

Taming the masters of the tech universe

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Eight of the world's most highly valued companies are technology businesses. The combined market capitalisation of these companies is \$4.7tn. That is 30 per cent of the combined market capitalisation of the other 92 companies in the world's 100 most valuable firms. Of these eight companies, five (Apple, Alphabet, Microsoft, Amazon and Facebook) are from the US, two are Chinese (Alibaba and Tencent) and one is South Korean (Samsung). The most highly valued European tech company, SAP, is the world's 60th most valued company.

Today's valuations might be excessive. The market's relative rankings might also turn out to be wrong. Moreover, the businesses in which these companies are engaged are all different in important respects. Nevertheless, the rise to prominence of these technology groups has to be telling us something important (see charts).

What then are the questions raised by these remarkable numbers? I will not respond by considering the [economics of the digital economy](#) itself (interesting and important though this is), except to the extent that it could reshape the wider economy and society. Nor do I focus on the benefits brought by the collapse in the costs of generating and distributing information itself. I focus below on seven wider challenges.

First, what are the implications of the remarkable US dominance? Thus, while five of the 10 most valuable US companies are technology companies, not one of the most valuable European companies is. Indeed, the most valuable European company is Royal Dutch Shell. Yet Exxon, its more highly valued US counterpart, is only the eighth most valuable US company.

The optimistic view might be that what matters is the ability to take advantage of what US or Chinese technology groups create. The pessimistic view is that if one's economy is not in the technology game, it is not in the economic games of the future at all. I suspect that the latter view may be correct.

Second, what are the economics of these extraordinary valuations? The answer must be monopoly. As of September 30, the book value of [Apple's equity was \\$134bn](#), while its market valuation was close to \$900bn. The difference has to reflect the expectation of enduring "super-normal" profits. This may not be the product of malign behaviour, but of innovation and economies of scale and scope, including the network externalities that lock in customers. Yet only monopoly could deliver such super-normal profits.

Third, how should we think about competition policy for businesses that benefit from such powerful monopoly positions? A question is whether these positions are temporary — as the great Austrian economist, Joseph Schumpeter, with his idea of "creative destruction", would argue — or lasting. This suggests a host of responses, but one at least seems straightforward. Schumpeter would argue that new entries are a necessary condition for eroding such temporary monopolies. If so, the technology giants should be strongly deterred from buying up their potential competitors. That must be anti-competitive.

Fourth, what might be the macroeconomic impact of such companies? Apple's accounts are, again, fascinating. Apple's total assets were \$375bn on September 30, but with fixed assets a mere \$34bn. The value of Apple's long-term investments was almost six times that of its fixed assets. Its net income in the year to September 30 was also more than 40 per cent higher than its total fixed assets. This company evidently has no profitable way to invest its huge profits in its business. It is now an investment fund attached to an innovation machine and so a black hole for aggregate demand. The idea that a lower corporate tax rate would raise investment in such

businesses is ludicrous.

Fifth, how should such a business be taxed? One aspect of the answer to this question is that a well-designed corporate tax would fall on monopoly rent. A way to do this would be via expensing of investment, together with a higher, not lower, corporation tax than at present. Another and equally important aspect is recognising that territorial taxes are inescapably defective in taxing global technology companies, since the location of their production is so hard to define. The inability to tax technology companies in a way that matches taxation of territorial competitors creates a huge economic distortion.

Sixth, how should we think about the impact of the technology giants on media? Media are not just a business, but a vital element in a free and democratic society. Here Google and Facebook are currently the main players. In 2017, these two businesses are expected to receive [63 per cent of all US digital advertising revenue](#), itself a rising share of the total. Yet these enormously profitable businesses are parasitic on the investments in collecting information made by others. At the limit, they will become highly efficient disseminators of non-information. This links to a further point: they can, as we now know, be used by people of ill will for the deliberate dissemination of dangerous falsehoods. These facts raise huge issues.

Finally, the activities in which the technology industry is now engaged — what Andrew McAfee and Erik Brynjolfsson call “[machine, platform, crowd](#)” — are going to have a huge [impact on our labour markets](#) and, if artificial intelligence continues to advance, on our very place in the world.

What are the implications? They are that our futures are too important to be left to the mercies of the technology industry alone. It has done magical things. Yet nobody elected it master of the universe. Policymakers must get an intellectual grip on what is happening. The time to begin such an effort is now.

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