



## COMMENTARY

# Size matters: risk and scale

Michael Mainelli

*Z/Yen Group Limited, London, UK, and*

Bob Giffords

*Independent Banking and Technology Analyst, Ringwood, UK*

### Is small beautiful?

Human organizations are growing in size and risk. We have created some behemoths, such as China's People's Liberation Army with 2.3 million soldiers, Indian Railways with 1.4 million employees or the UK's National Health Service with 1.3 million employees. More commercial organizations are hefty as well, such as Walmart with 2.1 million employees, HSBC with 330,000, Bank of America with 280,000, or JP Morgan Chase with 220,000. As the number of people on the planet approaches 6.8 billion, is it inevitable that their financial organizations should grow in size as well? One could argue that average family size has even been falling in recent decades.

The Credit Scrunch, as we term current financial crises, has brought to the fore the argument that no bank should be "too big to fail." No institution should be allowed to become so large that its problems become systemic risking the implosion of important social systems. Anti-monopoly and anti-trust legislation exist to keep size under control. However, it would appear that the legislation is either unenforced or poorly applied when we have some dozen banks controlling global wholesale markets and handfuls of banks in many countries controlling local retail and commercial markets (Mainelli and Giffords, 2009).

Without turning into slavish worshippers at the altar of "small is beautiful," it is interesting to note what a cap on size achieves:

- *Systemic risk reduction* – if no bank is allowed to become too large, then no single bank can threaten the stability of the financial system.
- *Remuneration reasonableness* – it is difficult to get many multi-million pay packages out of smaller organizations.
- *Better customer service* – more competition and attention.
- *Focus on the coalface reduces risk* – the less time spent navigating or comprehending a large organization, the more time hopefully spent understanding customers and lending risks.
- More transparency for investors and regulators, since large organizations can hide a multitude of sins behind a complex set of accounts.

A significant issue associated with size is the opacity and dysfunction of large commercial hierarchies. Hierarchies are good at hiding information and inhibiting contact among individuals who need to know and can do something about what they know. In the Credit Scrunch, non-executive directors were unable to penetrate their own

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organizations' risks and controls. Indeed, many executive directors were similarly restricted and incentivized to leave well enough alone.

Notwithstanding attempts at local budgets, flex budgets, etc. most large organizations find it problematic to design systems that empower people locally because the local managers are not getting accurate inputs for their decisions and are even more constrained in their discretionary scope. It is refreshing to note that while many organizations fail to design local control systems that they trust, the people in those organizations leave the office and jump into the largest system of all – the market – a system that evolved without design. One senior executive in a large multi-national said insightfully that his job was “to ensure the orderly functioning of our internal market – the market from which we generate returns to shareholders.” Competition and markets provide much more information and feedback for financial and political decision making than large commercial hierarchies. Global inter-connectedness, diversity, complexity, and the speed of change make control from the centre increasingly fraught.

### Is big beautiful?

However, the “big is beautiful” camp have their points on financial services too:

- *Economies of scale.* There should be more supply-side efficiencies for society as a whole.
- *Economies of scope.* There should be more demand-side efficiencies, e.g. multiple product sales, for society as a whole.
- *Global competition.* Size is simply a function of global reach.

In the early days of mainframe computers there was certainly a move from local banks, frequently more efficient than larger banks, to more efficient branch networks, enabled by new technology. Yet technological standardization, leasing and selective outsourcing have demonstrated that smaller firms can achieve similar economies of scale without owning large arrays of fixed assets. Indeed, these days firms have to “sweat” their fixed assets to make them pay and even the largest will insource demand to keep them efficiently loaded.

Moreover, if global reach were key then what size is sufficient? Many large financial institutions assets already rival some of the largest national economies. From a nation with 1 percent of the global population, a handful of the largest UK banks claims assets four times greater than the GDP of the lender of last resort.

The “big is beautiful” camp also have to contend with the “single point of failure” problem. Over-concentration in financial services correlates strongly with recent systemic failures, CDOs, global investment banking, and retail and commercial banking in the UK, Ireland, and Iceland, all occurred in markets dominated by small numbers of large players. Large risks cannot be diversified in overly small communities.

Further, and slightly simplified, where economies of scale and of scope both apply, then a natural monopoly exists. In short, the “big is beautiful” camp virtually argue the need to run banks as monopolies. Monopolies, of course, can be the low cost player, but they can also name their price to suppliers and essentially expropriate the competitive margin of their supply chains, thus distorting markets and asset allocation.

Firm size mix is also changing. Ronald Coase looked at transaction costs affecting the size of firms. High transaction costs result in bigger firms, and lower transaction costs in

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smaller firms. We should be seeing an era of smaller firms as transaction costs fall. Yet, we also see that the cost of organization is falling. Perhaps, we are moving towards a stronger power law distribution of firm size. Perhaps, transaction cost falls are offset by the need or desire to increase distribution to reduce risk. We all deal with Amazon because it is low cost. Amazon has distributed risk globally, both because it sees scale as achieving low cost, and because it can make more money. It exploits network effects to attract liquidity, which attracts more liquidity.

You cannot run a firm without looking at risk distribution, and one could argue that risk distribution leads to a need for certain larger, distributive firms, or at least firms well distributed throughout networks. And we have seen shifts to flat hierarchies in some businesses. However, we have also seen, over the last century or so, the emergence of multiple hierarchies, matrix management, and virtual teams and companies, as mass production morphs into mass customization of highly complex, recyclable products and services.

### **Controlling for size**

But can “small is beautiful” work in a global market? Clearly, we need to develop more transaction-based aggregation strategies to deal with large projects, but arguably this is already happening.

On the other hand, can “big is beautiful” really be limited?. There are ways in which size can be capped, absolute assets, number of employees or market share. Each has its problems and perverse incentives. For example, if financial institutions were capped on number of employees, then expect to see over-automation and intense use of outsourcing. Market share is the traditional measure for anti-monopolists, and seems readily usable, but in which market? National markets seem sensible, but if we concede some need to compete globally, we wind up allowing behemoths to dominate local markets while claiming that their size makes them international middleweights.

In banking, one of the most interesting controls might be one of the simplest: low leverage. The controls on leverage in New Zealand, Canada, and Australia are stronger and simpler than elsewhere. These markets, as with all financial markets, are not susceptible to simplistic analysis and riddled with exclusionary regulations. Still, given their resilience, these jurisdictions may indicate that by keeping leverage down the market is rendered unattractive to global freewheelers who can find racier markets elsewhere. This may be slightly anti-competitive under some readings, but Andrew Haldane’s work at the Bank of England shows that excess bank profits over long-term historical averages are explained by excessive leverage alone.

Here, of course, lies another risk of size. The hyper-connectivity of modern commercial practice means that large, multi-national entities can leverage their internal resources, their customer-supplier relationships, and the tail risks of those operations, as much as their external credit position. For regulators such internal leverage is incredibly opaque and constantly changing in a confusion of legal entities and commercial transactions. As we have recently seen, when a crisis occurs, this web of opaque obligations can unwind with amazing speed.

So size does matter, but controlling it will always be difficult and some aggregation is necessary to deal with certain large problems. Whether that aggregation should be driven from a single, privately managed company is the real question.

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### Risk and scale

For readers of this journal, the hoary debate around size may seem irrelevant. Actually, diversity of size and risk are intertwined. Perhaps, the most subtle competition policy is that of diversity. Ashby's Law of Requisite Variety, originally from cybernetics, states that for appropriate regulation the variety in the regulator must be equal to or greater than the variety in the system being regulated. Yet the greater the variety within a system, the more regulation will try to reduce it, leading to crowded trades, when everyone reacts according to homogenized rules. Significant government regulation inevitably reduces, or even worse, masks, essential variety. Unnecessary size leads to more regulation, interference and even corruption, as well as homogeneity. For this reason, moves towards a global regulatory regime are not an unalloyed good. Further, diversity in national regulation has allowed us to learn from Spain, Denmark, Canada, New Zealand, and Australia.

We can analyze diversity. Z/Yen has analyzed concentration risk using measures from biology such as Shannon-Wiener or Simpson indices. Goerner *et al.* (2009) contrast sustainable biological systems with sustainable economic systems, concluding that in both biology and economics there is an optimal zone between too little diversity and too little efficiency. Systems with too much unnecessary diversity are inefficient and can stagnate, though be highly resilient. Systems with too much efficiency reduce diversity and can become "brittle," though be highly efficient. Obviously, the sweet spot is a balance of diversity and efficiency. Given the excessive profits in financial services over the years, it is tough to argue that it is less competition that we need. Given the failure of key nodes in financial services, it is equally tough to argue that it is less diversity we need.

This leads us back to what is perhaps the most fertile ground for competition being the allotments of small teams who organize, manage, and assume the risks of a business or enterprise. We are not praising small exclusively, nor claiming that larger corporates are not equally important for development and distributions. Early in the last century, Schumpeter argued that innovation and technological change comes from entrepreneurs, or wild spirits. His German phrase was *Unternehmergeist*, entrepreneurial-spirit. Later, Schumpeter contradicted himself when he saw that in the USA, big companies, which have the resources and capital to invest in research and development, are also real movers. We need diversity; we need big and small. In fact, the more things are inter-connected, the more diversity we need, but size in itself is a risk as much as an opportunity.

As with other ecosystems, governments should pursue policies that encourage biodiversity. Biodiversity means favoring firm creation rather than national champions. On this basis, the USA creates financial firms while Germany does not, yet both have significantly more financial firms competing than the UK. Biodiversity means encouraging competition, so that one type of firm does not unnaturally predominate. Firms also need to die as well as be brought to life. Biodiversity requires aggressive anti-monopolies enforcement. Biodiversity also means not leaping in too early with standards and regulations. Understanding the risks of size is becoming increasingly urgent.

**References**

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**Corresponding author**

Michael Mainelli can be contacted at: [michael\\_mainelli@zyen.com](mailto:michael_mainelli@zyen.com)