

Born in bad times: Economic conditions, selection and employment

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Recessions can have long-term impacts on the economy. Firm entry rates decline during a recession, depressing future job creation. Firms which do enter may be permanently different from those born in more affluent times.

Born in bad times: Economic conditions, selection and employment by Lynda Sanderson explores the outcomes of firms started during difficult economic circumstances in a New Zealand context and examines the role of selection in explaining these facts. Using administrative data, it examines how patterns of entry, exit, firm growth, and selection differ for cohorts of firms born before, during, and after the Global Financial Crisis (GFC) of the late 2000s. It focuses on the role of entering firms for employment, and the impacts of the recession for the birth and growth of new firms.

Why this topic

Start-ups play an important role in productivity and economic growth across the economy. While they have a limited impact on current employment, they are an important source of longer-term growth and have also been shown to provide opportunities for younger and less skilled workers, who tend to fare worse during economic downturns.

By examining the outcomes of firms which enter during hard times, and the differences between those firms and others which enter in more stable economic conditions, we can better understand the impacts of aggregate fluctuations on firm success. This may identify opportunities for New Zealand to consider how policy and industry settings can better support economic performance both in hard times and in times of prosperity.

Firm entry and economic conditions

Economic conditions can affect the incentives for businesses to enter in multiple ways. In most cases, entrepreneurs must make an initial investment to establish their business – setting up their business premises; hiring and training employees; investing in equipment, technology, and marketing. While some equipment can be on-sold if the business fails, much of this expenditure is irreversible. Potential entrepreneurs' willingness to make such investments therefore depends both on the probability that the firm will succeed and make a profit (relative to their potential alternative employment options) and on the costs of establishing the firm. Poor economic conditions (and low demand in particular) reduce the

potential revenues of the firm, thus lowering the short-term expected profitability. However, lower interest rates and a reduction in alternative employment opportunities can lower the relative cost of establishing a business and attracting skilled employees.

Reduced opportunities to invest and build scale during a firm's early years may lead directly to long-lasting differences in firm performance outcomes. However, there are also likely to be innate differences in the type of businesses that enter in hard times, and in the characteristics of the entrepreneurs that start them. If only entrepreneurs with better ex ante prospects enter in hard times, and only the most successful survive, selection effects can lead recession born firms to outperform others at a similar stage of life. However, if poor economic conditions lead to increased unemployment, some previously employed workers may look to start a business of their own, despite not being well equipped to do so (Fairlie 2013). These conflicting influences make it difficult to predict outcomes for different cohorts of firms.

How do we measure the impact of economic conditions on firm performance?

To explore patterns of employment and output growth across economic cycles, this research brings together a range of administrative and survey data sources from Statistics New Zealand's Longitudinal Business Database (LBD) and Integrated Data Infrastructure (IDI) at the firm- and individual-level, linked through individual and corporate income tax returns. The data used covers the period from April 2000 to March 2022, focusing on new firm cohorts born between 2002 and 2015, which are observed for five years following entry.

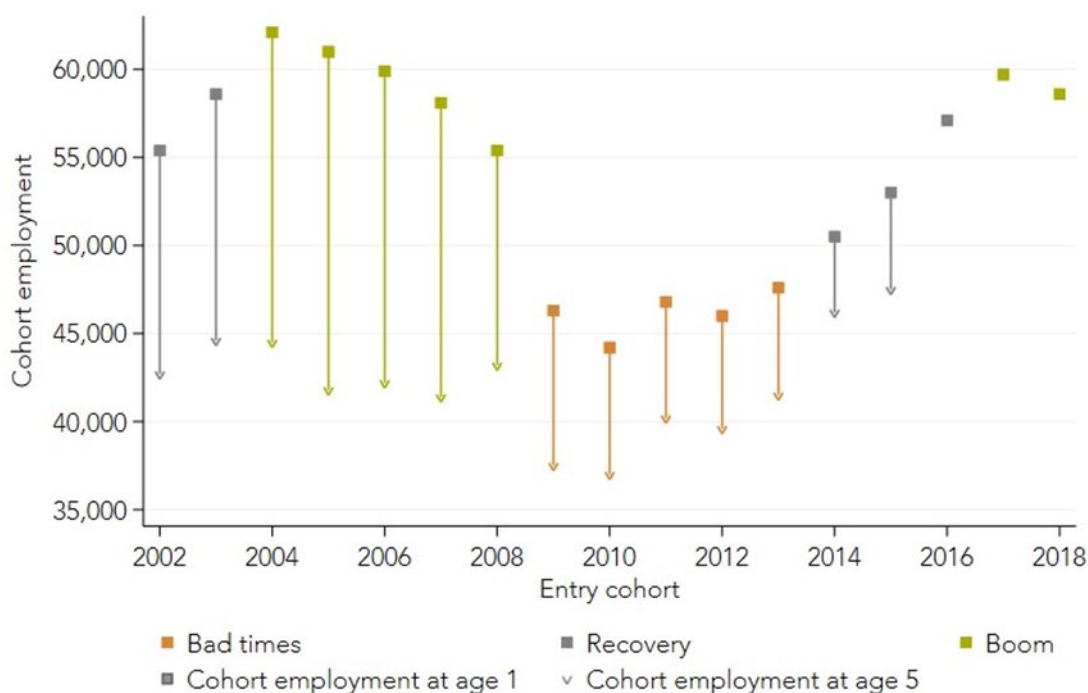
Firm entry and exit are defined based on observed labour input from the Fabling and Maré (2015) labour tables. A firm's year of entry is defined as the first year with observed labour input (employees or working proprietors) following a gap of at least two years with no labour input. Firm size (or "employment") is measured as FTE-adjusted labour input, which includes both employees and working proprietors. Cohort employment is the sum of firm employment for all (surviving) firms born in a particular year.

The paper presents a descriptive account of firm entry and exit, and firm and cohort employment in two decades since 2002, before turning to a more formal analysis of the relationship between entry conditions and firm employment. To distinguish the role of economic conditions at entry from those of contemporaneous conditions and firm aging, the research uses an age-period-cohort (APC) model. Cohort effects are simplified to a set of binary categories, based on the level, and change in detrended GDP. Years in which detrended GDP fell are classed as "bad times", while "good times" are divided into years in which GDP was both rising and above trend ("boom" years) and those in which GDP rose but remained below trend ("recovery" years).

When the economy is running hot and there are easy profits to be made, new firms are incentivised to enter. Periods of economic expansion are expected to draw in firms with relatively lower innate ability to capitalise on the high returns. However, these firms may find it difficult to survive when times get tough. The period leading up to the GFC saw high levels of employment coming from new firms (Figure 1). In their first full year of activity (age 1)

firms born in 2004 employed 62,000 workers – around 18,000 more than the cohort born in 2010. However, over the first five years of life, the gap in cohort employment between firms born in good and bad times narrows dramatically. As entry rates rose in the lead up to the GFC, average firm sizes declined, consistent with an influx of small, low ability entrants. Pre-GFC cohorts saw higher levels of job destruction due to both firm exit and employment decline in surviving firms compared to firms born during and after the recession.

Figure 1: Cohort employment, age 1 and age 5



Note: Entry cohort years refer to the year ending March which coincides most closely with the financial year in which firms entered. For example, the 2008 entry cohort includes firms which entered in the year to March 2008, with employment shown for the years to March 2009 (age 1) and 2013 (age 5).

Economic conditions and average firm size

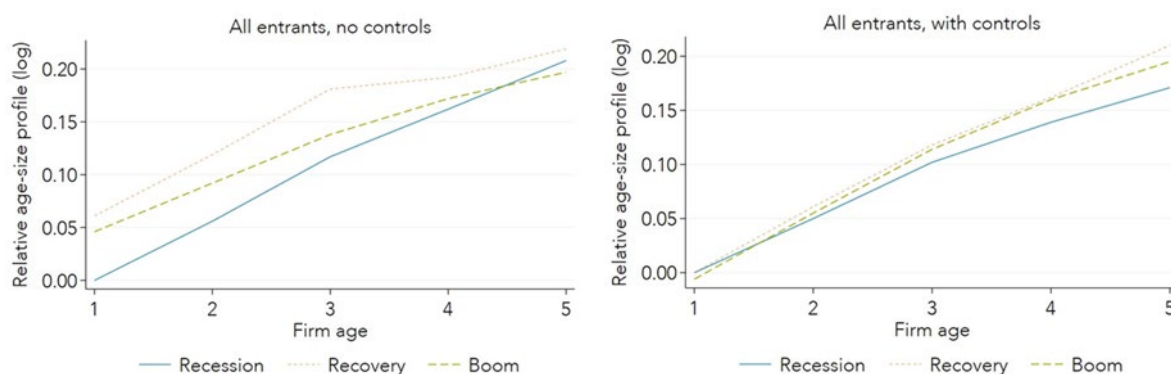
This decline in the average size of new firms continued with the onset of the GFC, mirrored by a fall in average firm size across older firms, which had been growing in the lead-up to the recession. Firms throughout the economy were affected by the economic shock. Untangling the impact of current conditions from conditions at birth requires a more formal analysis.

Looking across firms first five years of life, firms born during bad times are, on average, 3.5% smaller than firms born at other times. However, this average difference includes the wider effects of current economic conditions across all cohorts – firms born during a recession have, by definition, spent one or more years of their life in difficult times, while those born at the start of the 2000s or in the mid-2010s will not. Controlling for age and current conditions reduces the average size gap by around half to 1.6%.

Figure 2 depicts the difference in the level and age profile of firm cohorts, comparing the raw differences with the modelled version which controls for industry and current conditions. Ignoring the effect of current conditions, firms born during difficult economic times start out 5% smaller than the rest, but the gap narrows as other firms also experience hard times. In contrast, after controlling for contemporaneous conditions, the pattern is reversed – firms born in bad times start out a similar size but grow more slowly.

At the firm level, these relatively small percentage differences have negligible impact on employment. The average young firm has only 2.25 workers – a 5% reduction in firm size equates to only 0.1 FTE per firm per year. However, even very small firm-level differences add up to an appreciable number of jobs when spread over an average of 29,000 entrants per year between 2009 and 2013.

Figure 2: Estimated age-size profiles, by economic conditions at time of entry



Note: Relative age-size profiles by economic conditions at time of entry. Firm size defined as log FTE-adjusted labour input. Left panel presents raw size gap. Right panel include controls for current conditions and industry composition.

How important is selection?

Long-term size differences between cohorts may reflect differences in the composition of firms and individuals that enter at different points in the economic cycle. The paper explores whether differences in industry composition, and the characteristics and implied growth orientation of business owners can explain the remaining size gap between cohorts. Including industry controls further reduces the estimated size gap between firms born in good and bad times, consistent with a mild impact of industry composition. In contrast, while employer characteristics and growth orientation (proxied by initial firm type) appear to have a direct relationship with firm size, the inclusion of these controls has very little effect on the overall size gap. That is, business owner characteristics matter, but differences in these

characteristics across the cycle are not sufficient to explain the smaller size of recession-born firms.

What does this mean for the New Zealand economy

Recessions have an observable impact on future employment prospects across the population because of the influence they exert over the dynamics of new firms entering the economy. This research demonstrates that firms born during and immediately after the 2008/09 recession tend to be smaller than their counterparts born in more affluent times.

The main source of this variation is differences in entry rates – firm entry falls during a recession and rises during a boom. However, differences in average firm size also make a substantial contribution, accounting for over half the age 1 employment gap in the 2009 cohort and one third of the gap in the 2010 cohort. These size differences are not just a reflection of current economic conditions. Employment gaps between firms born during the recession, recovery, and boom periods widen as firms age.

While selection in entry and exit, and differences in the composition of new firm cohorts have a role to play these do not fully explain the size gap between cohorts. Nor are these significantly affected by differences in the observable characteristics of the entrepreneurs who start firms at different points of the economic cycle.

Further work is needed to better understand the forces behind these persistent size gaps, distinguishing between the role of early-life finance constraints, demand shocks, and other possible causes. This work could also contrast the impacts of the GFC with those of the COVID-19 shock, which was too recent to be considered in our analysis.

References

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