal displacement. Advancing the firm is submerged to advancing in the firm. Skills of the courtier win; those of the producer lose. Creative people leave to start new firms.

11. Alienation. Loss of sense of justice, as top management fails to reward functional effort.

12. Small things get overlooked. Small things may have high rates of return, and high growth potential. Examples: U.S. Government; public works planning, with trunks preferred over branches and twigs; preference for big hardware over humble spare parts—the "Russian Disease," right here at home.

13. Innovation gets choked, when it threatens or inconveniences the main chance of the time. (Case of the Erie Canal and the Pa. R.R.; case of Calavo and the Gwen Avocado; etc.)

14. Excessive diversification to avoid self-competition. Tendency of largest firm in cartel to restrict output the most, go into other lines. (Saudi Arabia and Alaska subsidizing petro-chemical plants; from USS to USX; from ALCOA to Century City, Kaiser to Kacor, etc.: what's in a name?)

15. Bureaucratic cultures and distorted reward systems militate against risk: high penalties for error, low rewards for success. Rewards for back scratching, penalties for criticizing. Premium on herd following, conventional behavior.[2]

16. Empire building as a personality disorder: hooked on acquisition, bored with stewardship. Henry VI effect: "Glory is like a circle in the water, Which never ceaseth to enlarge itself, Till by broad spreading it disperse to nought."[3] French proverb, *Qui trop embrasse, mal étreint* (Grasp

[2]Academic reward systems tend in this direction. When promotions are considered, about ten to fifteen outside letters are solicited. One bad letter can offset ten good ones—it is a kind of blackballing system. The result is a tendency to play it safe, join some herd, limit innovations to what is acceptable within the herd, avoid eccentricity, etc.

[3]Recently, historian Paul Kennedy made a big splash with *The Rise and Fall of the Great Powers*, renewing a theme popular about a century earlier in England, when poets expressed the thinking of the times. Kipling, the one-time imperialist, wrote his *Recessional*: "Far-called our navies melt away, On dune and headland sinks the fire; lo all our pomp of yesterday, Is one with Nineveh and Tyre! … Lord, God of Hosts, be with us yet, Lest we forget; Lest we forget." Fitzgerald revived Omar Khayyam: "They say the lion and the lizard keep the courts where Jamshyd gloried and drank deep; and Bahram, that great hunter, the wild ass stamps o'er his head but cannot break his sleep." Or Shelley: "And on the pedestal these words appear: 'My name is Ozymandias, King of Kings; Look on my works, ye mighty, and despair'. Nothing beside remains. Round the decay of that colossal wreck, boundless and bare, the

all, lose all). Overextension precipitates liquidation, and you read reports of the wreckage in the papers every week.

17. Underuse of credit for production; overuse for acquisition. (This one is frankly tricky and puzzling.)

18. Weak record of innovation per dollar of assets—a fact masked and obscured by publicity given to innovations from large firms.

19. Anti-environmental bias. Large farms are the chemical dependents. Work of Alistair Crerar in Pakistan, e.g. Absentee owners view local community simply as an oyster to be shucked—they don't live there. They have limited liability, if incorporated, having "neither bodies to kick nor souls to damn." The ultimate owners are sheltered by layers of shells of anonymity: you can't even find out who is doing this to you.

20. Loss of control by top manager, owing to limits on what one person can supervise. Growth of layers of intermediate bureaucrats.

Fallacies

1. The block phrase "large-efficient-firms" has been made part of American business and academic lore. It is a mind blocker, wherein the premise is the conclusion, based on neither thought nor observation.

2. Fallacy of Lowering AFC by Increasing Scale.

The falling AFC curve, spreading overhead and all that, is a matter of proportions: FC are assumed fixed. Firms that raise scale, however, generally do so by raising FC more than in proportion to VC, substituting K for W. Data from *Fortune*, e.g., show this clearly.

Thus, a graph with sales on abscissa, showing relation of LAFC and LAVC, looks like a squat, wide X: LAFC has the positive slope; LAVC the negative.

You can break down LAFC into land and K: land rises faster.

Break down LAVC into work, materials, and energy: only work falls with sales, for sure; materials and energy may rise some.

3. Fallacy of spreading overhead of K by buying more land.

This is common among farm economists. Its problem is that the land costs a lot more than the capital on which they are economizing. Machinery, equipment, and livestock are about 10% of the wealth of American farmers; land is much more.

4. Fallacy that concentration of wealth and control is due to economics of scale in production.

Evidence that land is most concentrated asset.

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lone and level sands stretch far away."

Financial power, clustering tendency. (See \mgl\prodnecs\loanbias).

Related Concepts

There are at least three separate ideas about economies that overlap. Scale; durability; and building integration.

Building integration includes building excess capacity for a rising demand. This involves all three: scale, durability, and integration.

Pure integration, without scale, is when you wire a building right the first time, so you don't need to retrofit later.

Pure durability is when it's cheaper to build once every thirty years than annually.