
5 Supply side factors explaining part time employment

Why do people want to work part time? This question underpins the supply-side approach to explaining the pattern of part time employment across demographic groups and the strong growth of part time employment over the last four decades. The first part of the Chapter outlines a theoretical model of time use to explain the decision making process in forming preferences for working particular hours. This model is then tested against the reasons for working part time reported by a survey of part time workers. Finally, the changes in part time employment across demographic groups are analysed in order to isolate the broad factors underpinning the growth in part time work.

5.1 Supply side explanation — the time allocation model

In 2006, 70 per cent of male workers and 78 per cent of female workers who worked part time did so voluntarily and did not want to work more hours (ABS 2007b). Therefore, a relevant question is why people want to supply their labour on a part time basis.

A supply oriented explanation for part time work relates to the fundamental constraint facing everybody — there are only 24 hours in a day to undertake a wide array of activities. An individual considering entering the workforce faces a number of decisions arising from the competing priorities on their time. While the time spent working provides an income, other possibilities exist in the way that time can be used — education and training can be undertaken, families can be cared for and/or leisure activities can be pursued. Individuals have different values for the different uses of their time. Only work has an explicit pecuniary value reflected in the income stream it generates. But can also provide non-pecuniary benefits such as social contact, prestige and intrinsic interest.

Neoclassical economic theory of time allocation posits that an individual seeking to maximise the utility or satisfaction that they derive will seek to equalise the marginal utility of employing their time across various work and non-work options (box 5.1). This will affect their decision of whether to work and,

Box 5.1 Simple model of time allocation

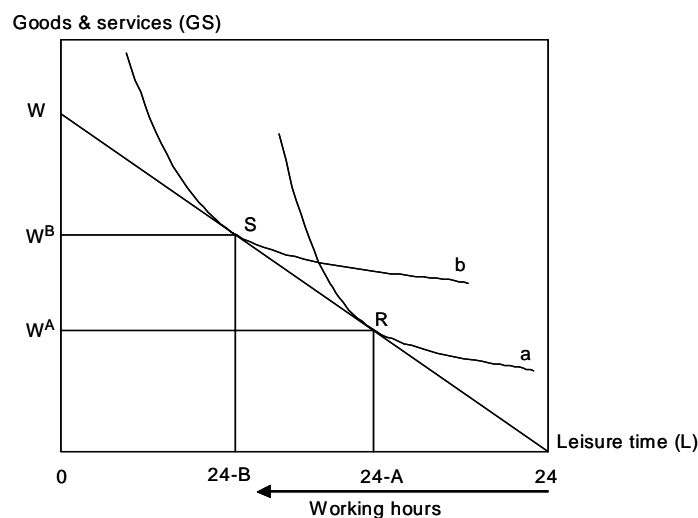
In its simplest form, the theory of time allocation posits that an individual faces a tradeoff in the consumption of two things they value — goods and services (*GS*) and leisure time (*L*). Goods and services can only be purchased out of earned income, but working reduces available leisure time. An individual earns a wage (*w*) for each *H* hours a day worked. But there are only 24 hours in a day to be allocated between work and leisure time. Leisure time is given by subtracting work hours from the hours in the day ($L = 24 - H$ hours). An individual faces a choice between trading off leisure time against income, where income is wage per hour times hours of work (wH). This income can be used to buy goods and services.

The decision for the individual is to select the combination of *L* and *GS* which provides them with the most satisfaction given that they have only 24 hours a day and earn *w* per hour. Combinations of *GS* and *L* that would provide the same level of satisfaction are given by the indifference curve (*a*). There are a series of indifference curves (not drawn) above and below this curve which represent combinations of *GS* and *L* that provide higher and lower levels of satisfaction respectively.

An individual's income depends upon the hours worked. These various combinations of income and hours worked are given by the straight line *W24*. If no work is undertaken, income is zero; if they work 24 hours, income is *W*. The slope of this line depends on the wage rate relative to the prices of the goods and services.

Indifference curve *a* (point *R*), is the highest curve that can be reached given the constraint represented by *W24*. For this individual this reflects the highest satisfaction they can achieve. This individual will work *A* hours earning wA and leaving $24 - A$ hours as leisure time.

For another individual who values goods and services more and values leisure less, their optimal combinations of *GS* and *L* will be given by indifference curve (*b*). Given the same income constraint, this individual will work more hours (*B*) in a day, earn a greater amount (wB) to spend on goods and services, but leaving lesser leisure time ($24 - B$).



if they decide to work, the level of work intensity in terms of hours per week and the expected duration of their working life. Individuals will decide to work up to the point where the marginal utility of their work equals the marginal utility they place on using their time for other purposes.

The wage rate that an individual earns will influence their choice of balance between paid work and leisure. More broadly, this balance is between paid work and non-work activities such as child-minding or caring for a disabled dependent or parent, as well as simple leisure time activities. A higher wage rate increases the opportunity cost of non-work activities. That is, if an individual is not working they are forgoing more income (the ‘substitution effect’) and will be inclined to work longer hours.

But having a higher wage rate also means an individual has greater financial capacity to work less hours (the ‘income effect’) and is able to ‘buy’ more time for non-work activities. The effect of a higher wage rate or an increase in the wage rate on the choice of the number of hours to work depends on the net outcome of these two effects and will vary among individuals. Non wage sources of income and wealth — including savings, income from investments — will also influence an individual’s financial capacity to work less (see, for example, Belkar, Cockerell and Edwards 2007).

While wages are a critical component of the marginal utility of working, other factors also play a part. The marginal utility of wages to an individual corresponds to the post tax wage and will therefore be influenced by the marginal tax rate. In addition, some individuals and families are eligible for government payments and services — some of which are means tested on the basis of personal or family income. The decision to work will be affected by the take home wage and any loss or reduction of means tested government payments and services.

As there are many and varied dimensions to individuals’ lives, the decisions to work and the intensity of work will be different for different people. But it would be expected that some demographic groups will exhibit common patterns of part time employment where they share dominant factors influencing their supply of labour. Some dominant factors include gender, presence of young children and health status. For example, even among families, the age of children and the number of children are likely to influence the preference between income and non work time. However, not all family members are influenced in the same way.

Booth and van Ours (2005), using the HILDA survey, investigated the nature of social customs and conditioning affecting gender identity and preference for part time work. They have found that, for couples, men are happier in full time work and women in part time work. Moreover, women’s life satisfaction increased if their

partners worked full time. Thus, some of the difference between the levels of part time employment between the genders can be seen as reflecting different gender preferences or values.

Work by Glezer and Wolcott (1997), using the Australian Family Life Course Study, also found differing gender preferences. Overall, six in ten couples said the male partner took more responsibility for being the economic provider, while three in ten couples said the responsibility was shared equally and one in ten said the woman was the main breadwinner. At the aggregate level, the pattern of part time and full time employment broadly reflects these preferences.

The supply side explanation for the level and growth in part time employment assumes that individuals are able to choose the number of hours they want to work. But the actual hours worked are the outcome of not just such supply decisions, but also employers' decisions to offer part time jobs. Nevertheless, a labour supply oriented analysis is useful in isolating the set of factors explaining the different levels of part time employment across different demographic groups and changes in those levels over time.

5.2 The experience of men and women in part time employment

People in different age groups tend to have different priorities and commitments that influence their desired involvement in the labour market. These life cycle effects may include education, parenting responsibilities and transitioning to retirement (Venn and Wakefield 2005). In addition to impacting on general labour market availability, these life cycle effects also impact on the preference for part time employment.

Life cycle factors are not events that occur for all individuals, nor are they events that always occur at the same age. However, a combination of social and physiological factors results in a clustering of these events around similar demographic groups. Thus the impact of life cycle events on the rate of part time work are likely to exhibit age specific patterns.

Reasons for working part time

The reasons people have for working part time provide insight into the role of part time work in meeting their needs and preferences. The different reasons also indicate that people will bring different attitudes and expectations to the workplace. This will influence a range of workplace experiences such as career paths, training undertaken, satisfaction levels and employers' attitudes to part time workers.

It is likely that men and women of varying ages will have different reasons for working part time given their differing life cycle events. The HILDA survey asks respondents why they are working part time. The data show that younger and older men and women have very similar reasons for working part time. It is only in the prime age working groups (25–54 years) that reasons differ significantly between genders.¹

The reasons for working part time are presented in figure 5.1 and in tables D.1 and D.2 in Appendix D. The figure indicates that young men and women (15–24 years) overwhelmingly undertake part time employment in combination with study at school or tertiary educational institutions. This accounts for over 70 per cent of young people working part time. The next main reason, which applies to 10 per cent of men and women aged 15–24 years, is the failure to find full time work.

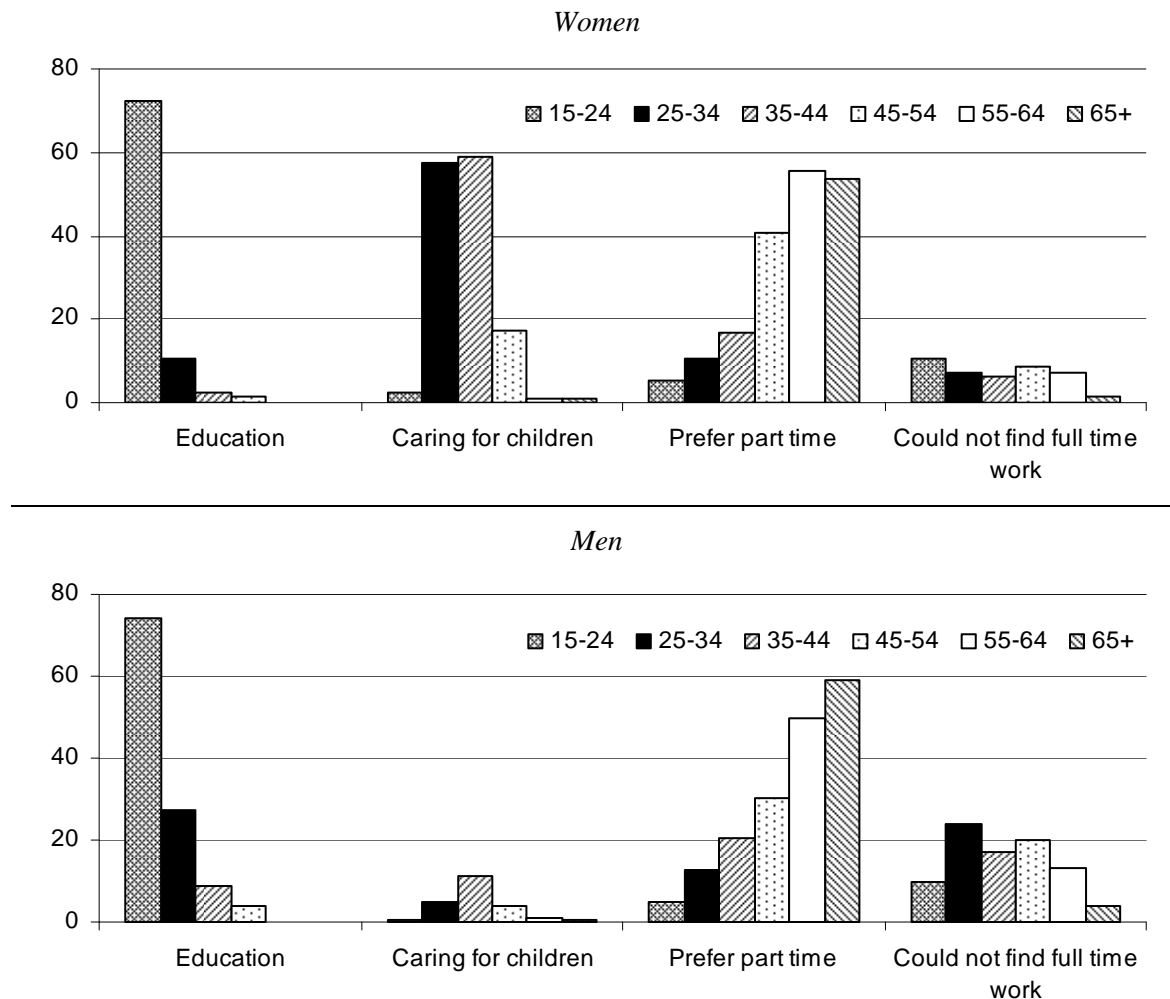
In the prime age group 25–44 years, 60 per cent of women working part time give the care for children as the main reason, followed by a preference for part time work (10–20 per cent).² Just under 10 per cent of the 25–44 year old women working part time list attending an educational institution, which demonstrates that life cycle associations with part time employment do not neatly fall into broad age categories.

Another characteristic that may influence part time work rates among prime age women is debt levels, particularly the size of any outstanding mortgage. Kalb (1999) found that the larger the outstanding mortgage, the higher was the estimated supply of work time — particularly for women. While Kalb did not address the link between mortgage levels and part time work, her results indicate that women are more likely to be seeking more hours of work when the household has a larger mortgage. Similarly, Belkar, Cockerell and Edwards (2007), using the HILDA survey, estimated that households with prime age workers that had higher debt levels or debt servicing ratios tended to increase their labour force participation compared to those with lower debt levels. They found that the effect was larger for women than men.

¹ The HILDA data presented in this paper have been weighted using the sample weights. These weights ‘... are designed to correct for the unequal probability of selection of individuals with different characteristics into the sample,’ (PC 2006, p. 168).

² Unfortunately, when the response was that people had a preference for working part time, no follow up question is asked in the HILDA survey to identify the reason for the preference.

Figure 5.1 Reasons for working part time, 2005
Per cent of part time workers



Data source: HILDA 2007 Release 5.1 (weighted data).

Given the link between higher mortgages and increased labour supply by women, it may be expected that mortgage debt would reduce the probability of women to work part time. However, women with mortgages may also be more likely to work part time than to not work at all. Thus, the overall probability of being a part time worker will depend on the relative importance of these two factors. While a link between debt levels and labour supply has been identified, it is not clear what the direction of causality is. For instance, people are likely to consider their expected future labour supply when taking out a mortgage (Kalb 1999 and Birch 2005).

The reasons for working part time among prime age men also differ according to their age. For younger prime age men (25–34 years), the main reasons are combining work with study and inability to obtain full time employment (each accounts for just under 25 per cent of part time working men). Another 10 per cent are working part time as they prefer the job, and part time work is a job requirement. Finally, around 10 per cent of men have a preference for part time employment.

For older prime age men (35–44 years), the main reason for working part time is a preference for part time work (21 per cent), followed by an inability to find full time work (17 per cent). Personal illness is also a significant reason for this age group (15 per cent) along with caring for children (11 per cent).

The 45–54 years age group appears to be a time of transition for both men and women regarding reasons for working part time. The main reason for working part time is a growing preference for part time work (30 per cent of men and 40 per cent of women). The significance of child care responsibilities as a reason for women begins to decline — to just under 20 per cent. Also there is an increase in non life cycle reasons for working part time — a failure to find full time employment is a reason for 20 per cent of men and 8 per cent of women. A further 5–10 per cent of men and women are working part time because it is a requirement of the job.

By 55 years, most part time workers (50–60 per cent) simply prefer to work part time. Another 10 per cent of 55–64 year olds could not obtain full time employment or their current job required part time hours.

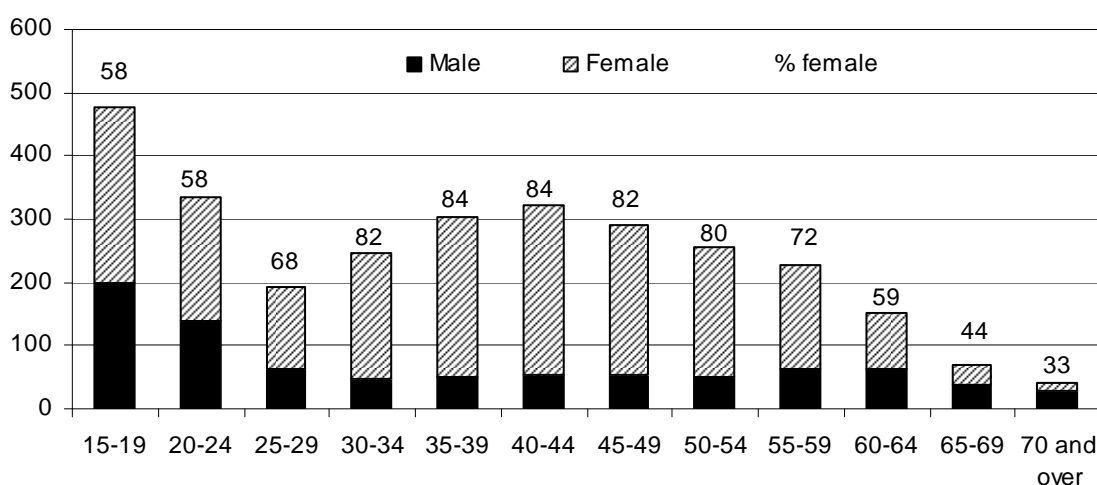
Numbers of part time employed

Figure 5.2 highlights the distribution of part time workers by age and gender group in 2006. Not only do men and women have different reasons for working part time, but they also have different patterns of part time work across the age groups.

The majority of part time workers are women, and most of the difference in the number of part time workers between men and women occurs between the ages of 25–59 years. There are three female part time workers for every male part time worker in this age category. In contrast, male part time workers comprised over 40 per cent of part time workers under 25 and male part time workers nearly equal females in the 60 years and over grouping.

Figure 5.2 Part time workers by age and gender, 2006

Thousands of persons



Data source: ABS (*Labour Force Australia detailed — electronic delivery*, Cat. no. 6291.0.55.001, April 2007 Table LM8).

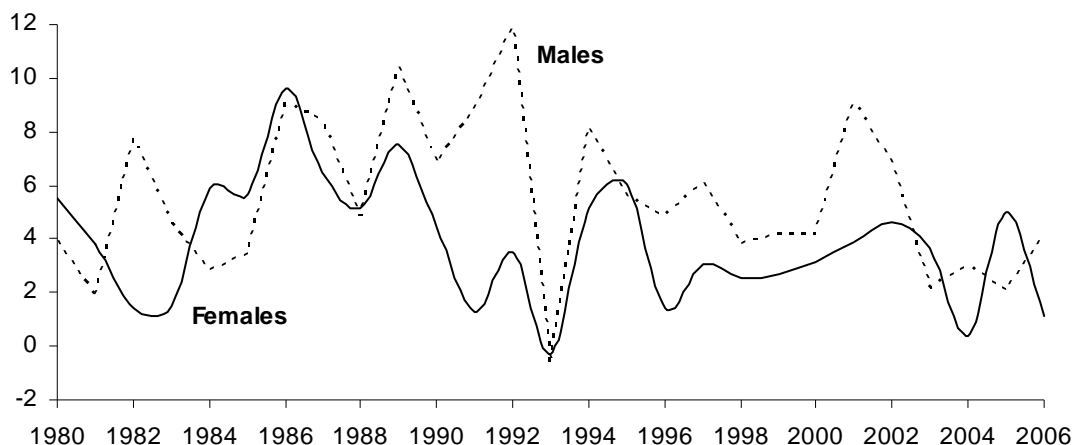
Change in part time employment among men and women

Not only are the levels of part time employment between men and women different, but the changes in part time employment over time have also differed. There has been larger growth in male part time workers since 1980 — 5.5 per cent per year compared to 3.8 per cent per year for women. Moreover, there have been large variations in the rate of growth of part time employment from year to year (figure 5.3).

As discussed in Chapter 4, economic conditions influence the overall growth rate of part time work, but the pattern of growth rates for men and women has been very different. For example, of the nine years with the highest growth in male part time work, only four of those years corresponded to the nine highest growth years for female part time work (figure 5.3). The degree of correlation between the growth in male and female part time work is only 0.37.³ This is not a close correlation and suggests that there are different influences underlying the growth of part time work for each gender. These differences are explored more fully in the following sections.

³ This degree of correlation refers to a correlation coefficient of 0.37. Correlation coefficients measure the degree of linear relationship between two variables. If a variable is an exact multiple of the other variable in every period, they are said to be perfectly linearly correlated and would have a correlation coefficient of 1 if the multiple is positive or -1 if the multiple is negative. A coefficient of 0 indicates no linear relationship exists between the variables.

Figure 5.3 Annual change in part time workers, 1980–2006
Per cent change from previous year



Data source: ABS (*Labour Force Australia detailed — electronic delivery*, Cat. no. 6291.0.55.001, April 2007, table LM8).

5.3 Decomposing the broad influences on part time employment

The reasons that different groups provide for working part time given above helps to explain the differing levels of part time employment across demographic groups but does not explain why part time work has grown. It is useful, therefore, to examine the sources of the growth in part time employment and how these may have changed. The growth in part time employment among the various age groups can be considered to be the result of the following three effects.

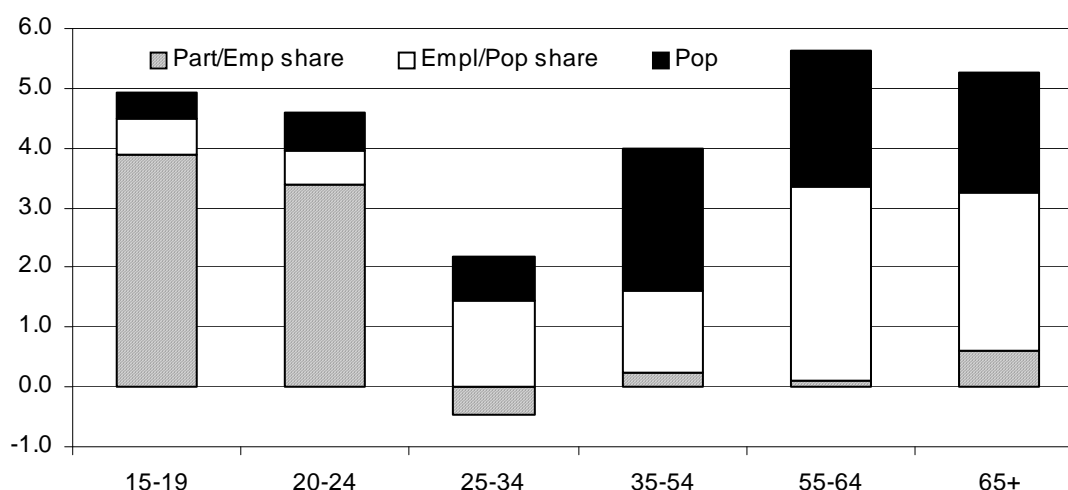
1. The part time share effect — this represents the shift between full time and part time jobs. It can reflect the changing preferences for part time employment and/or the likelihood of obtaining part time work.
2. The employment share effect — this measures the extent to which part time employment is associated with the overall change in employment. It therefore captures jobseekers' changing preferences for employment and success in obtaining employment rather than changing preference for part time work.
3. The population effect — this measures the extent to which the number of part time workers rises simply because of demographic change affecting the working age population.

It is possible to highlight the relative importance of social, demographic and economic changes to the overall change in part time employment, by decomposing the change in part time work into the part time share, employment and population effects for specific groups.⁴

Women

The relative influence of the effects varies across age groups for women (figure 5.4). For women under 25, changes in the rate of part time work have been the most dominant factor (accounting for 80 per cent of the change), while for women 25 and older, population growth (49 per cent) and the degree of involvement in the workforce (23 per cent) are more important factors.

Figure 5.4 **Decomposing growth in female part time work, 1980–2006**
Average percentage annual growth



Data source: ABS (*Labour Force Australia detailed — electronic delivery*, Cat. no. 6291.0.55.001, April 2007, Table LM8).

The strong shift to part time employment among young women has been associated with the growth in participation in post-compulsory secondary education and tertiary education and training. Thus, there may be a supply side explanation for the

⁴ The per cent change in part time employment for a given group (ΔPTE) can be calculated from the change in civilian population (ΔP), the change in the employment to population ratio (ΔE^r), and the change in the part time to total employment ratio (ΔPTE^r) and i is the year, as per the following formula:

$$\Delta PTE_{ii} = \Delta PTE_i^r + \Delta E_i^r + \Delta P_i$$

The relative contribution of each element can then be approximated by using the approach to decomposition detailed in PC (2005).

shift in preferences towards part time employment as young women invest in more human capital than previous generations. But there is an alternative demand side explanation — more specifically, the youth full time labour market declined over this period which may have encouraged young women to take up educational opportunities as the opportunity cost of more study — foregone wages — had been reduced.

Among older women, the growth in part time employment has less to do with changing preferences towards part time employment. There has been greater overall preference to engage in work, both full time and part time. Indeed for women aged between 25–34 years, there has been a shift away from part time employment as revealed by the small negative part time rate effect. This is consistent with a decline in child raising responsibilities associated with the reduced births and the increase in the average age of mothers at the birth of their children that has occurred in recent decades. For women, aged more than 35 years, a major determinant of the growth in part time employment has simply been demographic growth.

Therefore, while older women have a strong baseline preference for part time work, the growth in part time employment for women older than 25 years has little to do with changing preferences for part time employment. It has more to do with broader forces which affect the choice to work or not. These include increasing education levels and changing social values and attitudes to working women. Declining fertility levels, increased childcare availability and the introduction of labour saving devices in the home are likely to have encouraged entry to the workforce by reducing the marginal utility of home-based activities.

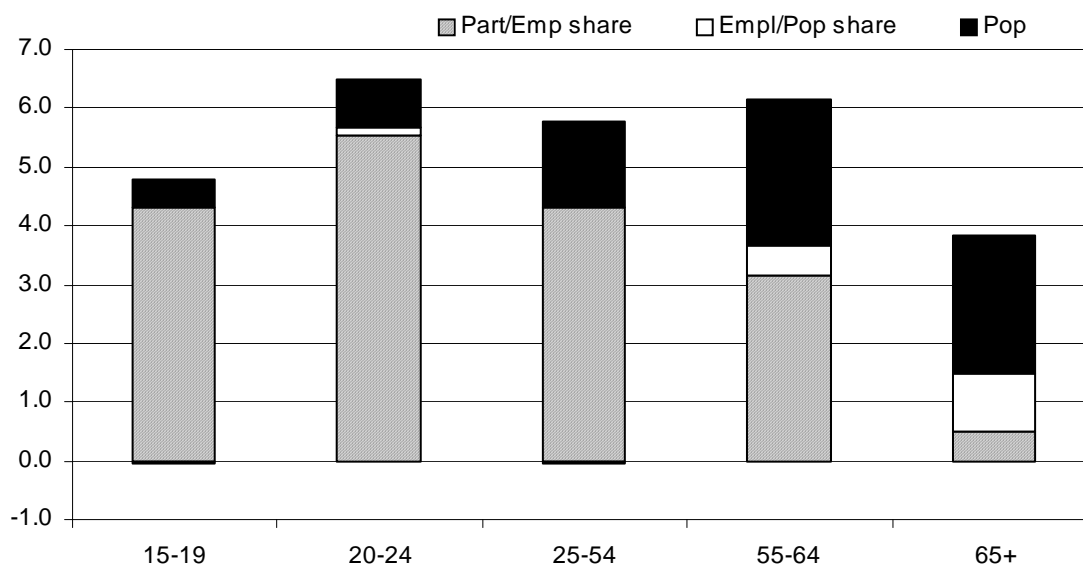
Men

The main driver of higher levels of part time work for men has been the rate of part time work among employed men (figure 5.5). Indeed, except for men aged more than 54 years, the employment share effect has had a small or even negative impact on the growth of part time employment. Population growth has contributed to growing levels of men working part time across all age groups, particularly for those over 25 years.

For men under 25 years, it is likely that the shift to part time employment has been influenced by similar factors to those affecting young women, that is a desire to combine part time employment with education and training. It is unclear what may be the underlying factors driving the shift to part time employment for men aged between 25–64 years.

Figure 5.5 Decomposing growth in male part time work, 1980–2006

Average percentage annual growth



Data source: ABS (*Labour Force Australia Detailed Electronic Delivery*, Cat. no. 6291.0.55.001, April 2007 Table LM8).

There may have been a shift in preferences among men towards reduced working hours over this period. However, it is also possible that, given the overall fall in the employment rate, demand side factors have played an important role. That is, employers may be offering part time jobs, where in previous periods, full time employment was available. Indeed, a common reason given by these men as to why they are working part time is the failure to find a full time job.

5.4 Summary

Supply oriented analysis is a useful approach to examine the levels and growth of part time employment. It links the clustering of reasons for working part time to key life cycle events for men and women. These include a preference for young people to combine part time employment with education, prime age women caring for children and a preference for part time employment for older age groups. However, for prime age men, a non life cycle event — the failure to find a full time job — is a significant reason for working part time.

Over the past 25 years, the sources of the growth of the number of part time workers have varied depending upon age group and gender. For younger men and women, the growth in part time employment has been the result of a strong shift in employment towards part time employment. This is associated with the expansion

of participation in tertiary education and training. Overall, employment levels for these men and women changed relatively little, and full time positions have even declined for young men. Thus, there are likely to be both demand and supply considerations involved in the increase in part time employment among younger age groups.

In contrast, it has been the overall growth in employment that has driven increased part time employment by prime age women. That is, there has not been a shift in preferences away from full time to part time employment, but rather a more general shift from non-employment to employment. That said, the baseline preference of women in this age group is strongly biased to part time work. This appears to be slowly eroding. This is consistent with a general reduction in the marginal utility of home based activities relative to market based activities. The growth in the population becomes an increasingly important driver of part time employment for women in older age groups.

For prime age men, the employment effect involving a shift to part time employment has been the major driver. Indeed, overall employment growth has been marginally negative for such men. The shift of employment towards part time employment can be partly explained by changes in the preferences among men, and reflect changes in the economy and relative decline in the creation of full time jobs. Again, as for older women, the growth in the population becomes an increasingly important source of growth of part time employment for older men.

