

NEW ZEALAND DEPARTMENT OF LABOUR

OCCASIONAL PAPER SERIES

Work Sharing

Its Potential to Reduce Unemployment in New Zealand

by

Sylvia Dixon

Occasional Paper 1994/2

September 1994

Labour Market Policy Group

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Work Sharing: Its Potential to Reduce Unemployment in New Zealand

by

Sylvia Dixon

Labour Market Analysis Unit

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Abstract

Work sharing measures attempt to spread the existing quantity of paid work in the economy among a larger number of people, by reducing the average number of hours worked by the currently employed. The objective of this literature review was to assess the potential of work sharing measures to reduce unemployment in New Zealand, by learning from the experiences of other OECD countries. The paper summarises the types of work sharing arrangements that have been trialled overseas and the empirical research evidence on their employment and unemployment effects. In general, work sharing measures do not appear to have been as successful at generating additional jobs and reducing unemployment as their advocates anticipated.

The views expressed in this paper do not necessarily represent the views of the Department of Labour.

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WORK SHARING

Its potential to reduce unemployment in New Zealand

EXECUTIVE SUMMARY

This short report considers the potential of work sharing measures to reduce unemployment in New Zealand. The work sharing issue was raised by the Employment Taskforce in its report *Employment. The issues*. There is a lengthier, technical paper in which the issues summarised below are addressed in more detail.

Definition of work sharing

"Work sharing" refers to measures which attempt to spread the existing quantity of paid work in the economy among a larger number of people, by reducing the number of hours worked by some or all of the currently employed. Measures which seek to reduce the total size of the labour force (for example, by delaying the entry of young people, or encouraging early retirement) are sometimes regarded as work sharing measures, but they are not addressed in this paper.

The work sharing measures considered in the paper are:

- Reductions in the length of the working week for full-timer employees¹;
- Reductions in the amount of overtime worked by full-time employees;
- Reductions in the length of the working year, through the provision of longer holidays or other types of leave;
- Changes in shift patterns or other scheduling innovations which reduce the length of the working year;
- Increased use of part-time work,² including job sharing.

The current working patterns of New Zealanders and their attitudes to work sharing

New Zealanders are already doing a considerable amount of work sharing, through their involvement in part-time employment. Part-time workers now comprise about 21 percent of all workers, including the self-employed. This percentage is likely to continue growing in future.

About 34 percent of the employed state that their total usual weekly hours of work are above 40, and about 29 percent have usual weekly hours of 45 or more. Thus there are a large number of people working "extended" hours, hours which might be seen as available for redistribution.

However, it is likely that the vast majority of full-time workers in New Zealand would not wish to reduce their hours of work if this meant a loss of income. Surveys undertaken overseas suggest that the proportion of workers who indicate an interest in opportunities to reduce their working hours, with corresponding reductions in their earnings, is likely to be around 5-15 percent. The workers most likely to want to reduce their hours are those with responsibility for the care of dependants, those seeking a transitional period between full-time work and retirement, and those on relatively high incomes who want to make a lifestyle choice in favour of increased leisure. These potential voluntary work sharers are scattered across workplaces, tend to have higher income levels than full-time workers in general, and are more likely than full-time workers in general to be working in professional, technical and managerial occupations.

There are no significant legislative or regulatory constraints on the adoption of work sharing measures at present. The industrial relations environment also provides flexibility for employers and workers to

¹ Defined as those working for at least 30 hours a week

² That is, work for fewer than 30 hours a week.

negotiate non-standard working time arrangements. Thus, the legislative and regulatory environment in New Zealand is favourable to the voluntary adoption of work sharing measures.

Work sharing measures implemented in other countries

Reductions in the length of the working week were implemented on a national, industry or enterprise basis in a number of West European countries during the 1980s. Most reductions were the outcome of union-management bargaining. Usually workers received full or partial wage compensation. More recent agreements have tended to involve concessions from unions in the form of wage restraints, increased working time flexibility, and the implementation of other measures to increase labour productivity.

Restrictions on overtime have not been widely promoted as work sharing measures in the 1980s and 1990s, and we were unable to locate any empirical examples of new restrictions being introduced for work sharing purposes. *Reductions in the length of the working year* were achieved in a number of European nations during the 1980s at a national or industry level, via extensions to annual leave entitlements.

Measures to promote part-time employment were implemented or piloted by several European governments during the 1980s. The measures included subsidies to employers to encourage them to create part-time jobs, allowances to full-time workers who transferred to part-time jobs, and amendments to employment laws, taxation rules and benefit regulations designed to remove barriers or disincentives to the adoption of part-time employment.

The employment impacts of work sharing measures

Economic theory indicates that work sharing measures will not necessarily have the positive effects on aggregate employment levels that advocates hope for. This is a consequence of the impact of these measures on labour costs, and the adjustments to working hours, the relative utilisation of different factors of production, and output levels which follow. The processes likely to be set in motion are as follows:

- a) Reductions in working time increase the significance of fixed costs as a component of total labour costs. (Fixed labour costs are those incurred whenever an employee is hired, such as hiring and firing costs, training, and the costs of any facilities or equipment that are used on a per capita basis). This increases the price of marginal adjustments to the number of *employees* relative to the price of marginal adjustments to *hours*. Firms that have the capacity for overtime work are likely to respond to the increase in fixed labour costs by making more use of overtime hours, offsetting at least in part the need to hire more employees. Increased use of shiftwork may achieve the same result;
- b) Even if workers are not compensated for the hours they no longer work, hourly labour costs to the firm are raised by a reduction in standard working hours, since fixed labour costs must be spread over a reduced number of working hours. Depending upon the elasticity of demand for the firm's output, the increase in labour costs may cause the firm to adjust its level of output downwards, thereby reducing its demand for labour;
- c) Reductions in working hours reduce levels of capital utilisation, raising the unit cost of capital. The firm may seek to offset this capital utilisation effect by making greater use of overtime or shift work;
- d) In the longer run, the increase in labour costs caused by reduced working hours provides an incentive for the firm to substitute away from labour and towards capital in the production process.

Economic theory suggests that firms' reactions to other types of work sharing policies are likely to be similar insofar as these policies also raise fixed labour costs. For instance, increased annual leave entitlements raise fixed costs by increasing the number of unproductive hours that employers must pay for. A ceiling on overtime which reduces the number of overtime hours worked by employees will also increase the ratio of fixed labour costs to productive working time. Similarly, the substitution of part-time for full-time workers raises the ratio of fixed labour costs to the number of productive hours worked by employees. In each case, the changes in relative costs brought about by these work sharing policies are likely to induce firms to make offsetting adjustments in their use of overtime or shift-work, their use of capital relative to labour, and their output levels. In a large number of circumstances (but not necessarily all), these offsetting adjustment will either reduce employment or leave it unchanged.

Any conclusions drawn from the theoretical analysis of the firm's response to work sharing measures need to be tempered by a number of other considerations:

Some firms cannot adjust labour hours incrementally as the models assume, due to technological constraints or the need to schedule labour services continuously or at fixed times of the day or week. These firms may be forced to increase employment in response to work sharing measures.

Some work sharing policies could have macroeconomic effects that impact back on aggregate employment levels, possibly in undesirable ways. For instance, widespread implementation of a reduced working week could reduce the supply of certain types of skilled labour, driving up wage rates and contributing to overall wage inflation.

Changes in the productivity of labour following implementation of a work sharing measure, could modify the firm's adjustment process and the employment effects predicted in the theoretical models. Productivity improvements could either reduce or increase employment, depending on the relevant cost and demand constraints faced by firms, and how they respond to these constraints. For instance, a significant reduction in hours may help to improve workers' performance, due to a reduction in their fatigue or boredom. Assuming that the productivity improvements are relatively significant, they mean that *less* labour is required to produce the same output. The firm's response to this could be a reduction in the number of employees. However, if the price elasticity of demand for the product made by the firm is relatively high, and the firm is able to pass on the productivity gains in the form of lower prices and subsequently increase sales and output, this result may be modified. An increase in employment could take place. Labour supply effects need to be taken into account. For instance, some work sharing policies, such as the division of full-time jobs into part-time ones, are likely to make jobs attractive to a different set of people, altering the quality and size of the pool of labour that firms are able to draw on. Recruitment costs could fall, and there could be significant changes in the productivity, turnover and absenteeism patterns of the work force, which might serve to offset the increases in fixed labour costs that are associated with the work sharing measure. Some labour supply effects would be adverse to employment levels, some positive.

The most informative empirical evidence on the effects of work sharing measures comes from surveys and case studies of participating firms. This empirical evidence provides very little support for the view that work sharing policies will reduce unemployment. Here, a distinction must be drawn between the different types of work sharing.

Across-the-board, incremental reductions in weekly working hours have not lead to significant job creation. The empirical studies show that it has frequently been possible for firms to maintain their output levels without employing any additional staff, due to productivity improvements or greater use of overtime. In other situations, both output and employment have fallen after a reduction in standard weekly hours. Job increases in individual firms have tended to be balanced by reductions in others. Although it is possible to identify cases where reductions in hours *have* been followed by job growth at an industry level, it is difficult to demonstrate that these employment increases would not have occurred if the reduction in hours had not been implemented.

Although most of the empirical studies have considered working hour reductions implemented with full or at least partial wage compensation to employees, economic theory indicates that incremental reductions in weekly hours *without* wage compensation would have similar effects. Labour productivity gains could eliminate the need for the employment of any additional staff, and the increase in fixed labour costs relative to variable costs could discourage firms from increasing their employment levels, or even bring about employment reductions.

There is little empirical evidence on the effects of *restrictions on overtime* or *extensions to annual leave entitlements*. The fact that these measures involve incremental reductions in the working hours of individual workers, and higher fixed labour costs for firms, suggests that the impacts would be similar to those associated with working week reductions.

The substitution of part-time for full-time positions involves reductions in the hours of employees too large to be easily offset by productivity increases, suggesting that it is more likely to lead to a net increase in the number of jobs. However, there is little empirical evidence that policies promoting part-time employment

have in fact had a positive impact on aggregate employment levels. *Direct subsidies to encourage job splitting* have suffered from low take-up and high levels of windfall gains. To the extent that employers are already free to determine for themselves their desired mix of full-time and part-time jobs, substantial financial incentives may be required to induce employers to alter the mix towards greater levels of part-time work. OECD governments that have experimented with subsidies for part-time work have tended to conclude that they are not cost-effective.

A few governments have implemented *measures which indirectly alter the relative costs and benefits of part-time employment to employers or employees*, through the tax system, the rules governing benefit entitlements, or the provisions of employment and industrial relations legislation. The evidence we have assembled so far on the effects of these policies is limited, and further research would be needed before firm conclusions about their impact on aggregate employment levels could be drawn.

The application of work sharing measures in New Zealand

At present, there are few constraints in New Zealand on the creation of part-time jobs, or the adoption of other work sharing measures by employers, that are open to government influence. Employment laws and regulations do not inhibit or discourage the use of part-time work, shorter working hours, or shorter working years. Most elements of non-wage labour costs that are influenced by government policies and regulations, such as paid annual leave entitlements and ACC levies, can be applied in a manner that is proportional to hours worked, and are therefore neutral to work sharing.

The industrial relations environment is also designed to provide flexibility for employers and employees to negotiate non-standard working time arrangements. It is possible that collective employment agreements which constrain the use of work sharing measures, particularly part-time employment, are in force in certain sectors of the labour market (although little is known about the extent to which working time arrangements are in fact regulated at present through employment contracts). However, the fact that quite significant changes in working time arrangements have been negotiated in at least some sectors of the labour market in recent years, suggests that any constraints that do exist are likely to be open to change, if they are opposed by employers or significant numbers of employees.

The measures open to the government to encourage or require firms to adopt work sharing measures include the following: legislative or regulatory constraints on the duration of standard working hours, the frequency and duration of overtime work legislation to increase minimum leave entitlements legislation giving employees certain rights to reduce their hours to part-time subsidies or tax concessions to firms to encourage them to adopt work sharing initiatives measures to influence relative non-wage labour costs in favour of part-time or shorter-hour employees. For example, reductions in the ACC levies that apply to part-time employees, or the elimination of certain minimum employment protections for part-time workers the provision of information on work sharing schemes proposed or implemented overseas.

The first three items in this list are inconsistent with the current direction of industrial relations policy, which has sought to remove restrictions on the organisation of work that are not justified by health and safety or welfare considerations, and to minimise costly obligations on employers that might discourage job creation. In matters of economic policy, recent governments have moved away from the use of subsidies and tax concessions to influence business decisions, in the belief that decisions based on the true underlying prices of resources will ultimately be more efficient. Given the composition of non-wage costs in New Zealand, the government does not actually have a great deal of scope to influence the relative non-wage costs of jobs of different weekly hours. Promoting part-time employment by denying part-time workers some of the statutory protections that all employees presently enjoy would raise issues of equity. Finally, and most importantly, there is no reason to believe that work sharing measures would be any more effective in increasing the aggregate level of employment in New Zealand than they have been in other countries. In general, the responses of firms and workers to these measures, and their direct and indirect costs to firms, have tended to undermine their employment creating potential.

Turning to the take-up of work sharing measures by workers, it seems likely that a small minority of New Zealanders who currently work full-time would be willing to reduce their weekly hours of work, even with some loss of earnings. In addition, it seems likely that a significant minority of unemployed New Zealanders would accept shorter-hour jobs, either by choice or as a less satisfactory alternative to full-time employment.

At present, the personal income tax system is fairly neutral towards decisions on weekly hours of work. The income maintenance system is mixed in its implications for the take-up of part-time or shorter hour jobs. On the one hand, current beneficiaries who take-up part-time jobs providing income above the current income exemption of \$50-60 a week, face very high effective marginal tax rates (caused by the progressive abatement of their benefits and supplementary allowances) which could discourage them from entering more substantial part-time jobs. However, within the current income support system some categories of beneficiary, such as married couples with children, can be better off on a benefit with additional income from part-time work than they would be in a low wage full-time job. An increased availability of part-time jobs as a result of work sharing measures could raise the number of people in these circumstances, potentially discouraging movement away from benefits.

The availability of income top-ups for low wage earners through the Family Support and GWFI schemes could also encourage people with dependent children who are already in the work force to take up low wage part-time or reduced-hour jobs under work sharing schemes, as an alternative to working full-time without income support. An increase in the take-up of Family Support and GWFI could be one of the unintended consequences of successful work sharing measures, if these created jobs at the lower end of the wage structure. The government should assess these possible indirect effects before promoting work sharing.

The measures open to the government to influence individuals' choices in favour of part-time or shorter hour jobs include the following:

- Higher marginal income tax rates on income above certain levels;
- Temporary or permanent income support for people who reduce their hours of work legislative clarification of the minimum conditions of employment that apply to part-time workers, and the manner in which they should be applied better enforcement of minimum conditions of employment, as they apply to part-time workers the provision of information on work sharing schemes which have been proposed or implemented overseas.

Higher marginal income tax rates would be contrary to current government policy. Providing income support to people who reduced their hours of work would be costly, and if temporary in nature might not have any lasting influence on individuals' hours of work choices. Clarification and better enforcement of the minimum employment conditions of part-time workers would probably have only a marginal impact on individuals' hours of work choices, if any.

It is important to be aware that the links between any additional jobs which might be created by work sharing measures, and unemployment levels, would be indirect at best. It is likely that the workers most willing to reduce their hours of work if some loss of income was involved would be people on higher than average incomes. This suggests that there would be some degree of mismatch between the skill requirements of jobs made available by voluntary work sharing measures and the skills of the unemployed, particularly the long-term unemployed. In addition, any new job opportunities brought into being by work sharing measures could stimulate increases in labour force participation, rather than going to those who are already unemployed.

Notwithstanding these limitations, certain work sharing measures could work well at an enterprise level. Their success may depend on:

- Voluntary adoption by firms and workers;
- Shorter hours not being fully compensated by higher hourly rates of pay;
- Increases in fixed labour costs being offset by other labour cost savings or productivity gains.

However, enterprise-based work sharing schemes are unlikely to create significant numbers of extra jobs, and they are unlikely to assist the longer-term unemployed.

Work Sharing

Its potential to reduce unemployment in New Zealand

"I think we may assume that, with the help of science ... the whole community could be kept in comfort by means of four hours work a day. The dread of unemployment and loss of livelihood will no longer haunt men like a nightmare. "
Bertrand Russell, 1918.³

There is a simple formula to end unemployment: a division of the hours of work between all those who wish to work would mean that no one would be without work. This theme has been present in policy debates for at least 100 years. It formed part of the rationale behind the drive for 10 hour and then 8 hour days, and the forty-eight and forty hour weeks.

The Employment Taskforce paper *Employment. The Issues* asks whether "work sharing" can be an effective or feasible way of reducing unemployment (1994, p. 97). This paper will examine this issue, and the related question of whether the Government can and should play a role in promoting work sharing for this purpose.

The paper begins by defining work sharing and identifying the particular forms of work sharing that are to be the focus of the paper. Next, it considers the extent to which paid work is being shared in New Zealand at present. Some of the more important contemporary trends affecting the distribution of paid work among people of working ages are discussed. This section of the paper also considers the extent to which New Zealanders may wish to share work more, and the extent to which firms and workers are free to adopt work sharing measures at present.

The third section of the paper describes some of the more recent experiments with work sharing that have been carried out overseas. In the fourth section, the paper turns to economic theory, and summarises the key conclusions that can be drawn from theoretical work about the potential of work sharing to reduce unemployment. Following this, there is a discussion of the empirical evidence on the relationship between work sharing measures, employment and unemployment. This evidence is drawn entirely from other OECD countries.

The final part of the paper draws some conclusions from the literature covered in the paper, and considers the question of whether any potential exists for the promotion of work sharing in New Zealand as a response to unemployment.

1 THE DEFINITION OF WORK SHARING AND THE SCOPE OF THE PAPER;

"Work sharing" is a global term that refers to the division of available working time between available workers. The term is not, however, used in a consistent way by all writers. In North America, "work sharing" is used to refer to temporary short-time working schemes in which the weekly hours of full-time workers are temporarily reduced during periods of reduced demand as an alternative to lay offs. In this paper, we will refer to measures of the latter type as "temporary short time working", and use the term work sharing in its global sense.

Measures which seek to reduce the total size of the labour force (for example, by delaying the entry of young people, or encouraging early retirement) are sometimes regarded as work sharing measures. For time and space reasons, the focus of this paper is confined to measures which seek to *redistribute* work among the existing members of the labour force. However, we briefly consider trends in labour force participation in the early part of the paper.

It is important to be aware that the working time which work sharing policies seek to influence is working time: the work that takes place within the market economy. An individual's paid working time

³ Bertrand Russell, "Roads to Freedom", Allen and Unwin, London, 1918, 193-4. Cited in Rathkey (1990).

may be considered in terms of brief periods such as a day or a week, or longer periods such as a year or lifetime. There are policy options concerning the distribution of work in relation to each of these units of time. These include:

- Reductions in the length of the working week for full-time employees⁴;
- Reductions in the amount of overtime worked by full-time employees;
- Reductions in the length of the working year, through the provision of longer holidays or other leave entitlements;
- Changes in shift patterns or other scheduling innovations that reduce the length of the working year;
- Increased use of part-time work,⁵ including job sharing.

The purpose of this paper is to consider the *employment and unemployment effects* of redistributing hours of work. However, it is worth remembering that work sharing raises a number of other important issues which are not addressed in the paper. These include:

- The health and safety implications of work sharing;
- The personal and social benefits for individuals and families, who may gain greater leisure and an increased capacity to balance paid work and family responsibilities;
- The impacts of work sharing on the distribution of income.

2 THE CURRENT WORKING PATTERNS OF NEW ZEALANDERS

Work sharing is a process that has been with us for some time. It is reflected in the reductions of the standard weekly hours of full-timers implemented earlier this century, in the tendency for overtime hours to increase during a period of economic expansion but decline during a recession, in the growth of part-time employment, and in the lowering of the average age of retirement. This section of the paper considers the extent to which New Zealanders are already work sharing (in the broadest sense), and whether they wish to share work more.

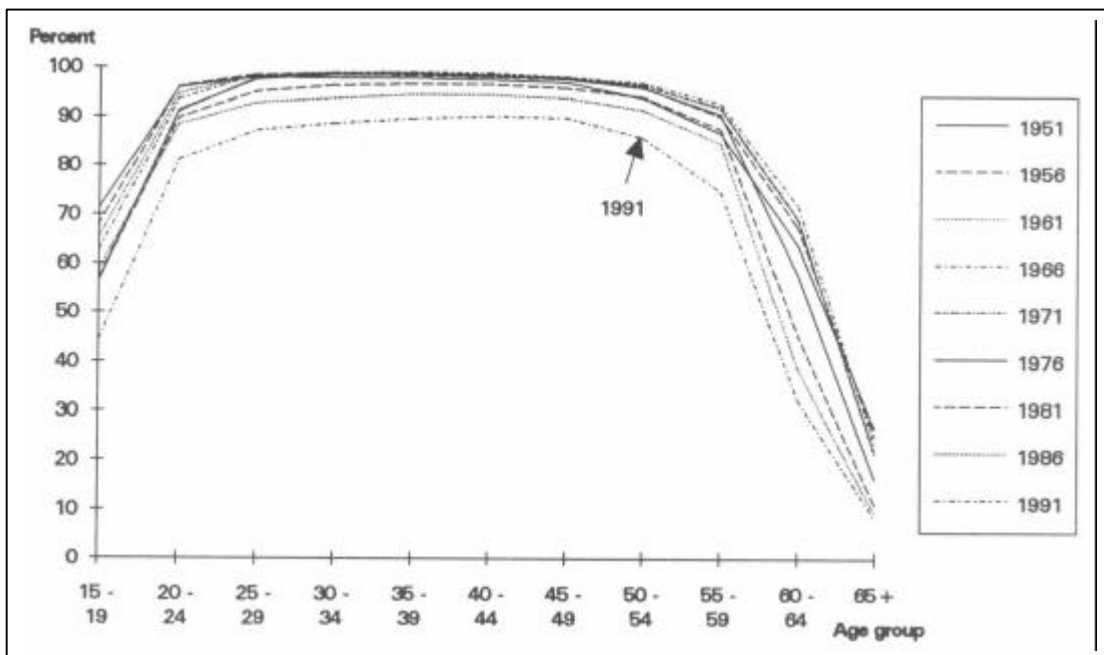
2.1 Changes in labour force participation over the lifetime

The age-specific labour force participation rates of men and women from 1951 to 1991 are illustrated in Figures 1 and 2. In the case of men there has been a general decline in participation rates, with the fall being most marked among the very young and the very old. On average, there has been a shortening of the average duration of the working life of males. In the case of women, participation rates have risen in almost all age groups, with the exception of the 15-19 and the 60-64 year old groups. The participation increases of women have been strongest in the mature age groups of 35-54.

⁴ Defined as those working for at least 30 hours a week.

⁵ That is, work for fewer than 30 hours a week.

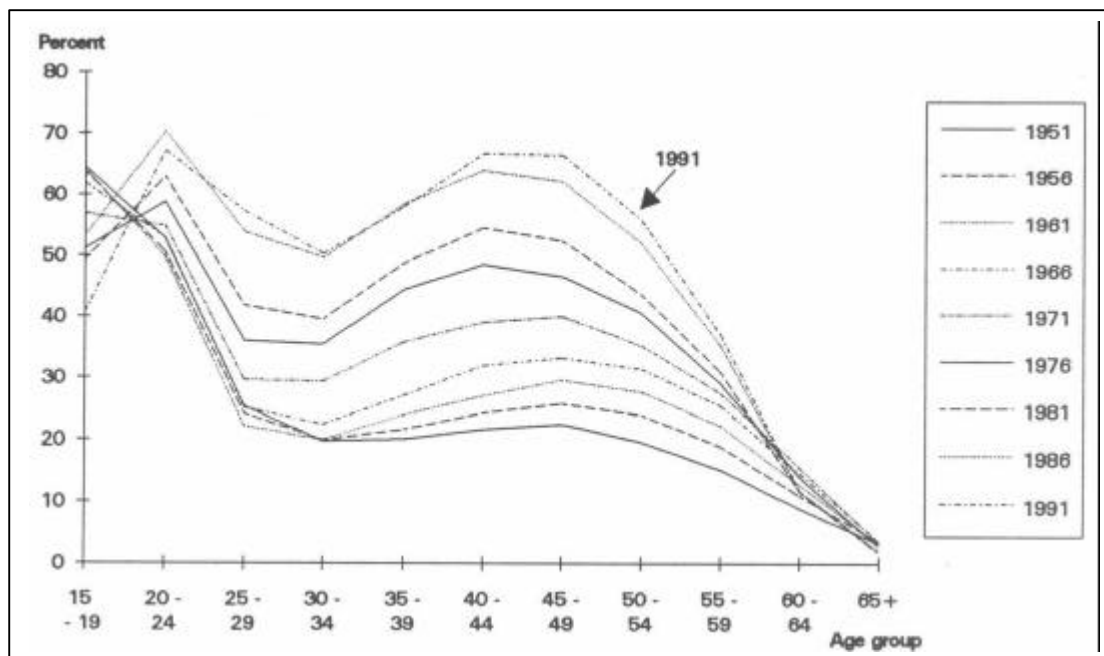
Figure 1
Men's labour force participation rates ^(a) by age group
 1951-1991



Source: *New Zealand Census of Population and Dwellings*.

(a) Participation is defined as working for 20 or more hours a week, or unemployed and seeking work, so that consistent historical series can be constructed. Prior to the 1970's, people who worked for fewer than 20 hours were not regarded as economically active and few data on their jobs were collected.

Figure 2
Women's labour force participation rates ^(b) by age group
 1951-1991



Source: *New Zealand Census of population and Dwellings*.

(b) Participation is defined as working for 20 or more hours a week, or unemployed and seeking work, so that consistent historical series can be constructed. Prior to the 1970s, people who worked for fewer than 20 hours were not regarded as economically active and few data on their jobs were collected.

Over recent decades there have been three major changes. First, workers have been retiring earlier. Second, young people have been increasingly delaying their entry into the labour force, in order to extend their education. Third, the working lives of women have been growing longer as more women remain in the workforce after the birth of children, and those who do withdraw return earlier.

Over a shorter time-frame, labour force participation rates tend to move in correlation with movements in employment, rising when there is employment growth and falling when there is employment contraction. Thus, the employment contraction over the 1989 to early 1992 period prompted a (somewhat delayed) decline in the total labour force participation rate from 63.9 percent to 62.9 percent, while the expansion of employment from March 1992 onwards has triggered an increase in participation. The tendency for participation to be procyclical in nature reduces the size of the unemployment problem during recessions, and the redistributive task faced by work sharing policies, but may make it more difficult for work sharing policies to have an impact on unemployment when there is an economic expansion.

The growth in employment opportunities expected over the next few years is likely to bring about further increases in aggregate participation rates. There are a number of other factors that could act to strengthen this trend. First, the planned increases in the age of eligibility for government superannuation which are still being phased in, could reinforce the tendency (observed in the most recent few quarters) for 60-64 year olds to remain in the labour force. Second, further increases in the participation rates of women are likely to be brought about by the long-term adjustments to women's paid working patterns that have been evident for several decades. Third, the increasing tendency for students to undertake part-time work may push up the labour force participation rates of 15-24 year olds, in spite of generally higher school retention and tertiary participation rates in the 1990s.

On balance, it seems unlikely that the average duration of the working life of men will decline significantly during the next five years. It is very likely that the average working life of women will increase in duration.

2.2 The length of the working week

A 40 hour working week became the effective standard for most employees in New Zealand as early as the 1930s. An amendment to the Industrial Conciliation and Arbitration Act passed by the Labour Government in 1936 required the Arbitration Court to fix the number of hours (exclusive of overtime) to be worked in any week by any worker bound by an award, at not more than 40, unless this would be impractical in the industry concerned. Where possible, the Court also had to try to set a five-day week with no work on Saturdays.

During the 1970s and early 1980s a reduced working week of between 35 and 40 hours was introduced into a number of significant awards, such as those covering clerical workers. However, at the time of the 1987/88 award round, about 85 percent of awards still provided for 40 ordinary hours of work (Harbridge and Dreaver, 1989). The passage of the Labour Relations Act in 1987 marked the beginning of change to this regularity. Much greater diversity in the standard hours and standard working weeks specified in industrial agreements emerged in subsequent years. Post-1987 developments in the regulation of hours of work through industrial agreements are discussed in Section 2.5.

More relevant perhaps than the standard full-time hours provided for in industrial agreements, are the weekly hours actually worked by people in employment. Data from the Household Labour Force Survey on usual hours of work indicate that New Zealanders in employment work just over 38 hours a week on average (see Table 1). During the year ended March 1993, those in full-time employment worked just under 45 hours a week on average, and those in part-time employment just under 14 hours⁶. The average weekly hours of men exceeded those of women, reflecting the fact that men in full-time employment tend to work for more hours than women in full-time employment.

⁶ These figures include self-employed people as well as employees, and because self-employed fulltime workers tend to work for longer hours than do full-time employees, the average weekly hours estimate for full-timers is likely to be slightly higher than an estimate for employees only.

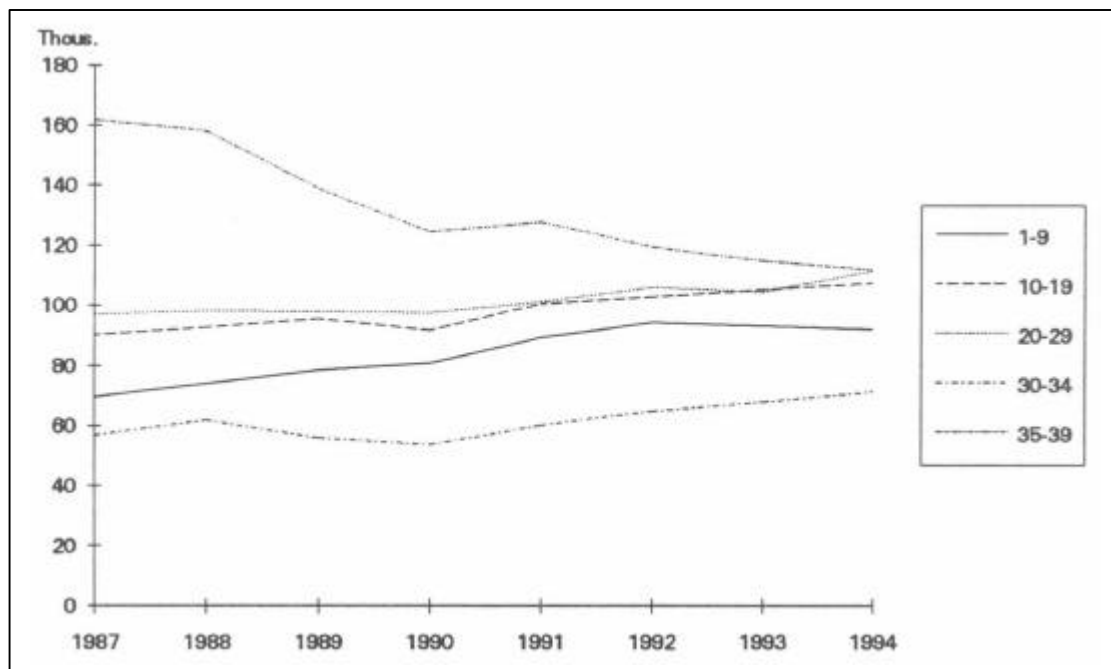
Over the period for which these data are available, the average usual hours of male full-time workers have increased slightly, while there has been a slight decline in the average usual hours of part-time workers (both male and female). The series are not long enough to show very pronounced trends. However, it is possible that the averages could hide significant compositional changes in the numbers and proportions of workers in different weekly hours groups. Figures 3, 4 and 5 address this compositional issue. Figures three and four show the numbers of workers in each of nine weekly hours groups over the period 1987 to 1994. Figure 5 shows how the proportions of workers in the various weekly hours categories has been changing over time.

Table One
Average Usual Weekly Hours Worked
By full-time and part-time status and sex

Avg for yr ended March	Males			Females			Total		
	Full-time	Part-time	Total	Full-time	Part-time	Total	Full-time	Part-time	Total
1987	46.0	13.9	44.1	41.4	15.4	33.0	44.4	15.1	39.5
1988	45.8	13.6	43.8	41.1	15.3	32.8	44.2	14.9	39.1
1989	46.1	13.8	43.9	41.2	15.0	32.4	44.4	14.7	38.9
1990	46.3	13.6	43.9	41.5	15.0	32.6	44.6	14.7	39.0
1991	46.3	12.9	43.3	41.6	14.4	32.0	44.6	14.0	38.5
1992	46.3	13.0	43.0	41.7	14.3	31.8	44.7	14.0	38.1
1993	46.5	12.7	43.1	41.6	14.2	31.8	44.7	13.8	38.1

Source: Household Labour Force Survey

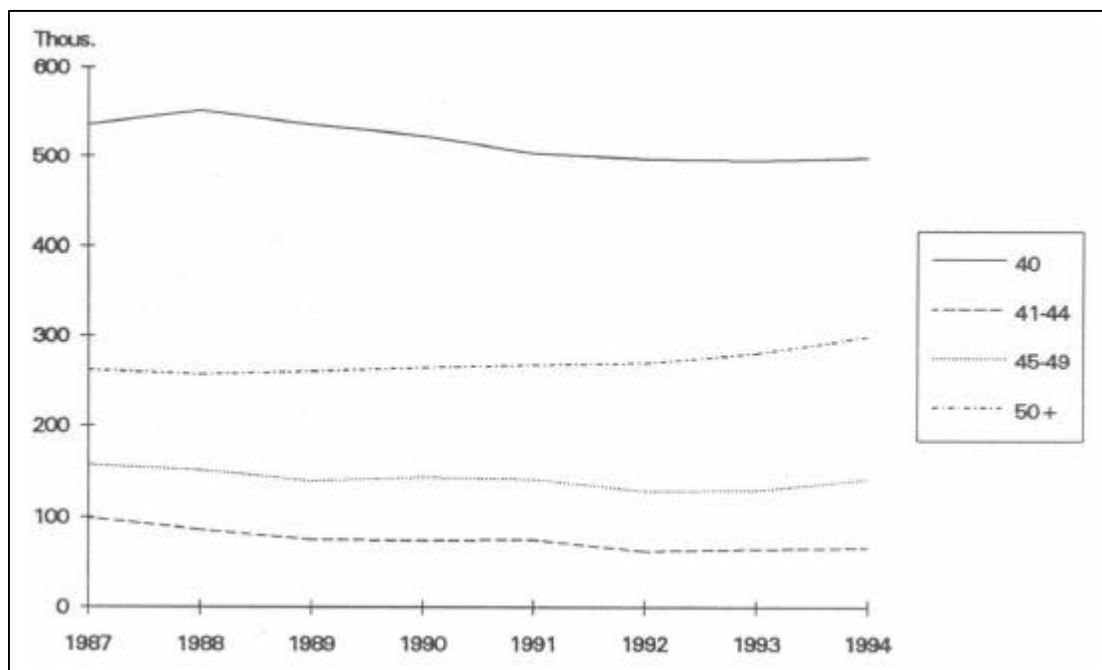
Figure Three
Workers with usual weekly hours below 40
Annual averages, 1987-1994^(c)



Source: Household Labour Force Survey

(c) March years.

Figure Four
Workers with usual weekly hours of 40 or above
 Annual averages, 1987-1994^(d)



Source: Household Labour Force Survey

(d) March years

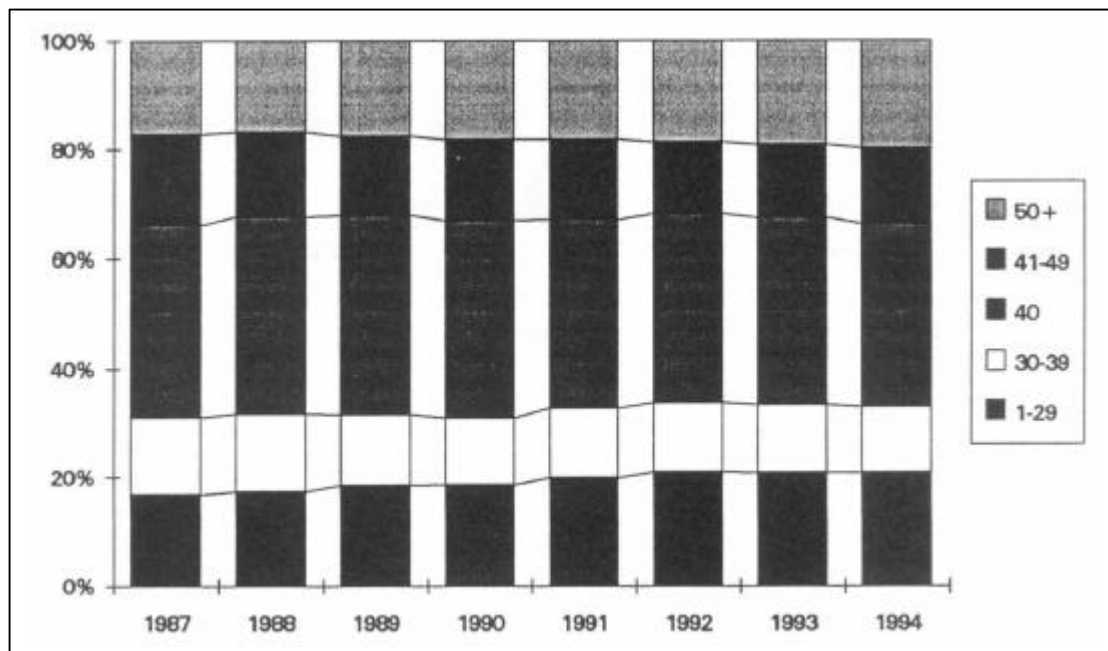
The data suggest that a number of changes in patterns of working time have been going on. First, there has been an increase in the number and proportion of workers whose weekly hours are less than 30, from 256,900 (16.8 percent) in the year ended March 1987 to 311,000 (20.8 percent) in the year ended March 1994. All three subgroups: 1-9 hours, 10-19 hours, and 20-29 hours, show growth over the period for which data are available. The 30-34 hours a week subgroup has also expanded in size.

By contrast, the number and proportion of workers whose usual weekly hours are either 35-39 or 40 exactly has declined significantly, from 698,000 (45.6 percent) in 1987 to 610,100 (40.7 percent) in 1994. In part, this decline is a consequence of the contraction of full-time employment over the period considered.

The number and proportion of workers whose usual weekly hours exceed 40 has not changed greatly between 1987 and 1994. However, the 50 hours and over category has expanded at the expense of the 41-44 and 45-49 hours subgroups, suggesting that the average hours of people who work for more than 40 hours have been increasing.

The general picture presented by these data is one of growing diversity in weekly hours of work, but no particularly rapid changes. Certain other OECD countries - most notably Australia, Canada, and the United States - experienced much more marked increases in the average weekly hours of full-time workers during the latter part of the 1980s than did New Zealand (Marchard, 1993, p.504, and Wooden, 1994, p.9). These increases are likely to have been caused, at least in part, by the growth in overtime working that was brought about by the economic recoveries experienced by those countries in the mid to late 1980s (Marchard, p.504). The current economic recovery in New Zealand could well have similar effects in coming years, bringing about increases in the average hours of full-timers, and raising the proportion of workers whose hours exceed 40.

Figure Five
Percentage distribution of workers by usual weekly hours group
Annual averages, 1987-1994^(e)



Source: Household Labour Force Survey

(e) March years

Over a somewhat longer time frame, the most dramatic change in the distribution of working time that is clearly evident in New Zealand is the growth of part-time employment. Part-time employees made up just 2.4 percent of all employees in non-agricultural industries in April 1947, but had expanded to 25.9 percent of all employees in these industries in February 1993⁷. The latest labour force survey estimates indicate that part-time workers currently comprise about 21.3 percent of all workers in the economy, including the self-employed and workers in agricultural industries.

Part-time employment is a particularly important component of the female workforce, and it is far more prevalent in some industries, such as wholesale and retail trade, restaurants and hotels; and community, social and personal services; than in others. While the majority of part-time workers work part-time hours by choice, there is a small group that does so because of inability to find full-time work. The number of part-time workers who would prefer to work full-time is not known, but we do have an estimate from the Household Labour Force Survey of the number who have been seeking part-time work during the past four weeks. In the March 1994 quarter, 7.2 percent of part-timers had been searching for full-time work, up from 2.7 percent in March 1986. Thus it appears that there has been an increase in involuntary part-time employment during the late 1980s and early 1990s. However, the recent growth in full-time employment opportunities could be expected to reverse this trend by making it easier for job seekers to find full-time work.

The causes of the growth of part-time employment are quite complex. They include increases in the labour force participation of workers who prefer part-time hours, and the increasing tendency of firms to minimise their labour costs and increase average labour productivity by scheduling labour services on a daily or weekly basis, in such a way as to tightly match fluctuations in the level of demand for labour services⁸. It seems likely that in coming years, part-time employment in New Zealand will continue to grow at a faster rate than full-time employment, on average⁹. Further increases in the labour force participation of women with children and students seeking to finance

⁷ These figures are from the Quarterly Employment Survey (formerly the Half Yearly Employment Survey).

⁸ For more detailed discussion of the causes of the growth in part-time employment, see Thurman and Trah (1990) and Tilly (1991).

⁹ Full-time employment could grow more rapidly than part-time employment in specific quarters or years.

their education will ensure a good supply of workers who want to work part-time hours. Some of the industries that already make disproportionate use of part-time employment, such as restaurants and hotels and community and social services, are expected to experience stronger than average rates of growth. Employers in general will continue to seek labour scheduling arrangements that increase productivity and contain labour costs.

A key issue raised by the expansion of part-time employment is the extent to which this growth enables workers who would otherwise have worked full-time to better realise their hours of work preferences (assuming that their movement to part-time work is voluntary), or draws into the labour force people who would not otherwise have participated. The first scenario is more consistent with the idea of work sharing as a strategy to reduce unemployment than the second. While this issue has not been examined in the New Zealand environment, overseas research on the characteristics of part-time workers and their motives for working part-time suggests that both sources of part-time labour are of some importance.

2.3 Overtime hours

Since restrictions on overtime working are among the measures that have been proposed to promote work sharing, it is important to consider just how much overtime is being worked by New Zealanders at present.

The main source of data on overtime work is the Quarterly Employment Survey, which measures the number of paid overtime hours worked by employees (as opposed to the self-employed) in firms which have more than two full-time equivalent employees in non-agricultural industries. In February 1993, employees covered by the QES were paid for an average of 1.91 hours overtime a week, representing 4.9 percent of total hours paid for. Male employees were paid for an average of 2.55 hours a week and females employees, 0.98 hours.

There are large variations in the significance of overtime to different industry groups. Overtime hours accounted for 1.3 percent of hours paid for in community and social services in February 1993, but 8.7 percent of hours paid for in manufacturing.

Table Two
Average weekly hours paid for

Year as at February	Ordinary time	Overtime	Total
1987	36.70	2.50	39.00
1988	36.66	2.30	38.70
1989	36.88	2.39	39.01
1990	36.71	2.51	38.91
1991	36.76	2.16	38.66
1992	37.08	1.94	38.77
1993	37.39	1.91	39.04

Source: Quarterly Employment Survey

The average number of overtime hours paid for and the importance of overtime as a proportion of total weekly hours declined over the 1987 to 1993 period, as shown in Table 2. In February 1987, overtime hours represented 6.4 percent of all hours paid for, compared with the most recent figure of 4.9 percent. The decline in overtime working is likely to have been largely a product of cyclical influences: firms reduced overtime work during the recession of the late 1980s and early 1990s. In recent quarters, QES figures have shown the beginning of a resurgence in overtime working. The decline in overtime hours may also have been influenced by changes in working time clauses in a number of industrial agreements over this period, which extended the range of hours that could be paid at ordinary time rates. This would serve to make overtime less measurable by the QES, without necessarily affecting the number of hours worked that are in excess of 40. However, it is not known whether contract changes of this type were widespread enough to influence the aggregate statistics.

Another relevant factor is that the growth of part-time employment may have reduced the need for employers to use overtime hours paid at premium rates, because the hours of part-time workers can be extended as an alternative to extending the hours of full-timers.

Without doubt, overtime working is a more important component of total working time than the statistics on paid overtime would suggest. Labour force survey data indicate that on average during the March 1994 year, 481,400 New Zealanders, representing 31.9 percent of all the employed, reported that their usual hours in their main job were above 40. Thus, extended hours, whether paid or unpaid, continue to be an important feature of the working week for many New Zealanders.

2.4 Do New Zealanders want to share work more?

Work sharing initiatives are likely to be better received if shorter hours are consistent with the preferences of the workers involved. While most people would be willing to work for fewer hours if they could do so without reductions in their earnings, the work sharing proposals which are most likely to promote additional employment do involve a trade off between earnings and leisure.

Attempts to shorten hours could be undermined if they are in conflict with the income preferences of workers (Wooden et al., 1994, p.64). Households could act to increase their supply of labour through other channels if they were determined to maintain their income levels in the face of unwanted reductions in hours. For instance, second jobs could be found, and additional household members could join the labour force. This means that it is quite important to assess the level of support among full-time workers for reductions in hours that do involve income reductions.

In a general household survey conducted by the New Zealand Department of Statistics in 1980-81, respondents were asked whether they would choose to work less and have more free time if they had the opportunity to do so, even if it meant earning less. Twenty-three percent of full-time employed men and 33 percent of full-time women workers stated that they would prefer to work fewer hours under these circumstances (Department of Statistics, 1985, p.20). The question did not specify the terms of the hypothetical income/hours trade off

It would be unwise to assume that the same survey question, if repeated in 1994, would give as high a level of positive responses. The most powerful factor likely to have brought about a shift in preferences over the intervening 14 years is the marked decline in real household incomes that has taken place over this period. The average pre-tax incomes of private households declined by 10 percent over the 1984 to 1993 period (Department of Statistics, 1993, p.9). The average after-tax incomes of the households of full-time wage and salary earners were also lower in March 1994 than in 1980/81, according to the Real Disposable Income Index calculated by the Department of Statistics¹⁰. The decline in real household incomes is likely to have provided an incentive for households to work longer hours as a means to increase their incomes. A resumption of growth in the real disposable incomes of households during the 1990s could reverse this tendency, although it may be some time before household incomes have risen far enough to shift workers' preferences in favour of shorter hours.

Studies of worker preferences conducted overseas suggest, however, that some groups of workers desire shorter working hours because of particular personal or family circumstances. Examples are workers with child care responsibilities, people seeking a transitional period between full-time work and retirement, and workers on high incomes who wish to make a lifestyle choice in favour of increased leisure. It is likely that a core group of workers with characteristics of this kind would voluntarily opt for shorter working hours at reduced pay, even during recessions.

The size of this group of potential work sharers in New Zealand at present is difficult to estimate. The results of overseas studies suggest that the proportion of workers would state that they were willing to reduce their hours could be between 5 and 15 percent, although the proportion who would actually take up opportunities to reduce their hours if a scheme were implemented could be lower

¹⁰ This index is not designed to track changes in the real after-tax incomes of households without a full-time wage and salary earner

than this¹¹. However, the characteristics of these potential worker sharers, as indicated by the overseas studies, may mean that it would not be a simple matter to translate the hours of work they gave up into additional jobs for the unemployed.

Firstly, potential voluntary work sharers are likely to be scattered across workplaces, making it difficult to implement any schemes that need to be implemented on a workplace-wide basis. Secondly, the members of this group tend to have higher income levels than full-time workers in general, and are more likely to be working in professional, technical and managerial occupations (Blyton, 1985, p.41). Since few of the unemployed have high levels of skill, the scope for direct recruitment of unemployed people to positions "freed up" by full-timers voluntarily reducing their hours would be somewhat limited by a mismatch of skills. The main connection between the reduced hours of the voluntary work sharers and the level of unemployment would have to be indirect (for example, operating through a chain effect on recruitment to positions at different skill levels).

There is little doubt that among the unemployed, there is a significant group who would be willing to take part-time jobs if they were available. The official Household Labour Survey estimate of the number of unemployed people seeking part-time jobs on average during the March 1994 year was 29,000, representing 18.7 percent of all the unemployed¹². The Household Labour Force Survey also estimated a part-time unemployment rate, representing the number of unemployed part-time job seekers as a proportion of the entire part-time labour force, of 8.2 percent for the year ended March 1994. This is not far below the full-time unemployment rate of 9.6 percent.

2.5 The current regulation of working time

There are currently no laws or regulations in New Zealand that directly restrict the use of shorter weekly hours or part-time employment.

Until 1987, hours of work were extensively regulated through the Award system. Most awards specified clock hours (the hours of the week within which work could take place), set premium rates of pay for overtime work, and penal rates of pay for work outside clock hours. Many contained provisions governing the use of part-time workers or shortened work days. In the present industrial system, employment contracts are the main instrument through which hours of work are regulated.

Some of the features of industrial agreements that could be expected to influence the nature and extent of work sharing in the New Zealand labour market are as follows:

- Prescriptions on the number of ordinary hours of full-time workers;
- Prescriptions on the number or use of part-time workers;
- Specification of starting and finishing time;
- Specification of the days on which work may be undertaken;
- Rules in relation to the use of overtime and the rates at which it must be paid;
- Provisions governing redundancy.

These features of industrial agreements have been undergoing extensive reform since 1987¹³.

The best sources of information on the hours of work provisions contained in current contracts are the collective contract data bases maintained by the Department of Labour and the Industrial

¹¹ The most extensive study of employee willingness to trade income for greater leisure was undertaken by Best (1980) on a sample of around 1000 workers in the United States in the late 1970s. About one in nine of his sample (about 11 percent) indicated that they would prefer to work for fewer hours for proportionally less income, although a much larger group were prepared to trade future wage for more time off work in the future. Results from an ABS survey of Australian workers in 1986 indicated that only 7.3 percent of full-time workers preferred to work for fewer hours (Wooden et.al., 1994, p 63)

¹² The official estimate should be treated with caution, because a significant minority of unemployed people, when asked if they are seeking full-time or part-time work, do not know. A part-time or full- status is imputed for these respondents.

¹³ These reforms are detailed in Harbridge and Dreaver (1989), and Harbridge and Tolich (1993).

Relations Centre of Victoria University. Some of the findings of recent analyses of these collective contracts are set out below. It is important to be aware, however, that the coverage of collective contracts has declined dramatically since the Employment Contracts Act was passed. In February 1993, collective contracts covered 43.2 percent of employees in enterprises with more than two full-time equivalent employees.¹⁴ If we assume that employees in enterprises below this size threshold and employees in agriculture (not covered by the Employment Contracts Survey) have individual contracts,¹⁵ then the proportion of all employees who are covered by collective contracts is just 36.9 percent. The only information on the hours of work provisions covering the remainder of the work force comes from sample surveys, such as those carried out by Heylen Research for the Department of Labour in 1992 and 1993. The decline in the coverage of collective contracts may in itself have had a dramatic impact on the regulation of working hours, as it would be very difficult to maintain and enforce provisions opposed by employers outside a collective contract structure.

Harbridge and Tolich (1993) analysed the working time provisions of 770 collective contracts held in the data base of the Industrial Relations Centre in August 1992, covering 166,000 workers (about 14.6 percent of all employees in the labour force at that time). They compared the working time provisions in these contracts with those analysed in a study of industrial awards in 1987/88. In 1992, 72 percent of the contracts specified clock hours, compared with 85 percent of the awards analysed in 1987/88. A clock hours clause typically states that normal hours of work, paid at ordinary rates of pay, will fall between fixed hours on specified days of the week. The absence of a clock hours clause means that the employer has greater discretion over the days of the week and the hours of each day within which the week's work can be arranged without attracting overtime payments. 201 contracts, covering 37,800 workers, allowed for normal hours of work to be worked on any day from Monday to Sunday, compared with only 80 (covering 16,600 workers) in the earlier study. 53 contracts covering 7,400 workers had ordinary hours in excess of 40 per week, and 385 contracts, covering 111,000 workers, made provision for shift work. The most significant liberalisation of hours of work provisions appeared to have taken place in the wholesale and retail trade, restaurants and hotels industry group.

In respect of overtime and penal payments, Harbridge and Tolich found that in 1992 triple time overtime rates had all but disappeared, and double time was much less available than in 1987/88. Also, the first three hours of overtime were more likely to be paid at time and a half, rather than double time. Provisions requiring the payment of a certain minimum period of overtime or penal rate work had all but disappeared.

Unfortunately, Harbridge and Tolich did not analyse changes in contract provisions that directly relate to the use of part-time workers. This would be a useful area for future research.

Overall, the evidence suggests that changes in working time clauses are giving at least some employers greater flexibility in the scheduling of their work forces, enabling them to reduce or avoid the payment of overtime or penal payments (Harbridge and Tolich, 1993). Employers in industries with a six or seven day a week operation, such as the retail, hotel and restaurant sector, are particularly likely to have negotiated greater flexibility in working time arrangements.

The overall level of working time flexibility in the New Zealand labour market is very difficult to assess, however, as little information is available on the provisions contained in the individual and smaller collective contracts which cover the bulk of the workforce. Furthermore, actual workplace practices may diverge from the practices set out in contracts. Surveys of employers and employees carried out in 1992 and 1993 by Heylen Research suggest that reform of working time arrangements was indeed quite widespread after the enactment of the Employment Contracts Act in 1991. For instance, in a 1992 survey of private sector employers, 11 percent of respondents indicated that overtime pay had been abolished from contracts covering their employees, and 14 percent indicated that penal time rates had been removed. The results of these surveys do not provide reliable estimates of the amount of change in working time arrangements that has been taking place in the

¹⁴ This estimate is derived from the Employment Contracts Survey carried out by Statistics NZ in February 1993.

¹⁵ This is probably close to the truth, but not strictly accurate.

labour market,¹⁶ but they do confirm that working time reform has been occurring, possibly to a significant extent.

In summary, there are no significant legislative or regulatory constraints on the adoption of work sharing measures at present. The industrial relations environment also permits employers and workers to negotiate a wide range of non-standard working time arrangements, which could encompass work sharing.

3 FORMS OF WORK SHARING AND POLICIES TO PROMOTE THEM

Work sharing policies which aim to redistribute work among people who are currently within the labour force are described in more detail in this section. The focus is on policies that are intended to have a lasting impact on the size and distribution of jobs. Thus, the temporary short-time working schemes used in other countries as a means to prevent temporary lay offs are not considered. This latter type of work sharing is designed to preserve jobs rather than to create them, and therefore it is of greater interest when unemployment is growing than when it has stabilised or is falling. It does not directly assist those who are already unemployed.

Governments can promote work sharing by regulating working hours directly, by providing positive incentives to encourage firms or workers to adopt certain forms of work sharing, or by setting the regulatory and tax-benefit framework in such a way as to encourage work sharing. Some of the more important governmental influences on work sharing may be indirect in nature. In this section we focus primarily on programmes which aim to promote work sharing directly, but examples of policies operating indirectly are also given.

3.1 Reductions in the length of the working week

The 40 week was introduced in most Western nations before or soon after the Second World War. This was followed by a period of little change in standard weekly hours of work, although average working hours per person per year continued to decline in many countries as a result of improvements in annual leave and public holiday entitlements.

In the 1970s, debate about the length of the working week re-emerged. Reductions in working hours were increasingly seen as a means to combat unemployment, as well as a means to improve the quality of working life. During the 1980s, the standard length of the working week was reduced below the 40 hours threshold in many European nations. Most often, this was achieved through collective bargaining rather than imposed by national legislation, although governments tended to play a role in facilitating or at least tolerating the developments. The examples that follow relate to four countries: the United Kingdom, West Germany, France and the Netherlands. In the first two countries shorter working hours were achieved in selected manufacturing industries without much government involvement, while in the other two countries the government played an active role.

In 1981, several manufacturing industries in the United Kingdom reduced their normal weekly hours from 40 to 39 or 37.5, as a result of national agreements reached between employers and unions. The industries involved were engineering, pharmaceuticals, printing and construction. Wage rates were increased to provide employees with full wage compensation (White and Ghobadian, 1984, p.30).

National legislation in France in 1981 brought about the reduction of the statutory working week from 40 to 39 hours. Full compensation was awarded to workers (in other words, the 39 hours were remunerated as if they were 40) (Jallade, 1985, p. 156). The government also passed legislation intended to encourage the development of special enterprise-level agreements involving further reductions in working hours (White, 1983, p.64).

In the Netherlands, a national agreement in 1982 between government, employers and unions set a framework for reductions in working time. From 1983 onwards, agreements for shorter working

¹⁶ The response rate for this survey was only 49 percent, and there may have been a response bias towards employers who had made reforms to their contracts.

weeks in particular industries began to appear. In general, these agreements combined substantial cuts in working hours with restraints on wage increases, and in some important agreements employers committed themselves to additional recruitment (White, 1987, p. 15).

In the Federal Republic of Germany, agreements were reached in 1984/85 to reduce average weekly hours from 40 to 38.5 in the metal, printing and woodworking industries (White, 1987, p.67). In the metalworking industry, which led the developments, workers were awarded full compensation but the hours reduction was conditional upon greater flexibility of hours (Bosch, 1990, p.616). The flexibility conceded by unions allowed for much greater variation in the number of hours worked in any given week, and their timing. In 1990, an agreement for a 35 hour week was reached in this industry, again conditional upon greater flexibility in the scheduling of working time (Bosch, 1990, p.618). The agreements on reductions in working hours pioneered by the metalworkers' and printers' unions were followed by similar agreements in other sectors. By December 1989, 89 percent of all employees covered by agreements in the Federal Republic had a working week of fewer than 40 hours. The average contractual time was 38.5 hours (Bosch, 1990, p.617).

White (1987, p.67) has observed that there has been a shift in the types of work sharing schemes advocated by supporters of the concept. In the 1970s, there was a tendency for advocates to simply assume that reductions in hours would feed through to increased employment. In the 1980s, it was increasingly recognised that substantial employment creation would not necessarily flow automatically. In addition, there was greater acceptance that some wage restraint, and increases in productivity, might be necessary to create jobs through reductions in working hours. Agreements dealt more explicitly with the mechanisms through which job increases were to be implemented, and sought guarantees of job creation or job retention from employers.

Wooden et.al. (1987, p.42) have observed that shorter working hours have generally been implemented in industries, sectors and countries with higher than average productivity levels and higher than average pay levels at the time of implementation. It is in these sectors or countries that employers have been willing to accept the costs of shorter working hours.

3.2 Restrictions on overtime working

There are two approaches to the limitation of overtime hours: restrictions on the total number of overtime hours that can be worked by an individual worker in a week or year, and requirements that overtime hours be paid at a higher, premium rate. In the United States the Fair Labour Standards Act, which provides that overtime hours (more than eight in a day) are to be paid at time and a half, has been law since 1936. In most other OECD countries, overtime premiums have been negotiated in collective agreements and are widespread. These provisions were introduced primarily as a means to protect the interests of full-time workers, rather than as a strategy to reduce unemployment.

In 1984, the International Labour Office identified 45 countries in which overtime was limited by legislation (Blyton, 1985, p.59). In Belgium, for example, overtime work is restricted to 2 hours a day, 10 hours a week and 130 a year on the part of each worker. In Sweden there is a monthly limit of 50 hours and a yearly limit of 200 (ibid, p.59). Generally, in countries where there are quantity limits on overtime, exceptions can be granted under specified circumstances.

We have not been able to locate any examples of overtime restrictions being introduced in the 1980s or 1990s as a work sharing initiative.

3.3 Reductions in the length of the working year

A fifth week of paid annual leave was introduced by national legislation in France in the early 1980s, as part of a set of measures intended to address high unemployment levels. During the 1980s German unions and employers negotiated extensive leave arrangements, providing for 6 weeks paid annual leave. Improvements in annual leave provisions were also achieved through collective bargaining in a number of other European countries during the 1980s, such as Austria and Sweden.

Other leave provisions relating to statutory holidays, care of dependants, or education and training, could also be used to reduce aggregate annual working hours. Elements of these types of work

sharing policies have been present in legislation and collective bargaining in a number of Western European countries, although they have been promoted largely as a means to improve the quality of working life rather than a means to reduce unemployment.

Innovations in shift patterns can also serve to reduce the total annual hours worked by the employees of particular enterprises. This type of work sharing can really only be implemented on an enterprise level, although governments could play a role in promoting it. We have not identified any instances of governments pursuing work sharing policies of this type.

3.4 Measures to encourage the creation of part-time jobs

While unions have played a key role in bringing about shorter working weeks and restrictions on overtime, they have tended to oppose or merely tolerate the growth of part-time employment, on the grounds that the growth of part-time employment is not in the interests of full-time workers. Measures to promote part-time employment as a solution to unemployment have invariably been initiated by governments, often without union support. Two kinds of measure are considered here: subsidies to employers or employees, and measures intended to remove barriers to the growth of part-time employment.

Job sharing can be seen as a special type of part-time employment, in which two part-time workers share the duties of one full-time position and are responsible for co-ordinating their work so that their dual performance is like that of one full-time worker. Job sharing has been advocated as a means to make part-time work feasible in jobs with high levels of responsibility and a need for continuity, such as teaching. While few (if any) governments have actively promoted job sharing, many of the measures intended to promote part-time employment could also be relevant to job sharing.

Subsidies to employers or employees

During the early 1980s several Western European governments experimented with subsidies to promote part-time employment (Casey, 1983). Some of these programmes were designed to influence the hiring and labour allocation decisions of employers, while others were designed to encourage particular groups of workers to reduce their hours to part-time. The rationale for the employer subsidies was that they would help to offset the higher fixed costs that are associated with part-time employment.¹⁷ The rationale for employee allowances was that they would offset the income losses associated with the reduction of hours, and thereby make the option more attractive to workers.

A number of regional governments in West Germany introduced employer subsidies for the creation of additional part-time jobs in 1979 and 1980. In some regions, the subsidies could be paid for part-time jobs created from the splitting of full-time jobs, while in others, they could only be paid for the creation of part-time jobs which increased the firm's total employment level (ibid, p. 7). Various other conditions were imposed, such as the condition that the part-time job be a permanent one.

The government of the Netherlands offered subsidies to employers who split full-time jobs into part-time positions under a programme that was in force from 1980 to 1982 (ibid, p 10). Receipt of the subsidy was conditional upon the part-time jobs created being between 16 and 30 hours per week, permanent rather than temporary, and located in departments or occupations within the firm where no part-time jobs already existed. The programme also offered full-timers switching to part-time work a temporary compensatory allowance. This allowance represented 60 percent of the foregone earnings for the first six months of part-time employment, and 30 percent for the second six months.

In 1983, the British government introduced a subsidy for employers who split full-time jobs into two part-time jobs, available if at least one of the newly created part-time positions was filled by an unemployed person or an existing employee who was under threat of redundancy (ibid, p. 13). Other conditions were imposed on the duration and permanency of the new part-time positions.

¹⁷ Selection and recruitment costs are doubled, as are the costs of training. Additional investments in equipment and space may be required. Any per capita employment charges imposed by governments would also make it more expensive to split full-time jobs into part-time jobs.

In Belgium, the government provided an income supplement to job seekers receiving unemployment compensation who were seeking full-time work, if they accepted a part-time job, during the 1980s (ibid, p.25). The supplement was available on an indefinite basis, but the recipient was expected to continue searching for full-time work and can be placed in any suitable full-time vacancy by the employment service.

Measures intended to remove barriers or disincentives to part-time work

The measures adopted by governments to remove barriers or disincentives to part-time employment are wide ranging in scope. They include changes in income tax regimes, changes in social security funding arrangements, and changes in the coverage and content of protective employment legislation.¹⁸

One source of reluctance on the part of employers to allow jobs to be performed on a part-time basis is that certain costs or obligations are imposed on them in relation to the number of persons employed. For example, some employment laws give all employees, regardless of the number of hours they work, rights and protections which are costly for employers to uphold. Similarly, social security contributions and other employment taxes have sometimes been imposed on a per capita basis, or in ways not strictly proportional to the earnings of employees or the hours they work. These measures raise the costs of employing part-time staff relative to the costs of employing full-timers.

Some governments have attempted to remove these barriers. For example, a French law of 1981 made a comprehensive attempt to revise the regulations in which numbers of employees were mentioned, so that their application to part-timers would be calculated on a strict pro rata basis, in proportion to the number of hours they worked (Casey, 1983, p. 19). Some conditions, such as rights to redundancy notice, cannot be pro-rated, however. Many governments have moved to eliminate or raise earnings ceilings on contributions to social security schemes, so that these schemes are more neutral towards part-time employment (ILO, 1993, p.58).

Income tax systems in which the couple rather than the individual is the unit of assessment can discourage part-time work on the part of people who have a spouse in full-time work, because their earnings are subject to high marginal tax rates. In the 1970s and 1980s, many Western nations moved from joint taxation for married couples to individual assessment, removing this particular barrier (ILO, 1993, p. 57).

Another possible source of reluctance to take up part-time jobs is that the terms of employment, rights and protections enjoyed by part-time workers are inferior to those of full-time workers. In France, in 1981, legislation was passed to provide protection to part-time workers. In calculating length of service, rights of notice and of maternity leave, and holiday entitlements, part-timers were to be treated as if they were full-timers (ibid, p.21). No discrimination between full-timers and part-timers in rates of remuneration was permitted, and redundancy payments were to be calculated on a pro rata basis. Similar legislation was passed in Belgium in 1981, to codify the position of part-timers in employment law.

Finally it has been suggested that some workers are deterred or prevented from working on a part-time basis by the very limited availability of part-time positions in the occupations they are trained for, or at their existing levels of responsibility. Opportunities to work part-time tend to be less common in traditionally-male occupations and in jobs with high levels of responsibility. In some sectors they simply do not exist. Job sharing, in which two part-timers share a full-time position and divide between them the responsibilities, status, pay and conditions of the full-time position, has been advocated as a means to overcome this barrier, making part-time work possible at all levels and in all sectors of the labour market. As far as we can determine OECD governments have done little or nothing to stimulate the growth of job sharing, however, leaving this initiative to unions and employers (Blyton, 1985, p. 121).

4 THE IMPACT OF WORK SHARING IN ECONOMIC THEORY

¹⁸ A more detailed discussion of these policies can be found in International Labour Office (1993).

There is a moderately large economic literature considering the effects of work sharing on employment in theory. Typically, a theoretical model of the firm's demand for labour is first specified, and then the effects of variations in hours are analysed using comparative static analysis. Most of this literature focuses on the effects of a reduction in standard weekly hours, as opposed to other types of work sharing. However, some common themes can be identified.

The theoretical models found in the literature are reviewed in some detail in a separate paper by the author titled: The impact of work sharing in economic theory. That paper is available on request. The following discussion simply summarises key results.

Considering first the direct effects of a reduction in standard weekly hours on the firm's demand for labour, most of the theoretical models indicate that employment will not rise and may even fall. This is a consequence of the impact of reduced weekly hours on labour costs, and the adjustments to hours, relative utilisation of inputs and output levels that follow. The processes likely to be set in motion are as follows:

- a) Reductions in working time increase the significance of fixed costs as a component of total labour costs. (Fixed labour costs are those incurred whenever an employee is hired, such as hiring and firing costs, training, and the costs of any facilities or equipment that are used on a per capita basis). This increases the price of marginal adjustments to the number of *employees* relative to the price of marginal adjustments to *hours*. Firms that have the capacity for overtime work are likely to respond to the increase in fixed labour costs by making more use of overtime hours, offsetting at least in part the need to hire more employees;
- b) Even if workers are not compensated for the hours they no longer work, hourly labour costs to the firm are raised by a reduction in standard working hours, since fixed labour costs must be spread over a reduced number of working hours. Depending upon the elasticity of demand for the firm's output, the increase in labour costs may cause the firm to adjust its (profit-maximising) level of output downwards, thereby reducing its demand for labour;
- c) Reductions in working hours reduce levels of capital utilisation, raising the unit cost of capital. The firm may seek to offset this capital utilisation effect by making greater use of overtime or shift work;
- d) In the longer run, the increase in labour costs caused by reduced working hours provides an incentive for the firm to substitute away from labour and towards capital in the production process.

The firm's reactions to other types of work sharing policies are likely to be similar, insofar as these policies also raise fixed labour costs. For instance, increased annual leave entitlements raise fixed costs by increasing the number of unproductive hours that need to be paid for. A ceiling on overtime which reduces the number of overtime hours actually worked by some employees will also increase the ratio of fixed labour costs to productive working time. Similarly, the substitution of part-time for full-time workers raises the ratio of fixed labour costs to the number of productive hours worked by employees. In all cases, the changes in relative costs brought about by these work sharing policies would be likely to induce firms to make off-setting adjustments in their utilisation of working time, their use of alternative factors of production, and their output levels.

The outcome of these adjustments for the firm's final level of employment cannot always be predicted with certainty from the theoretical models, because it depends partly on parameters which vary in the real world, such as the firm's elasticity of output with respect to its number of employees,¹⁹ and the elasticity of consumer demand for the firm's product. However, the theoretical models suggest that in a large number of circumstances, these offsetting adjustments would either be unfavourable or neutral to employment rather than favourable. While it is certainly possible to devise models that predict an increase in employment, the fact that most specifications do not give this

¹⁹ Elasticity is a measure of the responsiveness of one variable to another. Both the direction of the influence and the strength of the influence are reflected in a measure of elasticity. Thus, for example, the elasticity of output with respect to employment can be defined as the percentage change in output resulting from a one percent change in employment. An elasticity estimate of 0.8 percent would imply that a one percent increase in employment led to an 0.8 percent increase in output.

result suggests that the conditions under which employment growth will result from a reduction in working hours are quite constrained.

Any conclusions drawn from these microeconomic models of the firm's demand for labour need to be balanced by additional considerations, however. Firstly, the theoretical models assume that labour inputs can be adjusted incrementally. In reality, technological constraints, or the need to schedule labour services continuously or at fixed times of the day or week, may mean that the firm can only make large, "lumpy" adjustments to the number of employees or the number of hours worked. Where there are constraints preventing marginal changes in hours or employment, the adjustments made by firms may be quite different from those predicted in the models. However, indivisibilities are unlikely to constrain all firms, and the increases in employment that take place in some workplaces could be balanced by employment reductions in others.

Secondly, there is a need to consider the aggregate effects of firms' reactions to work sharing policies, and the macroeconomic implications. Since reductions in standard hours typically apply to all firms in an industry or in the economy as a whole, any adjustments to firms' demand for labour or their levels of output would be likely to have aggregate effects on wages and prices. For instance, a reduction in hours that successfully increased the level of employment in an industry where some types of labour were in short supply could drive up wages, leading to second-round adjustments in the demand for labour relative to other factor inputs. It is likely that those second-round adjustments would dampen the initial rise in employment. Increases in the relative price of labour due to reductions in weekly hours of work could also have implications for the domestic price level, the level of exports, the balance of payments and the exchange rate. The responses of fiscal or monetary authorities to these macroeconomic impacts may again influence long term employment and unemployment levels.

Only a few of the theoretical models of reduced working time attempt to incorporate these macroeconomic impacts. However, economists have tended to conclude, after brief consideration of the probable nature and direction of the effects, that they are unlikely to be favourable to aggregate employment levels (see Hart, 1987, p. 123).

A third modifying consideration is that most of the theoretical models of the firm's demand for labour do not explicitly incorporate changes in the productivity of labour which result from, or are triggered by, the implementation of work sharing measures. By contrast, the empirical evidence on real life experiments with work sharing (reviewed in the section that follows) suggests that productivity improvements are often a very important feature of the response to work sharing by firms and workers.

In theory, a number of different productivity impacts are possible (Hart, 1987, p. 53). Suppose firstly that the existing standard working week is relatively long. A significant reduction in hours may help to improve worker's performance, due to a reduction in their fatigue or boredom. Assuming that the productivity improvements are relatively significant, they mean that less labour is required to produce the same output. The firm's response to this could be a reduction in the number of employees. However, if the firm has a relatively high product elasticity of demand and is able to pass on the productivity gains in the form of lower prices, and subsequently increase output, this result may be modified, and an increase in employment could take place.

As a counter-example, suppose that a significant part of the firm's existing working week is devoted to machine set-up time. A fall in standard hours reduces labour productivity, as a smaller proportion of total labour time is being devoted to production. The reduction in standard hours would be associated with a proportionately greater fall in output per period, and the firm may need to recruit more employees. This outcome could be modified, however, if there is high product demand elasticity, and higher unit costs are passed on in the form of higher prices, leading to a fall in demand and reduced output. Thus, economic theory does not give any clear predictions about the productivity effects of a reduction in working hours.

A fourth issue is that the theoretical models do not consider the effects of work sharing policies on the supply of labour to firms. While incremental reductions in standard weekly hours probably do not have a significant impact on labour supply, the division of full-time jobs into part-time ones is likely to

make them attractive to a different set of workers, altering the quality and size of the pool of labour that the firm is able to draw upon. Recruitment costs could fall, and there could be significant changes in the productivity, turnover and absenteeism patterns of the work force, which might serve to offset the unavoidable increases in fixed labour costs that are associated with the employment of part-timers. Some of the empirical literature on part-time employment suggests that it can indeed offer cost savings to firms in the form of higher productivity, reduced turnover and lower absenteeism, as a result of the supply characteristics of part-time workers, who tend to be mature-aged women (Blyton, 1985, p. 111). However, if firms have taken these differing labour supply characteristics into account when making their initial decision to employ full-timers rather than part-timers, policies which impose higher levels of part-time employment on firms could still have adverse employment effects.

A fifth issue is that predictions about the impact of work sharing on employment levels do not necessarily lead to clear predictions about changes in unemployment levels. With a fixed supply of labour, an increase in the demand for workers must necessarily reduce unemployment. However, if the labour supply is not fixed, then the additional employment opportunities made available by reductions in working hours could draw non-participants into the labour force, diminishing the impact of the work sharing measures on unemployment. A related issue is the extent to which unemployed workers are good substitutes for current employees. If the skill distributions of these two populations are quite different, and the unemployed are not good substitutes for the currently employed, then an expansion in employment opportunities brought about by work sharing could not only fail to reduce unemployment significantly, but also intensify demand pressures for skilled labour and promote wage inflation.

A final point about the theoretical models is that they consider the impact of a particular work sharing measure, such as reduced weekly hours, in isolation from any other changes. In practice, work sharing measures have often been implemented in conjunction with other measures, such as wage restraints or changes in the scheduling of working time aimed to improve productivity. The combined effect of these measures will differ from that of a single measure in isolation.

In summary, the theoretical literature points to the conclusion that work sharing measures are unlikely to lead to employment growth and may even lead to employment contraction. While it is possible to devise a theoretical model of the firm which gives positive employment results, most of the models developed so far do not do so, or only under tightly specified circumstances. However, the theoretical models developed to date do not necessarily incorporate all the relevant aspects of worker and firm behaviour. Productivity effects appear to be particularly poorly specified.

5 EMPIRICAL EVIDENCE ON THE IMPACT OF WORK SHARING

There are three main types of evidence on the effects of reductions in working hours: micro-level data collected from firms on their response to the measures; econometric labour demand studies which use empirical data to model the demand for labour and then evaluate the implications of changes in hours within these models; and macroeconomic studies in which the effects of reductions in working hours are simulated in macroeconomic models (Wooden et.al., 1987, p.48). The evidence on the effects of other work sharing measures is much poorer and mainly consists of micro-level evidence from surveys of employers or workers.

5.1 Case studies and survey evidence

Many of the European experiments with reduced working hours in the 1980s prompted empirical research in which data was gathered from a sample of the firms affected. The results of this research are summarised in White (1987) and Wooden (1994). In general, this case study and survey evidence suggests that the employment gains achieved were small or non-existent.

White and Ghodadian (1984) studied the effects of the working hours reductions implemented in several British industries in the UK in 1981. They surveyed firms in these industries soon after the hours reductions were introduced and again about a year later. They made extensive use of data from production and personnel records as well as management reports of the impacts of the

changes. It was found that while total labour hours were reduced in line with the cuts in normal hours, productivity rose, unit wage costs fell, output was maintained, and there was actually some reduction in the numbers employed and the rate of recruitment (White, 1987, p. 13). -Aggregate statistics of production and employment in the industries affected tended to confirm this picture (ibid., p. 14).

The National Institute of Statistics and Economic Studies in France studied the response of firms to the reduction in the national working week from 40 to 39 hours in 1982. The official estimate of the number of jobs created from the agreement was 80,000 jobs, although this estimate included the effects of the simultaneous increases in holidays and an estimate of job losses avoided. Even this possibly too generous estimate of the employment effect of the hours reductions represents at most a conversion ratio of 10 percent from hours into employment (White, 1987, p. 15). It appears that the effects of the hours reductions were compensated by a vigorous increase in productivity which was stimulated by the reforms. Aggregate employment in the French economy fell by 0.1 percent in 1982, even though the labour input in hours fell by 2.7 percent and output rose by 1.5 percent. It was estimated that hourly productivity rose by about 6 percent in 1982, well above the increases recorded in preceding or subsequent years (White, 1987, p. 15).

Similar results were reported in relation to the employment effects of reductions in working hours in the Netherlands. Data from a survey by the Ministry of Social Affairs and Employment indicated an employment effect equivalent to only about 17 percent of the hours reduction (White, 1987, p. 15). It was reported that there were no employment effects in 78 percent of all firms which introduced shorter working hours, despite efforts to link hours reductions to new job creation in collective agreements.

Very different results were obtained in studies of the reductions in working hours that took place in the Federal Republic of Germany in the mid to late 1980s. All the studies indicated that working time reductions led to the creation of additional jobs, with estimates of the proportion of the reduction in working time that was compensated for through increased employment ranging from 35 to 75 percent. For example, the German Institute of Economic Research used econometric techniques to calculate an employment effect of more than 50 percent for reduced hours in the metalworking industry (Bosch, 1990, p.624).

Bosch argues that the employment effects of working time reductions in the mid to late 1980s were greater than in the past, and attributes this to the fact that little scope remained for metalworking firms to compensate for reduced working weeks through an intensification of the pace of work, as was possible during the earlier reforms (p.625). Wooden et al, by contrast, attribute the more favourable employment outcomes recorded in these German experiments to the climate of employment growth that existed in Germany at the time (1987, p.50). It is not easy to separate out the effects of work sharing policies from the effects of economic growth and technical and organisational change.

5.2 Econometric studies of labour demand

Case studies comparing employment levels before and after a reduction in working hours cannot control for simultaneous changes in other variables that affect employment. Econometric studies attempt to do so, by estimating a labour demand function and including standard hours of work as an explanatory variable along with output, capital, and other determinants.

Wooden et.al. (1994) summarise the results of several studies of this type. They vary widely in their conceptual models and choice of econometric techniques. Most have used aggregate time series or cross-sectional data relating to a particular country or industry in which shorter hours have been implemented. The majority of these studies indicate that reductions in standard working hours would have negligible or negative effects on employment. For instance, Konig and Pohimeier (1988), using data on the West German manufacturing industry over the period 1964 to 1983, found that reductions in standard hours reduce employment, but the size of the effect is very small. By contrast, de Regt (1988), using data on the Dutch manufacturing industry over the period 1954 to 1982, estimated that employment would rise by 4 percent in response to a 10 percent reduction of hours.

The only study that used firm-level data to estimate the labour demand function is Hart and Wilson (1988). This study estimated a model of the demand for employment and hours using panel data collected from 52 firms in the UK metalworking industry. The results indicated that a reduction in standard hours would significantly increase overtime in firms already employing some overtime. The overall impact of a 10 percent reduction in standard hours was estimated to be a four percent reduction in employment. However, the employment effects of the reductions in standard hours were found to differ according to the extent that firms used overtime prior to the reforms. Firms that did not use overtime increased their employment, while those that did use overtime reduced it. Possibly this result reflects the fact that firms without overtime were not in a position to lengthen hours of work after a change in standard weekly hours, due to technical or organisational constraints.

The results of these empirical labour demand studies do not allow one to draw firm conclusions on the employment implications of reductions in working hours, as they are limited in number and have all utilised data relating to the manufacturing industry. Firms in other sectors of the economy where overtime working is uncommon may show a greater employment response to a reduction in standard hours. Even more importantly, the effects of changes in the productivity of hours following a reduction in the standard working week are not allowed for in the majority of labour demand studies. Any changes in the productivity of working hours could lead to further employment impacts through factor substitution and output adjustments. This issue is discussed in more detail below. The strongest conclusion that can be drawn is that the empirical labour demand studies undertaken to date do not provide any real support for the idea that reductions in standard working hours will have favourable employment effects.

5.3 Macroeconomic models

The impact of a shorter working week has also been studied through macroeconomic models. In contrast to the microeconomic studies considered so far, the use of macroeconomic models should mean that any indirect or secondary impacts occurring at an aggregate level, such as wage or price inflation or adjustments to aggregate output, can be taken into account.

Van Ginneken (1984) reviewed the results of simulations of reduced working weeks within seven European macroeconomic models: two from France, two from the Netherlands, and one each from the FRD, Belgium and the UK. He reported for each model the estimated employment responses to a one percent reduction in the length of the working week under several different assumptions, including the assumption of full wage compensation for the reduction in hours.

According to Van Ginneken, all but one of the models produced positive employment outcomes under all the assumptions tested. The remaining model predicted a fall in employment only under the assumption of full wage compensation. The elasticities of the employment response to a change in standard hours varied widely between models, with the most optimistic indicating an elasticity of between 0.62 and 0.84 (that is, a one percent reduction in hours was associated with a 0.62 to 0.84 percent increase in employment). This particular result implied that a two hour reduction in the working week in West Germany would create between 800,000 and 1.2 million additional jobs.

Van Ginneken and other reviewers point out that these results are strongly influenced by the structure of the models and the assumptions incorporated into the simulations. For example, none of the models adequately measure factor prices, in that they do not distinguish between wage and non-wage or between fixed and variable labour costs, and therefore they cannot reflect the impact of changes in the relative prices of these components (Hart, 1987, p158). Similarly, the measurement of capital costs in most macroeconomic models is not sophisticated enough to reflect the impact of changes in hours on capital utilisation and unit capital costs. In addition, nearly all of the simulations reviewed by van Ginneken assumed that firms throughout the economy maintained their pre-existing level of output following the change in hours, which is in conflict with the predictions of economic theory and with some of the empirical evidence from case studies. For these reasons, it seems likely that the positive employment results obtained in macroeconomic model simulations are primarily an outcome of the failure of these models to represent all the

relevant economic relationships at the micro-level, and should not be taken seriously as a guide to the real world impacts.

5.4 The productivity effects of shorter working time

The relationship between labour productivity and hours of work has been studied by economists using production functions, which allow them to estimate the elasticity of output with respect to changes in hours. The general procedure is to estimate a production function using empirical data on employment, hours and output, and then use this production function to estimate the effects of changes in hours worked upon output. Estimates of the elasticity of output with respect to hours that are greater than one indicate that a reduction in hours will be associated with a greater than proportional reduction in output (increasing returns to hours); while estimates of the elasticity of output with respect to hours that are below one indicate that a reduction in hours will be associated with a less than proportional reduction in output (decreasing returns to hours).

Hart (1987) summarises the results of seven production function studies. He finds that there is no uniform pattern: four of the studies reviewed find decreasing returns to hours and three find increasing returns (p. 149). Hart argues that the studies indicating a decreasing return to hours are more reliable, because they incorporate a measure of capital utilisation into their production functions²⁰. If there are decreasing returns to labour hours, reductions in hours of work will raise the productivity of labour. This would not lead to employment gains in all firms,²¹ but it would tend to have favourable implications for employment in the economy as a whole (for example, by improving the international competitiveness of exporting firms).

However, the data on which the existing production function studies are based may mean their results that are not really relevant to an understanding of the impacts of the work sharing measures considered in this paper. The existing studies all utilise data relating to marginal changes in hours in the overtime region, whereas shorter working hours and part-time employment measures involve reductions of hours within the standard hours region. The productivity effects of a change in hours could differ substantially at different places in the hours range.²²

Another critical limitation of the production function studies is that they seek to model the incremental changes in output that result from incremental changes in the efficiency and effectiveness of labour utilisation. Variations in labour productivity resulting from increasing fatigue or reduced levels of motivation should be reflected in production function relationships. However, more radical shifts in labour productivity that are brought about by workplace-wide changes in the organisation of working time or working methods are not embodied in production function relationships (at least, not intentionally). The case study and survey evidence reviewed above suggests that these workplace reforms can be an important source of the productivity gains that follow the introduction of a work sharing measure.

5.5 The employment effects of other types of work sharing

In the time available it has not been possible to locate any empirical evaluations of the impact of restrictions on overtime working, or extensions to annual leave.

²⁰ Controlling for capital utilisation is necessary to account for the possibility of labour hoarding. The argument here is that the variable of interest, hours worked, is proxied in the production function studies by data on hours paid for, which could hide significant variations in work intensity, including the "slack time" associated with labour hoarding. If the intensity of work declines with the number of hours worked, estimates of returns to hours worked based on the hours paid for data will be upwardly biased because the number of hours paid for will not reflect the decreasing intensity of work. Controlling for the level of capital utilisation is an indirect way of controlling for variations in the intensity of work (Hart, 1987, p. 148), and therefore the studies that do this should give more reliable results.

²¹ Since the demand for labour depends in part on its cost relative to other factors of production, and is influenced by level of demand for the product being produced.

²² Hart cites results from a single study in which the production functions for standard hours and overtime hours were modelled separately (1987, p. 152). In this study, the productivity impacts of standard hours reductions were found to be much larger than those of overtime reductions. This suggests that the specific elasticity values estimated in the literature are not necessarily very relevant to predictions about the productivity impacts of a reduction in the standard working week.

Casey (1983) reviewed the evidence on the results of governmental experiments with the promotion of part-time work in the 1970s and early 1980s. The countries involved were Britain, the Netherlands, Belgium, France, and West Germany. Many of the schemes he reviewed were pilot programmes, and most were never implemented on a national basis because of dissatisfaction with the results attained.

Considering first subsidies to employers to encourage them to split full-time jobs into part-time ones, Casey found that all the schemes trailed experienced much lower than expected levels of take-up by employers. Surveys of the employers that participated in the schemes also provided evidence of very high "windfall" losses: subsidies were frequently paid to employers for job splitting decisions that would have taken place in the absence of a subsidy, due to there being good economic reasons for organising work on a part-time basis (ibid, p.45). The part-time jobs subsidised under the schemes were generally jobs of low skill for which the fixed costs of employment are not particularly high. This may have been partly a consequence of the subsidy levels not being high enough to encourage the splitting of more skilled jobs, for which fixed costs are higher. Given that employers are free to determine for themselves their desired mix of full-time and part-time jobs, substantial financial incentives may be required to induce employers to alter the mix towards greater levels of part-time work (Wooden et al, 1987, p.60).

The take-up of government allowances offered to employees transferring from fulltime to part-time positions was also very low, except in the case of schemes targeted at workers on the verge of retirement (Casey, 1983, p.47). This probably reflects the temporary nature of the allowances. Casey comments that "only where the transition to part-time employment comes at the very end of a person's working life, and the payments made under the scheme continue right up to the moment of retirement, can some system of "bridging payments" have a role to play (p.47).

The effects of the government initiatives in France and Belgium to promote part-time work by removing disincentives embodied in employment regulations do not seem to have been evaluated. However, there is some evidence that employment laws and features of the taxation systems in various European countries have indeed had a (in some cases unintentional) impact on the number and average size of part-time jobs. Britain provides a good example.

In Britain, employers and employees are exempt from paying National Insurance contributions for workers earning less than a certain threshold (in 1985, 35.50 pounds per week) (Blyton, 1985, p. 110). Further, the provisions of much protective employment legislation only apply to employees working for a minimum of 16 hours a week, or eight hours if the employee has worked for the same employer for the last five years. The protective measures which part-timers below these weekly hours thresholds are excluded from include protection against unjustified dismissal, maternity leave and maternity payments, redundancy leave and redundancy payments (Blyton, 1985, p. 110). This differentiation on the basis of hours worked appears to have led to a disproportionate concentration of British part-time workers in jobs of less than 16 hours, compared with the distributions found in other countries. The proportion of British part-time workers involved in jobs of less than 16 hours has also been growing over time: from 26.6 percent in 1972 to 34.5 percent in 1985 (European Foundation for the Improvement of Working Conditions, 1991, p.45).

6. THE PROMOTION OF WORK SHARING AS A RESPONSE TO UNEMPLOYMENT IN NEW ZEALAND

6.1 Conclusions from the discussion so far

The review of recent trends in working time in New Zealand indicated that a good deal of work sharing is occurring at present without government intervention, via the growth of part-time employment. The weekly hours of full-time workers are not showing any tendency to grow shorter, however. Indeed it would not be surprising if a *lengthening* of the average weekly hours of full-timers was observed over the next few years, if New Zealand follows trends in certain other countries such as Australia.

On the question of whether there is scope for further work sharing, it was suggested that any policies which imposed shorter working hours without full compensation on workers who want to maintain certain income levels, run the risk of being subverted, through increases in overtime work, increases in multiple job holding and the entry of new workers to the labour force. However, it seems likely that there is a group of people within the full-time workforce who would like to reduce their weekly hours, and would be willing to give up some of their current earnings to do so. While we have no reliable evidence on the size of this group in New Zealand, evidence from other OECD countries suggests it could be in the region of 5-15 percent of full-time workers.

The theoretical analysis of the impact of work sharing, reviewed in Section 4, indicates that work sharing measures may fail to have the positive employment and unemployment outcomes that advocates seek. If a reduction in weekly working hours leads to an increase in labour productivity, there may not be any need for firms to take on additional staff to maintain their level of output. To the extent that reduced hours increase the importance of fixed labour costs, there is an incentive for firms to make greater use of overtime as an alternative to maintaining or increasing their employment levels. To the extent that reduced hours increase labour costs overall, there is an incentive for firms to substitute away from labour towards capital in production processes. To the extent that firms' output levels are adversely affected by the increase in labour costs, their demand for labour will fall, offsetting any initially positive effects of the reduction in hours on employment.

The empirical evidence on the employment effects of work sharing policies, reviewed in Section 5, also provides very little support for the view that work sharing policies can reduce unemployment. Here, a distinction must be drawn between the different types of work sharing.

The evidence on across-the-board, incremental reductions in weekly working hours, which have been studied much more extensively than other work sharing measures, suggests that significant job creation is unlikely to take place. Case studies and industry surveys show that frequently it has been possible for firms to maintain their output levels without employing any additional staff, due to productivity improvements or greater use of overtime. In other situations, both output and employment have fallen after a reduction in standard weekly hours. Industry-level data tend to confirm this story. Although it is possible to identify cases where a reduction in hours has been followed by employment growth, such as the case of the metalworking industry in West Germany, it is difficult to demonstrate that these employment increases would not have occurred if the reduction in hours had not been implemented. The weight of the evidence is against any presumption that incremental reductions in standard weekly hours will cause aggregate increases in the number of jobs. Of course, increases may take place in individual firms.

Although most of the empirical studies have focused on working hour reductions implemented with full or at least partial wage compensation to employees, the theoretical analysis summarised in Section 4 suggests that incremental reductions in weekly hours without wage compensation would have similar effects. Labour productivity gains could eliminate the need for firms to employ any additional staff, and the increase in fixed labour costs relative to variable costs could discourage firms from increasing their employment levels, or even bring about employment reductions.

There is little empirical evidence on the effects of restrictions on overtime or extensions to annual level entitlements, but the fact that these measures involve incremental reductions in the working hours of individual workers and higher fixed labour costs for firms, suggests that the impacts could be similar to those associated with working week reductions.

The substitution of part-time for full-time positions, by contrast with the other work sharing measures, involves large reductions in the hours of employees: reductions too large to be easily offset by increases in the productivity of the workers concerned. Given this, the substitution of part-time for full-time positions seems more likely to lead to a net increase in the number of jobs. Unfortunately, there is little empirical evidence that policies intended to promote part-time employment have in fact had a positive impact on aggregate employment levels. This lack of evidence may be partly a consequence of the fact that schemes to promote part-time employment

simply haven't been studied extensively and rigorously enough²³. It could also reflect the fact that it is genuinely difficult to influence the part-time employment decisions of employers and employees.

Direct subsidies to encourage job splitting have suffered from low take-up and high levels of windfall losses. The fiscal costs involved in using subsidies to promote part-time employment may also be high. To the extent that employers are free to determine for themselves their desired mix of full-time and part-time jobs, substantial financial incentives may be required to induce employers to alter the mix towards greater levels of part-time work.

In the sections that follow, we consider the extent to which government policies or institutional features of the New Zealand labour market may be influencing the working time decisions of firms and workers in ways that are either favourable or unfavourable to work sharing. We then consider what specific policy instruments New Zealand governments could use to promote work sharing, if they wished to do so. Finally, we return to the question of whether increased levels of part-time employment would be likely to reduce unemployment, particularly long-term unemployment.

6.2 Incentives and disincentives for employers to implement work sharing

Non-wage labour costs

The theoretical work on the demand for labour suggests that levels of non-wage labour costs, particularly fixed non-wage labour costs, can have a critical influence on the size of jobs. All other things being equal, higher fixed labour costs provide an incentive for employers to lengthen the hours of employees, and a disincentive for them to employ people on a part-time basis. This prompts a number of questions about non-wage labour costs in the New Zealand environment:

- a) How high are non-wage labour costs, relative to wage costs, and relative to the levels in other countries?
- b) Which elements of non-wage labour costs do not vary in proportion to hours worked?
- c) Are there any elements of non-wage labour costs that the government could seek to reduce, in order to reduce disincentives to part-time employment or shorter working hours?

Non-wage labour costs include:

- a) Remuneration for time not worked, including annual leave, statutory holidays, sick leave, and other paid leave;
- b) Other cash payments and payments in kind (i.e. fringe benefits), such as company cars for private use, low cost housing loans, medical insurance, and employer contributions to superannuation schemes;
- c) Employer contributions to government social security schemes, such as ACC levies;
- d) Vocational training costs;
- e) Recruitment and severance costs;
- f) The costs of complying with laws and regulations relating to employees, such as the administration of PAYE, the administration of Family Support and Child Support, and compliance with parental leave entitlements.

The Labour Cost Index was introduced in December 1992 to measure the rate of change in labour costs in New Zealand. The following types of non-wage costs are measured in the Index: annual leave and statutory holidays, employer contributions to superannuation schemes, ACC employer

²³ As mentioned previously, there is circumstantial evidence that particular features of national tax systems and national employment laws have shaped the level and characteristics of part-time employment in some OECD nations. We have not been able to locate studies which used methods able to test the *cause and effect* relationships between these features of institutional environments and part-time employment, however. In addition, the taxation and social security systems of OECD nations were generally designed to achieve a range of objectives unrelated to part-time employment, and their impact on part-time employment was incidental.

premiums, medical insurance, motor vehicles, and low interest loans. Data collected when the index was set up indicated that these non-wage labour costs represented just under 17 percent of all measured labour costs in 1992. Annual leave and statutory holidays made up about two-thirds of the non-wage costs measured by the index. All other elements were much smaller.

An earlier study of non-wage labour costs by the NZIER, which estimated the value of a more comprehensive set of these costs, indicated that they comprise around 24 percent of total labour costs (Braae, 1984, p.43). Since the author of this study found little data on which to base estimates of training, recruitment and severance costs, his estimates of those cost elements could possibly be too low, however. The overall estimate of 24 percent is low in relation to estimated levels of non-wage costs in many other OECD countries (ibid, p.44). However, any gap between New Zealand and other countries can be largely attributed to the fact that New Zealand does not have payroll taxes or social security schemes that are funded as direct employment taxes, with the exception of ACC. Braae claims that when pay for time not worked and employers' contributions to private pensions schemes are considered, New Zealand's non-wage cost level is close to the levels prevailing in other countries (ibid, p.44).

Most non-wage costs in New Zealand, and certainly those making up the bulk of total non-wage costs if Braae's estimates are reasonably accurate, are recurrent payments which vary in proportion to wages. Payments for time not worked, employer contributions to superannuation schemes, and employer ACC levies, fall into this group. For instance, ACC contributions are levied as a proportion of the total wage bill of the employer. Other fringe benefits such as cars and low interest loans have some potential to be pro-rated into smaller packages for employees who work shorter hours, and in any case they represent a discretionary part of the pay packages of a minority of employees in New Zealand. This leaves training, recruitment and severance costs, and the costs to employers of complying with statutory obligations that relate to employees. These are generally one-off costs that are incurred independently of the number of hours that an employee works. They are the costs most likely to create a bias in favour of full-time employment. Braae estimated training costs to be around one percent of total labour costs, and hiring and severance costs to be around one percent also, but the basis of these estimates is questionable.

Currently, the government exercises little influence on training, recruitment and firing costs in New Zealand. There are no compulsory levies for training purposes, or regulations governing the amount of training that must be provided by firms. The recruitment of employees and the procedures for termination due to redundancy are also independent of national regulations. The dismissal of employees is regulated by the personal grievance provisions contained in the Employment Contracts Act, which provide employees with some recourse against unjustified dismissal.

The laws and regulations relating to employees which employers must comply with, that do not distinguish between full-time and part-time employees, include those governing the payment of personal income tax and employee ACC contributions, health and safety laws, the provisions for the payment of Family Support and Guaranteed Minimum Family Income, and the provisions for the deduction of Child Support payments and student loan repayments. Undoubtedly the compliance costs arising from these regulations are higher, the greater the use made of part-time employees. The level of these compliance costs is difficult to estimate, however. The government is currently involved in a joint survey with the New Zealand Employers Federation aimed to obtain better information on compliance costs.

One employment law that does draw a distinction between full-time and part-time workers is the Parental Leave Act. Employees must work continuously for one employer for at least 10 hours a week over a period of at least 12 months in order to be eligible for parental leave protection. All employees, whether full-time or part-time, must work for a minimum of 12 months with the same employer to be eligible. All other things being equal, the costs of complying with this legislation would be higher if the employer had a predominantly part-time work force rather than a predominantly full-time work force. However, this compliance cost is probably extremely low as a proportion of total labour costs.

Direct restrictions on working hours

The discussion in section 2.5 considered the extent to which working time arrangements are regulated in New Zealand by the government or by collective bargaining. It was noted that there are no laws or regulations that directly restrict the use of part-time work, shorter working hours, or shorter working years. The industrial relations environment also provides flexibility for employers and employees to negotiate non-standard working time arrangements. While the overall level of working time flexibility in the New Zealand labour market is very difficult to assess, there is evidence that working time reform has been occurring in recent years.

The implications of these recent working time reforms for the future potential of work sharing schemes in New Zealand are mixed. On the one hand, it is likely that restrictions on the use of part-time workers are being eased via the general liberalisation of working time arrangements. For instance, it is likely that there are now fewer contracts which specify a minimum number of hours which must be paid for a given day's work or shift. In loosening the constraints governing the scheduling of hours in industries traditionally dominated by full-timers, such as transport and communications, it is likely that recent working time reforms have given employers greater scope to use part-timers, fitting them into new shift systems or extended working days and weeks.

On the other hand, the general direction of the reforms had been to reduce the need for employers to pay overtime rates or penal rates for evening and weekend work, due to extensions in the scope of normal working hours. This trend is likely to make it easier and cheaper for employers to lengthen the hours of full-time workers. Any externally imposed reduction in standard working hours would be more easily circumvented, and direct restrictions on the use of overtime work would have less effect. This suggests that reduced working weeks and overtime regulations are likely to be less effective work sharing measures than previously.

6.3 Incentives and disincentives for workers to participate in work sharing

Employment laws in New Zealand do not, in general, differentiate between full-time and part-time employees. With the exception of the Parental Leave Act, they do not provide any rationale for employers to treat part-time employees any less generously than full-time employees with respect to their terms and conditions of employment. On the other hand, the fact that most of the relevant acts do not specify the entitlements of part-time employees explicitly may provide some potential for the law to be applied in discriminatory ways in practice.

Nevertheless, if part-timers do not enjoy terms and conditions of employment comparable to those of full-timers, the source of this discrimination is likely to lie in the content, application and enforcement of collective contracts, rather than in labour legislation. Since little is known about the conditions of employment of New Zealanders who work in smaller workplaces or have individual employment contracts, it is not really possible to assess the extent to which discrimination exists, or the extent to which it might act as a disincentive for workers to accept part-time jobs.

Another factor likely to influence the take-up of work sharing options is the extent to which people are able to retain any additional income which they earn by working part-time, or supplement it through the benefit system. The current income tax system in New Zealand assesses each member of a couple separately, which means that those who have a partner in full-time employment do not face high marginal tax rates if they work part-time. Thus the tax system is neutral towards part-time employment.

The implications of the income maintenance system for the take-up of part-time or shorter hours jobs are mixed. At present, income beneficiaries are allowed to earn a small amount of income (up to \$50 a week) to supplement their benefit, without any penalty. This means that there is no disincentive to them taking up very small part-time jobs. However, they often face very high effective marginal tax rates when they earn income beyond the exemption zone, due to the progressive abatement of benefits and supplementary allowances. These high marginal tax rates (approaching 100 percent) can dramatically reduce the financial incentive for beneficiaries to undertake more substantial part-time jobs, or move to full-time work²⁴. The use of the couple or core family as the

²⁴ For some beneficiaries, the combination of a benefit and part-time work provides a higher income than full-time employment, providing an incentive for them to remain a part-time worker.

unit of income assessment for most benefits, means that the spouses of beneficiaries can also face very high effective marginal tax rates, and have little financial incentive to undertake part-time work. Beneficiaries working in part-time jobs in which hours of work fluctuate from week to week face the additional risk of their benefits not being abated at the correct rate, necessitating (in some cases) repayments to the Income Support Service.

On the other hand, within the current income support system some categories of beneficiary, such as married couples with children, can be better off on a benefit with additional income from part-time work than they would be in a low wage full-time job. An increased availability of part-time jobs as a result of work sharing measures could raise the number of people in these circumstances, potentially discouraging movement away from benefits.

In addition, non-beneficiaries with dependent children, whose earnings from employment are low, may be eligible for Family Support payments. Provided that they and their spouse work for a minimum number of hours a week, they may also be eligible for Guaranteed Minimum Family Income payments²⁵. The availability of income top-ups for people with low earnings from employment could encourage the take-up of low wage, shorter-hour jobs under work sharing schemes. While this might be a desirable process if it facilitated movement from outside the labour force or unemployment to employment, it would not be particularly desirable if it encouraged people to move from full-time jobs without income support, to shorter-hour jobs with income support. Thus, an increased take-up of Family Support and GWFI by wage earners could be an unintended and probably undesirable consequence of any work sharing scheme that succeeded in creating additional job opportunities at the low end of the wage structure.

6.4 How could NZ governments promote work sharing?

The measures open to New Zealand governments to encourage or require firms to adopt work sharing measures include the following:

- Legislative or regulatory constraints on the duration of standard working hours, or the frequency and duration of overtime work;
- Legislation to increase minimum leave entitlements;
- Legislation giving employees certain rights to reduce their hours to part-time subsidies or tax concessions to firms to encourage them to adopt work sharing initiatives;
- Measures to influence relative non-wage labour costs in favour of part-time or shorter-hour employees. For example, reductions in the ACC levies that apply to part-time employees, or the elimination of certain minimum employment protections for part-time workers;
- The provision of information on work sharing schemes proposed or implemented overseas.

The first three items in this list are inconsistent with the current direction of industrial relations policy, which has sought to remove restrictions on the organisation of work that are not justified by health and safety or welfare considerations, and to minimise costly obligations on employers that might discourage job creation. In matters of economic policy, recent governments have moved away from the use of subsidies and tax concessions to influence business decisions, in the belief that decisions based on the true underlying prices of resources will ultimately be more efficient. Given the composition of non-wage costs in New Zealand, the government does not actually have a great deal of scope to influence the relative non-wage costs of jobs of different weekly hours. Promoting part-time employment by denying part-time workers some of the statutory protections that all employees presently enjoy would raise issues of equity. Finally, and most importantly, there is no reason to believe that the work sharing measures on this list would be any more effective in increasing the aggregate level of employment in New Zealand than they have been in other countries. This is the main argument against government involvement in the provision of information on work sharing initiatives. It is possible that firms and workers would gain other benefits from increased diversity in working time arrangements, such as higher efficiency and productivity, or improvements in the quality of life. If so, the case for the government to provide information on work

²⁵ Couples must work a minimum of 30 hours a week per couple and sole parents, a minimum of 20 hours.

sharing should be made in terms of these benefits, not in terms of the impact of work sharing on employment and unemployment.

The measures open to New Zealand governments to influence individuals' choices in favour of part-time or shorter hour jobs include the following:

- Higher marginal income tax rates on income above certain levels temporary or permanent income support for people who reduce their hours of work;
- Legislative clarification of the minimum conditions of employment that apply to part-time workers, and the manner in which they should be applied;
- Better enforcement of minimum conditions of employment, as they apply to part-time workers;
- The provision of information on work sharing schemes which have been proposed or implemented overseas

Higher marginal income tax rates would be contrary to current government policy. Providing income support to people who reduced their hours of work would be costly, and if temporary in nature might not have any lasting influence on individuals' hours of work choices. Clarification and better enforcement of the minimum employment conditions of part-time workers would probably have only a marginal impact on individuals' hours of work choices, if any. As noted above, governmental provision of information on work sharing cannot really be justified as an employment initiative.

6.5 Would more work sharing assist the unemployed?

Assuming that work sharing measures were effective in creating at least some additional jobs, their capacity to assist the unemployed would be influenced by the characteristics of the jobs created. If the full-time workers who are most likely to participate in voluntary work sharing schemes have above average levels of skill, as suggested by the overseas studies, there could turn out to be a significant mismatch between the skill requirements of the jobs created by work sharing and the skills of the unemployed.

Another risk is that policies intended to promote the growth of part-time employment would operate most successfully in sectors of the labour market that already make considerable use of part-time labour, such as retail trade, restaurants and hotels. It is in these sectors that employers are most likely to have good economic reasons for using part-time employment, which may make them more responsive to slight changes in incentives. At present, the jobs in these sectors of the labour market are predominantly carried out by women and young people. This means that mature-aged unemployed men may be reluctant to enter them, for social or financial reasons. Thus, the occupational, age and gender profiles of the jobs brought into being by work sharing measures could limit their potential to assist people who are currently unemployed.

The extent to which work sharing measures led to a reduction in unemployment would also depend on the flexibility of labour supply. Unless explicit constraints were imposed, any additional jobs created by work sharing measures could be taken up by people who were not currently members of the labour force, which would not lead to any reduction in the level of unemployment. Unemployment could even rise, if people entered the labour force in response to work sharing measures in the hope that they would benefit from the new jobs becoming available. There is no direct link between job creation and reductions in unemployment. Of course, any rise in the number of employed people brought about by work sharing measures could still have potential benefits for the community, by changing the distribution of income from paid work.

6.6 Conclusions: the scope for work sharing as a solution to unemployment in New Zealand

- The work sharing measures trailed overseas are unlikely to be more effective in increasing the aggregate level of employment in New Zealand than they have been in other countries. In general, the responses of firms and workers to these measures, and their direct and indirect costs to firms, have tended to undermine their employment-creating potential;
- At present, there appear to be few direct or indirect barriers to the creation of part-time jobs, or the adoption of other work sharing measures by employers, that are open to government influence. Employment laws and regulations do not inhibit or discourage the use of part-time

work, shorter working hours, or shorter working years. The non-wage labour costs that are influenced by government policy, such as paid annual leave entitlements and ACC levies, can be applied in a manner that is proportional to hours worked and therefore neutral to work sharing;

- The most important barrier limiting the take-up of part-time jobs that is open to government influence arises from the income benefit abatement system. At present beneficiaries are able to earn up to \$50 a week without penalty. The abatement of income in excess of this limit is likely to discourage beneficiaries and their spouses from taking up *substantial* part-time jobs. On the other hand, the availability of income top-ups via Family Support and GWFI could encourage people with dependent children to take up low wage part-time or reduced-hour jobs under work sharing schemes, as an alternative to working full-time without income support. This would raise the total cost of these income support programmes, and would not be consistent with the government's objective of encouraging individual self-sufficiency. The impact of work sharing on the take-up of income supplements like Family Support would need to be considered carefully before the government took any action to promote work sharing;
- The links between work sharing measures and unemployment levels are indirect at best. It is likely that there would be some mismatch between the skill requirements of jobs made available by voluntary work sharing measures and the skills of the unemployed, particularly the long term unemployed. Any new job opportunities brought into being by work sharing measures could stimulate increases in labour force participation, rather than going to those who are already unemployed;
- Certain work sharing measures could work well at an enterprise level. Their success may depend on:
 - Voluntary adoption by firms and workers;
 - Shorter hours not being fully compensated by higher hourly rates of pay;
 - Increases in fixed labour costs being offset by other labour cost savings or productivity gains.

Enterprise-based work sharing schemes are unlikely to create significant numbers of extra jobs, however, and they are unlikely to assist the longer-term unemployed.

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