DO WE HAVE TOO MANY ENTREPRENEURS?

Beware the downside of innovation

Matthew Ryan

ECONOMIC growth is fuelled by successful entrepreneurs. Nevertheless, since failure is an unavoidable part of the enterprise economy, successful entrepreneurs must be resilient in the face of set-backs. The downside of this resilience is that entrepreneurs are likely to stay too long with failing enterprises. Moreover, business failure can have long-term detrimental effects on workers who are made redundant, including reduced employment prospects, lower income and poor health.

▶ Encouraging 'over-confident' entrepreneurs may do more harm than good.

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ANDREW CALDWELL (ALL PHOTO-COMPOSITIONS)

In 1986, American academic Richard Roll proposed his famous 'hubris' theory of corporate takeovers to explain the fact that more than 50 per cent of corporate mergers fail.

HE argued that, despite the evidence, most chief executives believed their own abilities would protect their mergers from the problems that beset others. More often than not, said Roll, they were wrong. His academic paper marked the start of an explosion of research into the effects of psychological biases on the functioning—and dysfunctioning—of the modern economy.

Entrepreneurs are known to be particularly susceptible to decision-making biases such as optimism and over-confidence (*see sidebar*), and New Zealand entrepreneurs are no exception. Research by World Bank economist Rocco Huang suggests that our entrepreneurs are fuelled by relatively high levels of optimism. Huang used the results of psychological testing conducted in 35 countries to construct an international optimism league table. New Zealand ranked 10th out of 35—ahead of Australia. More interestingly, Huang demonstrated that optimism drives innovation: more optimistic countries exhibit higher levels of entrepreneurial activity. Ranked according to their willingness to launch new businesses with uncertain prospects, New Zealanders again made the top 10 of Huang's sample.

To the extent that optimism supports innovation, creativity and enterprise, it is no bad thing. Indeed, a recent report by New Zealand Trade and Enterprise concluded that the country's "manufacturing and service sector firms adopt innovations at above the OECD average [rate], and produce an abundance of novel ideas".

Up...and Down

"Increasing the rate of new firm formation is correlated with a decline in a country's economic growth"

There is a strong tendency for the media and policy-makers to focus on these positive aspects of our entrepreneurial spirit, and to advocate policies that encourage entrepreneurship. If more entrepreneurs means more innovation, then more entrepreneurs must be better—or so the argument goes. In its briefing to the incoming Government in 2008, for example, Treasury highlighted New Zealand's low level of labour productivity as a major economic concern and suggested that "entrepreneurship, innovation and technological change" were essential to improving productivity growth.

However, I would argue that we also need to look at the downside of entrepreneurial activity, and to ask whether New Zealand has too many entrepreneurs. By international standards, New Zealand already has a very high level of start-up activity. *The Global Entrepreneurship Monitor* ranks New Zealand sixth out of 36 countries for "total entrepreneurial activity" (percentage of the adult population starting a new venture or owning a business less than 42-months old). We are one of only three OECD countries to have experienced an upward trend in self-employment rates over the last half of the 20th century. Moreover, the World Bank's *Ease of Doing Business Survey* ranks New Zealand first for ease of starting a new business and second for ease of doing business. The data speak very clearly: there are relatively few barriers to starting a new business in New Zealand and no shortage of people willing to take up the challenge.

The contribution of entrepreneurs to economic growth and productivity is ambiguous. The key facts are summarised in Scott Shane's excellent book, *The Illusions of Entrepreneurship*. Older firms tend to be more productive than newer ones, so "increasing the rate of new firm formation is correlated with a decline in a country's economic growth".

Productivity is not enhanced by entrepreneurship *per se*. It is enhanced by the small fraction of successful and highly innovative start-ups. Shane estimates that the entrepreneurial contribution to United States growth comes predominantly from the 0.05 per cent of start-ups that are financed by venture capitalists. The bulk of entrepreneurial activity merely diverts resources from more to less productive uses.

Pollyanna capitalism?

"The chance of gain is by every man more or less over-valued, and the chance of loss is by most men under-valued, and scarce by any man, who is in tolerable health and spirits, valued more than it is worth." (Adam Smith)

OPTIMISM, or over-confidence, has been extensively studied by psychologists and is known to be expressed most strongly in situations where people perceive themselves (rightly or wrongly) to be in control. Psychologists have also shown that optimists are susceptible to the so-called *Pollyanna Principle*: the less reliable the information on which a decision is based, the more optimistic they are of a favourable outcome. Optimists like being in control and are attracted to uncertainty, so it is unsurprising that they should be over-represented amongst entrepreneurs.

Indeed, numerous studies attest to the high levels of over-confidence and optimism amongst entrepreneurs. Data from the *British Household Panel Survey* revealed that almost five times as many self-employed people overestimated their financial position in the subsequent year as underestimated it. The study showed that employees were almost three times more likely to overestimate, than to underestimate, their financial position over the same time period. Optimism, it would seem, is ubiquitous, but is especially pronounced amongst the self-employed.

In a survey of New Zealand business founders by John Pinfold of Massey University, the average respondent reported a 75 per cent chance of still being in business in five years' time, but assessed that a "similar venture" had only a 50 per cent chance of surviving five years. (Data from the Ministry of Economic Development show that the typical five-year survival rate for a new firm is between 40 per cent and 60 per cent). Almost all entrepreneurs regard themselves as "better than average".

Not only are optimists more likely to start a new venture, they are also more likely to bounce back from failure. Entrepreneurs are subject to a psychological bias known as "escalation of commitment" which makes them prone to throw good money after bad, even when evidence counsels otherwise. While some studies show that business failure dents over-confidence, an over-confident entrepreneur is still more likely to start a new venture following a failure. Over-confidence is especially rampant amongst serial entrepreneurs.

Over-confident entrepreneurs are also more likely to fail. A 2007 study by European economists Philipp Koellinger, Maria Minniti and Christian Schade found a significant negative correlation between entrepreneurial confidence and the probability of firm survival. This result provides a sobering counterpoint to Huang: optimism drives failure as much as it drives innovation.

The Costs of Failure

ENTREPRENEURSHIP is a process of trial and error, so failures are inevitable. Failure can even be a valuable learning experience. But failed ventures also impose significant economic costs, not all of which are borne by the unfortunate entrepreneur.

An important social cost of business failure—and one that has been largely neglected in the business literature—is human capital scarring. This is the loss in productivity that results from workers being displaced from employment. Traditionally, economists have supposed that labour should be mobile so it can seek its most productive use. But we now know that moving workers from one firm to another is not a frictionless process: human capital is eroded along the way, and to a surprising degree.

According to a Statistics New Zealand study, workers displaced by firm closures between 2001 and 2004 earned 22 per cent less income one year later (relative to comparable workers who were not displaced) and 16 per cent less after four years. The displaced workers were also 12 per cent less likely to be employed four years later. In other words, losing your job, even through no fault of your own, casts a long shadow over your labour market prospects.

It can even damage your health. A remarkable study by US economists Daniel Sullivan and Till von Wachter found that workers who lose their jobs from firm closures have, on average, a 15-20 per cent increase in mortality rate over the subsequent 20 years. For a 40 year old male, this amounts to an 18-month reduction in life expectancy.

The leading explanation for this sustained deterioration in labour market outcomes is that displaced workers lose what economists call "firm-specific skills"—human capital acquired through experience working within the same organisation. Workers with long tenure in their current positions suffer most from displacement. Analysis of US data suggests that workers with at least six years tenure experience a 25 per cent reduction in income even six years after displacement, relative to their non-displaced counterparts. The Statistics New Zealand study estimated that workers who lost their jobs due to restructuring, and who were re-deployed within the same organisation, suffered much less deterioration in long-term earnings and employment prospects than workers who were displaced by a firm closure.

Of course, we all know it takes time for a new worker to become fully productive, but the magnitude and persistence of productivity losses from displaced workers are not well appreciated. Some startling figures were revealed in research by economist Tom Krebs from the University of Mannheim. He conducted a numerical simulation to determine the effects of human capital scarring during recessions on the US economy. To do so, he calculated the productivity improvement that would be obtained by removing the cycles around mean GDP. Assuming that cycles cause 4 per cent of workers to be displaced in an average year (over the long run), Krebs calculated that eliminating cycles would be equivalent to raising per capita GDP by between 0.5 per cent and 4 per cent in perpetuity. Just to be clear, that is a 0.5-4 per cent increase in the income of everyone in the United States, just from preventing the annual displacement of only 4 per cent of the working population.

Business failures that result in displaced workers are detrimental to productivity. Since over-confidence contributes to the high failure rates amongst new businesses, over-confident entrepreneurs are a luxury we cannot afford to create to excess.

Limiting the Damage

THE foregoing analysis raises two important policy questions.

First, are there too many entrepreneurs, rather than too few? I do not have an answer to the question, but it is important to observe that New Zealand already has a high level of labour market turnover (or "churn", as labour economists prefer to call it). A 2004 study by the US-based, New Zealand economist John McMillan found that "New Zealand's job creation and destruction is somewhat more rapid than in the United States and considerably more rapid than in Europe", and that most of the country's job destruction is concentrated amongst firms with 1-5 employees. New firms are much more likely to shed labour than older, more established firms. Given our high rates of entrepreneurship and worker displacement, we need to think carefully about the productivity costs of human capital scarring.

We should be cautious about policies that aim to increase the general level of start-up activity. Not only will few of these enterprises be growth-enhancing, but most will fail. Many more would fail if not for the life-support provided by the 'sweat equity' of tenacious entrepreneurs, who typically earn far less than if they had remained in the paid workforce—around 35 per cent less after 10 years in business according to US data cited by Shane.

Second, how do we design innovation policies that guard against the worst excesses of over-confidence—policies that select for *successful* entrepreneurs?

Consider programmes that promote an enterprise culture and the turning of ideas into businesses. To the extent that these encourage the not-so-confident into entrepreneurship, or educate budding entrepreneurs on how to employ more rational decision-making, they serve a useful purpose. Similarly, mentoring programmes that provide new

business owners with a more objective perspective on their businesses are especially valuable in the context of over-optimistic entrepreneurs.

But programmes that give further encouragement to the already over-confident, and especially programmes targeted at young entrepreneurs with little experience, may be counter-productive. Data from Shane are again instructive. The typical profile of a successful US entrepreneur is a person between 45 and 55, with a University degree—often at postgraduate level, and several years' experience working in the same industry as his (they are also usually male!) new firm.

Of course, selecting for success is a tricky, though not impossible, exercise – venture capitalists seem to do it quite well. As Shane argues, the first step is to understand the profile of the successful entrepreneur and to know which sectors have the highest success rates for new start-ups. The latter, of course, is country-specific, so careful research on the experience of New Zealand entrepreneurs is needed.

We should also be wary of programmes that lower barriers to entry. Respected British economist David de Meza has written (with various co-authors) a series of influential papers on policies to combat the social costs of over-optimistic entrepreneurs. He advocates that government schemes which subsidise new start-ups be abolished, and proposes that loans to new businesses be taxed.

Clearly, these are controversial suggestions. Business people and researchers typically argue that a 'finance gap' hinders new start-ups, and that policies should improve access to finance, not impede it. However, not all credit rationing indicates a market failure. Conservative lenders may correctly perceive that an entrepreneur has unrealistic expectations. Denying finance —or imposing high collateral requirements—is precisely the sort of screening that well-functioning credit and capital markets are expected to perform.

De Meza's data from the UK and US show that credit markets perform it quite well. The businesses for which lenders require higher levels of collateral—and hence the ones for which they perceive the highest risk—do indeed fail with greater regularity. Markets raise the finance hurdle for over-confident entrepreneurs, for which society should be grateful.

But they do not, according to de Meza, raise it high enough. Markets do not eliminate all of the economic risks of over-confidence. High collateral requirements, for example, protect lenders' interests against over-optimistic borrowers, but they do not protect the economy from the productivity costs of failed ventures. De Meza concludes that there is 'over-lending' to entrepreneurs —the marginal entrepreneur adds more economic cost than economic benefit. By de Meza's logic, having fewer entrepreneurs would give the economy a more efficient engine for driving innovation.

This is a radical inversion of conventional wisdom – the finance 'gap' has become a finance 'glut'. While it would be premature to advocate de Meza's policy prescription for New Zealand, the ideas behind it should be incorporated into our thinking about innovation policy.

Treasury's own analysis suggests that a lack of managerial talent is much more significant in explaining New Zealand's poor productivity than deficiencies in our enterprise culture. Encouraging more entrepreneurship may not be the best way to address our slow-growing small and medium enterprises (SMEs), and the risks of 'excessive' entrepreneurship are very real.

It is common, when observing someone tackle a risky endeavour, to remark that the person must be "either brave or foolish". Successful innovation policy should not only support our courageous entrepreneurs; it should also protect us from foolhardy adventurers. ■

Associate Professor **Matthew Ryan** is Deputy Head of the Department of Economics at the University of Auckland Business School. Professor Ryan has a PhD from Yale University. His research interests include decision science and the analysis of risk.

m.ryan@auckland.ac.nz

KEY TAKE-OUTS

- **New Zealand already has a high rate of entrepreneurial activity, and the nexus between the general level of entrepreneurship and improved productivity is tenuous at best.**
- **Entrepreneurs have a tendency to over-confidence (the over-confident are attracted to entrepreneurship), which contributes to the high failure rates for new businesses.**
- **Workers displaced by business failures suffer long-term reductions in health, wealth and well-being.**
- **Innovation policy must balance the costs of inefficient resource allocation—including lost productivity from "human capital scarring"—against the benefits of innovation.**