SMALL BUSINESS EMPLOYMENT

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Forming the Productivity Commission

The Industry Commission, the former Bureau of Industry Economics and the Economic Planning Advisory Commission have amalgamated on an administrative basis to prepare for the formation of the Productivity Commission. Legislation formally establishing the new Commission is before Parliament.

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CONTENTS

OVERVIEW

This report examines the changing size distribution of firms in Australia and, in particular, some implications of the growing importance of smaller firms in the economy.

The big picture

Between 1983–84 and 1994–95, small business (defined to cover all enterprises, but not subsidiaries or outlets, with less than 100 employees) has significantly increased its share of national employment (table 1). The increase was mainly at the expense of public and agricultural employment. On the other hand, there was little expansion in the share of the over 100 person private firm category.

Table 1: Share of national employment, 1983–84 to 1994–95

	Private non-farm sector by firm employment size					*Farm sector*	*Public sector*
	< 20	*20 - 99*	*<100*	*100+*	*Total*		
1983–84 (%)	29.0	12.5	41.6	25.4	67.0	6.5	26.5
1994–95 (%)	32.8	13.8	46.6	26.6	73.2	5.4	21.4
1983–84 to 1994–95 (change in percentage points)	3.8	1.2	5.0	1.2	6.2	-1.1	-5.1

Source: Table E.6 in appendix E.

Comparisons with other OECD countries indicate that the share of small business employment in Australia is higher than in large industrialised economies like the USA, UK, Germany and France. However, it is in line with the share of small business in a number of developed small economies, such as Denmark and Spain.

Although the shift toward small business in terms of the share of employment has been gradual, in recent years small business appears to have accounted for a disproportionate share of new net jobs in the economy. Between 1983–84 and 1994–95, firms with less than 20 employees accounted for 53 per cent of net new jobs added to the Australian economy, and firms with less than 100 employees accounted for 72.6 per cent of such jobs. These contributions are much higher than the employment shares of such small businesses — which were around 33 per cent and 47 per cent respectively, of national employment in 1994–95.

We find that there are quite marked variations in the apparent job creation by small business, depending on the preferences of the statistical user for one

definition over another. In all cases, however, the rate of employment growth in small business has exceeded the average rate of employment growth.

Consistent measurement in this area is, however, very difficult. The actual contribution to job creation by small business is confused by 'category shifting' — this occurs when larger firms re-organise or downsize so that they are categorised as small businesses. On the other hand, anomalies in the employment data (which are currently being revised by the ABS) suggest that small business may well have accounted for an even higher percentage of new jobs in the economy.

Reasons for the employment shift

Analysis of sectoral changes provides one perspective on the proximate causes for the shift (table 2). At the economy wide level, some of the growth in the business share of national employment (including small business) is a statistical inevitability — contraction in the public sector means that the residual private sector employment share must grow.

But the story is far from being wholly a statistical artefact because:

- there was compensating job creation in the business sector (including small business); and
- the share of small business in total *private* non-farm sector employment grew as well.

The increase in the private non-farm employment share of small business largely reflects structural changes in the private sector. It reflects growth, in relative terms, of sectors in which small firms play a dominant role. Surprisingly though, the higher (smaller) the small business intensity in a sector in 1983–84, the more likely it is that its intensity *fell* (grew) over the next decade. For example, manufacturing, which has a relatively low small business intensity, has declined in importance compared to other sectors — but its small business share has expanded. In the area of accommodation, cafes and restaurants, the opposite trend is evident. Small business plays a relatively important role in this expanding sector — yet that role has diminished over the last decade. This pattern is not consonant with a generalised shift in the comparative advantage of smaller enterprises.

While at one level structural change provides an explanation for the marked changes in the non-farm size distribution of private firms, it does not explain the origin of these structural shifts in the first place.

We note too that another possible candidate for the shift — the rapid growth of part-time employment in the economy — did not raise the share of small

business in national employment because in recent years part-time employment has grown more strongly in large firms.

Table 2: Sectoral changes that account for the increase in the share of small business employment between 1983–84 and 1994–95[a]

	Firm employment size	
Source of change	*Under 20*	*Under 100*
	%	%
Contraction in the share of public employment	2.2	3.2
Contraction in the share of farm employment	0.5	0.7
Increases in the sectoral share of property and business services	1.0	1.4
Increases in the sectoral share of health and community services	0.7	1.2
Other changes in the sectoral composition of private demand	-0.4	-1.0
Reduction in average firm size in manufacturing	1.0	1.4
Increasing importance of supermarkets and chain stores	-1.1	-1.0
Changes in the share of SB in other sectors	0.1	-0.3
Other[b]	-0.3	-0.6
Total change in the employment share of small business	3.8	5.0

a We describe the methodology used in appendix E.

b This represents the interaction term described in the early section of chapter 4.

Source: Appendix E.7 and table 4.2.

Are jobs in small business different?

A variety of indicators point to differences in the characteristics of many jobs in small firms compared to large firms. For instance, the average hourly earnings of small business employees are considerably lower than employees in bigger businesses — and this wage margin widened from 1987 to 1994 (particularly in the under 20 size category).

Other differences include:

- labour turnover tends to be higher in small firms than in large ones;
- expenditure on staff training is lower in small firms; and
- casual employment (ie employees who are not entitled to paid leave) is more widespread in small firms.

However, while there is a margin between returns to labour in small and big business in Australia, it is not as pronounced as many other countries (such as Japan and the US, or developing economies like Brazil).

Policy implications?

Small business is a highly significant sector in the economy — responsible for around half total employment. Clearly, it is important to ensure that this sector, like others, is not hamstrung by any major impediments. This is the main message emerging from recent reviews, such as the Bell report.

But some commentators go much further than this. They argue that not only does small business have distinct needs to enable it to prosper (such as access to an efficient capital market), but that small business is 'special' for more fundamental reasons. In particular, they maintain that the sector is 'special' given its role in employment generation, and argue for *selective* measures, such as subsidies, to stimulate employment in small business (see pages 93-94). In doing so they may be misinterpreting the complex labour market in which small business is a cog.

While small firms may be *where* many of the new jobs have been created, this does not necessarily mean they are *responsible* for their creation. In fact, the sectoral data imply that the smallness of firms is largely incidental to the process of job creation. Many of the new jobs were created in small business, not because that size of firm is particularly able to generate new jobs, but because the products for which demand has increased are mainly supplied by small business. This is not a subtle semantic distinction. Causality matters for policy analysis. For example, it makes little sense to argue that one feature of an interdependent system (the hands in a watch, for example) makes that system function, when its functioning depends on all parts working smoothly (the battery, other electronics etc). Similarly the fact that many new jobs appear in small business does not logically imply that it was their 'smallness' that generated them.

So while there are strong grounds for removing the substantial impediments that hamper the sector's efficiency, we should be cautious about measures that selectively subsidise the small business sector with the aim of increasing employment. Unless we fully understand the complex interaction between small business and the remainder of the economy, measures, such as special subsidies, can have little, or even perverse, impacts on employment. The idea of selective encouragement is open to questioning on other grounds too:

- Subsidies or other measures directed at small firms could have broad adverse effects. The distribution of enterprise sizes in the economy is determined by technological and transaction cost conditions. Subsidies to small firms undermine the optimal distribution of firm sizes — some operations that would be performed more efficiently by a larger enterprise may shift to a smaller one. As well, small firm survival rates are lower than larger businesses. As a consequence, *selective* assistance to small business might increase turbulence, with implied social and economic costs. Finally,

subsidies have to be financed through taxation — which in turn can reduce incentives to work, and inevitably impose other economic costs.

- Most small firms do not grow appreciably or contribute much to net job creation. Instead, a few small firms — the 'gazelles' — account for most net new jobs. Accordingly, the idea of focusing policy attention on those firms which are job creators, suggests that incipient gazelles should be targeted by any subsidy or other support program. However, the selective promotion of such firms may imply an unrealistically high level of foreknowledge and capacity by government to finesse private sector outcomes: How could such 'gazelles' be accurately identified and stimulated before the event? How would governments know that the firm would not have grown rapidly anyway?
- Supporting small business to realise employment goals on the basis of their past job creation record presupposes that the patterns of the past will persist. An historical record of job creation does not imply that the trend will necessarily continue.
- Even if small firms had been directly *responsible* for creating many of the new jobs in Australia over the past decade, that tells us nothing *by itself* about how successful a government small business program would be at creating new jobs in the economy. If government gave small business a $100 a week subsidy for employing a previously unemployed person, it would employ more workers. But would they do so more than big business? Moreover, to what extent will those unemployed people displace existing workers? Nothing about the past record of employment creation tells us anything about the likely relative responsiveness of small versus large firms to such subsidies.

These cautionary notes do *not* imply that small businesses are unimportant or that government should ignore how regulations, industry policies, labour market and social welfare institutions resonate in small (and large) business. To the contrary, small business is clearly important, and there is scope for policy moves which would have a significant potential impact on employment and efficiency in both small *and* big enterprises. For example, there may be gains from:

- eliminating or modifying regulations whose overall benefits are questionable;
- re-designing regulation so that their compliance costs are lower for business users;
- examining, and possibly amending, a range of laws and institutions that affect the likelihood of employment. For example, scrutiny of how labour market institutions, such as education and training, matching services, employment programs, other aspects of the IR framework, and the social

security system, shape employment outcomes in the labour market is likely to be a productive route for discerning opportunities for creating jobs — in small *and* large business.

While these approaches could have a significant and positive impact on small business and job creation, they have additional advantages in that they do not place an excessive burden of expectation on small business, avoid discriminating against other business, and eschew the risk of other inefficiencies that a selective approach may entail.

1 INTRODUCTION

1.1 Scope and purpose

The share of small business in total employment had been declining in industrialised countries before the early 1970s. Following the growth slowdown in the 1970s, this trend was reversed. Since then, there has been a gradual increase in the share of non-farm small business in total employment. This phenomenon, which runs contrary to the previously widely accepted thinking about the benefits of scale in production, has generated an extensive literature. It has also prompted re-interpretation of the policy significance of small business.

In 1978, the UK Expenditure Committee report argued that:

> if each small business could take on one more employee, the unemployment problem would be solved (*People and Work, Prospects for Jobs and Training*).

This idea has enjoyed remarkable persistence and appeal, and as Storey (1994 pp. 258-260) and Harrison (1994 p.38) note, employment generation and unemployment mitigation is one of the major, if sometimes implicit, bases for SME policy.

The idea is, on the surface, incontrovertible. Small businesses are very common — the overwhelming number of businesses in every OECD economy are (very) small businesses. It is therefore a true, albeit glib, observation that *if* every small business took on one more employee, there would be no unemployment problem. But this sort of simple arithmetic ignores more fundamental and interesting questions about the role of small business in employment generation:

- To what extent has economy wide employment growth occurred in small firms?
- What factors lie behind changes in the distribution of jobs by firm size?
- To what extent has any growth in employment shares also been employment creation? In some of the small business literature, growth in the employment share of small business has been equated with employment creation/generation. However, there is no automatic nexus. For example, the employment share of small business can rise because big business contracts, or it can rise because new jobs were created by small business.
- To what extent is employment creation **due** to small business? Mediation and agency can be confused. Thus, while new jobs may have been located in (mediated through) small business, this does not necessarily imply that

small business, as a social and economic institution, is responsible for their creation. For example, new jobs may be created because of shifts in the demand for local services, where small firms have a competitive advantage compared to larger enterprises.

- What sort of jobs are created in small business? Are they part time or full time, casual or permanent, lowly or highly paid, with sparse or good conditions, with short or long tenure, with limited or extensive training?
- What is the policy significance of the role of small business in employment generation? For example, to what extent can small business policy be used as a tool for generating employment or mitigating unemployment?

Small business employment covers more than half of the private labour force. As this is a very broad and diverse area, we could not adequately address a wide range of issues relevant to small business employment in a report of this nature. Some of the more important subjects that have been given little or no attention include:

- gender, age and country of origin profiles of SME employees;
- education standards, occupational classifications and regional distribution of SME employees;
- firm-based longitudinal surveys; and
- industrial relations issues relevant to small business.

The choice of subjects and emphasis reflects a desire to shed more light on the rising share of small business in national employment and its implications, while giving less emphasis to other subjects that, from a different perspective, might be considered at least as important.

1.2 Data and definitions

In Australia, data about employment by enterprise size are available only since 1983. These statistics show a rising share of employment in non-farm small business in line with similar findings in most other (particularly West European) industrialised countries.

The currently available statistics represent interim estimates, because the ABS is in the process of revising these estimates from 1983 onward. New estimates are expected to be published later in 1997. The revised estimates will likely show an even larger increase in the share of small business employees in national employment than indicated from the currently available data.

Throughout much of this paper we present statistical data for enterprises employing under 20, 20-99 and over 100 employees. In discussing these data, we

follow the OECD definition of small business which classifies enterprises with less than 100 employees as small, and those employing less than 20 employees as micro-business or very small business. [1] Agricultural small business is not covered in this study.

Firm size refers to the size of the legal enterprise. Some larger enterprises may comprise a number of separate establishments. There are some statistics available on employment by size of establishment and we shall examine such data. However, the main focus in this paper will be on employment by size of enterprise, because in the context of economic policy, the concept of small business usually refers to the size of the legal enterprise rather than its branches or outlets.

1.3 Outline

The report is divided into six chapters. A reader interested in looking closely at the economics of small business labour markets and the policy implications of the report can go straight to chapter 6. The other chapters provide a detailed analysis of four main areas:

- aggregate trends in the share of small business in employment between 1983 and 1995 (chapter 2);
- the extent to which changes in employment shares cast light on the job creation of various firm size categories (chapter 3);
- sectoral analysis of changes in the size distribution of firms, based on employment share data for 14 major sectors from 1983–84 to 1994–95 (chapter 4); and
- relative earnings and job characteristics in small versus large businesses.

Supporting data is provided in a series of appendices.

[1] The Australian ABS classification is different from that used by the OECD. The ABS defines small businesses as service enterprises employing less than 20 persons and manufacturing enterprises employing less than 100. In chapter 3 we provide some results based on the ABS definition, while in chapter 4 (and its associated appendix), we present sectoral data that would allow readers to apply the ABS definition if they wished.

2 THE SMALL BUSINESS EMPLOYMENT SHARE

In this chapter we examine the recent trend toward a gradually rising share of small business in national employment. In the first part of the chapter we analyse wage and salary earners by firm size. In the second part we look at small business operators — employers and the self-employed. We then pool the two data sets to estimate the share of small business in total employment.

2.1 Wage and salary earners

Relevant statistics on wage and salary earners by firm size are available in Australia since 1983 from the Survey of Employment and Earnings — the SEE (figure 2.1). [1]

Much of the international statistics on the changing share of small business in employment relate to private-sector non-farm wage and salary earners alone. For that reason we start the discussion with this item rather than the share of small business in total national employment (which also includes the public and farm sectors, and the self-employed).

Over the period September 1983 to March 1995, the share of small business among private wage and salary earners increased slightly. [2] The employment share of firms employing less than 20 persons increased by 1.9 percentage points, while the share of firms employing between 20 and 99 persons increased by only 0.6 percentage points. As a consequence, the share of businesses employing 100 or more persons decreased by 2.5 percentage points.

As shown in figure 2.1, a sharp change occurred during the recession between 1990 to 1992 when the share of smaller businesses (employing 1-19 persons) increased by more than three percentage points in two years. It then decreased by

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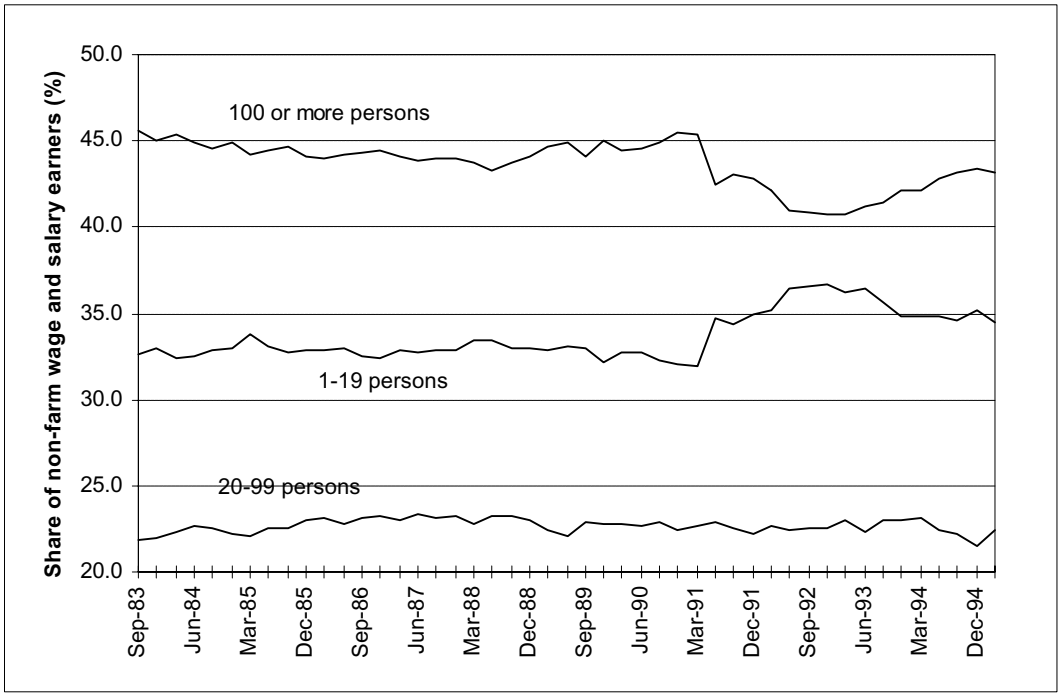
[1] The SEE collects data from 'management units' in each state and territory. In most cases a management unit coincides with the legal entity owning the business — but in some cases a business may cover a number of management units. In this case, a collection of apparently small businesses may actually be part of a large business.

[2] In fact the SEE quarterly data cover less than 12 years. Est imates for 1983 are available only for the third and fourth quarters. For 1995, statistics are available only for the first quarter. It should be noted that, in the SEE, the size classification reflects the size of the business in a particular state/territory and not necessarily the size of the business Australia-wide.

more than one and a half percentage points after the end of the recession. The employment share of businesses employing 100 or more persons follows the opposite pattern, initially decreasing, while rising as the economy grew after the 1990–92 recession. The employment share of middle sized firms (20-99 employees) was relatively stable across the business cycle.

Figure 2.1: Shares of private non-farm employees by firm size, September quarter 1983 to March quarter 1995



Source: Table A.1 in appendix A.

The near constancy of the percentage shares (apart from the recession period) hide significant changes in the structure of employment at the sectoral level and between part-time and full-time employees that will be discussed later.

The literature (eg ILO, 1990, IAESR, 1994 and Atkinson and Storey, 1994) also notes the cyclical effects in small business employment. In times of recession, the share of small business employment tends to increase, sometimes quite sharply. One reason for this cyclical pattern may be the tendency by many small firms to meet a fall in demand by reducing working hours rather than employment, while bigger companies are shedding staff. But perhaps a more important reason for this statistical phenomenon is negative 'category jumping' which occurs in times of recession (ie labour shedding by larger firms until they fall back into the 'small' firm size category).

To illustrate this point, assume that there are two categories of firms, small with less than 100 and 'large' with more than 100 employees. Assume further, that before the recession there were four firms in the economy with 15, 85, 108 and 300 employees. Following the recession, employee numbers have been reduced by around 10 per cent. In the new situation the firms will employ 13, 76, 97 and 270 people. As a result of the recession there has been an increase in the small business group because the third firm had been reclassified from large to small.

The best way of enumerating category jumping is a longitudinal survey, in which a particular firm can be tracked through time, and the way in which it crosses various size boundaries examined. However, in the absence of such data we can still look at other evidence for category jumping. In figure 2.1 the share of businesses employing between 20 and 99 persons appeared relatively unaffected by the recession — this is what would be expected given category jumping. Employment in large firms falls as some larger firms drop below the critical 100 person threshold. Employment in the middle sized firms is balanced by category shifting *from* the large firm category and *to* the small firm category. Finally, employment in the smallest firm category swells as larger firms are re-categorised as small. On the other hand, patterns in more finely disaggregated data are not wholly consistent with category jumping as a systematic influence for all size categories.[3] Overall, though, the existence of category jumping suggests that part of the anti-cyclical 'generation' of jobs by small business is probably an illusion. Some jobs supposedly 'created' by small business during recessions are really inherited from downsizing larger businesses. On the other hand, during upturns, some of the apparent growth in bigger businesses simply represents the growth of a small business into a large business.

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[3] The ABS publishes data on employees for businesses in the 1-9, 10-19, 20-49, 50-99 and 100+ employment categories (Cat. 1321.0). These data, with other data on enterprise numbers, can be used to estimate the average size of enterprises in each size class. The distribution of firm numbers by employment size is highly skewed, resembling something like a lognormal distribution — the number of firms in a given size interval falls as size grows. When a recession occurs then, under the hypothesis of category jumping, some firms in the ith size category lose employment and drop down to the $(i-1)$th category, while at the same time other firms from the $(i+1)$th category drop into the ith category. However, if a roughly fixed proportion of firms in any group drop out, then the skewed nature of the size distribution implies that the average firm size will grow in every firm size category bar the largest. Data for 1991–92 can be used to test this hypothesis. We find that average firm size did rise for both the 1-9 and 10-19 employee sizes (suggestive of category jumping), but that average firm size actually declined for firms employing between 20-49 and 50-99 (which is not consistent with category jumping). Of course, this analysis is premised on the assumption that the recession affected roughly the same proportion of firms in every size group— a hypothesis which may be questioned.

2.2 Part-time employees

Part-time employment plays an important role in the changes in the share of small business employment. The proportion of part-time wage and salary earners in all private sector firms climbed from 24.2 per cent in 1985 to 33 per cent in 1995 (table 2.1).

Table 2.1: Share of part-time and full-time employees, 1985 and 1995, per cent

	Firm size			
	Under 20	*20-99*	*100+*	*All*
Proportion of part-time employees in each group	%	%	%	%
1985	29.4	25.1	19.7	24.2
1995	34.9	29.9	33.1	33.0
Distribution of employees (heads)				
1985	33.1	22.6	44.4	100.0
1995	34.5	22.4	43.1	100.0
Distribution of employees (hours)				
1985	31.9	22.4	45.8	100.0
1995	34.0	22.9	43.1	100.0

Source: Unpublished ABS data from the SEE survey and table A.1.

In 1985, the share of part-time employees declined systematically with firm size. However, by 1995 this pattern had changed — firms with more than 100 employees had a higher proportion of part-time employees than firms in the 20-99 category. The expansion in the number of part-time employees in large business was mainly due to the marked increase in the number of part-timers employed by large retailers, wholesalers, banks and offices. A sectoral analysis of part-time employment is presented in table A.2 in appendix A.

The findings from another survey (the Labour Force Survey supplement on the distribution of earnings — WEEDA) indicate that around 70 per cent of part-time employees are casual workers, ie employees who are not entitled to annual leave or sick pay. Further discussion on casual employment is presented in appendix C.[4]

[4] It should be noted that, according to the WEEDA survey, part-time employees represented only 28.1 per cent of all private non-farm employees in 1995, as against 33 per cent according to the SEE survey (table 2.1). We are unable to explain the difference.

In the WEEDA survey, the classification of firm sizes is given in terms of establishments rather than management units, as in the SEE. Unlike the SEE, the findings from WEEDA (shown in table C.3 in appendix C) suggest that part-time employment in small establishments was considerably higher than in larger ones. The proportion of part-timers in 0-9 establishments was 33.7 per cent compared with 19.3 per cent in 100+ establishments. However, these numbers do not contradict the findings of near parity in the share of part-timers across different firm sizes, bearing in mind that many large firms (particularly in retailing and other service industries) control a large number of part-time intensive small establishments.

Another survey, the Business Longitudinal Survey (BLS), finds results more in line with the WEEDA survey (table 2.2), notwithstanding the fact that it surveys business units which are close to those used by the SEE. There remains, therefore, some question about the relative importance of part-time work in different sized businesses.

Table 2.2: Part-time employment share by size of business, June 1995[a]

Size grouping	*Part-time employment share*	*Part-time share of employees*
	%	%
Under 20	25.1	39.4
20-99	28.4	29.8
100+	24.1	24.3
Total	25.4	30.1

a The data are from the Business Longitudinal Survey (BLS), a survey based on the management unit, which, for some large businesses, may not coincide with the legal entity owning the business. The survey scope excludes some services, such as health and community services. Two definitions of the employment share are included here. The first is the share of part-timers in total employment in the firm, where employment includes the proprietor. The SEE covers only employees in the firm, so for comparability we calculated a second measure — the share of part-time employees in total employees.

Source: Industry Commission and DIST 1997.

Despite some of the differences between the cross-sectional results for 1995, we have no data which contradicts the (somewhat surprising) finding that part-time employment grew more rapidly in the last decade in large rather than small firms. The increase in part-time employment appears to be related to the increasing participation in the workforce by married women (EPAC, 1996).

The middle panel in table 2.1 presents the distribution of employees between different size groups. In this panel each employee is counted the same regardless of how many hours he/she has worked per week. These data reveal a modest 1.3

percentage points reduction in the share of part-timers for businesses employing over 100 employees.

The bottom panel, on the other hand, represents the distribution by business size of employees in equivalent units, where full-time and part-time employees are weighted according to the average number of hours worked. These estimates were calculated using unpublished ABS data on the mean number of working hours of part-time and full-time employees. In 1985, the mean working time of full-time private sector employees was 39.6 hours per week, whereas that of part-time employees was 16.1 hours per week. This means that one part-time employee worked on average 40.7 per cent of the time of full-time employees. In 1995, full-time employees worked an average of 42.8 hours per week compared to the average for part-timers of 16.6 hours per week. This yields an equivalence rate of 0.388. Using these equivalence scales we converted total employment into total hours, and then re-calculated the changing shares of employment by firm size.

The decline in the employment share of larger businesses is more pronounced when we account for working hours. Between 1985 and 1995, the employment share of larger businesses (those employing more than 100 employees) decreased by 2.7 percentage points in terms of hours compared to 1.3 percentage points using the gross measure of employees. The 1.4 percentage points difference occurred because of the proportionally larger increase in part-time employment in the 100+ size category, as shown in the upper panel of table 2.1.

2.3 The average size of enterprises

While the employment share of smaller enterprises has been growing, this does not necessarily imply that the average size of firms has been declining. We examined data from the ABS to see whether there was evidence of changes in average firm size (table 2.3) from 1983–84 to 1994–95. Overall, there has been a small decline in the average size of enterprises — from 12.5 persons per enterprise to 11.7 persons. The overwhelming bulk of this decline can be traced to larger businesses, where average employment dropped by about 45 persons per enterprise. This reflected a strong *rise* in the number of enterprises employing 100 or more people, combined with a relatively modest increase in the number of employees in this group. Businesses employing 10 to 19 persons and 20 to 49 persons were the only categories to record an increase over the same period.

Table 2.3: Employment, enterprises and average size, private Australian employing businesses, 1983–84 to 1994–95

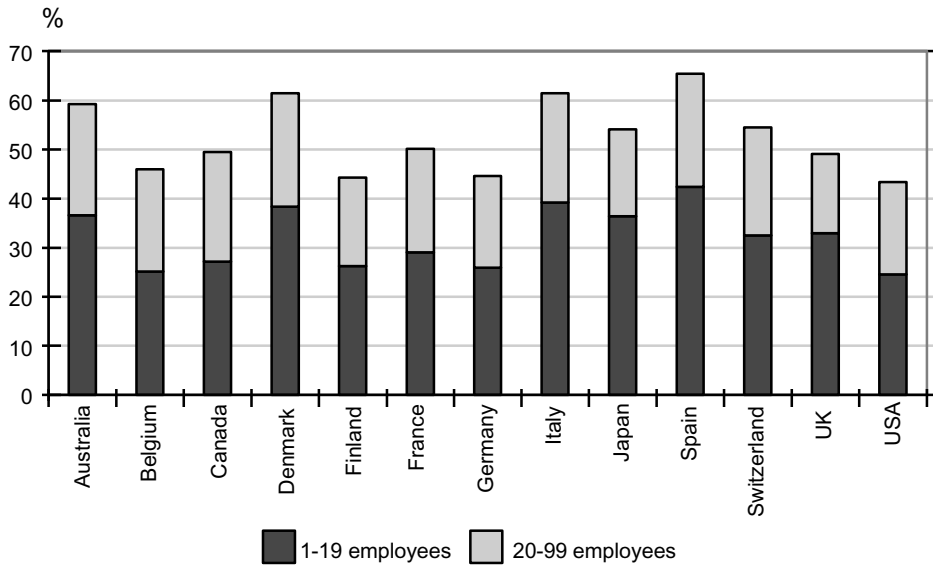
	Firm size					
	1 to 9	*10 to 19*	*20 to 49*	*50 to 99*	*100 or more*	*Total*
Employees (No.)						
1983–84	743.1	385.2	461.7	301.8	1586.0	3477.8
1994–95	1019.2	501.4	600.3	403.1	1979.3	4503.3
% change	37.2	30.2	30.0	33.6	24.8	29.5
Enterprises (No.)						
1983–84	224.3	29.1	15.9	4.3	3.9	277.5
1994–95	315.3	37.7	20.3	5.9	5.5	384.7
% change	40.6	29.6	27.7	37.2	41.0	38.6
Average size (No.)						
1983–84	3.3	13.2	29.0	70.2	406.7	12.5
1994–95	3.2	13.3	29.6	68.3	359.9	11.7
Difference	-0.1	0.1	0.5	-1.9	-46.8	-0.8

Source: ABS, *Small Business in Australia*, Cat. 1321.0. Note that this data is formulated on a slightly different basis to the data in appendix A, so that the employment growth figures by firm size do not match exactly.

2.4 International comparisons

Figure 2.2 presents comparative statistics on the share of small business employees in a number of developed countries based on OECD (1994). The data relate to private employment, excluding the primary sector. The Australian figures correspond to the 1992 data in table A.1, with the difference that here mining employees are excluded. The percentages in the chart represent private sector employment shares of businesses with less than 20 and with 20-99 employees.

Figure 2.2: Distribution of private employees by business size, (excluding agriculture and mining)



Source: OECD (1994).

These estimates show that the employment share of small business is higher in Australia than in large industrialised countries like the USA, UK, France and Germany in both the under 20 and the 20–99 employee firm size categories. The share of non-farm small business employees in Australia is similar to those in less industrialised smaller economies like Spain and Denmark. As shown in figure 2.2, even excluding the farm sector, Australia can be characterised as a small business country, though to a lesser extent than Spain, Italy or Denmark.

The comparatively high share of SMEs in Australia might be due partly to the fact that the SEE categorises the size of the firm according to its size in each state and not nationwide.

Among large economies, Japan and Italy are exceptional in having a high proportion of small business. In both Japan and Italy, large industrial businesses rely heavily on subcontractor suppliers of components and intermediate inputs. In both countries, services and particularly retailing, tend to be fragmented for reasons of regulation and history. We shall discuss the Japanese system in more detail in chapter 4.

Time series data on the employment share of under 100 employee firms in a number of OECD countries are presented in table A.6 in appendix A. In countries with longer historical data (ie the USA, Germany and Italy — see table A.6), the employment share of under 100 person firms displays a trend reversal in the first half of the 1970s. This is a central theme in the small business employment

literature.[5] Until the early 1970s, the employment share of small businesses was gradually declining in industrialised countries. Since the oil price crisis in 1973–74, and the output stagnation that followed it, the trend has been reversed and the employment share of small businesses has been rising in most industrialised countries.[6]

In Australia, the private sector employment share of firms with less than 100 employees has increased by 2.1 percentage points during this period. This gradual rise seems to be in line with the general trend in most West-European countries. Given that employment data by business size are only available in Australia since 1983, it is difficult to judge whether the rising trend here started in the 1980s or earlier.

In a number of OECD countries the shift toward small business levelled off in the second half of the 1980s. In the UK, France and Italy, the share of small business increased by more than five percentage points between the early 1970s and the second half of the 1980s, but the rise slowed down thereafter. Japan experienced a slight decline in the employment share of small business between 1981 and 1992. This is related to the continuing growth of large Japanese manufacturers during this period and the rising importance of large wholesale and retail trading businesses.

In the USA, the share of small business *decreased* significantly between 1988 and 1991 (table A.6). In 1991, the employment share of firms employing under 100 persons was slightly below their share in 1967. The rapid growth in private health and education services run by big business is one of the principal reasons for the rising share of 100+ employee businesses in the USA (US Small Business Administration, 1994).

The US and Japanese experience contradicts the idea that the rising trend in the small business share is an enduring feature of all developed economies. If the shifts in the size distribution of firms toward larger enterprises in the service sector, evident in the USA and Japan, are mimicked in Australia (as appears to be happening already — see chapter 4), then it seems possible that the shift toward small business here may be ephemeral.

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5 The more important publications in this field include ILO, 1990; B rown *et al,* 1990; Atkinson and Storey, 1994; Harrison, 1994; and OECD, 1996b.

6 In some countries, such as the USA, the trend reversal might have started before the oil crisis (see Birch, 1979 and Dennis *et al*, 1994). Dunne and Hughes (1992) identify the turning point in the UK in the late 1960s.

2.5 Small business operators

So far the statistical analysis has been concerned with wage and salary earners. We now turn to small business operators or entrepreneurs. Small business operators[7] comprise two groups:

1. Own account workers or the self-employed. These are people who operate their own economic enterprise or engage independently in a profession or trade, hire no employees, and whose business is unincorporated. This category also includes partnerships without employees. A large proportion of people working for money at home are own account workers.
2. Employers in unincorporated businesses. Most of these employers are working in firms classified as small.

In 1995, non-farm small business operators (ie own account workers plus employers) represented 37.0 per cent of the total number of non-farm private workers employed in the under 20 category and 26.1 per cent in the under 100 size group.

During the 1980s, non-farm small business operators in Australia grew at an average rate of around 2.5 per cent per year (figure 2.3). This was not higher than the growth in the number of small business employees. Thus, the share of small business operators in the small business sector (and in national employment) did not increase over the last 12 years (see table A.3 in appendix A).

Long run data on the importance of small business operators (figure 2.4) [8] suggests that, over the very long run, SBOs have represented a *less* important form of employment in Australia. More recently that decline has been arrested — with very rapid growth of self-employment from the early 1970s to the late 1970s. The SBO share was then stable throughout the 1980s and 90s.

Over the last decade, the growth rate of small business operators in Australia was higher than in most other OECD countries, though considerably below the very high growth rates recorded in the UK, Spain and the Netherlands (table B.2 in appendix B). But Australia has a significantly higher proportion of small business operators broadly defined (including farmers) in the total workforce than advanced industrialised countries like the UK and Canada (table B.5 in appendix B).

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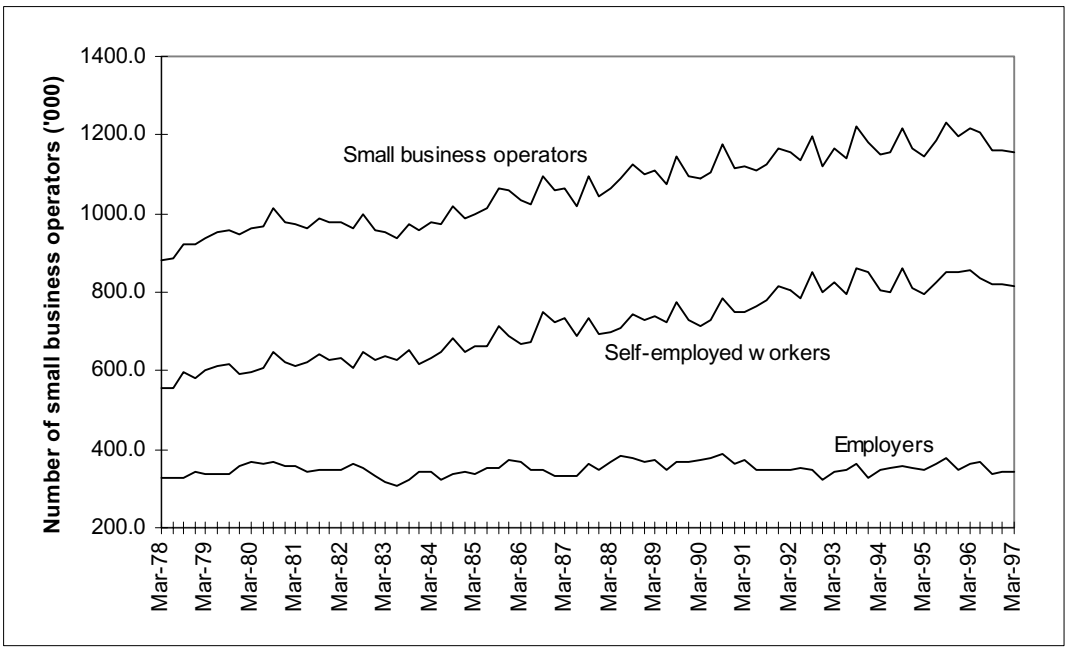
[7] The ABS definition of employers and own-account workers excludes people who own their own *company* business (whether employing or not). The measure will therefore understate the effective number of small business operators.

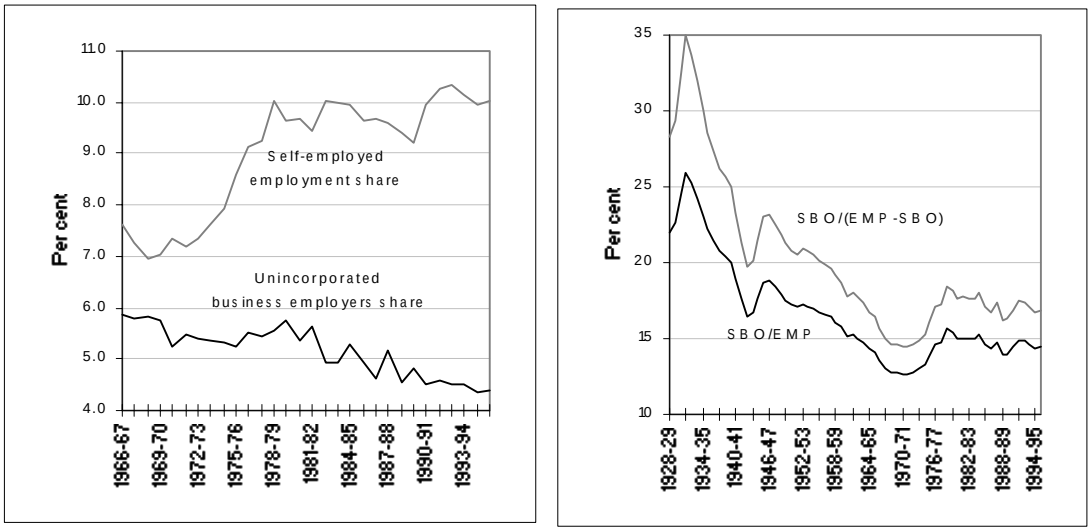
[8] But note these data include the farm sector.

Figure 2.3: Number of non-farm small business operators, March quarter 1978 to March quarter 1997



Source: ABS Catalogue 6203.0 (LFS survey).

Figure 2.4: Small business operators (farm and non-farm), Australia



a SBOs comprise two employment categories: the self-employed and unincorporated employers. While some unincorporated employers will actually be running medium or big businesses, the overwhelming majority will be genuine small business operators. The separation of SBOs into these two categories only goes back as far as 1966-67. See Appendix B for data and sources.

A discussion on statistical profiles and a review of some recent Australian economic literature related to non-agricultural small business operators is

presented in appendix B (and we model the determinants of SBO employment in appendix J). Suffice to note here the following points:

- Small business operators are heavily concentrated in retailing, personal and community services and construction.
- Migrants from non-English speaking countries are more heavily represented among small business operators than among wage and salary earners.
- The proportion of women among small business operators is considerably lower than among wage and salary earners.
- Contractors providing regular services to businesses or other organisations represent more than 40 per cent of all small business operators. The demarcation line between self-employed contractors dependent on a single client and casual employees is often fairly blurred.

The data on the small business operators illustrated in figure 2.3 (based on the Labour Force Survey — LFS) can be added to the estimates on wage and salary earners from the SEE survey (figure 2.1) to obtain aggregate estimates of the number of people working in small business in Australia. [9]

The estimated share of the combined private non-farm labour force employed in small business is presented in table A.3 in appendix A. This table shows that the share of small business employment has fluctuated over the 1983 – 1995 period. The overall percentage point increase in the share of firms with under 20 persons employed was 1.6 points, compared to 2.0 points for those firms employing under 100 persons.

2.6 Composition of the total labour force

In the final part of this chapter we look at the share of small business in total employment, *including the public sector and agriculture*. Table 2.4 shows the composition of the total labour force in 1983 and 1995 using data on non-farm private employment, plus additional data on the public and agricultural sectors.

[9] Some adjustments are needed to obtain these aggregates. The term 'employers' in the ABS statistics refers to the owners of unincorporated enterprises, but excluding those of incorporated companies. We used data in ABS catalogue 1321 (1996) to allocate employers to different sized businesses.

Table 2.4: Composition of the national labour force

	Private non-farm firms employing				*Agriculture*	*Public* [a]	*Total*
	under 20	*20-99*	*100+*	*total*			
	%	%	%	%	%	%	000s
Sep 1983	29.2	12.3	25.2	66.7	6.7	26.6	6168.8
Mar 1995	33.0	13.8	26.0	72.8	5.6	21.6	7332.0
Change 1983–95	3.8	1.5	0.8	6.1	-1.0	-5.1	1163.2

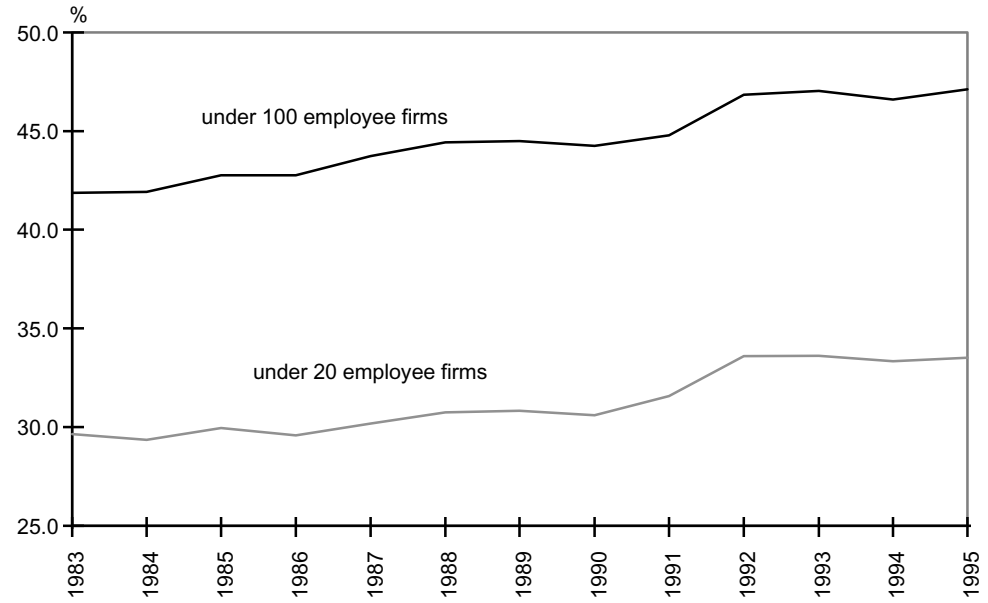
a The public sector includes public business enterprises but excludes the defence forces.
Source: Table A.4 in appendix A.

The share of public employment fell by 5.1 percentage points and agricultural employment by 1.0 percentage point between 1983 and 1995. In consequence, the share of private non-farm employment increased from 66.7 to 72.8 per cent of national employment. As well, the decline in these two sectors means that the change in the small business share of employment is much greater when national employment is used as the benchmark, rather than private sector non-farm employment (figure 2.5).

The general increase in the share of private employment pushed up the share of all size groups in the private non-farm sector. The shares of small business categories, that is the under 20 and the 20-99 size groups, increased more than the over 100 category (figure 2.6). Altogether the under 20 category increased its share in national employment by 3.8 per cent and the under 100 category by 5.3 per cent. These figures are considerably higher than the corresponding increases inside the private non-farm sector — which amounted to 1.6 and 2.0 per cent, respectively (table A.3).

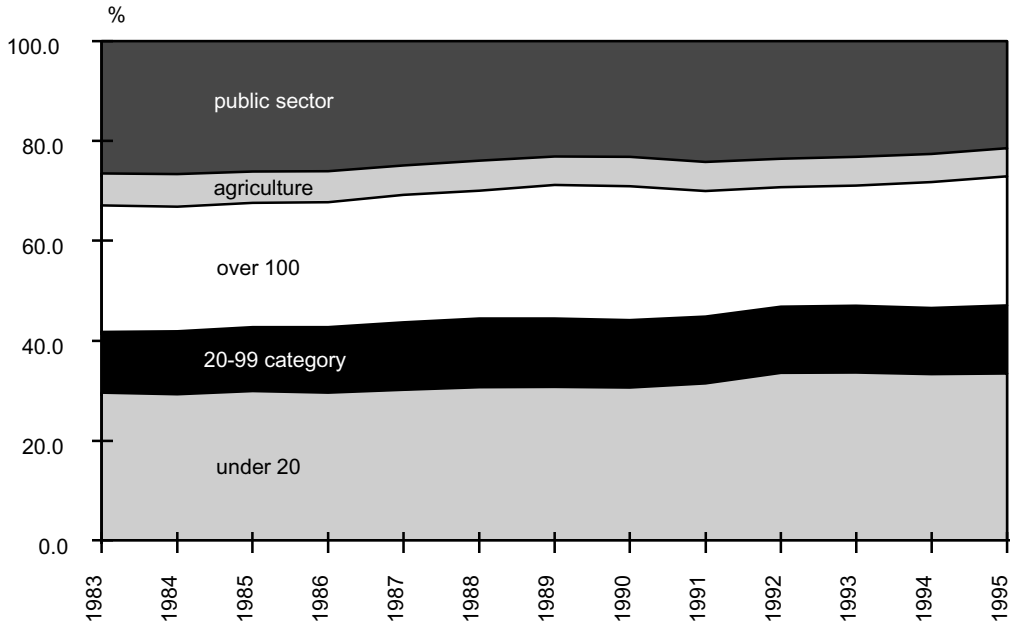
In purely accounting terms, the contraction in the share of public employment accounts for much of the increase in the share of small business in national employment. The underlying factors are more complex. A quantitative analysis of the factors accounting for the changes in table 2.4 is presented in table 6.2 in chapter 6.

Figure 2.5: Share of small business in total employment, 1983 to 1995, per cent



Source: Table A.4 in appendix A.

Figure 2.6: Composition of national employment, 1983 to 1995, per cent



Source: Table A.4 in appendix A.

In table 2.5 we re-cast the employment distribution presented in table 2.4 (which includes both full-time and part-time employees) in terms of hours worked. Data were obtained from the ABS on the distribution between full-time and part-time employees in various size groups, and the corresponding average number of hours worked per week. Similar information was obtained also for small business operators, agricultural workers and public sector employees. By weighting the groups according to the average hours worked we obtained aggregate labour force estimates in terms of hours rather than employment numbers.

Between 1985 and 1995, the share of the under 100 size group increased by 5.2 per cent in terms of hours, compared to an increase of 4.3 per cent according to labour force population statistics. On the other hand, the share of the 100+ category did not change in terms of hours worked, but it increased by one per cent in terms of employment numbers. The difference between the hours-based and population-based estimates of the employment shares of small and large business is due to the rapid growth of part-time employment in large firms (as discussed in section 2.2).

Table 2.5: Composition of the workforce in terms of persons and hours, 1985 and 1995, per cent

	Proportion of part-time workers 1985	*Proportion of part-time workers 1995*	*Share in terms of hours 1985*	*Share in terms of hours 1995*	*Change in shares based on hours 1985–95*	*Change in shares based on heads 1985–95*
	%	%	%	%	%	%
Under 20	29.4	34.9	28.2	31.8	4.2	3.5
20-99	25.1	29.9	12.7	13.8	1.0	0.8
Under 100	27.7	32.9	41.0	45.8	5.2	4.3
100+	19.7	33.1	25.3	25.4	0.0	1.0
Agriculture	24.7	25.3	5.9	5.8	-0.4	-0.7
Public sector	13.0	19.8	27.8	23.2	-4.7	-4.6
Total	21.8	29.9	100.0	100.0	0.0	0.0

Source: Table 2.1 and unpublished ABS data.

2.7 Caveats about the data

The main data source on wage and salary earners in this paper is the SEE survey, which is a sample survey of businesses. The SEE is the only regular survey published by the ABS which provides time series data on the distribution of employment by firm size. However, the SEE is only one amongst a number of ABS employment surveys.

The principal ABS employment survey is the Labour Force Survey (LFS) which is a survey amongst households rather than businesses. Apart from a small annual

supplementary survey on income distribution (the WEEDA survey discussed in appendix C), the LFS does not categorise labour market variables by employer size. In recent years the LFS consistently reported much higher estimates for the total number of employees than the SEE, and the difference is widening (box 2.1). The same applies also to the WEEDA survey, as shown in table C.1 in appendix C.

Box 2.1: 800 000 persons are missing

Table A.5 in appendix A compares the number of people employed according to the LFS with the estimates based on non-farm employees from the SEE survey, plus estimates for the self-employed and agricultural employment from the LFS.

Total number of people employed (in 000s)

	LFS	*SEE based*	*Difference*
1983	6 358	6168	189
1988	7 378	7 216	162
1989	7 711	7 414	297
1992	7 642	7 137	505
1995	8 165	7 332	833

Until 1989 the two series were moving relatively close together. The difference between them could primarily be explained by the absence of defence personnel and unpaid family workers in the SEE based measure. However, since 1989 the difference between the two series has widened rapidly.

Source: Table A.5.

The ABS is aware of this discrepancy and it suspended publication of SEE quarterly statistics (Catalogue 6248.0) following the release of figures for the March quarter 1995.

The decision to suspend publication of the SEE statistics was made pending:

- the redevelopment of the quarterly surveys of private and public sector employers and the adoption of the new ANZSIC industry classification; and
- the incorporation of revisions to previously published statistics resulting from improved coverage of private sector employers.

The task of determining the nature and extent of revisions to employment and earnings statistics has proved to be a complex and time consuming exercise. It is

still not completed. It is now anticipated that the publication of employer survey estimates of employment and earnings will recommence later in 1997. This will provide details of revisions made to previously published estimates. These will be produced back to the introduction of the series in 1983–84.

The possibly less comprehensive coverage of the population in the currently available SEE statistics is, by itself, not a major problem when one examines relative shares of employment by firm size, rather than the absolute number of employees. However, the difference between the estimated total number of employees according to the SEE and LFS has escalated rapidly in the last six years, as shown in box 2.1. If this growing discrepancy represents a diminishing coverage of the population in the SEE survey then there is a possibility that lower coverage will affect the employment estimates of small business more, because larger companies and public agencies are not *sampled* in the SEE but fully enumerated. *If* that is the case, we might have underestimated the shift toward small business employment in the statistics presented in this chapter. [10]

In tables A.7 and A.8 in appendix A, we present a sensitivity analysis of the effects of adjusting the data by allocating the unexplained discrepancy in various proportions between small and large business employees. Assuming that 75 per cent of the difference represents employees in under 100 person firms missing from the SEE data [11], then we obtain a significantly higher estimate for the share of small business in 1995. For instance, according to current SEE estimates, the share of small business in private non-farm employment increased by 2.5 percentage points between 1983 and 1995. By attributing 75 per cent of the above discrepancy to small business, the increase in the share of small business becomes 4.8 percentage points.

In this report we use the *currently available* SEE data because of the absence of other published time series data on employment by firm size, and to avoid arbitrary adjustments to the current data which may prove to be quite misleading.

We have decided not to postpone the publication of this report until the revised SEE estimates are publicly released, as we have some confidence that current SEE estimates are reasonably accurate in respect to trends in employment shares which is the main usage of SEE statistics in this report:

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[10] Other Australian studies which attempted to estimate the share of small business in the total workforce (such as ABS Catalogue 1321.0 (1993 and 1996) and IAESR (1994)) relied on the same sources of information. They used SEE data on wage and salary earners (non-farm private and public employment) and LFS data on self-employment and agricultural employment.

[11] The 75 per cent allocation is based on the Canadian experience in reconciling a similar discrepancy between enterprise and household-based labour surveys, as explained in appendix A.

- The LFS based survey — the WEEDA — provides some corroboration of our results (appendix C). [12] Despite different measurements of employer sizes in the two surveys, comparison of changes in shares over time is revealing. WEEDA data are available between 1990 and 1995. According to WEEDA (tables C.3 and C.4), the share of wage and salary earners in under 20 person workplaces increased from 44.4 to 46.5 per cent during this period (or by 2.1 percentage points). According to the SEE (table A.1) the share of under 20 size firms increased from 32.5 to 34.5 per cent between 1990 and 1995 (or by 2 percentage points). The WEEDA survey reports an increase in the employment share of under 100 employee businesses of 1.3 per cent between 1990 and 1995, compared to the SEE, which records a 1.7 per cent increase. Evidently changes in shares in the two surveys have been moving in tandem since 1990, which is the period when the large divergence emerged in total population estimates.

In summary, while it is possible that the currently available data from the SEE have underestimated the shift toward small business, it is unlikely that revised estimates in regard to employment shares will fundamentally alter the findings or conclusions presented in this report.

[12] Unfortunately, the two surveys are not entirely comparable, because while the dissection in the SEE is by management unit size, the dissection in WEEDA is by the size of the workplace (ie establishment) rather than the size of the firm.

3 EMPLOYMENT DYNAMICS

In this chapter we provide estimates of the small business contribution to net job 'creation'.[1] This will give a different and more detailed perspective on small business employment than the average shares discussed in chapter 2. We start by looking at the contribution of different parts of the economy to net employment changes. We then examine job generation and job turnover. In the final section we discuss the recruitment patterns and problems in small business.

3.1 Contribution to employment growth

The number of non-farm private sector employees increased by just over one million between 1983–84 and 1994–95.[2] Of these, just under 400 000 were in businesses employing less than 20 people, another 240 000 were in businesses employing between 20 and 99 persons and the remainder were in 'big' business. To put these raw numbers into some perspective we produce four measures of employment dynamics by firm size (table 3.1):

- The percentage increase in the number of employees in each category between 1983 and 1995 (or $\hat{n}_i = 100.\{n_{it}\text{-}n_{it-1}\}/n_{it-1}$ where n_{it} is employment in firm size category i at time t).
- The ratio of employment growth in each firm size category to average employment growth (or $g_i = \hat{n}_i / \hat{v}$ where $\hat{v} = 100.\{v_t\text{-}v_{t-1}\}/v_{t-1}$ and v_t is total employment in period t).
- The percentage contribution of each size category to the total national increase in private employee numbers between 1983–84 and 1994–95 (or $c_i = \{n_{it} - n_{it-1}\}/\{v_t\text{-}v_{t-1}\}$).

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1 We caution readers that these sorts of n umbers are prone to the category shifting problem identified in the previous chapter. We also note that the data used here, while derived from SEE and LFS data, are fiscal year rather than quarterly data as in chapter 2. They also include more firm size categories.

2 In this analysis we examined changes over 12 years because clear patterns emerge only over relatively long time frames. In shorter periods, the contributions to employment growth of various size groups display large variations, depending on stages in the business cycle and random fluctuations, and are much more likely to be afflicted by the problem of category jumping described in the previous chapter.

- The change in the share of each size category in the total number of private wage and salary earners between 1983–84 and 1994–95 (or $\Delta s_i = n_{it}/v_t - n_{it-1}/v_{t-1}$).

There are a number of illuminating relationships between these various measures. First, the percentage contribution to employment growth by any firm size category (c_i) can be expressed as:

- the multiple of the growth ratio (g_i) and the employment share in the starting period (or $c_i = 100.\ g_i.s_{it}$ where s_{it} is the share of the *i*th size category in employment at time t). For example, we found that the number of wage and salary earners in the 1-19 group increased by 34.8 per cent between 1983–84 and 1994–95 — or 1.18 times the growth rate for employment on average. The implication of this more rapid growth is that firms employing 1-19 persons accounted for a greater share (in this case 38.3 per cent) of national non-farm private sector employment growth than their employment share in 1983–84 (which was 32.4 per cent).
- as the addition of the end period employment share and the normalised change in the employment share (or $c_i = 100.\{s_{it} + D_{si}/\hat{v}\}$). This implies immediately that any firm size category whose employment share increases, has made a contribution to employment growth in excess of their employment share. [3]

Second, the change in the employment share of firm size category i depends on whether the growth in employment in category i exceeds the growth rate of total employment. That is:

$$\Delta s_i = \frac{n_{it}}{v_t} - \frac{n_{it-1}}{v_{t-1}} = \frac{n_{it-1}}{v_t}\left\{\hat{n}_i - \hat{v}\right\}$$

This dispels any notion that there is an *automatic* nexus between growth in the employment share of a sector and employment creation by that sector. For instance, if total employment falls, then Δs_i will be positive even if $\hat{n}_i$ is zero or even somewhat negative.

While the Australian experience over the time span from 1983–84 to 1994–95 *is* based on a genuine increase in the number of jobs located in small business, in some circumstances changes in employment shares can provide quite misleading signals about the amount of net job creation that is taking place. For example, if we had selected the period from 1989–90 to 1993–94, then small business job growth would have been very modest, but the share of small business in total

[3] Obviously, so long as overall employment grows in the economy.

employment would have increased substantially — reflecting an apparent fall of overall employment in the economy as a whole.

It appears that, *as measured*, most new net jobs generated over the period from 1983–84 to 1994–95 have been located in small business, and particularly in businesses employing under 10 persons. This is true regardless of whether we compute such dynamic measures of employment change for wage and salary earners (table 3.1), total non-farm private employment (table 3.2) or national employment (table 3.3).

Table 3.1: Private non-farm wage and salary earners, changes by firm size, 1983–1995

	Employment change	*Growth ratio*	*Contribution to employment growth*	*Employment share 1983-84*	*Employment share 1994-95*	*Change in share*
Firm category	%	ratio	%	%	%	Points
1 to 9	37.2	1.26	26.9	21.4	22.6	1.3
10 to 19	30.2	1.02	11.3	11.1	11.1	0.1
1 to 19	34.8	1.18	38.3	32.4	33.8	1.3
20 to 49	30.0	1.02	13.5	13.3	13.3	0.1
50 to 99	33.6	1.14	9.9	8.7	9.0	0.3
20 to 99	31.4	1.07	23.4	22.0	22.3	0.3
100 or more	24.8	0.84	38.4	45.6	44.0	-1.7
Total	29.5	1.00	100.0	100.0	100.0	0.0

Source: Table A.16.

However, each of the three tables gives a somewhat different perspective on the share of jobs 'created' by small business (0-100 employees):

- 61.7 per cent of private non-farm wage and salary earners;
- 68.9 per cent of private non-farm employment (including SBOs); or
- 72.6 per cent of national employment (including the farm and public sectors).[4]

[4] The higher number here reflects the fact that the public sector has provided a negative contribution to employment growth.

Table 3.2: Private non-farm employment, changes by firm size, 1983–84 to 1994–95

	Employment change	*Growth ratio*	*Contribution to employment growth*	*Employment share 1983-84*	*Employment share 1994-95*	*Change in share*
Firm category	%	ratio	%	%	%	Points
0 to 9	36.5	1.21	40.5	33.5	35.1	1.6
10 to 19	28.5	0.94	9.3	9.9	9.8	-0.1
1 to 19	34.7	1.15	49.8	43.3	44.8	1.5
20 to 49	29.2	0.97	11.0	11.4	11.3	-0.1
50 to 99	33.3	1.10	8.0	7.3	7.5	0.2
20 to 99	30.8	1.02	19.1	18.7	18.8	0.1
100 or more	24.8	0.82	31.1	38.0	36.4	-1.6
Total	30.2	1.00	100.0	100.0	100.0	0.0

a Includes allocation of SBOs to different business size groups.
Source: Table A.17.

Table 3.3: Total employment, changes by firm size and sector, 1983–84 to 1994–95

	Employment change	*Growth ratio*	*Contribution to employment growth*	*Employment share 1983-84*	*Employment share 1994-95*	*Change in share*
Firm category	%	ratio	%	%	%	Points
0 to 9	36.5	1.9	42.7	22.4	25.7	3.3
10 to 19	28.5	1.5	9.8	6.6	7.1	0.5
1 to 19	34.7	1.8	52.5	29.0	32.8	3.8
20 to 49	29.2	1.5	11.6	7.6	8.3	0.6
50 to 99	33.3	1.7	8.5	4.9	5.5	0.6
20 to 99	30.8	1.6	20.1	12.5	13.8	1.2
100 or more	24.8	1.3	32.9	25.4	26.6	1.2
Agriculture	-0.4	0.0	-0.1	6.5	5.4	-1.1
Public sector	-3.9	-0.2	-5.4	26.5	21.4	-5.1
Total	19.2	1.0	100.0	100.0	100.0	0.0

a Includes allocation of SBOs to different business size groups.
Source: Table A.18.

Different definitions of small business will, in turn, produce further estimates. Accordingly, had we used the ABS definition of small business [5], rather than the OECD definition, then the share of jobs 'created' by small business from 1983–84 to 1994–95 would have been:

- 39.4 per cent of private non-farm wage and salary earners;
- 50.8 per cent of private non-farm employment (including SBOs); or
- 53.5 per cent of national employment (including the farm and public sectors).

These outcomes show that there can be quite marked variations in the apparent job creation by small business, depending on the preferences of the statistical user for one definition over another. In all cases, however, the rate of employment growth in small business has exceeded the average rate of employment growth.

Moreover, in the light of the caveats about the ABS data presented in chapter 2, it is quite possible that the contribution of small business to employment growth during the 1983–84 to 1994–95 period was even higher than the numbers presented here.

Time-series data on the share of wage and salary earners employed by small business (ie under 100 employee firms) are available for a number of other OECD countries. These are shown in table A.6 in appendix A. Combining such data on employment shares with the International Labour Organisation's (ILO) figures on aggregate growth in private non-farm employment, we calculated the increases in employment accounted for by the under 100 employee and over 100 employee business groups. The results are shown in table D.1 in appendix D.

The figures show that, during the 1980s, small business contributed more than its share to employment growth in most OECD countries (with the exception of the USA and Japan). Usually the contribution of small business to the change in employment of wage and salary earners in the private sector exceeded 65 per cent. However, this must be seen in the context that the small business share in private non-farm employment is close to or above 50 per cent in most countries.

The contribution of firms employing under 100 persons to employment growth in Australia has, therefore, been in line with the contributions recorded in a number of OECD countries from the late 1970s to the early 1990s.

[5] Firms employing less than 100 in manufacturing and less than 20 in the service sector.

3.2 Job generation studies

The contribution of small business to job growth has received considerable attention in the literature. The class of studies on net changes in the number of jobs that we shall discuss in this section are referred to in the literature as 'job generation studies'. [6] Despite some reservation about the suitability of this term to describe the nature of these studies, we shall follow here the common terminology used in the literature. These also include other terms with possibly misleading connotations like 'job creation' and 'job destruction'.

Job generation studies are based on enterprise-level longitudinal employment data. The term longitudinal refers to tracking records over time on employment in individual enterprises. The logic behind the estimates of net job generation is very simple. If the firm employs more people then this is called 'job creation'. The opposite process is called 'job destruction'. There are two sources for job creation:

- Employment in newly opened firms.
- New jobs in existing and expanding firms.

In a similar manner there are two possible sources for job destruction:

- Jobs lost due to firm closures.
- Jobs lost due to contraction.

Net job generation is defined as job creation minus job destruction.

As evident from these definitions, job generation studies define job gains and losses in terms of observable changes in firm size. A register of enterprises and records on the number of people employed in these enterprises over a number of years is maintained by national statistical bureaux in most industrialised countries. Such data are even available from large credit rating agencies. Hence, by measuring job gains and losses according to these definitions researchers have a readily available data source.

Job generation studies have one major advantage over studies based purely on the changing size distribution of firms — they can avoid the problem of category jumping. This is because no matter what the final size of any firm at the end of any given year, job creation or destruction at the period can allocated to the size category of the firm at the start of the year.

But these data suffer other deficiencies when measuring job changes. These include the following:

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[6] This literature includes Baldwin and Picot (1995), Berney and P hillips (1995), Birch (1979), Borland and Home (1994), Dennis *et al* (1994), Davis *et al* (1994, 1995), Hammermesh *et al* (1994) and OECD (1994, 1996a, 1996b).

- The data do not measure job changes in the conventional sense. There can be many job reallocations and reclassifications occurring *inside* an enterprise which are not reflected in the firm's overall employment level.
- Due to takeovers and name changes, statistically recorded enterprise openings and closures will not always represent substantive changes.
- Statistics about job changes due to openings, closures, expansions and contractions reveal little about the factors underlying employment dynamics. There is no information in these studies on the nature of job reductions (ie resignations, dismissals or retirements).
- Some other, arguably less severe technical problems of bias and interpretability, such as the regression fallacy (appendix D) and the difficulty with net versus gross job measures (Davidsson, 1995).

Broadly, job generation data can be seen as a more detailed extension of aggregate employment change data, with further dissection provided on the source of employment changes in terms of the job change categories described earlier. Despite their limitations, job generation studies have become popular in the last fifteen years and occupy an important part of the employment literature.

An interesting point revealed by these studies is that small business jobs tend to be created in two types of firms. Birch (1979) refers to them as the 'mice' and the 'gazelles'. The mice are the new, small entrants. The gazelles are a comparatively few rapidly growing firms that are responsible for most small business jobs created through expansions. The gazelles appear to be in virtually every industry, not just the growing ones. According to recent estimates presented in Wetzel (1995), since 1979 over 75 per cent of net new jobs in small firms in the USA were created by less than 10 per cent of small enterprises. There has not yet been a study on the role and characteristics of 'gazelles' in Australia.

Job generation studies tend to indicate a larger contribution of small business to employment growth than the contribution estimates obtained by observing changes between two periods in the number of workers counted in different size groups, as shown in tables 3.1 to 3.3. The reasons for the discrepancies between these two measurement approaches and some of the methodological problems associated with job generation studies are reviewed in appendix D. We also present in appendix D (tables D.2, D.3 and D.4) statistical summaries of job generation studies in a number of OECD countries. These data highlight marked differences in net job generation by establishment size, with small establishments dominating in both gross job gains and losses as well as in net gains (gross gains minus losses). This reflects the stronger employment growth and greater employment turbulence in small businesses.

Before we turn to job turnover, it is worth noting another problem related to job generation studies — the terminology itself. Active terms like net job generation, job creation and job destruction, when related to firm size, imply semantically that the employment growth observed in small business is generated by the small business sector itself. But in reality small business is not an independent driving force of job generation in the economy.

The fact that a large proportion of new jobs *occurs* in small business does not necessarily imply that they have been autonomously generated by the small business sector. Job generation is a complex process dependent on a wide range of economic and technological factors, with firm size being only one factor amongst many. We shall discuss this subject in more detail in chapter 6, where we examine to what extent the increasing share of small business employment represents net job generation or job replacement. Without entering into this discussion here, it should be noted that job generation studies use terms like job creation, job destruction and net job generation without regard to the possible misleading connotations of these terms, when actually they merely denote changes in employment counts.

3.3 Job turnover

Job generation studies contain information that can be used to better understand employment dynamics and job turnover. Job turnover is defined as job creation plus job destruction as a proportion of employment.

Given that job creation and destruction are inferred from changes in firm size [7], job turnover is not a very precise indicator of labour turnover. The usual measures applied in the literature to quantify labour stability/turnover are length of tenure or the percentage of employees who joined or left the firm during the last year. However, given the paucity of data in Australia and abroad about length of tenure in relation to firm size (a subject discussed in detail in chapter 5), job generation studies can fill some of the information gap.

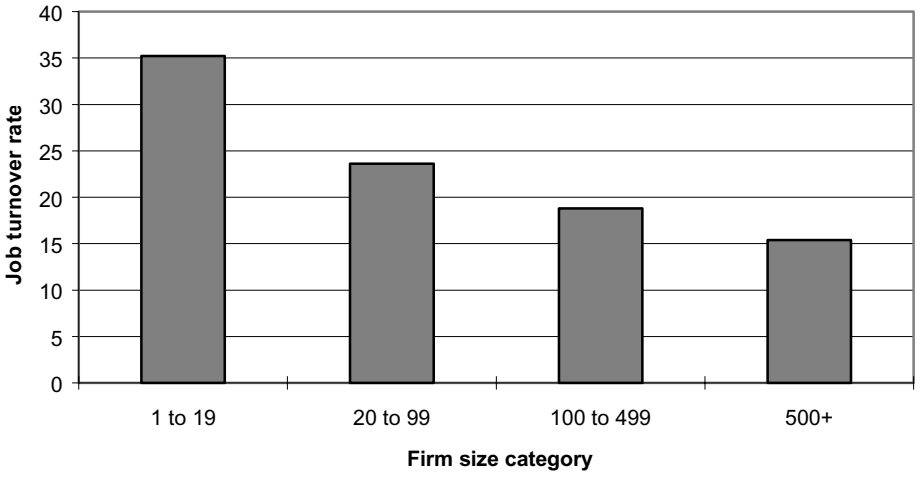
Job turnover can provide a reasonable proxy for labour turnover (where labour turnover is defined as the ratio of recruitments and separations to employment). Overseas studies, like Hammermesh et al (1994) and other studies cited in OECD (1996b), have compared job turnover, as inferred from changes in the number of employees, with detailed labour turnover statistics from the same sample of firms. They found that, in large samples, job turnover amounts on the average to

[7] At the firm level, (net) job creation is measured as $(n_1 - n_0)$ so long as $(n_1 - n_0)>0$, while (net) job destruction is $(n_0 - n_1)$ so long as $(n_1 - n_0)<0$, where n_1 and n_0 represent the closing and opening number of employees in a business.

between 20 and 40 per cent of labour turnover. The relationship between the two measures is not linear at the enterprise level. For example, if firm size remains unchanged during the year but there was a change in staff, then job turnover amounts to zero per cent of labour turnover. On the other hand, in a newly established firm where all labour turnover represents new recruitments, job turnover amounts to 100 per cent of labour turnover.

While at the individual enterprise level large variations can occur, the overseas studies suggest that, in large samples, statistics on job turnover by firm size can give a useful indication on labour turnover by firm size. OECD estimates reveal that job turnover in small establishments is more than twice as high as in large ones (tables D.3 and D.4 and figure 3.1). Dissection of job turnover rates in figure 3.1 by their four components (eg. openings, contractions, closures and expansions) is shown in figure 3.2.

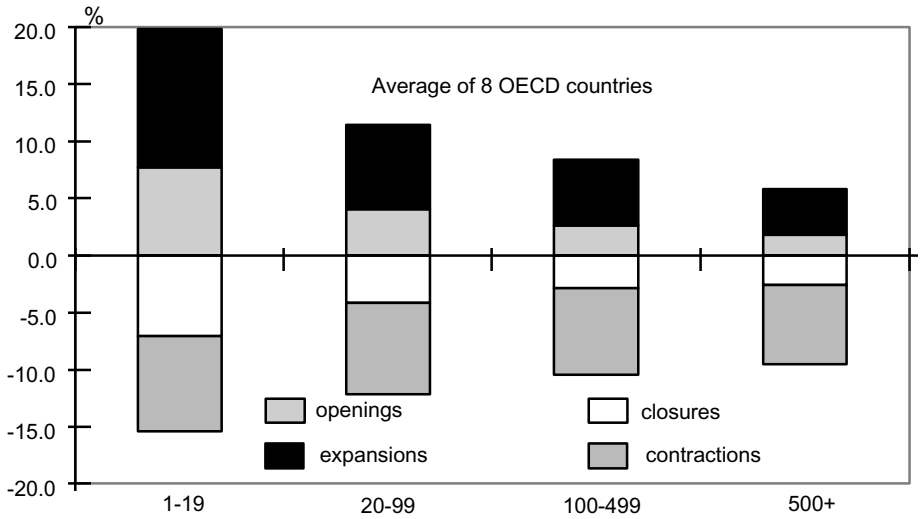
Figure 3.1: Job turnover in OECD countries by firm size[a]



a The OECD average relates to national employment data. The OECD data are based on job turnover estimates from Canada, Denmark, Finland, France, Italy, New Zealand, Sweden and the United Kingdom. The data cover slightly different periods between 1983 and 1992.

Source: Table D.3.

Figure 3.2: Components of job turnover by establishment size, OECD countries



Source: Table D.3.

The figures clearly illustrate that small firms record significantly higher rates of both job gains and job losses than larger firms. This is referred to in the literature as small business turbulence. It is interesting to note that the differences in job turbulence are mainly due to new openings and closures. There seems to be little difference by establishment size in terms of jobs lost due to contractions.

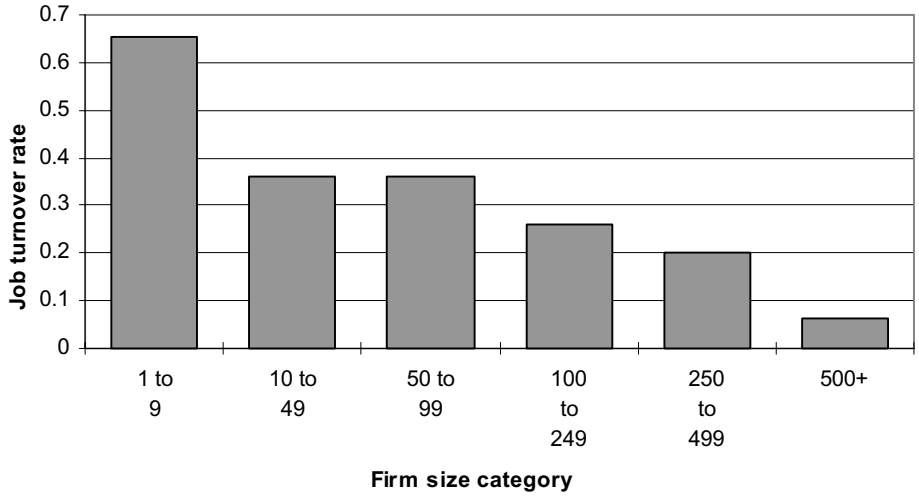
While the OECD data shows a significantly higher proportion of job expansion in existing small establishments, this finding must be viewed with some caution. The data in table D.3 cover only OECD countries that experienced a growth in the share of small business in the late 1980s. It excludes countries, such as the USA and Japan, which recorded a decline in the share of small business during this period. Hence, the marked differences in job expansion by employer size might be partly due to the sample of countries chosen.

Unfortunately, there are no Australian data covering all sectors or similar periods, which we could compare with the OECD data. However, an Australian job generation study by Borland and Home (1994) provides a useful picture of job dynamics by size in manufacturing. Their study was based on comparing manufacturing census data at the individual establishment level between 1983–84 and 1984–85. We emphasise that the Borland and Home study was confined to one year and one sector, so that its findings might not be representative of the broader population.

As in the more broadly based OECD studies, Borland and Home find that job turnover tends to be higher in smaller establishments (figure 3.3). Their results show, not surprisingly, that small business accounts for a disproportionately large

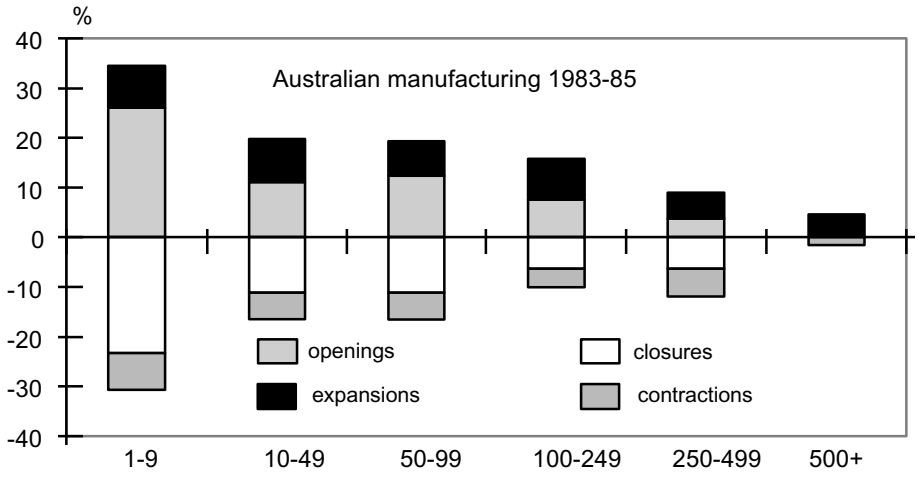
share of jobs created through openings (figure 3.4). On the other hand, small business does not (unlike the broader OECD study) account for a disproportionately large share of job creation through expansion of businesses.

Figure 3.3: Job turnover by establishment size in Australian manufacturing



Source: Table D.5.

Figure 3.4: Components of job turnover by establishment size in Australian manufacturing



Source: Table D.5.

The strong negative correlation between job turnover and firm size *suggests* that employment stability is lower in small firms — we examine this issue in more detail in section 5.3.

3.4 Survey of recruitment

The issue of job turnover leads us to the related subject of staff recruitment. To date the quantity and quality of jobs in small business have been major topics in the literature. So, whilst there is considerable information available on the effects of small business employment on the labour market, there is little work on the counter side: how well labour markets serve small business. The aim of this section is to explore this subject further.

What evidence there is points to relatively minor problems in recruitment of staff by small business. In a general question about the prime concerns facing the business, the Yellow Pages Small Business Survey [8] of February 1996 found that 3 per cent of respondents identified finding quality staff to be their prime concern. While this suggests that it is not a big issue for most firms, it should be noted that the question was asked in the context of the business as a whole.

In August 1996 we conducted a preliminary, small-scale study of business recruitment through a telephone survey of 102 respondents (appendix H). The main objective of the survey was to investigate recruitment channels used by small business and the difficulties they encounter in recruiting staff. Its sample size is too small to generate anything other than tentative conclusions. Nevertheless:

- We did not find decisive evidence of barriers to small firms in the recruitment process. The sampled firms appeared to have access to all conventional methods of recruitment, both formal and informal. Difficulties were being experienced mainly in recruiting skilled staff, but much less so when it came to less skilled workers. Most firms with less than 20 employees (and even more so those with less than 5) were able to conduct the majority of their recruitment without having to use formal recruitment methods such as the CES, recruitment agencies or advertising in the press.
- We found that smaller firms tended, not surprisingly, to use informal mechanisms for recruitment more intensively than larger firms.

Other sources such as Wright and Thong's (1989) survey of recruitment in Victoria and Atkinson and Storey's (1994) research in the UK, supports our finding that informal methods become less important as firm size increases. And conversely that press advertising becomes increasingly important.

[8] Based on a survey of at least 1200 small businesses every quarter.

4 SECTORAL ANALYSIS

In this chapter we investigate the employment distribution by firm size at the sectoral level. We provide some quantitative estimates of the effect on the employment share of small business of (a) changes in the sectoral composition of the economy and (b) changes that occurred *within* sectors in the size of firms. Special attention is given to changes that occurred in manufacturing and retail trade.

For the purpose of this analysis we examined fourteen broad industry groups covering the non-farm private sector.

4.1 Basic data

Employment by firm size is available from the ABS (Cat. 1321.0) for fourteen major industry groups over a number of years. The data were derived by combining statistics on employees with statistics on small business operators. [1]

The change in the share of small business employment can be broken down into sub-components. One such decomposition [2] is to separate changes in the employment share due to:

1. changing small business shares of employment at the sectoral level, holding sectoral shares of total employment fixed; and
2. changing sectoral shares of total employment, holding the small business share of employment at the sectoral level fixed.

Thus, the small business share of non-farm private employment is:

$$S_t = \sum_{i=1}^{k} \frac{E_{it}}{N_{it}} \frac{N_{it}}{N_t} = \sum_{i=1}^{k} \alpha_{it} \times \beta_{it}$$

where E_{it} is small business employment at time t in sector i, N is total employment, α is the small business share of employment in sector i, and β is the employment share of sector i.

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1 These data differ somewhat from the SEE/LFS data that have been used elsewhere in this report. For example, they show a smaller increase in the share of small business in non-agricultural private employment than data presented in previous chapters. This is because of differences in the period used as well as other minor methodological variations in their derivation.

2 A more complicated decomposition is discussed and calculated in appendix E.

Accordingly the change in employment share is:

$$\Delta S_t = \sum_{i=1}^{k} (\alpha_{it} \times \beta_{it}) - (\alpha_{it-1} \times \beta_{it-1})$$
$$= \sum_{i=1}^{k} (\Delta\alpha_{it} \times \beta_{it-1}) + (\Delta\beta_{it} \times \alpha_{it-1}) + (\Delta\alpha_{it} \times \Delta\beta_{it})$$

The first term in the expansion corresponds to (1) above while the second term relates to (2). There is an additional term, (3), which picks up the fact that changes in sectoral shares and small business shares occur simultaneously, but we largely ignore this in the analysis that follows.

Changes in the small business share (whether defined in terms of less than 20 or less than 100 employees) of sectoral employment varies markedly from sector to sector (table 4.1). Small business significantly increased its share of employment in manufacturing, mining, construction and infrastructure (the electricity, gas, water and telecommunications sectors). In contrast, the small business share fell markedly in a range of service sectors: retail trade, accommodation etc, personal and other services, and cultural and recreational services — although small business still had a relatively high presence in these sectors. The higher the small business intensity in a sector in 1983–84, the more likely that its intensity *declined* over the next decade [3] — this is not a pattern consonant with any substantial shift in the comparative advantage of smaller enterprises (figure 4.1A).

There were also substantial shifts in the sectoral shares of total non-farm private employment (table 4.1). In particular, manufacturing (in which large firms dominate employment) and retail trade (in which smaller firms play a bigger role) decreased in importance, while property and business services and health and community services (both dominated by small firms) increased in importance.

Overall, we find that the change in the employment share of small business at an aggregate level largely reflects structural change in the economy (table 4.2). The reason for a growing aggregate small business share is that sectors in which small firms play an intensive (minor) role have tended to expand (decline) in relative terms (figure 4.1B).

[3] Though the relationship is fairly weak.

Table 4.1: Sectoral distribution of private non-farm employment

Industry	*SB share* [a]			*Sector share* [b]		
	1983–84	*1994–95*	*Change*	*1983–84*	*1994–95*	*Change*
	%	*%*	*%*	*%*	*%*	*%*
Under 20 employee firms						
Mining	7.4	12.5	5.1	1.9	1.4	-0.5
Manufacturing	19.4	24.9	5.5	24.1	17.4	-6.7
Construction	72.7	79.3	6.6	7.8	8.3	0.4
Wholesale trade	44.8	46.8	2.1	9.0	8.4	-0.6
Retail trade	55.4	48.0	-7.3	20.5	19.1	-1.4
Accommodation, cafes etc	48.0	41.8	-6.2	5.6	6.4	0.9
Transport & storage	53.1	50.3	-2.7	4.3	4.4	0.1
Finance & insurance	22.1	20.2	-1.9	3.8	4.6	0.8
Property & business services	55.2	56.4	1.2	9.6	12.2	2.6
Education	30.8	30.8	0.0	1.8	2.6	0.8
Health & community services	38.5	37.3	-1.2	6.0	8.7	2.7
Cultural & recreational services	55.3	49.2	-6.1	2.3	2.6	0.3
Personal & other services	71.0	67.9	-3.1	2.9	3.5	0.5
Electricity, G&W & Comm. [c]	36.9	57.0	20.1	0.3	0.5	0.1
Total	43.3	44.8	1.5	100.0	100.0	0.0
Under 100 employee firms						
Mining	17.1	23.2	6.1	1.9	1.4	-0.5
Manufacturing	38.8	46.8	8.1	24.1	17.4	-6.7
Construction	87.3	92.2	4.9	7.8	8.3	0.4
Wholesale trade	69.9	74.1	4.2	9.0	8.4	-0.6
Retail trade	66.8	60.0	-6.8	20.5	19.1	-1.4
Accommodation, cafes etc	80.9	71.2	-9.8	5.6	6.4	0.9
Transport & storage	70.6	72.6	2.0	4.3	4.4	0.1
Finance & insurance	34.4	32.1	-2.3	3.8	4.6	0.8
Property & business services	75.6	75.0	-0.6	9.6	12.2	2.6
Education	61.2	56.3	-4.9	1.8	2.6	0.8
Health & community services	62.3	56.3	-6.0	6.0	8.7	2.7
Cultural & recreational services	80.6	72.2	-8.4	2.3	2.6	0.3
Personal & other services	87.2	83.0	-4.2	2.9	3.5	0.5
Electricity, G&W & Comm. [c]	44.0	67.1	23.2	0.3	0.5	0.1
Total	62.0	63.6	1.6	100.0	100.0	0.0

a This is the small business share of employment within each sector. It includes employers and own-account workers.

b This is the employment share of each sector (encompassing all firm sizes).

c Infrastructure services include electricity, water, and telecommunications. Historically most of these services were provided by public agencies, but the situation is changing.

Source: ABS Catalogue 1321.0 with allocation of SBOs to different firm size categories.

Table 4.2: Distribution of private non-farm employment in small business[a]

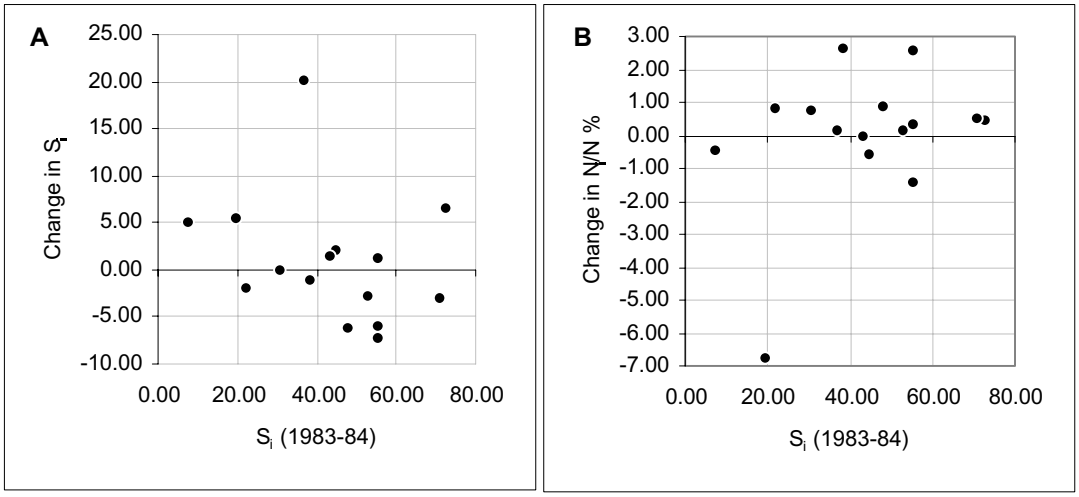
Industry	$S_{1983–84}$	$S_{1994–95}$	ΔS	*(1)*	*(2)*	*(3)*
	%	%	%	%	%	%
Under 20 employee firms						
Mining	0.14	0.17	0.04	0.10	-0.04	-0.02
Manufacturing	4.68	4.35	-0.34	1.34	-1.31	-0.37
Construction	5.69	6.56	0.87	0.52	0.32	0.03
Wholesale trade	4.02	3.94	-0.08	0.19	-0.26	-0.01
Retail trade	11.34	9.15	-2.19	-1.50	-0.80	0.11
Accommodation, cafes & restaurants	2.68	2.69	0.01	-0.35	0.41	-0.05
Transport & storage	2.29	2.24	-0.06	-0.12	0.06	0.00
Finance & insurance	0.83	0.93	0.09	-0.07	0.18	-0.02
Property & business services	5.31	6.87	1.56	0.12	1.41	0.03
Education	0.56	0.80	0.24	0.00	0.24	0.00
Health & community services	2.32	3.24	0.92	-0.07	1.02	-0.03
Cultural & recreational services	1.27	1.30	0.03	-0.14	0.19	-0.02
Personal & other services	2.08	2.35	0.27	-0.09	0.38	-0.02
Electricity, gas & water & communication	0.12	0.26	0.14	0.06	0.05	0.03
Total	43.33	44.83	1.50	-0.01	1.86	-0.36
Under 100 employee firms						
Mining	0.32	0.32	0.00	0.11	-0.08	-0.03
Manufacturing	9.36	8.16	-1.20	1.95	-2.61	-0.54
Construction	6.84	7.63	0.80	0.39	0.39	0.02
Wholesale trade	6.28	6.23	-0.05	0.38	-0.40	-0.02
Retail trade	13.70	11.44	-2.26	-1.40	-0.96	0.10
Accommodation, cafes & restaurants	4.52	4.58	0.06	-0.54	0.69	-0.08
Transport & storage	3.05	3.23	0.18	0.09	0.09	0.00
Finance & insurance	1.30	1.47	0.18	-0.08	0.28	-0.02
Property & business services	7.27	9.13	1.86	-0.06	1.93	-0.01
Education	1.11	1.45	0.35	-0.09	0.48	-0.04
Health & community services	3.75	4.89	1.14	-0.36	1.65	-0.16
Cultural & recreational services	1.86	1.91	0.05	-0.19	0.27	-0.03
Personal & other services	2.55	2.88	0.32	-0.12	0.47	-0.02
Electricity, gas & water & communication	0.14	0.30	0.16	0.07	0.06	0.03
Total	62.04	63.62	1.58	0.14	2.24	-0.81

a The terms (1), (2) and (3) relate to the three sub-components of the decomposition of the changing employment share of small business.

Source: ABS Catalogue 1321.0 with allocation of SBOs to different firm size categories.

For example, we found that, in aggregate, firms employing less than 20 employees increased their share of non-farm private employment by around 1.5 percentage points from 1983–84 to 1994–95. However, if there had been no change in the relative importance of different sectors (ie $\Delta\beta = 0$) then the small business share of non-farm private employment would have actually *fallen* slightly.

Figure 4.1: Small business intensity by sector[a]



a Based on firms employing less than 20 persons.

The overall rise in the share of small business in the private non-farm workforce stemmed principally from increases in the importance of the finance and insurance, property and business services, and health and community services sectors (table 4.2 column headed ΔS). In these sectors the proportion of small business did not change by much. However, the large increase in their overall employment levels lifted the share of their small business components in the private non-farm workforce.

Some of the increase in business services was due to outsourcing of computer, accounting, printing and legal work from companies in other sectors. Contract employment is classified by the ABS in business services; it is another reason for the strong employment growth in this category. The rise in private community services has been partly due to outsourcing from government agencies. The growing demand for child care services in response to the increasing participation of women in the workforce has been another major contributing factor (BIE, 1994).

Manufacturing and retail trade have made negative contributions to the share of small business in the private workforce:

- The share of small business in manufacturing rose considerably between 1983–84 and 1994–95. However, the overall share of manufacturing in private non-farm employment fell from 24.1 per cent in 1983–84 to 17.4 per cent in 1994–95 (table 4.1). Consequently the non-farm private employment share of manufacturing firms with less than 20 and 100 employees actually decreased (ΔS in table 4.2).

- The employment share of small business in retail trade decreased by around 7 percentage points for both the under 20 and under 100 employee categories. This was mainly due to the growing importance of larger supermarkets and department stores, and the rapidly increasing number of part-time employees in these large enterprises. We shall return to this subject later.

It should be noted that, due to the high level of aggregation applied in this analysis (14 sectors only), the effect of sectoral changes may have been underestimated. In particular, a more disaggregated analysis is needed to discern the effect on employment of the shift in demand toward more customised products and services.

This purely algebraic exercise sheds some light on the causes for the increased share of small business in private employment, albeit still at a fairly superficial level. These causes are examined more fully in chapter 6.

In the following two sections we examine in more detail two sectors that experienced large changes: manufacturing and wholesale and retail trade.

4.2 Small business in manufacturing

There is an extensive literature dealing with the role of small business in manufacturing and more statistical data are available in this area than for most other sectors.

According to enterprise-based SEE data, over the September 1983 to the March quarter 1995 period there has been a large change in the composition of manufacturing, with the employment share of enterprises employing under 100 persons increasing from 39.9 per cent to 48.1 per cent of the manufacturing total. [4]

The phenomenon of a rising small business share of manufacturing employment in a shrinking manufacturing labour force is not unique to Australia, and it has attracted some attention in the literature. A literature review on corporate downsizing with an international perspective, focussing particularly on manufacturing, is presented by Harrison (1994). Other publications on this

[4] Disaggregated statistics of manufacturing establishments by individual industries are presented in table E.6 in the appendix. These statistics (based on manufacturing census data) are only available between 1988–89 and 1991–92. Nonetheless, during this short period the share of small manufacturing establishments employing less than 100 persons increased from 44.5 per cent to 48.3 per cent. The 1990–92 recession might have influenced this rapid change.

subject include Robson and Gallagher (1994) on UK manufacturing and Davis and Haltiwanger (1992) in relation to the USA.

Harrison argues that the growing importance of small business in manufacturing is driven by the move of large corporations toward core production. Taken to its extreme, such a corporate policy implies that ultimately only the final stages of production, research and marketing activities will be retained by the corporation. Components, sub-assemblies and even peripheral R&D can be contracted out to smaller enterprises — but it is large firms which are seen to drive this process, rather than the autonomous entrepreneurial efforts of the small business sector.

The most extreme examples of concentrating on core production can be found in Japanese manufacturing, where outsourcing has a long tradition. Many of the smaller contractors to the large transnational Japanese corporations are partly or fully owned by the client company or its financial affiliates, but are classified statistically as separate enterprises. Similar large customer–dependent contractor networks are developing rapidly in other advanced Western economies. These strategies are referred to in the literature by terms like 'lean production', 'downsizing', 'decentralisation', 'vertical disintegration', 'focussing on core business' or 'flexible specialisation'.

In an increasingly globalised world economy the large corporation-contractor networks often transcend national boundaries. Outsourcing is favoured by recent developments in computer controlled 'flexible' production which tend to reduce economies of scale and favour smaller production units. Perhaps the more significant reason for the shift toward outsourcing is the need to find the cheapest possible supplies due to the increasing intensity of global competition. The emulation of Japanese successes in organising manufacturing operations is possibly another motive.

Harrison argues that vertical disintegration does not mean that large corporations lose their market power or technological leaderships. Outsourcing domestically or overseas simply improves the competitive position of the corporation in increasingly competitive global markets. While the share of sub-contractor enterprises in the value of production increases, they remain in a subordinate position with little control over the market.

There has been little research done in Australia to investigate the growing employment share of small business in manufacturing. The BIE (1994) study on job growth and decline examined the reasons for the sharp reduction of employment in large manufacturing enterprises. As part of that study, interviews were conducted with managers in fourteen of Australia's largest companies operating in the manufacturing sector. These interviews were carried out in 1993 shortly after the start of the recovery from the 1990–92 recession. The survey was

mainly concerned with exploring the reasons for the large scale job losses that occurred during the recession.

The replies indicated that less than 15 per cent of the job losses could be regarded as cyclical (and therefore temporary) downsizing during the recession. More than 80 per cent of job losses were described as structural, with little prospect that new hiring for these positions would occur in the future. The main reasons given for structural job losses were general productivity improvements and divesture or closure of certain branches or production lines. Growing competition from imports is one of the major reasons for cutting back on less lucrative operations. It appears that the recession gave added impetus to rationalising operations and staff numbers that probably would have proceeded at a slower pace in better times.

In contrast to what is suggested in the overseas literature, outsourcing was not mentioned as one of the primary factors behind labour reductions by large companies. Employment statistics also do not suggest a significant increase in outsourcing to small Australian manufacturing enterprises in recent years. The SEE data indicate that the recent rise in the share of small business in manufacturing employment has been driven mainly by the contraction in the workforce of large manufacturers rather than by the growth in small business employment. In fact, the number of people employed by small manufacturers decreased from 474 000 in 1989 to 454 000 in 1995.

4.3 Wholesale and retail trade

Some of the most notable employment changes in the last decade occurred in the internal trade sector. Important developments include:

- Longer opening hours, requiring additional labour.
- A rapid increase in the number of part-time workers employed by large retailers. In 1995, almost 63 per cent of employees in large retail enterprises were working on a part-time basis (see table A.2).
- Consumer demand tended to favour the expansion of large trading enterprises at the expense of ‘corner shops’.

Altogether the information available suggests that significant economic and technological changes have taken place in the last decade in the wholesale and retail trade areas, with the net effect being a slight reduction in the share of small business between 1983 and 1995.

Unlike manufacturing, little could be found in the literature about the process of restructuring in wholesale and retail trade. The BIE (1992) report on small business presents some comparative data on the share of very small enterprises

(less than 10 persons) in wholesale and retail trade in Australia, UK, USA and Japan in the mid to late 1980s. We replicated these data in table E.10 in appendix E. The data reveal that in the 1980s the employment share of very small enterprises in wholesale trade in Australia was similar to the USA, but lower than in Japan. In retail trade, the employment share of very small firms in Australia was 45 per cent compared to 29 per cent in the UK, 20 per cent in the USA and 49 per cent in Japan. [5]

Dennis *et al* (1994) report that the share of small business in retailing in the USA continues to decline. Since the USA is in the vanguard of the technological and social changes affecting retail trade, this suggests that in our country the shift toward large enterprises in retail trade is also likely to continue in the coming years.

4.4 The ratio between sales and employment

An interesting issue in sectoral analysis is the ratio between output measures (value added or sales) and employment (table 4.3). The last two columns in table 4.3 show the ratio between the percentage share of small business in sales or value added against its percentage share in employment (of wage and salary earners only). Generally a lower proportion of output (sales or VA) compared to employment indicates lower capital intensity and/or lower wages in the respective industry. The ratios for individual manufacturing industries are presented in tables E.8 and E.9 (appendix E). The data show that virtually in every manufacturing industry the output to employment ratio is higher in large enterprises than in small firms.

As shown in table 4.3, in most sectors the percentage share of small business in employment is higher than its share in the value of output (value added or sales). This is particularly marked in equipment intensive sectors like manufacturing, transport and construction. However, in private community services (which also includes medical services), the small business employment share is markedly smaller than its sales share.

[5] Due to various regulatory controls Japan has maintained a fairly fragmented and inefficient wholesale and retail system, but the situation is changing.

Table 4.3: Small business share in employment, sales and value added, 1993–94[a]

	Small business share of employees	*Small business share of sales*	*Small business share of value added*	*Relative sales per employee for small business*	*Relative value added per employee for small business*
	a	*b*	*c*	*b/a*	*c/a*
	%	%	%	%	%
Manufacturing	39	26	29	66.7	74.4
Construction	71	57	60	80.3	84.5
Wholesale trade	38	29	34	76.3	89.5
Retail trade	45	38	46	84.4	102.2
Accommodation, restaurants	35	37	34	105.7	97.1
Transport and storage	24	21	17	87.5	70.8
Finance and insurance	18	24	na	133.3	na
Property and business services	62	63	64	101.6	103.2
Private community services	26	51	41	196.2	157.7
Cultural and recreational	42	24	20	57.1	47.6
Personal and other services	57	51	52	89.5	91.2
Total private	39	32	33	82.1	84.6

a In this table small business is defined according to the ABS classification which categorises as 'small', service enterprises employing less than 20 employees and manufacturing enterprises employing less than 100.

Source: ABS catalogue 1321.0 (1996a).

Overall, small firms tend to have lower value added per employee, reflecting the combined effect of:

- generally lower wages (which in turn are likely to partly reflect underlying differences in the quality of human capital — and the nature of tasks that are performed by small business);
- lower physical capital intensity; and
- perhaps less skilled management.

In regard to the latter point, the Business Longitudinal Survey of Australian firms (IC & DIST, 1997) reveals that managers in small firms are less highly qualified than their peers in large businesses, that they are less intensive trainers, and that they engage less in planning or business comparisons.

Similar findings in relation to output/employment ratios are shown for the USA in table E.11 and for a number of European countries in table E.12 in appendix E.

An important point to note from the sectoral data in table 4.3 is that, while large business tends to dominate in foreign trade oriented sectors (particularly manufacturing and mining), small business is more important in non-trade oriented service industries like construction, personal services and retailing.

5 JOB CHARACTERISTICS IN SMALL BUSINESS

In this chapter we examine earnings and other job characteristics in small versus large firms. A major part of the analysis will concentrate on two quantifiable indicators:

- average wage levels by firm (or establishment) size; and
- employment stability by firm (or establishment) size.

We also review briefly other indicators of job 'quality' using data broken down by firm or establishment sizes. These include:

- expenditure on staff training;
- union membership;
- percentage of casual workers; and
- level of absenteeism.

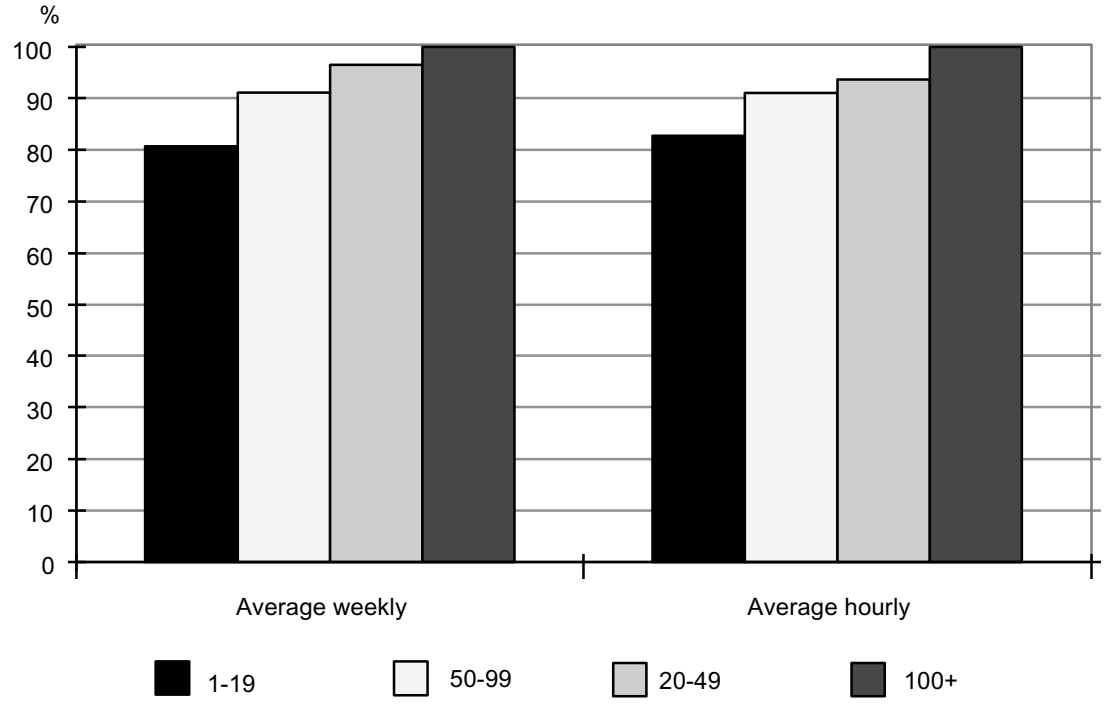
Finally we look at less quantitative issues, like differences in job satisfaction between workers in small and large firms, as indicated by Australian and overseas studies. The discussion will highlight the difficulties in making generalisations about job quality and in comparing wage levels across different firm sizes.

5.1 Relative wages

A comparison of average weekly and hourly earnings by firm size of private non-managerial employees is presented in figure 5.1. These estimates are based on a survey on the distribution and composition of employee earnings and hours (DCEEH) published in ABS Catalogue 1321 (1996a). Figure 5.1 shows that, in 1994, average weekly earnings in firms employing less than 20 people amounted to 81 per cent of the average wage level in firms employing 100 or more people. The wage margin is smaller when we examine *hourly* wage rates (83 per cent).

It is difficult to judge to what extent differences in earnings by firm size can be attributed to differences in education, experience and other dimensions of the quality of the workforce. Overseas studies cited in ILO (1990), Brown *et al* (1990), Harrison (1994) and Atkinson and Storey (1994) indicate that, on average, small business employees tend to be less educated than employees in larger firms. We shall come back to this issue in section 5.6.

Figure 5.1: Relative average weekly and hourly total earnings for full-time adult non-managerial private sector employees by employer size, May 1994



Source: ABS Catalogue 1321 (1996a).

International comparisons of relative wages are shown in table F.1 in appendix F. The overseas data indicate that, in the early 1980s, wage margins between small and large enterprises were slightly smaller in West European countries than those in Australia in the early 1990s. In the UK, France, Italy and Germany average wage levels in firms employing 10 to 99 people amounted to between 82 and 89 per cent of the average level in firms employing 500+ persons.

Differences by firm size are much wider in the USA and Japan. In the USA the mean wage level (in 1992) in establishments employing less than 20 people was around 66 per cent of that in establishments employing 500+ persons (table F.1). In Japan, in 1993, the average wage level in enterprises employing 5-29 persons was 60 per cent of that in enterprises employing 500+ persons.

It appears that part of the reason for the wider dispersion of wage levels in the USA and Japan is a history of markedly different industrial relations practices than in Australia and Western Europe. Centralised wage fixing arrangements in Australia and western Europe have led to a reduction in the dispersion of wages and to smaller differences in the average wage level by firm size (ILO, 1990). By contrast, in the traditionally less regulated labour markets in the USA and Japan, organised labour has been in a stronger bargaining position in large capital-

intensive enterprises — and this is reflected in wage relativities. [1] In addition, the build-up of human capital through on-the-job training, with its accompanying high labour returns, tends to be stronger in the giant, technology-oriented corporations in the USA and Japan.

Is Australia a dual labour market economy? The description of a dual economy — characterised by an advanced sector dominated by big business and a technologically less advanced SME sector where wages are much lower —seems to more closely fit the USA and Japan rather than Australia. [2] While there is a margin between returns to labour in small and big business in Australia, it is not as pronounced as in these countries, and very far from the margins observed in some developing economies.

The ILO (1995) cites Brazilian census data which found that average wages rose steeply with firm size. In 1985, average wages in Brazilian micro-enterprises (1-19) were 37 per cent of those in the largest firms (500+ workers). Wages in small firms (20-99) were 62 per cent of the largest firms, while wages of medium-scale firms (100-499) were 80 per cent of those in the largest businesses.

While Australia is far away from a dual economy on the Brazilian scale, this does not mean that there are no sections in small business that offer average wages and conditions substantially below those in larger enterprises. While the average wage gap is not large in Australia, indications are that it is widening (figure 5.2).

ABS data obtained from other surveys (tables C.6, C.9, F.3 and F.4 in the appendix) also show a widening gap in wages between small and large firms. In table C.6 the gap is widening faster than in figure 5.2, while in tables F.3 and F.4 the change in wage relativities is slower. The estimates in figure 5.2 are probably the most reliable because they have been obtained from a survey which is specifically designed to measure the distribution of hourly earnings.

Labour costs on top of wages — some of them are also important in the ultimate remuneration of labour — also vary across firm size (tables F.4 and F.5 in appendix F). Labour on-costs (including payroll tax, superannuation, workers' compensation and fringe benefits tax) amounted on average to 12.6 per cent of wages in 1993–94. These costs tend to be much lower in small business than in large companies. However, the difference is narrowing. In 1985–86, the labour

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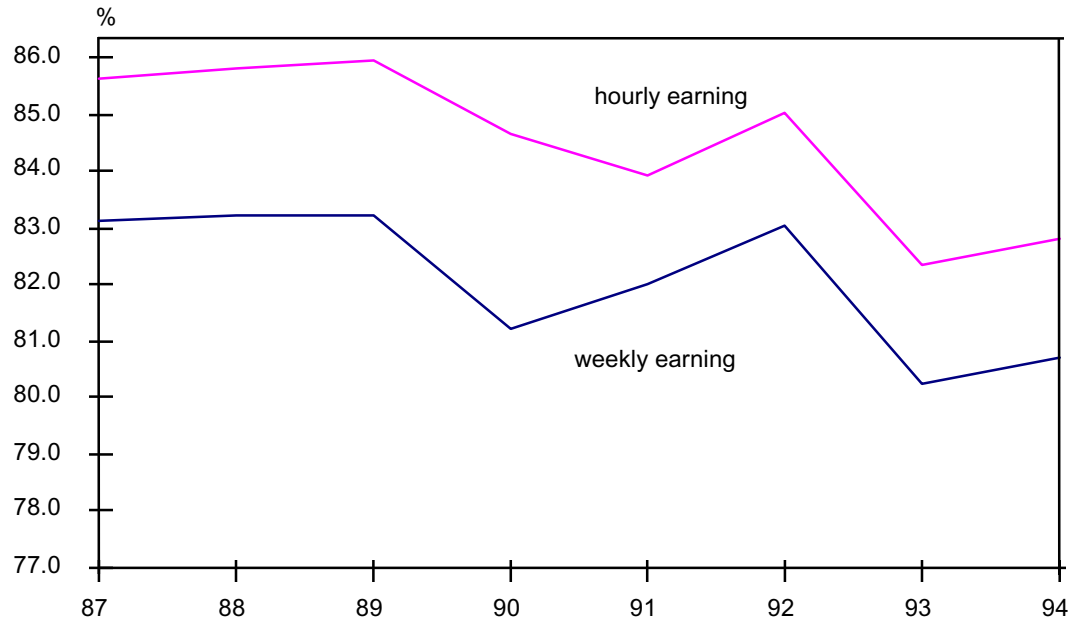
[1] Significant differences in the level of skills by employer size has been put forward as another explanation for the large employer size-wage premiums as discussed in section 5.6.

[2] According to the OECD (1996a), the difference in job quality between large corporations and SMEs in the USA and Japan has narrowed down in recent years, though no figures are given to substantiate this claim. The USA data in table F.1 suggest a minor reduction in the wage gap between 1980 and 1992.

on-costs per person in the under 20 size group amounted to 39.8 per cent of the corresponding costs in the 100+ category, but by 1993–94 this ratio climbed to 50.8 per cent.

Figure 5.2: Average earnings in under 20 employee firms compared to the 100+ group, 1987–1994



Source: ABS Catalogue 1321 (various issues).

The main reason for this rise has been the rapid catchup in superannuation coverage by small firms following the introduction of compulsory contributions. Currently, the main item which accounts for the difference in on-costs between small and large business is payroll tax. Small business benefits from exemptions to payroll tax.

5.2 Earnings of small business operators

Using data from the 1991 population census, we found that the pre-tax income of small business operators is generally lower than that of wage and salary earners in the same occupation groups (table F.6). The average pre-tax income of small business operators was 87 per cent of that of private sector employees. Comparison between the two types of earnings is made difficult by various work

related expenses that are deducted when reporting the gross earnings of small business operators, but are not deducted when reporting wages and salaries. [3]

Changes in relative levels over time may be more revealing than the comparison of absolute values. Time series data on the income of small business operators are available from national accounts statistics on household income from unincorporated enterprises (table F.7 in appendix F). The ratio of unincorporated non-farm income [4] per small business operator to average weekly wages declined by about 8 per cent between 1983–84 and 1994–95. This is a much larger fall in relative incomes than that between employees in small and large firms illustrated in figure 5.2.

Since only aggregate statistics are available, it is difficult to judge to what extent the decline in the relative income of the self-employed reflects a change in the mix between skilled and less skilled operators, sectoral shifts in the employment of small business operators or a relative decline in yearly earnings, holding labour quality fixed. Whatever the case may be, the figures for both small business operators and small firm employees indicate a widening gap between average earnings in large and small enterprises.

Measurement of the relative income of small business operators is equally difficult in other countries. Using information from US personal wealth studies, Brown *et al* (1990) suggest that small business owners are somewhat wealthier, but they report somewhat lower incomes than owners of stock in large firms. These US studies also indicate that the owners of business of any size are wealthier than the rest of the population. We could find no similar contemporary study of wealth for Australia.

5.3 Labour stability and turnover

Labour stability and turnover are measured by a number of indices. The more important ones are:

- average length of tenure with the same employer;
- percentage of employees who have been with their current employer for less than one year or some other time period; and

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[3] Measurement problems of uninco rporated income due to the retention of income in the lower taxed firm and understatement of income have been recognised by the ABS and appropriate adjustments have been made in the national accounts. We shall not enter into these measurement difficulties here. It should be also noted that 1991 was a year of recession and, as indicated in table F.7, at that time unincorporated business income per self-employed person was unusually low compared to wage and salary earners.

[4] Defined in the national accounts as net operating surplus.

- labour turnover measured as the percentage of employees who joined or left the firm during the last year.

The need to employ a number of distinct measures is warranted by the complex nature of labour turnover. Statistically, the probability of employment severance decreases as tenure with the same employer rises. This leads to the apparent paradox that most employment periods are short in duration, but that most employees have been in their current job for a fairly long time (in Australia around seven years) and will probably stay with their current employer for more than ten years (OECD 1993).

The usual model that explains this is labour mismatch —it is quite difficult to find a good match between employees and employers. As a consequence, churning is high in the initial stages of trying to find a match. However, when a fit is found, employees stay for a long time as the fit is valuable both to employee and employer.

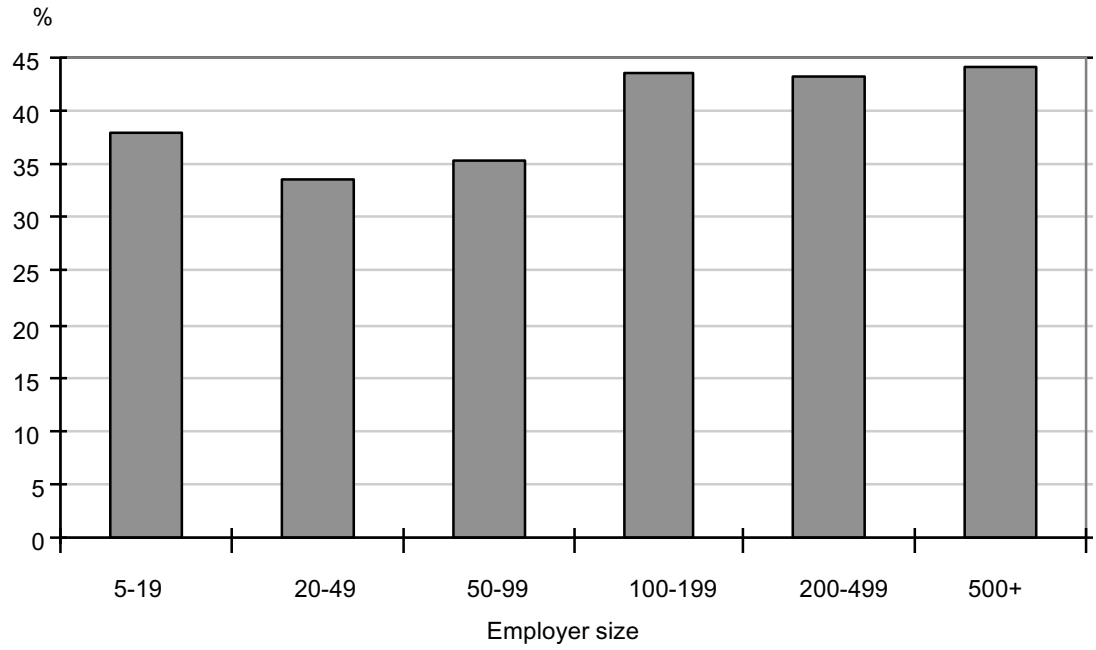
From this perspective, length of tenure is the most suitable indicator of long-term employment stability. On the other hand, two other measures — labour turnover and the percentage of employees with less than one year tenure — are better suited to quantify churning.

There has been no systematic survey in Australia about how these turnover indicators vary with firm size. The ABS publishes a regular report about labour mobility (Catalogue 6209.0) based on the percentage of employees who have been with their current employer for less than one year. However, no information is available from this survey on employer size.

The Australian Workplace Industrial Relations Survey (AWIRS), however, provides a vehicle for examining this issue. The survey gathered information, among other things, on the proportion of employees who stayed with their current employer for more than 5 years (figure 5.3). The survey reveals that there is a higher proportion of employees with more than five years job tenure in larger establishments than in smaller ones. On the other hand, labour stability is higher in the smallest size group than in the next two size categories (20-49 and 50-99 persons).

In part, the difference in labour stability may be a statistical artefact: there is a higher chance that a small establishment did not exist five years earlier.

Figure 5.3: Percentage of employees who have been working with their current employer for more than 5 years



Source: Department of Industrial Relations (1991). Calculations in table F.8 in appendix F.

While there may be modest differences between length of tenure in different establishment sizes for those establishments which have continued to operate for a long time, the job turnover estimates in section 3.3 suggest that there is likely to be a significantly lower employment stability in small business due to the higher rate of business entries and exits.

The AWIRS also explored the frequency of dismissals and voluntary resignations. These are two components of separations — the others are retrenchments, retirements and deaths. Data on the reasons for separations are shown in figure 5.4. These estimates suggest that the rate of resignations and dismissals tend to *decrease* with firm size, other than the anomalous position of the smallest firms (employing 5-19) — where the resignation rate is lower than in other groups.

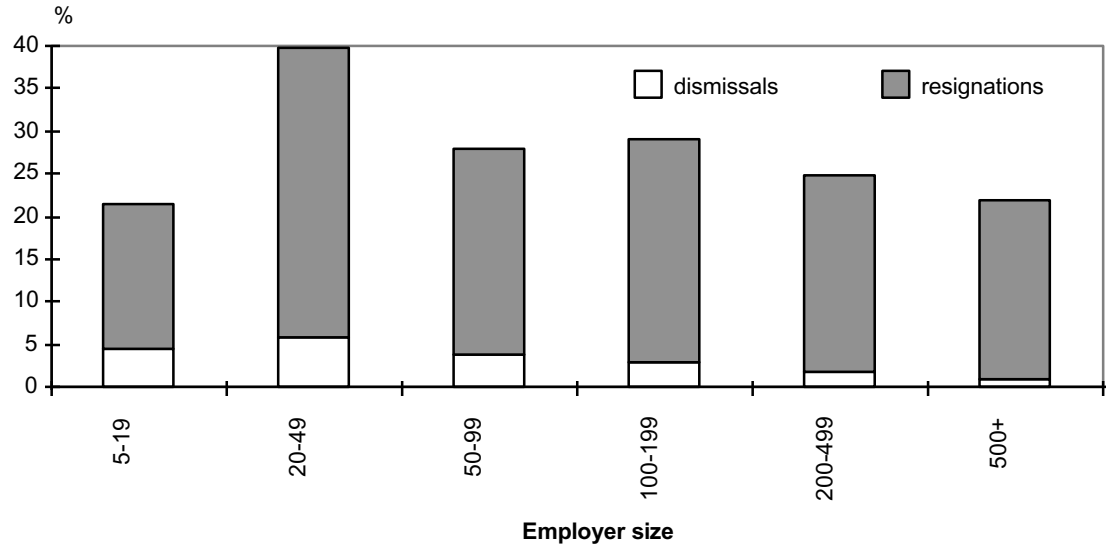
To the extent that there is higher labour turnover in small firms, a number of explanations can be offered, including:

- The higher exit rate of small firms.
- More limited internal labour markets. Internal labour markets refer to different job opportunities within the firm. For employees within large enterprises the most important labour market is often the internal labour

market.[5] If one looks at *job* turnover (ie substantial changes in employment) rather than *employee* turnover (severance between employee and employer), then it may be that turnover is actually higher in big firms.

- More labour churning during the initial search for suitable employment. The data in figure 5.3 indicate that over 34 per cent of employees have been with the same employer for more than five years in under 100 employee establishments and about 43 per cent in the 100+ category. This indicates that it is possible for many people to find a suitable long-term position in small business, but proportionately more people find long-term 'matches' with large business.
- Lower investment in enterprise based training.

Figure 5.4: Resignations and dismissals per year, per cent of total employment, 1989–90[a]



a Dismissals do not include redundancies.
Source: Department of Industrial Relations (1991).

Information about employment stability/turnover by firm size is scarce in the overseas literature as well. After an extensive literature review we found only one statistical table which links length of tenure with establishment (not enterprise) size in the USA and Japan (OECD 1993). These data — restricted to establishments with more than 25 employees (table F.10 in appendix F) —

5 If, for example, a clerical worker at BHP does a computer science degree at night he/she will most probably look for computer science work within BHP. A clerical worker at a three person law firm, or other small business, will probably have to leave the firm to change jobs. In other words, there is scope for a broader career path and a more extensive promotion ladder within large firms.

indicate that length of tenure is positively related to establishment size, more so in Japan than in the USA. Tenure is also positively related to formal enterprise training. This finding suggests that longer tenure in large companies might be partly related to a greater investment in firm-specific knowledge and skills.

Other overseas job tenure statistics (without reference to the size of the employer) are presented in table F.9 in appendix F. These data show that, in aggregate, Australia has a lower level of labour stability than other OECD countries, with the exception of the USA and Netherlands. Whether the relatively high share of small business in Australia has influenced this outcome is an open question.

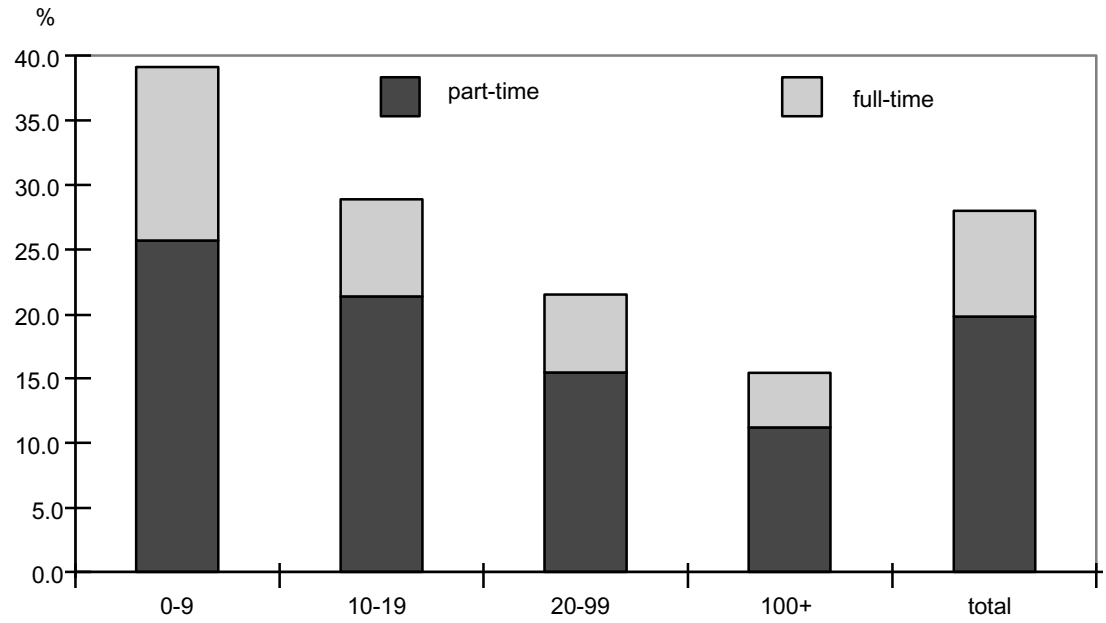
5.4 Casual employment

The ABS defines casual employees as those who are not entitled to either annual leave or sick leave in their main job. Within the Australian award system casual employees usually receive a premium on their hourly wage. Nonetheless, casual employment is widely regarded as a less stable and a less protected form of employment than that of 'permanent' wage and salary earners (Dawkins and Norris 1990). Hence, data on the distribution of casual employees can provide another useful indicator on job quality by firm size.

Casual employment tends to decrease markedly by establishment size (figure 5.5).[6] In 1995, casual employees represented about 15 per cent of private non-farm wage and salary earners in establishments employing more than 100 persons. In contrast, casual workers — many of them part time —accounted for around 40 per cent of employees in establishments employing less than 10 persons.

6 Data by management unit or enterprise are, unfortunately, not available.

Figure 5.5: Percentage of casual employees by size of workplace, non-farm workforce, 1995



Source: Table C.3, based on unpublished data from the WEEDA survey.

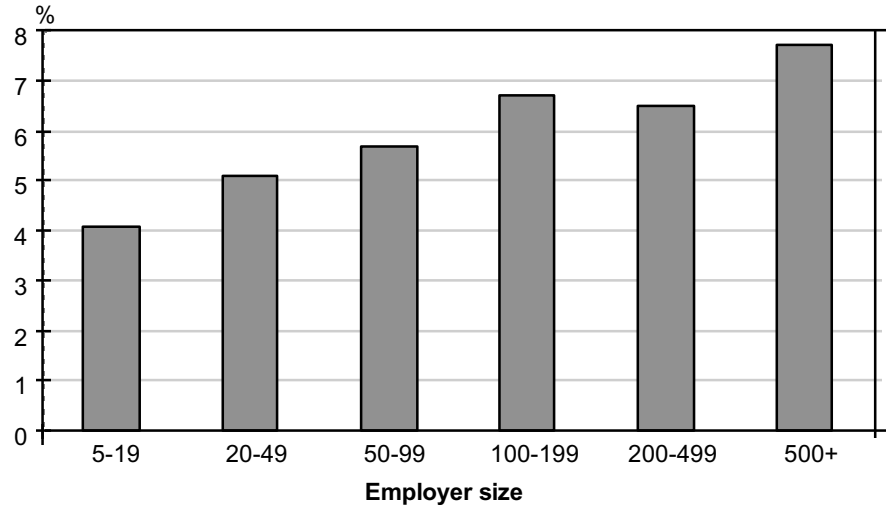
The proportion of casual employees in the workforce increased from 23.1 per cent in 1990 to 28 per cent in 1995 (tables C.3 and C.4 in appendix C), a significant change over a five year period. Casual employees usually have a loading of about 20 per cent to compensate for the absence of paid leave and some job security. However, the figures from the WEEDA survey indicate that, on average, they earn around 15 per cent less per hour than the 'permanent' employees. This probably reflects occupational and skill differences between casual and permanent jobs.

Further discussion on casual employment, part-time employment and estimated earnings by size of location, based on the WEEDA survey, is presented in appendix C.

5.5 Other indicators

The AWIRS report contains a number of other indicators which shed light on qualitative aspects of employment by size of establishment. First, absenteeism from work due to sickness or other reasons (excluding annual leave and public holidays) tends to be lower in small establishments (figure 5.6).

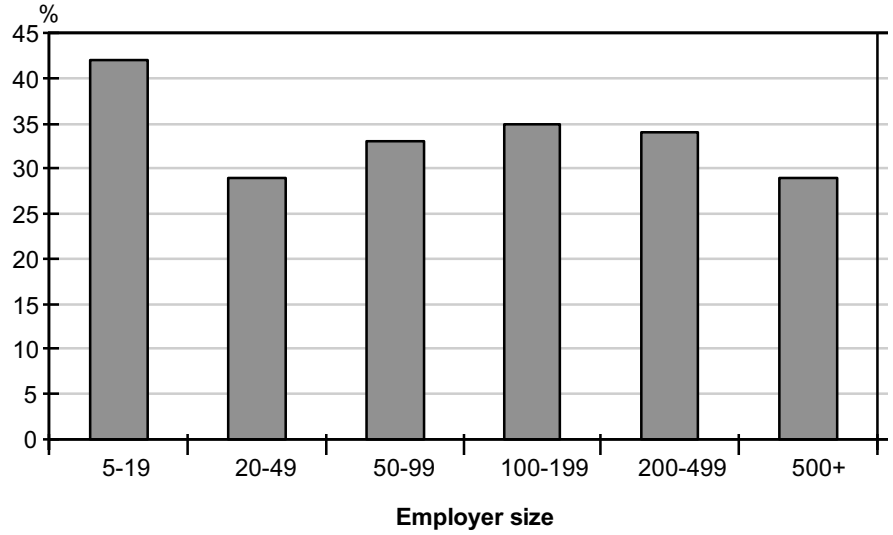
Figure 5.6: Percentage of workers absent from work[a]



a People were asked about absenteeism for the week preceding the survey.
Source: Department of Industrial Relations (1991).

The proportion of employees receiving performance related pay in 1989 was generally higher in smaller establishments, as shown in figure 5.7.

Figure 5.7: Percentage of employees receiving performance related pay

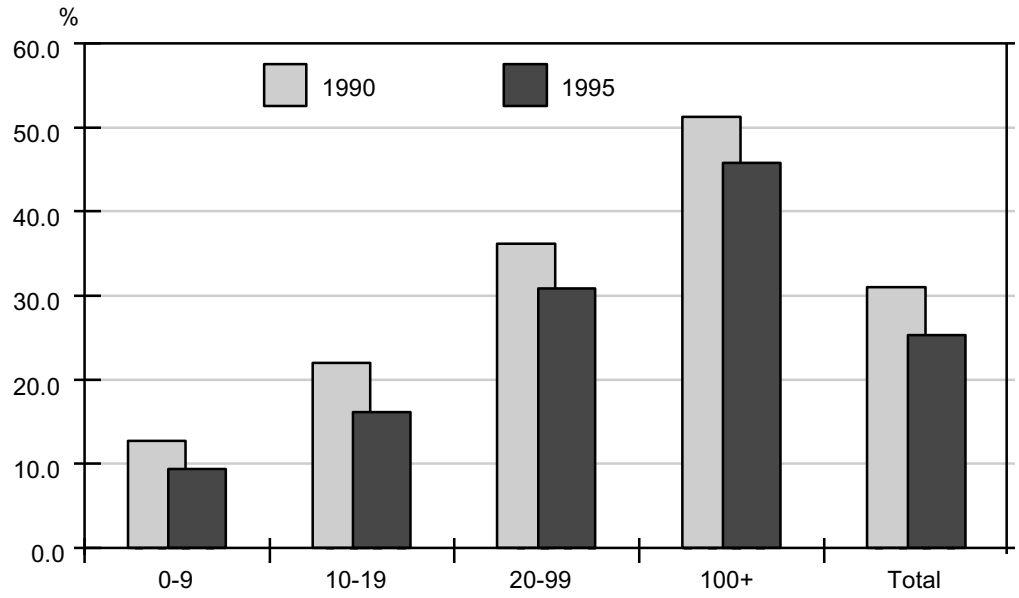


Source: Department of Industrial Relations (1991).

The higher prevalence in small establishments of performance related pay and the lower incidence of absenteeism support the widely held view about closer supervision and stronger work incentives in smaller enterprises and workplaces.

Another relevant indicator is union membership. The WEEDA survey discussed in section 5.4 also contains data on union membership in 1990 and 1995 by size of the workplace. A summary of the results is shown in figure 5.8. More detailed data are presented in table C.5 in the appendix.

Figure 5.8: Union membership by size of the workplace, per cent



Source: Table C.5 in appendix C.

The density of union membership tends to be much lower in small workplaces. Moreover, average union membership has declined by more in smaller enterprises than larger ones. Over the five year period covered by the survey, union membership rates fell by 27 per cent in enterprises employing less than 20 people, by 15 per cent for enterprises employing between 20 and 99 people and by 11 per cent for enterprises employing 100 or more people.

According to the AWIRS report, the frequency and duration of industrial disputes also tends to be lower in small establishments — though the path of causality from union representation to disputes is probably both complex and multidirectional.

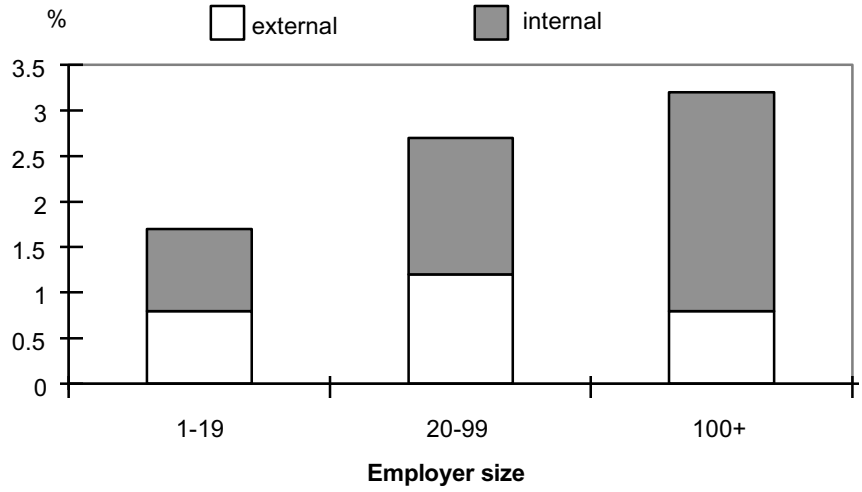
Expenditure on training paid by the employer provides another indicator of job quality. Two sources of data are available:

- A (now discontinued) ABS survey aimed specifically at enterprise training (figure 5.9) indicates that small firms (above the minimum threshold applicable under the Training Guarantee legislation of $230 000 annual payroll in 1993) were spending a substantially lower proportion of wages on training than larger firms. The difference is particularly wide in in-house

training where 100+ enterprises spent three times more per worker than under 20 employee firms. Part of the difference is not due to firm size, but rather to sectoral composition. Technology intensive sectors like mining and manufacturing which require continuous skill upgrading, are dominated by large companies. On the other hand, in small business dominated sectors, like personal services and retailing, on-the-job training requirements are more limited.

- The Business Longitudinal Survey (IC and DIST, 1997), which has more up-to-date information on formal training by firm size, indicates a strongly rising incidence of formal training and a general increase in training intensity with firm size (table 5.1).

Figure 5.9: Training expenditure as a percentage of wages and salaries, 1993



Source: ABS Catalogue 6353 (1993).

5.6 Some observations about job 'quality'

While the difference in average hourly wage rates between small and large businesses (amounting to 17 per cent in 1994) does not point to sharply segmented labour markets in Australia, almost all the indicators so far suggest that jobs in small business are of lower quality. Gross wages and other labour returns, job stability, unionisation and expenditure on training are generally lower in small firms.

However, data based on averages can be misleading, bearing in mind the great diversity *within* the small business workforce, ranging from poorly paid casual workers to medical practitioners. Moreover, labour is not homogeneous *across*

firm size. Some of the wage gap can be accounted for by the lower average education standard and skill level of small business employees. We now turn to the literature which tries to measure the wage gap *after* accounting for educational, industry, occupational and other potentially confounding variables.

Table 5.1: Incidence and intensity of formal training by firm size, 1994–95

Size of firm (employees)	*Industry*	*Training incidence*[a]	*Training intensity*[b]
		%	%
1-4	Manufacturing	11.2	0.9
	Wholesale trade	10.8	0.9
	Retail trade	8.3	0.5
	Prop. & bus. services	22.9	2.7
	Other	9.2	1.0
	Total	*12.9*	*1.4*
5-19	Manufacturing	36.4	1.0
	Wholesale trade	43.3	1.2
	Retail trade	31.4	1.0
	Prop. & bus. services	52.9	2.4
	Other	30.3	0.9
	Total	*36.9*	*1.3*
20-99	Manufacturing	76.2	1.3
	Wholesale trade	84.0	1.5
	Retail trade	68.6	1.4
	Prop. & bus. services	69.0	1.9
	Other	55.5	1.0
	Total	*68.0*	*1.4*
100+	Manufacturing	89.5	1.8
	Wholesale trade	88.0	1.5
	Retail trade	75.4	0.9
	Prop. & bus. services	79.1	2.2
	Other	81.1	1.6
	Total	*83.8*	*1.7*

a Share of firms which undertake any formal training of workers.

b This is total formal trainin g expenditure expressed as a fraction of total wages and salaries. The IC & DIST (1997, p. 169) show that training expenditure per wages and salaries generally *falls* with firm size, but the data relate only to those firms which undertake some training. When non-training firms are included, the training intensity rises with firm size.

Source: IC & DIST (1997).

A systematic study of the employer size-wage premium requires detailed matching of skills within narrow occupational groups and the examination of general working conditions besides wages. Some research along this line has been carried out in the USA, UK and Germany in comparing the quality of jobs in small and large business (Brown *et al* 1990, Atkinson and Storey 1994, Harrison 1994, Troske 1994 and OECD 1996a). The overall conclusion emerging from these studies, particularly in the USA, is that, after taking into account differences in skills and working conditions, it is still true that there is a wage gap

between small and large enterprises. For example, on the basis of a number of US studies, Brown *et al* (1990) estimate that, while the uncorrected average wage gap between small and large USA firms is in the range of between 31 and 37 per cent, the range falls to between 10 and 15 per cent after taking into account differences in skills.

The size-wage premium is a puzzle for labour economists because empirical evidence (like the Australian data discussed in chapters 3 and 5, and overseas data in table F.10) indicates that jobs with small enterprises are generally of shorter duration than jobs with large employers due to higher failure rates and greater labour turnover in small firms. All other things being equal, workers in small firms should therefore receive *higher* wages to compensate them for the increased risk of unemployment.

The estimated size-wage premium is an unexplained residual that might reflect unobserved differences in abilities within the same occupational groups or differences in skills due to lower investment by many small firms in employee training (Troske, 1994).[7] As shown in figure 5.9 and table F.10, larger firms generally invest more in worker training. A firm that invests more in its employees will lose that investment if the employee leaves. Such firms might gain higher productivity from training, but need to share that gain with their employees to discourage them from leaving. This model has employees paid more than their short-term marginal product to prevent them from leaving.

Moreover, the accumulation of human capital through internal training implies that standard measures of skills in terms of education standards and length of work experience can be misleading. The 'true' marketable skill level of employees in large enterprises may often be systematically underestimated. These factors explain to a certain extent higher wages and lower turnover in large firms which provide significant training to their employees.

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[7] This would still leave unexplained why bigger business required labour with more of these unobserved higher quality characteristics. One possible explanation is that larger firms (a) face higher costs from errors (such as loss of reputation, delays with very expensive capital, higher litigation costs etc) and (b) find it harder to detect and then dismiss lower quality workers once they are employed. High costs from errors or high firing costs force larger enterprises to screen applicants more diligently. In undertaking this screening they hire the best quality workers within any group, but must pay these workers for their extra qualities. These extra qualities are unlikely to be picked up by the crude measures of quality used in econometric studies. For example, a firm might wish to employ a foreman. Thirty applications are made. The firm bases its appointment on a wide set of characteristics, such as trade experience, referees' comments, attitude, communication skills, numeracy and so on — many of them not reflected in simple measures of labour quality.

Another possible explanation for the wage gap is related to the concept of efficiency wages. Firms cannot always closely supervise and monitor work effort. In the absence of such close monitoring, wage increases provide an incentive for increased morale and work effort, in part because the costs of being sacked for shirking are much higher if one relinquishes a higher paid job rather than a low paid one. Efficiency wages provide an explanation of why identical individuals may earn quite different wages across different enterprises:

> Other, more direct, evidence comes from the fact that wages of otherwise identical workers differ widely between firms and industries, and when individual workers move to 'high wage' industries most of them get wage increases. The high wage industries are mostly those where the morale of the workers matters more: they use valuable equipment, or their performance is more difficult to monitor. (Layard, Nickell and Jackman 1991 p. 24)

Smaller firms have a greater capacity for monitoring effort and less to lose from lower morale. Efficiency wages, therefore, may provide part of the answer to the riddle of the wage gap.[8] Box 5.1 describes how, if efficiency wages (or union bargaining) hold, then the labour market might be split into a primary and secondary labour market. This would generate lower wage outcomes for employees in secondary markets where smaller firms are more commonly represented.

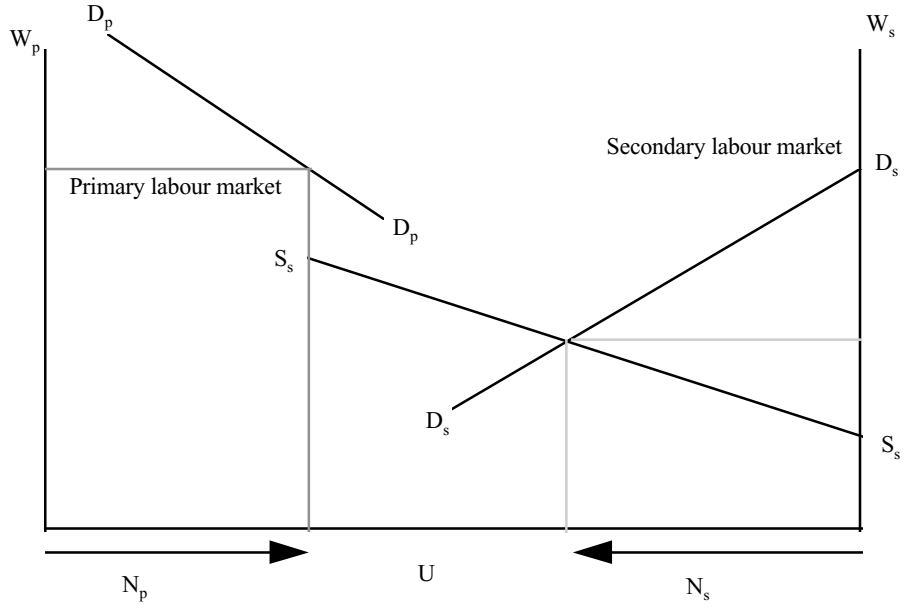
Yet another explanation for the size-wage premium is the greater geographical dispersion of small business, which in many cases might be reflected in shorter distances from home. In some cases the employee might accept lower wages in return for being located closer to home. Moreover, locational factors could play another role. Large enterprises in CBDs or prime industrial districts may have to pay workers more in order to compensate them for other higher costs (such as higher rentals) that arise from resource congestion.

Box 5.1: Primary and secondary labour markets with efficiency wages and/or union bargaining

Layard, Nickell and Jackman (1991, pp. 42–44) have proposed a model of primary and secondary labour markets which may be useful for explaining wage setting for some

[8] Why would anybody want to work for a small firm in the secondary labour market when they could seemingly get a higher paid job with a bigger firm? The answer suggested by the theory of efficiency wages is that the larger firms (on average) get more takers for jobs, but refuse many of them. They dare not lower wages too much in the presence of an excess supply of labour, because they then affect the work effort of all their existing employees. But people rejected (or deterred by queues from even applying) by large firms can seek a job with a smaller firm which, while paying less, is preferable to unemployment.

segments of small business. The total labour force is fixed and is equal to N_p+U+N_s, where N_p is the number employed in the primary market (higher wages but labour rationing), N_s is employment in the secondary labour market (where wages are lower and the market clears) and U is unemployment. All workers would like a job in the primary sector. However, wages in the primary market reflect either efficiency wages or/and union bargaining so that not all takers for jobs in the primary sector receive them. In the secondary labour market — encompassing jobs such as catering, cleaning, some retailing, maintenance and self-employment — the market wage is the outcome of the interaction of supply and demand. In equilibrium, N_p find jobs in the primary sector, and at the clearing wage, N_s find jobs in the secondary market. Some people rationed in the primary market are not willing to take up jobs at the going wage in the secondary market, so that there is unemployment. Smaller firms appear much more likely to occupy secondary markets (where skill levels and effort monitoring costs are lower).



Source: Layard, Nickell and Jackman, 1991.

There have been a number of Australian studies dealing with wage and job quality differences by firm size. Recently, Miller and Mulvey (1996) conducted an econometric analysis of the factors explaining differences in hourly earnings. They included in their regression model as explanatory variables various individual and job related characteristics such as education level, work experience, industry, occupation, family status, English proficiency, union membership and size of the workplace. The report's principal aim was to test the

validity of earlier econometric estimates suggesting that unions raise their members wages relative to non-members by between 7 and 15 per cent.

Miller and Mulvey (1996) demonstrate that the inclusion of employer size in the regressions reduces the estimated contribution of union membership to wages to less than 3 per cent under most specifications. This is due to the strong correlation between union membership and the size of the workplace (see figure 5.8) which poses serious identification problems. From the regression coefficients presented in Miller and Mulvey (1996), it appears that the difference in wage rates that can be attributed to employer size between employees in firms employing under 10 persons and those employing more over 100 persons can be very pronounced. For example, for a salesman, working in Melbourne in retail, who completed secondary school, is married with young children, was born in Australia, speaks English proficiently, and who has no experience or tenure, the wage gap is 22 per cent.

The AWIRS survey provides another comparative perspective. This survey examined the overall industrial relations climate in different size establishments. In summarising the findings of their study (reported in BIE, 1992), the authors (Callus, Kitay and Sutcliff) note that relations in small business tend to be more personalised than in larger firms. Closer personal relationships between employers and employees have various manifestations. In some cases they represent paternalistic rule and exploitation. In other cases they reflect mutual trust and team spirit. The stronger personal bonds and more informal working environment may provide to some people sufficient compensation for lower wages.

Overseas studies of small business employees also mention non-monetary benefits in the small business environment. Apart from closer personal relations, other job enhancing factors include less regimentation, less specialisation and employee involvement in more varied aspects of work. However, American studies cited in Brown *et al* (1990) did *not* generally find that employees prefer working conditions in small firms to those in larger ones.

A different type of Australian study dealing with qualitative comparisons was an opinion survey conducted by Van den Heuvel and Wooden (1995). The main purpose of their survey was to test the widely held view that self-employed contractors are being exploited in remuneration and working conditions in a similar manner as casual employees. The results from their opinion survey are summarised in table F.11 in the appendix.

Briefly, the results suggest that, overall, self-employed contractors are more satisfied with their jobs than wage and salary earners. While satisfaction over income and job security is lower, there is more satisfaction in relation to working hours and control over how work is performed. For other self-employed, the

survey found about the same overall satisfaction level as that of wage and salary earners. Once again satisfaction is lower in regard to income and job security, but higher in relation to working hours and control over work.

Given these rather ambivalent findings, it seems unlikely that non-pecuniary benefits could explain the residual wage gap between large and small enterprises.

6 EXPLAINING THE RISE OF SMALL BUSINESS

In this chapter we try to interpret the role of small business in the contemporary Australian labour market. We start by noting a number of incongruities in some popular interpretations of the small business employment data. We then turn to theories which help to explain how the size distribution of firms is shaped — and try to test some of these theories with data. In the next section of the chapter we bring together the material from preceding chapters to provide quantitative estimates on the contribution of various factors to the increase in the employment share of small business, such as the contraction in public employment, the composition of private demand and changes in part-time employment. Finally, we make an assessment of the policy implications of the findings.

6.1 Popular misconceptions

The small business share of employment has grown over time in Australia, as in many other countries. This fact is not, perhaps, as transparent or rich in significance as some may think (as summarised by sceptics such as Storey 1994; Davis, Haltiwanger and Schuh, 1994 and Harrison, 1994).

First, as explained in chapter 2, the small business employment share is an imperfect indicator of job creation by small business. For example, if there is significant category jumping from big business to small business (or vice versa), small business will appear to play a larger (smaller) role in net job creation than may be warranted.

Second, any measure of net job creation can provide a distorted view about the process of *gross* job creation (appendix D).

Third, if a sector has a large *share* of total net jobs created in an economy over a certain period, this does not by itself imply that job creation in that sector is particularly dynamic. For example, over the five years from 1990 to 1995, a relatively modest number of net jobs were created by small business compared to the previous five years — the growth of the small business employment share over that period was largely generated by net job losses elsewhere (Appendix A, table A4).

Finally, claims about the job generating role of small business over the past decade do not constitute a cogent basis for selective assistance to small business.

However, this does *not* imply that small businesses are unimportant, or that government should ignore how regulations, industry policies, labour market and social welfare institutions resonate in small (and large) business. To the contrary, there is scope for policy moves with a significant potential impact on employment and efficiency in business, both small *and* big. For example, there may be gains from:

- re-configuring the way in which a whole range of laws and institutions affect the likelihood of employment, encompassing active manpower policies, industrial relations systems, the social welfare system, and labour regulations. [1]
- eliminating or modifying business regulations whose overall benefits are questionable;
- re-designing regulations so that their compliance costs are lower for business users (for example, as in the tax simplification process);

The policy significance of employment in small business is explored in more detail in section 6.7.

6.2 Towards a theory of the composition of the economy by firm size

A modern view of labour markets (from almost any methodological perspective) pictures small firms as cogs in a complex machine. The jobs ultimately created in small business depend inextricably on the functioning and organisation of the economy as a whole. In this case, small business is not an independent engine generating new employment opportunities.

A wide range of factors influence the composition of the economy by firm size (the 'size distribution'):

- Smaller transactions costs, reputational advantages, technological economies of scale and scope provide competitive advantages to larger sized enterprises in some industries (appendix I). In the last two decades considerable progress has been made in the economic literature on the analysis of transaction costs and the limitations of contracts in the marketplace (Borland and Garvey 1994). This literature suggests that the type of activities undertaken inside the firm or acquired from the outside are influenced by technological and communication conditions, as well as the

[1] Some recent material relevant to this is Layard et al (1993) in an OECD context and papers by Chapman (1997); Mulvey and Sloan (1995); Mulvey (1997) and Covik (1997) in an Australian context.

regulatory and legal environment. Given these varied influences, the optimal size of a firm cannot be precisely determined. Actual size will often be strongly influenced by random events. New technologies can affect the advantages/disadvantages of size — for example, more flexible manufacturing may have eroded some of the traditional advantages of scale.

- Greater flexibility, geographical proximity and more simple governance mechanisms, where these are desirable attributes of the firm, tend to favour smaller sized enterprises. On the other hand, in some sectors, such as food retailing, the transactions costs posed by distance have probably decreased, so that larger retailers have become more, not less, important.
- The behaviour of consumers. For example, services have commanded a greater budget share — and small firms have significant advantages in many service sector activities.
- Structural change produced by increasing import competition (spurred on by decreasing barriers to trade) has probably had bigger impacts on large enterprises, particularly in manufacturing. Many tradeable manufactures involve technologies with scale and learning economies. The firms which are active in these markets tend to be big employers. As tariff protection has fallen, and as some developing economies (such as South Korea and Taiwan) have increased their manufacturing capabilities, the competitiveness of Australian firms in these technologies has waned.
- The nature of the labour market facing small versus large firms (such as varying degrees of wage flexibility and 'insider' power, and the differential impact of the unemployment benefit to wage ratio and minimum wage legislation). We review the direction and likely impact of labour market variables in section 6.4.

Thus, Sengenberger and Loveman, writing in ILO (1990), question the usefulness of focussing exclusively on the size of business units. They argue that job generation and economic performance depend less on simply fostering small firms than on organisational structures and the public and private policies which influence the development of firms in general. In a more extreme view, Brown *et al* (1990) argue that small firms simply absorb the labour shed by large firms, so that any structural shift amounts to a mere displacement.

6.3 Recent developments

As we noted in chapter 2 until the late 1960s to early 70s the general trend in industrialised countries was toward a gradual increase in the employment share of large business. Since the oil price shocks and the growth slowdowns that

appeared in their wake, the trend has been reversed and the share of small business employment has started to climb. [2]

In all industrialised countries this change in direction has been partly driven by the changing composition of the economy, with a shift in consumption toward services and away from manufacturing, a trend which generally favours smaller enterprises. With increasing affluence, the demand for customisation and specialisation has generally been rising and offered niche production opportunities for small firms. [3] It could be argued that this trend is even more important in the service sector where closeness to customers plays an essential role in business success.

But in addition, average firm size inside a number of sectors also decreased (most notably in manufacturing) as indicated in the Australian data presented in table 4.1. This raises the question, which of the factors listed earlier has shifted in favour of small business?

The discussion in the literature on this subject is mainly relevant to manufacturing, though it also has implications for other sectors. We start with manufacturing, further elaborating on some of the points discussed in chapter 4. Much of the following analysis is based on Harrison (1994) and Dunne and Hughes (1992) — and relate to global trends rather than the Australian situation alone.

The 1970s growth slowdown put a break on the expansion of the automotive and petrochemical sectors and related heavy industries like base metals and chemicals. While demand stagnated, most large corporations in these fields embarked on rationalisation and automation in order to remain cost competitive. Hence, the increasing importance of small business as an employer was partly driven by the contraction of employment in the heavy industrial sector.

In addition to the effect of the oil price shocks, manufacturers had to contend with international trade liberalisation and increasing competition from developing countries, particularly in East Asia. These intense competitive pressures forced large corporations to adopt efficiency maximising strategies through 'lean production', by pursuing automation and outsourcing from the cheapest suppliers at home and abroad. Outsourcing affected not only components but also various non-core services. For instance, activities like

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[2] In the USA the trend reversal started in the late 1960s. Since the late 1980s, it seems to have reversed again, this time shifting toward big business, particularly in some service industries.

[3] Though Harrison (1994) argues that large enterprises can also successfully meet niche market needs. They do this through flexible manufacturing, re-badging, outsourcing and other strategies.

computer work, record-keeping, legal services, transport, storage, cleaning, security and maintenance were increasingly awarded to smaller enterprises. The usage of contract labour also increased.

All told the net outcome has been, at least in the US, a 'leaner and meaner' manufacturing sector employing a declining share of the workforce and increasingly reliant on advanced automation techniques and the outsourcing of peripheral activities to smaller scale less unionised suppliers at home and to cheap but reliable quality suppliers abroad. [4]

These competitive pressures were less acute in the non-trade exposed service sectors than in manufacturing. Nonetheless, some increase in competition occurred in these sectors as well. A major contributing factor has been the move by most western governments to liberalise and deregulate commercial, labour and financial markets. A number of large service organisations have moved toward downsizing and reliance in non-core services on small business suppliers.

However, it should be noted from table 4.1 that, in Australia, apart from manufacturing, only infrastructure services (telecommunications, electricity, etc.), mining and construction showed a significant increase in the small business employment share between 1983–84 and 1994–95. Other sectors recorded only small positive or even negative changes in the small business employment share.

The rapid progress in computer technologies has probably also had a significant positive effect on small business growth. This has helped to reduce the cost of many types of digitally controlled 'flexible' production equipment that earlier was affordable only to large companies. The rapidly diminishing cost of computing also had a marked effect on unit transaction costs, a major handicap to small business. Technological progress in the telecommunications industry (faxes, mobile telephones and digital communications) has facilitated speedy contacts between enterprises and establishments, and the transfer of some non-core functions to small subcontractor firms. [5]

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[4] Another development that appears to favour small business in manufacturing is the increasing usage of new flexible computer controlled machinery that can perform quick tool changes and thus can accommodate economically shorter production runs. However, the evidence from abroad is inconclusive. Harrison (1994) notes that the uptake of new computer controlled machinery has been more rapid and widespread in large factories than in smaller ones.

[5] The technological progress in information technologies and telecommunications also enabled the transfer of some administrative functions (particularly in record-keeping and filing) from headquarters to suburban branches, but this is a different story than transfer to legally separate enterprises.

Another possible contributor to the expansion of the small business sector has been the introduction of measures by governments, which may have made it easier for small businesses to form or grow. These measures included advisory services, assistance in loan or equity finance, and increased access to government purchasing (ILO, 1990 and Brown *et al,* 1990). On the other hand, there is evidence also of growing government regulatory and compliance burdens in some countries, whose impact would seemingly operate in the opposite direction.[6]

It might also be conjectured that some of the increased importance of small business might reflect the role of new high growth innovative small firms.[7] Under this conjecture, new, small firms with innovative ways of organising resources grow rapidly, engaging both new resources in the economy and displacing resources in large firms. If this process is somehow accelerated, the small business share of employment will (at least initially) grow.

Is there evidence that this is an important explanator of the growing small business share of employment in Australia? The answer is equivocal. On the one hand, the sectoral data generally point to structural causes for the growth in the small business employment share. On the other hand, the rising small business employment share of manufacturing, may, to some extent, reflect the growing technological importance of smaller players.[8] We find that smaller firms have accounted for a substantially increasing share of manufacturing R&D over the last ten years (with firms employing less than 100 employees accounting for 17.6 per cent of R&D in person years in 1984–85, but just under 30 per cent in 1995–96 — appendix K). Modeling from Phillips (forthcoming) suggests that innovation is strongly associated with output growth (and, therefore, probably employment growth) in small firms. The data are therefore consistent with the

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6 The Industry Commission (1996b, pp. 1–18) provided evidence of increasing regulatory burden in Australia. For example, the average annual number of pages enacted as Commonwealth legislation increased roughly tenfold from 1960–64 to 1990–94, subordinate legislation subject to parliamentary scrutiny increased significantly from 1983–84 to 1994–95, and resources for regulatory agencies have also increased significantly. Falconer et al (1996, p. 4) suggest a threefold increase in paperwork and regulation over a ten to 15 year period — though the basis for this estimate is not disclosed. While small business does receive exemptions or weakened requirements for some regulations, it is very likely that overall regulatory and compliance costs have risen for Australian small business.

7 In what Kirchhoff (1995) refers to as a process of Schumpeterian 'creative destruction'.

8 It should be noted that most small manufacturing firms do not innovate whereas most large ones do. However, this is not evidence against the possible relevance of Kirchhoff's hypothesis to manufacturing, so long as the share or intensity of innovation by smaller firms has increased over time.

hypothesis that small firm innovative dynamism may have played a role in the growing small business employment share in manufacturing. However, we found even greater growth in the share of R&D accounted for by firms employing less than 100 persons *outside* of manufacturing (table K.2), and yet analysis of the sectoral employment shares for these industries does not generally show an increasing role for small business in employment. On the whole, therefore, the evidence that changing patterns of technological innovation by firm size has had an impact on the growth in the small business job share is mixed indeed.

Finally, some growth in small business has occurred due to pressures from the growth in the supply of labour – particularly people with lower skills – and unemployment. As a result of chronic unemployment, many people have turned from looking for paid jobs to self-employment. Others were ready to accept part-time or casual work with low pay. The symptoms of excess labour supply driven employment are lower income, a low level of time utilisation, or underemployment in the sense of working less hours than the part-time worker would prefer. Among Australian studies, excess labour supply driven employment in small business has been strongly emphasised by Burgess (1991). Occasionally, this has been referred to in the literature as the 'labour sponge' role of small business (see ILO, 1995).

6.4 The role of small business in the labour market

While chapter 2 indicates a significant increase in the share of employment accounted for by small business, how is this to be interpreted?

Economic theories are consistent with the view that small firms are not autonomous job generators. They suggest that employment is determined by the (complex) interaction of a host of demand and supply factors. [9] Firm size does not enter as an *independent* factor in such models.

However, firm size may be *associated* with certain features of the labour market which have a role in employment (and unemployment) outcomes. We review them briefly in turn:

Wage setting processes vary by firm size.

Studies consistently find that wages are lower for smaller enterprises than large firms (chapter 5, Brown and Medoff, 1989; Miller and Mulvey, 1996). It has

[9] For example, changes in the product mar ket, search efficiency by the unemployed, the skills of workers, union bargaining, real wages, capital/labour intensity, price expectations and a wide variety of other variables affect wages, employment and unemployment in an economy.

been difficult to isolate the reasons for the wage differentials. Labour quality does not appear to explain all of the difference, nor do differences in working conditions. Indeed, the notion that the large firm wage premium reflects compensation for inferior working conditions is rejected by Brown and Medoff's findings. They show that desirable job characteristics are typically *positively* associated with firm size (for 38 of 42 job characteristics).

The wage differentials probably reflect a number of factors:

- Firms are willing to pay 'efficiency' wages to increase work effort. Firms will pay extra wages so long as they elicit a sufficient payoff in terms of increased effort. This payoff will vary in different firms and industries. For example, the importance of having a job performed well can be higher in a capital intensive industry with large downtime costs (Kreuger and Summers, 1988). Similarly, a firm whose market share relies on reputation and brand names may pay efficiency wages to decrease the potential for costly errors.
- The wage bargaining environment is different in small firms compared to large firms.[10] Small firms are much less unionised [11] and typically possess lower market power. There are few rents for employees to bargain away. Moreover, it seems likely that wages in smaller firms will be more responsive to the stock of unemployment than wages in large firms. Why? Workers in large firms possess more insider power. Part of the reason for this is that workers in smaller firms are typically (though we emphasise not always) lower skilled than employees in larger firms. The unemployed are also generally less skilled than the employed. As unemployment grows, then employers in small firms can more readily fill any vacancy, and any disemployed person finds it harder to find a job, given the competition from other unemployed people. This tends to depress wage pressure, and allows greater employment. The same process is likely to occur in large firms too, but not so many of the unemployed are close substitutes to existing workers, so the impact on wage pressure is attenuated.

Skills of workers

[10] A discussion of the economic literature dealing with dual labour markets and with 'insiders' and 'outsiders' in the Australian context is presented by Harris (1991).

[11] However, the implications of unionisation for wage bargaining are not empirically clearcut. A number of econometric studies fail to show a significant relationship between union density and wages, once firm size is accounted for. Given the very strong correlation between unionisation and firm size, it is difficult to identify to what extent higher wages in large companies are due to a firm size related wage premium and to what extent they are due to higher union density. An Australian study on this subject is presented by Miller and Mulvey (1996), a British study by Main and Reilly (1993).

Small business cannot be characterised as homogeneous. It includes high technology companies, medical specialists and many professional services, where skill and remuneration levels are high.

But it also includes a range of unskilled jobs, such as catering, labouring and cleaning, that make up what is sometimes known as the secondary labour market. As noted in chapter 5, the, typically smaller, businesses in this secondary market are more likely to hire workers who do not have specific job-related skills than firms operating in the primary market. Such a business will (for a relatively lower wage) be able to hire someone with no training or someone whose existing skills are ill-matched to bigger business. If there is an increase in such job mismatchs (say, because of structural change in industry) and/or an increase in the number of unskilled job applicants, then the unemployed are more likely to find jobs (if at all) in the small business sector.

Indivisibilities in personnel and hours flexibility

While small business, *on average*, employs less skilled workers than big business, it is not true that these employees are identical unskilled clones. There will be some specialisation. This implies that if a small firm faces a demand shock, it may reduce hours of work of their staff rather than lay them off, in order to avoid losing a worker with a specialised skill. A large firm, in contrast, has many workers with the same specialised skill and can afford to lay off 'whole' workers.

The benefit-income (replacement) ratio

If unemployment benefits or their duration [12] rise relative to average wages two outcomes occur. Some people search less intensively for a job — and this, in turn, creates greater wage pressure in firms. Second, for some unskilled people, the benefit may exceed the wage they could ever hope to obtain (the reservation wage), and they fail to genuinely search at all.

As we noted above, small firms play a significant role in the secondary labour market. Wages in this market are low. It is likely that the unemployment benefit will sometimes be a binding constraint on employment in this sector of the economy, in that some people elect to stay in unemployment rather than take a low paid job. Business owners certainly sometimes report this perception (box 6.1).

Employment protection legislation

Such legislation determines conditions for the exit of an employee, governing issues such as notice and unfair dismissal. They can adversely affect hiring in a firm.[13]

This is because all recruitment is a gamble — a worker may not meet expectations or demand may fall. A firm may be less willing to hire labour if there is a risk of a subsequent higher cost from dismissal. [14] This also increases the insider power of already hired workers and increases wage pressure.

Arguably, small employing firms may find such legislation more costly than larger business because:

- they have less capacity to economically develop high quality recruitment practices which reduce the probability of an employee mismatch; and
- are more likely to need to develop a protocol for the dismissal of a worker than a large business. Larger businesses would often have such systems in place, even if not legislatively required.

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[12] Currently, there is no maximum duration for receipt of unemployment benefits in Australia.

[13] Two qualifiers are necessary. First, in *some* circumstances employment protection may actually increase employment (Bean, 1994, pp. 610-612). Second, even if the orthodox belief is true, this does not mean that such legislation is necessarily inappropriate. There is some tradeoff between employment and other social goals.

[14] Some business people have interpreted employment protection legislation in this light (box 6.1).

Box 6. 1: Regulatory frictions and employment: the perceptions of firms[a]

'I have now worked for myself for seventeen years. Each year, the book work and red tape that exists between a small business and government departments — local and state or federal — has grown and grown. Then when you start employing someone it gets worse and worse, as more and more paperwork is shoved under our noses. It is no wonder small businesses are reluctant to increase their work forces.'

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'Book keeping nightmares (re record keeping, receipt collecting, wages, workcover, super guarantee) have meant that the proprietor has been tentative in expanding — the end result is expansion may never occur.'

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'The total failure of effective deregulation of labour has prevented us from arranging flexible work practices which would have benefited the employees, the company, and made it possible to employ more people. We are actively pursuing a programme of plant reduction with the object of reducing employee numbers permanently. We now offer casual employment only, rather than permanent, as was our policy in the past.'

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'The costs of doing business have increased substantially. We need an extra 20 hours a week to meet the increased burden. Industrial relations and unfair dismissal laws are a disincentive to grow. We are considering downscaling our business to one run by 4 family members and 3 staff down from a peak of 25 staff.'

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'We recently employed a person from CES who had been unemployed for 4 years. The hours of work and skill levels did not match exactly what we wanted, but we gave the person a go. The person was completely unsuitable and was dismissed. Now we face unfair dismissal proceedings. We have two other employees from the CES, one on a traineeship. However, never again will I give such a person a go until this legislation is repealed. It is counter productive to creating employment.'

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'Unfortunately there are undoubtedly some unscrupulous employers out there that would take advantage of their employees given half the chance. There is a need for some mechanism whereby employees can seek justice in such instances. The existing system, however, does not seem to operate fairly.'

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'I employ 11 people — the seniors work well — but the new employees attitude to their work has dropped — knowing full well they can't be put off without a good excuse. I once employed 14 persons and am now down to 11. I hope soon somehow to get down to 9. ... it's getting so hard to employ people.'

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'It is difficult to get staff to work overtime as they will exceed their benefit level.'

– – – –

'This experience with the inflexibility of the current work practices has completely soured any business growth we planned, so we have reduced the number of full time staff, employ casuals where necessary, and have completely streamlined the work environment with reduced staff.'

‘We operate a small business, and as such are only able to provide workers with limited hours of work per week. We found that when searching for new staff, it was extremely difficult to provide our business needs, as we could only offer up to 15 hours per week in any given site. Applicants provided the following argument, "why should I work 15 hours/week for $220 gross when I can get $153 net from DSS benefits?"‘

– – – –

‘We need flexibility in being able to pay inexperienced staff less, and experienced staff more. The minimum wage seems to force us to pay inexperienced staff too much while experienced staff are not receiving their due because our wage bills are artificially inflated by minimum wage legislation.’

– – – –

‘The amount of regulation, paperwork and time required to be spent when employing personnel is a major disincentive to employ eg Taxation, Social Security enquires, Superannuation matters, Workcover, Dept of Labour regulations, Safety procedures etc. The worst offenders are Social Security in relation to family allowances, fringe benefits, etc. We never stop filling in information to support employees applications for benefits — particularly part time employees. It is better in the end to work the additional hours ourselves and save the labour costs.’

– – – –

‘We are now reluctant to employ staff full time because of the paperwork and obligations involved.’

– – – –

‘The government seems to have the idea that as a company gets larger it becomes more profitable and as such attracts increased taxes as such there is no incentive to expand small to medium sized businesses.’

– – – –

‘25% of my working year is devoted to government controlled issues of one type or another....I need to spend more time devoted to developing and promoting my business, creating jobs, creating export potential ...Not being a bookkeeper for bureaucracy.’

– – – –

a In an attachment to the GAPS survey, respondents were asked if they would like to make any comments on government policies. Any references which may have identified an individual respondent have been repressed. Note that the questionnaire was typically completed in late 1995, prior to changes in workplace legislation introduced by the new government in 1996.

Source: Survey addendum responses to the ABS, *Business Growth and Performance Survey (GAPS)*, 1994–95.

In either case, the impacts of employment protection legislation on employment may be greater for small employing firms than large ones. Part of the purpose of the new Workplace Relations Act 1996 was to ameliorate some of these impacts.

Minimum wage legislation can play a similar role. Minimum wages are less likely to bind for large firms because of either efficiency wages or greater insider power. Smaller employing firms operating in more competitive market

conditions where wage flexibility is inherently greater may find that they do bind (Oi, 1997 and firms' impressions in box 6.1). [15]

However, while employment protection legislation and minimum wages may affect employment in employing firms, they do not constrain growth of own account jobs (the self-employed) — this may partly explain the expansion of own account employment, a factor we later examine econometrically (appendix J).

Labour demand increases in a secondary labour market

In the secondary labour market (a component of small business), employment would fall if wages were lower [16], because of a reduced supply of labour (see Box 5.1). If, however, demand for services such as catering and cleaning were to increase, and with them wages, then employment in this market would grow (Layard, Nickell and Jackman, 1991 pp. 42-43).

Own account labour or self-employment

Own account (or self-employed) work outside the farm sector is a very special category of small business with a unique labour 'market'. Non-farm own account employment comprised 8.8 per cent of total employment in March 1995 and 18.8 per cent of small business employment. So long as the reservation wage to unemployment benefit ratio is above some threshold, then own account employment is preferable to unemployment. [17] As in the secondary labour market, increases in the demand for goods and services produced by own account workers will, ceteris paribus [18], tend to increase wages and increase employment in this sector.

The impact of small business on unemployment rates

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[15] We note that the impact of minimum wages on employment became an issue of some controversy following research by Card and Kreuger (1995). They used a unique micro data set to examine how employment responded in burger and fried chicken retailers in New Jersey, where minimum wages were increased, and neighbouring Pennsylvania, where they did not. Employment did not fall in New Jersey retailers as might have been expected. However, the Card and Kreuger study has many faults as evidence in favour of no impacts of minimum wage legislation on employment (summarised in Kennan 1995). The orthodox view is that such legislation has a negative, but probably small, impact on employment.

[16] So long as no artificial floor had been set for wages via *binding* minimum wage legislation.

[17] For many the threshold may be less than unity, at least in the short run (if for example, there is stigma from unemployment, job satisfaction, or gains from training and learning on the job).

[18] Of course, we may not observe increasing wages and in creasing employment if there are also supply side effects which expand the pool of potential self-employees.

Consider Layard, Nickell and Jackman's model of unemployment (1991 p. 387). In equilibrium, unemployment is:

$$u^* = \frac{(\gamma_0 + \beta_0 + Z_w)}{(\gamma_1 + \beta_1)} \qquad \{1\}$$

where γ_1 measures the effect of unemployment on wage-setting (also termed wage flexibility), β_1 measures the impact of unemployment on real product prices (also termed price flexibility), Z_w measures wage pressure influences on real wages (such as union power, employer coordination, tax wedges between consumer and producer prices and search intensity) and γ_0 and β_0 are respectively the intercepts from the wage and price equations. [19]

The main parameters of interest for the analysis of the labour market role of small business are γ_1 and β_1. The higher is γ_1 then the more wages fall when there is a change in the level of unemployment. The arguments in previous sub-sections suggest that γ_1 is likely to be bigger in small firms than large ones because of weaker insider power. For example, in explaining low Japanese unemployment Layard *et al* note:

> ...employment in Japan is stable, compared with elsewhere. What happens is roughly as follows. Only 40 per cent of Japanese workers are in the organised sector (where bonuses are paid); another 30 per cent are employees in the small-firm sector, and 30 per cent are family workers. When output fluctuates, employment in the formal sector fluctuates quite a lot. But employment in small firms varies much less (Brunello and Wadwhani 1989). This is quite simply because the flexibility of pay per worker is very high in the market-clearing small-firm sector, while it is much less high in the bonus-paying large firms. Thus, Japan's stable employment record is mainly due to the wage flexibility in the small-firm sector. (p. 501).

The other possible influence of the firm size distribution cited by Layard *et al* is β_1. Less economic activity, or more unemployment, tends to (weakly) depress real product prices, as measured by log (p/w) where p is product prices and w, wages. Layard *et al* conclude that price flexibility is greater the more competitive

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[19] This steady state condition for unemployment is from (Layard et al, p.378) and is derived as the solution of a firm's price equation ($p - w = \beta_0 - \beta_1 u - \beta_{11} \Delta u - \beta_2 \Delta^2 p - \beta_3 \{k - l\}$), and the wage equation ($w - p = \gamma_0 - \gamma_1 u - \gamma_{11} \Delta u - \gamma_2 \Delta^2 p + Z_w + \beta_3 \{k - l\}$) with non-accelerating inflation (ie $\Delta^2 p = 0$). p denotes log price, w log wages, u the unemployment rate, k log capital and l log employment. Layard et al estimated the price and wage equations for each OECD country, so that they had an estimate of each of the parameters for each country. They then try to explain why different countries have different values of the parameters in these equations. Based on the sort of theories described earlier and, in particular, the role of product market competition, Layard et al hypothesise and test the association between variations in the size distribution of firms among OECD countries and variations in the values of γ_1 and β_1.

the product market — and argue that the share of employees in large firms is a crude proxy for the state of competition.

This theory suggests that, where an economy has a greater proportion of employment in small firms, both wage and price flexibility is improved, and equilibrium unemployment is likely to be less. On the other hand, there is evidence that small business jobs tend to be more poorly remunerated and possess other characteristics different to large firm jobs (Storey, 1994 and chapter 5).

Summary

There are a plethora of hypotheses about the possible labour market role of small firms, but relatively little information to rigorously test which of the hypotheses is an adequate explanator for the pattern found. Even so, it is useful to specify the hypotheses, if for no other reason than to explain how the employment shares of small business are likely to be a reflection of complex, sometimes opposing, factors in the labour market. In the next section, we turn to evidence, from both Australia and overseas, which may help to isolate better the links between small business employment and the overall labour market.

6.5 Empirical evidence on the role of small firms in the labour market

6.5.1 Structural change

First, there is strong evidence that the two major reasons that the small business share of national employment has risen is because of changing demand patterns and the relative decline of the public sector. In chapter 4, we found that small business was **not** expanding in many individual sectors of the economy. Rather, there have been expansions in output of sectors where small business is the primary (if reducing) mode of organisation — leading to a potentially exaggerated view of the role of small business in job creation. [20] We do not need to turn to labour market explanations of what amounts to structural change in the economy.

However, while structural change is an important ingredient in the story of the growing small business employment share, it is not the only one. In some sectors (such as construction and manufacturing) we still found an increasing role for small business.

[20] Though we note that there may be other factors (such as measurement problems in the labour statistics) which lead to opposite biases.

6.5.2 Employment creation or displacement?

While we cannot investigate each of the hypotheses in the previous section, we can examine one issue — to what extent is job generation in small business correlated with unemployment, and to what extent is it shuffling of jobs from one sized firm to another?

The connection between small firms and wage flexibility

Higher degrees of wage flexibility (picked up by the term γ_1 in equation 1) are theoretically and empirically associated with lower unemployment rates. Layard *et al* (1991) test the role of small versus large firms in shaping an economy's wage flexibility by estimating γ_1 for OECD countries and then examining whether γ_1 is positively correlated with the percentage of employees in small firms. They found (p. 418) that:

$$\hat{\gamma}_1 = 10.3 - 0.059\,\mathrm{RR} - 0.2\,\mathrm{BD} - 0.30\,\mathrm{CORP} + 0.23\,\mathrm{PSF}$$

for 14 OECD countries where RR is the unemployment benefit to income ratio, BD the unemployment benefit duration, CORP a measure of corporatism [21] and PSF the proportion of employees in small firms in manufacturing in 1985. As PSF is not very highly correlated with the other regressors, we also estimated the simple relationship between γ_1 and PSF. We found:

$$\hat{\gamma}_1 = -3.90 + 0.28\ \mathrm{PSF}$$

The coefficient on PSF is statistically significant in both regressions. The results imply that small changes in the small business employment share have relatively big impacts on unemployment. To see why, note that the proportional impact of a change in γ_1 on equilibrium unemployment is:

$$\frac{\tilde{u}^* - u^*}{u^*} = \frac{(\gamma_1 + \beta_1)}{(\tilde{\gamma}_1 + \beta_1)} - 1 \qquad \{2\}$$

where the tilda indicates the new value of a variable. For example, this implies that, if a country starts with the mean values of γ_1 and β_1 (4.57 and 1.41), a change of ten percentage points in PSF reduces equilibrium unemployment by a little less than 30 per cent.

However, the confidence intervals about parameter estimates are wide. Therefore, the extent to which changes in the size structure of firms is likely to affect γ_1, and thereby equilibrium unemployment, is not known with any precision. Moreover, Australia is an outlier. In both regressions Australia has a significantly lower

[21] The degree of centralisation in wage bargaining.

value for γ_1 than would be predicted by the explanatory variables. The evidence, therefore, that shifts in the size structure of firms is likely to have any impact on γ_1 and equilibrium unemployment is extremely fragile for Australia.

The connection between small firms and product price flexibility

Layard et al also explore the extent to which the large firm share (typically negatively correlated with the small firm share) is associated with less product price flexibility — and therefore higher long-run unemployment. They find :

$$\hat{\beta}_1 = 3.19 - 2.19\,\mathrm{M/Y} - 0.023\ \mathrm{PLF}$$

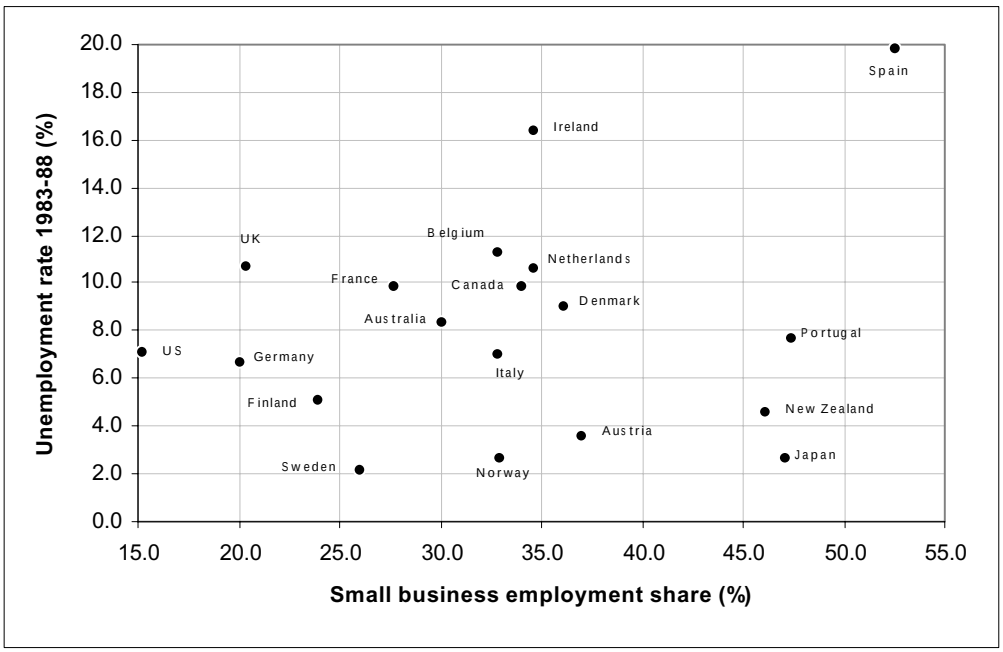
where M/Y is imports to GDP and PLF is the percentage of employees in manufacturing who work in firms that employ more than 500 people. This indicates a weak negative correlation between the proportion of employees in large firms and estimates of β_1— but the coefficient is not statistically significant and its size is so small that it implies only small economic effects.

Cross-sectional evidence

We further examined the impact of small business employment on the unemployment rate by examining whether cross sectional and time series variations in the small business employment share were correlated with unemployment rates.

First, we examined to what extent there was any correlation between unemployment rates and the small business employment share among OECD countries. No obvious relationship is apparent in figure 6.1.

Figure 6.1: Unemployment rates and the small business employment share



Source: The data relate to the share of manufacturing employment accounted for by firms employing less than 100 employees, typically for 1985. PSF data for Portugal, Spain and Norway were estimated from European Commission, 1994, *Enterprises in Europe* 3rd Report. PSF data for New Zealand are from ABS *Small Business in Australia, 1993,* while those for Canada are from Baldwin, J. and G. Picot 1994, 'Employment generation by small producers in the Canadian Manufacturing Sector', Research Paper 70, Statistics Canada. All other data are from Layard et al (1991).

In particular, there is a range of countries with a high small business employment share but with very different unemployment experiences. Some have low unemployment like Portugal and Japan, and others have high unemployment like Spain. Similarly, there is a group of countries with unemployment between 4 and 8 per cent, some with a very low small business employment share (eg the US and Germany) and some with a very high small business employment share (eg Portugal). The regression of unemployment on the proportion of small firms (PSF) yielded a *positive*, not a negative correlation:

$$UR = 5.15 + 0.092\ PSF$$

Moreover, the relationship is not statistically significant. However, the regression may produce quite spurious inferences about the relationship between the small business employment share and unemployment, because we have not controlled for any of the other factors that bear on unemployment outcomes.

To do this, we used Layard et al's (1991 p.55) model of unemployment variations among OECD countries, augmented by the small business employment share (table 6.1).

Table 6.1: Explaining unemployment variation among OECD countries using the Layard, Nickell and Jackman model

	Model 1		*Model 2*		*Model 3*	
Mnemonic	*Coeff.*	*t stat*	*Coeff.*	*t stat*	*Coeff.*	*t stat*
Constant	0.99	0.6	2.19	1.9	2.41	2.3
BDUR	0.84	3.9	0.83	4.5	0.86	4.1
RR	0.15	6.6	0.17	8.0	0.17	10.2
SPEND	-0.14	-4.4	-0.16	-6.2	-0.17	-9.5
BARGN	2.53	3.5	2.45	4.9	2.23	3.3
ECOORD	-3.88	-5.7	-4.64	-5.4	-5.22	-11.8
DINF	-0.35	-2.8	-0.40	-3.7	-0.43	-3.5
UCOORD	-1.70	-2.7	-0.87	-1.0	..	..
PSF	..	..	-0.06	-2.2	-0.08	-4.4
$\overline{R}^2$	0.886		0.892		0.896	

a The variables are: BDUR is unemployment benefit duration (years), RR is the unemployment benefit to income or replacement ratio (%), SPEND is active labour market spending (expenditure per unemployed as a percentage of output per person), BARGN is the coverage of collective bargaining (1= under 25%, 2 = 25-75%, 3= over 75%), ECOORD is employer coordination (from 1 = low to 3 = high), DINF is the change in inflation from 1983 to 1988 (% points), UCOORD is union coordination (1 = low to 3= high) and PSF is the share of small business employment (%). t statistics are robust to heteroscedasticity.

Once other factors are controlled for — and in particular, the degree of employer and union coordination, the small business employment share *is* negatively correlated with unemployment. It is also statistically significant. However, the implied effect of changes in the small business employment share on unemployment is very modest — a 10 percentage point increase in the share of small business (a massive increase) is associated with a 0.6 to 0.8 percentage point reduction in the unemployment rate. This is quite at odds with the magnitude of the effect implied by the indirect evidence cited in the previous section. Part of the explanation for the differences between the two approaches may stem from the links between the small business employment share and other factors that shape unemployment outcomes. For example, it is harder to have employer coordination if there are many more employers — as would be the case if the small business employment share was very high. In this case, wage flexibility (γ_1 in equation {1}) may be higher, but the benefits of this may be partly offset by a reduction in employer coordination (which is transmitted through Z_w in equation 1).

Time series evidence

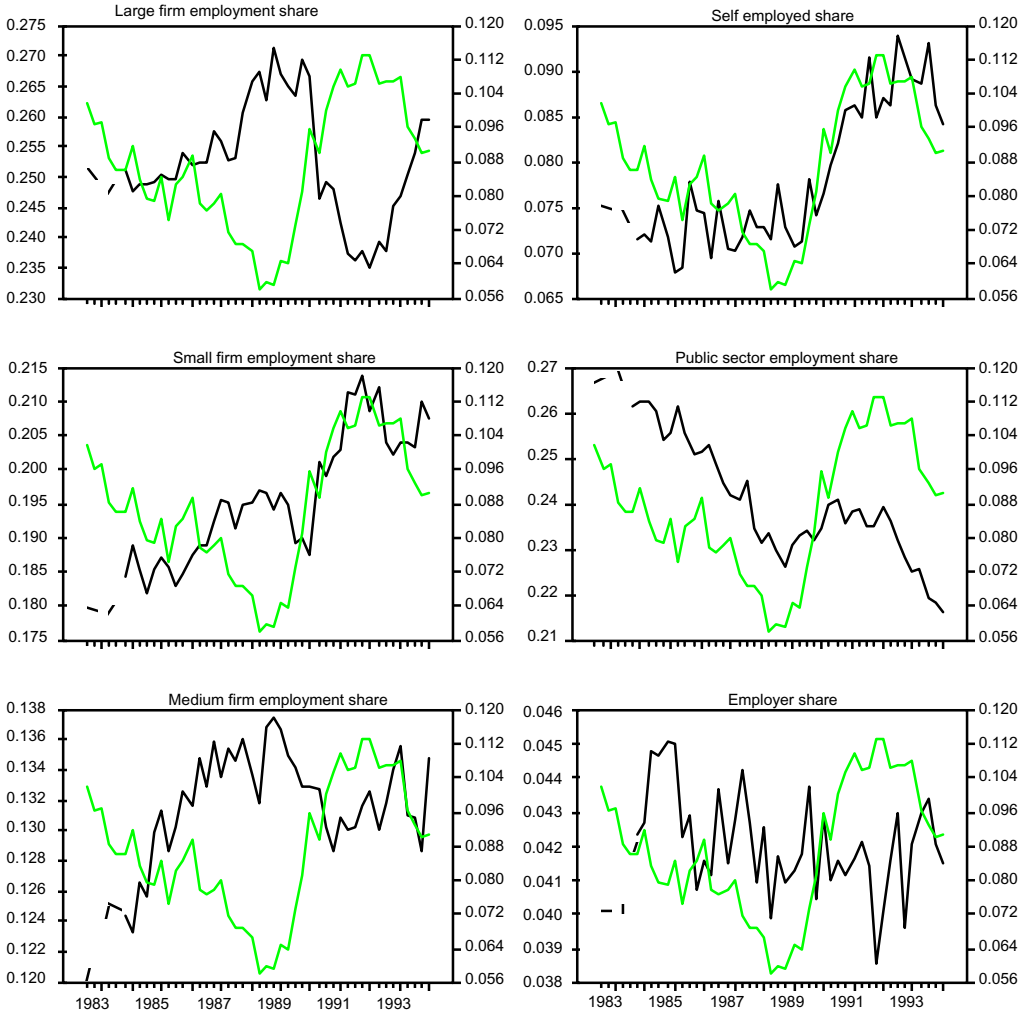
We turn now to Australian evidence on the time series correlations between employment shares by size of business and unemployment. Over the period from 1983 to 1995, the large firm share of employment appears to be strongly negatively correlated with the unemployment rate, as do the medium firm and employer shares, although to a lesser extent. The public sector share of employment has been declining steadily throughout the period. The most interesting patterns are evident for small business:

- Up until 1989, the small firm share was also negatively correlated with the unemployment rate, but it has since been *positively* correlated.
- The self-employed share seems to have followed the unemployment rate throughout the period.

However, figure 6.2 picks up short-run cyclical relationships, rather than any long-run relationship. To examine possible long-run relationships in further detail we estimated a relatively simple model of unemployment (which incorporated current and lagged real GDP changes, lags of the unemployment level, seasonal dummies and current and lagged values of the small business employment share). The model suggested that the small business employment share was not at all statistically or economically significant as a long-run determinant of the unemployment rate. [22]

[22] This particular reduced form picks up some of the obvious adjustment costs as unemployment responds to shocks (represented by the lags in the relevant variables), seasonal unemployment variations and the impact of the cycle. A fully specified reduced form for the long run unemployment rate would include other sets of variables, such as tax, social security and search variables. However, we only have data on the size distribution of firms from 1983 to 1995 — which would leave us with degrees of freedom problems if we had expanded the number of variables in our analysis. We decided to omit those variables which tend to evolve quite slowly over time. Even so, it is possible that one explanation for the non-significance of the small firm share is the omission of these variables.

Figure 6.2: Unemployment and employment shares by employment type, September quarter 1983 to March quarter 1995[a]



a The grey line represents the unemployment rate (right hand scale of the graphs).

The special role of small business operators

Small business operators (SBOs — see chapter 2) play a unique labour market role since their working conditions are not the outcome of any employer-employee bargain. They are also separated from institutions which determine or shape wages and conditions.

Modeling (appendix J) suggested a major role for wages (relative to wage and salary earners), the minimum to average wage and payroll taxes as long-run determinants of the employment share of small business operators, while changes in unemployment and nominal interest rates were useful in explaining short-run deviations in their share. Interestingly, the employment share of small business

operators tends to be *higher* during episodes of increased unemployment — probably reflecting the greater difficulties in obtaining a job in the orthodox labour market and a higher likelihood of unemployment among wage and salary earners.

Summary

While there are some theoretical reasons why an increasing share of small firms may be associated with lower unemployment outcomes, robust empirical evidence for such a relationship is lacking for Australia.

6.6 Why did small business employment shares change?

At this stage we can summarise the various estimates presented in this paper to explain the increase in the share of small business in national employment between 1983–84 and 1994–95.

The most direct, albeit mechanical, approach is to examine sectoral data which account for changes in employment shares. Table E.6 displays changes in the composition of national employment. [23] It shows that the increasing share of small and large private non-farm business was at the expense of a 5.1 percentage points fall in the share of public employment between 1983–84 and 1994–95 and a 1.1 percentage point fall in the share of agricultural employment. Combining the information in tables E.6 and 4.2 yields the sectoral analysis presented in table 6.2 — the detailed method is described in section E.2 in appendix E.

The information in table 6.2 indicates that, in sectoral accounting terms, the increase in the *economy wide* share of small business was brought about mainly due to the contraction in the share of public and agricultural employment and changes in the sectoral composition of private demand.

While table 6.2 explains something about the source of the growing small business employment share, it still leaves many questions unanswered. For example, the private non-farm sector (including small business) managed to absorb an increasing share of the workforce by replacing some of the jobs in the public sector and through various general equilibrium readjustments. But from the sectoral analysis presented in table 6.2, we gain little understanding of this readjustment process.

[23] Table 2.4 in chapter 2 also measures the impact of the changing economy-wide composition of jobs, but uses quarterly data as its basis. The results are very similar to those provided by table E.6.

Table 6.2 Sectoral changes that account for the increase in the share of small business employment between 1983–84 and 1994–95[a]

	Firm size	
Source of change	*Under 20*	*Under 100*
	%	%
Contraction in the share of public employment	2.2	3.2
Contraction in the share of farm employment	0.5	0.7
Increases in the sectoral share of property and business services	1.0	1.4
Increases in the sectoral share of health and community services	0.7	1.2
Other changes in the sectoral composition of private demand	-0.4	-1.0
Reduction in average firm size in manufacturing	1.0	1.4
Increasing importance of supermarkets and chain stores	-1.1	-1.0
Changes in the share of SB in other sectors	0.1	-0.3
Other[b]	-0.3	-0.6
Total change in the employment share of small business	3.8	5.0

a The methodology for calculating these estimates is in appen dix E.

b This represents the interaction term described in the early section of chapter 4.

Source: Appendix E.6 and table 4.2.

For that purpose one has to look on the underlying factors behind the sectoral changes. While the contraction in the share of the public sector was driven mainly by budgetary and administrative considerations, the changes in employment shares inside the private sector were driven largely by economic factors, like changes in demand, technologies and factor prices. Only changes in the composition of sectoral demand are reflected in table 6.2.

One important policy question concerns the extent to which smaller firms' possibly greater downward wage flexibility contributed to the observed increase in employment in small enterprises. The assessment of this issue is complicated. The wages of small business declined relative to bigger business. This, with increased employment, is consistent with outward shifts in the supply of labour to the small business labour market, which would tend to depress wages. However, determining the exact role of wage effects in explaining the rise in employment in small business is complex — wage rates are the outcome of labour market interactions, rather than an exogenous determinant of the demand for labour:

- The characteristics and quality of labour changed over the period examined. For example, table A.9 in appendix A reveals that there were very marked changes in the pattern of employment of women versus men among

different sized firms from 1989–90 to 1994–95. Wage changes may partly reflect changes in the quality of workers and the intensity of work.

- There were shifts in demand to sectors intensive in small business.
- Changing labour market institutions and regulations probably played a complex role in employment outcomes.

Formal modeling of the extent to which small firms genuinely have greater wage flexibility, and the interaction of this with employment protection, minimum wages and social security provisions remains largely unresearched in Australia.

The rapid increase in part-time employment also poses some interesting questions about the functioning of Australian labour markets over this period. On average, part-time employment in large firms grew more rapidly than in small firms during the 1985 – 1995 period (table 2.1). This had a negative impact on the small business employment share *measured using head counts*. In this sense, the most commonly cited data on small business employment shares tends to underestimate the extent to which small business generated *full-time equivalent jobs*.

Another underlying factor that has been quantified in this paper is the effect on employment shares of outsourcing from public agencies. In appendix G it is estimated that outsourcing has increased the share of employment accounted for by firms employing less than 20 people by 0.4 to 0.7 percentage points (and the share of under 100 employee firms by 0.5 to 0.9 percentage points). These estimates are smaller than the estimated impact of the contraction in public employment shown in table 6.2. Evidently there were many indirect changes and readjustments associated with the contraction in the share of public employment about which we know little quantitatively.

In summary, we do not possess comprehensive quantitative estimates on the underlying factors behind the changes in employment shares. However, the qualitative discussions in sections 6.1 to 6.5 provide some evidence and theory concerning these underlying causes.

Overall, new employment generation accounted for a minor portion of the changes that occurred in employment shares. Most of the changes in employment shares can be attributed to either resource reallocation (ie. job replacement) effects or structural change in the economy. These job reallocations may improve economic efficiency but do not contribute directly to increase employment. This result mirrors that found by Borland (1996) when examining the possible relationship between unemployment and sectoral shifts in the composition of labour demand.

All told, the findings in this paper support the view that to a large extent small business is not an independent motor driving new job generation in the economy.

Most of the increase in small business employment share was due to the replacement of jobs in other sectors rather than new job generation.

6.7 Policy implications

6.7.1 A policy opportunity?

Small business is a highly significant sector in the economy —responsible for around half total employment. Clearly, it is important to ensure that this sector, like others, is not hamstrung by any major impediments.

But some commentators characterise the sector as 'special', given its role in employment generation, and argue for *selective* measures to stimulate employment in small business. A range of views sympathetic and antagonistic to this view is shown in Box 6.2. Most recently in Australia, the Council of Small Businesses of Australia (COSBOA) argued for a range of subsidies which would reduce the cost of small business hiring the long term unemployed. [24]

In this section we question whether there are grounds for selective subsidies or exemptions directed at creating employment in small business. In doing so, however, we have to be careful to distinguish between two views about small business, which sometimes get blurred in the rhetoric.

The first view

On the one hand, there is a policy agenda aimed at eliminating all sorts of impediments to small business, such as redundant regulations, poor coordination of regulations, and excessive paperwork requirements. These concerns are typified by the Report of the Small Business Deregulation Task force, *Time for Business*, (known as the Bell report), which has made a detailed assessment of regulatory impact on small business.

Box 6.2: Perceptions of SME employment and government policy

Views sympathetic to specific SME policies

'Experience in recent years has shown that it is above all the SMEs that have been able to retain jobs and create new ones. They should therefore be supported and promoted to the greatest extent possible.' (Austrian Chamber of Commerce, ILO 1997 p.4)

It would be appropriate for the Conference to adopt an international instrument to emphasise the significance of job creation and stimulate it in SMEs (Japanese Federation of Employers' Associations, ILO 1997 p. 15)

[24] Reported in the *Courier Mail*, 22/7/97, p.10.

'Furthermore, cohort analysis demonstrates unequivocally that new small firms do create a disproportionate share of net new jobs. ...Public policy must focus on encouraging new firm formation and growth.' (Bruce A. Kirchhoff of New Jersey Institute of Technology, and Patricia G. Greene of Rutgers University,http://www.babson.edu/entrep/fer/papers95/kirchof.htm).

'...it was a commonly shared opinion that such measures as encouraging the development and growth of SMEs... are important tools to increase productivity and productive employment.' (OECD, 1996, *Industrial Competitiveness*, Paris, p.30).

'To help bridge the gap to stronger growth, the government continues to take action to invest now in key sectors of the economy...to ensure that jobs are created and economic growth is strong. These investments — with a focus on youth, trade, small business, tourism and infrastructure — not only help create jobs in the near term but have lasting benefits for the economy.' The Government's Jobs Strategy, Budget 1997, Canada, (http ://www.fin.gc.ca/budget97/jobe /jobe.txt). [25]

'The small business and craft sector, which hosts about half of the total labour force, needs special attention in such a policy. The more so because the potential for job generation by SMEs is significant.' European Commission, *The European Observatory for SMEs*, First Annual Report (http://161.31.208.50/docs/Publications/pub00059.txt). [26]

'Nearly two-thirds of all of our workers are employed by small businesses. And as I said, millions of jobs in the last decade were created by them even as larger employers were downsizing, contracting out or moving employment offshore. We cannot afford not to try to resume this trend in the 1990s ...That's why we have offered incentives like investment tax credits for small employers, the new business capital gains tax, urban enterprise zones and a network of small business community development banks.' (Remarks by the President of the US, 1993, http://www.whitehouse.gov/white-house-publications/1993/03/1993-03-10-remarks-by-the-president-on-the-credit-crunch-3-10-93.text).

Views cautioning against active measures

...even if it is the case that the small firm sector is a major source of new job creation, this does not automatically point to a justification for providing the sector with additional incentives. The question of whether, at the margin, it is appropriate to redirect resources away from large and towards small firms is not proven simply be demonstrating that small firms have in the past been significant sources of job creation' (Storey, D., 1994, *Understanding the Small Business Sector*, p. 201).

'The key to job creation is the establishment of a supportive economic environment for all enterprises regardless of size.'(New Zealand response, ILO 1997 p. 8)

[25] The 1997 Canadian budget announced new budgetary measures affecting small business. Employment insurance premiums will be virtually eliminated for additional employees hired by almost 900,000 eligible small businesses.

[26] Note that, in a somewhat paradoxical vein, the report goes on to say that 'Stimulation of the SME sector should be based on viable economic reasoning and recognising the fact that SMEs are not the only subject of a social policy to diminish unemployment. Both large and small enterprises should be targeted for schemes to diminish unemployment.'

'By definition, policies to promote some firms, in this case SMEs, do so at the expense of other firms (ie. non-SMEs). while these programmes and policies may serve social objectives, they may quite possibly hinder rather than help the labour market and the achievement of full employment.' (US response, ILO 1997 p. 11)

'SMEs have a fundamental role to play in creating new employment opportunities. But only a very small proportion of small businesses will grow significantly... It is through the creation of a healthy economy and conditions for growth that employment will be generated and maintained. Governments should therefore focus on creating the right conditions for SMEs to start and grow, rather than on introducing market distortions aimed at individual policy objectives. An international instrument on job creation should therefore not be adopted.' (Response by the Confederation of British Industry, ILO 1997 p. 17)

'One part of the business sector should not be overemphasised in relation to others. ...small, medium and large enterprises form a closely linked operational and production chain. Irrespective of the size of business they form together a basis for the growth and development of employment. The aim should be equal treatment regardless of the size, branch or legal form of the enterprise.' (Finnish response, ILO 1997 p. 27)

'The basic role of SMEs in the various aspects mentioned should be recognised, but clause (a) [27] is dangerous in that it could be wrongly interpreted. The ultimate aim of SMEs is not to promote employment but to create wealth, manufacture goods and provide services for which there is demand.' (Swiss Union of Arts and Crafts, ILO 1997 p.30).

The orientation of this approach to small business may be misinterpreted on two fronts. First, while such reports may *appear* to exemplify a selective approach, the actual recommendations generally relate to regulatory reform for all business, or take account of distinctive burdens affecting small businesses. Second, sometimes governments, policymakers and commentators aiming for such regulatory reform, also include the employment-creating record of the small business sector in their justifications for reform. But this is a way of embellishing the argument, rather than something which should be taken literally, and assessed on its logical merits. Fundamentally, there are strong grounds for identifying and removing regulatory and other impediments to the efficient operation of firms — large and small.

The second view

On the other hand, there are some who seriously advocate selective policies for creating jobs in small business — whether these be explicit subsidies, regulatory exemptions, special government purchasing concessions or other policies.

[27] This asked: 'Should the instrument recognise that SMEs have a fundamental role to play in the promotion of full, productive and freely chose employment?'

It is the latter view about small business which is our concern. The notion that such policy interventions should be applied selectively to small business to generate more jobs has questionable underpinnings and logical consequences.

First, the judgment that small firms are the major 'source' of new jobs is premature. As yet, no economy-wide longitudinal analysis of job creation and destruction over long periods has been undertaken for Australia. The substitute for this analysis, examination of changes in the size distribution of firms, can sometimes provide a distorted picture of the true underlying process of job creation and destruction (chapter 2).

But second, even if, as seems plausible, we accept that the observed changes in the size distribution of firms indicates that small business has genuinely been responsible for a disproportionate amount of net job creation in the economy, it is — as explained below — a non sequitur to advocate policies to promote this sector because of its job generating record.

The policy implication is that we should be cautious about the effectiveness and efficiency of selective subsidies or other programs aimed at encouraging employment in small enterprises alone. The idea of a selective approach is open to questioning on other grounds too. There are seven other cautionary notes:

Confusion of medium and cause

Small businesses appear to be a major source of new jobs in the economy. But this is open to misinterpretation. While small firms may be *where* many of the new jobs have been created, this does not necessarily mean they are *responsible* for their creation. In fact, the sectoral data (chapter 4) imply that the smallness of firms is, to a large degree, incidental to the process of job creation. Many of the new jobs were created in small business, not because that size of firm is particularly able to generate new jobs, but because the products for which demand has increased are mainly supplied by small business. In a sense, the customers of these firms created the jobs, not the firms.

Neglecting the optimal size distribution of firms

Selective support by government of small business changes the economic process of allocating resources by the size of the business unit. We have argued in previous sections that the distribution of enterprise sizes in the economy is determined by technological and transaction cost conditions — it would be far too costly, for example, to have one large centrally located hairdressing salon, or on the other hand, many thousands of small steel making plants.

Some interventions, for example, subsidies to small firms, undermine the optimal distribution of firm sizes — some operations that would be performed more

efficiently by a larger enterprise would shift to a smaller one. As well, small firm survival rates are lower than larger businesses. As a consequence, *selective* assistance to small business might increase turbulence, with implied social and economic costs. Finally, subsidies have to be financed through taxation — which in turn can reduce incentives to work, and inevitably impose other economic costs.

Arbitrary focus on job creation cf job destruction

The labour market is very turbulent. Jobs are created and destroyed as firms grow, deal with worker mismatches, change their structures, contract, or close. Advocates for a proactive small business policy as a way of delivering jobs focus on one expedient measure of the dynamics of labour markets — *net* job creation (or the number of gross jobs gained less the number of gross jobs created).

But there are other, equally arbitrary (and unsatisfactory) ways of looking at the way labour markets 'produce' jobs. An advocate for selective big business policy could argue for assistance to *stop* job destruction — arguing that saving a job from destruction in a big firm is just as valuable as creating one in a small firm. An advocate for bigger public spending might argue against public sector rationalisation along the same lines.

All of these various advocates run into serious logical and practical problems in connecting their policy measures with genuinely positive labour market outcomes. But the point is that, once there is a mechanistic focus on *where* jobs are 'created' or 'destroyed', there is nothing which gives the arguments of small business advocates any more coherence than those of big business or public sector advocates.

Inapplicability to the average small firm and difficulty in selecting target firms

Most small firms do not grow appreciably or contribute much to net job creation. Instead, a few small firms — the 'gazelles' — account for most net new jobs. Accordingly, the idea of focusing policy attention on those firms which are job creators, suggests that incipient gazelles should be targeted by any subsidy or other support program. However, the selective promotion of such firms to achieve positive economy-wide net employment outcomes implies an unrealistically high level of foreknowledge and capacity by government to finesse private sector outcomes: How could such 'gazelles' be accurately identified and stimulated before the event? How would governments know that the firm would not have grown rapidly anyway? How would the government know that the expansion of the gazelle was not achieved, as seems likely, through the contraction of other firms?

Questionable persistence of trends

Supporting small business to realise employment goals on the basis of their past job creation record presupposes that the patterns of the past will persist. An historical record of job creation does not imply that the trend will continue. In fact, the share of non-farm private sector employees in small firms declined from 1992 to 1995 as the impact of the recession waned.

From an economic perspective, it seems very unlikely that there would be any long-run positive trend in the small business share of employment. [28] The economic approach suggests that the optimal long-run distribution of employment by firm size depends on a variety of factors, such as technology, consumer preferences, various labour market institutions (such as wage setting and industrial relations) and government regulations. As these factors shift over time, the size distribution of firms in the economy will change slowly. However, it is difficult to predict the direction and duration of any changes.

Confusion of the marginal and the average response of firms

Even *if* small firms had been directly responsible for creating many of the new jobs in Australia over the past decade, that tells us nothing *by itself* about how successful a government small business program would be at creating new jobs in the economy. If a government gave small business a $100 a week subsidy for employing a previously unemployed person, it would employ more workers. But we don't know whether the same subsidy would elicit different responses by big or small businesses along all sorts of dimensions, such as:

- their initial recruitment responses;
- the duration of employment of any subsidised worker;
- the quality of the job and any associated training;
- the extent to which participating businesses would get a subsidy for a worker they would have hired anyway; and
- the extent to which those unemployed people might displace existing workers somewhere else in the economy.

Nothing about the past record of employment creation tells us anything about the likely relative magnitudes or qualities of the responses by small versus large firms to such subsidies. As noted by Davis (1994):

> ...the argument for preferential treatment of small business fails to comprehend the central theorem of economic policy prescription. This theorem directs attention toward marginal responses to proposed economic policy changes. In contrast, claims about the job-creating prowess of small business are statements about the

[28] And a *permanent* trend clearly leads to absurd outcomes.

> average behaviour of a class of firms. Even if accurate, these statements do not predict how the number (or quality) of jobs would respond to a proposed economic policy change.

Unfortunately, there is very sparse information about the extent to which the effectiveness of existing or past labour market programs varies by the size of the employing firm. Limited data on the JOBSTART program are available, but are insufficient to adequately appraise the differential impact of the JOBSTART program. However, what there is (appendix L) does not point to any obvious superiority of small firms as targets for the program.

Distortionary taxes and other costs

If subsidies are used, these have to be financed through taxation, which in turn can reduce incentives to work, and inevitably impose other economic costs. Moreover, any selective measures require eligibility criteria, accountability requirements and other administrative procedures — and these generate administrative expenses for government, and compliance costs for business. Any selective measure will also involve difficult issues of the appropriate definition of 'small' business, with considerable scope for rent seeking by groups which wish to be included. Finally, the existence of assistance to, or other selective provisions for, small business can actually reduce the incentive for the growth of businesses which are about to exceed the small firm threshold.

Summary

In conclusion, arguments for job creating policies which earmark small business place an excessive burden of expectation on this sector, may generate unexpected inefficiencies, and may miss out on broader opportunities for employment creation among business as a whole.

However, these cautionary notes do *not* imply that government should be indifferent to the small business sector in designing appropriate industry and other policies.

6.7.2 Links to criteria for government industry policy

What are the usual criteria for industry policy intervention? One or more of three fundamental rationale are often advanced by proponents for such interventions. Interventions are intended to:

- eliminate or modify regulations, institutions, practices or compliance burdens which are not justified on the basis of benefit;
- overcome market or firm failures (for example, information deficiencies, spillovers for R&D, x-inefficiency and lack of competition); and/or
- achieve certain economic and social objectives, such as greater national security or prestige, the reduction in unemployment, and support for certain regions or demographic groups.

The third plank is the most controversial and has the least general support — often because the link between the policy objectives and the policy instruments intended to reach them, appears roundabout and weak. This is particularly evident when looking at small business policies as a method for generating jobs and reducing unemployment. Arguably, if reduced unemployment is a target of policy, then the objective should be to find the lowest cost method for minimising unemployment subject to a number of politically and socially determined constraints (such as some minimum standard for the quality of the jobs, or their remuneration).

The small business labour market does have some characteristics which are theoretically favourable to genuine job creation — increased wage and price flexibility — but these characteristics are likely to be partly offset by other aspects of the labour market. These include minimum wages which may bind for workers with lower skills, the benefit system which may bind for those on the lowest wages and the impacts of various regulations. It is beyond the scope of this report to examine the pros and cons of these features of the small business labour market. But these characteristics suggest that it is the operation of the labour market and the regulatory environment that would be a starting point for

policies aimed at increasing employment, rather than the *targeted* application of industry policies to different sized firms. [29]

The rising share of small business employment *may* also have implications for public policy outside the small business area. First, if this employment growth is based on an increasing number of people working on lower wages, this may have ramifications for re-distributive policies, such as social security and tax policies. Moreover, the higher labour turnover and shorter career paths in small firms and their generally lower investment in worker training, *might* create additional need for skill upgrading and occupational retraining programs which are not based on the firm — but are provided by the education system. These issues are also outside the scope of this study.

[29] In saying this, we are not either criticising or supporting the appropriateness of certain programs which are *mediated* through small business as part of a wider suite of employment programs. For example, the New Enterprise Incentive Scheme (NEIS) aims to assist unemployed people to set up self-employment ventures through a package of assistance. This scheme has been separately evaluated by Johnstone (1993). NEIS is clearly not targeted on small business as a group of firms, and as such is better considered as an employment program, rather than an industry program with employment objectives.

APPENDIX A: EMPLOYMENT BY FIRM SIZE

The distribution of non-farm private sector wage and salary earners by firm size is presented in table A.1.

Table A.1: Distribution of non-farm private sector wage and salary earners by firm size, 1983 to 1995

	Firm size				
Year[a]	*1–19*	*20–99*	*Under 100*	*Over 100*	*SEE Total*
	%	%	%	%	'000
1983	32.6	21.8	54.4	45.6	3402
1984	32.7	22.4	55.1	44.9	3486
1985	33.1	22.6	55.6	44.4	3688
1986	32.7	23.1	55.7	44.3	3872
1987	32.8	23.2	56.0	44.0	4031
1988	33.2	23.1	56.3	43.7	4248
1989	32.8	22.6	55.3	44.7	4474
1990	32.5	22.7	55.2	44.8	4451
1991	34.0	22.6	56.5	43.5	4210
1992	36.2	22.6	58.8	41.2	4146
1993	35.8	22.9	58.6	41.4	4137
1994	34.8	22.3	57.1	42.9	4221
1995	34.5	22.4	56.9	43.1	4415
diff 1983–95	+1.9	+0.6	+2.5	-2.5	+1013

a With the exception of 1983 and 1995, all percentages represent average shares during the year. Because of data availability problems, the 1995 data relate to the March quarter and the 1983 data relate to the September quarter.

Source: ABS, *Survey of Employment and Earnings* (SEE), Catalogue 6248.0 (1997).

The proportion of part-time employees is shown in table A.2

Table A.2: Proportion of part-time employees by sector and firm size, 1985 and 1995

	1995				*1985*			
	Firm size categories				*Firm size categories*			
	<20	*20–99*	*100+*	*Total*	*<20*	*20–99*	*100+*	*Total*
Industry	%	%	%	%	%	%	%	%
Mining	23.6	2.6	1.9	4.6	10.2	2.6	1.2	1.9
Manufacturing	19.1	9.0	8.4	11.2	14.1	9.0	4.2	6.8
Electricity, gas & water	33.3	0.0	4.5	7.1	0.0	0.0	1.9	1.7
Construction	14.4	7.2	5.7	11.4	13.1	7.2	1.9	9.6
Wholesale trade	18.7	10.6	18.1	17.0	15.0	10.6	7.7	11.4
Retail trade	45.3	29.4	62.9	52.7	34.5	29.4	48.8	39.9
Transport & storage	31.1	10.6	17.5	21.1	26.3	10.6	10.2	16.0
Finance & property	27.6	19.2	26.5	25.7	24.3	19.2	16.6	20.0
Community services	54.9	49.4	48.4	52.6	46.6	49.4	40.4	44.7
Personal services	54.2	60.1	52.6	55.7	54.0	60.1	48.2	54.6
Total	34.9	25.1	33.1	33.0	29.4	25.1	19.7	24.1

Source: Unpublished ABS data based on the SEE survey.

Table A.3 shows the combined estimates for private sector non-farm wage and salary earners and small business operators (ie. self-employed from table B.1). We note that this combines business operator data from the Labour force Survey with employee data from the Survey of Employment and Earnings — and is subject to error. Table A.4 shows the composition of the *total* employed workforce using data from table A.3 plus separate data on the public sector (from SEE) and agriculture (from LFS).

Table A.3: Private non-farm employment including business operators[a]

	Firm size categories									
	1-19 persons	*Own account workers*	*SB Emplo-yers*	*Combin-ed <20*	*20-99 persons excl. SBOs*	*20-99 persons incl. SBOs*	*Combined <100*	*100 or more excl. BOs*	*100 or more persons incl. BOs*	*Total*
Number	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Sep–83	1 109.2	463.2	227.1	1 799.5	742.2	759.1	2 558.5	1 550.9	1 554.4	4 113.0
Jun–84	1 118.9	465.7	229.8	1 814.4	782.1	799.2	2 613.6	1 546.0	1 549.6	4 163.1
Jun–85	1 211.8	465.3	268.8	1 945.9	828.1	848.0	2 793.9	1 628.5	1 632.7	4 426.6
Jun–86	1 271.2	467.5	265.3	2 004.0	880.1	899.8	2 903.8	1 708.6	1 712.7	4 616.5
Jun–87	1 312.8	482.2	262.3	2 057.3	935.9	955.4	3 012.7	1 753.9	1 758.0	4 770.7
Jun–88	1 408.6	517.1	292.8	2 218.5	977.8	999.5	3 218.0	1 823.5	1 828.1	5 046.1
Jun–89	1 461.9	529.1	271.3	2 262.3	977.1	997.2	3 259.6	1 983.7	1 987.9	5 247.5
Jun–90	1 467.4	537.1	288.6	2 293.1	1 017.3	1 038.7	3 331.8	1 996.8	2 001.3	5 333.1
Jun–91	1 456.1	575.4	272.1	2 303.6	960.5	980.7	3 284.3	1 782.4	1 786.6	5 070.9
Jun–92	1 507.9	605.6	275.8	2 389.3	928.8	949.3	3 338.6	1 694.9	1 699.2	5 037.8
Jun–93	1 509.4	614.5	271.5	2 395.4	925.4	945.6	3 341.0	1 702.1	1 706.3	5 047.3
Jun–94	1 438.2	624.3	278.2	2 340.7	924.1	944.7	3 285.5	1 766.7	1 771.0	5 056.5
Mar–95	1 522.2	616.1	279.4	2 417.7	988.8	1 009.5	3 427.2	1 903.8	1 908.2	5 335.4
Shares	%	%	%	%	%	%	%	%	%	%
Sep–83	27.0	11.3	5.5	43.8	18.0	18.5	62.2	37.7	37.8	100.0
Jun–84	26.9	11.2	5.5	43.6	18.8	19.2	62.8	37.1	37.2	100.0
Jun–85	27.4	10.5	6.1	44.0	18.7	19.2	63.1	36.8	36.9	100.0
Jun–86	27.5	10.1	5.7	43.4	19.1	19.5	62.9	37.0	37.1	100.0
Jun–87	27.5	10.1	5.5	43.1	19.6	20.0	63.2	36.8	36.8	100.0
Jun–88	27.9	10.2	5.8	44.0	19.4	19.8	63.8	36.1	36.2	100.0
Jun–89	27.9	10.1	5.2	43.1	18.6	19.0	62.1	37.8	37.9	100.0
Jun–90	27.5	10.1	5.4	43.0	19.1	19.5	62.5	37.4	37.5	100.0
Jun–91	28.7	11.3	5.4	45.4	18.9	19.3	64.8	35.1	35.2	100.0
Jun–92	29.9	12.0	5.5	47.4	18.4	18.8	66.3	33.6	33.7	100.0
Jun–93	29.9	12.2	5.4	47.5	18.3	18.7	66.2	33.7	33.8	100.0
Jun–94	28.4	12.3	5.5	46.3	18.3	18.7	65.0	34.9	35.0	100.0
Mar–95	28.5	11.5	5.2	45.3	18.5	18.9	64.2	35.7	35.8	100.0
Diff 82-95	1.6	0.3	-0.3	1.6	0.5	0.5	2.0	-2.0	-2.0	0.0

a The data are based on end of fiscal year inf ormation, excepting 1983 and 1995. Data on business operators (BOs) are from the labour force survey. BOs comprise two groups — own account workers (or the self-employed) and employers. BOs in the farm sector have been removed. The labour force survey records such employment only in respect of unincorporated enterprises — most of which are small. We have allocated all of the own account workers to businesses employing less than 20 employees. We have also allocated the bulk (91.8 per cent) of employers to this category on the basis of enterprise proportions for 1994–95 from the ABS *Small Business in Australia*, 1995 (Cat. No. 1321.0). 6.8 per cent have been allocated to the 20-99 employee category and the remaining 1.4 per cent to the 100+ employee category.

Source: ABS *Labour Force Survey* (Cat. No. 6203.0) and unpublished data from the SEE survey (Cat. No. 6248.0).

Table A.4: Composition of national employment, Australia, 1983–1995

Period	*Firm size categories*						
	0-19 persons	*20-99 persons*	*100 or more persons*	*Non-farm private*	*Agriculture*	*Public sector*	*Total*
Numbers	No.	No.	No.	No.	No.	No.	No.
Sep–83	1799.5	759.1	1554.4	4113.0	412.0	1643.8	6168.8
Jun–84	1814.4	799.2	1549.6	4163.1	400.0	1684.2	6247.3
Jun–85	1945.9	848.0	1632.7	4426.6	396.1	1717.9	6540.6
Jun–86	2004.0	899.8	1712.7	4616.5	436.3	1790.5	6843.3
Jun–87	2057.3	955.4	1758.0	4770.7	416.8	1757.9	6945.4
Jun–88	2218.5	999.5	1828.1	5046.1	430.4	1739.8	7216.3
Jun–89	2262.3	997.2	1987.9	5247.5	434.1	1732.3	7413.9
Jun–90	2293.1	1038.7	2001.3	5333.1	446.0	1755.2	7534.3
Jun–91	2303.6	980.7	1786.6	5070.9	425.9	1735.1	7231.9
Jun–92	2389.3	949.3	1699.2	5037.8	396.8	1702.7	7137.3
Jun–93	2395.4	945.6	1706.3	5047.3	388.7	1679.6	7115.6
Jun–94	2340.7	944.7	1771.0	5056.5	404.0	1591.7	7052.2
Mar–95	2417.7	1009.5	1908.2	5335.4	413.3	1583.3	7332.0
Diff 83–95	618.2	250.5	353.7	1222.4	1.3	-60.5	1163.2
Shares	%	%	%	%	%	%	%
Sep–83	29.2	12.3	25.2	66.7	6.7	26.6	100.0
Jun–84	29.0	12.8	24.8	66.6	6.4	27.0	100.0
Jun–85	29.8	13.0	25.0	67.7	6.1	26.3	100.0
Jun–86	29.3	13.1	25.0	67.5	6.4	26.2	100.0
Jun–87	29.6	13.8	25.3	68.7	6.0	25.3	100.0
Jun–88	30.7	13.9	25.3	69.9	6.0	24.1	100.0
Jun–89	30.5	13.5	26.8	70.8	5.9	23.4	100.0
Jun–90	30.4	13.8	26.6	70.8	5.9	23.3	100.0
Jun–91	31.9	13.6	24.7	70.1	5.9	24.0	100.0
Jun–92	33.5	13.3	23.8	70.6	5.6	23.9	100.0
Jun–93	33.7	13.3	24.0	70.9	5.5	23.6	100.0
Jun–94	33.2	13.4	25.1	71.7	5.7	22.6	100.0
Mar–95	33.0	13.8	26.0	72.8	5.6	21.6	100.0
Diff 83–95	3.8	1.5	0.8	6.1	-1.0	-5.1	0.0

Source: ABS Catalogues 6203.0 (LFS) and 6248.0 (SEE).

Table A.5 shows a more detailed breakdown of the numbers on which the percentages in table A.4 are based. In the last three columns of table A.5 we

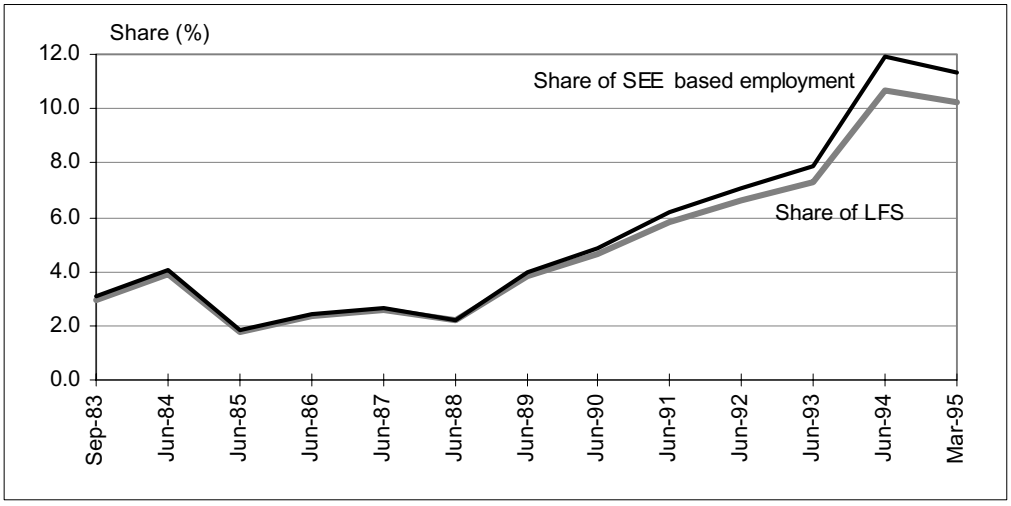
compare the SEE based estimates used in this report with the LFS total employment estimates.

Table A.5: Estimates of employment from the LFS and the SEE, 1983 to 1995

	Firm size and sectoral categories					
Period	*1-19 persons*	*20-99 persons*	*100 or more persons*	*Total non-farm private employees*	*Public employees*	*Total SEE*
	No.	No.	No.	No.	No.	No.
Sep–83	1109.2	742.2	1550.9	3402.3	1643.8	5046.1
Jun–84	1118.9	782.1	1546.0	3447	1684.2	5131.2
Jun–85	1211.8	828.1	1628.5	3668.4	1717.9	5386.3
Jun–86	1271.2	880.1	1708.6	3859.9	1790.5	5650.4
Jun–87	1312.8	935.9	1753.9	4002.6	1757.9	5760.5
Jun–88	1408.6	977.8	1823.5	4209.9	1739.8	5949.7
Jun–89	1461.9	977.1	1983.7	4422.7	1732.3	6155.0
Jun–90	1467.4	1017.3	1996.8	4481.5	1755.2	6236.7
Jun–91	1456.1	960.5	1782.4	4199.0	1735.1	5934.1
Jun–92	1507.9	928.8	1694.9	4131.6	1702.7	5834.3
Jun–93	1509.4	925.4	1702.1	4136.9	1679.6	5816.5
Jun–94	1438.2	924.1	1766.7	4129	1591.7	5720.7
Mar–95	1522.2	988.8	1903.8	4414.8	1583.3	5998.1

Period	*Non farm BOs*	*Agric.*	*SEE based total*	*LFS*	*LFS less SEE*
	No.	No.	No.	No.	No.
Sep–83	710.7	412.0	6168.8	6358.2	189
Jun–84	716.1	400.0	6247.3	6499.0	252
Jun–85	758.2	396.1	6540.6	6659.4	119
Jun–86	756.6	436.3	6843.3	7007.7	164
Jun–87	768.1	416.8	6945.4	7128.9	183
Jun–88	836.2	430.4	7216.3	7378.2	162
Jun–89	824.8	434.1	7413.9	7711.1	297
Jun–90	851.6	446.0	7534.3	7900.2	366
Jun–91	871.9	425.9	7231.9	7678.0	446
Jun–92	906.2	396.8	7137.3	7642.6	505
Jun–93	910.4	388.7	7115.6	7677.0	561
Jun–94	927.5	404.0	7052.2	7892.7	841
Mar–95	920.6	413.3	7332.0	8164.6	833

Figure A.1: Employment discrepancies as a share of employment totals, Australia, 1983 to 1995



Overseas data on historical trends in various OECD countries in the employment share of small and medium sized enterprises is presented in ILO (1990) and BIE (1992). We updated the data to the early 1990s using OECD (1994). A comparative view is presented in table A.6.

Sensitivity analysis of SEE-based estimates

In this section we examine possible adjustments to the aggregate percentage estimates taking into account the unexplained discrepancy between the SEE and LFS surveys that emerged after 1989. As we noted in chapter 2, the ABS is currently working to reconcile the differences between the SEE and LFS estimates.

In discussing this issue, ABS officers pointed out that similar discrepancies were recorded in other countries which use separate enterprise and household based labour force surveys. For example, a discrepancy amounting to almost 10 per cent of the labour force has emerged in Canadian surveys. Recently, following detailed studies, Statistics Canada has managed to narrow down considerably the differences between their household and enterprise-based labour surveys. Approximately 70 per cent of the discrepancies that could be later reconciled in the Canadian statistics were due to the omission of small business (under 100 persons) employees in the Canadian enterprise-based statistics. The other 30 per cent were mainly due to incomplete employment data from larger companies.

Table A.6: Share of wage and salary earners in the private sector by enterprise size, time series data for selected OECD countries

	Employees less than	*Percentage share of wage and salary earners*					
Australia		*1983*	*1987*	*1990*	*1993*	*1995*	
Small	100	54.4	56.0	55.2	58.6	56.9	
Japan		*1971*	*1974*	*1977*	*1982*	*1985*	*1992*
Small	100	53.3	54.4	56.9	56.6	55.6	54.9
Small and medium	500	70.0	70.4	72.7	73.1	73.3	72.4
United States		*1958*	*1967*	*1972*	*1977*	*1988*	*1991*
Small	100	41.3	39.9	41.3	40.1	42.5	38.8
Small and medium	500	55.1	53.2	53.5	52.5	54.5	53.1
United Kingdom		*1973*	*1976*	*1981*	*1986*	*1991*	
Small	100	41.3	45.3	48.7	47.0	49.1	
France		*1971*	*1979*	*1985*	*1990*		
Small	100	39.0	43.4	46.2	50.1		
Small and medium	500	57.4	60.7	64.5	66.3		
Germany, Fed Rep		*1907*	*1925*	*1961*	*1970*	*1985*	*1990*
Small	100				44.8	45.5	46.9
Small	50	57.8	47.6	40.4	37.9		
Small and medium	200	72.9	61.5	54.9	52.3		
Italy		*1951*	*1961*	*1971*	*1981*	*1986*	*1991*
Small	100	60.2	63.5	61.6	69.3	72.4	71.4
Small and medium	500	73.0	77.1	74.4	81.5	83.6	81.3

Source: ILO (1990), OECD (1994) and BIE (1992). Australian data are based on table A.1. USA estimates for 1967 to 1991 from US Small Business Administration (various issues). Japanese data from 1982 to 1992 from MITI (1994).

In Canada, firms with less than 100 employees account for around 50 per cent of private wage and salary earners (OECD, 1994), whereas in Australia the corresponding figure is 57 per cent (table A.1). In the light of the greater importance of small business in Australia, it seems plausible that the 70 per cent small business component in the Canadian reconciliation would correspond to

around 75 per cent in Australia, provided the reasons for the differences are similar. This is the median estimate we adopted in our sensitivity analysis.

Table A.7 presents three sets of estimates on the distribution of private non-farm wage and salary earners. The first is the original SEE-based estimate from table A.1. The second calculation is based on the assumption that 75 per cent of the discrepancy that emerged between 1989 and 1995 belong to the under 100 employee firm size category, in line with the Canadian findings mentioned earlier. The third set of calculations is based on the extreme assumption that all the yet unexplained discrepancy represents small business employment that is missing from the SEE data.

Under each assumption we present the respective percentage shares in 1995, the change in shares between 1983 and 1995, and the contribution of each size category to the total increase in the population of wage and salary earners between 1983 and 1995. The estimated contribution to employment growth is a subject discussed in chapter 3 (figures 3.1 and 3.2), whereas the other percentages are discussed in chapter 2.

Table A.7: Distribution of non-farm wage and salary earners under three assumptions

	Firm size category			
	Under 20	*20 to 99*	*100+*	*Total*
	%	%	%	'000
1983	32.6	21.8	45.6	3402.3
Original SEE estimate 1995				
Share in 1995	34.5	22.4	43.1	4414.8
Change from 1983	1.9	0.6	-2.5	1012.5
Contribution to total increase	40.8	24.4	34.9	100.0
75% of the unexplained discrepancy allocated to SB				
Share in 1995	35.9	23.3	40.8	5068.2
Change from 1983	3.3	1.5	-4.8	1665.9
Contribution to total increase	42.6	26.4	31.0	
100% of the unexplained discrepancy allocated to SB				
Share in 1995	37.8	24.6	37.6	5068.2
Change from 1983	5.2	2.8	-8.0	1665.9
Contribution to total increase	48.6	30.2	21.2	

a We estimated the unexplained discrepancy as follows. We assumed that the discrepancy apparent in June 1988 was a 'natural' discrepancy which would persist even after adjustment of the surveys. At that time the discrepancy amounted to 2.2 per cent of the SEE based total employment measure (table A5). The unexplained discrepancy, x, is therefore such that (d-x)/(SEE+x) = 0.022 where d is the observed discrepancy in 1995, and SEE is the SEE based economy wide measure of employment in 1995. We found that x = 653. The unexplained discrepancy was then allocated between different sized enterprises as follows:

$$\hat{N}_{1-19} = N_{1-19} + \frac{N_{1-19}}{N_{1-19} + N_{20-99}} \times 0.75 \times x$$

$$\hat{N}_{20-99} = N_{20-99} + \frac{N_{20-99}}{N_{1-19} + N_{20-99}} \times 0.75 \times x$$

$$\hat{N}_{100+} = N_{100+} + 0.25 \times x$$

where the N terms represent the numbers of people employed in each employment size category. A hatch indicates an adjusted value for N.

Source: SEE data, table A.1 and A.5 and discrepancy calculations.

The same calculations covering the entire labour force and not just private non-farm wage and salary earners are presented in table A.8.

Table A.8: Distribution of national employment under three assumptions

	Firm size category					
	under 20	*20-99*	*100+*	*Agric.*	*Public*	*Total*
	%	%	%	%	%	'000
1983	29.2	12.3	25.2	6.7	26.6	6168.8
Original SEE based estimate						
Share in 1995	33.0	13.8	26.0	5.6	21.6	7332.0
Change in share 1983-95	3.8	1.5	0.8	-1.0	-5.1	1163.2
Contribution to total increase	53.1	21.5	30.4	0.1	-5.2	
75% of unexplained discrepancy allocated to SB						
Share in 1995	34.0	15.1	25.9	5.2	19.8	7985.4
Change in share 1983-95	4.8	2.8	0.7	-1.5	-6.8	1816.7
Contribution to total increase	50.4	24.4	28.5	0.1	-3.3	
100% of unexplained discrepancy allocated to SB						
Share in 1995	36.0	15.1	23.9	5.2	19.8	7985.4
Change in share 1983-95	6.9	2.7	-1.3	-1.5	-6.8	1816.7
Contribution to total increase	59.4	24.4	19.5	0.1	-3.3	

Source: IC calculations.

Table A.9: Gender differences in employment trends, Australia, 1989–90 to 1994–95

			Firm size category					
	Own account workers	*Employers*	*1-9*	*10-19*	*20-49*	*50-99*	*100 or more*	*Total*
	'000	'000	'000	'000	'000	'000	'000	'000
Numbers								
1989–90								
Males	374.4	216.3	486.4	286	343.9	243.1	1139.1	3089.2
Females	176.5	95.9	451.1	234.3	254	184.5	855.6	2251.9
Total	550.9	312.2	937.5	520.3	597.9	427.6	1994.7	5341.1
1994–95								
Males	433.9	205	533.4	278.3	349.5	224	1054.1	3078.2
Females	206.6	104	485.7	223.1	250.7	179	952.2	2401.3
Total	640.5	309	1019.1	501.4	600.2	403	2006.3	5479.5
Change 1989–90 to 1994–95								
Males	59.5	-11.3	47	-7.7	5.6	-19.1	-85	-11
Females	30.1	8.1	34.6	-11.2	-3.3	-5.5	96.6	149.4
Total	89.6	-3.2	81.6	-18.9	2.3	-24.6	11.6	138.4
Percentage change								
	%	%	%	%	%	%	%	%
Males	15.9	-5.2	9.7	-2.7	1.6	-7.9	-7.5	-0.4
Females	17.1	8.4	7.7	-4.8	-1.3	-3.0	11.3	6.6
Total	16.3	-1.0	8.7	-3.6	0.4	-5.8	0.6	2.6
Share of job creation								
	%	%	%	%	%	%	%	%
Males	43.0	-8.2	34.0	-5.6	4.0	-13.8	-61.4	-7.9
Females	21.7	5.9	25.0	-8.1	-2.4	-4.0	69.8	107.9
Total	64.7	-2.3	59.0	-13.7	1.7	-17.8	8.4	100.0
Female employment shares								
	%	%	%	%	%	%	%	%
1989–90	32.0	30.7	48.1	45.0	42.5	43.1	42.9	42.2
1994–95	32.3	33.7	47.7	44.5	41.8	44.4	47.5	43.8
Change	0.2	2.9	-0.5	-0.5	-0.7	1.3	4.6	1.7

Source: Australian Bureau of Statistics, *Small Business in Australia* (various issues), Cat. No. 1321.0

Table A10: State and time series data on number of non-agricultural enterprises, by enterprise size

	Small businesses [a]	*Other business*	*Total*
	'000	'000	'000
1983–84			
NSW	196.5	6.4	202.9
VIC	144	5.3	149.3
QLD	90.5	2.9	93.4
SA	43.1	2.1	45.2
WA	49.9	1.7	51.6
TAS	13.7	0.5	14.2
NT	4.5	0.2	4.7
ACT	8.1	0.3	8.4
Australia	550.3	19.4	569.7
1994–95			
NSW	253.6	8.7	262.3
VIC	196.2	7.3	203.5
QLD	151.8	4.4	156.2
SA	64.2	2.2	66.4
WA	83.7	2.7	86.4
TAS	18.3	0.5	18.8
NT	5.7	0.4	6.1
ACT	12.3	0.5	12.8
Australia	785.8	26.7	812.5
Change 1983–95			
NSW	57.1	2.3	59.4
VIC	52.2	2	54.2
QLD	61.3	1.5	62.8
SA	21.1	0.1	21.2
WA	33.8	1	34.8
TAS	4.6	0	4.6
NT	1.2	0.2	1.4
ACT	4.2	0.2	4.4
Australia	235.5	7.3	242.8

a The data are based on the business register. The ABS uses its orthodox definition of small business (a firm employing less than 20 in the service sector, and under 100 in manufacturing). Note that this definition is different to that customarily employed in this report.

Source: Australian Bureau of Statistics, *Small Business in Australia* (various issues), Cat. No. 1321.0.

Table A11: State and time series data on non-agricultural employment, by enterprise size[a]

	Small businesses	*Other business*	*Total*
	'000	'000	'000
1983–84			
NSW	710.2	781.5	1491.7
VIC	543	613.3	1156.3
QLD	332.9	303.3	636.2
SA	163.3	185.2	348.5
WA	184.9	186	370.9
TAS	51.7	52.4	104.1
NT	16.7	13.4	30.1
ACT	30.7	20.1	50.8
Australia	2033.4	2155.2	4188.6
1994–95			
NSW	879.2	1002.7	1881.9
VIC	684	736.3	1420.3
QLD	504.4	453.3	957.7
SA	211.4	211.5	422.9
WA	267.6	265.7	533.3
TAS	67.9	53.2	121.1
NT	21.6	24.1	45.7
ACT	41.8	31.2	73
Australia	2677.9	2778	5455.9
Change 1983–95			
NSW	169	221.2	390.2
VIC	141	123	264
QLD	171.5	150	321.5
SA	48.1	26.3	74.4
WA	82.7	79.7	162.4
TAS	16.2	0.8	17
NT	4.9	10.7	15.6
ACT	11.1	11.1	22.2
Australia	644.5	622.8	1267.3

a The ABS uses its orthodox definition of small business (a firm employing less than 20 in the service sector, and under 100 in manufacturing). Note that this definition is different to that customarily employed in this report.

Source: Australian Bureau of Statistics, *Small Business in Australia* (various issues), Cat. No. 1321.0.

Table A12: Change in non-agricultural employment shares, by state[a]

	1983–84		*1994–95*		*Change*	
	Small	*Other*	*Small*	*Other*	*Small*	*Other*
	%	%	%	%	%	%
NSW	47.6	52.4	46.7	53.3	-0.9	0.9
VIC	47.0	53.0	48.2	51.8	1.2	-1.2
QLD	52.3	47.7	52.7	47.3	0.3	-0.3
SA	46.9	53.1	50.0	50.0	3.1	-3.1
WA	49.9	50.1	50.2	49.8	0.3	-0.3
TAS	49.7	50.3	56.1	43.9	6.4	-6.4
NT	55.5	44.5	47.3	52.7	-8.2	8.2
ACT	60.4	39.6	57.3	42.7	-3.2	3.2
Australia	48.5	51.5	49.1	50.9	0.5	-0.5

a The ABS uses its orthodox definition of small business (a firm employing less than 20 in the service sector, and under 100 in manufacturing). Note that this definition is different to that customarily employed in this report.

Source: Australian Bureau of Statistics, *Small Business in Australia* (various issues), Cat. No. 1321.0.

Table A13: Average employment size of enterprises, by state and time[a]

	1983–84			*1994–95*			*Change*		
	Small businesses	*Other business*	*Total*	*Small businesses*	*Other business*	*Total*	*Small businesses*	*Other business*	*Total*
	No.	No.	No.	No.	No.	No.	No.	No.	No.
NSW	3.61	122.11	7.35	3.47	115.25	7.17	-0.15	-6.86	-0.18
VIC	3.77	115.72	7.74	3.49	100.86	6.98	-0.28	-14.85	-0.77
QLD	3.68	104.59	6.81	3.32	103.02	6.13	-0.36	-1.56	-0.68
SA	3.79	88.19	7.71	3.29	96.14	6.37	-0.50	7.95	-1.34
WA	3.71	109.41	7.19	3.20	98.41	6.17	-0.51	-11.00	-1.02
TAS	3.77	104.80	7.33	3.71	106.40	6.44	-0.06	1.60	-0.89
NT	3.71	67.00	6.40	3.79	60.25	7.49	0.08	-6.75	1.09
ACT	3.79	67.00	6.05	3.40	62.40	5.70	-0.39	-4.60	-0.34
Australia	3.70	111.09	7.35	3.41	104.04	6.71	-0.29	-7.05	-0.64

a The ABS uses its orthodox definition of small business (a firm employing less than 20 in the service sector, and under 100 in manufacturing). Note that this definition is different to that customarily employed in this report.

Source: Australian Bureau of Statistics, *Small Business in Australia* (various issues), Cat. No. 1321.0.

Table A14: Employment change and net job 'creation' of enterprises, by state[a]

	Employment change 1983–84 to 1994–95			*Small business share of net job creation in each state*
	Small businesses	*Other business*	*Total*	
	%	%	%	%
NSW	24	28	26	43.3
VIC	26	20	23	53.4
QLD	52	49	51	53.3
SA	29	14	21	64.7
WA	45	43	44	50.9
TAS	31	2	16	95.3
NT	29	80	52	31.4
ACT	36	55	44	50.0
Australia	32	29	30	50.9

a The ABS uses its orthodox definition of small business (a firm employing less than 20 in the service sector, and under 100 in manufactur ing). Note that this definition is different to that customarily employed in this report.

Source: Australian Bureau of Statistics, *Small Business in Australia* (various issues), Cat. No. 1321.0.

Table A15: Shares of total Australian net job growth, by size and location of business, 1983–84 to 1994–95

	Small business share of state	*Share of net new jobs in Australia 1983–84 to 1994–95*			*Employment share of Australia*
		Small business share of new net jobs	*Other*	*Total*	*(1983–94)*
	%	%	%	%	%
NSW	46.7	13.3	17.5	30.8	35.6
VIC	48.2	11.1	9.7	20.8	27.6
QLD	52.7	13.5	11.8	25.4	15.2
SA	50.0	3.8	2.1	5.9	8.3
WA	50.2	6.5	6.3	12.8	8.9
TAS	56.1	1.3	0.1	1.3	2.5
NT	47.3	0.4	0.8	1.2	0.7
ACT	57.3	0.9	0.9	1.8	1.2
Australia	49.1	50.9	49.1	100.0	100.0

Source: Australian Bureau of Statistics, *Small Business in Australia* (various issues), Cat. No. 1321.0.

Table A16: Non-farm private wage and salary earners, by size of business, 1983–84 to 1994–95

Firm size category	*1983-84*	*1994-95*
	Persons	Persons
1 to 9	743.1	1019.2
10 to 19	385.2	501.4
1 to 19	1128.3	1520.6
20 to 49	461.7	600.3
50 to 99	301.8	403.1
20 to 99	763.5	1003.4
100 or more	1586.0	1979.3
Total	3477.8	4503.3

Source: Australian Bureau of Statistics, *Small Business in Australia* (various issues), Cat. No. 1321.0.

Table A17: Non-farm private employment, by size of business, 1983–84 to 1994–95[a]

Firm size category	*1983-84*	*1994-95*
	Persons	Persons
1 to 9	1401.0	1913.0
10 to 19	413.8	531.7
0 to 19	1814.8	2444.6
20 to 49	477.3	616.6
50 to 99	306.0	407.8
20 to 99	783.4	1024.4
100 or more	1589.8	1983.7
Total	4188.0	5452.8

a Includes allocation of SBOs to different business size groups.

Source: Australian Bureau of Statistics, *Small Business in Australia* (various issues), Cat. No. 1321.0.

Table A18: Total employment, by size of business and sector, 1983–84 to 1994–95 [a]

Firm size category	*1983-84*	*1994-95*
	Persons	Persons
1 to 9	1401.0	1913.0
10 to 19	413.8	531.7
0 to 19	1814.8	2444.6
20 to 49	477.3	616.6
50 to 99	306.0	407.8
20 to 99	783.4	1024.4
100 or more	1589.8	1983.7
Agriculture	406.0	404.4
Public sector	1656.1	1591.9
Total	6250.1	7449.1

a Includes allocation of SBOs to different business size groups.

Source: Australian Bureau of Statistics, *Small Business in Australia* (various issues), Cat. No. 1321.0 and the *Labour Force Survey* (Cat. 6203.0)

APPENDIX B: SMALL BUSINESS OPERATORS

Persons working in their own business cover two statistical categories:

1. own account workers who have no employees; and
2. employers in unincorporated enterprises.

These two categories are sometimes also referred to in the literature as business operators, a term used in this report. They are also referred to as the business operators in international statistics, but this term is ambiguous as it also sometimes applies only to own account workers. [1] We avoid the term. Recent growth trend in the number of small business operators is shown in table B.1.

Table B.1 Number of *non-farm* business operators[a]

	Own account workers	*Employers*	*Business operators*
	'000	'000	'000
1983	463.2	247.5	710.7
1984	465.7	250.5	716.1
1985	465.3	292.9	758.2
1986	467.5	289.1	756.6
1987	482.2	285.9	768.1
1988	517.1	319.1	836.2
1989	529.1	295.7	824.8
1990	537.1	314.5	851.6
1991	575.4	296.5	871.9
1992	605.6	300.6	906.2
1993	614.5	295.9	910.4
1994	624.3	303.2	927.5
1995	616.1	304.5	920.6
Trend rate	3.00	1.33	2.41

a The data relate to June in each year, with the exception of 1983 when it is September and 1995 when it is March. The trend rate of growth was calculated by regressing the logged values against a time trend.

Source: Labour Force Survey (ABS Cat. 6203.0).

Table B.2 compares growth rates in business operators in the 1980s across countries and the distribution of business operators by occupational groups.

1 For example, the ABS originally termed own account workers as the 'self-employed'.

Table B.2: Non-agricultural business operators: growth rates and occupational groups

Percentage distribution by occupations

Country	*Period*	*Average annual growth*	*Professional*	*Administrative*	*Clerical*	*Trade and services*	*Prod'n & transport*
		%	%	%	%	%	%
Australia	83-90	3.7	14.7	17.2	9.2	13.7	45.2
Belgium	83-89	2.6	21.8	17.5	0.4	41.9	18.3
Canada	83-90	3.2	19.8	3.7	1.7	45.7	29.0
France	83-90	2.6	21.5	2.6	0.1	39.5	36.5
Japan	83-90	-0.5	13.2	0.8	1.2	38.8	46.0
Netherlands	83-89	5.7	28.9	8.8	2.4	43.1	16.8
Norway	83-89	-0.6	17.5	6.1	2.6	33.3	40.4
Spain	86-89	5.0	8.1	4.9	0.4	46.1	40.6
UK	83-89	7.3	17.0	4.2	3.8	44.0	40.6
USA	83-89	2.1	17.7	18.2	3.9	34.7	25.6

Source: ABS Catalogue 1321.0, 1993.

The figures show that the growth of 'entrepreneurship' (as measured by business operators) in Australia was higher than in most other OECD countries, although significantly lower than the growth rates recorded in the UK, Spain and the Netherlands.

The low percentage for Australia in table B.2 in trade and service occupations might be related to different classifications than in other OECD countries. The dissection of small business operators by broad industry groups (shown in table B.3) indicates that in Australia 32.5 per cent of them are working in trade and 5.2 per cent in personal services. This is in line with the combined trade-services percentages in other OECD countries.

Looking at recent Australian trends Van den Heuvel and Wooden (1994) note that, between 1989 and 1993, there was an absolute increase in people working in their own business in each major industry and every major occupational category except clerks.

Table B.3: Non-agricultural business operators by industry groups, 1990

	Percentage distribution by industry group						
Country	*Manufactg & mining*	*Construct*	*Trade*	*Transport*	*Property & finance*	*Community services*	*Personal services*
	%	%	%	%	%	%	%
Australia	8.0	22.3	32.5	8.7	13.9	14.6	5.2
Belgium	9.0	10.3	46.3	2.8	12.6	19.0	
Canada	3.0	14.7	24.3	5.8	17.1	35.1	23.0
France	11.5	16.6	38.3	3.4	9.5	19.1	
Japan	21.3	13.7	31.8	2.7	6.3	24.2	
Netherlands	7.3	7.1	31.8	2.6	16.4	33.7	
Norway	7.0	19.3	23.7	13.2	8.8	28.1	
Spain	15.5	11.9	49.3	10.2	4.8	8.3	
UK	10.9	26.3	26.9	5.5	12.5	17.8	
USA	5.2	16.8	25.4	3.3	17.5	31.7	6.8

Source: ABS Catalogue 1321.0, 1993.

Turning to a different topic, a cross-country comparison of the average working hours of business operators is shown in table B.4.

Table B.4: Average weekly usual hours of non-agricultural business operators by industry groups, 1990

	1983	*1985*	*1987*	*1990*
	hours	*hours*	*hours*	*hours*
Australia	40.8	41.1	40.8	39.4
Belgium	53.7	51.2	51.8	52.0
Canada	35.0	35.6	36.1	40.1
France	50.8	51.3	50.3	50.6
Japan	47.3	47.2	47.4	46.6
Netherlands	43.7	43.6	39.4	39.3
UK	43.3	43.6	44.2	44.5
USA	40.0	41.1	41.0	40.8

Source: ABS Catalogue 1321.0, 1993.

In Australia, the average weekly usual hours of non-agricultural business operators amounted to 39.4 hours in 1990 compared to 40.8 average weekly hours for wage and salary earners (table C.10). In 1985, the corresponding figures were 41.1 hours for business operators and 40.7 hours for wage and salary earners. As shown in table B.4, in other OECD countries (with the exception of the Netherlands) business operators tend to work more hours than in Australia.

Some international data on the share of business operators in the total workforce are available from the USA Bureau of Census Internet database. Cross-country comparisons are presented in table B.5. Care must be taken in interpreting these numbers. First, the definition of people working in their own business in these estimates also covers farmers, unlike the statistics presented earlier which exclude the agricultural sector. Wage and salary earners include the public sector and agriculture. Unfortunately the estimates are dated.

Table B.5: Share of business operators (including farmers) from the total workforce, by country

	Employers	*Own account*	*Total self-employed*	*Wage earners*	*Unpaid family members*	*Cooperative members*	*Unknown*
	%	%	%	%	%	%	%
Australia/1986	6.1	10.0	16.1	82.9	0.9	na	na
Canada/1986	2.2	4.1	6.3	90.6	0.7	na	2.4
Denmark/1976	2.5	10.5	13.0	85.6	na	1.4	na
Ireland/1981	20.4	na	20.4	77.1	2.5	na	na
Italy/1990	21.6	na	21.6	63.2	3.6	na	11.5
Japan/1985	3.5	11.6	15.1	75.7	9.2	na	na
Finland/1985	2.2	7.8	10.0	85.9	4.0	na	0.0
New Zealand/1989	8.1	10.6	18.7	80.2	0.8	na	0.4
Singapore/1980	3.9	10.8	14.7	82.8	2.5	na	na
South Korea/1980	4.0	31.4	35.4	43.4	21.1	na	0.0
Spain/1981	4.1	14.8	18.9	74.3	4.4	1.4	1.0
United Kingdom/1981	2.8	4.8	7.5	82.7	na	na	9.8
United States/1970	na	7.8	7.8	91.6	0.5	na	na

Source: US Bureau of Census, International Data Base (IDB) Internet address: http://www.census.gov/ipc/www/idbsprd.html

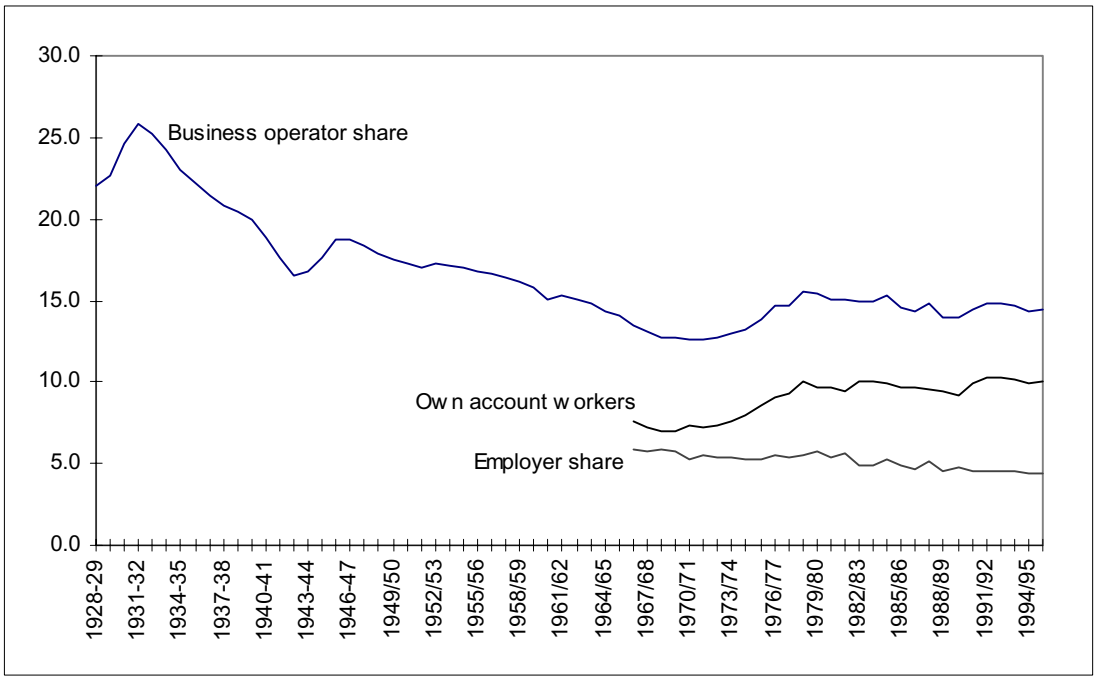
Notwithstanding their limitations, these comparisons reveal some interesting points. Australia has a significantly higher proportion of business operators in the total workforce than more industrialised countries like the US, UK and Canada. However, it has a lower proportion of business operators than economies like Ireland, Spain, Italy, South Korea and New Zealand. [2]

The long run historical data (figure B.1 and table B.6) on the share of employment accounted for by business operators show a fairly steep decline from the early 1930s to the late 1960s, a brief period of relative expansion until the later 1970s and a roughly steady share since. In part, this reflects the

[2] The interested reader can find further information about self-employment, persons working at home and firms employing less than five persons in ABS Catalogue 1321.0 (1993 and 1996a).

transformation of the Australian economy — with much less dependence on agriculture, but more recently, an increasing emphasis on services.

Figure B.1: Long run trends in 'entrepreneurship' in Australia[a], 1928–29 to 1995–96



a Measured as the share of total (civilian) employment accounted for by own account workers and employers (in all parts of the economy).

Source: Table B.6.

Table B.6: Small business operators (including agriculture) — a long term perspective, Australia, 1928–29 to 1995–96

End June	*Employers*		*Own account workers*	*Employers/self employed*				*Civilian employed*	
	E	*E1*	*S*	*SBO*	*SBO1*	*SBO2*	*SBO3*	*EMP*	*SBOR*
	'000	'000	'000	'000	'000	'000	'000	'000	%
1928-29	..	..	..	535.6	575.0	..	..	2430.4	22.0
1929-30	..	..	..	530.0	569.0	..	..	2339.8	22.6
1930-31	..	..	..	533.7	573.0	..	..	2167.9	24.6
1931-32	..	..	..	549.5	590.0	..	..	2122.1	25.9
1932-33	..	..	..	566.3	608.0	..	..	2246.2	25.2
1933-34	..	..	..	570.0	612.0	..	..	2353.0	24.2
1934-35	..	..	..	567.2	609.0	..	..	2458.8	23.1
1935-36	..	..	..	565.4	607.0	..	..	2547.4	22.2
1936-37	..	..	..	560.7	602.0	..	..	2609.4	21.5
1937-38	..	..	..	560.7	602.0	..	..	2701.0	20.8
1938-39	..	..	..	557.9	599.0	..	..	2728.4	20.4
1939-40	..	..	..	543.9	584.0	..	..	2723.3	20.0
1940-41	..	..	..	511.3	549.0	..	..	2708.1	18.9
1941-42	..	..	..	470.4	505.0	..	..	2673.5	17.6
1942-43	..	..	..	431.2	463.0	..	..	2616.5	16.5
1943-44	..	..	..	443.3	476.0	..	..	2645.0	16.8
1944-45	..	..	..	473.2	508.0	..	..	2682.7	17.6
1945-46	..	..	..	527.2	566.0	..	..	2823.0	18.7
1946-47	..	..	..	579.3	622.0	..	..	3086.5	18.8
1947-48	..	..	..	591.4	635.0	..	..	3221.8	18.4
1948-49	..	..	..	598.0	642.0	..	..	3338.8	17.9
1949-50	..	..	..	603.5	648.0	..	..	3437.5	17.6
1950-51	..	..	..	615.7	661.0	..	..	3572.8	17.2
1951-52	..	..	..	621.2	667.0	..	..	3641.0	17.1
1952-53	..	..	..	616.6	662.0	..	..	3571.8	17.3
1953-54	..	..	..	625.9	672.0	..	..	3646.0	17.2
1954-55	..	..	..	638.0	685.0	..	..	3748.8	17.0
1955-56	..	..	..	643.6	691.0	..	..	3842.4	16.7
1956-57	..	..	..	642.7	690.0	..	..	3871.9	16.6
1957-58	..	..	..	641.7	689.0	..	..	3914.6	16.4
1958-59	..	..	..	638.9	686.0	..	..	3965.5	16.1
1959-60	..	..	..	641.7	689.0	..	..	4066.2	15.8
1960-61	..	..	..	643.6	691.0	..	..	4261.5	15.1
1961-62	..	..	..	651.0	699.0	..	..	4268.6	15.3
1962-63	..	..	..	658.5	707.0	..	..	4371.4	15.1
1963-64	..	..	..	665.0	714.0	712.0	..	4497.5	14.8
1964-65	..	..	..	663.2	722.0	710.0	..	4637.9	14.3
1965-66	..	..	..	674.4	..	722.0	701.0	4772.2	14.1
1966-67	288.8	288.0	374.0	662.8	..	..	689.0	4906.5	13.5

Table B.6 continued

End June	*Employers*		*Own account workers*	*Employers/self employed*				*Civilian employed*	
	E	*E1*	*S*	*SBO*	*SBO1*	*SBO2*	*SBO3*	*EMP*	*SBOR*
	'000	'000	'000	'000	'000	'000	'000	'000	%
1967-68	290.8	290.0	366.2	657.0	..	..	683.0	5032.6	13.1
1968-69	300.8	300.0	358.1	659.0	..	..	685.0	5159.9	12.8
1969-70	308.8	308.0	378.0	686.9	..	..	714.0	5371.7	12.8
1970-71	289.8	289.0	406.7	696.5	..	..	724.0	5526.6	12.6
1971-72	305.8	305.0	399.3	705.1	..	..	733.0	5567.7	12.7
1972-73	308.8	308.0	420.3	729.2	..	..	758.0	5719.6	12.7
1973-74	317.9	317.0	450.8	768.6	..	..	799.0	5917.9	13.0
1974-75	310.9	310.0	464.5	775.4	..	..	806.0	5851.6	13.3
1975-76	314.9	314.0	514.4	829.2	..	..	862.0	5982.3	13.9
1976-77	332.9	332.0	549.2	882.2	..	..	917.0	6024.2	14.6
1977-78	327.9	327.0	558.1	886.0	..	..	921.0	6031.3	14.7
1978-79	338.9	..	611.6	950.5	..	..	..	6095.7	15.6
1979-80	361.0	..	604.5	965.5	..	..	..	6269.9	15.4
1980-81	343.2	..	619.7	962.9	..	..	..	6413.9	15.0
1981-82	360.3	..	604.7	965.0	..	..	..	6414.3	15.0
1982-83	308.5	..	629.1	937.6	..	..	..	6266.5	15.0
1983-84	321.8	..	649.9	971.7	..	..	..	6499.0	15.0
1984-85	352.0	..	663.7	1015.7	..	..	..	6659.4	15.3
1985-86	346.0	..	675.3	1021.3	..	..	..	7007.7	14.6
1986-87	330.1	..	689.9	1020.0	..	..	..	7128.9	14.3
1987-88	382.4	..	708.3	1090.7	..	..	..	7378.2	14.8
1988-89	350.0	..	724.8	1074.8	..	..	..	7711.1	13.9
1989-90	380.0	..	726.8	1106.8	..	..	..	7900.2	14.0
1990-91	345.9	..	763.7	1109.6	..	..	..	7678.0	14.5
1991-92	350.9	..	784.7	1135.6	..	..	..	7642.6	14.9
1992-93	346.0	..	793.6	1139.6	..	..	..	7677.0	14.8
1993-94	354.2	..	802.1	1156.3	..	..	..	7892.7	14.7
1994-95	361.3	..	823.1	1184.4	..	..	..	8273.6	14.3
1995-96	366.6	..	838.1	1204.7	..	..	..	8354.1	14.4

a E denotes employers (from LFS data at June in each fiscal year). E1 denotes data on employers from Foster and Stewart (1991) — based on August returns. In this case we assumed that data for August in any year x was a good proxy for the fiscal year ending x. S denotes the own account workers (from LFS data at June in each fiscal year). SBO denotes own account workers and employers. SBO1 denotes employers and own account workers from Butlin (1977 p.92). SBO2 denotes employers and own account workers from Foster & Stewart (1991, p.156). SBO3 denotes employers and own account workers from Foster & Stewart (1991, p.156) but based on August data. In this case we assumed that data for August in the year x were a good proxy for the fiscal year ending x. EMP is the total value of civilian employment derived from the Labour Force survey supplemented by civilian employment data spliced from Butlin (1977). SBOR is the small business operator rate — defined as the share of the civilian employed who are own account workers or employers in unincorporated enterprises.

Demographic data about the business operators (including farmers) discussed in Anh (1995), based on the 1991 Australian Census of Population, indicate the following points:

- Small business operators are a fairly heterogeneous group in terms of educational standards. There is an above average representation of people with higher education and also of people who left school at an early age.
- Women represent 32.4 per cent of small business operators, compared to 44.8 per cent amongst wage and salary earners.
- 21 per cent of migrants from non-English speaking countries work in their own business, compared to 17.5 per cent amongst Australian born. [3]
- Many of the migrant business operators are working in geographic neighbourhoods or workplace environments that could be described as 'ethnic enclaves'.

One of the important characteristics of running a business is that it can provide opportunities for particularly motivated or able individuals who lack formal credentials. Kidd (1993) examined the effects of self-employment on the earnings of native born Australians, immigrants from English speaking backgrounds and immigrants from non-English speaking backgrounds. Using regression analysis, Kidd found that personal characteristics (age, education, State of residence and the like) were less able to explain the earnings of business operators than paid employees. Education had less influence on the earnings of migrant business operators than native business operators. Immigrants from an English speaking background received approximately six per cent lower wages than similarly endowed, native-born wage and salary earners and business operators. However, immigrants from a non-English speaking background received 31.7 per cent less than similarly endowed native-born wage and salary earners, but only 13.7 per cent less than native born business operators. This result provides an important explanation of why immigrants from a non-English speaking background are more likely to work in their own business than other population groups.

In recent years some attention has been given in the economic literature to contract work performed by business operators. Van den Heuvel and Wooden (1995) estimate that, on the basis of the ABS 1994 Population Survey Monitor, contractors account for 6.8 per cent of the total non-farm workforce. [4] According

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[3] According to ABS Catalogue 1321 (1993), migrants from non-English speaking countries represented 15.8 per cent of all non-agricultural business operators in 1991–92. According to ABS Catalogue 6203 (LFS), at that time they represented 12.4 per cent of wage and salary earners.

[4] According to the estimates used in table A.3, non-agricultural small business operators account for 17 per cent of total non-farm employment. If contractors account for 6.8 per

to their definition, contractors are own account workers who provide regular services to private or public organisations. This covers a wide spectrum of activities ranging from consultancy services provided by highly paid computer professionals to clothing work done at the home by poorly paid service workers. Around 38 per cent of these contractors depend primarily or entirely on one organisation for their work and, in many respects, can be regarded as casual employees. Other contractors (particularly in construction and transport) are more independent and usually rely on more than one source of income over the year.

Van den Heuvel and Wooden (1994) suggest that the increasing utilisation of contractors has been primarily due to demand-side considerations. Using contractors enables employers to avoid a number of fixed non-wage costs specified in various awards (superannuation, annual leave, etc.). The business operators are also less likely to be unionised, have no recourse against unfair dismissals and may have a stronger incentive to perform than do ordinary employees.

The growth of contract self-employment has led to concerns over the 'exploitation' of contract workers, particularly those who are dependent exclusively or primarily on one organisation. The fact that non-wage costs are reduced or eliminated for these workers may induce firms to substitute business operators contractors for employees, resulting in involuntary contract employment. In order to test the exploitation hypothesis, Van den Heuvel and Wooden (1995) utilised the May 1994 Population Survey Monitor of the ABS to collect data on the job satisfaction of business operators' contractors. Before controlling for other factors, they found that business operators' contractors had *greater* satisfaction with their control over how work is performed and hours worked, but less satisfaction over income and job security. Their overall job satisfaction was higher than that of wage and salary earners — this does not support the exploitation hypothesis. When self-employment status was disaggregated into dependent and independent contracting categories, they found that dependent contractors enjoyed a significantly lower level of overall job satisfaction than independent contractors, but not less satisfaction than wage and salary earners. This finding supports the view that many so called contractors are in fact little different from employees.

cent of the workforce, this implies that they represent about 40 per cent of the population of business operators.

APPENDIX C: THE WEEDA SURVEY

In this appendix we examine in detail statistics by employer size from an ABS survey titled Weekly Earnings of Employees (Distribution) Australia (denoted hereafter as WEEDA). This supplementary survey to the LFS is published once a year in ABS catalogue 6310.0. We have obtained from the ABS detailed unpublished WEEDA data for the years 1990, 1992 and 1995. We used this detailed information to supplement the data on wage and salary earners from the SEE and DCEEH surveys cited in the text and presented in appendices A, D and F.

For two reasons we assigned to WEEDA a supplementary role in this paper. One reason is the shorter time series available. Whereas SEE statistics are available since 1983, reliable data from WEEDA are available only between 1990 and 1995. The more important reason is connected with the definition of employer size in the WEEDA survey.

WEEDA is conducted amongst households and the relevant question asks about the number of persons employed in the location where the respondent works. Evidently, size of location as reported in the survey will often be considerably smaller than the size of the legal enterprise. Bearing in mind that the estimated size of location is provided by individuals, it might also differ from the size of the employer units reported in ABS establishment-based surveys. Given that by definition the concept of small business refers to the size of the legal enterprise rather than its outlets or subsidiaries, the enterprise based statistics from the SEE and DCEEH surveys are better suited for the purposes of this report than data from WEEDA which are dissected by the size of the workplace.

Nonetheless, the information from WEEDA can be used to cross-check other statistics presented in this paper and, in some cases (like casual employment), it provides information that is not available from other sources.

We start the discussion by comparing the size of the population of wage and salary earners according to WEEDA and the SEE. These comparisons, which are relevant to the discussion in section 2.7 about the reliability of the SEE data, are presented in table C.1.

Table C.1: Comparison of the estimated number of wage and salary earners in the WEEDA and SEE surveys[a]

		Number of employees			*Share of total*	
		WEEDA based	*SEE*	*difference*	*WEEDA*	*SEE*
		000s	*000s*	*000s*	*%*	*%*
1995	total non-farm private	5068	4415	654	73.6	71.7
	total farm	136	157	-21	2.0	2.6
	total public	1678	1583	94	24.4	25.7
	total population	6882	6155	727	100.0	100.0
1992	total non-farm private	4495	4146	349	71.0	69.4
	total farm	124	142	-18	2.0	2.4
	total public	1717	1685	32	27.1	28.2
	total population	6335	5973	362	100.0	100.0
1990	total non-farm private	4671	4451	221	71.1	70.1
	total farm	122	161	-39	1.9	2.5
	total public	1773	1742	31	27.0	27.4
	total population	6566	6353	213	100.0	100.0

a Wage and salary earners in the agricultural sector are not covered in the SEE survey. Farm employment in the SEE column is taken from the estimates of employees in the quarterly LFS survey (Catalogue 6203.0).

Source: ABS Catalogue 6248.0 (SEE), Catalogue 6310.0 (WEEDA) and unpublished data.

A few points should be noted from these comparisons. First, the difference between the estimated total population — which was 213 000 in 1990 — climbed to 727 000 in 1995. This illustrates the point raised in chapter 2 that the currently available estimates from the SEE report considerably smaller numbers of wage and salary earners than the LFS surveys and the difference is widening.

In regard to the employment shares of the private, farm and public sectors, the widening difference in estimated population sizes is not reflected in any clear bias in percentage distributions. Both WEEDA and the SEE show a significant contraction in the share of public employment. Initially, the large reduction in the share of public employment between 1983 and 1995 according to the SEE caused us some concerns about the reliability of these estimates. The fact that WEEDA estimates display an even larger contraction in public employment between 1990 and 1995 provides added credence to the unexpected findings from the SEE data.

Going one step further in comparisons, we present in table C.2 the distribution of part-time and full-time employees by employer size in the private non-farm sector according to the two surveys.

Table C.2: Part-time and full-time private non-farm employees: distribution by size of employer in 1995

	Employer size categories					
	Under 20	*20-99*	*Over 100*	*Unknown*	*Total*	*Pop*
WEEDA (establishments)	%	%	%	%	%	000s
Full-time	44.0	26.6	26.6	2.8	100.0	3645
Part-time	53.1	25.9	16.3	4.7	100.0	1423
Total	46.5	26.4	23.7	3.3	100.0	5068
Proportion part-time from total	32.0	27.6	19.3	39.7	28.1	
SEE (enterprises)						
Full time	32.7	23.4	43.9		100.0	2966
Part time	35.6	20.3	44.1		100.0	1461
Total	33.7	22.4	43.9		100.0	4427
Proportion part-time from total	34.9	29.9	33.1		33.0	

Source: ABS Catalogue 6248.0 (SEE), Catalogue 6310.0 (WEEDA) and unpublished data

We were able to carry out a comparison between the two surveys in regard to part-time and full-time employment only for 1995 because unpublished data on these items from the SEE was obtained only for 1985 and 1995. For 1985, we have no WEEDA estimates to compare with since the WEEDA series started from 1990.

But even comparisons for one year are instructive. Looking at table C.2, in relation to both full-time and part-time employees, WEEDA shows a much higher proportion of the workforce located in the smaller size categories than the SEE. These large differences illustrate the effect of the different statistical definitions of employer units adopted in these surveys: enterprises in the SEE, 'locations' in WEEDA. Given that the size of workplaces will often be much smaller than the size of the firm, it comes as no surprise that a much higher proportion of the population is concentrated in small size categories in WEEDA. The large difference highlights the point that, while WEEDA estimates by size of employer can provide some indications about trends and changes, they are not strictly comparable with other statistics by employer size presented in this paper.

But not all differences are related to the definition of the employer unit. Looking at the bottom line of the two sections in table C.2 we see that the proportion of part-time employees in the total population according to SEE was 33 per cent in 1995, but only 28.1 per cent according to WEEDA. We do not know the reason for this significant discrepancy in aggregate estimates.

According to WEEDA, part-time employment is heavily concentrated in small workplaces, whereas, according to SEE estimates part-time employment was fairly evenly distributed across firm sizes in 1995. This difference can be

explained by the high prevalence of part-time employment in the small outlets of large firms, particularly in retail trade, banking and other business services.

Having reviewed the differences between WEEDA and SEE, the reader is better prepared to interpret the statistical summaries from WEEDA. In the following sections we shall examine findings from the analysis of the WEEDA database in regard to the distribution of employees, union membership, relative earnings and other income distribution statistics. This statistical analysis will compare figures by size of location. In each case we shall look on estimates from 1990 and 1995.

To start this statistical analysis let us examine the distribution of full-time, part-time, permanent and casual employees in 1990 and 1995. These estimates are presented in tables C.3 and C.4. Dissection by casual/permanent employees is only available from WEEDA and not from any other statistical source examined in this report.

Comparing the bottom rows in tables C.3 and C.4, one can see that the share of the under 20 group increased from 44.4 per cent in 1990 to 46.5 per cent in 1995. According to SEE data in table A.1, during the same period the employment share of the under 20 firm size category increased from 32.5 to 34.5 per cent. Thus, in terms of the increase in the share of small business the two surveys display similar estimates.

The figures clearly show that both part-time and casual employees are more heavily represented in small workplaces. More than 70 per cent of casual employees are part-timers and this ratio is higher in smaller size categories. Between 1990 and 1995, the proportion of both part-time and casual employees increased by around 5 percentage points.

The next item we examine is union membership. Table C.5 shows the percentage of employees who were union members in various location size categories in 1990 and 1995.

Average union membership decreased from 31 per cent in 1990 to 25.3 per cent in 1995. In 1995, union membership exceeded 45 per cent in 100+ locations, but averaged only 9.4 per cent in workplaces with less than 10 employees. Participation is particularly low amongst casual employees in small locations. By contrast, amongst casual and part-time employees in 100+ workplaces union membership is comparatively high.

Now let us turn to relative earnings. Average earnings and relative earnings as a percentage of the level of the 100+ group are presented in table C.6. The data clearly show that weekly earnings are negatively related to the size of the workplace. Curiously, in the under 10 person category, employees tend to earn more than in the 10-19 size group but otherwise the trend is in the opposite direction.

Table C.3: Distribution of private non-farm employees by size of location, 1995

	Size of location					
	0-9	*10-19*	*20-99*	*100+*	*Unknown*	*Total*
Distribution within each size category	*%*	*%*	*%*	*%*	*%*	*%*
Permanent	60.9	71.1	76.5	84.5	55.3	72.0
full-time	53.0	63.8	67.2	76.4	48.1	63.8
part-time	7.9	7.3	9.3	8.1	7.3	8.2
Casual	39.1	28.9	23.5	15.5	44.7	28.0
full-time	13.4	7.5	5.3	4.3	12.3	8.2
part-time	25.7	21.4	18.2	11.2	32.4	19.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
% part-time from total employment	33.7	28.7	27.6	19.3	39.7	28.1
% casual from part-timers	76.4	74.5	66.2	58.0	81.7	70.7
Share of the total						
Permanent	26.5	15.0	28.1	27.9	2.5	100.0
Casual	43.7	15.7	22.2	13.1	5.3	100.0
Full time	28.9	15.1	26.6	26.6	2.8	100.0
Part time	37.5	15.5	25.9	16.3	4.7	100.0
Total	31.3	15.2	26.4	23.7	3.3	100.0

Source: Unpublished ABS data based on the WEEDA survey.

Table C.4: Distribution of private non-farm employees by size of location, 1990

	Size of location					
	0-9	*10-19*	*20-99*	*100+*	*Unknown*	*Total*
Distribution within each size category	*%*	*%*	*%*	*%*	*%*	*%*
Permanent	65.0	75.9	80.9	88.2	61.8	76.9
full-time	58.5	70.5	74.4	83.4	55.6	71.0
part-time	6.5	5.4	6.5	4.8	6.2	5.9
Casual	35.0	24.1	19.1	11.8	38.2	23.1
full-time	11.8	5.3	3.5	2.1	7.0	6.0
part-time	23.2	18.8	15.6	9.6	31.2	17.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
% part-time from total employment	29.7	24.2	19.1	14.4	78.3	23.0
% casual from part-timers	78.2	77.7	81.9	66.7	39.9	74.4
Share from the total						
Permanent	25.9	13.5	28.7	30.3	1.6	100.0
Casual	46.5	14.2	22.5	13.4	3.3	100.0
Full time	28.0	13.4	28.6	29.3	0.6	100.0
Part time	39.6	14.4	22.6	16.5	6.9	100.0
Total	30.7	13.7	27.2	26.4	2.0	100.0

Source: Unpublished ABS data based on the WEEDA survey.

Average earnings of full-time employees in under 20 person locations was 86.1 per cent the level in the 100+ group in 1990. It decreased to 83.7 per cent of the 100+ level by 1995. These figures are in line with the estimates from the DCEEH survey shown in charts 5.1 and 5.2 in the report.

The difference in earnings by firm and workplace size suggests that the frequency of low paid 'marginal' jobs tends to be higher in small business. We have tested this hypothesis using the WEEDA database which contains information on the distribution of earnings by 28 income brackets. The frequency of marginal jobs is an issue of some importance in relation to 'job generation' by small business. For the purpose of examining the population density at the lower tail of the distribution of earnings, we arbitrarily selected $350 weekly earnings (in 1995 prices) as the lower demarcation point for full-time wage and salary earners. The percentage of full-time employees earning less than $350 is presented in table C.7.

Table C.5: Percentage union membership by size of location

	Size of location				
	0-9	*10-19*	*20-99*	*100+*	*Total*
1995	*%*	*%*	*%*	*%*	*%*
Permanent	12.6	18.9	33.1	47.2	29.6
full-time	12.7	18.7	32.1	46.5	29.3
part-time	11.7	20.9	40.0	53.8	32.1
Casual	4.4	9.1	23.6	37.9	14.3
full-time	7.5	1.3	21.2	31.3	13.9
part-time	2.8	7.8	24.3	40.4	14.5
Total full-time	11.7	9.3	31.3	45.7	27.5
Total part-time	4.9	11.1	29.6	46.0	19.6
Total	9.4	16.1	30.9	45.8	25.3
1990					
Permanent	15.7	25.4	37.6	52.1	34.7
full-time	16.3	25.4	37.7	52.1	35.2
part-time	10.0	25.7	35.3	51.6	29.3
Casual	7.3	11.2	30.3	45.6	18.6
full-time	12.1	14.6	26.2	45.8	18.2
part-time	4.9	10.3	31.3	45.6	18.8
Total full-time	15.6	24.6	37.2	51.9	33.9
Total part-time	6.0	13.7	32.5	47.6	21.5
Total	12.8	22.0	36.2	51.3	31.0

Source: Unpublished ABS data based on the WEEDA survey.

The figures show that the frequency of very low-paid jobs is more than twice as high in under 10 employee locations than in the 100+ category. In regard to part-time employees we examined the population tail below $175. The percentage of part-timers earning less than $175 per week is presented in table C.8.

Once again the figures indicate that the proportion of low paid employees is higher in smaller locations than in larger ones. However, the differences by size of the workplace for part-timers are less marked than for full-time employees. Another indicator on earnings is the average hourly wage rate. Table C.9 presents information on average hourly wage rates in 1990 and 1995.

Table C.6: Average and relative weekly earnings

	Size of location					
	0-9	*10-19*	*20-99*	*100+*	*Average earnings*	*Average earnings*
1995	*%*	*%*	*%*	*%*	*%*	*current $*
Permanent	86.1	81.9	90.2	100.0	87.9	583.2
full-time	86.1	81.8	91.6	100.0	88.6	619.7
part-time	111.8	91.5	90.6	100.0	93.1	300.9
Casual	95.9	86.6	79.1	100.0	88.4	291.8
full-time	90.1	93.5	89.9	100.0	90.0	545.5
part-time	87.6	82.9	79.5	100.0	83.3	187.6
Total full time	85.1	82.3	91.3	100.0	88.0	611.3
Total part time	88.6	80.6	81.7	100.0	82.9	220.8
Total	74.4	74.0	82.0	100.0	79.2	501.6
1990						
Permanent	87.7	84.3	88.2	100.0	88.5	483.2
full-time	88.6	84.3	89.4	100.0	89.3	501.4
part-time	111.3	102.1	87.4	100.0	92.7	263.2
Casual	110.1	92.4	85.1	100.0	97.0	231.2
full-time	98.0	94.6	93.2	100.0	94.4	447.2
part-time	85.8	84.4	80.8	100.0	83.7	155.6
Total full time	87.9	84.3	86.0	100.0	88.9	497.2
Total part time	88.6	85.3	94.9	100.0	83.8	183.1
Total	79.1	78.9	84.0	100.0	83.3	424.9

Source: Unpublished ABS data based on the WEEDA survey.

The totals for 1990 and 1995 suggest a drop in the average wage rate in line with the change in average weekly earnings shown in table C.6.

Changes in the number of hours worked are presented in table C.10. The figures show that in recent years weekly hours worked by full-time employees have increased slightly, a finding supported by other studies (EPAC, 1996).

Table C.7: Percentage of full-time employees earning less than $350 per week[a]

	Size of location				
	0-9	*10-19*	*20-99*	*100+*	*Total*
1995	*%*	*%*	*%*	*%*	*%*
permanent full-time	20.9	12.5	10.1	7.9	12.9

casual full-time	30.8	21.6	20.5	14.7	25.2
total full-time	22.9	13.5	10.9	8.3	14.4
1990					
permanent full-time	27.3	19.7	15.8	10.4	17.8
casual full-time	38.2	28.7	29.7	21.5	33.7
total full-time	29.2	20.4	16.5	10.7	19.2

a The demarcation level in 1990 is $308, which is equivalent to $350 in 1995 prices

Source: Unpublished ABS data based on the WEEDA survey.

Table C.8: Percentage of part-time employees earning less than $175 per week[a]

	Size of location				
	0-9	*10-19*	*20-99*	*100+*	*Total*
1995	*%*	*%*	*%*	*%*	*%*
permanent part-time	19.7	18.1	16.5	14.5	17.5
casual part-time	49.0	49.3	48.6	42.1	48.9
total part-time	41.3	40.7	36.5	30.6	38.9
1990					
permanent part-time	28.6	15.4	23.8	16.9	23.3
casual part-time	52.5	54.5	54.0	41.9	52.3
total part-time	46.3	44.6	43.9	32.8	43.8

a The demarcation level in 1990 is $154, which is equivalent to $175 in 1995 prices

Source: Unpublished ABS data based on the WEEDA survey.

Table C.9: Hourly wage rates relative to the level in the 100+ category

	Size of location			
	0-19	*20-99*	*100+*	*Total*
1995	*%*	*%*	*%*	*%*
permanent	84.0	89.6	100.0	88.0
casual	88.7	88.3	100.0	88.2
full-time	81.4	89.3	100.0	86.7
part-time	98.7	89.4	100.0	91.9
total	83.0	88.9	100.0	86.8
1990				
permanent	85.8	87.9	100.0	88.2
casual	91.7	92.0	100.0	90.5
total full-time	83.8	88.0	100.0	87.3
total part-time	100.4	90.3	100.0	93.1
total	85.1	87.8	100.0	87.5

Source: Unpublished ABS data based on the WEEDA survey.

Table C.10: Average weekly hours worked in the main job

	Size of location				
	0-9	*10-19*	*20-99*	*100+*	*Total*
1995	*hrs*	*hrs*	*hrs*	*hrs*	*hrs*
total full-time	42.5	41.8	41.8	40.9	41.7
total part-time	15.7	17.0	16.8	18.4	16.6
total	33.5	34.7	34.9	36.6	34.7
1990					
total full-time	41.8	40.7	40.7	40.0	40.8
total part-time	15.5	16.4	16.3	18.0	16.2
total	34.0	34.8	35.3	36.9	35.1

Source: Unpublished ABS data based on the WEEDA survey.

APPENDIX D: JOB GROWTH AND TURNOVER

Table D.1 presents 'comparative static' estimates for a number of OECD countries on the contribution to employment growth of SMEs. These estimates are based on private sector employment share data in table A.6 combined with statistics on the growth of private non-farm employment from ILO yearbooks.

Table D.1: Share in the private workforce and contribution to employment growth of the under 100 firm size group

	Period	*Share of under 100 in private employment*		*Percentage increase in private employment*			*Contribution to total increase*	
		Beginning	*End*	*Total*	*Under 100*	*Over 100*	*Under 100*	*Over 100*
		%	%	%	%	%	%	%
Australia	1983-95	54.4	56.9	29.8	19.4	10.4	65.1	34.9
Australia	1991-95	56.5	56.9	4.9	3.1	1.8	64.0	36.0
USA	1977-91	40.1	38.8	25.6	8.6	17.0	33.7	66.3
USA	1988-91	40.2	38.8	5.1	0.6	4.5	11.3	88.7
Japan	1977-92	56.9	54.9	29.6	14.2	15.3	48.1	51.9
Japan	1988-92	55.7	54.9	13.9	6.9	7.0	49.1	50.9
Germany	1970-90	44.8	46.9	33.9	18.0	15.9	53.1	46.9
Germany	1985-90	45.5	46.9	11.8	6.9	4.9	58.7	41.3
France	1979-90	43.4	50.1	7.7	10.5	-2.9	137.4	-37.4
France	1985-90	46.2	50.1	8.0	7.9	0.1	98.8	1.2
UK	1976-91	45.3	49.1	9.8	8.6	1.2	87.9	12.1
UK	1986-91	47.0	49.1	7.8	5.9	1.8	76.2	23.8

Source: Table A.6 and International Labour Organisation (ILO) yearbooks data on employment growth.

Job generation studies

The principles of job generation studies have been discussed in the text and we shall not repeat them here.

The pioneering job generation study was conducted by Birch in the Massachusetts Institute of Technology and was published in 1979. In this study Birch used the Dunn and Bradstreet (D&B) credit rating agency large database on USA enterprises between 1969 and 1976. He came up with some surprising results. According to Birch's calculations, more than 80 per cent of net job gains in the USA between 1969 and 1976 were provided by firms employing less than 20 persons. These striking results were later picked up by the media and entered into the political debate concerning the role of small business in employment growth.

A number of later studies that used the D&B database and other American information sources were not able to replicate Birch's findings (ILO, 1990 and Harrison, 1994). Between 1969 and 1976 the employment share of small business in the USA has barely changed (see table A.6), thus it is rather difficult to reconcile Birch's findings with aggregate employment share data. Nonetheless, the follow-up studies also found that small firms account for a disproportionate share of new jobs in the American economy. Some of the differences between Birch's findings and 'static' aggregate employment by firm size comparisons has been explained by deficiencies in the D&B database used by Birch. These included inadequate distinctions between establishments and enterprises and time lags in recording new openings and closures. But there is more to it.

There are a number of reasons for the persistent discrepancies between the findings of job generation studies and those observing changes in the distribution of employment by firm size during the same period. Job generation studies of the Birch model aim to track over time changes in employment levels and classify them according to the opening size of the firm, or classify them according to the closing size, if the firm was established during the investigation period. This gives rise to a number of differences compared to changes in aggregate employment share data where categorisation by size is determined each year rather than at the starting point.

One of the reasons for different findings is related to the natural cycle of firm creations and closures. Unless new firms result from takeovers, they are invariably created small. On the other hand, when it comes to job losses due to closures, all firm size groups are represented. Thus the natural cycle of business birth and death provides a bias in favour of small business in the net job growth estimates, even if the aggregate employment share of small business remains unchanged.

Another source of discrepancy is related to 'category jumping'. We have already encountered this phenomenon in section 2.1 where we illustrated its distorting effect on employment share estimates during times of recession. Here we shall examine a case of category jumping which introduces a systematic bias in favour of small business in job generation studies.

Suppose that the overall employment share distribution remains constant but there are random variations up and down in each size category. Assume further that there are no new openings and closures. In this case firms which move up from a low size category to a higher size category will be recorded as small business growth in the job generation study. The compensating movement of larger firms to the smaller size group will be recorded as job contraction in larger business. Thus spontaneous expansions and contractions which have no effect on the share distribution will show up in a job generation study as small business job growth and larger business job contraction.

A related phenomenon mentioned in the literature is called 'regression to the mean' (ILO, 1990, Atkinson and Storey, 1994, IAESR, 1994). Regression to the mean can be illustrated by a simple numerical example. Suppose the initial size of a firm is 15 employees. Following a successful year it expanded its workforce to 23 employees. Provided that firms are allocated to size brackets according to the count at the beginning of the year, then in the job generation calculation the 8 new jobs will be attributed in that year to the under 20 size group. In the following year the firm contracts back from 23 to 15 employees. In this case job contraction will be attributed to the larger size group. Hence a zero net change appears in one year as a job growth in the smallest size group and in a later year as a contraction in the larger size category. This represents another bias in favour of attributing job growth to small business.

Regression to the mean can be overcome by allocating firms to size categories according to the average of the opening and closing employment counts. Such correction was not applied in the early job generation studies that created so much of the controversy in the literature. Also, this kind of averaging runs contrary to the original aim of job generation studies to examine employment changes in relation to firm size categories defined at the starting period rather than the average size year-by-year. With year-by-year averaging, the estimates from job generation studies on contribution to employment growth are expected to converge to the estimates obtained from 'static' comparisons of employment distribution by firm size, like the ones shown in figures 3.1 and 3.2.

A further problem — the confusion between gross and net job creation — is more one of interpretability than a conceptual flaw in the measurement of job generation. Davis *et al* (1993) and Davidsson (in a critique, 1995) indicate the 'problem' (table D.2). It is possible to set up artificial situations where the small

business share of net job creation is very high (100 per cent in table D.2), yet their share of gross job creation is quite modest (20 per cent in this case). The example simply indicates that net job creation can provide a misleading picture of the dynamism of a sector in generating jobs — it is possible, in circumstances where little additional employment is generated in an economy, to have net job creation percentages well in excess of 100 per cent, as in Sweden in table D.3.

Table D.2: The confusion between net and gross job generation

				Firm size		
	Firm 1	*Firm 2*	*Firm 3*	*Small firms*	*Big firms*	*All firms*
Year 1	300	600	600	300	1200	1500
Year 2	350	400	800	350	1200	1550
Net change	50	-200	200	50	0	50

Source: Davidsson (1995).

In summary, job generation studies modelled on Birch's work have a number of biases which can create the statistical illusion that small business accounts for a higher proportion of job growth than it actually does. Notwithstanding their methodological problems, job generation studies contain more information than what is available from aggregate employment distribution data. Some of the more notable findings from job generation studies are: [1]

- In Western Europe, new jobs are mainly due to existing business expansion rather than new births. Job losses are mainly due to business contractions rather than closures. By contrast, in the USA, the impact of births and closures tend to dominate (Dennis *et al*, 1994).
- A large proportion of new jobs occur in a small percentage of fast-growing small enterprises, commonly referred to as the 'gazelles'. The gazelles appear to be in every sector and not just the growing ones.
- The vast majority of job creation and job destruction occurs within sectors as opposed to reallocation of employment across sectors.
- Job destruction is much more cyclically sensitive than job creation. At times of recession job creation does not decrease by much, however, job destruction increases sharply.
- Job turnover is positively correlated with employment growth. But high job turnover will not guarantee job growth. The success of the USA and the

[1] This literature includes Birch (1979), Dennis *et al* (1994), Davis *et al* (1994, 1995), Hammermesh *et al* (1994) and OECD (1994, 1996a, 1996b).

lesser success of Europe to create new jobs may be related to the high incidence of business births in the USA.

OECD data

Table D.3 presents OECD (1994) estimates on the contribution of different establishment (not firm) size groups to the total employment growth of all size groups. These estimates are based on job generation studies. The figures clearly indicate that in both job gains and job losses small establishments tend to dominate.

Notice that in each country the gain and loss figures add up horizontally and vertically. The bottom line in each country reports the percentage contribution of various size groups to total employment growth. When total employment growth is very small or negative these percentage contributions are widely dispersed (see Finland, New Zealand and Sweden).

Table D.4 is based on the same OECD data as table D.3. It presents estimates of average annual job turnover rates. Job turnover is calculated by taking the combined absolute value of job gains and losses and dividing it by total employment.

The bottom part of table D.4 presents a detailed dissection of job gains and losses of the eight OECD countries unweighted average. Clearly, the proportion of both job gains and losses tends to be higher in small establishment sizes.

Additional data from job generation studies in the USA and Canada are presented in table D.5. Turning to Australia, table D.6 presents results from an Australian study on job generation by Borland and Home (1994). Their study was based on unpublished ABS data and was restricted to manufacturing establishments from a merged population file of the 1983–84 and 1984–85 Manufacturing Industry Censuses. The bottom line indicates a marked negative relationship between manufacturing establishment size and job turnover.

Table D.3: Contribution of different establishment size groups to total job gains and losses in selected OECD countries

			Firm size			
		Total	*1-19*	*20-99*	*100-499*	*500+*
		%	%	%	%	%
Canada	job creation (annual)	14.5	6.3	3.3	2.2	2.7
1983-91	job destruction (annual)	11.9	4.3	2.7	2.0	2.8
	net gain	2.6	2.0	0.5	0.2	-0.1
	% net contribtn to jobs	100.0	78.5	19.8	6.3	-4.5
Denmark	job creation (annual)	16.0	8.9	4.0	3.1	na
1983-89	job destruction (annual)	13.8	6.6	3.8	3.4	na
	net gain	2.2	2.3	0.2	-0.4	na
	% net contribtn to jobs	100.0	104.8	11.2	-16.0	na
Finland	job creation (annual)	10.4	5.5	2.6	1.8	0.6
1986-91	job destruction (annual)	12.0	4.6	3.2	2.9	1.3
	net gain	-1.6	0.9	-0.7	-1.1	-0.7
	% net contribtn to jobs	-100.0	54.6	-41.2	-66.8	-46.6
France	job creation (annual)	13.9	7.6	3.3	2.1	0.8
1984-92	job destruction (annual)	13.2	7.0	3.4	2.0	0.8
	net gain	0.7	0.6	0.0	0.1	0.1
	% net contribtn to jobs	100.0	81.2	-4.2	15.0	8.0
Italy	job creation (annual)	12.3	7.9	2.2	1.1	1.2
1984-92	job destruction (annual)	11.1	6.2	2.2	1.2	1.4
	net gain	1.2	1.6	-0.1	-0.1	-0.3
	% net contribtn to jobs	100.0	135.1	-4.6	-8.5	-22.1
New Zealand	job creation (annual)	15.7	8.7	4.1	2.2	0.7
1987-92	job destruction (annual)	19.8	8.3	6.0	3.7	1.8
	net gain	-4.1	0.5	-1.9	-1.5	-1.2
	% net contribtn to jobs	-100.0	+11.0	-46.5	-36.5	-28.1
Sweden	job creation (annual)	14.5	7.7	3.1	2.0	1.8
1985-91	job destruction (annual)	14.6	6.1	3.8	2.8	1.9
	net gain	-0.1	1.6	-0.7	-0.8	-0.1
	% net contribtn to jobs	-100.0	+1553.2	-707.6	-831.1	+114.5
United Kingdom	job creation (annual)	8.7	4.4	1.4	1.1	1.8
1987-91	job destruction (annual)	6.6	3.0	1.2	0.9	1.6
	net gain	2.1	1.3	0.3	0.2	0.3
	% net contribtn to jobs	100.0	63.8	13.5	10.0	12.7

Source: OECD(1994).

Table D.4: Job turnover over employment by establishment size

			Firm size				
		Total	*1-19*	*20-99*	*1-99*	*100-499*	*500+*
		%	%	%	%	%	%
Canada	1983-91	26.4	39.1	27.0	33.6	26.3	16.1
Denmark	1983-89	29.8	39.2	24.4	32.6	22.8	
Finland	1986-91	22.4	29.7	19.8	25.1	18.3	16.5
France	1984-92	27.1	41.1	22.7	32.7	18.1	13.6
Italy	1984-92	23.4	36.0	19.8	30.1	15.0	11.2
New Zealand	1987-92	34.2	37.6	32.8	17.7	18.8	35.2
Sweden	1985-91	29.1	39.1	24.4	32.6	21.1	26.3
United Kingdom	1987-91	15.3	24.1	15.6	21.1	14.8	8.6
8 country average							
	openings	4.7	7.7	4.1	5.3	2.6	1.8
	expansions	8.2	12.2	7.4	9.0	5.8	4.0
	job creation	12.9	19.8	11.4	14.3	8.4	5.9
	closures	4.6	7.1	4.1	4.7	2.8	2.5
	contractions	8.0	8.3	8.0	7.3	7.6	7.0
	job destruction	12.6	15.3	12.2	12.0	10.4	9.5
	annual net gain	0.7	4.1	-0.7	2.1	-1.7	-3.1
	turnover	25.5	35.2	23.6	26.3	18.8	15.4

Source: OECD (1994).

Table D.5: Job turnover estimates from North America by firm size

	Firm size					
	1-19	*20-49*	*50-99*	*100-249*	*250-499*	*500+*
	%	%	%	%	%	%
USA (general) 1989-1991						
Job creation	23.8	9.4	10.0	8.8		2.9
Job destruction	11.7	12.4	13.2	10.9		2.8
Job turnover	35.5	21.8	23.2	19.7		5.7
USA (manufg) 1973-1988						
Job creation	16.5	12.3	11.5	11.1	9.8	7.7
Job destruction	18.8	13.3	11.9	11.2	9.9	8.9
Job turnover	35.3	25.6	23.4	22.3	19.7	16.6
Canada (manufg) 1970-1988[a]						
Job creation	28.8	18.0	12.6	9.0	6.8	4.9
Job destruction	17.5	14.2	11.9	9.7	8.4	6.4
Job turnover	36.3	32.2	24.5	18.7	15.2	11.3

a The Canadian manufacturing data are by establishment size.

Source: USA (general) from Berney and Phillips (1995), USA manufacturing from Davis et al (1994), Canadian manufacturing from Baldwin and Picot (1995).

Table D.6: The rate of job changes and job turnover in Australian manufacturing, by establishment size, 1983–85

	Firm size					
	1-9	*10-49*	*50-99*	*100-249*	*250-499*	*500+*
	%	%	%	%	%	%
openings	26.0	11.1	12.4	7.5	3.7	0
expansions	8.5	8.6	7.0	8.3	5.2	4.6
job gains	34.5	19.7	19.4	15.8	8.9	4.6
closures	23.3	11.1	11.1	6.3	6.3	0
contractions	7.5	5.3	5.4	3.8	5.6	1.5
job losses	30.8	16.4	16.5	10.1	11.9	1.5
gains - losses	+3.7	+3.3	+2.9	+5.7	-3.0	+3.1
job turnover	65.3	36.1	35.9	25.9	20.8	7.7

Source: Borland and Home (1994).

APPENDIX E: SECTORAL STATISTICS

E.1 Further decomposition

In chapter 4 we provide a relatively simple sectoral decomposition of the change in the small business share of private non-farm employment. What are some of the more fundamental causes behind these sectoral patterns? The shift in consumer demand toward services is frequently cited in the literature as one factor behind the growing importance of small firms. Given that small business tends to be more prominent in services than in manufacturing, the change in the composition of aggregate demand fosters employment in the small business sector. This hypothesis can be tested in the Australian context by using ABS employment and national accounts data.

The decomposition was carried out in respect to five factors:

- $\Delta\alpha$ — changes in the proportion of small business within individual industries;
- $\Delta\theta$ — changes in the number of persons required to produce $1000 of real value-added (changes in employment requirement coefficients [1]);
- $\Delta\psi$ — changes in nominal value-added shares of sectors;
- $\Delta\lambda$ — changes in the output prices of sectors compared to the weighted average price; and
- ε — an interaction term which picks up the impact of simultaneous variation in all of the above factors.

The data in tables E1 and E2 with other data on gross product and price indexes can be used to calculate the values of these parameters (tables E.3 to E.5).

The results (table E5):

- reiterate that structural change is the major source of the increasing aggregate role for small business.
- show that shifts in labour requirements underlie most of the shifts in the sectoral shares of non-farm private employment. For example, there was

[1] The relevant calculation involves merely dividing total employment by value added (VA) in each sector. This calculation ignores changes in the composition of output and employment, and changes in the proportion of part-time workers — so that it is, at best, only an approximation for a Leontieff coefficient.

very little change in the labour requirements of retail trade between 1983–84 and 1994–95, whereas most sectors recorded significant declines in labour requirements. This in turn, increased the employment share of retail trade, holding real value added constant in the economy. Because small business has an above average representation in retailing, this contributed to the aggregate increase in the small business share in non-farm employment.

- suggest that had relative prices, labour requirements and small business sectoral shares remained constant, then changes in *nominal* demand in sectors would have led to an increased small business share. However, relative price effects more than offset this influence, so that changes in *real* value-added shares in the economy have little impact on the small business share. This suggests that the rising small business share of non-farm employment cannot be traced to increases in *real* demand for goods and services produced by sectors with higher small business intensities.

E.2 Linking sectoral analysis to other results

So far the sectoral results relate to non-farm private employment. We have estimates of the change in the share of small business in private non-farm employment (ΔS) and its sub-components (in section E.1 and in chapter 4 at a more aggregated level), but we wish to explain the rise of small business in the economy overall. How can this be done? Some simple algebra suggests a method. Total employment (E) comprises small business non-farm employment (B), other non-farm employment (L), public employees (P) and agricultural employment (A):

$E = B+L+P+A$

Non-farm private employment (NF) is the sum of B and L. Let us define $\eta_i = NF_i/E_i$ where the subscript i relates to the period (in this case either 1983–84 or 1994–95).

We can then show that:

$$\Delta(B/E) = (\eta_{94\text{-}95} - \eta_{83\text{-}84})B_{83\text{-}84}/NF_{83\text{-}84} + \eta_{94\text{-}95}\,\Delta S$$

$$= \{(\phi_{83\text{-}84} - \phi_{94\text{-}95}) + (\zeta_{83\text{-}84} - \zeta_{94\text{-}95})\}B_{83\text{-}84}/NF_{83\text{-}84} + \eta_{94\text{-}95}\,\Delta S$$

where $\phi_i = P_i/E_i$ and $\zeta_i = A_i/E_i$.

Table E1: Private non-farm employment by sector by firm size

	Firm size and type				
	Total	*Under 20*	*Under 100*	*Own*	*Employers*

				account workers	
1983-84	No.	No.	No.	No.	No.
Mining	78.2	4.4	12.0	0.9	0.5
Manufacturing	1011.3	145.3	339.4	28.6	24.4
Construction	328.0	94.8	139.9	107.9	39.0
Wholesale trade	376.1	127.2	220.5	25.8	16.8
Retail trade	858.1	285.7	377.7	106.8	90.4
Accommodation, cafes & restaurants	233.7	88.4	164.0	7.7	17.7
Transport & storage	181.0	40.7	71.4	43.5	13.0
Finance & insurance	158.1	25.5	44.8	7.0	2.6
Property & business services	403.2	149.7	229.8	45.2	30.1
Education	75.6	14.7	37.6	7.2	1.5
Health & community services	252.2	70.7	129.5	9.4	18.5
Cultural & recreational services	96.5	32.1	56.2	16.3	5.4
Personal & other services	122.6	47.3	66.3	28.3	12.5
Electricity, gas & water & communication	13.4	1.8	2.7	2.6	0.6
Total	4188.0	1128.3	1891.8	437.2	273.0
1994-95					
Mining	75.8	5.5	13.6	3.5	0.5
Manufacturing	949.8	167.5	373.8	47.5	23.9
Construction	451.2	148.9	203.7	162.2	50.9
Wholesale trade	458.3	173.9	297.9	26.6	15.4
Retail trade	1038.8	296.2	414.2	114.1	96.7
Accommodation, cafes & restaurants	350.8	114.1	215.7	12.5	21.8
Transport & storage	242.3	62.7	115.8	48.1	12.2
Finance & insurance	250.1	40.3	70.0	8.2	2.2
Property & business services	664.1	240.2	360.9	96.5	41.2
Education	140.8	27.8	63.5	13.4	2.4
Health & community services	473.1	132.3	221.0	26.1	19.7
Cultural & recreational services	144.2	41.8	74.6	24.3	5.3
Personal & other services	188.8	66.3	93.8	47.9	15.3
Electricity, gas & water & communication	24.7	3.1	5.5	9.6	1.5
Total	5452.8	1520.6	2524.0	640.5	309.0

Source: ABS Cat.1321.0.

Table E2: Private non-farm employment by sector with allocation of own account workers and employers

			1983-84			*1994-95*
	Total	*< 20*	*< 100*	*Total*	*< 20*	*< 100*
Mining	78.2	5.8	13.4	75.8	9.5	17.6
Manufacturing	1011.3	196.2	392.1	949.8	236.9	444.9
Construction	328.0	238.3	286.3	451.2	357.8	416.1
Wholesale trade	376.1	168.3	262.9	458.3	214.6	339.7
Retail trade	858.1	475.0	573.6	1038.8	499.0	623.6
Accommodation, cafes & restaurants	233.7	112.3	189.2	350.8	146.6	249.7
Transport & storage	181.0	96.1	127.7	242.3	122.0	175.9
Finance & insurance	158.1	34.9	54.4	250.1	50.5	80.4
Property & business services	403.2	222.4	304.7	664.1	374.5	498.0
Education	75.6	23.3	46.3	140.8	43.4	79.3
Health & community services	252.2	97.0	157.1	473.1	176.5	266.5
Cultural & recreational services	96.5	53.3	77.8	144.2	71.0	104.1
Personal & other services	122.6	87.0	106.9	188.8	128.2	156.8
Electricity, gas & water & communication	13.4	4.9	5.9	24.7	14.1	16.6
Total	4188.0	1814.8	2598.2	5452.8	2444.6	3469.1

Source: Manipulation of table E1.

Table E3: Relevant parameters for decomposition for explaining the change in the small business share of firms employing under 20 persons

	θ		α		ψ		λ		β		*Ei /N*	
	83-84	94-95	83-84	94-95	83-84	94-95	83-84	94-95	83-84	94-95	83-84	94-95
Mining	0.011	0.004	0.074	0.125	0.080	0.062	0.561	1.187	0.019	0.014	0.001	0.002
Manuf	0.024	0.016	0.194	0.249	0.294	0.238	0.930	1.085	0.241	0.174	0.047	0.043
Const.	0.024	0.022	0.727	0.793	0.083	0.084	1.069	1.061	0.078	0.083	0.057	0.066
Whole	0.022	0.024	0.448	0.468	0.092	0.087	1.206	0.940	0.090	0.084	0.040	0.039
Retail	0.039	0.038	0.554	0.480	0.119	0.120	1.192	0.985	0.205	0.191	0.113	0.092
Accom	0.046	0.047	0.480	0.418	0.029	0.035	1.169	0.923	0.056	0.064	0.027	0.027
Trans	0.021	0.017	0.531	0.503	0.063	0.060	0.898	1.045	0.043	0.044	0.023	0.022
Finance	0.023	0.027	0.221	0.202	0.046	0.069	0.988	0.586	0.038	0.046	0.008	0.009
Property	0.023	0.022	0.552	0.564	0.101	0.129	1.115	1.016	0.096	0.122	0.053	0.069
Education	0.035	0.031	0.308	0.308	0.015	0.020	0.933	0.990	0.018	0.026	0.006	0.008
Health	0.039	0.040	0.385	0.373	0.044	0.053	0.973	0.968	0.060	0.087	0.023	0.032
Cultural	0.035	0.031	0.553	0.492	0.017	0.021	1.082	0.983	0.023	0.026	0.013	0.013
Personal	0.055	0.050	0.710	0.679	0.015	0.018	0.982	0.913	0.029	0.035	0.021	0.024
Electricity	0.041	0.022	0.369	0.570	0.003	0.004	0.849	1.138	0.003	0.005	0.001	0.003
Total	0.027	0.023	0.433	0.448	1.000	1.000	1.000	1.000	1.000	1.000	0.433	0.448

Table E4: Relevant parameters for decomposition for explaining the change in the small business share of firms employing under 20 persons

	θ		α		ψ		λ		β		*Ei/N*	
	83-84	94-95	83-84	94-95	83-84	94-95	83-84	94-95	83-84	94-95	83-84	94-95
Mining	0.011	0.004	0.171	0.232	0.080	0.062	0.561	1.187	0.019	0.014	0.003	0.003
Manuf	0.024	0.016	0.388	0.468	0.294	0.238	0.930	1.085	0.241	0.174	0.094	0.082
Const.	0.024	0.022	0.873	0.922	0.083	0.084	1.069	1.061	0.078	0.083	0.068	0.076
Whole	0.022	0.024	0.699	0.741	0.092	0.087	1.206	0.940	0.090	0.084	0.063	0.062
Retail	0.039	0.038	0.668	0.600	0.119	0.120	1.192	0.985	0.205	0.191	0.137	0.114
Accom	0.046	0.047	0.809	0.712	0.029	0.035	1.169	0.923	0.056	0.064	0.045	0.046
Trans	0.021	0.017	0.706	0.726	0.063	0.060	0.898	1.045	0.043	0.044	0.030	0.032
Finance	0.023	0.027	0.344	0.321	0.046	0.069	0.988	0.586	0.038	0.046	0.013	0.015
Property	0.023	0.022	0.756	0.750	0.101	0.129	1.115	1.016	0.096	0.122	0.073	0.091
Education	0.035	0.031	0.612	0.563	0.015	0.020	0.933	0.990	0.018	0.026	0.011	0.015
Health	0.039	0.040	0.623	0.563	0.044	0.053	0.973	0.968	0.060	0.087	0.038	0.049
Cultural	0.035	0.031	0.806	0.722	0.017	0.021	1.082	0.983	0.023	0.026	0.019	0.019
Personal	0.055	0.050	0.872	0.830	0.015	0.018	0.982	0.913	0.029	0.035	0.026	0.029
Electricity	0.041	0.022	0.440	0.671	0.003	0.004	0.849	1.138	0.003	0.005	0.001	0.003
Total	0.027	0.023	0.620	0.636	1.000	1.000	1.000	1.000	1.000	1.000	0.620	0.636

Table E.5: Decomposition of changes accounting for the increase in the non-farm private employment share of small business between 1983–84 and 1994–95

Firm size categories	*Total change in SB share*	*Due to changing SB shares within sectors*	*Due to changing employment requirement coefficients*	*Due to changing nominal value added shares*	*Due to changing relative prices*	*Interaction term*
	ΔS	$\Delta\alpha$	$\Delta\theta$	$\Delta\psi$	$\Delta\lambda$	ε
	%	%	%	%	%	%
Under 20	1.50	-0.01	1.92	1.30	-2.10	0.39
Under 100	1.58	0.14	2.09	1.49	-2.23	0.08

Source: Appendix E.

Accordingly, the change in the small business share of total employment can be broken down into components representing:

- the changing importance of the public sector, $(\phi_{83\text{-}84} - \phi_{94\text{-}95})\, B_{83\text{-}84}/NF_{83\text{-}84}$;
- the changing importance of agricultural employment, $(\zeta_{83\text{-}84} - \zeta_{94\text{-}95})\, B_{83\text{-}84}/NF_{83\text{-}84;}$ and

- the changing share of small business in non-farm private employment, $\eta_{94\text{-}95}\Delta S$. This term can itself be broken down into the sectoral sub-components identified above.

In the report we use a number of different data sets relating to small business employment (from that reported by the ABS in the SEE, LFS, WEEDA and Cat 1321.0) and a number of different periods (fiscal years in chapter 4 but quarters in chapter 2). When bringing together the various methods for computing the sub-components underlying the change in the small business share, we need a consistent data set — we use the data in Cat. 1321.0 supplemented by some SEE and LFS data on agricultural and public sector employment (table E.6). Then, with these data, and the method described above, we can calculate the various sources of the change in the small business share (table E.7).

Table E.6: Data for calculation of sub-components of the change in the small business share

	Private non-farm employment					
	In firms <100	*In firms <20*	*Non-farm total*	*Public sector*	*Agriculture*	*Total*
	Persons	Persons	Persons	Persons	Persons	Persons
1983-84	2598.2	1814.8	4188.0	1656.1	406.0	6250.1
1994-95	3469.1	2444.6	5452.8	1591.9	404.4	7449.1

	$B_{<100}/E$	$B_{<100}/NF$	$B_{<20}/E$	$B_{<20}/NF$	η	ϕ	ζ
	%	%	%	%	%	%	%
1983-84	41.6	62.0	29.0	43.3	67.0	26.5	6.5
1994-95	46.6	63.6	32.8	44.8	73.2	21.4	5.4
Change	5.0	1.6	3.8	1.5	6.2	-5.1	-1.1

Table E.7: The sub-components of the change in the small business share[a]

Source of change	*Calculation*	*Under 20*	*Under 100*
Contraction in the share of public employment	$(\phi_{83\text{-}84} - \phi_{94\text{-}95})B_{83\text{-}84}/NF_{83\text{-}84}$	2.2	3.2
Contraction in the share of farm employment	$(\zeta_{83\text{-}84} - \zeta_{94\text{-}95})B_{83\text{-}84}/NF_{83\text{-}84}$	0.5	0.7
Increases in the sectoral share of property and business services	$(\Delta\beta_p \times \alpha_{p,83-84}) \times \eta_{94-95}$ where p is property & BS.	1.0	1.4
Increases in the sectoral share of health and community services	$(\Delta\beta_h \times \alpha_{h,83-84}) \times \eta_{94-95}$ where h is health & CS.	0.7	1.2
Other changes in the sectoral composition of private demand	$\sum_{i=1}^{k} (\Delta\beta_i \times \alpha_{i,83-84}) \times \eta_{94-95}$ where $i \neq p,h$	-0.4	-1.0
Reduction in the average size of manufacturing	$(\Delta\alpha_m \times \beta_{m,83-84}) \times \eta_{94-95}$ where m is manufacturing.	1.0	1.4
Increasing importance of supermarkets and chain stores	$(\Delta\alpha_r \times \beta_{r,83-84}) \times \eta_{94-95}$ where r is retailing.	-1.1	-1.0
Changes in the share of SB in other sectors	$\sum_{i=1}^{k} (\Delta\alpha_i \times \beta_{i,83-84}) \times \eta_{94-95}$ where $i \neq m,r$	0.1	-0.3
Other	$\sum_{i=1}^{k} (\Delta\alpha_i \times \Delta\beta_{i,83-84}) \times \eta_{94-95}$	-0.3	-0.6
Total change in the employment share of small business	ΔS	3.8	5.0

a All mnemonics are described in the text of the appendix, except β which is the employment share of a sector.

E.3 Manufacturing

Table E.8 presents recent statistics on broad manufacturing groups. In these statistics (based on manufacturing census data) size is defined in relation to establishments and not legal enterprises. [2]

The third column in table E.8 shows the ratio between the share of small business in turnover and its share in employment in each industry. The fourth column presents the corresponding ratios for large companies (ie above 100 employees).

[2] The difference between enterprise and establishment based manufacturing data in Australia is relatively small. In 1986–87, the ABS manufacturing census recorded 24 311 enterprises and 27 723 establishments.

The fact that small business is recording lower turnover to employment ratios in every industry (with the exception of clothing and footwear) is an indication of generally lower capital intensity and lower labour costs in small manufacturing establishments.

Table E.8: Small manufacturing establishments (under 100 employees)

Employment size group	*SB share in employment 1988-89*	*SB share in employment 1991-92*	*Turnover/ employment under 100 1991-92*	*Turnover/ employment over 100 1991-92*
	%	%		
Food, beverages and tobacco	32.4	33.8	0.85	1.08
Basic metal	15.6	18.3	0.78	1.05
Chemicals	33.7	35.0	0.63	1.20
Non-metallic minerals	45.8	49.2	0.91	1.09
Clothing and footwear	53.1	58.6	1.02	0.98
Textiles	38.9	41.4	0.95	1.03
Paper products and printing	46.7	49.7	0.77	1.23
Wood products and furniture	75.5	79.2	0.92	1.31
Fabricated metal products	66.9	75.2	0.92	1.24
Miscellaneous manufactures	61.6	68.2	0.90	1.21
Machinery and equipment	47.3	53.9	0.84	1.18
Transport equipment	20.9	24.8	0.62	1.12
Total manufacturing	44.5	48.3	0.74	1.25

a The third column represents the ratio of small business share in turnover to its share in employment in each sector. The corresponding ratio for large enterprise is shown in the fourth column.

Source: ABS Catalogue 8221.0.

The difference in this ratio between small and big establishments tends to be particularly large in capital intensive sectors like chemicals, paper products and transport equipment. Firm-size related wage premiums and the level of vertical integration of companies, which influence their value added to turnover ratios, are other explanatory factors.

Statistics from Australia, the UK and Japan from the late 1980s on the proportion of under 100 firms in manufacturing employment and on the ratio between the share of under 100 firms in sectoral value added over their share in sectoral employment is shown in table E.7. These ratios are similar to those between turnover and employment presented in table E.6, the only difference is that in the numerator turnover has been replaced by value added.

Table E.9: Manufacturing enterprises: small business employment shares and value added to employment ratios

	Proportion of small business (SB) in sector			The ratio between SB share in value added and the SB employment share		
	Australia	UK	Japan	Australia	UK	Japan
	1986-87	1989	1989	1986-87	1989	1989
	%	%	%			
Food, beverages, tobacco	21.1	15.2	61.7	0.67	0.66	0.78
Basic metals	7.7	12.3	34.4	0.49	0.77	0.64
Chemicals	16.7	11.2	29.4	0.83	0.58	0.65
Non-metallic minerals	23.4	17.3	70.1	0.59	0.80	0.80
Clothing and footwear	51.5	33.6	81.3	0.87	0.93	0.96
Textiles	26.9	21.8	70.2	0.82	0.92	0.91
Paper products and printing	35.8	35.2	66.0	0.70	0.86	0.69
Wood products and furniture	71.9	50.5	85.2	0.82	0.93	0.89
Fabricated metal products	63.6	42.7	75.0	0.87	0.90	0.86
Miscellaneous manufactures	43.9	36.0	68.3	0.73	0.85	0.78
Machinery and equipment	39.4	26.2	41.5	0.76	0.85	0.64
Transport equipment	18.5	8.2	25.9	0.73	0.64	0.35
Total manufacturing	34.8	25.2	54.8	0.68	0.76	0.67

Source: BIE (1992).

In terms of the proportion of small business in manufacturing employment, Australia was above the UK in every manufacturing sector with the exception of basic metals (iron and steel, aluminium, copper, etc). On the other hand, small business shares in Australia were consistently below those in Japan. The dominance of small business in most Japanese manufacturing sectors (with the exception of chemicals, machinery and equipment and transport equipment) calls into question the importance of economies of scale in many manufacturing activities, bearing in mind that Japan is widely regarded as a world leader in production efficiency.

The ratios between the share of small business in value added and its share in employment are in line with what is shown in table 4.3. Small business have both lower turnover/employment and value-added/employment ratios due to lower

average capital intensities in small manufacturing operations. It is interesting to note in table E.7 that the relative value-added to employment ratios tend to be lower in Japan than in the UK and Australia. This suggests that the tendency of small business to concentrate in less capital intensive areas of manufacturing is even more pronounced in Japan than in Australia and the UK.

E.4 Retail trade

International comparisons concerning very small enterprises (employing less than 10 persons) in wholesale and retail trade are shown in table E.10. The implications from these figures are discussed in section 4.4.

E.5 Overseas data on output and employment shares

Table E.11 presents data from the USA Bureau of Census on the share of small business in employment and sales in the USA in 1992.

These statistics show a similar pattern as the Australian data presented in table 4.3 in the text. Note, however, that differences in employment and sales shares tend to be more narrow in the USA than in Australia. Curiously, in a number of service sectors small business appears to be more capital intensive in both the USA and Australia. According to the statistics from both countries, small manufacturing firms tend to be much less capital intensive than large ones.

Aggregate European data on the distribution by firm size of employment and value added, of enterprises with more than 20 employees, are presented in table E.12.

Table E.10: The contribution of very small enterprises (<10 persons) in wholesale and retail trade

	Sector's share in employment	*Share of very small enterprises*			
		Employees	Self-employed[a]	Total employed	Turnover
	%	%	%	%	%
Retail trade					
Australia 1985-86	13	21	23	45	35
UK 1988	9	13	15	29	23
USA 1987	16	13	7	20	14
Japan 1988	11	45	16	61	49
Wholesale trade					
Australia 1981-82	5	11	12	23	18
UK 1988	11	na	18	na	na
USA 1987	4	17	7	24	20
Japan 1988	7	14	16	31	16
Total internal trade					
Australia 81-2, 85-6	19	18	20	39	28
UK 1988	20	na	17	na	na
USA 1987	20	13	7	21	17
Japan 1988	18	33	16	49	23

a With the exception of Australia, self-employed data for all other countries relate to 1990.

Source: BIE (1992).

Table E.11: The share of under 100 employee firms in employment and sales in the USA, 1992

	Share of employees	*Share of sales*	*Ratio of shares sales/employment*
	a %	b %	b/a %
Mining	27.4	21.0	76.5
Construction	75.9	71.1	93.7
Manufacturing	22.1	14.6	66.0
Transportation & utilities	25.3	14.3	56.4
Wholesale trade	51.2	49.5	96.7
Retail trade	43.5	45.9	105.5
Finance and real estate	30.9	17.9	58.0
Services	40.9	44.5	108.7
All industries	38.7	34.4	88.9

Source: 1992 US Bureau of Census Internet WAIS Statistics of US Business, Internet address: http://www.census.gov/ftp/pub/epcd/ssel_tabs/view/tab3.txt.

Table E.12: Distribution by firm size of employment and value added in European countries

	Small (20-99 employees)			*Medium (100-499 employees)*			*Large (500+ employees)*		
	EMP	*VA*	*VA/ EMP*	*EMP*	*VA*	*VA/ EMP*	*EMP*	*VA*	*VA/ EMP*
	%	%	%	%	%	%	%	%	%
Germany/1981	14.7	12.5	85.0	24.6	22.5	91.5	60.7	65	107.1
France/1983	20.2	18	89.1	27.1	23.3	86.0	52.7	58.7	111.4
Italy/1983	31	29.1	93.9	27.6	27.9	101.1	41.9	43	102.6
Netherlands/83	28.2	23.3	82.6	32.5	31.7	97.5	39.2	44.9	114.5
Belgium/1983	20	15.1	75.5	28.1	25.8	91.8	52.5	59.1	112.6
UK/1983	14.9	11.1	74.5	15.7	13.8	87.9	69.4	75	108.1

Source: Dunne and Hughes (1992).

APPENDIX F: JOB QUALITY INDICATORS

F.1 International comparisons of relative wages

Table F.1: Average private wage level by enterprise size as a percentage of the wage level in the highest employer size category

Country	*Year*	*Size groupings*				
Australia		*1-20*	*20-49*	*50-99*	*100+*	
	1994	80.7	91.2	94.5	100.0	
	1987	83.1	90.2	94.9	100.0	
Japan		*5-29*	*30-99*	*100-499*	*500+*	
	1993	59.9	68.8	82.4	100.0	
	1986	59.7	70.4	80.9	100.0	
USA		*1-99*	*100-499*	*500+*		
	1983	57.0	73.8	100.0		
USA (establishments)		*<20*	*20-99*	*100-499*	*500+*	
	1992	66.4	67.1	76.6	100.0	
	1980	65.3	67.7	76.6	100.0	
New Zealand		*2.5-9.5*	*10-99.5*	*100+*		
	1995	77.4	85.6	100.0		
	1989	78.2	87.6	100.0		
Selective European		*10-99*	*100-499*	*500+*		
France (manufg)	1978	82.9	86.3	100.0		
Germany (manufg)	1978	89.7	92.2	100.0		
Italy (manufg)	1978	85.4	92.7	100.0		
UK		*1-99*	*100-499*	*500+*		
	1986	83.2	92.8	100.0		
Specific UK		*25-49*	*50-99*	*100-499*	*500-999*	*2000+*
UK semi skilled	1980	76.0	86.0	85.0	94.0	100.0
UK skilled	1980	82.0	88.0	86.0	95.0	100.0
UK clerical	1980	82.0	86.0	87.0	89.0	100.0
UK middle management	1980	82.0	85.0	85.0	92.0	100.0

Source: Unless otherwise stated the source is ILO (1990), Australian data from ABS Catalogue 1321. Japanese data from MITI (1994). New Zealand estimates from Statistics New Zealand (1995). UK (1986) estimates are taken from Main and Reilly (1993) article. American wages by establishment size from US Bureau of Census (1996).

F.2 Data from the SEE survey

The SEE does not report estimates of weekly or hourly earnings but it reports the total wage bill by firm size and sector. Average wages can be estimated by dividing the total wage bill by the total number of employees. These estimates on wage relativities are not entirely consistent with the data from the ABS survey on the distribution and composition of employee earnings and hours (DCEEH) shown in figure 5.1.

The SEE reports lower relative wages in small business than the data in the DCEEH. One reason for the difference between the two surveys is that the DCEEH data cover only full-time adult non-managerial employees, while the SEE covers all categories combined (that is full-time and part-time workers, adults and juniors, managerial and non-managerial staff). Evidently the lumping of all categories together provides a less reliable picture about wage relativities than the comparison of less diverse groups.

Despite the deficiencies of the SEE in regard to wages, in order to disclose to the reader all the limited information available, we present two summary tables derived from the SEE on wages. Table F.2 presents data on sectoral distribution.

Table F.2: Relative wage level in major private industry groups in 1995

	Compared to wage level in 100+ firm category			*Compared to private all industries average*		
Number of employees	*1-19*	*20-99*	*>100*	*1-19*	*20-99*	*>100*
	%	*%*	*%*	*%*	*%*	*%*
Mining	60.5	75.9	100.0	133.9	168.0	221.4
Manufacturing	63.4	76.5	100.0	86.4	104.2	136.2
Infrastructure related	53.4	72.3	100.0	85.6	115.8	160.2
Construction	52.5	72.8	100.0	91.4	126.7	174.2
Wholesale & retail	102.7	141.9	100.0	77.0	106.3	74.9
Transport	52.8	73.5	100.0	85.2	118.6	161.4
Business services	69.5	93.1	100.0	98.6	132.2	141.9
Community services	98.4	98.7	100.0	84.7	84.9	86.0
Personal services	62.8	85.8	100.0	52.0	71.1	82.9
All industries	72.3	91.6	100.0	81.6	103.4	112.9

Source: ABS Catalogue 6248.0 (SEE).

In the first part of the table, the average wage level of smaller firms is compared with that of the 100+ size category. The figures clearly indicate significantly lower wages in smaller firms with the exception of wholesale and retail trade.

The second part of the table compares the average wage level in each firm size category and industry with the all industries non-farm private sector average.

Suitable information from the SEE on wages is available since 1986. Table F.3 presents time series data on relative wages between 1986 and 1995.

Table F.3: Relative wage level by firm size between 1986 and 1995

	Compared to wage level in the 100+ size category			*Compared to private all industries average*		
Number of employees	*1-19*	*20-99*	*>100*	*1-19*	*20-99*	*>100*
	%	*%*	*%*	*%*	*%*	*%*
1986	72.6	91.0	100.0	81.6	102.3	112.4
1987	72.7	91.2	100.0	81.7	102.5	112.4
1988	73.3	90.8	100.0	82.4	102.0	112.3
1989	74.5	93.7	100.0	82.5	103.9	110.9
1990	73.1	89.9	100.0	82.2	101.0	112.4
1991	73.3	89.0	100.0	82.9	100.6	113.0
1992	73.8	90.1	100.0	83.6	102.0	113.3
1993	74.5	89.8	100.0	84.1	101.4	113.0
1994	74.6	93.7	100.0	83.1	104.4	111.4
1995	72.3	91.6	100.0	81.6	103.4	112.9
In equivalent units						
1986	77.0	93.6	100.0			
1995	74.8	92.2	100.0			

Source: ABS Catalogue 6248.0 (SEE) and unpublished data.

The trend of wage relativities from the SEE does not track well the declining trend of the under 20 group shown in figure 5.2 (based on the DCEEH survey). However, a declining trend becomes evident when average wages are calculated by dividing the total wage bill by the equivalent number of employees based on the analysis in section 2.2 (table 2.1). This is shown in the bottom part of table F.3. By using equivalent units we offset to some extent the effect of part-time work on average wages and the result can be regarded as a proxy to the average hourly wage rate.

F.3 Survey of major labour costs

Another source of information on wage relativities comes from the ABS survey of major labour costs. The latest survey results are from 1993–94. They are presented in table F.4.

Table F.4: Labour costs by firm size and industry, 1993–94

1993–94	*Compared to wage level in the 100+ category*			*Compared to private all industries average*			
	< 20	*20-99*	*100+*	*< 20*	*20-99*	*100+*	*Total*
Relative earnings	*%*	*%*	*%*	*%*	*%*	*%*	*%*
Mining	52.3	77.9	100.0	121.6	181.3	232.5	215.7
Manufacturing	65.0	81.4	100.0	88.0	110.2	135.3	119.9
Electricity, gas, water	54.2	67.0	100.0	85.6	105.8	157.9	144.2
Construction	57.6	95.8	100.0	92.4	153.6	160.3	113.8
Wholesale trade	77.7	90.7	100.0	110.5	129.0	142.3	124.2
Retail trade	92.3	111.0	100.0	61.6	74.1	66.7	65.9
Accommodation, cafes	76.5	91.3	100.0	54.6	65.3	71.5	63.3
Transport and storage	49.8	69.2	100.0	79.9	110.9	160.4	118.8
Communication services	44.6	78.7	100.0	70.2	123.9	157.4	117.3
Finance and insurance	86.6	131.5	100.0	127.1	192.9	146.7	145.9
Property and business	72.9	71.7	100.0	99.5	97.8	136.4	106.6
Education	61.2	119.6	100.0	55.3	108.1	90.4	88.5
Health and community	118.7	93.9	100.0	93.9	74.3	79.1	83.6
Cultural and recreational	56.6	23.9	100.0	58.9	24.9	104.2	55.4
Personal and other services	73.8	84.3	100.0	81.8	93.4	110.8	91.4
Total 1993–94							
Earnings	74.2	82.9	100.0	85.5	95.4	115.2	100.0
Other labour costs	50.8	71.0	100.0	67.1	93.7	132.1	100.0
Total major labour costs	71.3	81.4	100.0	83.4	95.3	117.1	100.0
Total 1990–91							
Earnings	76.8	91.9	100.0	85.2	101.9	110.9	100.0
Other labour costs	54.0	80.5	100.0	67.7	101.0	125.5	100.0
Total major labour costs	74.1	90.6	100.0	83.3	101.8	112.4	100.0
Total 1985–86							
Earnings	75.5	88.1	100.0	83.2	97.0	110.2	100.0
Other labour costs	39.8	63.4	100.0	52.9	84.2	132.8	100.0
Total labour costs	71.7	85.4	100.0	80.5	95.9	112.2	100.0

Source: ABS Catalogue 6348.0.

According to these data, relative wages in the under 20 group increased from 1985–86 to 1990–91 and then decreased to 1993–94. There has been a more significant fall in the relative wage level of the 20-99 group from 1990–91 to 1993–94.

Small business pays substantially less labour on-costs than large business. The main reason for the difference is the much lower payroll tax burden on firms with less than 20 employees. The difference between the percentage on-costs in small and large firms has narrowed down between 1986–87 and 1993–94 as shown in table F.5. The principal reason for this trend has been the marked increase in superannuation contributions by small firms.

Table F.5: The composition of labour costs in the private sector by firm size

	Less than 20	*20-99*	*100+*	*Total*
1993-94	*%*	*%*	*%*	*%*
Earnings	91.0	89.0	87.3	88.8
Other labour costs	9.0	11.0	12.7	11.2
Superannuation	6.0	4.7	4.4	4.9
Payroll tax	0.8	3.7	5.1	3.5
Workers compensation	1.5	1.9	2.1	1.9
Fringe benefits tax	0.7	0.8	1.1	0.9
1990-91				
Earnings	91.0	89.5	88.1	89.3
Other labour costs	9.0	10.5	11.9	10.7
Superannuation	5.7	3.3	3.6	4.1
Payroll tax	0.7	4.0	5.1	3.6
Workers compensation	1.9	2.3	2.3	2.2
Fringe benefits tax	0.7	0.9	1.0	0.9
1986-87				
Earnings	92.5	90.3	88.8	90.1
Other labour costs	7.5	9.7	11.2	9.9
Superannuation	3.6	2.5	3.1	3.1
Payroll tax	0.9	4.1	4.8	3.6
Workers compensation	2.5	2.5	2.7	2.6
Fringe benefits tax	0.5	0.6	0.7	0.6

Source: ABS Catalogue 6348.0 (various issues).

F.4 The self-employed

Comparison of the gross (pre-tax) income of the self-employed relative to wage and salary earners is shown in table F.6. Both the gross income of self-employed and those of employees are taken from the 1991 Population Census.

The finding that the average pre-tax income level of the self-employed is below that of wage and salary earners was unexpected. One possible explanation is that the self-employed are deducting from their reported incomes various work-related expenses that are not deducted from the earnings of wage and salary earners. Another reason is that 1991 was a year of recession and a lean income year for the self-employed as shown in table F.7.

Table F.6: Gross (pre-tax) income of self employed compared to the gross income of wage and salary earners in the private sector[a]

	% of the average gross income of employees
Occupations	
Managers & Administrators	74.5
Professionals	81.8
Para-Professionals	87.3
Tradespersons	93.2
Clerks	84.2
Salespersons & Personal Services	94.2
Machine Operators & Drivers	100.9
Labourers & Related Workers	101.2
Inadequately Described	83.6
Industry	
Manufacturing	76.8
Construction	82.7
Wholesale and retail trade	78.2
Transport, storage	87.5
Finance, property	88.8
Community services	84.8
Personal services	84.9
Industry not stated	91.8
Total non-farm	86.8

a In each category average gross earnings of self-employed reported in the census are compared with the gross earnings of wage and salary earners reported in the census.

Source: Unpublished data from the ABS based on the 1991 Census of Population.

Table F.7 illustrates the time trend in the average income of self-employed inferred from the national accounts. The national accounts (ABS Catalogue 5204.0, table 51) reports amongst other items household income from unincorporated non-farm enterprises. Dividing this by the total number of self-employed (table B.1) yields an estimate of net business income per self-

employed person. These estimates, expressed in constant 1994–95 prices, are presented in the first column of table F.7.

Judging by household income from non-farm unincorporated enterprises, the average real income of the self-employed declined significantly from 1983–84 until 1990–91, but subsequently recovered to the level recorded in 1983–84. But even though real unincorporated income per person did recover, it has lagged behind the growth in wages. The second column reports average weekly earnings of full-time employees in constant 1994–95 prices. There has been a much greater rise in inflation adjusted wages than in average unincorporated business income per self-employed person. The third column reports the ratio between the first two columns expressed in index terms, with the 1983–84 ratio representing the base index of 100 per cent.

Table F.7: Estimated average income per person from non-farm unincorporated enterprises

	Unincorporated income per person	*Average weekly wages of full time employees*	*Index of unincorporated income over wages*
	1994-95 constant prices $ 000s	*1994-95 constant prices $ 000s*	*1983-84 base=100 %*
1983-84	24.0	563	100.0
1984-85	23.3	572	95.5
1985-86	23.7	572	97.0
1986-87	21.8	566	90.3
1987-88	21.8	565	90.4
1988-89	22.2	567	91.7
1989-90	20.3	558	85.1
1990-91	18.6	565	77.0
1991-92	20.8	578	84.2
1992-93	23.5	605	91.1
1993-94	24.9	619	94.0
1994-95	24.8	630	92.1

Source: ABS Catalogue 5204.0 and Catalogue 6310.0.

The trend of the index indicates that the average income of self employed persons declined relative to that of wage and salary earners by 4 to 8 per cent between 1983–84 and 1994–95. As discussed earlier, a more moderate trend of declining relativities has been observed in respect to the average wage level in small firms compared to large ones.

F.5 Labour stability

One index of labour stability is the number of employees who have been with their current employer for a certain number of years. The AWIRS presents data on the percentage of employees who worked in the same establishment for more than five years. The data has been dissected by employer size, which in this survey is the size of the establishment rather than the enterprise. These data are presented in table F.8.

Taking the mid point percentages in each category, that is 0, 12.5, 37.5 and 75 per cent, and multiplying it by the respective frequencies we obtain the estimated average proportion of employees with more than five years tenure. These estimates are shown in the last column. They indicate a negative relationship between length of job tenure and establishment size.

Given that smaller establishments tend to be younger than larger ones, due to the high rate of entries and exits in the small business area, it is not surprising that they have on the average a lower proportion of employees with over 5 years tenure. The small differences by establishment size in table F.8 suggests that there is a strong possibility that average length of tenure in small establishments which operate for many years may be higher than in large workplaces.

Table F.8: Percentage employed for more than 5 years

	0%	*1-25%*	*26-50%*	*Above 50%*	*Average*
Employer size	*%*	*%*	*%*	*%*	*%*
5-19	14	21	36	29	37.9
20-49	5	47	22	26	33.6
50-99	3	42	30	25	35.2
100-199	35	43	22	40	43.6
200-499	3	24	41	33	43.1
500+	2	21	43	34	44.3

Source: Department of Industrial Relations (1991).

Comparison of aggregate Australian and overseas data on job tenure (not dissected by firm size) is presented in table F.9. These indicators show that Australia has a shorter average tenure length than other OECD countries with the exception of the USA and Netherlands. The greater importance of small business in our country might be a contributing factor to the low level of employment stability.

Other data from the same article on job tenure and employee training by establishment size in the US and Japan, are presented in table F.10.

Table F.9: Job tenure in OECD countries, 1991

Country	*Average tenure*	*Median tenure*	*Employed with tenure of less than one year*
	years	*years*	*%*
Australia	6.8	3.5	21.4
Canada	7.8	4.1	23.5
Finland	9.0	5.2	11.9
France	10.1	7.5	15.7
Germany[a]	10.4	7.5	12.8
Japan[a]	10.9	8.2	9.8
Netherlands[a]	7.0	3.1	24.0
Norway[a]	9.4	6.5	na
Spain[a]	9.8	6.3	23.9
Switzerland	8.8	5.0	na
United Kingdom	7.9	4.4	18.6
United States	6.7	3.0	28.8
Median OECD	8.7	5.4	18.3

a Data for Germany, Japan and the Netherlands relate to 1990, for Norway data relate to 1989 and for Spain 1992.

Source: OECD (1993).

Table F.10: Incidence of formal enterprise training and tenure by establishment size

	Number of employees in the establishment			
	25-99	*100-499*	*500-999*	*1000+*
Japan 1989				
Per cent of employees who received formal company training	59.5	75.5	83.0	89.5
Average tenure (years)	6.9	10.2		13.7
Per cent of employees with less than one year tenure	11.2	8.4		5.1
United States 1991				
Per cent of employees who received formal company training	10.6	13.2	18.4	26.2
Any kind of training	34.5	41.9	47.7	52.2
Average tenure (years)	5.4	6.8	7.0	8.4
Per cent of employees with less than one year tenure	25.2	18.4	16.4	15.5

Source: OECD (1993).

F.6 The job satisfaction survey

Table F.11 presents a summary of results from an opinion survey conducted by Van den Heuvel and Wooden (1995). In this opinion survey, satisfaction was measured on a 5-point scale ranging from very satisfied to very dissatisfied. Due to relatively few respondents replying that they were dissatisfied or very dissatisfied to the various job satisfaction measures, these two categories were combined with the neutral category in table F.11.

The central problem with this kind of opinion survey is that job satisfaction is personal and subjective and is not entirely related to properties of the job itself. Satisfaction with job will often depend on personality and general mood. It will be also influenced by opinions and sentiments in the social environment. These factors can lead to some paradoxical results. For example, OECD (1996a) cites a Dutch opinion survey which found that employees working in large firms were less satisfied with their salaries than employees in small ones, even though their pay was considerably higher. Similar perceptual biases might have affected also the survey results presented in table F.11.

Table F.11: Ratings of job satisfaction

Satisfaction with	*Wage and salary earners*	*Self-employed contractors*	*Other self-employed*
Job security	*%*	*%*	*%*
Very satisfied	36.6	24.8	28.3
Satisfied	40.5	35.1	38.3
Neutral or dissatisfied	22.9	40.1	33.4
Income			
Very satisfied	17.0	13.1	16.3
Satisfied	49.2	44.0	34.8
Neutral or dissatisfied	33.8	42.9	48.9
Control over how work is performed			
Very satisfied	31.3	44.7	43.2
Satisfied	45.5	39.1	39.4
Neutral or dissatisfied	23.2	16.2	17.4
Hours worked			
Very satisfied	18.9	25.9	21.1
Satisfied	54.3	45.6	36.6
Neutral or dissatisfied	26.8	28.5	42.3
Job overall			
Very satisfied	29.8	38.6	33.8
Satisfied	50.5	42.4	42.8
Neutral or dissatisfied	19.7	19.0	23.4

Source: Van den Heuvel and Wooden (1995).

APPENDIX G: PUBLIC OUTSOURCING

As indicated in table E.6, the share of public employment in national employment fell by 5.1 percentage points between 1983–84 and 1994–95. This contraction was offset by an increase in the share of the non-farm private sector. The decline in employment in the public sector, ceteris paribus, meant that the under 20 size category increased its share of national employment by 2.2 per cent and the under 100 category by 3.2 per cent (table E.7).

These estimated increases in the small business shares are simply based on mechanistic allocations described in section E.2. When we come to examine directly the impact of the contraction in public employment on SME employment, there is little information to rely on.

Briefly, the decrease in public employment was driven by four main factors: tighter budgets, improved efficiency, outsourcing and privatisation. Of these, outsourcing has the most significant direct impact on small business formation and expansion. So far there has been no systematic research carried out to estimate quantitatively the effect of public outsourcing on small business development. But some relevant information is available from the Industry Commission (1996a) report on competitive tendering and contracting in public agencies.

The IC (1996a) estimated that the value of services contracted by public agencies was at least $13 billion per year. [1] This figure represents around 3 per cent of GDP and by implication also around 3 per cent of national employment.

Data presented in IC (1996a) show a very sharp increase in the number of services contracted for the first time in the last 8 years. Other information sources such as CTC (1993, 1994 and 1995) also suggest a sharp increase in public outsourcing by state governments in recent years. On the basis of this information and a discussion with Professor Domberger from the CTC, it seems plausible that the value of public outsourcing has at least doubled and possibly even tripled in real terms between 1983 and 1995. This implies that during this period the 5 per cent contraction in the share of public employment has been offset by between a 1.5 and 2 per cent increase in the share of private employment from contracted public work.

[1] Public agencies refer to the three layers of government at the Federal, State and local council levels.

Some indirect information can be used to estimate the share of small business from public work contracted to the private sector. According to a detailed classification in CTC (1995) of service categories contracted by the NSW Government, the dominant categories are: transport services, property management, cleaning, building and equipment maintenance, information technologies, medical and waste management services. [2] From discussion with Professor Domberger and officers involved in the IC (1996a) report, it appears that the provision of most of these services tends to be dominated by companies with more than 20 employees and often with more than 100 employees. The reliance of public agencies on larger contractors is motivated by considerations related to the organisation of work and by the desire to ensure high reliability in the provision of contracted services. From the limited information available it appears that firms employing less than 20 persons and self-employed persons account for between 25 and 40 per cent of the work contracted out by public agencies. Firms with less than 100 employees probably account for between 35 and 55 per cent of outsourced public work.

Assuming that 1.7 per cent of the national labour force is engaged in publicly outsourced work that was created after 1983, then we can calculate the net contribution to the employment share of small business using the estimates mentioned in the previous paragraph.

Table G.1: Net contribution to small business employment of public outsourcing

	Public work awarded	*Share of national employment*
Under 20 category	25–40%	0.4–0.7%
Under 100 category	35–55%	0.5–0.9%

In regard to privatisation it seems unlikely that it led *directly* to the formation of much new business in the under 20 category, but there is little substantive information to provide even crude estimates of its overall effects on the size distribution of employment.

[2] There is also a large category of unspecified contract staff representing temporary staff who are working as contractors rather than employees in the public service. In the less detailed dissection of contracted services in table D.3 in IC (1996), contracted staff represents the dominant category.

APPENDIX H: THE RECRUITMENT SURVEY

A small preliminary survey of recruitment was conducted in August 1996. Because the sample size is small, any estimates may be subject to considerable sampling variability. Even so, if tentatively used, the estimates may be useful.

For the purpose of this survey we prepared a list of firms to approach from five broad industry groups (construction, manufacturing, retail and wholesale, transport and others). We selected the members of each group at random from the Yellow Pages listings on the Internet. We restricted respondents to firms that employed less than 100 persons and were independent small businesses, ie franchisees and off-shoots of larger companies were excluded.

A copy of the short questionnaire is presented at the end of this appendix. Information was sought on the size of the firm (in terms of the number of employees), the age of the firm, and whether the firm had attempted to recruit in the last 12 months. Those firms that had recruited were then asked the occupations of the recruits, the method of recruitment used and of problems they may have encountered. In addition all firms were asked to rank their perceptions of recruitment difficulties on a scale of 1 to 5 (in a continuum of rising difficulty). In the majority of instances the survey was answered by the owner and/or manager of the firm.

Out of the 102 respondents, 52 firms recruited a total of 84 new employees in the previous twelve months. Looking just at the *recruiting* firms, an average of 27 per cent of total employment was recruited. The size and age of firm *appear* to be important factors in influencing recruitment behaviour as shown in table H.1.

The proportion of recruits to total employment falls consistently as firm size increases. This is in line with the findings discussed in chapter 3 which indicate a negative relationship between job turnover and firm size.

We found that the proportion of employees recruited in the last year tends to be higher in younger firms. Given a general positive correlation between firm size and firm age this is not a surprising result.

Table H.2 summarises the survey findings about recruitment methods. Informal channels were used most often. Press advertisements, approaches by recruits to firms and the Commonwealth Employment Service (CES) were next. Private recruitment agencies and 'other' methods were used substantially less often.

Looking at the method of recruitment by the age of the firm (table H.3) did not reveal any marked deviations from this general pattern. There were, however,

some observable size effects on the method of recruitment chosen. For the smallest firms, informal channels and direct approaches were the most frequently used methods. In the case of the larger firms (in the 20-99 category) press advertisements were the most popular method. The CES was the second most frequently chosen option.

The required skill level of the recruit appears to influence the method of recruitment chosen. Press advertisements are used as often as informal methods for highly skilled recruits. This is nearly twice as often as they are used for lowly skilled recruits. The rise in press advertisements is reflected in a decline in the relative importance of direct approaches by recruits. In the case of low skill recruits, informal channels remained the most popular. Direct approaches to firms and the CES were also important methods of recruitment.

Intuitively these are not surprising observations. Low skill positions can typically be filled quite easily without having to resort to more formal, costly and involved, methods of recruitment. The greater demand for specific skills, knowledge and experience in the high skill positions would often necessitate the broader coverage afforded by the more formal channel of press advertisements.

The firm's age did not appear to significantly affect the ratio of problems to recruitments (table H.4). However, the required skill of the recruit appeared to have a significant influence. Those firms that were looking for higher skill recruits reported, on average, twice as many problems as firms recruiting less skilled workers.

Table H.1: Distribution of sample by firm size, age and industry

	Number of firms	*Proportion of firms that recruited in last 12 months (%)*	*Average proportion of total employment recruited (%)*[a]
Firm size (No of employees)			
1 - 4	64	34	42
5 - 19	27	74	36
20 - 99	11	100	18
Total	102	52	27
Age of firm (in years)			
< 3	23	43	51
3 - 6	21	52	36
> 6	58	55	21
Total	102	52	27
Industry group			
Construction	22	41	34
Manufacturing	21	52	18
Retail and wholesale	21	48	46
Transport	19	63	38
Other private sector	19	58	23
Total	102	52	27

a Recruiting firms only. The proportion of firms recruitin g in the past 12 months is measured relative to the full sample of firms. However, the average proportion of recruitment to total employment is measured by taking total recruitment and dividing it by total employment of recruiting firms for each sub-group.

Source: IC survey data.

Table H.2: Method of recruitment chosen

Method of recruitment	*Frequency*	*Share (%)*
Recruit approached firm	17	20
Informal channels	26	31
CES	17	20
Private recruitment agency	3	4
Press advertisement	18	21
Other	3	4
TOTAL	84	100

Source: IC survey data.

Table H.3: Method of recruitment by size, age and skill type

	Recruit approached firm	*Informal channels*	*CES*	*Private recruitment agency*	*Press advert*	*Other*	*Total*
	%	%	%	%	%	%	%
By firm size							
1 - 4 emp.	28	34	17	0	14	7	100
5 - 19 emp.	15	36	18	6	21	3	100
20 - 99 emp.	18	18	27	5	32	0	100
By age							
< 3 years	12	29	24	0	24	12	100
3 - 6 years	25	50	13	0	13	0	100
> 6 years	22	25	22	6	24	2	100
By skill[a]							
High skill	16	29	18	5	29	3	100
Low skill	24	33	22	2	15	4	100

a For the purpose of this analysis each recruiting firm has been identified as either a high skill or a low skill recruiter. We used the following rule to assign the firms to the two categories. First we calculated the proportion of high skill recruits to total recruits and sorted the data accordingly. All firms for which this ratio was zero were categorised as low skill, the remaining firms were high skill.

Table H.4: Problems per recruiting firm by age, skill type, industry and recruitment method

	Number of problems	*Number of recruiting firms*	*Problem / firm ratio*
Age (years)			
< 3	13	10	1.300
3 - 6	12	11	1.091
> 6	40	32	1.250
Total	65	53	1.236
Skill			
High	44	26	1.692
Low	21	27	0.778
Total	65	53	1.236
Sector			
Construction	11	9	1.222
Manufacturing	19	11	1.727
Retail and wholesale	10	10	1.000
Transport	14	12	1.167
Other private sector	11	11	1.000
Total	65	53	1.236
Recruitment method			
Recruit approached firm	16	17	0.94
Informal channels	23	26	0.88
CES	37	17	2.17
Private recruitment agency	7	3	2.33
Press advertisement	43	16	2.69
Other	0	3	0
Total	126	84	1.50

QUESTIONNAIRE FOR THE RECRUITMENT SURVEY

Business: _____ **Phone:** _____

Sector: _____ **Sub-group:** _____

Q1. How many people does the business employ? ___

Q2. How long have you owned/managed this business? ___

Q3. Have you attempted to hire new employees in the last 12 months? ___
(If **YES,** go on to next question. If **NO**, go to Q8.)

Q4. How many people did you hire over the last 12 months? ___
(If **'0'** please go to Q7.)

Q5. Of these, how many were:

- professional or managerial staff? ___
- technical, craft or skilled staff? ___
- clerical, administrative or sales staff? ___
- semi-skilled or unskilled labourers? ___
- staff belonging to another category?. ___

Please describe this category _____

Q6. How did you go about getting these people:

- they approached you? (Q7 NA here) ___
- was this in response to a sign in the window? ___
- had these people heard that you were looking for someone? ___
- through informal networks such as family and friends, clients and business contacts? ___
- from the CES? ___
- from private recruitment agencies? ___
- through press advertisements? ___

If you used other sources for recruitment, could you please describe them and give the number of people you recruited by these methods? _____

Q7. Did you have any problems in getting suitable applicants? For example:

- Did you get any applicants? YES / NO
- Were any of the applicants suitable? YES / NO
- Was lack of experience or qualifications a problem? YES / NO
- Other problems, please describe _____

Q8. Thinking of any difficulties currently facing the business, on a scale of 1 to 5, where 5 represents a "significant problem" and 1 represents "no problem at all", how significantly do you rate recruitment issues?

1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

Contact name: _____

APPENDIX I: SIZE DETERMINANTS

I.1 Benefits from bigness

The traditional production function model (see BIE, 1988 and IAESR, 1994) sheds some light on the factors determining the distribution of firm sizes. The theory asserts that, in certain production processes, technical conditions will arise which favour large scale production units to reduce labour, energy or material costs. Usually the limitations on scale are imposed by transport, access and congestion problems which tend to increase with size, and by management and industrial relations problems encountered in running a large organisation on one site.

The large production unit model fits well a number of industries in manufacturing and mining. Examples include integrated steel mills and other metal smelting facilities, oil refineries, chemical plants, power stations, shipyards and other heavy industry.

Large scale production is also important in certain assembly operations. Such operations usually can be split up into a number of sub-units (so called workstations). It is often economical to keep a series of workstations on one site in order to minimise transport costs and to facilitate coordination. Once again congestion and management problems will impose a constraint on the optimal size of the assembly plant. Mass production assembly plants can be found in the automotive, whitegoods and electrical industries.

Whilst large scale establishments which benefit from economies of scale in production are present in many industries, in practice the size of the most efficient production unit is only one factor among many that will determine firm size. There are many corporations which control a large number of separate production units. Moreover, large corporations can be found in industries where the direct 'production' process does not require particularly large establishment sizes, like retailing, banking and processed food, to name a few examples. Neither does classical production theory provide an adequate explanation for the coexistence of large and small firms within the same industry.

One explanation is that, in addition to economies of scale, the firm can benefit from larger size by gaining 'economies of scope' from a broader range of goods and services in production or marketing. But there is more to it than this. In order to gain a better understanding about the factors determining firm size we have to

look beyond the direct production process into overhead costs. Major indirect factors that tend to favour large enterprises include:

- the acquisition of firm-specific knowledge;
- brand name and marketing;
- transaction costs; and
- finance and risk spreading.

Firm-specific knowledge

The acquisition of firm-specific knowledge refers to tacit knowledge held by some members of the firm on technologies and/or markets which provides a competitive advantage to the enterprise. For commercial reasons the firm will endeavour to keep this knowledge out of the public domain and prevent its leakage to competitors. In practice, information flows through personal contacts, inter-firm movements of staff and reverse engineering are difficult to prevent. Nonetheless, firm-specific knowledge is one of the most important competitive tools in industrial markets.

Research and development (R&D) is the common method used by companies to acquire knowledge about state-of-the-art technologies or to develop new technologies. In many cases R&D cannot be carried out in small amounts. Often a minimum 'critical mass' is required in order to obtain commercially useful innovative results. In industries like aerospace, nuclear technologies or telecommunications, the minimum critical mass can be very large and the same applies to many projects in other industries. Such a big investment in R&D has to be defrayed through a large volume of sales. Not surprisingly, R&D intensive sectors are dominated by large transnational corporations. This applies to sectors like aircraft, computers, telecommunications equipment and pharmaceuticals. Medium R&D intensive industries like cars, chemicals and electrical equipment are also controlled by large corporations due to the combined benefits of scale of large plants and R&D. However, in some high technology niche markets in medical and scientific instruments, machine building, software development and electronic components, small producers can compete in the market because the minimum critical mass of R&D needed for commercially successful innovations may be relatively small.

In general terms, the requirement for firm-specific knowledge, whether on markets or technologies, tends to favour larger enterprises, given that they are able to spread the fixed cost of acquiring the information or knowhow over a large volume of sales. Large enterprises usually have a technocratic layer of engineers, scientists, accountants and marketing experts whose main function is to obtain and process information for the benefit of the company. Better acquisition and processing of information provides a competitive advantage, not

only to R&D intensive companies, but also to large banks, finance companies, retailers, wholesalers and the like.

Brand name and marketing

Marketing is another factor that favours large firms. Establishing a strong brand name requires a large investment in advertising and promotion that few small enterprises can afford.

Moreover, scale by itself can ensure a greater influence in oligopolistic markets, which in turn can lead to higher profitability and better chances of survival in the long run. Large companies will often branch out in order to obtain better control and more information on consumer or supplier markets. Strong brand name and market control can explain why an industry like processed food, which does not require large production units and is not highly R&D intensive, is dominated in many product lines by large multinational corporations. Brand name is also important in service industries like media, banking, insurance, tourism and retail trade.

Large companies are better geared to offer a wide range of goods and services than smaller ones. This favours large business in retailing, finance, construction, tourism and transport.

Transaction costs

The third major factor affecting firm size is transaction costs. The cost per unit sales of purchasing, selling, borrowing, bookkeeping, the preparation of contracts, tax returns and compliance with regulations [1] tends to be negatively related to firm size. Transaction costs play a central role in the firm's decision whether to source supplies and services from inside or outside. In the discussion about the optimal sourcing of intermediate inputs, the economic literature refers to transaction costs in a broad sense, including not only direct administrative costs, but also hidden costs when supplies are sourced from the outside. These include invisible costs like loss of information when sourcing from outside as well as the extra effort required to ensure compliance with contracts and informal agreements. These factors, in addition to possible extra transport and communication costs, tend to constrain outsourcing.

[1] Most regulatory controls tend to disadvantage small business. However, Harrison (1994) cites anecdotal evidence from the USA that many small firms comply less strictly than large ones with environmental, safety and labour regulations and this provides them some competitive advantage.

Finance and risk spreading

Large businesses have advantages accessing finance — ultimately reflecting lower transactions costs. For example, large business:

- can access equity through organised stock markets. The fixed costs of flotation, prospectuses, appropriate due diligence requirements and other components of the cost of issuing formal equity are typically beyond small businesses.
- can obtain debt finance from the banks at lower interest rates and less onerous collateral requirements than small firms (BIE 1991) — reflecting the lower costs of monitoring and dealing with loan applications by larger enterprises. For example, the costs of assessing a loan for $5 million to a large company are much less than 100 times the costs of assessing a loan of $50 000 to a small business.

Large firms engaged in many diverse activities are also able to spread risks more effectively than small enterprises involved in few activities. Theoretically, in the absence of frictions in the formal equity market, risk spreading could be achieved by shareholders holding diversified share portfolios in many small enterprises. However, the transactions costs of organising a formal sharemarket for very small firms favours some degree of risk spreading within larger enterprises.

I.2 Benefits to the firm of small size

Factors favouring small firm size include:

- One of the biggest benefits of small size is geographically dispersed production of services where economies of scale are typically weak, eg. residential construction, personal services and much, though not all, of retailing.
- An important aspect of labour incentives is that close supervision by the owner-manager can improve the monitoring of labour performance and provide remuneration that is more closely tied to performance (ILO, 1990 and Brown *et al,* 1990). Less influence by unions on wages and workplace practices can sometimes provide a competitive advantage to small firms. Weaker adherence to award conditions can in effect make labour costs cheaper. It can also improve flexibility in organising and allocating tasks.
- Greater flexibility – decision making is done by an individual or a small group of people in a non-bureaucratic environment. By contrast, decision making in large business is often tied to more cumbersome procedures.
- Less separation between ownership and management in small business provides an easier resolution of the governance problems and conflicts that

may arise in larger enterprises. It is sometimes claimed that managers who are not major shareholders face incentives to satisfice (to provide a satisfactory performance rather than to strive for strict profit maximisation — Borland and Garvey, 1994).

From the previous discussion we conclude that large firms will tend to dominate where:

- there are economies of scale in large production units;
- production runs are repetitive and machine-oriented;
- technological and/or market knowledge requirements are high;
- a wide range of goods and services is desired by the customer from one supplier; and
- brand name and market control are important.

Small business is more important in:

- labour intensive activities;
- customised non-routine production;
- low and medium R&D intensity sectors; and
- services for the local neighbourhood.

In many enterprises there is considerable leeway in the long-run in choosing between internal production or relying on subcontractors and external suppliers.

APPENDIX J: MODELLING ENTREPRENEURS

It is easier to take a more rigorous approach to the modelling of small business operators because a long data set exists. [1] We modelled the determinants of employment of small business operators (SBOs), testing the influence of a range of variables which theoretically could influence the decision to be a small business operator (table J.1). As the absolute numbers of SBOs will rise in a growing economy, we modelled the ratio of SBOs to other employment (RAT) — and as is customary in much applied time series analysis, estimated the model in first difference form. [2]

A model with current and lagged values of the variables in table J.1 was estimated — and then simplified through testing. The resulting model explained around 80 per cent of the variation in the change in RAT, parameter signs were as expected, the model had good forecasting ability (figure J.1), appeared to be relatively stable over time [3] and suffered few obvious problems of misspecification. [4]

In this model, the share of people employed as SBOs *increases* with unemployment, probably because a self-generated job is better than no job at a time of higher unemployment, and because unemployment probability is higher among wage and salary earners than SBOs.

Payroll taxes, the ratio of award to average wages and relative returns appear to play an important long run role in the determination of entrepreneurial employment (as graphed in figure J.2).

---

1 We have employment data starting before World War II, but have modelled employment from 1950–51 because of problems of availability of other data.

2 Some variables will have a temporary impact on the growth rate in SBOs; others will have a permanent impact. This mix of short and long run effects were accommodated using the now common error-correction approach (where the dependent variable is expressed in difference form and the model approaches some long run static equilibrium captured by a lag in the level of the dependent variable).

3 As indicated by both the forecasting test and a Chow test between the periods up to and after 1972–73.

4 There was no evidence of exogeneity bias (the Hausman test), non-spherical disturbances, unmodelled non-linearities (the RESET tests) or problems in inference stemming from non-normality (the Jarque-Bera test).

Table J.1: Variables in model of small business operators

Mnemonic	*Description of variable*	*Expected impact on DRAT*
REL	The relative returns to small business operators, measured as unincorporated income to wages salaries and supplements (from the National Accounts) should have a long run impact on the share of employment accounted for by small business operators. The higher the return to SBOs, then all other things being equal, the more attractive is a job as an SBO. On the other hand, care must be taken in modeling the impact of relative wages. Relative wages and employment are determined in a labour market simultaneously.	+
RAT_{t-1}	Lagged values of the ratio of small business employment to other employment (to pick up adjustment costs and other dynamic effects).	–
Δi	Changes in nominal interest rates will affect business liquidity, set up bigger hurdles to new businesses, and make alternative uses of capital more attractive. It is likely that higher interest rates will therefore reduce, in the shorter run, the proportion of people employed as small business operators.	–
MINAV	The ratio of minimum wages to average wages. The higher are minimum wages, the more likely they are to bind in those parts of employment where they apply. Since SBOs are unaffected by minimum wage legislation, a higher value of MINAV should lead to a bigger employment share for SBOs, as some people switch to self-employment when they find access to orthodox labour markets difficult.	+
TPAY	Payroll taxes. Payroll taxes are not levied on the smallest businesses or on the self-employed. Higher payroll taxes may therefore lead to exemption seeking behaviour and the displacement of jobs from one type of institution to another.	+
DINF	The change in inflation. This may pick up uncertainty over business conditions (and the taxation treatment of assets) — which would probably exert a negative impact on entrepreneurship.	–
BENEFIT	The ratio of unemployment benefits to after-tax average weekly earnings. As the benefit ratio rises, the incentive at the margin for people to seek jobs is reduced. If that incentive is reduced by more (less) for people who have a tendency to become self-employed than for those who have a tendency to become employees, then BENEFIT exerts a negative (positive) impact on RAT.	?
DUR	Change in the unemployment rate. When unemployment is high, this reduces the likelihood of finding a job as a wage and salary earner. Moreover, if the probability of unemployment is higher among wage and salary earners, then an episode of increased unemployment will tend to reduce employment of wage and salary earners by more than SBOs — raising the SBO share of employment.	+

With the exception of payroll taxes, these influences have tended to decrease the role of SBOs in employment over the very long run. The increase in payroll taxes

in the 1970s appeared to have played a major part in the expansion of (payroll tax exempt) self-employment evident at that time. [5] The rise in award to minium wages in the mid 1970s also appears to have played a role in the unprecedented expansion of SBO employment at that time. Nominal interest rate changes have a significant role as an explanator of short run movements in the SBO employment ratio — and have been particularly important influences in the last decade.

Table J.2: Model results for small business operators

	OLS		*IV*	
	Coeff	*t-stat*	*Coeff*	*t-stat*
Constant	0.286	4.3	0.2612	3.5
RAT_{t-1}	-0.540	-4.6	-0.4770	-3.7
RAT_{t-2}	0.245	2.5	0.2143	2.0
ΔUR	0.0201	2.9	0.0234	1.8
MINAV	0.00532	7.0	0.00456	4.9
Δi	-0.00947	-7.2	-0.0102	-3.2
REL_{t-1}	0.000351	6.7	0.000339	4.0
PAYROLL	0.0683	7.7	0.0620	6.4
$\overline{R}^2$	0.733		0.724	
100se	1.54		1.57	
Sample size	45		45	
Hausman Exogeneity test (Prob.)	..		0.95	
Sargan instrument validity test (Prob.)	..		0.21	
Chow test of break in 1971-72 (Prob.)	0.48			
Breusch-Pagan SC test (Prob.)	0.12			
Reset 2 (Prob.)	0.832			
Reset 3 (Prob.)	0.968			
Jarque-Bera normality test (Prob.)	0.514			

a The t statistics for OLS are White's heteroscedasticity corrected t values. Other than t values and the R^2, test results indicate the probabilities rather than the test scores.

5 Because the payroll tax rate changed so abruptly, we t hought it might be acting as a pseudo dummy for any large shocks that might have affected RAT at that time. Accordingly we tested whether a dummy variable (=1 from 1972-73 on, otherwise zero) was significant; it was not. We also estimated the static version of the model. The CRDW test suggested the variables were cointegrated.

Figure J.1: Predicted and actual values of the change in the ratio of SBO to other employment, 1987–88 to 1994–95.

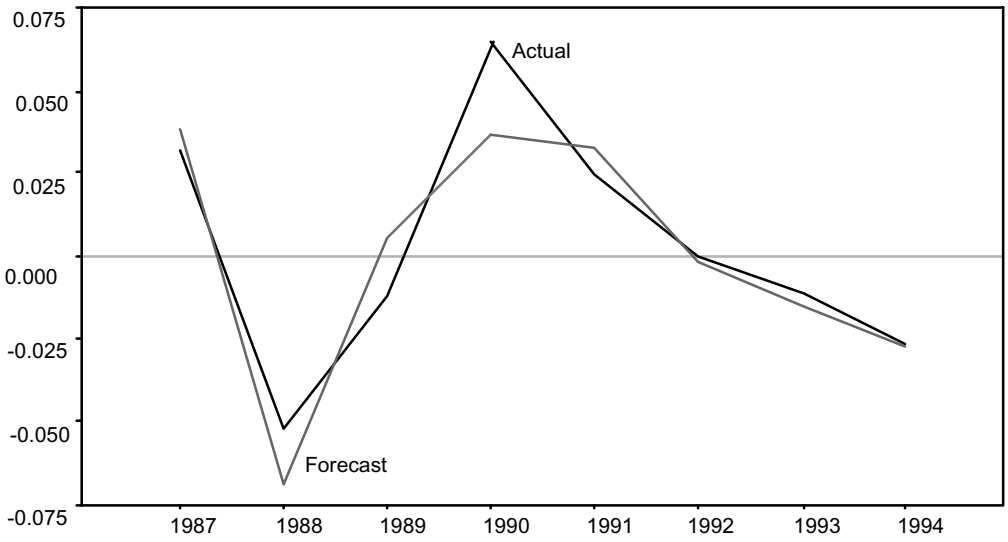
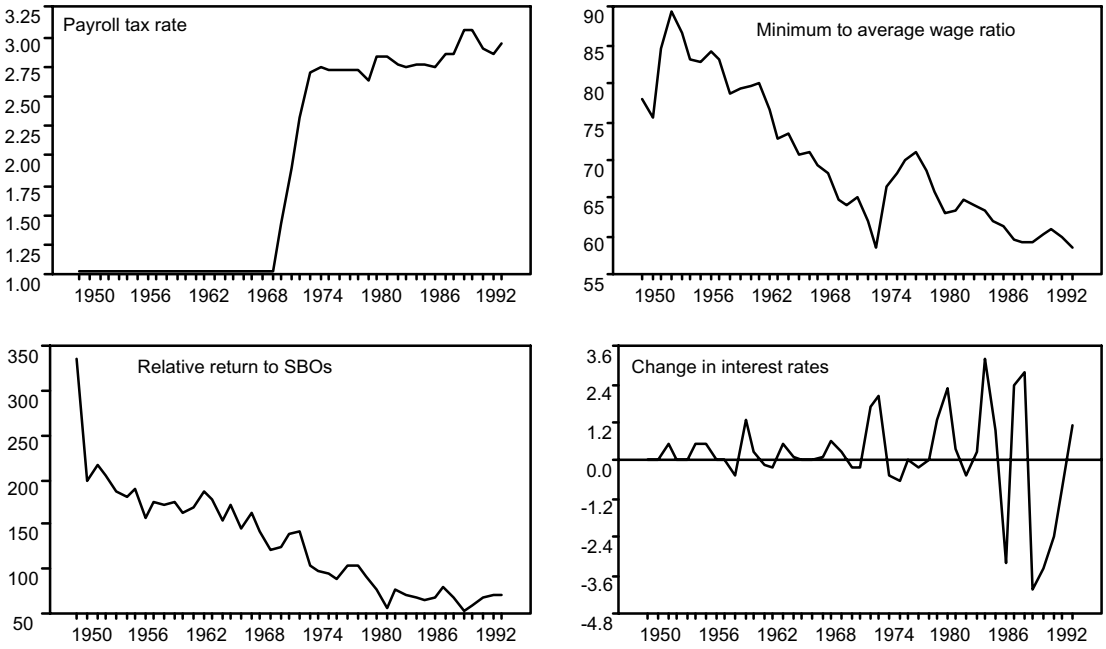


Figure J.2: Values of the main determinants of employment of small business operators



APPENDIX K: INNOVATION BY FIRM SIZE

Table K.1: Innovation (R&D person years) by enterprise size in manufacturing

	Less than 10	*10 to 19*	*20 to 99*	*100 to 199*	*200 to 499*	*500 to 999*	*1000 or more*	*Total*
Person years								
1984-85	253	287	838	495	1071	752	4117	7813
1986-87	613	533	1641	713	1348	935	4337	10120
1988-89	734	600	2193	962	1570	1247	3937	11243
1990-91	771	672	2168	974	1794	1216	3664	11259
1992-93	672	658	2268	1096	2190	1439	4426	12749
1994-95	667	798	2643	1182	2168	2732	4724	14914
1995-96	788	957	2934	1298	2045	3091	4537	15650
Share of total R&D person years (%)								
1984-85	3.2	3.7	10.7	6.3	13.7	9.6	52.7	100
1986-87	6.1	5.3	16.2	7.0	13.3	9.2	42.9	100
1988-89	6.5	5.3	19.5	8.6	14.0	11.1	35.0	100
1990-91	6.8	6.0	19.3	8.7	15.9	10.8	32.5	100
1992-93	5.3	5.2	17.8	8.6	17.2	11.3	34.7	100
1994-95	4.5	5.4	17.7	7.9	14.5	18.3	31.7	100
1995-96	5.0	6.1	18.7	8.3	13.1	19.8	29.0	100

Source: ABS *Research and Experimental Development, Business Enterprises, Australia*, Cat. No. 8104.0 (various issues).

Table K.2: Innovation (R&D person years) by enterprise size in manufacturing

	Less than 10	*10 to 19*	*20 to 99*	*100 to 199*	*200 to 499*	*500 to 999*	*1000 or more*	*Total*
Person years								
1984-85	418	263	623	325	340	320	1810	4099
1986-87	676	545	1298	532	536	306	2355	6248
1988-89	757	626	1519	1003	1079	628	2855	8467
1990-91	564	..	..	1185	1203	292	..	8168
1992-93	695	..	2210	..	860	452	3117	8930
1994-95	789	746	2704	902	931	670	2758	9500
1995-96	931	841	2828	916	891	704	2834	9945
Share of total R&D person years (%)								
1984-85	10.2	6.4	15.2	7.9	8.3	7.8	44.2	100
1986-87	10.8	8.7	20.8	8.5	8.6	4.9	37.7	100
1988-89	8.9	7.4	17.9	11.8	12.7	7.4	33.7	100
1990-91	6.9	..	..	14.5	14.7	3.6	..	100
1992-93	7.8	..	24.7	..	9.6	5.1	34.9	100
1994-95	8.3	7.9	28.5	9.5	9.8	7.1	29.0	100
1995-96	9.4	8.5	28.4	9.2	9.0	7.1	28.5	100

.. not published.

Source: ABS *Research and Experimental Development, Business Enterprises, Australia*, Cat. No. 8104.0 (various issues).

APPENDIX L: THE JOBSTART PROGRAM

Data (table L.1) from the JOBSTART program, which provides subsidies for the employment of formerly unemployed workers, suggest that smaller firms:

- are much less likely to have used the program in the past, and slightly less likely to use it again in the future;
- have a much lower propensity to use the program (given the relative number of businesses of various sizes);
- tend to regard the subsidy as inadequate (in terms of benefit duration) relative to larger firms; and
- tend to pick up information on the existence of the program from informal rather than formal sources — which might explain the relatively lower take-up by smaller firms.

A full analysis of the differential impact of JOBSTART on small versus bigger enployers would require evidence on the number of JOBSTART places per employee in different businesses:

- noting that, while bigger businesses both have a higher propensity to participate in the JOBSTART program, and typically take on more than one JOBSTART applicant, their average employment is, of course, much greater than smaller enterprises.

Moreover, information on how long JOBSTART placements retain their jobs, and the quality of their training and career paths, would also have to be assessed as part of a full evaluation of the differential impact of the program when mediated through small versus large business.

Table L.1: Use of the JOBSTART program by employment size

Size category	*Number of JOBSTART employers*	*Previous use*[a]	*Informal sources?*[b]	*Subsidy too short in duration?*	*Use again?*	*Number in economy*[c]	*Relative propensity to use program*[d]
1-4	766	38	29	32	85	239.3	100
5-9	618	55	23	26	92	76	254
10-29	540	64	13	19	93	48.5	348
30+	306	73	15	13	97	20.9	457

a This is the number of enterprises who have previously used the JOBSTART program.

b The evaluation recorded where firms obtained information about the program. We categorised these into formal and informal. An informal source was defined as from other employers, employees and work colleagues.

c Number of employing businesses in economy ('000 1994–95) from ABS Cat. 1321 with estimation of the breakdown between 10-29 and 30+.

d Relative propensity is defined as:

$$RP = 100 \times (\frac{U_i}{N_i}) / (\frac{U_{1-4}}{N_{1-4}})$$

where U_i is the number of employers using JOBSTART in the ith firm size category, N_i is the number of such firms in the economy, and the (1-4) subscript denotes the usage and number of employers in the (1-4) employees category.

Source: Byrne and Buchanan 1994.

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