

Falling out of love with market myths

When it comes to buying into economic theories to suit their own interests, technology entrepreneurs are as bad as the bankers we demonise, says **Terence Kealey**

MY STORY starts with a theory that Ronald Reagan and Margaret Thatcher sold us. It is called “supply-side economics”, and it claims that economic growth depends, first, on the rich (not the poor) being rewarded with tax cuts; and second, on markets being freed from regulation.

Clearly the theory is flawed. The rush by bankers to pay themselves large bonuses, even as their failing banks were being nationalised, reveals the true function of this bloated remuneration – to benefit only its recipients – while the banks failed precisely because their regulation was too lax.

Supply-side economics was buttressed by two further theories: “rational expectations” and “efficient markets”. As their names imply, these assume that traders do not make systematic errors when predicting the future, and that the prices of financial products such as shares, bonds and property accurately reflect all relevant information.

Yet traders do make systematic errors of prediction, and the prices of financial products can actually reflect misinformation. The real function of these economic theories was manifestly to help the rich justify the methods by which they grew even richer.

This is not the only false theory around. While bankers were busy promoting models of market success, research-based enterprises were equally hard at work promoting their

own false model of “market failure” to justify government subsidies for their endeavours. They are, in my book, as culpable as the bankers. Let me explain why.

We scientists tend to find economics hard to penetrate because economists work in an unexpected way. In science, facts tend to be collected and a theory constructed to explain them. Of course, hunches can sometimes drive science, but the wildness of our hunches is as nothing compared to the wildness of the economists’.

As Nobel laureate Milton Friedman wrote in 1953 in his *Essays in Positive Economics*, theories can be based on any assumptions, however bizarre. As Reagan noted, “an economist is someone who, on being shown something that works in practice, wonders if it would work in theory”.

The economists’ most bizarre theory is that of “perfect markets”. It is also their most important theory: the authoritative *New Palgrave Dictionary of Economics* states that “no set of ideas is so widely and successfully used by economists as is the logic of perfectly competitive markets”.

But perfect markets are bizarre indeed because they postulate an infinity of producers who produce an infinity of objects for sale. An infinity – not just a trillion trillion trillion (all on your doorstep, by the way) but even more than that. There is also an infinity of consumers. Oh, and all those producers and consumers are supposed to know everything.

The economists invented the “perfect market” because they could not explain how, in the real world, the prices of goods and services are determined. So they created a mathematical model (all economics today is densely mathematical) by which prices could be determined in the abstract. Unfortunately it comes up with some bizarre predictions.

PROFILE

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They sold us a myth and we believed it, so let's not make the same mistake again

Consider profits. In a perfect market profits cannot exist because every producer is challenged by an infinity of competitors who drive everything down to cost price. Yet real markets are driven by profits. And consider research. That, too, cannot exist in a perfect market because a producer who develops an innovation will be undercut by his or her competitors who, magically, know everything about the innovation. Because these competitors don't have to bear the new product's R&D costs, they can charge less than the innovator and drive them out of business.

Because of this, the economists claim that knowledge and science suffer from market failure: no private company will pay for research when its benefits go to others. From this it follows that science is a public good because only governments will fund it.

Yet in the real world, successful companies – think Microsoft and GlaxoSmithKline – invest billions in R&D every year. It was to address this that in 1990 Paul Romer, then an economist at the University of Chicago, published in the *Journal of Political Economy* a theory he called, for obscure technical reasons, post-neoclassical endogenous growth theory. Romer's theory acknowledges the existence of R&D, and he modelled mathematically the activity of entrepreneurs when they do R&D to create profitable innovations.

Unfortunately, however, Romer did not discard all notions of "perfect markets" and their implication that the spread of knowledge spells commercial disaster for an innovator burdened with the cost of research, so he argued that only government could fund R&D properly.

In fact, the evidence shows otherwise. In 2003, the Organisation for Economic Co-operation and Development published *The Sources of Economic Growth in OECD Countries*, reporting on a comprehensive regression analysis of the factors that might explain the different growth rates of the world's 21 leading economies between 1971 and 1998. This indicated that only privately funded R&D led to economic growth, and that publicly funded R&D did not. Worse, the public funding of R&D crowded out private funding, and thus slowed economic growth.

This is because, as scholars such as the late Edwin Mansfield of the University of Pennsylvania tried to show, the assumptions of the "perfect market" are false when it comes to the spread of knowledge about innovations.

The copying of innovations is actually very expensive because it requires the acquisition of the relevant tacit knowledge – the sort of knowledge that cannot be transferred as a neat unit. The direct costs of copying an innovation are, on average, some two-thirds of the cost of creating it from scratch. Add to that the cost to the copying companies of employing their own scientists and their own infrastructure, and the average costs of copying a new product match those creating it originally.

In research, new knowledge spreads. Researchers read papers and patents, talk at conferences, and analyse their competitors' products. But this spreading of knowledge is actually a sharing of knowledge, and on average the amount of knowledge a company or scientist disseminates freely is balanced by the knowledge it or they import freely. Indeed, scientists – even from competing companies – meet at conferences and other venues to exchange ideas for mutual advantage. This is why sociologists say science is organised in "invisible colleges". The idea of market failure in knowledge and science is therefore wrong –

"Public funding of R&D crowded out private funds, slowing economic growth"

though it persists universally in research-based enterprises. Just recall the numerous appeals by British multimillionaire biotech entrepreneur Christopher Evans for government cash for start-ups.

Unfortunately, entrepreneurs today love the theory of market failure. Once, like Bill Gates, they rejoiced in the free market, but today, banker-like, they want to nationalise the costs of their R&D but to privatise their profits. Indeed, when I ran a biotechnology start-up in the 1990s, I too claimed every government grant going, even though I secretly knew that there is no market failure.

But because the idea prevails, scientists lose out: as the OECD showed, government funding of research crowds out more money than it supplies, thus driving down research budgets, researchers' salaries and the self-worth of researchers.

False theories are often beguiling (markets look, at first sight, efficient; science looks, at first sight, like a public good) but while false economic theories are soon exposed by the crunches in the market, the tragedy of false economic theories in science is that they can be more easily disguised because their failings are more insidious. ■