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The Growth of Labour Hire Employment in Australia

Productivity Commission Staff Working Paper

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Preface

This Staff Working Paper is part of an ongoing labour market research program at the Productivity Commission to examine developments in employment relationships and the implications of these developments for the labour force and the Australian economy.

Previous papers in this research program include:

- *The Growth of Non-Traditional Employment: Are Jobs Becoming More Precarious* (Murtough and Waite 2000);
- *The Diversity of Casual Contract Employment* (Murtough and Waite 2000);
- *Self-Employed Contractors in Australia* (Waite and Will 2001); and
- *Fixed-Term Employees in Australia: Incidence and Characteristics* (Waite and Will 2002).

The series seeks to produce analysis to inform the policy debate by characterising how different forms of employment contribute to the Australian economy.

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All errors and omissions remain the responsibility of the authors.

Abbreviations

ABS	Australian Bureau of Statistics
AWIRS	Australian Workplace Industrial Relations Survey
ESS	Employment Services Survey (ABS)
FOES	Forms of Employment Survey (ABS)
HILDA	Household, Income and Labour Dynamics in Australia (survey)
PC	Productivity Commission
W&V	Wooden and VandenHeuvel (survey)

Glossary

Casual employees	Employees who are not entitled to holiday pay or sick leave (ABS 2002a). In contrast with contractors, Pay-As-You-Go tax is deducted from their wages and they do not issue a tax invoice.
Client firm	Firm using labour supplied by a labour hire agency.
Contractor	An enterprise that supplies labour services to clients on the basis of a commercial contract and bills for that work using a tax invoice.
Direct employee	An employee of a firm who is not employed through a labour hire agency.
Employed persons	Persons who, during the survey reference week, worked for one hour or more for pay, profit, commission or payment in kind, in a job or business or on a farm (includes employees, employers and contractors).
Employee	A person who works in someone else's business for wages paid by that business. Pay-As-You-Go tax is deducted from their wages by their employer. There are many possible types of employee, including: ongoing; casual; trainee; apprentice; full- or part-time.
Firm	An unincorporated or incorporated business enterprise. In this study, firm usually refers to a client firm, that is, the end-user of a labour hire worker.
Incidence of labour hire	Proportion of firms or workplaces that use labour hire.
Labour hire agency	A firm that receives commission from a client firm in return for supplying labour to that client for a limited period. It may arrange placements for employees, self-employed contractors, trainees and apprentices (ABS 2002a).

Labour hire contractor	A self-employed contractor supplied by a labour hire agency to a client firm. Invoices either the labour hire agency or the client firm for services rendered. Pay-As-You-Go tax is not deducted from payments.
Labour hire employee	A person employed by a labour hire agency on a casual or ongoing basis. Pay-As-You-Go tax is deducted from their wages by the labour hire agency. They do not issue tax invoices. Also referred to as temps, on-hired workers and agency workers.
Labour hire workers	Employees and (self-employed) contractors supplied by a labour hire agency to a client firm. Also referred to as temps, on-hired workers and agency workers.
Ongoing employee	Employees who do not expect to leave their employer in the next 12 months for reasons initiated by their employer.
Part-time employees	Employees who work for less than the normal number of hours worked in a workplace. Full-time employees usually work 35 hours or more per week.
Remuneration	Wages and all other benefits received by a worker.
Self-employed contractors	Persons who operate their own business and do not employ others. They supply labour services to clients on a commercial contract basis. Clients are billed using tax invoices.
Temporary workers	Workers who expect to leave their job in the next 12 months for reasons initiated by their employer. Includes casual employees, self-employed contractors and labour hire workers.
Work arrangement	Major categories of work arrangements include ongoing, casual, contractor, labour hire, and full- and part-time employee. These arrangements influence how work is performed at a workplace.
Workplace	A workplace is a single physical location occupied by an establishment that engages in productive activity on a relatively permanent basis.
Workers	All persons supplying labour. Includes employees and contractors.

Key points

- Labour hire employees numbered around 270 000 in 2002, equivalent to about 2.9 per cent of all employed persons.
- Labour hire employment grew strongly between 1990 and 2002. In workplaces with 20 or more employees:
  - the number of labour hire workers grew from 33 000 in 1990 to 190 000 in 2002, an increase of 15.7 per cent a year; and
  - the proportion of labour hire workers among all employees grew almost fivefold, from 0.8 per cent in 1990 to 3.9 per cent in 2002.
- The rapid growth of labour hire employment over the period can be attributed to how firms manage their workforce, rather than to changes in the economy's structure (that is, its composition in terms of industry and firm size).
- The following changes in operating environment contributed to firms' altering of their employment strategy in favour of labour hire workers:
  - Changing industrial relations context: in the period: there was a decline in the proportion of firms with 'closed union shops', a rise in enterprise bargaining, and an increase in the use of human resources managers. All three changes are likely to have contributed to an increase in the propensity of firms to use labour hire.
  - Rising competitive pressures: trade liberalisation and globalisation put increasing pressure on firms to be competitive. One way for firms to increase competitiveness is to optimise their use of labour. Labour hire employment helped some firms to achieve that objective.
- In contrast, two changes occurring between 1990 and 2002 are likely to have slowed the growth of labour hire employment:
  - The introduction of new technology: contrary to expectations, new technology is associated with a lower likelihood of using labour hire.
  - Changes in the economy's structure: the slower growth of manufacturing and other intensive users of labour hire employment, relative to other sectors of the economy, slowed the growth of labour hire employment.

1 Introduction

Labour hire employment (also known as ‘on-hire’, ‘temp’ or ‘agency’ employment) is one of a range of flexible work arrangements available to Australian firms, that also includes casual, part-time labour and fixed-term employment. Compared with other flexible forms of employment, the distinguishing feature of labour hire employment is that it involves three parties (box 1.1).

Labour hire employment is not a new work arrangement in Australia. However, there have been suggestions that it has grown rapidly since the early 1990s. Hall argues that ‘the growth in labour hire in Australia over the past decade has been one of the most dramatic aspects of the more general proliferation of non-standard employment’ (2002, p. 4).

The reported rise in the proportion of workers and firms involved in this form of employment has led to concerns (Hall 2000, 2002; LHTF 2001) about the implications of this expansion for the job security, job safety and job satisfaction of Australian workers. These observers argue that the labour hire work arrangement may be deficient in terms of:

- training, promotion, human capital investment, and career prospects;
- occupational health and safety and workers’ compensation and rehabilitation; and
- job security and workers’ remuneration and entitlements.

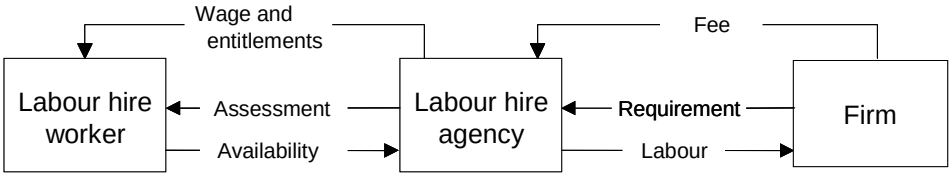
Implicit in these concerns is the view that labour hire has grown rapidly because firms see it as a way of reneging on their responsibilities towards their workforce, thus undermining workers’ pay and entitlements. Thus, labour hire workers are perceived as *substitutes* for directly employed workers.

Employer surveys (box 1.2), together with a review of the labour hire literature (Glover et al. 2005), suggest a number of reasons why firms may have incentives to use labour hire. They include:

- Delays in, and consequently the cost of, obtaining scarce skills can be reduced, if labour hire agencies are more efficient than many firms at sourcing and assessing persons with desired skills.

Box 1.1 **The labour hire work arrangement**

In Australia, there are two forms of labour hire work arrangement: a labour hire worker can be an employee or a self-employed contractor (ABS 2000). In this study, the term 'labour hire employee' is used when referring to the former. When referring to both, the term 'labour hire worker' is used.



The diagram above emphasises that the labour hire work arrangement involves three parties:

- an employee (of a labour hire agency), or a contractor, who supplies labour;
- a firm requiring labour (the client); and
- a labour hire agency that acts as an intermediary between the other two parties.

For a labour hire engagement to occur:

- A potential labour hire worker informs a labour hire agency that they are available for work. At first contact, the labour hire agency assesses the worker's qualifications and skills.
- A firm informs the agency of their need for a person with specified skills.
- The agency matches the needs of the firm to a person on its books with the required skills.

For the duration of a labour hire engagement, regular payments are made by:

- the firm to the labour hire agency for the provision of labour; and
- the labour hire agency to the worker.[a]

Although a relatively small number of labour hire agencies — such as Adecco, Manpower and Skilled — dominate the industry, and tend to have long term relationships with large client firms, the industry has low entry costs and includes a large number of small, often specialised, operators (Hall 2000; Hartig 1999).

[a] Occasionally, labour hire contractors are paid directly by the client firm.

- Labour hire employment allows firms greater control over the amount of time they choose to employ workers, and over the tasks workers carry out in that time.
- The actual or perceived risks of recruiting and laying off some staff are transferred to either the labour hire agency or to the worker.

If labour hire workers are used because of the unavailability of direct workers with the necessary skills, then the two groups may be regarded as *complements* rather than substitutes.

Box 1.2 **Why do firms choose labour hire employment?**

Firms choose different work arrangements to meet the diverse job requirements that arise from their production process. While labour hire employment assists some employers in tailoring the quantity and type of labour to their requirements (Houseman 2001), others find other forms of flexible employment, such as casual employees, more suitable.

An Australian survey by Brennan, Valos and Hindle (2003) of firms' main reasons for using labour hire finds that firms use it most frequently to:

- source additional staff (30 per cent of firms);
- replace temporarily absent employees (17 per cent);
- outsource the administrative burden of employment (11 per cent);
- achieve thorough recruitment (11 per cent); and
- overcome skill shortages (9 per cent).

Less frequently given reasons were: speed of availability (4 per cent); short-term overload (4 per cent); convenience (3 per cent); guarantee of performance (3 per cent); difficult to fill positions (3 per cent); leave replacement (3 per cent); pay less (2 per cent); cost (1 per cent); and poor self-recruitment (less than 1 per cent).

The wide range of reasons for using labour hire may be important in understanding variations in its use.

The relative merits of the arguments for and against labour hire employment could not be properly investigated to date, because of two important knowledge gaps:

- No clear or consistent measures of the level and growth of labour hire employment are available.
- Information on why firms use labour hire is largely anecdotal or based on case studies which are not amenable to generalisation.

This paper sheds light on both these issues, by:

- measuring the level and growth of labour hire employment using consistent, comparable and recent data (see chapter 2); and
- identifying, but not apportioning, sources of growth of labour hire employment between 1990 to 2002 (see chapter 3).

The paper finds that labour hire employees numbered 270 000 in 2002, equivalent to about 2.9 per cent of all employed persons.

Based on consistent and comparable survey estimates, the number of labour hire workers in workplaces with 20 or more employees grew from 33 000 in 1990 to 190 000 in 2002, an increase of 15.7 per cent per year. Further, the proportion of labour hire workers among all employees of these workplaces grew almost fivefold, from 0.8 per cent in 1990 to 3.9 per cent in 2002. These estimates support claims of a rapid expansion in labour hire employment over the 1990s and early 2000s; they are discussed in more detail in chapter 2 and in chapter 2 of Laplagne and Glover (2005).

The growth of labour hire employment between 1990 and 2002 can be notionally decomposed into two broad components (figure 1.1):

- Growth attributable to changes in the economy's structure, favouring specific industries, or businesses of a particular size.
- Growth attributable to factors affecting firms' behaviour.

The analysis presented in this paper suggests that changes in the economy's structure are likely to have partly offset the growth of labour hire use over the period under consideration, compared with what would have occurred without structural change. A decline in the employment share of industries most likely to be using labour hire, combined with an increase in the proportion of small businesses, have meant that the economy-wide rate of use of labour hire did not rise as rapidly as it might have.

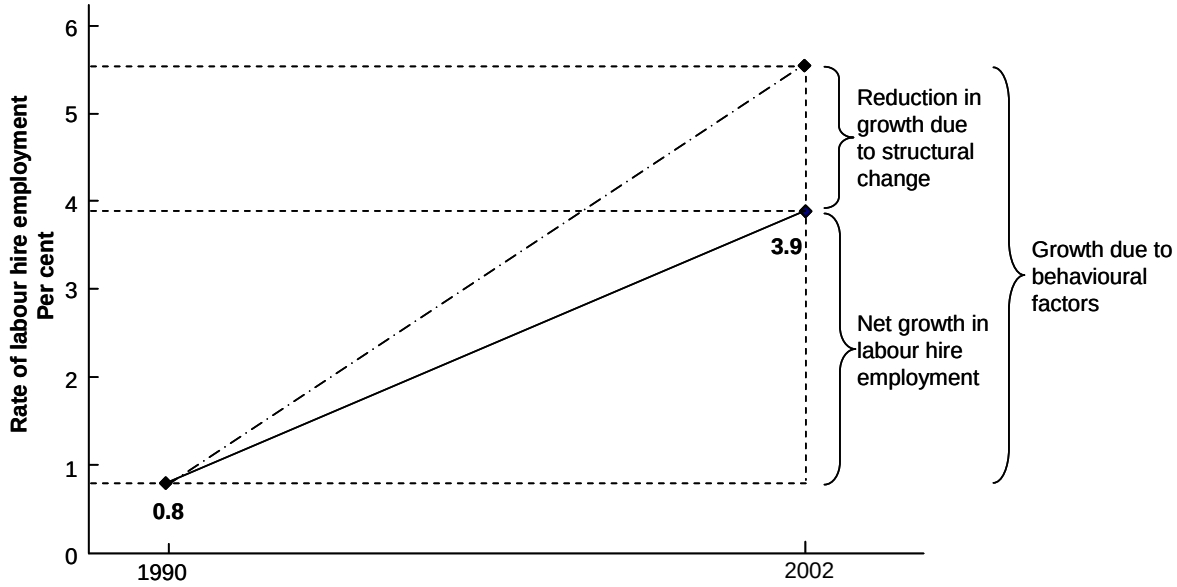
As the two structural factors considered produced a negative growth of labour hire over the period, the observed growth of labour hire employment over the 1990–2002 period may be attributed entirely to behavioural factors. Those factors cannot all be known with certainty, but they most likely reflect changes to the environment of firms which caused them to alter their employment strategies.

Based on an econometric analysis of workplaces' demand for labour hire employment in 1995, it is possible to infer what environmental changes influenced firms' behaviour during the 1990–2002 period. This analysis suggests that from 1990 to 2002, workplaces increased their use of labour hire largely as a response to changes in the industrial relations and the competitive environment in which firms operate. Industrial relations changes contributed to the rise in the proportion of workplaces using labour hire but appear to have had a negative impact, or no impact at all, on the labour hire use of those workplaces that were already using this form of employment. Thus, the main effect of these changes has probably been to lower the 'threshold' for the use of labour hire by firms. Increased domestic and

international competition may have added to firms' incentives to introduce some labour hire into the workplace and to use it at a higher rate.

Figure 1.1 **Decomposition of the growth of labour hire employment[a]**

Workplaces with 20 or more employees, excluding agriculture, forestry, fisheries and defence



[a] The growth illustrated is that in labour hire employment as a proportion of all persons employed by workplaces with 20 or more employees (excluding agriculture, forestry, fisheries and defence) between 1990 and 2002. An economy-wide rate of labour hire employment is not available for 1990. In 2002, the economy-wide rate of labour hire employment was 2.9 per cent of employed persons (see section 2.1). The size of the negative 'structural factors' effect in 2002 is extrapolated on the basis of its magnitude in 1995 (0.6 percentage points), and should not be regarded as a precise estimate.

Contrary to a priori expectations, there was no detectable relationship between a workplace's apparent need for external labour flexibility (as a result, for example, of unanticipated absences) and its use, or rate of use, of labour hire employment.

In another unexpected result, the introduction of new technology and accompanying workforce adjustments appear to reduce workplaces' incentive to use labour hire workers, suggesting that technology substitutes for labour hire employment.

The remainder of this paper is structured as follows: the level and growth in the rate of labour hire employment are examined in chapter 2. In chapter 3, the contribution of demand-side factors to the growth of labour hire employment since 1990 is analysed. Chapter 4 provides a summary, identifies some remaining research questions and briefly speculates on the future growth of labour hire.

2 The level and growth of labour hire employment

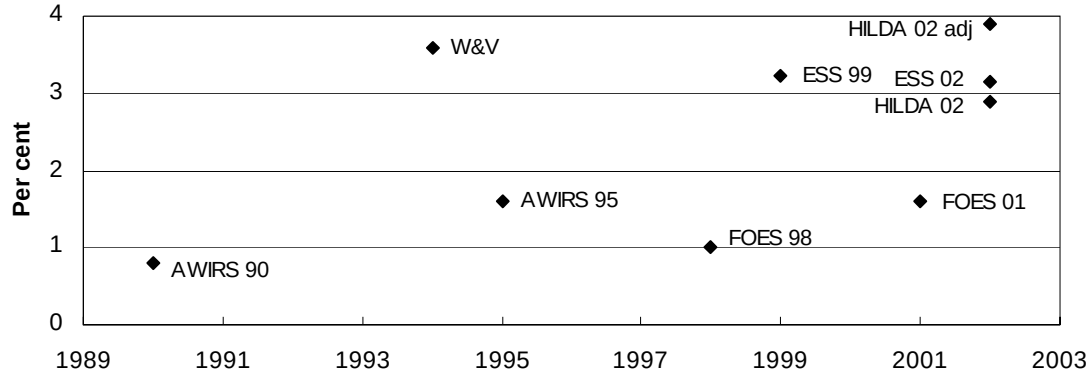
Labour hire employment is often reported to have grown since 1990 (Wooden 1999a; Hall 2000). Hall (2002, p. 7) observed that labour hire workers constitute a 'growing proportion of the labour market'. Between 1990 and 2002, eight surveys are available that contain information on labour hire employment. Careful consideration of these surveys allows detailed estimates of the level and growth of labour hire employment to be constructed.

2.1 The rate of labour hire employment, 1990 to 2002

Estimates of the proportion of labour hire workers among all employed persons — the 'rate of labour hire employment' — are reported in figure 2.1 for the period 1990–2002. These estimates are not strictly comparable, due to differences in survey method and reference population (see appendix A). Inspection of the AWIRS 90, AWIRS 95, ESS 02 and HILDA 02 estimates suggests that these surveys are sufficiently representative to contribute to our knowledge of the rate of labour hire employment between 1990 and 2002. By contrast, the W&V, FOES 98, FOES 01 and ESS 99 estimates may be regarded as outliers for this purpose (see appendix A).

Using the economy-wide HILDA 02 survey, labour hire employees numbered around 270 000 in 2002, equivalent to about 2.9 per cent of all employed persons. This number aligns closely with the estimate derived from the ESS 02 survey, of 290 000 labour hire workers or 3.1 per cent of all employed persons. Given the similarity between the ESS 02 and the HILDA 02 rate estimates, it appears highly likely that the economy-wide rate of labour hire employment was around 3 per cent of all employed persons in 2002. This compares with AWIRS estimates by Wooden (1998), which put the rate of labour hire employment at 0.8 per cent in 1990 and 1.6 per cent in 1995. However, Wooden's estimates are based on workplaces with 20 or more employees, and are therefore not directly comparable with those from ESS and HILDA.

Figure 2.1 **Estimated rate of labour hire employment, 1990 to 2002[a]**



a Differences in reference populations and methodologies make the estimates presented in this figure not strictly comparable (for details, refer to Laplagne and Glover 2005). Surveys and reference years are: AWIRS 90 and 95 – Australian Workplace Industrial Relations Surveys of 1990 and 1995; W&V – Wooden and VandenHeuvel 1994; FOES 98 and 01 – Forms of Employment Surveys of 1998 and 2001; ESS 99 and 02 – Employment Services Surveys of 1999 and 2002; HILDA 02 – Household, Income and Labour Dynamics in Australia survey of 2002. 'HILDA 02 adj' refers to the rate of labour hire employment for workplaces employing 20 or more workers, excluding all workplaces in the agriculture, forestry, fisheries and defence industries.

Source: Table A.1 of Laplagne and Glover (2005).

2.2 What has been the growth of labour hire employment since 1990?

Adjusting the HILDA 02 survey by removing workplaces with fewer than 20 employees or belonging to the agriculture, forestry, fisheries and defence industries means that the survey becomes comparable to AWIRS. This reduction in coverage results in an average rate of labour hire employment of 3.9 per cent in 2002, equivalent to about 190 000 workers (see 'HILDA 02 adj' data point in figure 2.1). This figure, which may be directly compared with the AWIRS 90 estimate of 33 000 labour hire workers in 1990 (Morehead et al. 1997), suggests that, in the type of workplaces covered by AWIRS, the number of labour hire workers grew at an annual average rate of 15.7 per cent between 1990 and 2002. Because, over that period, the total number of persons employed only grew at 1.5 per cent per year, the rate of labour hire employment in workplaces of 20 employees or more increased from 0.8 per cent in 1990 to 3.9 per cent in 2002. The increase in both the number and the proportion of labour hire workers over the period supports claims (Hall 2002; Hartig 1999; Wooden 1998) that the growth of labour hire employment has been rapid.

However, the growth estimates may be inflated by an unusually low rate of labour hire employment in 1990 because the Australian economy was in recession. According to United States research (Golden 1996), labour hire employment declines during periods of low or negative economic growth. It is not known how labour hire in Australia responds to fluctuations in economic growth.

3 Sources of growth of labour hire employment

3.1 Introduction

This chapter investigates factors that, on the employer side of the labour market, might explain the rapid growth of labour hire employment in recent years. This investigation combines evidence from three sources:

- a comparison of consistent and comparable data contained in the 1990 and 1995 AWIRS surveys;
- a quantitative analysis of the factors associated with workplaces' use of labour hire in 1995, based on the AWIRS 95 survey (Glover et al. 2005); and
- an overview of recent characteristics of labour hire employment, based on the HILDA survey (Laplagne and Glover 2005).

Looking at the total population of workplaces making up the economy, any growth in their overall use of labour hire over a particular period can arise from two effects: (i) a behavioural effect; and (ii) a structural effect. A behavioural effect occurs when workplaces alter their employment strategies in favour of labour hire workers. That strategy is affected by the environment in which firms operate, in terms of the competition and cost pressures they face, and their legal, industrial relations and regulatory framework.

A behavioural effect can be twofold: an *incidence* effect, whereby workplaces that previously did not use any labour hire start using some; or a *rate of use* effect, whereby workplaces using labour hire increase their rate of use of this form of labour.

A structural effect arises when a change in the economy's structure occurs, favouring industries or workplaces that tend to use labour hire more readily or intensively. This type of effect leads to an increase in the economy-wide incidence or rate of use of labour hire employment (or both).

A comparison of the AWIRS panel data for 1990 and 1995 reveals that the growth of labour hire employment during that period was due to behavioural effects

(see appendix B). That is, workplaces increased their use of labour hire, both in terms of incidence and rate of use, irrespective of any changes in the economy's industry or workplace structure. The same analysis shows that structural effects occurring during that period moderated the growth of labour hire employment.

These results raise the following questions:

- What changes caused workplaces to alter their employment strategies in favour of labour hire?
- What changes in economic structure were responsible for slowing down the growth of labour hire employment?

Ideally, both questions should be addressed through the analysis of time-series or longitudinal data on workplaces' environment and on their use of labour hire employment. Such data are unfortunately unavailable for the period under consideration. However, the issue may be approached indirectly, by examining the factors that influence a workplace's use of labour hire at a point in time and extrapolating that result. As an example of that approach, if the analysis showed that a workplace's competitive environment influenced its use of labour hire in 1995, it might be concluded that increasing competition in itself might lead to the more likely or more intensive use of labour hire *over a period*. Or, if the analysis revealed a particular industry to be a more likely user of labour hire in a given year, then a continuing contraction in that industry's output could be regarded as exerting downward pressure on the growth of labour hire employment *over a period*.

The use of this indirect approach may be justified in light of the predominance of behavioural factors in explaining the growth of labour hire employment in AWIRS panel workplaces. That is, influences identified from the analysis of 1995 data may be extrapolated to earlier or later years since, in general, the same stimuli are likely to produce the same responses by firms. For example, if the labour hire employment behaviour of workplaces is constrained by their industrial relations environment, then changes in industrial relations legislation that make it easier for firms to use labour hire may lead to additional use of labour hire, irrespective of the period under consideration.[1] Thus, a detailed understanding of the factors that drove the use of labour hire employment in 1995 might shed light not only on workplace behaviour in that year, but also in preceding and following years.

[1] This interpretation is subject to the caveat that cross-section data are not well suited to the analysis of lagged or time-dependent processes. That is, the possibility that a workplace's use of labour hire employment in 1995 is linked to that workplace's characteristics in previous years cannot usually be investigated in a cross-section dataset.

In the remainder of this chapter, a quantitative analysis of the AWIRS 95 survey is discussed. Results are grouped under three broad categories of drivers of change: industrial relations context; workplace employment strategies; and compositional factors. Factors belonging to the first two categories are behavioural, while those in the third category are structural.

Before turning to the presentation of the analytical results, three caveats are in order. First, the probability that a firm uses labour hire and the rate at which it uses it were modelled jointly but independently.[2] Many more factors were found to be associated with the probability that a firm uses labour hire than were found to be associated with the rate at which it uses it. The meaning of this discrepancy is not straightforward. On the one hand, it might mean that firms, once they have decided to use labour hire, tend to use it in fairly uniform fashion. On the other hand, it might denote that unobserved characteristics of individual workplaces influence the rate at which they use labour hire. Accounting for unobserved (and, in some cases, unobservable) workplace characteristics was not feasible, given the dataset.

Second, while surveys of firms' reasons for using labour hire strongly point to the need for labour flexibility (as a result, for example, of unforeseen increases in demand for the firm's product), this association was not detected in the AWIRS data. This may be due to problems with the variables that were available and warrants further study.

Third, because it is suspected that all of the factors that may influence the growth of labour hire have not been identified, no attempt has been made to measure the exact contribution to that growth of the behavioural factors identified in the econometric analysis. Instead, conclusions about the relative importance of the different groups of factors are mainly based on the strength with which factors in each group affected the use of labour hire in 1995.

3.2 Industrial relations context

Between 1990 and 2002, a number of industrial relations changes were implemented in Australia. In October 1991, the Australian Industrial Relations Commission introduced the enterprise bargaining principle. Subsequently, the Australian Government's *Industrial Relations Reform Act 1993* allowed for directly negotiated agreements between a firm and its workforce. State-based industrial relations change facilitating workplace bargaining also occurred around this time in Victoria (*Employees Relations Act 1992*) and Western Australia (*Workplace*

[2] By applying a Heckman selection model to the 1995 AWIRS dataset (see Glover et al. 2005, chapter 3).

Agreements Act 1993). In 1996, the NSW *Industrial Relations Act 1996* was passed. In that same year, the *Workplace Relations Act 1996* was introduced; among other changes, this Act abolished compulsory unionism for most employees.

Some of the industrial relations changes listed above post-date the 1995 AWIRS. However, the thrust of these reforms would have been anticipated by workplaces, and probably caused some workplaces to revise their employment strategies prior to the AWIRS 95 survey.

While the 1995 survey contains many variables related to various aspects of a workplace's industrial relations environment, three variables were found to be most relevant to the use of labour hire employment: union activity, human resources management and workplace bargaining.

Union activity

Of the many union-related AWIRS 95 variables, two had a response rate sufficient for modelling purposes. One, the presence of an active union at the workplace,[3] had no influence on either the probability that a workplace uses labour hire, or the rate at which it uses it.

By contrast, the second variable, denoting the presence of a closed union shop at the workplace, was strongly associated with the use of labour hire. Workplaces which were closed shops had the lowest probability of use of labour hire of any workplaces (see appendix C). A closed union shop in the workplace, therefore, limits the use of any labour hire workers.

The reasons for this may be behavioural or technical. An example of a behavioural reason is that unions may seek actively to limit or prevent the use of any labour hire by firms, regarding this form of employment as undermining the conditions of ongoing employees. The existence of this union objective has been documented in the context of large capital city building projects (PC 1999).

A technical explanation is that, because only about 10 per cent of labour hire workers belong to a union (Laplagne and Glover 2005), this category of workers is not as readily available to closed union shops as to other workplaces.

While it is not possible to ascertain whether behavioural or technical reasons dominated, the association between closed union shops and labour hire use may nonetheless explain part of the growth in the incidence of labour hire that occurred during the 1990s. Peetz (1997), using ABS rather than AWIRS data sources,

[3] For a definition of this and other AWIRS variables, see Glover et al. (2005), Appendix A.

estimates that the economy-wide proportion of employees in closed shops fell from 21 per cent to 11 per cent from 1990 to 1995. He attributes a third of this rapid decline to structural change (for example, the growth in industries that have low levels of compulsory unionism) and the majority of it to changes in employer strategies and the institutional framework.[4] Moreover, Peetz suggests that changes in employer strategies — such as withdrawing their support for closed union shops — were often triggered by institutional changes.

There were 695 workplaces that were surveyed in both the 1990 and 1995 AWIRS. By definition, these 'panel' workplaces were not affected by compositional changes. Thus, based on Peetz' analysis, they would have experienced around two-thirds of the overall decline in compulsory unionism between 1990 and 1995. Over the same period, the proportion of panel workplaces using labour hire grew from 16.6 per cent to 27.2 per cent. The simultaneous occurrence of the two changes in these workplaces strongly suggests that they may be related.[5] That interpretation would be largely consistent with the difference, mentioned at the beginning of this section, in the predicted probability of use of labour hire by workplaces that are closed shops and those that are not.[6]

Finally, a caveat is necessary, regarding the inverse relationship between the existence of a closed union shop and the probability of use of labour hire. That relationship applies primarily to workplaces, and may not hold for whole firms. It is possible, in some cases, that closed shop workplaces coexist with labour hire-intensive workplaces within the same firm. For example, a metal turning workshop that is a closed union shop and employs no labour hire might be owned by a firm which also owns a separate workplace in which labour hire is prevalent.

In contrast to the probability of using labour hire, no significant association was detected between closed union shops and the *rate* of labour hire use of workplaces using this work arrangement. This suggests that, in workplaces where compulsory union membership does not prevent the use of labour hire altogether, that form of

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[4] In NSW, 'no-ticket-no-start' (compulsory unionism) on commercial building and construction sites was abolished in 1991 (PC 1999). Economy-wide, the decline in compulsory unionism between 1990 and 1995 could in part have occurred in anticipation of the introduction of the *Workplace Relations Act 1996* (Peetz 1997).

[5] Unfortunately, the methodological approach adopted here does not allow measurement of the contribution of the decline in compulsory unionism to the increased proportion of workplaces using labour hire.

[6] This probability differential is based on all workplaces that were surveyed in 1995 (that is, the cross-sectional sample). Applying this information to a *continuing* workplace may not be appropriate. Ideally, one would use panel data analysis to analyse the effect on a continuing workplace of shedding its closed shop status. However, the size of the panel dataset (695 workplaces) did not allow the econometric model to be run.

employment was used as intensively as in workplaces without a closed shop. In the few closed shop workplaces that used labour hire, labour hire workers were probably union members.

Human resources management

The first half of the 1990s also witnessed the growing use of human resources managers by Australian workplaces.[7] In 1990, 34 per cent of workplaces covered by the AWIRS survey had such a manager; by 1995, that proportion had risen to 46 per cent (Morehead et al. 1997). This increase was due, in part, to structural economic changes. However, behavioural factors were also important: of the 695 workplaces surveyed in both 1990 and 1995 by AWIRS, twice as many workplaces acquired a human resources manager as dispensed with one.

The importance of industrial relations change for the rise in the prevalence of human resources managers is reflected in the changing roles of these managers. Between 1990 and 1995, an increasing proportion of human resources managers reported that their role included negotiating with unions, setting/negotiating wage levels and preparing for industrial tribunal hearings. Also, more conventional tasks such as inducting new employees, processing personnel records, organising workplace training and recruiting declined in importance (Morehead et al. 1997).

Quantitative results based on AWIRS 95 (Glover et al. 2005) indicate that having a human resources manager at the workplace was the single most important positive influence on the probability of use of labour hire (see appendix C). By contrast, having a human resources manager was associated with a *lower* rate of use among workplaces using labour hire, indicating that workplaces with human resource managers using labour hire tended to use it more carefully (see appendix C).

Looking at the incidence and rate of use results together suggests that workplaces with employee relations managers are more attuned to, and more knowledgeable about, the range of labour sources available to them, and thus more likely to use labour hire workers when appropriate. However, when they do employ labour hire, workplaces with human resources managers do so sparingly, balancing them with other highly flexible forms of employment such as part-time, casual labour. This hypothesis is consistent with the negative association between the rate of use of labour hire and the rate of use of part-time, casual employees (see appendix C). It may be the case that, in workplaces without an human resources manager, the fine-

[7] The employment title of such managers varies: industrial relations manager, employment relations manager, human resources manager, or personnel manager.

tuning of the use of substitutable forms of flexible employment occurs less frequently.

An increase in the prevalence of human resources managers across workplaces is linked to the growth in the economy-wide incidence of labour hire employment. At the same time, this increased prevalence moderated the growth in the rate of use of labour hire.

Workplace bargaining

Workplace bargaining principles were first introduced in 1991 by the Australian Industrial Relations Commission. By 1995, the proportion of workplaces engaging in workplace negotiations between management and union officials or delegates had reached 48 per cent (Morehead et al. 1997).[8]

The *Workplace Relations Act 1996*, by providing for Certified Agreements to be struck directly between employers and their employees, broadened the scope of workplace bargaining in the economy, and is likely to have further encouraged the use of labour hire employment.

Quantitative analysis shows that workplace bargaining is positively associated with the likelihood of a workplace using labour hire employment (see appendix C). However, workplace bargaining did not affect the rate of use of labour hire in those workplaces that use it.

As with the employment of a human resources manager, workplace bargaining might denote the existence of an active and finely tuned human resources policy, which is conducive to the use of labour hire. Workplace bargaining might also enhance workplace flexibility and promote the use of flexible forms of employment.

Summary

This section suggests that changes to the industrial relations context might have contributed to the observed growth in the incidence of labour hire employment. A detailed analysis of the 1990 and 1995 AWIRS surveys reveals that several changes in industrial relations practices were accompanied by increases in the use of labour hire. These changes were: (i) the reduced prevalence of compulsory unionism; (ii) the increasing use of human resources manager; and (iii) the spread of workplace bargaining.

[8] Only those AWIRS workplaces in which unions were represented were questioned about their use of workplace bargaining.

The change in industrial relations practices appears to have had a 'threshold' effect only, encouraging firms to use labour hire where previously they did not. For workplaces that already used labour hire prior to the changes, they do not appear to have increased the intensity with which workplaces use this form of employment. The growth in the use of specialist human resources managers might have moderated that intensity.

3.3 Workplace employment strategies

The spread of industrial relations change throughout the economy was not the only alteration to the environment in which Australian workplaces operated during the 1990s. That period was also marked by widespread technological change (PC 2004), and by an increase in domestic and international competitive pressures, from trade liberalisation and globalisation (Gabbitas and Gretton 2003). It is likely that firms' responses to these developments included changes to their employment strategies, with possible repercussions on their use of labour hire employment.

The role of technology

The 1990s witnessed an explosion in the use of personal computers at the workplace. Forty-seven per cent of the workplaces covered by AWIRS 95 indicated that they had introduced new office technology in the two years preceding the survey (Morehead et al. 1997). From 1989-90 to 1994-95, investment in information technology (hardware and software) in the market sector grew 43 times faster than investment in other assets (PC 2004).

The modelling undertaken by Glover et al. (2005) included two variables reflecting technological change and its effects on the employment strategies of the firm: *new technology introduced into the workplace in the last two years*; and *workplace downsized in the last year because of technological change*. The presence of either factor nearly halves the probability of using labour hire (see appendix C).

Having introduced new technology in the previous two years had no significant association with the rate of use of labour hire. By contrast, having downsized in the past year because of technology had a strong positive association with the rate of labour hire use (see appendix C). This could be interpreted as showing that downsizing firms shed their direct employees rather than labour hire workers in response to technological change. However, this result could also indicate that, of workplaces that downsize their direct workforce because of technology, those with

low rates of use of labour hire stop using labour hire altogether.[9] This results indirectly in a higher average rate of use for remaining labour hire users. In the absence of repeated annual observations on the same workplaces, it is not possible to ascertain the validity of this explanation.

On balance, the modelling results do not provide strong support for the positive relationship between technological change and the use of labour hire, as hypothesized by: Von Glinow and Mohrman 1990; Benson and Ieronimo 1996; Brynjolfsson and Hitt 2000; and Neumark and Reed 2002.[10]

Two reasons may explain the unexpected negative association between technological change and labour hire use. If the new technology is labour-saving, firms that downsize can reduce the risk of industrial unrest and litigation by stopping the use of labour hire workers. Second, if new technology results in an increased demand for skilled labour, as has been argued by some authors (Berman et al. 1998; Machin and Van Reenen 1998), a rebalancing of occupations may occur within the workplace. Because labour hire workers are somewhat underrepresented in 'skilled' occupations (that is, managers, professionals, and para-professionals — see table 3.2), their incidence and rate of use might decline proportionately more, following the introduction of new technology.[11]

Both explanations suggest that workplaces tend to combine the introduction of new technology with workforce adjustments that reduce their need for labour hire workers, at least in the two years following the change. That is, the introduction of technology substitutes for the use of labour hire. Given the widespread introduction of new technology in Australian workplaces in the 1990s, it may be inferred that technological change has lowered growth in the incidence and rate of use of labour hire.

The role of competitive pressures

Indicators in the AWIRS surveys point to an intensifying competitive environment faced by Australian workplaces between 1990 and 1995 (table 3.1). Moreover, along with the quality of products and services offered, price was cited most often

9 This interpretation would be consistent with analysis of AWIRS panel data, which suggests that workplaces that relinquished the use of labour hire between 1990 and 1995 were more likely to have had a below-average rate of use in 1990 (see appendix B).

10 Reasons underlying this hypothesis include the lower cost of monitoring and benchmarking that technology allows, and the need for the introduction of new technology to be facilitated by greater workplace flexibility.

11 In 2002, 68 per cent of labour hire workers were employed in less skilled occupations. The corresponding percentage for other workers was 60 per cent (Laplagne and Glover 2005).

as the most important factor of competitive success in both years. These data are consistent with firms lowering their production costs during the period to gain or maintain a competitive advantage. Such a strategy is likely to have had repercussions on employment; lower production costs might have been sought through a reduction in labour costs. The introduction of labour hire allows workplaces to employ additional labour only when required, resulting in lower overall wage costs compared with a strategy of hiring additional ongoing labour.

Table 3.1 **Changes in the competitive environment of Australian workplaces, 1990 to 1995**

AWIRS variable	*1990*	*1995*
	%	%
Workplace has many competitors	65	69
Competition is intense or strong[a]	68	81
Price of product most crucial to competitiveness	32	36

[a] The question on the intensity of competition was only asked of workplace managers who reported many or few competitors (rather than none).

Sources: Morehead et al. 1997; Productivity Commission estimates based on AWIRS 90 unit record data.

For this reason, it might be expected that workplaces that have recently introduced cost reduction strategies, or have low wage bills relative to other workplaces in their industry, are relatively high users of labour hire employment.

This is confirmed, in the case of cost reduction strategies, by econometric results (Glover et al. 2005). Workplaces that, in the two years prior to the 1995 survey, had decided to introduce measures to reduce costs, were much more likely than others to be using labour hire (see appendix C).

By contrast, being a low-wage workplace lowered the probability that a workplace uses labour hire (see appendix C). This result might indicate that, having achieved durable wage bill reductions by using employment strategies other than the use of labour hire, workplaces have no incentive to use that form of employment for that purpose. Alternatively, it might mean that workplaces used labour hire to achieve wage reductions in the past, but no longer have a need for it.

Neither the adoption of cost reduction strategies nor the operation of a low-wage workplace were associated with the rate of use of labour hire.

The impact of growing competitive pressures on the use of labour hire, hypothesized to operate through workplace incentives to reduce production and labour costs, cannot be definitively ascertained from the results reported above. However, it may be argued that the implementation of cost reduction strategies is a better indicator of rising competition than implementing a low-wage strategy. The

former variable reflects a conscious (and recent) decision of a workplace to rein in costs, in areas that might include, but are not restricted to, labour costs. It would be surprising if greater competition were not one of the main drivers of efforts at cost reduction. Conversely, the operation of a low-wage workplace may reflect different influences, such as location or low skill requirements, and therefore may not be an indicator of strong competition.

On the basis of the preferred indicator, the implementation of cost reduction strategies, it may be concluded that rising competitive pressures experienced by Australian workplaces are, in part, responsible for the growth in the incidence of labour hire, at least between 1990 and 1995. If anything, such pressures are likely to have increased in subsequent years, especially as a result of greater openness to international trade. Gabbitas and Gretton (2003) report that the export intensity of Australian firms increased in the four years to 1997-98.

The role of workplace age and occupational mix

A workplace's employment strategies, and hence its use of labour hire, may be directly influenced by its age, and by the mix of occupations it employs. These influences may also be indirect, such as when these workplace characteristics condition its employment response to industrial relations change, technological change or competitive pressures.

Workplace age

The age of a workplace does not influence the likelihood that it uses labour hire (Glover et al. 2005). However, workplaces that had been in operation for fewer than five years at the time of the 1995 AWIRS survey had a higher predicted rate of use of labour hire than other workplaces (see appendix C).

One possible explanation for the lack of 'probability effect' coexisting with the strong 'rate' effect is that any probability effect associated with younger workplaces is already captured by the industrial relations, technology and occupational variables used in the modelling. Morehead et al. (1997, p. 51) commented that workplaces that were less than five years old were apparently 'simpler' than older workplaces, with fewer occupational groups and unions, on average. Their managers were also more likely to regard enterprise agreements as important. Younger workplaces are also more likely, by definition, to be using more technology and skill-intensive production processes than their older counterparts.

Occupational mix

In 2002, labour hire workers were most represented among labourers and related workers, making up 7.0 per cent of total employment in that occupation (table 3.2). They were least represented among elementary clerical, sales and service workers, where casual employees, rather than labour hire workers, are used by employers to provide labour flexibility. On average, labour hire workers make up a greater proportion of the workforce employed in less-skilled occupations (defined in table 3.2 as all occupations except the first three) than of that employed in skilled occupations.[12]

Table 3.2 **Rate of use and distribution of labour hire employment, by occupation, 2002[a]**

		Distribution	
Occupation	*Representation of labour hire workers*[b]	*Labour hire*	*Non labour hire*
	%	%	%
Managers and administrators	1.9	3.2	5.8
Professionals	2.9	18.0	22.0
Associate professionals	3.0	10.7	12.6
Tradespersons and related workers	4.6	14.4	10.7
Advanced clerical and service workers	2.5	2.1	3.0
Intermediate clerical, sales and service workers	3.4	18.0	18.3
Intermediate production and service workers	4.8	11.9	8.5
Elementary clerical, sales and service workers	1.6	5.1	11.1
Labourers and related workers	7.0	16.7	8.0
Total[c]	**3.5**	**100.0**	**100.0**

a Population estimates. Reference population includes all employees, including labour hire employees, aged 15–64 (excludes employers and self-employed workers). **b** In this and following chapter 3 tables, the rate of use of labour hire is expressed as (number of labour hire employees)/(total number of employees including labour hire). **c** May not add up to one hundred, due to rounding.

Source: Laplagne and Glover 2005.

The varying representation of labour hire workers across occupations suggests that the occupational mix of a workplace influences its use of labour hire. That is, whether a workplace employs mostly professionals or labourers will bear some relationship with how likely it is to use labour hire, and at what rate.

Modelling by Glover et al. (2005) indicates that the incidence of labour hire is highest in workplaces where para-professionals or managers represent the largest

12 Reasons for the greater likelihood of labour hire workers to be employed in less skilled occupations are discussed in chapter 3 of Laplagne and Glover (2005).

proportion of the workforce. Such workplaces also had a higher rate of use of labour hire.

These results do not mean that labour hire workers are most likely to be working as para-professionals or managers. As shown in table 3.2, the majority of labour hire workers are employed in less skilled occupations. The modelling suggests that labour hire workers are more likely to be employed *in support of* skilled workers, than *as* skilled workers. Put differently, they complement rather than substitute for skilled workers.[13]

The proportion of skilled workers in total employment increased slightly from around 30 per cent in 1990 to around 32.5 per cent in 1998 (De Laine et al. 2000). Since that time, it is likely that the upskilling of the Australian labour force has continued. Based on the complementarity between skilled workers and labour hire workers, hypothesized above, this upskilling may have contributed a little to the growth in the incidence and rate of use of labour hire.

3.4 Compositional factors

As mentioned in chapter 1, the two compositional factors that are controlled for in the analysis of panel data are workplace size and industry of operation (see also appendix B).

Workplace size

Small and large workplaces may differ in their opportunities to use labour hire, and in their response to these opportunities. For example:

- The greater the number of direct employees, the greater is the probability that, on any given day or week, one or more employees will be absent from the workplace, thus leading to more opportunities for the use of labour hire.
- The unexpected absence of one direct employee is likely to be more disruptive of the production process in small workplaces. This would tend to make these workplaces more inclined than larger ones to use labour hire when faced with employee absences.

Recent data from the HILDA survey indicate that the use of labour hire varies between workplaces of different sizes (table 3.3). In terms of the average use of

[13] However, within some disaggregated occupations, labour hire workers often perform the same tasks as their skilled colleagues who are directly employed. An example is nursing.

labour hire across all workplaces in a given size category, workplaces with between 20 to 49 employees and those with 500 or more employees relied most on labour hire (3.8 per cent and 4.0 per cent of their workforce, respectively) in 2002. These two categories also employed the largest proportions of the total labour hire employee population (21.5 per cent and 14.1 per cent, respectively).

Table 3.3 **Rate of use and distribution of labour hire workers, by workplace size of main job, 2002[a]**

Bivariate analysis

Number of employees at workplace[b]	*Proportion of employees who are labour hire*	*Implied minimum rate of use where labour hire used*[c]	*Distribution of labour hire workforce*
	%	%	%
Fewer than 5	3.5	25.0	11.2
5 to 9	1.6	11.1	6.3
10 to 19	2.5	5.3	11.8
20 to 49	3.8	na	21.5
50 to 99	3.5	na	12.3
100 to 199	3.6	na	11.5
200 to 499	3.4	na	11.2
500 or more	4.0	na	14.1
Total	**na**	**na**	**100.0**
Fewer than 20[d]	2.6	na	29.4
20 or more	4.0	na	70.6
Total	**na**	**na**	**100.0**

a Population estimates. Reference population includes all employees, including labour hire employees, aged 15–64 (excludes employers and self-employed workers). **b** Includes labour hire, part-time and casual employees. Does not include contractors. **c** By definition, a workplace with N employees, one or more of whom are labour hire workers, has a rate of labour hire use of at least [(1/N)*100]. In a given size range, therefore, the rate of use of labour hire is potentially much greater than indicated by the proportion of employees who are labour hire employees for all workplaces in that size range (some of which use no labour hire). For example, in workplaces with fewer than 5 employees that use labour hire, the rate of use of labour hire must be at least (1/4 =) 25.0 per cent. Figures in this column assume that one labour hire worker is employed in a workplace that has the maximum number of employees in that particular size category. Over a certain workplace size, the minimum implied rate of use is equal to the proportion of employees who are labour hire workers and is therefore not shown. **d** Cut-off value of 20 employees chosen to allow comparisons with AWIRS sample (see chapter 2). **na**: Not applicable.

Source: Laplagne and Glover 2005, table 3.4.

As indicators of the probability and intensity of use of labour hire, the figures in column 1 of table 3.3 are somewhat misleading, for two reasons:

- As averages across users and non-users of labour hire in a particular size category, these figures do not convey information on the percentage of workplaces that use labour hire or the rate at which these workplaces use labour hire. As an example, when they used labour hire in 2002, workplaces with fewer

than five employees used it at the highest rate of all size categories (at least 25 per cent. See column 2 of table 3.3).

- Simple bivariate associations between workplace size and the probability or rate of use of labour hire do not provide strong evidence that size is a driver of labour hire use. It might be the case that another workplace characteristic, associated with size (for example, industry), is the real driver.

Both these problems can be overcome by using a multivariate analysis that distinguishes the influence of individual factors on the probability and rate of use of labour hire. Using this approach, Glover et al. (2005) find that workplace size is positively related to the probability of using labour hire, and negatively related to the rate of labour hire use (table 3.4).[14]

Table 3.4 **Predicted probability and rate of use of labour hire, by workplace size, 1995[a]**
Multivariate analysis

Workplace size	*Probability of use*	*Rate of use*[b]
No. of employees[c]	%	%
24	18.7	4.4
49	19.2	4.2
65	19.6	4.1
88	20.1	3.9
98	20.3	3.9
107	20.5	3.8
195	22.5	3.3
488	29.9	2.0
700	35.8	1.4
1000	44.8	0.9

a Apart from workplace size, other workplace characteristics are those of a sample-wide reference workplace. See chapter 5 and appendix D of Glover et al. (2005) for details. **b** Rate of use among workplaces that use labour hire. **c** The median workplace size in the AWIRS 95 sample is approximately 98.

Source: Glover et al. 2005.

The advantages of multivariate analysis over bivariate analysis may be illustrated by comparing, in tables 3.3 and 3.4, the rate of use of labour hire of workplaces in a particular size category. For example, the rate of use in workplaces in the '500 or more' category in table 3.3 is 4.0 per cent. By contrast, the predicted rate of use for workplaces of that size in table 3.4 is 2.0 per cent or lower. The gap between the two rates indicates that the bivariate analysis overestimates the rate of use of labour

14 These results mainly align with those Wooden and VandenHeuvel (1996a), which are based on a dataset of workplaces with 100 employees or more. Unlike in Wooden and VandenHeuvel's results, there is no evidence that the probability of labour hire use increases with workplace size at a declining rate in AWIRS 95.

hire, by not separating the effects of size from those of other workplace characteristics.

Nonetheless, the results of the multivariate analysis confirm that, while larger firms are more likely to employ *some* labour hire workers, smaller firms use this form of employment more intensively when they do use it.

The association detected between workplace size and the use of labour hire sheds light on the possible role that structural changes in the economy have played in the growth of labour hire employment. As mentioned earlier, changes in the relative importance of industries and of workplaces of different sizes are thought to have moderated that growth (see appendix B). Between 1990 and 1995, the number of workplaces employing between 20 and 49 employees grew, while the number of larger workplaces fell (Morehead et al. 1997). The results contained in table 3.4 indicate that this lowering of the median workplace size might have led to a reduction in the incidence of labour hire use in that period, and to a rise in the rate of use. Provided the association between workplace size and labour hire use remained unchanged after 1995, then a further increase in the proportion of small businesses probably contributed to a reduction in the incidence of labour hire employment, but to an increase in the rate of use within workplaces.

Industry of operation

Recent data from the HILDA survey show that labour hire employment is used to varying extents across industries (table 3.5). As a proportion of an industry's workforce, labour hire workers are most represented in the communication services, manufacturing and property and business services industries.

However, as with the use of labour hire by workplaces of different sizes, the percentages in table 3.5 do not allow inter-industry differences in incidence to be distinguished from differences in the rate of use of workplaces that employ labour hire. Moreover, the inter-industry differences reflected in those percentages arise partly because of differences in workplace characteristics that vary across industries, so that these characteristics, rather than industry of operation, could be the real driver of labour hire use. For example, a high proportion of closed union shops in an industry would depress the incidence of use of labour hire in that industry, given the closed shop results reported earlier.

Table 3.5 **Rate of use of labour hire employment, by industry, 2002[a]**
Bivariate analysis

Industry	*Rate of use of labour hire*[b]
Agriculture, forestry and fishing	5.4
Mining	3.4
Manufacturing	6.2
Electricity, gas and water supply	ns
Construction	3.9
Wholesale trade	4.1
Retail trade	1.4
Accommodation, cafes and restaurants	1.7
Transport and storage	3.6
Communication services	11.1
Finance and insurance	4.0
Property and business services	6.1
Government administration	2.5
Education	1.1
Health and community services	2.7
Cultural and recreational services	2.1
Personal and other services	ns
Economy-wide average	**3.5**

a Population estimates. Reference population includes all employees, including labour hire employees, aged 15–64 (excludes employers and self-employed workers). **b** This rate is the average rate for all the workplaces in an industry, and does not reflect the intensity of use of labour hire by those workplaces that use it. **ns**: Estimates for the electricity, gas and water supply and the personal and other services industries are not reliable, due to the likelihood of sampling error.

Source: Laplagne and Glover 2005.

Using multivariate analysis, it is possible to separate the influence of industry from that of other variables, and to distinguish between industry's influence on the incidence and on the rate of use of workplaces that use labour hire (Glover et al. 2005). Results from this analysis show that:

- workplaces in manufacturing, wholesale trade, transport and storage, and finance and insurance are most likely to use labour hire;
- workplaces in the cultural, recreational, personal and other services industry are least likely to use labour hire; and
- workplaces in the remaining industries (mining, electricity, gas and water, construction, retail trade, accommodation, cafes and restaurants, communications services, property and business services, and government, health and education) fall somewhere between these extremes.

By contrast, among workplaces that use labour hire, no industry effects on the rate of use of labour hire were detected.

The econometric model does not explain the industry effects on the probability of use of labour hire. These effects do not arise from differences in, for example, median workplace size, occupational mix or union representation, which are taken into account by the model. Unexplained inter-industry differences in incidence might be due to differences in each industry's intrinsic ability to use labour hire. For example, manufacturing workplaces might require generic skills that are widely available and can, therefore, be readily supplied by labour hire agencies. However, attempts to include, in the modelling, a variable measuring the specificity of skills required by a particular workplace did not prove successful (see chapter 5 of Glover et al. 2005).

Modelling of the influence of industry can explain part of the structural changes in the economy-wide use of labour hire. Between 1990 and 1995, the combined share of total employment of the four industries that are more likely to use labour hire (manufacturing, wholesale trade, transport and storage, finance and insurance) declined from 40 per cent to 31 per cent (Morehead et al. 1997).[15] This explains why changes in the employment structure of the economy over that period slowed the growth in the incidence of labour hire.

By 2002, the combined employment shares of the four industries mentioned above had fallen further, to 26 per cent of total employment (ABS 2002b). Provided their relatively high propensity to use labour hire in 1995 persisted, the continued decline of these four industries probably slowed the growth in the incidence of labour hire employment. Given that no industry effects were detected regarding the rate of labour hire use by workplaces that use it, that decline would also have partly offset the growth in the economy-wide rate of labour hire employment.

3.5 Summary

This chapter has investigated the importance of selected demand-side factors that may be related to the rapid growth in the incidence and rate of use of labour hire employment in recent years. Based on a comparison of labour hire use by workplaces in 1990 and 1995, the growth of labour hire employment over that period was apportioned between behavioural factors and compositional factors. The nature of both types of factor was then explored using econometric analysis. Finally, knowledge of these factors was used to assess the likely sources of the growth of labour hire employment over the past decade or so.

[15] Does not include agriculture, forestry and fishing and defence industries.

Results of the analysis outlined above indicate that changes in their industrial relations and competitive environments have generally resulted in changes in the employment behaviour of workplaces, favouring labour hire use. Industrial relations changes, in particular, are likely to have contributed to the rise in the incidence of labour hire. By contrast, these changes appear to have had a negative impact, or no impact at all, on the labour hire use of those workplaces that were already using this form of employment. Thus, it might be argued that the main effect of these changes was to lower the 'threshold' for the use of labour hire.

The increasing use of technology by Australian workplaces during the 1990s and beyond appears to have had a negative impact on the growth in the use of labour hire. This suggests that, when introducing new technology, firms carry out workforce adjustments that reduce their need for labour hire, at least in the two years following the change.

Econometric modelling indicates that changes in industry structure have unambiguously lowered the proportion of workplaces using labour hire and the economy-wide rate of labour hire use.

In contrast, it is not possible to be as definite where workplace size is concerned. An increase in the proportion of small businesses has most likely meant that the proportion of workplaces using labour hire did not rise as rapidly as it would have done otherwise. On the other hand, an increasing prevalence of small businesses would have raised the rate of use of labour hire of those workplaces that use it. These two effects, therefore, influenced the economy-wide rate of labour hire use in opposite directions.

However, when considered jointly, changes in the economy's industry and workplace size structure have slowed the growth of labour hire employment, both in terms of incidence and the economy-wide rate of use (see appendix B).

4 Conclusions and further research

This study fills gaps in basic factual information about the demand for labour hire, by using survey data to investigate its characteristics, level and growth between 1990 and 2002.

The estimation of comparable rates of labour hire employment leads to the conclusion that labour hire employment grew strongly between 1990 and 2002. Survey evidence is then used to evaluate whether that growth was prompted by changes in the structure of the economy or by changes in firms' preferences in favour of labour hire employment. Change due to structural factors is largely beyond the control of individual firms as, for example, structural change leads some industries to expand and others to contract. It is established that the increase in demand for labour hire is driven by behavioural changes, not by changes in economic structure. Indeed, structural changes are shown to have partly offset the growth in this form of employment. As behavioural changes in the use of labour hire employment can be reflected in a greater proportion of firms using it and/or in firms using it employing a greater proportion of labour hire workers, each of these aspects is investigated separately.

While the supply of labour to the labour hire work arrangement also influences the rate at which it is used in the economy, this was not investigated in this paper.

The reasons for the behavioural and compositional changes to the use of labour hire are summarised below.

4.1 What is the rate of labour hire employment; has it grown?

To establish whether the use of labour hire employment grew between 1990 and 2002, estimates from eight surveys were examined. Careful consideration of the characteristics of those surveys indicates that only four yield reliable estimates of the rate of labour hire employment; estimates from the other surveys are adversely affected by sampling and weighting issues.

Based on the HILDA 02 survey, the economy-wide rate of labour hire employment is estimated to have been 2.9 per cent of all employed persons in 2002, equivalent to 270 000 labour hire employees.

Adjusting the coverage of the HILDA survey to make it comparable with AWIRS indicates that, as a proportion of all employed persons at workplaces with 20 or more employees, labour hire employment was 0.8 per cent in 1990 and 3.9 per cent in 2002, supporting claims of rapid growth in this work arrangement (Wooden 1999; Hall 2000, 2002).

Available estimates do not clarify whether the growth rate of labour hire has been constant or whether it declined over the 1990–2002 period. Future estimates, derived from the annual HILDA survey, should allow the issue of changes in the rate of growth of labour hire employment to be explored.

In the United States, estimates of the rate of labour hire employment by the Bureau of Labour Statistics indicate that the use of labour hire employment is strongly and positively related to the economic cycle. While the 1990 Australian estimate of the rate of labour hire employment may have been influenced by the recession at that time, Australia has not experienced a substantial economic downturn since. Ongoing estimates from the HILDA survey may also allow this issue to be investigated.

4.2 Why has the use of labour hire grown?

The rapid growth of labour hire employment between 1990 and 2002 may have been due to two distinct demand-side influences. It may have grown because firms' behaviour changed or because the structure of the economy changed. Structural change is related to the proportion of firms belonging to some industries increasing while the proportion in other industries declines, or to the distribution of firms by employment size changing. Both behavioural and structural change may result in a larger proportion of firms using labour hire or firms using it more intensively economy-wide.

Analysis of survey data relating to 1990 and 1995 indicates that the economy-wide growth of labour hire employment can be explained entirely by changes in the behaviour of firms. On the whole, firms became more likely to use labour hire employment, and when using it, used more of it. Structural changes in the economy, by contrast, partly offset the growth in the use of labour hire employment.

Industrial relations context

The period between 1990 and 1995 was one of significant industrial relations change that saw a shift from a system of centralised wage fixing towards one of enterprise bargaining. Three industrial relations variables are found to be related to the use of labour hire: the presence of a closed union shop; the presence of a human resource manager at the workplace; and being involved in workplace bargaining.

The presence an active union at the workplace did not influence the probability of use, or the rate of use of labour hire. However, when all of its employees are unionised, so that the workplace is a closed union shop, the likelihood of use of labour hire becomes very low (but the rate of use is unaffected).

A workplace employing a human resources manager is more likely than other workplaces to use labour hire. However, it uses it at a lower rate. This suggests that the employment of a human resource manager allows a firm to make a more informed choice between the various work arrangements available.

Finally, workplaces engaging in workplace bargaining had a higher probability of use of labour hire.

Between 1990 and 1995, the proportion of workplaces that are closed shops decreased, more firms employed a human resources manager, and the proportion of firms engaging in workplace bargaining increased. All three of these industrial relations factors therefore had the potential to contribute to the increase in the proportion of firms using labour hire. The industrial relations factor that suppressed the use of labour hire the most was the existence of a closed shop. It may be speculated that any decline in the number of closed shops since 1995 has contributed to a further increase in the number of firms using labour hire. Similarly, as workplace bargaining continued to spread throughout the economy, it is likely to have contributed to the growth of labour hire employment through to 2002.

Given that their presence at the workplace leads to a lower rate of use of labour hire, some ambiguity exists regarding the overall influence of increasing numbers of human resources managers on the economy-wide rate of use of labour hire. However, taken as a whole, it seems likely that changes in the industrial relations environment and practices of firms have had a positive influence on that rate.

Other factors affecting workplace employment strategies

In addition to industrial relations change, widespread technological change and increased competitive pressures on firms influenced their employment strategies, including the use of labour hire.

The two factors that are related to technological change, the introduction of new technology into the workplace in the last two years and the downsizing of employment in the last year because of technological change, both halve the proportion of workplaces using labour hire. That is, irrespective of whether a firm downsizes its workforce or not, technological change leads to firms being less likely to use labour hire. The rate of use of labour hire is not affected by the introduction of new technology in the last two years. However, downsizing in the last year because of technological change doubles the rate at which labour hire is used. Despite this, a hypothesised positive relationship between technological change and the use of labour hire is not supported overall.

Econometric analysis shows that firms that have sought to reduce costs over the past two years have a much higher probability of using labour hire. The intent to reduce costs is likely to be related to a specific stimulus facing a firm, possibly an increase in competitive pressures. Analysis of the AWIRS 1990 and 1995 surveys shows competitive pressures on Australian firms increasing between those two years. By contrast, workplaces that have low wages compared with similar workplaces appear to use strategies other than labour hire to lower labour costs, as they use half as much labour hire as other workplaces. The operation of a low-wage workplace appears to be related to factors other than increased competitive pressure. It may, for example, relate to a firm's location or occupational composition.

Workplaces in operation for less than five years use a higher rate of labour hire employment, but are no more likely to use it than other workplaces. The intensity of use effect is probably associated with the characteristics of recently established workplaces. They appear to have fewer barriers to the use of labour hire, as they have fewer occupations groups and unions and their managers appear to be more aware of the benefits and risks of employing different forms of labour.

Compositional factors

Multivariate analysis of the relationship between the use of labour hire and workplace size, as measured by the number of employees, was conducted to separate the influence of workplace size from that of other factors. This analysis indicates that larger firms are more likely than smaller firms to employ some labour hire workers but that small firms, when they use it, use it at a higher rate. This may

occur because large workplaces are more likely than small workplaces to have employee absences on any day of the week, creating more opportunities for the use of labour hire. However, an absence that requires a labour hire replacement worker results in a higher rate of use of labour hire at smaller workplace.

Between 1990 and 1995, the proportion of workplaces employing between 20 and 49 employees grew while the proportion of larger workplaces fell. This led to a decrease in the proportion of workplaces using labour hire, but to an increase in their average rate of use. Any further increase in the proportion of smaller firms after 1995 will probably have furthered these opposite effects.

The HILDA 02 survey data indicate that the use of labour hire is highest in the communications services, manufacturing and the property and business services industries. However, as with workplace size, it is necessary to account for the influence of other factors and to distinguish whether a workplace uses labour hire from how much is used.

Taking other factors into account, some industries (manufacturing, wholesale trade, transport and storage, and finance and insurance) are more likely to use labour hire than others. However, there were no significant differences in the rate of use across industries.

The industry effects are not explained by the econometric model analysis, in the sense that they do not arise from variation in variables included in the model. Further research into what causes these unexplained industry effects is needed.

Structural change in the economy explains part of the change in the use of labour hire. Between 1990 and 1995, the total share of employment of the four industries most likely to use labour hire declined from 40 to 31 per cent. By 2002, the employment share of these industries had fallen to 26 per cent. The relative decline of industries with a higher propensity to use labour hire explains why structural change partly offset the overall growth in the use of labour hire.

4.3 Concluding comments

This paper has shown that the use of labour hire employment grew strongly from 1990 to 2002, with many demand-side factors leading to both the proportion of firms using labour hire and the rate at which they use it increasing. However, it is not clear if this rate of growth will be maintained. The influence of some factors, such as whether a workplace is a closed shop, can be expected to have a weaker influence on future growth as the importance of closed shops continues to fall. Other industrial relations factors underpinning the growth of labour hire between

1990 and 2002 may similarly decline in importance with, for example, most workplaces now engaging in workplace bargaining. Moreover, future industrial relations reforms affecting direct employees might reduce the comparative advantage of labour hire workers. On the other hand, factors such as international competition may continue to strengthen. In addition, new influences, such as skill shortages, may help sustain the growth in the labour hire work arrangement.

A Major factors influencing survey estimates

The major factors influencing survey estimates of labour hire employment are outlined below. Further discussion, of these and other factors affecting the estimates, is detailed in appendix A of Laplagne and Glover (2005).

Surveys of households and labour hire agencies, such as the HILDA surveys and the ESS surveys, allow estimates of the economy-wide rate of labour hire employment. Surveys of workplaces allow less comprehensive estimates, because the cost of such surveys has led to the exclusion of a significant number of workplaces from their scope. For example, the two AWIRS surveys excluded workplaces with fewer than 20 employees and those in the agriculture, forestry and fisheries, and defence industries. Because of AWIRS's exclusion of smaller workplaces, that survey is representative of only half of all employees in 1990 and 1995 (Morehead et al. 1997). By contrast, household-based surveys and surveys of firms providing labour hire services are not restricted in scope. Therefore, as long as the household and labour hire agency samples are adjusted to be representative of the whole population, the HILDA and ESS surveys allow potentially reliable economy-wide estimates of the rate of labour hire employment.

Estimates of labour hire employment based on the HILDA 02 and ESS 02 surveys differ slightly. Based on ESS 02, 290 000 labour hire workers are identified, equivalent to 3.1 per cent of all employed persons. Based on HILDA 02, only 270 000 labour hire workers are identified, or 2.9 per cent of all employed persons. The difference between the two estimates is mainly due to the HILDA 02 survey not identifying labour hire contractors, who were identified by the ESS 02 survey.

A.1 Why are the W&V, FOES and ESS 99 estimates outliers?

Wooden and VandenHeuvel (W&V) state that their sample is 'non-representative' of the economy in 1994 (Wooden and VandenHeuvel 1996b, p. 171). The W&V estimate appears to be affected by factors beside the restriction of the analysis to workplaces employing 100 or more employees. Restricting the AWIRS 95 sample

to workplaces employing 100 or more employees increases the rate of labour hire employment from 2.2 to 2.8 per cent, well below Wooden and VandenHeuvel's estimate of 3.6 per cent in the previous year. Refer to Wooden and VandenHeuvel (1996b) for a discussion of factors that may have affected the representativeness of their sample.

The FOES 98 and FOES 01 surveys underestimate the rate of labour hire employment. This may have occurred because the FOES surveys use the 'any responsible adult in the household' survey method to select a single survey respondent to represent each household (Vassiliou S., ABS, Melbourne, pers. comm., 21 September 2004). It appears that many respondents were unaware of the employment details of other members of their household, as a large number of FOES questions were answered with 'don't know'.

The ESS 99 survey overestimates the rate of labour hire employment because:

- persons 'employed' in their own single-person business, created for the sole purpose of arranging a series of placements for themselves, were counted as labour hire workers, even though they were not employed through a commercially independent labour hire agency;
- clients of businesses that primarily provided ancillary employment services, such as assistance in preparing résumés or career counselling, but did not perform labour hire placements, were counted as labour hire workers; and
- employees of firms that used one business entity to collect revenue and another to provide administrative services, including employment services, were counted as labour hire workers.

Similar problems do not affect the estimate of labour hire employment obtained from the ESS 02 survey, as these three groups were not regarded as labour hire workers.

B Analysis of labour hire growth using the AWIRS panel dataset

The AWIRS surveys of 1990 and 1995 contain a sub-sample of workplaces that existed in both years. This sub-sample forms the AWIRS panel, or longitudinal, dataset.

Using that panel dataset, it is possible to attribute the growth in the rate of use of labour hire employment between 1990 and 1995 to one or both of the following effects:

- a change in firms' preferences in favour of labour hire employment;[16] and
- a change in the economy's industry structure towards firms that are more likely to use labour hire or towards firms that use higher rates of labour hire.

The former effect is obtained by examining how panel workplaces changed their use of labour hire between 1990 and 1995. The latter effect can be estimated by re-weighting the 1995 data to adjust them to the industry composition and workplace size composition existing in the whole economy in 1995.[17] This analysis is akin to decomposition or shift-share analysis, except that the only sources of structural change considered are industry of operation and workplace size.

The examination of the AWIRS panel data indicates that the growth in the use of labour hire workers between 1990 and 1995 was due to an increased preference for labour hire, not structural change. The preference effect was reflected in an increase in the proportion of workplaces using any labour hire, and an increase in the rate of use of labour hire by workplaces already using it in 1990. The proportion of panel workplaces using any labour hire increased from 16.6 to 27.2 per cent from 1990 to 1995, while the rate of use, as a proportion of panel workplaces' employees, increased from 4.3 to 8.5 per cent from 1990 to 1995.

16 A change in firms' preferences can be reflected in an increase in the proportion of firms using any labour hire, in a higher rate of use by firms using labour hire workers, or in both.

17 Panel workplaces in 1990 were selected so as to be representative of all workplaces in that year, without the need for weighting. For those workplaces to be also representative of the 1995 population of workplaces, re-weighting is required.

The AWIRS panel data also reveal that workplaces' use of labour hire employment is dynamic: approximately half of workplaces using labour hire employment in the 1990 survey period did not use it in the 1995 survey period. Those workplaces generally had a below-average rate of use in 1990. Despite the relatively low continuation rate, the incidence of use of labour hire increased between 1990 and 1995 because new users, those not using it in 1990 but using it in 1995, outnumbered those no longer using it by a factor of 2.5. Moreover, new users used labour hire at the same rate as ongoing users.

Adjusting the 1995 panel data for changes in industry composition and in the distribution of workplace size reveals that the unweighted panel data results overstate the growth in both the incidence and rate of use of labour hire in the economy. Based on weighted 1995 panel data, the economy-wide incidence of labour hire is only 20.6 per cent, and the rate of use among workplaces using labour hire is only 8.1 per cent. Changes to the economy's industry structure and workplace size composition between 1990 and 1995, therefore, moderated the preference effects identified above. In other words, the growth in the economy-wide rate of labour hire employment between 1990 and 1995 was entirely due to an increased preference by firms for this form of employment, with the change in the structure of the economy slowing labour hire growth somewhat.

C Detailed results

Estimation results in this paper are sourced from Glover et al. (1995). These authors used econometric analysis of unit-record data from AWIRS 95 to identify the factors that influence the use of labour hire employment by workplaces. The econometric approach was preferred to alternatives used by other authors, such as shift-share analysis, because of two related advantages:

- Multivariate econometric analysis can identify and measure the individual effects of many factors operating simultaneously. Shift-share analysis, being analogous to bivariate analysis, can only deal easily with two, or at most three, factors at a time. For example, using shift-share analysis to examine the effects of workplace age on the economy-wide rate of labour hire use would not generally allow for the possibility that age might be related to size and unionisation, which may be the real drivers of labour hire use.
- Econometric analysis can quickly and efficiently distinguish between the 'incidence' effects of individual factors (more firms use labour hire) and their 'intensity' effects (existing users use it more intensively).

Glover et al. (2005) used the Heckman modelling approach because it allows the separate identification of the determinants of the probability that a workplace uses labour hire workers, and of the rate at which labour hire is used, when it is used. This approach is necessary as a workplace can choose to use or not use labour hire, and if it uses it, it then chooses what rate of labour hire to use.

Marginal effects are the effects of a small change in an explanatory variable on the dependent variable. In a standard linear regression, these effects are measured by the coefficient estimates of each explanatory variable. The two-part structure of the Heckman model means that the coefficients do not represent marginal effects. Marginal effects in a Heckman framework are a complex function of coefficients estimated in both equations (see Glover et al. 2005, appendix C).

Table C.1 reports the predicted probability of a workplace using labour hire and its predicted rate of use, calculated by applying the estimated marginal effects of significant variables to a reference workplace (see table notes).

Table C.1 **Predicted probability and rate of use of labour hire employment[a]**

Factor	*Probability of use*	*Rate of use*[b]
	%	%
Sample-wide reference workplace[c]	*20.3*	*3.9*
Workplace is a closed union shop	8.8	
Workplace use of part-time casual employees		3.8
New technology introduced into workplace in last two years	13.8	
Workplace downsized because tech. change in last year	10.2	8.1
Workplace change introduced to reduce costs	28.9	
Low wage workplace relative to others in same industry	10.1	
Employment relations manager employed at workplace	29.2	2.4
Workplace established less than five years ago		7.1
Workplace bargaining occurred at the workplace	26.2	

a Only marginal effects that are significant at the 0.05 level or better are shown. **b** Conditional rate of use: the proportion of labour hire workers in the total workforce of workplaces that use this form of employment. **c** The sample-wide reference workplace is a stylised workplace, designed to be representative of all workplaces in the sample, regardless of industry. The reference workplace is assumed to have the median number of employees of all workplaces in the sample, as well as the average occupational mix and proportion of part-time casual employees. The role of this hypothetical workplace is to serve as a benchmark against which the effects of various factors can be assessed, in terms of direction and strength. For example, compared to the predicted probability of use of labour hire of the reference workplace (20.3 per cent), the presence of a closed union shop leads to a probability which is almost 12 percentage points lower (8.8 per cent). Note, however, that the probabilities linked to individual factors are not additive. That is, the probability of using labour hire at a workplace that downsized due to technological change *and* introduced new technology does not equal 10.2 plus 13.8.

Source: Glover et al. 2005.

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