The Economic Trends, Challenges and Behaviour of Small Businesses in Australia

Sam Nicholls and David Orsmond

1. Abstract

While small businesses play a significant role in the Australian economy, they also face a range of unique challenges. In view of these challenges, this paper draws on information gathered from the Bank’s business liaison to examine whether, and if so how, the economic decisions of smaller firms differ from those of larger firms. The results suggest that the drivers of smaller firms’ current price, employment and investment decisions are generally not statistically different from larger firms, though this may in part reflect the large degree of heterogeneity in the small business sector. There is, however, some evidence that smaller businesses are less forward looking in making their economic decisions.

2. Introduction

Small businesses make an important contribution to the Australian economy. They account for the vast majority of the active private businesses in the country and represent large shares of its employment and value added. However, small businesses face a unique set of operational challenges, and as a consequence typically have higher failure rates than those for larger companies. While these features have been noted previously, there has been little work undertaken in examining how these challenges consequently affect the corporate decisions of small businesses relative to those of larger firms.

To help address this question, this paper brings together data from official sources such as the Australian Bureau of Statistics (ABS) as well as information gathered through the RBA’s business liaison. The paper first provides a summary of the characteristics of the Australian small business sector, the contribution small businesses make to the Australian economy, and the recent economic conditions faced by the sector. It then outlines the nature of the operational challenges the sector faces, drawing in particular on the Bank’s discussions with small businesses in the context of its liaison program. Finally the paper uses panel data compiled by the Bank to examine econometrically whether, and if so how, small business economic decisions and behaviour differ from those of larger firms.

3. Small business contribution to the economy

There are numerous ways of defining small businesses. Definitions that have been used include their legal structure, number of employees, revenue, size of balance sheet and/or other financial and economic characteristics. While previous Bank research (Connolly, et al (2012)) found that different definitions can identify rather distinct groups of firms, in this paper we adopt the ABS definition that defines small businesses as all entities that are independent and privately owned, managed by an
individual or a small number of persons, and have less than 20 employees. This choice mainly reflects the greater availability of data that can be analysed using this definition.

Private firms with fewer than 20 employees are quite heterogeneous, though they can be loosely grouped into three broad categories. One part of the sector provides a range of professional services to other businesses and households such as tradespeople (electricians, plumbers, roofers, landscapers, painters), mechanics and auto sales dealers, skilled professionals (lawyers, accountants, financial planners, consultants), doctors and dentists, other health and exercise practitioners, real estate and insurance agents, information technology providers and tourism-related businesses (bed and breakfast facilities, tour operators). Another part represents various types of retail outlets, including small shopkeepers (grocers, petrol stations, hardware, hairdressers, beauticians, newsagents, jewellers, dry cleaners, small clothing, home and hardware stores) and processed food and drink providers (liquor stores, bars, take outs, restaurants). Finally, there are a number of companies that produce a range of niche and other goods in the manufactured, construction and agricultural sectors. Given this diverse set of activities, the motivations and consequent economic behaviour are likely to be quite different between the different firms classified within the small business sector, as discussed further below.

While there are several ways to assess the contribution of small business, on all the various measures their ‘direct’ contribution to the Australian economy is substantial. Given the diverse range of activities undertaken by the sector, not surprisingly there are a large number of small businesses in the economy. Using data on businesses registered for tax purposes (their ABNs) and which are classified as ‘actively trading’ by the ABS (specifically, they have remitted a GST form in the last three years), there are currently over 2 million small businesses in Australia (Table 1). This is well over 95 per cent of the total number of firms in the economy. Most of these are micro-firms: almost two-thirds had no employees (the ‘self-employed’) and a further one-quarter only had between 1-4 employees. Only around 10 per cent of small business firms have between 4-19 employees.

<table>
<thead>
<tr>
<th>Table 1: Businesses in Australia, by Size, 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of employees</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Small</td>
</tr>
<tr>
<td>Of which:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Medium</td>
</tr>
<tr>
<td>Large</td>
</tr>
</tbody>
</table>

* Private non-financial sector
Source: ABS

Given this large number of firms, small businesses constitute the overwhelming majority of firms in virtually every industry of the Australian economy. For each of the industries listed in Table 2, between 92–99 per cent of the total number of its businesses employed fewer than 20 people. In terms of the total number of small businesses in the economy overall, about one-third are in the business services
industry, and just less than one-fifth in each of the construction, distribution services and household services industries. In contrast, the manufacturing and mining industries contain comparatively small shares of the total number of small businesses. The largest shares of non-employing firms are in the agricultural, business services and construction industries (primarily family-owned farms and self-employed professionals and tradespeople), though almost half of the firms in the manufacturing and household services sectors are also small firms that do not employ any staff.

Table 2: Small Businesses in Australia, by Industry, 2013*

<table>
<thead>
<tr>
<th>Industry</th>
<th>Number of firms</th>
<th>Employment</th>
<th>Value add</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Per cent of</td>
<td>Include</td>
<td>Exc. non-</td>
</tr>
<tr>
<td></td>
<td>small businesses</td>
<td>non-employing</td>
<td>non-employing</td>
</tr>
<tr>
<td></td>
<td>'000</td>
<td>firms</td>
<td>firms</td>
</tr>
<tr>
<td>Agriculture, Forestry and Fishing</td>
<td>183</td>
<td>99</td>
<td>83</td>
</tr>
<tr>
<td>Mining</td>
<td>7</td>
<td>92</td>
<td>13</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>77</td>
<td>92</td>
<td>50</td>
</tr>
<tr>
<td>Construction</td>
<td>324</td>
<td>99</td>
<td>60</td>
</tr>
<tr>
<td>Distribution services</td>
<td>319</td>
<td>96</td>
<td>44</td>
</tr>
<tr>
<td>Business services</td>
<td>545</td>
<td>98</td>
<td>31</td>
</tr>
<tr>
<td>Household services</td>
<td>314</td>
<td>96</td>
<td>51</td>
</tr>
</tbody>
</table>

* Private non-financial sector
Source: ABS

Small businesses account for a large share of national employment, at around 43 per cent of the private non-financial sector (Graph 1). Over recent years, the share of national employment in small businesses has tended to decline, only partly offset by a rise in the share of employment in medium-sized companies (20-200 employees). The share of total employment in each industry that represents small business varies considerably. Small business firms are by far the major employer in the agricultural and construction industries (83 per cent and 60 per cent), represent around one-third of total employment in the manufacturing, distribution, and household and business services industries, but are much less prominent in mining sector employment.

Graph 1
Small and Medium Sized Businesses Shares of National Employment

* Private non-financial sector
Source: ABS
The share of small businesses in private non-financial output – at around 33 per cent – is smaller than its employment share, and has also been declining (Graph 2). This result suggests that on average small businesses are concentrated in more labour-intensive, service-based activities compared with those of larger firms. Specifically, while their contribution to value added in the agricultural industry is large (82 per cent), it is only around 10-20 per cent in the mining and manufacturing industries.

Another way of measuring the contribution of small business to the Australian economy is through their role in providing goods and services in regional areas, where due to low potential for economies of scale it is less feasible for large businesses to do so. For example, a large supermarket is less likely to open in a small town, and small businesses fill the void to the benefit of local consumers. Across each state in Australia, small businesses tend to be more likely to be located in regional areas compared to larger businesses, especially in New South Wales, Victoria and Western Australia (Graph 3). On average, around 35 per cent of the total number of small businesses in each state is located in the regional areas of the state, compared with about 20 per cent for large firms.

The small business sector also makes a significant ‘indirect’ contribution to the economy that is not reflected in the data on small business’ shares of national employment and output aggregates. One of these indirect contributions is through the provision of innovation. According to the ABS, overall a
smaller share of small businesses are engaged in innovative activity compared with larger firms (40 per cent relative to 64 percent in 2012/13), and small businesses represent only a small share of national research and development expenditure (13 per cent in 2011/12). However, over 85 per cent of the firms in Australia that are engaging in innovative activity are small businesses, reflecting the large number of such firms in the economy overall. This represents a large number of entrepreneurial innovation activities and as such the small business sector can be an important source of productivity advances and bringing new products to market.

Nonetheless, many small businesses such as the self-employed are focused on providing an existing service to an existing market, and do not intend to be a significant source of innovation or to expand significantly. Indeed, firms with 1-4 employees are more likely to expand employment over the coming year than the very large number of firms with zero employees (Graph 4, top panel). This dichotomy highlights an important aspect of the small business sector. Research in the United States suggests that many small business owners are motivated by a life-style choice, where the establishment of the firm is driven by aspects such as a desire be one’s own boss, have more control over the hours of work and/or engage in a passion and hobby. For many of these types of businesses, the firm is almost indistinguishable from the owner’s household (such as a bed and breakfast accommodation facility or a corner store). However, within the broad small business sector these types of firms coexist alongside owners of other firms that are willing to undertake risks in order to grow rapidly and expand the company’s size, adding to the diversity of the sector.

Nonetheless, whatever the motivation of their owners, the survival rate of firms in the small business sector is much lower than that for larger companies. More small businesses have downsized than upsized in recent years, and the exit rate of firms generally exceeds that of the entry rate (Graph 4, bottom panel). Over the past four years, only around 60-70 per cent of micro firms (those with zero or 1-4 employees) are still operating, and less than half of the firms that were established in 2009/10 are still operating (Graph 5). In contrast, the survival rate of the established companies that have 5-

---

3 The ABS defines innovation as the introduction of a new or significantly improved good or service, operational process, organisational and managerial process, or marketing method.

4 For further discussion, see Pugsley and Hurst (2011); for Australia, see also Craig, Schaper and Dibrell (2007).
19 employees is higher and fairly close to that for firms with 20-199 employees, although new companies of all sizes up to 200 employees have a much lower survival rate than firms that employ more than 200 people.

Graph 5

While business exits may reflect the sale or merger of a business, or the retirement of an owner, many are the consequence of business failures. These failures can reflect cyclical reasons – especially during the post-GFC period – or a range of structural constraints that are faced by small businesses. These issues are explored further below.

4. Recent conditions in the small business sector

After experiencing a supportive environment in the pre-financial crisis years, economic conditions for the small business sector have since that time been quite challenging. While to some extent this is true for firms of all sizes, comparison of the NAB survey of large companies with that of the Sensis survey of small businesses suggests that conditions as reported by small businesses have been noticeably weaker than for larger companies since the onset of the global financial crisis in 2008-09 (Graphs 6 and 7). In particular, both current and expected business conditions for the small business sector have remained around one standard deviation below their long-run average, and there has been little sign of recovery on average in these surveys. This is in contrast to larger companies, which report that overall current and expected conditions have almost returned to their long-run average.

5 A number of other surveys of large and small firms exist. Both the NAB and Sensis surveys benefit from having a long history, which is important when making comparisons of current economic conditions relative to the long run average (for instance, the NAB small business survey only starts in 2006).
This ongoing weakness is reflected across a range of economic indicators for the small business sector. In particular, faced with a sub-trend demand environment, selling prices have come under significant pressure, with consequent weak profit levels in the sector overall (Graphs 8 and 9). Small businesses have responded by scaling back their hiring activities and the level of their capital spending (Graphs 10 and 11).
The economic weakness experienced by the small business sector compared with larger companies over recent years reflects a range of factors. Part is due to the different industry composition of the small business sector compared with larger companies. As noted, small businesses are most pronounced in the agricultural and small construction sectors, while larger companies are more common in the mining sectors where, at least until recently, economic conditions have been more buoyant. Furthermore, the ongoing weak global demand conditions have led to an increase in the global competitive environment, which has compounded a range of issues faced by small firms in particular, as outlined below.

Nonetheless, there is some tentative evidence that the economic environment for smaller business in some industries may have strengthened a little of late. Compared with two years ago, conditions for SMEs in the wholesale and, to a lesser extent, retail industry have picked up along with the rise in national household consumption. Conditions in the construction industry have also improved, likely due to the strong growth in dwelling investment (Graph 12). In contrast, manufacturers have reported weaker conditions over the past several years, in part reflecting the strong Australian dollar; this could ease if the depreciation of the exchange rate over the past 18 months is sustained.
5. Main economic and operational constraints faced by small businesses

To explore further the factors behind the historically high failure rates faced by small businesses we draw on the Bank’s business liaison. In the Bank’s discussions with companies, a number of constraints are noted that are common to companies of all sizes, such as generally weak economic conditions, the low level of confidence, low risk tolerance threshold, and relatively high Australian dollar. Nonetheless, small businesses are reportedly often less resilient than larger companies to economy-wide shocks regardless of their source, and appear to face a range of structural challenges specific to small businesses that add to their vulnerabilities. The issues raised by small companies in Bank liaison include the following themes.

Demand fluctuations

Small companies appear to be much more susceptible to cyclical fluctuations in demand for their output and as a consequence experience much greater swings in revenue growth than larger firms. This is reflected in a wider distribution of revenue growth rates for small firms (Graph 13). While this in part reflects the higher risk-return nature of the new activities undertaken by some small businesses, it is also likely to be indicative of the relatively narrow geographic markets in which many small businesses operate and hence their sensitivity to local demand conditions.

Graph 13
Annual Revenue Growth*
Share of businesses by size

In the Bank’s liaison, small businesses also note that the trend reduction in global transport costs and advances in communications technology has intensified competition on the Australian market from foreign producers. While in principle small companies can take advantage of the same technologies to broaden their outreach into other domestic and global markets, this requires building knowledge of such markets and securing access to finance to do so, which has a high fixed cost for small businesses.

Economies of scale and high fixed costs

Many small businesses find it challenging to compete for demand against larger companies since they generally cannot take advantage of economies of scale to lower their average costs. These include the costs associated with understanding the complexity and ensuring compliance with changing labour, tax and other regulations and reporting requirements that can imply a significant time commitment for
small businesses. It also includes the search and training costs associated with new labour, especially for key personnel.

Related to this, small businesses generally constitute a small share of the broader market in which they operate. As such, they can be subject to less favourable pricing arrangements from suppliers, which in turn inhibit their ability to compete with larger rivals. In terms of the prices of their output, while in some cases small businesses can maintain profit margins by offering a product or experience that is differentiated in some way, other small businesses offer products that are broadly similar to those available from their larger competitors and hence are normally required to operate on thinner margins.

Managerial issues

As small businesses grow, their owner-managers often try to stretch their skills over several new areas, and can struggle to deal with the expanding complexity of operating a growing firm. Many owners are not experienced in complying with regulations, managing cash flow, or evaluating capital investments rigorously. For instance, some small business owners do not have or utilise a well-developed business plan (writing such plans only when they need a loan) and seek to win contracts for new business even if the price they bid implies a very thin margin or a loss. Consultants in the small business sector report that owner-managers can be reluctant to improve their company’s performance by hiring a professional manager in a timely manner, to free up the owner’s time to return to their original trade and expertise. Indeed, of the small business failures that fall into corporate administration, managerial issues are the most commonly cited cause by the external administrators, though weak economic conditions, inadequate cash flow and low capital are also common causes of failure (Graph 14). Such instances leave firms vulnerable when demand softens and financing conditions tighten.

Financing relationships

The impediments faced by small businesses also include cash constraints and the cost and access to finance, both for working capital and for investment expansions. Within a company, payment delays by
its customers therefore add disproportionately to financial pressures. Other financial issues raised by small businesses in the Bank’s liaison include the continuity of personnel at banks to develop an understanding of the firm and its products and the common requirement that loans be secured by the owner’s property. However, the vulnerabilities of small business operations as outlined above also imply a comparatively higher degree of lending risk.

6. An econometric analysis of the drivers of small business behaviour

Given the challenges to the ability and resilience of small businesses to handle changing demand and operational conditions, and the associated high failure rate of small businesses, it might be expected that the drivers of economic and strategic decisions of small business behaviour would vary from those of larger companies. For instance, in determining current and future pricing, employment and investment decisions, small businesses may be more sensitive to the strength of current demand conditions than larger businesses in view of the lower resilience to shocks that is typical among small business. To explore this issue, we use some data for large and small companies collected by the Bank in the context of its business liaison program.

The data

The Reserve Bank’s business liaison program is focused primarily on obtaining qualitative information from contacts, though attempts are also made to quantify some of the information received. These data cover a range of variables that have been recorded at the individual firm level. The variables reflect the magnitude of either growth or the level of certain variables relative to the firm’s historical average, both their current level and what is expected to occur over the next year. For instance, the variables where the pace of growth is assessed include demand, employment, wages and other costs; the variables where levels are assessed include capacity utilisation, investment spending and margins.

The verbal descriptions of current and expected conditions provided by companies are quantified by an RBA officer. These scores take a value between -5 and +5, with higher values corresponding to stronger growth or a higher level of a particular variable relative to the firm’s own historical average (termed a likert scale). To provide a common standard, for scales that measure growth in variables, a score of 2 is interpreted as an average rate of growth for the firm and zero for no growth; for scales that measure levels, a score of 0 is interpreted as the firm’s average.

The data contain information on developments over the past year and firms’ expectations for the coming year. In practice the information incorporated may not be based on a precise one-year period. Firms may provide information based on their most recent reporting cycle, such as the financial or calendar year. The forward-looking data may also be affected by biases related to reporting periods or myopia. Overall, however, we do not believe that our results outlined below are substantially affected by these factors.

The composition reflects the frequency with which businesses in different industries are contacted by the Bank. In general, the focus of the Bank’s discussions with businesses is on the more cyclically sensitive areas of the economy, and a greater share of the discussions is with larger firms where conditions are likely to reflect broader economic trends, rather than idiosyncratic factors. Furthermore, firms are normally contacted once they have a noticeable presence in their market, and hence the

---

8 For more information on the Reserve Bank’s business liaison program, see RBA (2014)
sample contains very few start-up firms. There are also virtually no self-employed persons in the sample; most firms have at least 10 employees. Nevertheless, about 5 per cent of the full sample consists of businesses with up to 20 employees, corresponding to around 300 observations over the full sample period since 2001 (Graph 15). More than half of the small businesses in our sample have more than 10 employees and there are virtually no firms with 5 or fewer employees. Our sample of small businesses is therefore probably more homogenous than the overall population of small businesses, though it is still more heterogeneous than our sample of larger firms. The industry composition of these companies is concentrated within the manufacturing, business services and construction industries (Graph 16).

The methodology

Using these data, we can compare the behaviour of firms of various sizes by modelling certain variables with a standard fixed effects regression model. Specifically, the dependent variables ($Y$) examined here are:

- Price growth
- Employment growth
- Investment spending

Each of these variables can be directly influenced by firms and therefore analysing their determinants enables us to draw inferences about the economic behaviour of businesses in different size groups. We first aim to identify differences in the drivers of firms’ current behaviour across different size groups; later we examine how firms form expectations for their future behaviour.

Our models are of the form:

$$Y_{it} = \beta X_{it} + \alpha S_{it}Z_{it} + \epsilon_{it}$$
where $X$ is a set of control variables and $S_i$ is a set of indicator variables for firm size ($S_i$ does not vary over time; information on firm size is updated regularly after each meeting with companies, though a time series is not maintained). In each regression, the variable of interest $Z$ is interacted with the size dummies in order to determine how its relationship with $Y$ varies across firm size. The pattern of the coefficients contained in $\alpha$ enables us to draw inferences about how the sensitivity of $Y$ to $Z$ varies across firm size categories. For each regression, the explanatory variables have been chosen according to what is reasonably likely to be related to the dependent variable. In choosing which variables are interacted with the size dummies we also take into account considerations about sufficient sample sizes; for example, capacity utilisation is not interacted with the size dummies in a regression for prices, due to an insufficient sample of price-capacity utilisation observations for some firm sizes. For each dependent variable, we run a regression for each of the associated $Z$ variables listed in Table 3 (when a variable is included as a $Z$ variable, it is not included in $X$).  

<table>
<thead>
<tr>
<th>Dependent variable ($Y$):</th>
<th>Prices</th>
<th>Employment</th>
<th>Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explanatory variables ($X$):</td>
<td>Demand</td>
<td>Demand</td>
<td>Demand</td>
</tr>
<tr>
<td></td>
<td>Expected demand</td>
<td>Expected demand</td>
<td>Expected demand</td>
</tr>
<tr>
<td></td>
<td>Wages</td>
<td>Wages</td>
<td>Wages</td>
</tr>
<tr>
<td></td>
<td>Non-wage costs</td>
<td>Non-wage costs</td>
<td>Non-wage costs</td>
</tr>
<tr>
<td></td>
<td>Capacity utilisation</td>
<td>Capacity utilisation</td>
<td>Capacity utilisation</td>
</tr>
<tr>
<td>Variables successively interacted with the size dummies ($Z$):</td>
<td>Demand</td>
<td>Demand</td>
<td>Demand</td>
</tr>
<tr>
<td></td>
<td>Wages</td>
<td>Wages</td>
<td>Capacity utilisation</td>
</tr>
<tr>
<td></td>
<td>Non-wage costs</td>
<td>Capacity utilisation</td>
<td>Capacity utilisation</td>
</tr>
<tr>
<td></td>
<td>Expected demand</td>
<td>Expected demand</td>
<td>Expected demand</td>
</tr>
</tbody>
</table>

* In each regression, one variable ($Z$) will be interacted with the size dummies ($S$). This variable is then not included as one of the explanatory variables in $X$.

The model allows for unobserved firm-specific effects captured in $\varepsilon$. This is an important feature of the model, as such unobserved factors are likely to be prevalent. For example, there may be variation in the periods over which firms estimate long-run averages (likert scores represent magnitudes relative to the firm-specific long-run average). There may also be variation in the degree of optimism/pessimism bias across contacts. Since these sources of variation will affect all the firm’s scores, the firm-specific factors will be correlated with the explanatory variables. Therefore a fixed (as opposed to random) effects specification seems appropriate. We use conventional standard error estimates, as the estimated standard errors are not materially different when clustered on firm, industry or firm and industry.

The nature of the business liaison database presents several econometric issues to be addressed. First, the ordered-categorical nature of the data presents a hurdle in our analysis. Likert scores are recorded on a scale of -5 to +5, though they are not, strictly speaking, interval data; the distance between say -2 and -1 may for instance be different to the distance between +1 and +2. There has been considerable debate on treating categorical variables as if they were continuous, particularly in the field of health sciences. Nunnally and Bernstein (1994) state that typically little information is lost when categorical variables with 11 or more categories are treated as continuous; similarly Streiner and Norman (2008) 

9. Our regressors are generally positively correlated, though variance inflation factors are quite small (below 2 in all cases), indicating that multicollinearity is not a significant concern.
note that while debate is ongoing, one can analyse data from rating scales as if they were equally spaced without introducing severe bias, as long as the distribution is not severely skewed.

In contrast, Townsend and Ashby (1984) argue that the ordered-categorical data must be demonstrated to have a linear relationship with the underlying latent variable of interest before they can be treated as continuous. Fortunately, there are certain series available that allow an examination of the relationship that two of the likert scales have with the underlying variables that they aim to measure: sales growth figures for several contacts that were collected in the course of one of the Bank’s internal projects, as well as the pace of wage growth, which is collected alongside wage growth likert scores. The figures for actual sales and wage growth were compared with the likert scores for demand growth and wage growth. For both sales growth and wage growth, the actual growth rates appear exhibit a linear relationship with the likert data. These findings, combined with generally supportive recommendations from the literature, make us comfortable in imposing linearity on the data, especially given the broader array of econometric methods that are available when analysing standard continuous data.

A second methodological issue concerns the potential for an omitted variable bias in the model. There are undoubtedly sources of shocks to the dependent variables in the models that are not captured by any of the explanatory variables in the model. Such shocks may also be specific to firms in certain size categories. For example, liaison over the financial crisis period indicated that smaller firms were affected by credit constraints to a greater degree than larger businesses were. This would have materially affected smaller firms’ investment decisions over the 2008-09 period and possibly other aspects of their behaviour. To capture size and time-period specific shocks such as this we include a series of indicator variables for each combination of year and size category.

Third, as noted above, the majority of the RBA’s liaison contacts are met on an annual basis. However, for some contacts, scores are recorded as often as quarterly. Quarterly observations for a firm may introduce some bias into our estimates as the scores relate to growth over the past year or expectations for growth over the coming year. This type of ‘overlapping data’ problem has been explored in the context of time-series analysis in detail (e.g., by Harri and Brorsen (2009); Britten-Jones and Neuberger (2011); Dhrymes (1971)), and have been shown to induce correlation between the error terms and the explanatory variables. To avoid this problem, we drop from the sample any observations from a single firm that are less than one year apart.

Results for current behaviour

The elements of $\alpha$ are interpreted as the typical change in the relevant dependent variable associated with a unit change in the explanatory variable. Plotting the elements of $\alpha$ across size categories provides a simple visual summary of how these sensitivities vary across size groups. This provides an indication of whether, and by how much, the behaviour of small businesses varies compared with that of larger businesses, on average.
Price setting behaviour

We start by examining pricing behaviour of small businesses.\textsuperscript{10} The coefficient estimates suggest that the price-setting behaviour of small businesses (here taken as those with 20 or fewer employees) with respect to changes in demand is different from that of larger firms, with small businesses on average much more responsive in setting their prices. However, the confidence bands around the coefficient estimates are very wide, which likely reflects the significant heterogeneity within the small business sector as well as the smaller sample sizes for these types of firms in the Bank’s liaison. Overall, the data indicate that the pricing strategies of smaller firms are not statistically different from those employed by larger firms (Graph 17).\textsuperscript{11}

The same broad conclusions can be drawn with respect to the importance of wage and non-wage cost pressures; specifically, the confidence intervals around the estimates of the sensitivity of current pricing decisions to changes in the wages and other costs are again quite wide, and overall the pricing behaviour of small businesses taken as a group is not statistically different from that for larger companies.

\textsuperscript{10} Economic theory and empirical evidence suggests that in setting the prices of their output, companies take into account current demand conditions or follow a simple mark up over costs. The evidence presented here indicates that both current demand conditions and mark-up strategies affect the pricing decisions of firms in Australia, regardless of size.

\textsuperscript{11} While the differences between the coefficients contained in $\alpha$ are not statistically significant in several of the regression results presented here, some caution is needed in concluding from this that economic behaviour of small businesses is therefore similar to that for larger firms. In particular, the sample sizes used here are more limited for small firms, which results in wider confidence intervals. Additionally, the heterogeneous nature of small businesses along many dimensions tends to further widen our confidence intervals.
Employment behaviour

As for their price setting behaviour, the sample data provide little indication that small businesses on average are markedly more or less sensitive to current demand or wages in determining their employment decisions. For all firm size categories, employment is positively correlated with demand and wages growth, regardless of firm size, with the coefficient estimates for small businesses around the same as those for larger firms, although with a higher variance (Graph 18). There appears, however, to be a difference in the sensitivity of employment growth to the level of capacity utilisation across firm size categories, with small businesses placing much less weight on their current level of capacity utilisation in making their employment decisions. This may reflect that small businesses tend to operate with the minimum level of staff and for instance are unable to change employment levels when capacity falls off.

Investment decisions

A similar result can also be seen when examining the correlation of investment activities across firm size. Investment is generally positively correlated with higher demand, and with the wide confidence intervals around our estimates of the sensitivity of investment to demand for small businesses, overall their behaviour does not appear to be statistically different from that for larger firms (Graph 19). However, as previously seen in regard to their employment behaviour, the coefficient estimates for the sensitivity of investment to capacity utilisation is higher for larger firms than for small businesses. This may indicate that a standard model of investment decisions, in which firms invest in additional capacity periodically as their capacity utilisation rates become high, may not apply to smaller firms.
These results are consistent with the notion that small businesses think about their investment and employment decisions in a somewhat different way to larger firms. On one hand, smaller firms may operate with a minimal level of investment, generally opting only to invest to offset depreciation. Smaller firms would then be unable to reduce investment spending further when capacity utilisation rates fall, in contrast to larger businesses, which invest constantly and adjust their investment spending in line with fluctuations in demand. Alternatively, the results may simply suggest that there are factors that inhibit investment and expansion for smaller firms even when they are operating at a high level of capacity utilisation, such as greater difficulty accessing finance, until there are clear indications of a significant further pick-up in the pace of demand.

Results for future behaviour

Another way of exploring the motivations behind small businesses’ behaviour is to examine how their plans for future price, wage and employment growth are determined. In particular, we examine the relative importance of both current and expected demand in influencing firms’ expected price, employment and investment growth. Firms that place a greater weight on expected demand relative to current demand are deemed to be more ‘forward-looking’ in their behaviour. Several factors may affect the degree to which smaller firms are more or less ‘forward-looking’ than larger companies. On the one hand, small businesses that tend to be highly strategic in their efforts to tap new markets are likely to make pricing, hiring and investment decisions pre-emptively, based on their expectations of future demand for their products, whereupon expected demand should be a significant variable in driving their behaviour. On the other hand, firms where the owner is motivated by life-style choices or firms that are more vulnerable to unexpected developments may not be particularly strategic in their expected behaviour. Additionally, small firms can face constraints on their ability to act on their expectations, such as difficulty accessing finance and generally longer search periods in order to find quality staff.
We investigate whether smaller firms tend to be more or less forward looking in their behaviour than larger companies by using a simple variation of the fixed-effects model described above. Firms’ expected prices, employment and investment outcomes are modelled against the same sets of explanatory variables outline above. However, now we also allow for variation in the coefficients on both current demand and expected demand across size categories:

\[ Y_{eit} = \beta X_{it} + \alpha_1 S_i D_{it} + \alpha_2 S_i D_{it} + \epsilon_{it} \]

where \( Y_e \) is the firms’ expectation for prices, employment or investment over the coming year, \( X \) is a set of control variables as listed in Table 3 above (and excludes current and expected demand), \( D \) represents the likert score for current demand and \( D_e \) represents the likert score for expected demand. For each of the three dependant variables listed in Table 3, one regression is estimated. We are particularly interested in the statistical significance of the coefficient on expected demand relative to the coefficient on current demand. A straight-forward measure of the relative significance of the two variables is provided by the t-statistic from a test that the difference between coefficients on \( D \) and \( D_e \) for a given size category is statistically greater than zero. Specifically, for each size category \( i \) our test statistic is:

\[ t_i = \frac{\alpha_{1i} - \alpha_{2i}}{SE(\alpha_{1i} - \alpha_{2i})} \]

A positive t-statistic indicates that firms place more weight on their expectations for future demand than on the level of demand they have experienced over the past year. A negative statistic could indicate that firms do not tend to act on their expectations for future demand, possibly because they are prevented from doing so, or because they simply do not have confidence in their projections.

These t-statistics are plotted for each size category in Graph 20 below. The results suggest two broad conclusions. First, that when considering prices, employment and investment intentions, larger firms (those with employment greater than 100 employees) tend to be more forward-looking than firms with fewer employees. This is most noticeable in terms of the effect of expected demand in driving larger firms’ employment and to a lesser extent investment behaviour, relative to that for smaller businesses. And secondly, that within the class of companies with fewer than 100 employees, there are generally only minor differences.
The general tendency among the small firms to be more backward looking than larger firms has several possible explanations. As mentioned previously, smaller firms may be constrained in their access to funding, which may limit their ability to invest regardless of their expectations for future demand. Additionally, smaller firms often face significant lags in finding and attracting quality staff, which would inhibit their ability to adjust employment levels based on expectations for future demand. Alternately the more backward looking behaviour of smaller firms may reflect less planning for the future, or that smaller firms have less confidence in their expectations for the future than larger firms and are therefore less willing to act on their expectations given the risks involved. Indeed the task of forecasting future demand is often more difficult for smaller firms, due to the generally greater volatility of their revenues, which may result in small firms having a lower degree of confidence in their expectations for the future. One final possibility is that smaller firms can rely on having greater flexibility in their operations that allows them to respond to current developments, and therefore have less need to be forward-looking.

7. Conclusions

While small businesses play an important role in the Australian economy, they face a number of challenges in dealing with fluctuations in demand, the costs of doing business, managerial skills and financial issues. Nonetheless, the evidence presented here indicates that despite these challenges, the economic behaviour of the small business sector overall seems to be quite similar to that of larger companies. While the significant heterogeneity in the small business sector and relatively small sample sizes make it difficult to draw statistically significant conclusions, the results indicate two possible exceptions to this general conclusion: small businesses appear to respond much less to capacity utilisation than larger firms and they appear to be less forward-looking in forming their pricing, employment and investment plans.
References


