

The Determinants of Labour Force Participation by Older Australian Women: A Literature Review

By

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Women in Social & Economic Research (WiSER)

Women in Social & Economic Research (WiSER) has recently changed its name from the Women's Economic Policy Analysis Unit (WEPAU) to reflect the broader scope of academic and consultancy research into women's experiences of the **social** and economic policies that permeate their lives.

WiSER is a research program that spans two divisions of Curtin University: the Curtin Business School (CBS) and the Division of Humanities. WiSER was founded in April 1999 in response to a growing void, both within the Australian and international contexts, in the gendered analysis of the economic and social policy issues that confront women. As such, WiSER is committed to producing high quality quantitative and qualitative research on a broad range of issues which women identify as impeding their ability to achieve equity and autonomy. The gender perspective generated through the work of WiSER has provided a number of key opportunities to inform the policy debates within numerous government departments. WiSER seeks to further its commitment to providing a meaningful gender analysis of policy through pursuing further research opportunities which focus on women's experiences of social and economic policies within the Australian context. The broad objectives of WiSER include:

- To identify the cases and causes of women's disadvantaged social and economic status and to contribute to appropriate policy initiatives to address this disadvantage;
- To demonstrate the way in which social factors, particularly gender, influence the construction of economic theory and policy;
- To extend current theory and research by placing women and their social context at the centre of analysis;
- To contribute an interdisciplinary approach to the understanding of women's position in society. In turn, this should enable the unit to better reflect the interrelatedness of the social, economic and political discourses in policy and their consequent implications for women;
- To foster feminist research both nationally and internationally;
- To expand linkages with industry;
- To establish and support a thriving Curtin University of Technology post-graduate research community with a common interest in feminist scholarship.

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Introduction

This report presents a review of the empirical literature on the determinants of older women's labour force participation. While there is a wide body of literature that examines the determinants of labour force for all women (see Birch, 2005b and Killingsworth, 1983 for reviews of studies), the economic literature on the determinants of older women's labour force participation is fairly limited.

The literature on older women's labour force participation decisions can be classified into four types of studies. First, there are studies which present profiles of older women's labour force participation rates. VandenHeuvel (1999) provides a profile of older women's labour force participation rates in Australia; Dixon (1996) gives a profile of older women working in New Zealand and Gustman and Steinmeier (1985) present similar data for the United States. Johnson (2001) and Jaumotte (2003) provide cross-country comparisons of the characteristics of older working women.

Second, there are studies which examine older women's transitions from employment to retirement (see Gohmann, 1990; Henretta and O'Rand, 1980; Pozzebon and Mitchell, 1989; Hurd, 1990; Gustman and Steinmeier, 1985; Benitez-Silva and Heiland, 2003; Gurber and Kubik, 1997; and Hank, 2004).

Third, there are studies which consider the determinants of labour force participation for both older men and women using pooled data sets (see Williamson and McNamara, 2001 and Favreault, Ratcliffe and Toder, 1999 for the United States; Woodland, 1987 for Australia; Breslaw and Stelcner, 1987 for Canada; and Ho, Wei and Voon, 2000 for Hong Kong)¹.

Finally, there are studies which specifically examine the determinants of older women's labour force participation. These studies, which are briefly summarised in the table below, are the focus of this particular literature review, although the

¹ There are also several studies that examine the determinants of older men's labour force participation including Rubb (2003), O'Brien (2000-01), Vanderhart (2003), Gurber and Orszag (2003) and Campolieti (2002).

findings of these studies are also discussed in the context of the findings of a much larger group of studies on the participation behaviour of *all* women. The report considers, first, how older women's labour force participation behaviour varies with age (Section 1). Some theoretical background for the remainder of the report is provided in Section 2. The literature on how older women's participation behaviour is affected by the opportunities available to them in the labour market is outlined in Section 3. The literature on the factors that may constrain women's ability to take up these opportunities, such as those relating to health status and caring roles, is discussed in Section 4; while Section 5 describes the role played by other, non-labour market sources of income. The findings of the review are summarised in the final section.

Table 1: Studies that Specifically Estimate the Determinants of Older Women's Labour Force Participation

Study/ Country/ Year/ Sample	Measurement of Labour Force Participation Rate
Greenhalgh (1977) United Kingdom: 1971 Married women aged 40 to 64 years.	Probability of participating in the labour force by age cohorts.
Clark, Johnson and McDermed (1980) United States: 1969, 1971 and 1973 Married women aged 58 to 69 years.	Probability of participating in the labour force.
Hanoch and Honig (1983) United States: 1969, 1971, 1973 and 1975 Unmarried women aged 58 to 69 years.	Probability of participating in the labour force.
Miller and Volker (1983) Australia: 1976 Married women aged 45 to 64 years.	Probability of participating in the labour force by age cohorts.
Clark and Anker (1990) 151 countries (pooled): 1985 Women aged over 64 years.	Probability of participating in the labour force.
McCarty (1990) United States: 1969 and 1973 Married women aged over 50 years.	Probability of employment by age cohorts.
Vistnes (1994) United States: 1971 to 1979 Married women aged 57 to 66 years.	Probability of employment by age cohorts.
Chase (1995) Czech Republic and Slovakia: 1984 and 1993 Married women aged over 50 years.	Probability of participating in the labour force.
Clark, York and Anker (1999) 134 countries (pooled): 1990 Women aged over 54 years.	Probability of participating in the labour force by age cohorts.
Fortin and Fortin (1999) Canada: 1969 to 1996 Women aged over 54	Probability of participating in the labour force.

Table 2: Studies that Specifically Estimate the Determinants of Older Women's Labour Force Participation

Study/ Country/ Year/ Sample	Measurement of Labour Force Participation Rate
Nagase (1999) Japan: 1983 and 1992 Women aged 55 to 69 years.	Probability of participating in the labour force by age cohorts, number of family members in the household, and whether the woman had a pension plan.
Campolieti (2001) Canada: 1976 to 1997 Women aged between 45 and 64 years.	Probability of participating in the labour force.
Hill (2002) United States: 1997 Women aged 60 to 74 years.	Probability of employment by age cohorts.
Mete and Schultz (2002) Taiwan: 1989, 1993 and 1996 Women aged 50 to 66 years.	Probability of employment.
Cai and Kalb (2004) Australia: 2001 Women aged 50 to 60 years.	Probability of participating in the labour force.
Lam, Leibbrandt and Ranchhod (2004) South Africa: 1996 and 2000 Women aged 50 to 75 years.	Probability of employment.
Wang and Cai (2004) China: 2000 Women aged over 45 years.	Probability of participating in the labour force by age cohorts.
Birch (2005a&b) Australia: 1992 Women aged 40 to 59 years.	Probability of employment by age cohorts.

I. Age

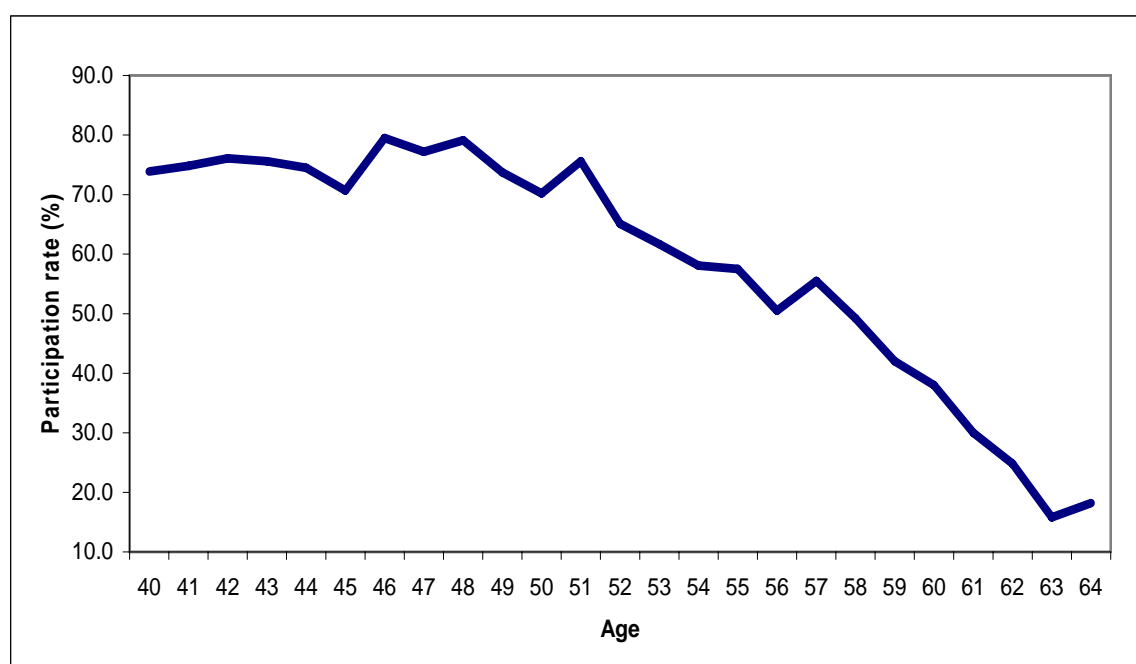
A useful starting point for a discussion of the findings of studies of older women's participation behaviour is the evidence on age-based differences in this behaviour. This data underscores the importance of examining older women's participation behaviour separate from the behaviour of other women. Importantly, it also serves to highlight that the group of older women is far from homogeneous in terms of women's participation behaviour, with participation rates varying substantially with the age of women *within* this group.

Women's involvement in the paid labour force typically changes substantially over the life course. Many women's participation behaviour follows an 'M' shaped pattern, with their level of involvement in paid work being high when they are in their early to mid twenties, falling in the period when they have responsibility for young children, increasing in their late thirties and early forties, before falling over the years

until they reach 64². Data on these patterns for Victorian women is provided in Part 3 of this report, where it is also shown that age-based participation behaviour has changed over recent decades in line with changing patterns of fertility and a general rise in participation rates.

The focus of this particular study is the second half of the 'M' shaped profile. The following figure illustrates the labour force participation rates of Victorian women aged 40 to 64 years. The figure shows that there are few differences in the labour force participation rates of women aged 40 to 50 years. It also shows that there is a steep negative correlation between labour force participation and age for women aged over 50 years. The labour force participation rate of women aged 50 years is 70.2 per cent, whilst for women aged 55 years it is only 57.5 per cent. The rate falls to only 38.1 per cent for women aged 60 years and 18.2 per cent for women aged 64 years.

Figure 1: Labour Force Participation Rates of Victorian Women Aged 40 to 59 Years by Age, 2001



Source: ABS (2001).

² Heckman (1976), Heckman and Willis (1979) and Mincer and Ofek (1979) discuss this feature of women's labour supply with reference to international data. Australian studies on the issue include Austen, Jefferson and Preston (2001) and Chapman, Dunlop, Gray, Lui and Mitchell (2001).

Most studies that examine the determinants of older women's labour force participation take women's ages into account. Some studies do this by examining the determinants of labour force participation for women of different age cohorts (examples include Hill, 2002; Miller and Volker, 1983; Birch, 2005a; Wang and Cai, 2004; Greenhalgh, 1977; McCarty, 1990; Nagase, 1999; Vistnes, 1994 and Clark, York and Anker, 1999). For example, Birch (2005a) estimates the determinants of women's labour force participation for the age cohorts 40 to 49 years and 50 to 59 years. Similarly, Miller and Volker (1983) estimate the factors influencing the decision to participate in the workforce separately for women aged 45 to 54 years and women aged 55 to 64 years.

Other studies include variables for age in the estimating equation (see Hill, 2002; Cai and Kalb, 2004; Lam, Leibbrandt and Ranchhod, 2004; Mete and Schultz, 2002; Wang and Cai, 2004; McCarty, 1990 and Nagase 1999). These studies generally report that women of an older age are less likely to participate in the labour market than women of a younger age. For example, using data from Japan, Nagase (1999) indicated that turning one year older reduced the probability that a woman aged 55 to 69 years would be a labour force participant by 4 per cent. Likewise, using data from China, Wang and Cai (2004) suggested that the probability of labour force participation of women aged 46 to 54 years fell by 5 per cent every time a woman turned another year older.

Summary Point: *Labour force participation rates vary substantially across the group of older women. Participation rates for women aged over 60 years tend to be very low, while those for women aged 40-50 years are relatively high. This highlights the importance of not treating older women as a homogeneous group and the need for studies on the determinants of participation rates to be sensitive to the different factors affecting the participation behaviour of women in their forties, fifties and sixties.*

2. Theoretical Background

The theoretical framework that has guided many of the economic studies of older women's participation behaviour has been the traditional labour supply model. This model focuses attention on the *individual's choice* of labour market activity. The individual is modelled as making a decision about whether to participate in the labour market in the light of considerations of her income earning opportunities; her ability to respond to these opportunities; and the importance or value of income derived from the labour market.

A theoretical concept that is central to this body of theory is that of a *reservation wage*. Each individual is assumed to define the minimum wage rate that she would require in order to be enticed into the paid workforce. This wage rate will vary according to a number of factors, including: access to alternative income sources; financial costs associated with labour market participation; the extent of competing demands on time (as well as the cost and availability of substitute provisions for these needs); and the individual's valuation of the perceived gains from market-based activity (such as improved access to economic goods and services), as compared to her valuation of non-market activity. This last factor tends to be the 'catch all' category where the relevance of elements of the social and cultural environment affecting women's participation choices is expressed.

The nature of the empirical studies of women's labour force behaviour within economics reflects the dominance of the traditional labour supply model within the discipline. As is demonstrated in the remainder of this paper, these studies have typically explored the importance of factors relevant to the labour market opportunities of older women on the one hand, and, on the other hand, the importance of factors affecting the reservation wage.

3. Labour Market Opportunities³

3.1 Wage Opportunities

From an economic perspective, individuals' potential market wages exert a powerful influence on their participation behaviour. This reflects the underlying presumption of the key labour supply model that the main motivation for participating in the labour market is to gain income. As market wage opportunities increase so too does the incentive to join the labour market.

Many studies examining the determinants of women's labour force participation have found that women's decision to participate in the labour market is positively associated with their potential market wages. As summarised in Birch (2005b), the general consensus of Australian studies of women of all ages is that an increase in a woman's potential market wage by 10 per cent will increase the likelihood that she will participate in the labour market by around 7.5 per cent.

The influence of higher market wage opportunities on the participation behaviour of older women has been the subject of a relatively small number of studies. Birch (2005a) and Miller and Volker (1983) report this relationship for Australia; Greenhalgh (1977) reports this for the United Kingdom; and McCarty (1990) reports this for the United States. As is summarised in Table 3, the general consensus of these studies is that increases in market wage opportunities also have a positive impact on the likelihood of labour force participation by older women.

Importantly, the relatively few studies that have been conducted on the issue also suggest that, generally, the responsiveness of older women to changes in market wage opportunities is relatively large. Across the studies reviewed here (see Table 4), the average prediction is that a 10 per cent increase in an older woman's

³ Another group of economic variables that has been used in studies on the determinants of female labour supply is the cost of living. Birch (2005a) suggests that for all women (regardless of their age), labour force participation rises as the cost of living increases. Most likely due a lack of data (or accurate proxies), the impact of the cost of living on older women's labour force participation decisions has not been examined in the empirical literature.

potential market wages will increase the chances of her being a labour force participant by approximately 10 per cent.

A further finding of these studies of older women's participation behaviour is that the responsiveness of older women's participation to changes in wage opportunities varies with their age. Generally, the older women within this group are less responsive to changing wage opportunities than the younger women. For example, Miller and Volker (1983) found that a 10 per cent increase in the potential market wages of women aged 45 to 54 years increased their labour force participation chances by 8.7 per cent, whilst variations in the level of market wages did not influence the labour force participation behaviour of women aged 55 to 64 years. Similarly, Birch (2005a) found that a 10 per cent increase in market wage opportunities increased the probability of labour force participation for women aged 40 to 49 years by 12.2 per cent. This effect was only 9.6 per cent for women aged between 50 to 59 years.

Table 3: Summary of Studies Examining the Impact of Own or Potential Market Wages on the Labour Force Participation Decisions of Older Women^(a)

Study/ Country/ Year/ Sample	Main Findings
Greenhalgh (1977) United Kingdom: 1971 Married women aged 40 to 64 years (in age cohorts).	Average hourly earnings of women working in manufacturing industries had a positive impact on the labour force participation of women aged 40 to 44 years, 45 to 49 years, 50 to 54 years and 55 to 59 years. Average hourly earnings of women working in manufacturing industries did influence the labour force participation of women aged 60 to 64 years. Average hourly earnings of women in non-manufacturing industries did not influence labour force participation.
Miller and Volker (1983) Australia: 1976 Married women aged 45 to 64 years (in age cohorts).	Predicted wages had a positive impact on the labour force participation of women aged 45 to 54 years. Predicted wages did not influence the labour force participation of women aged 55 to 64 years.
McCarty (1990) United States: 1969 and 1973 Married women aged over 49 years (in age cohorts).	Past earnings had a positive impact on labour force participation.
Vistnes (1994) United States: 1971 to 1979 Married women aged 57 to 66 years (in age cohorts).	Past earnings did not significantly influence labour force participation.
Chase (1995) Czech Republic and Slovakia: 1984 and 1993 Married women aged over 50 years.	Predicted wages had a positive impact on labour force participation.
Fortin and Fortin (1999) Canada: 1969 to 1996 Married women aged over 55 years.	Average real minimum wages had a positive impact on labour force participation.
Nagase (1999) Japan: 1983 and 1992 Women aged 55 to 69 years (in age cohorts).	Average actual wages had a positive impact on labour force participation.
Birch (2005a) Australia: 1992 Women aged 40 to 59 years (in age cohorts).	Predicted wages had a positive impact on labour force participation.

Notes:

(a) Studies which use actual wages rather than predicted wages are faced with problems as data on actual wages is only observed for women who work. Therefore, the wage may not be an accurate reflection of the potential wages of women who are not in the labour force. Most studies using cross-section data use predicted wages that are estimated using a human capital model. The use of this model provides a greater estimate of a woman's potential earnings.

Table 4: Summary of Studies Examining the Responsiveness of Older Women's Participation to Changes in Market Wages

Study/ Country/ Year/ Sample	Elasticity ^(a)
Miller and Volker (1983)	
Australia: 1976	Aged 45 to 54 years: 0.87
Married women aged 45 to 64 years (in age cohorts).	Aged 55 to 64 years: NS
Chase (1995)	
Czech Republic and Slovakia: 1984 and 1993	Czech Republic 1984 data: 1.78
Married women aged over 50 years.	Czech Republic 1993 data: 0.67
	Slovakia 1984 data: 0.92
	Slovakia 1993 data: 0.87
Fortin and Fortin (1999)	
Canada: 1969 to 1996	0.20
Women aged over 55 years.	
Birch (2005a)	
Australia: 1992	Aged 40 to 49 years: 1.22
Women aged 40 to 59 years (in age cohorts).	Aged 50 to 59 years: 0.96

Notes:

(a) Elasticity measures how the probability of a woman participating in the labour force participation changes in response to an increase in her potential wage. A labour force participation elasticity with respect to wages of 1.5 would suggest that as potential wages increase by 1 per cent, the probability of a woman participating in the labour market increases by 1.5 per cent. The abbreviation NS stands for the results being statistically insignificant in the estimating equation.

Summary Point: *Previous studies of older women's participation behaviour have found that the decision to participate in the paid labour market is significantly affected by the wage opportunities available in the market. The studies have also found that the responsiveness of participation behaviour of women in their forties to wage opportunities is high compared to younger women, older women and men. This result has potential policy significance because it suggests that changes in net wage rates (for example, through the manipulation of tax rates) will have the greatest chances of increasing labour supply if they are targeted at this particular group of women.*

3.2 Conditions in the Local Labour Market

Studies of how women's participation behaviour is affected by their wage opportunities have been complemented by more disaggregated analyses of the role of factors that influence these opportunities. As was outlined in Section 2, the theoretical expectation is that a woman's wage opportunities will be linked to local labour market conditions, her own level of education and experience in the labour market, and to the presence of discrimination in the labour market. The following paragraphs consider the literature on the importance of each of these factors.

Economies with high levels of unemployment can produce what is known as a discouraged worker effect, whereby workers drop out of the labour market after becoming pessimistic about their employment chances (see Birch, 2005a; Bingley and Walker, 2001 and McConnell and Brue, 1995).

In studies estimating the determinants of the labour force participation of older women, local economic conditions have been measured in several ways. For example, Mete and Schultz (2002) and Campolieti (2001) measure the demand for labour using regional unemployment rates of men and women. Miller and Volker (1983) and Greenhalgh (1977) measure it using the unemployment rate of men only, and the study by Fortin and Fortin (1999) measures it using a job availability index.

Despite the different measures of the demand for labour, most of these studies concur that an increase in the unemployment rate reduces the labour force participation of older women (that is, a discouraged worker effect is observed)⁴. For example, Greenhalgh (1977) reports that in the United Kingdom, a rise in the male unemployment rate decreases the labour force participation of women aged 40 to 64 years, with it having a more pronounced impact on the labour force participation of women nearing retirement (aged 60 to 64 years). Likewise, the Canadian study by Campolieti (2001) suggests that a 1 percentage point increase in the unemployment rate of men and women aged 25 to 44 years reduces the labour force participation of women aged 45 to 64 years by approximately 1.5 percentage points. However, an

⁴ The exception to this is the Australian study by Miller and Volker (1983) who report an added worker effect among older women.

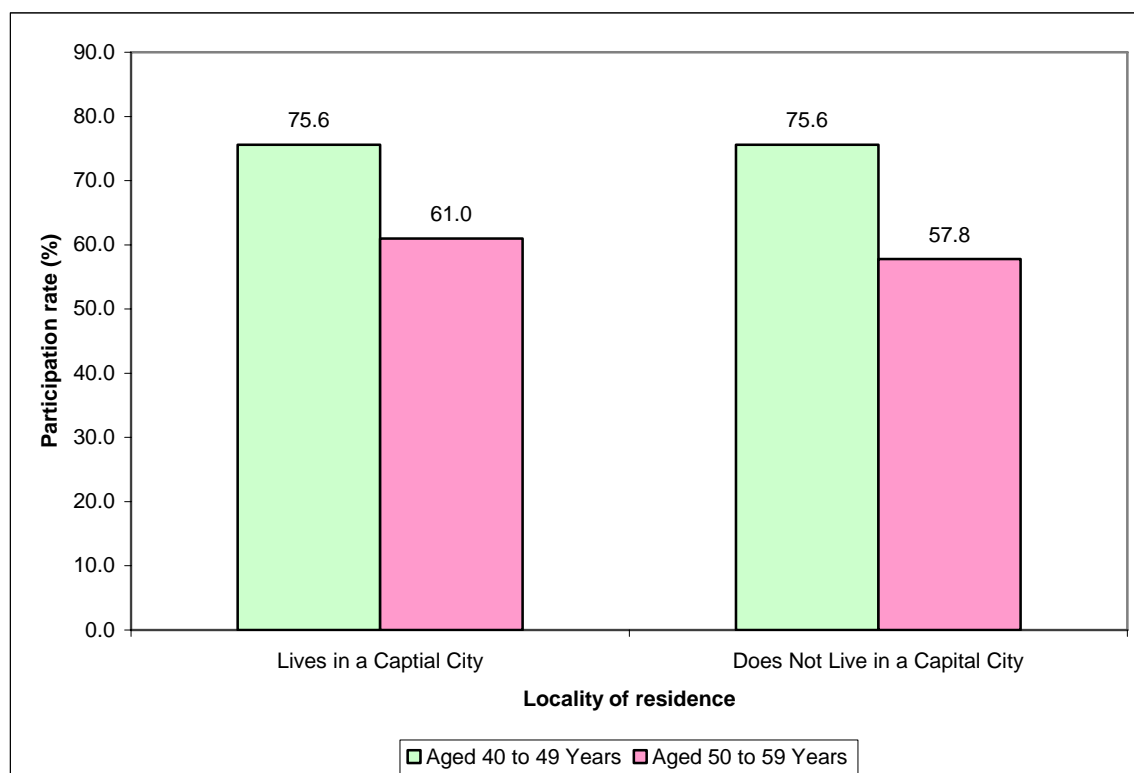
important Australian study of older women's participation rates (by Miller and Volker, 1983) produced a different finding: that the labour force participation rate of married women aged 55 to 64 years was positively related to the unemployment rate of men aged 35 to 54 years.

This latter result may reflect the study's use of only the male unemployment rate in the measurement of labour market conditions. The study may have captured something known as an 'added worker effect', where women enter the labour market after their partner becomes unemployed, to compensate for the loss of family income. The fact that the study dates back to 1983 should also be kept in mind. Time-series studies of all women's participation behaviour have shown that the importance of partner's income in determining all women's participation behaviour has fallen over recent decades (see especially Cohen and Bianchi, 1999)⁵.

Further insights to the importance of local economic conditions in determining older women's participation behaviour is provided by studies that examine the differences in participation rates between women living in metropolitan and non-metropolitan areas. Figure 2, derived from 2001 Census data, provides some contextual information for the discussion of this literature. It shows that for Victorian women aged 40 to 59 years, labour force participation is positively associated with living in a capital city of Australia. However, the difference in the labour force participation rates of women aged 50 to 59 years living in capital cities and those living in other areas are only slight, at around 4 percentage points.

⁵ We return to a discussion of the importance of partner's income in Section 4 of this paper.

Figure 2: Labour Force Participation Rates of Victorian Women Aged 40 to 59 Years by Locality of Residence, 2001



Source: ABS (2001).

There is only a limited amount of research that includes detailed empirical tests of the impact of locality of residence on the labour force participation of older women once other factors affecting participation are taken into account (Campolieti, 2001; Lam, Leibbrandt and Ranchhod, 2004; Birch, 2005a; Greenhalgh, 1977; Miller and Volker, 1983 and Clark and Anker, 1990 are among the studies that do so).

Furthermore, these studies have used data from different time periods, and they have employed different definitions of locality⁶. It is not surprising, therefore, that their findings have been mixed. Using data from 1971, Greenhalgh (1977) suggested that women in the United Kingdom who lived in urban areas had higher labour force participation rates than the rates for their counterparts living outside urban areas. In contrast, Miller and Volker (1983) found that in Australia, women who lived in rural areas had a higher probability of being in the workforce than women who were living metropolitan areas. Studies using more recent data tend to suggest that older

⁶ For example, Miller and Volker (1983) used the concepts of 'rural' and 'metropolitan' in their analysis, whereas Lam, Leibbrandt and Ranchhod (2004) conducted an inter-regional analysis.

women's decisions regarding labour force participation are not influenced by their locality of residence (see Birch, 2005a for recent Australian results and Campolieti, 2001 for Canadian results).

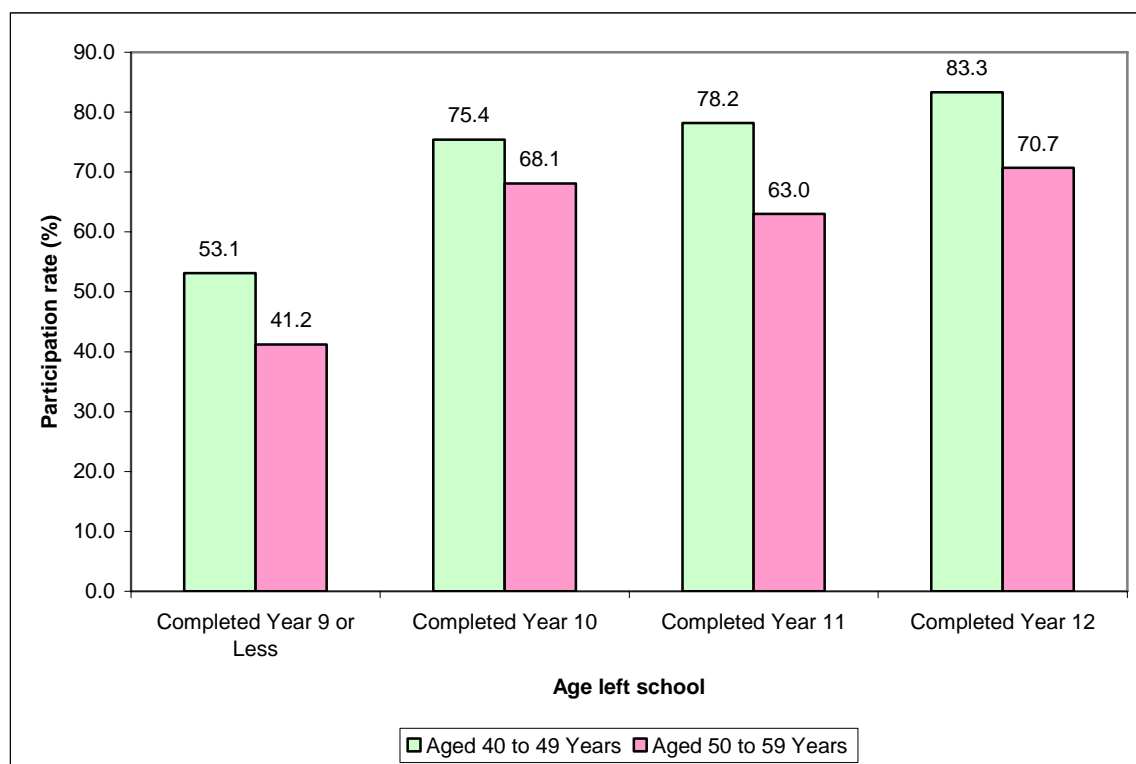
Summary point: *International studies of older women's participation behaviour have shown that it is positively related to employment growth in the local labour market. However, the Australian literature on this issue is far from complete.*

The most recent studies of differences in participation rates between urban and rural areas do not suggest that this factor is a significant determinant of older women's participation behaviour.

3.3 Educational Attainment

Older women's education levels, including the age at which they left school and their post-school qualifications, are regarded in the literature as key determinants of their labour force participation decision (see Birch, 2005b). To provide some background to the findings of this literature the following figure shows the distribution of women's participation in the labour force across educational groups. The data in the graph indicates that, in 2001 (according to Census data), the labour force participation rate of Victorian women aged 40 to 49 years who completed Year 12 was over 50 per cent larger than the rate for women of the same age who left school prior to completing Year 10. In the 50 to 59 years age group the difference between the labour force participation rates of women who completed Year 12 and those who only finished up to Year 9 (or less than Year 9) was around 70 per cent.

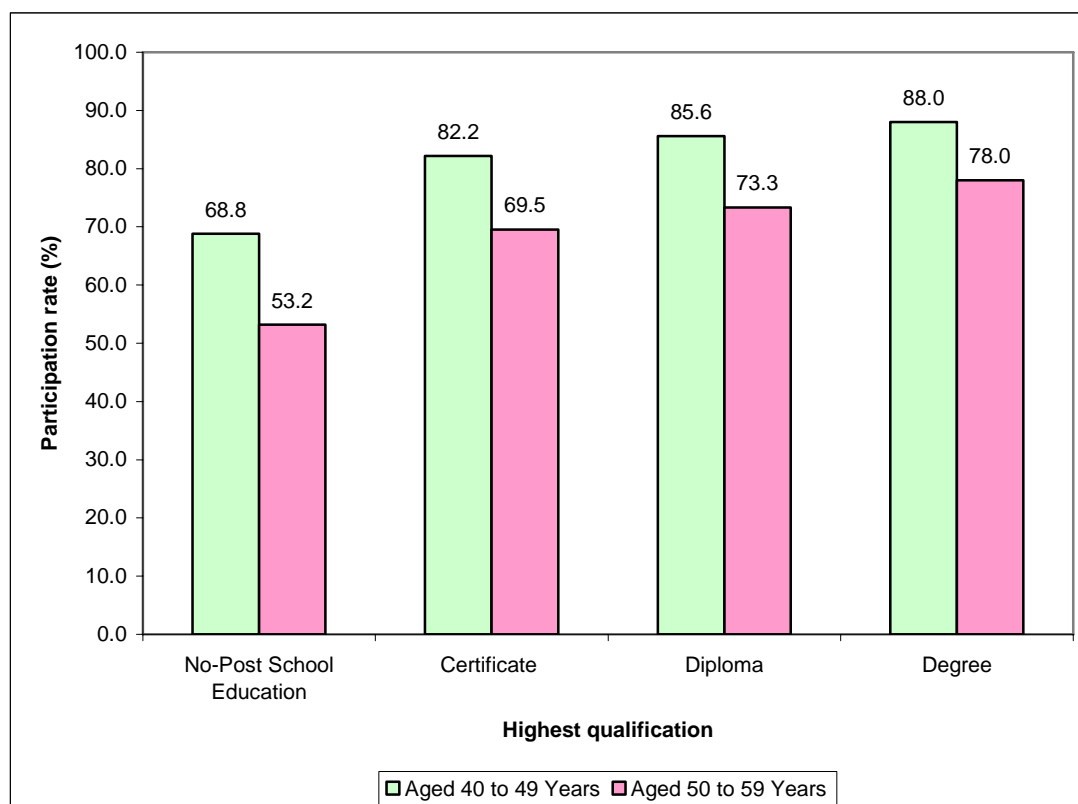
Figure 3: Labour Force Participation Rates of Victorian Women Aged 40 to 59 Years by Level of Completed Secondary School Education, 2001



Source: ABS (2001).

A similar pattern is apparent when the comparison is made of the participation rates of older women with degrees as compared to other women. As is shown in Figure 5, in 2001, women aged 40 to 49 years with degree qualifications had a labour force participation rate that was nearly one-third higher than the rate for women without post-school qualifications. Women aged 50 to 59 years with degrees had a labour force participation rate that was over 50 per cent larger than the rate for their counterparts without post-school qualifications.

Figure 4: Labour Force Participation Rates of Victorian Women Aged 40 to 59 Years by Highest Qualification, 2001



Source: ABS (2001).

Many of the detailed econometric studies of the determinants of older women's labour force participation find that differences in participation behaviour associated with education persist once the influence of other factors are taken into account. Hanoch and Honig (1983), Wang and Cai (2004), Mete and Schultz (2002), Birch (2005a) and Lam, Leibbrandt and Ranchhod (2004) all report that older women's labour force participation is positively associated with years of schooling. For example, Birch (2005a) reports that in Australia, the probability of labour force participation for women aged 50 to 59 years who left school aged over 15 years is 9 percentage points higher than the probability for women who left school at an earlier age. Lam and Leibbrandt and Ranchhod (2004) suggest that in South Africa, an additional year of schooling increases the likelihood of labour force participation of women aged 50 to 75 years by 1.1 per cent.

A positive relationship between older women's labour force participation and post-school education has been found in Australia by Birch (2005a), in the United States by Hill (2002), and in China by Wang and Cia (2004). Using recent Australian data

Birch (2005a) found that women aged 40 to 49 years with degrees and diplomas had probabilities of labour force participation that were, respectively, 22.6 and 14.0 percentage points higher than the probabilities for women without qualifications. For women aged 50 to 59 years, the study found that the differences in the probabilities of labour force participation for those with degree and diploma qualifications and those with no post-school education were 22.9 and 24.2 percentage points, respectively.

These findings are consistent with studies examining the determinants of labour force participation of all women (see Kidd and Ferko, 2001 and Leaper and Silberberg, 1977). However, the conclusions are not universal to older women. Two other Australian studies of older women's participation behaviour – by Miller and Volker (1983) and Cai and Kalb (2004) - found no significant differences in the labour force participation rates of older women associated with their level of education attainment.

Summary Point: *Basic cross-sectional data on older women's participation rates across educational categories is suggestive of a strong relationship between the two factors. Theoretical models also predict a strong relationship. However, although many empirical studies support the hypothesis that older women's participation behaviour will be affected by their level of education, some Australian studies have questioned whether, for older women, a causal relationship does in fact exist once other factors are taken into account.*

3.4 Labour Market Experience

One factor that may influence the measured relationship between older women's participation behaviour and their level of education is labour market experience. Women with more education are likely to spend more time in the labour market than other women when they are young. This labour market experience is likely to add to their chances of employment when they are older. Thus, if measures of both education and experience are included in a statistical analysis of participation behaviour it is possible that the independent effects of education will be small.

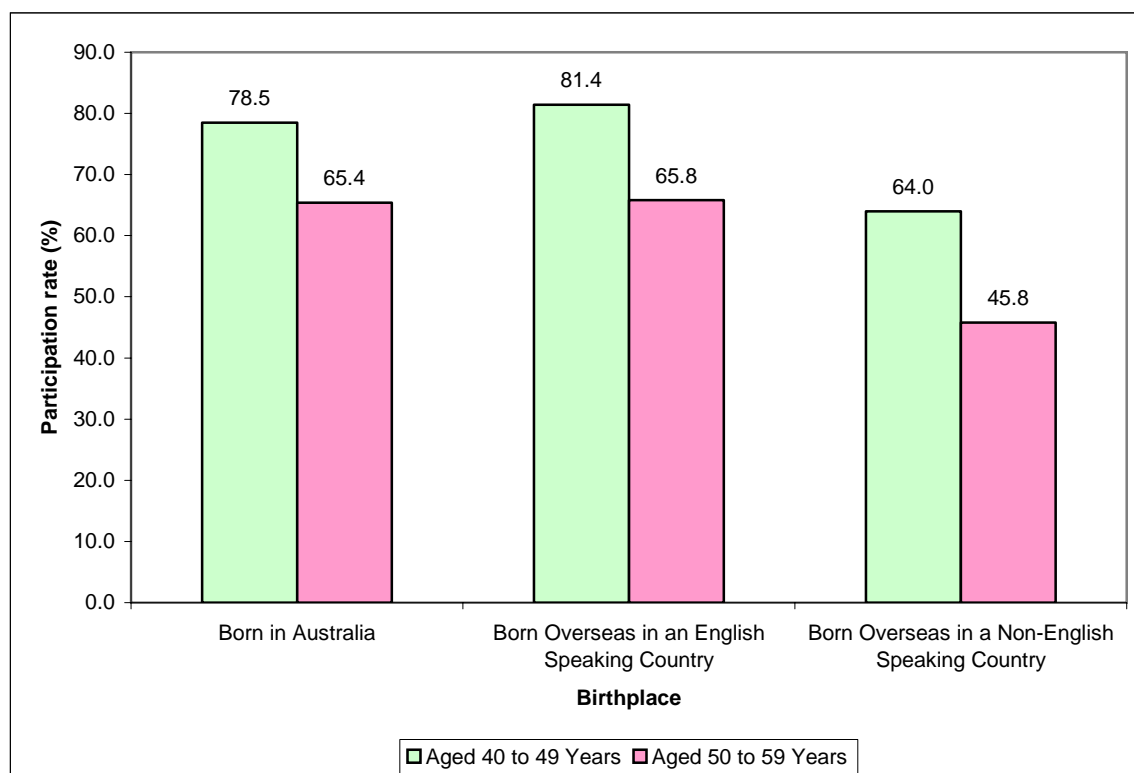
There have only been a few studies that have considered the relationship between older women's labour force participation and labour market experience. In part this reflects the limited amount of longitudinal and career history data in Australia (see Birch, 2005a). Of the studies that have been conducted, all report a positive association between older women's labour force participation and their labour market experience. Cai and Kalb (2004) measured the proportion of time Australian women spent working after they left school and found that labour market experience had a positive impact on the labour force participation rate of women aged 50 to 60 years. Similarly, Hanoch and Honig (1983) and Hill (2002) found that in the United States, labour market experience, (measured by actual years worked), had a positive impact on the labour force participation rates of women. Hill (2002) also suggested that labour market experience had a greater impact on the labour force participation rates of women who were closer to the typical retirement ages (such as aged over 64 years) than women who were younger (such as those aged 50 to 59 years). Disaggregated studies of this nature have yet to be conducted in Australia.

3.5 Ethnicity

A number of Australian studies have identified a relationship between women's ethnicity and their level of involvement in the paid workforce (see Birch, 2005a for an overview). In many cases this relationship is explained by the links between ethnicity and English skills, which can be directly related to an individual's employment opportunities.

The following figures (derived from the 2001 Census data) provide some context for the discussion of this part of the literature on older women's participation behaviour. The first figure shows that Australian-born women aged in their forties and fifties have a higher labour force participation rate than immigrant women born in non-English speaking countries who are of a similar age. However, older women born in Australia have a labour force participation rate that is lower than their counterparts born overseas in English speaking countries.

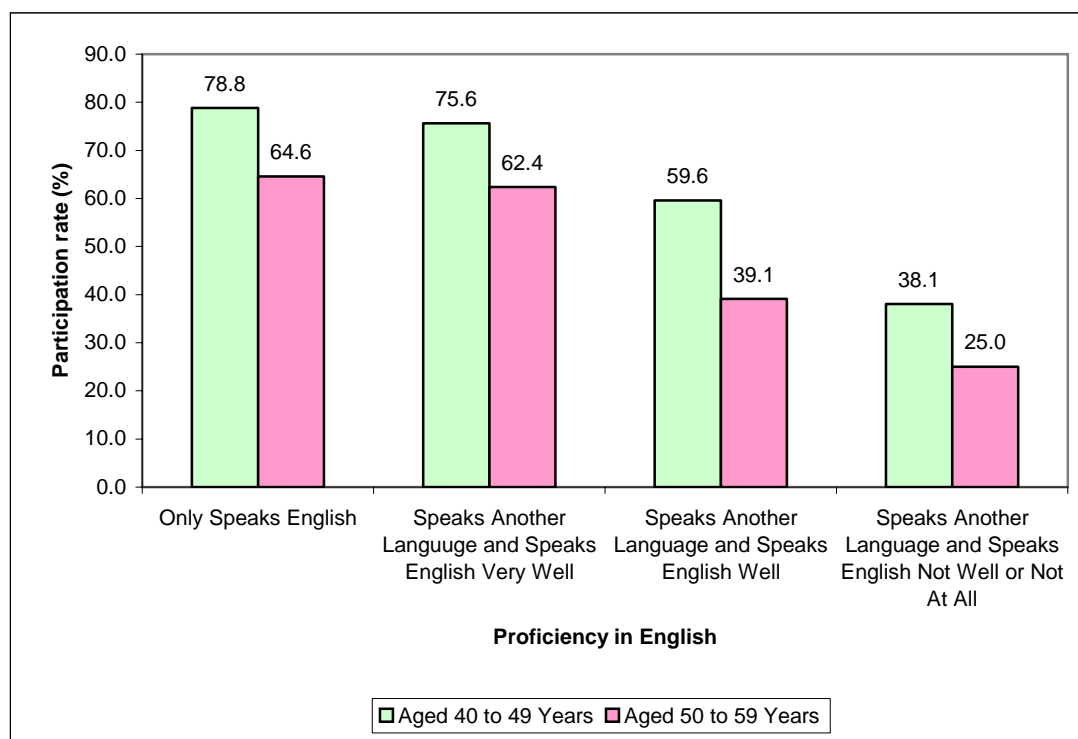
Figure 5: Labour Force Participation Rates of Victorian Women Aged 40 to 59 Years by Birthplace, 2001



Source: ABS (2001).

The data in Figure 6 also point to a link between English skills and participation behaviour. It shows that Victorian women aged 40 to 59 years who are not proficient in speaking English have a considerably lower labour force participation rate than women who can speak the language. For example, women aged 40 to 49 years who speak a language other than English and do not speak English 'well' have a labour force participation rate that is 38.1 per cent. In comparison, the participation rate for the same age women who only speak English is 78.8 per cent. Among women aged 50 to 59 years the comparative figures are 25.0 per cent for women who do not speak English well and 64.6 per cent for women whose only language is English.

Figure 6: Labour Force Participation Rates of Victorian Women Aged 40 to 59 Years by Proficiency in Speaking English, 2001



Source: ABS (2001).

Detailed econometric studies of older women's participation behaviour that have included measures of ethnicity have produced a mixture of findings. These are summarised in Table 5. Some studies have found that older immigrant women who migrate to a country with a different language have a lower likelihood of working than other women. For example, Cai and Kalb (2004) indicate that in Australia, immigrant women born in non-English speaking countries have a considerably lower likelihood of participating in the labour market than women born in English speaking countries.

Other studies, which focus on the differences in participation rates between migrant and non-migrant women (rather than language differences per se) have found that older women born overseas have higher labour force participation rates than women who are not born overseas. Greenhalgh (1977) reports this for the United Kingdom and Miller and Volker (1983) report this relationship in Australia. As these studies do not measure language skills their results may indicate a need among migrant women to supply more labour to accumulate wealth for retirement. This will

be especially important if their destination country had a different retirement income system from their country of origin.

The literature on differences in participation behaviour among indigenous and non-indigenous older Australians is virtually non-existent. The only Australian study that canvassed these differences (by Cai and Kalb (2004)) did not identify any significant differences in the rates. However, studies of the issue in the United States have found that women who are white have higher labour force participation rates than other women (see, for example, Hill (2002)).

Summary Point: *English skills appear to be a crucial factor in determining older women's ability to participate in the labour market. Some older migrant women may also have a greater financial need to participate due to limited access to retirement income from their home countries. Beyond this, the various possible links between older women's cultural and linguistic background and their involvement in the world of paid work is an under-researched field.*

Table 5: The Impact of Ethnicity on Older Women's Labour Force Participation, Selected Studies

Study/ Country/ Year/ Sample	Main Findings
Greenhalgh (1977) United Kingdom: 1971 Married women aged 40 to 64 years.	Being born overseas had a positive impact on labour force participation.
Miller and Volker (1983) Australia: 1976 Women aged 45 to 64 years.	Being born overseas had a positive impact on labour force participation.
Clark and Anker (1990) Pooled data on 151 countries: 1985 Women aged over 64 years.	Living in Africa had a positive impact on labour force participation. Living in the Middle East, Latin America or Asia did not significantly influence labour force participation.
Hill (2002) United States: 1997 Women aged 60 to 74 years.	Being white had a positive impact on labour force participation.
Mete and Schultz (2002) Taiwan: 1989, 1993 and 1996 Women aged 50 to 66 years.	Birthplace did not significantly influence labour force participation rates.
Cai and Kalb (2004) Australia: 2001 Women aged 50 to 60 years.	Being born overseas did not significantly influence labour force participation. Being born in non-English speaking countries had a negative impact on labour force participation. Being of Aboriginal or Torres Strait Islander origin did not significantly influence labour force participation.
Birch (2005a) Australia: 1992 Women aged 40 to 59 years.	Being born in overseas in an English speaking country had a positive impact on labour force participation for women aged 50 to 59 years but a non-significant impact on the participation behaviour of women aged 40 to 49 years Being born overseas in a non-English speaking country did not influence labour force participation. Being a recent resident to Australia had a negative impact on labour force participation.

4. Taking Advantage of Labour Market Opportunities

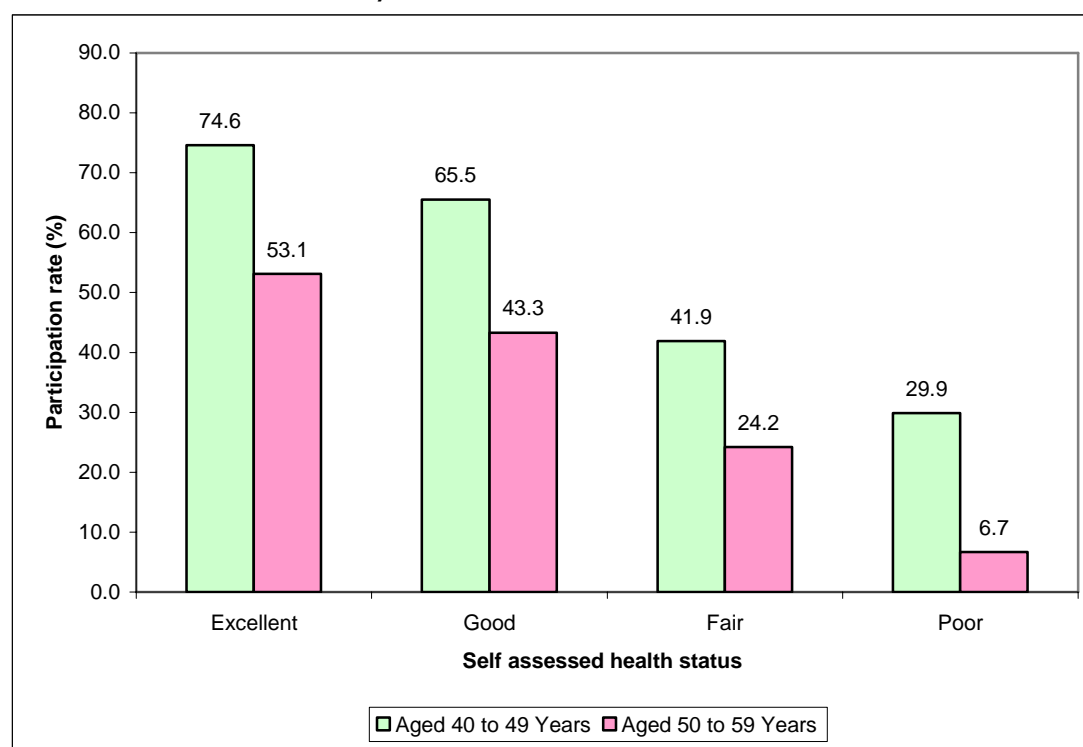
Thus far we have examined the literature on how older women's participation behaviour might be affected by factors influencing their opportunities in the paid labour market. In this section we turn our attention to women's ability and need to respond to these opportunities.

4.1 Health Status

A factor that may constrain an older woman's ability to respond to the labour market opportunities open to her is poor health.

Some basic data, taken from the 1992 ABS Survey of Families (ABS, 1992)⁷, illustrates the likely importance of this factor. As summarised in Figure 7, it shows that women aged 40 to 59 years in fair or poor health have a considerably lower labour force participation rate than women in good or excellent health. The mean labour force participation rate of women aged 40 to 49 years in excellent health is 74.6 per cent, while it is only 29.9 per cent for women in poor health. Likewise, women aged 50 to 59 years in excellent health have a labour force participation rate of 53.1 per cent, while those in poor health have a rate of only 6.7 per cent.

Figure 7: Labour Force Participation Rates of Australian Women Aged 40 to 59 Years by Self Assessed Health Status, 1992



Source: ABS (1992).

⁷ The Census does not report health status.

There is a relatively comprehensive set of literature on the impact of health status on older women's labour force participation, perhaps indicating the perceived significance of this factor. Examples of studies include Birch (2005a), Campolieti (2001), Mete and Schultz (2002), Cai and Kalb (2004), Nagase (1999) and Hanoch and Honig (1983).

As summarised in Table 6, the findings in this literature suggest that being in poor health has a negative impact on the labour force participation of women aged 40 years or more. For example, Nagase (1999) found that in Japan women aged 55 to 69 years who assessed their health as 'good' had a probability of participating in the labour market that was 40 cent higher than the probability for women who assessed their health as 'bad'. Similarly, Mete and Schultz (2002) predicted that in Taiwan, the probability of labour force participation for women aged 50 to 66 years would increase by 20 percentage points if they went from average health (measured by a health index) to perfect health on the health index. The study by Birch (2005a) found that Australian women aged 50 to 59 years who described their health as 'excellent' had a 6 percentage point higher probability of participation in the labour market than women who described their health as 'good'. The study also found that women who stated their health as 'fair' or 'poor' had probabilities of participating in the labour force that were 17 and 30 percentage points lower than the probabilities for their counterparts with good health.

Summary Point: *Older women's health status appears to have a strong influence on their ability to participate in the paid labour market. This may reflect a current mismatch between standard working arrangements (such as hours of work and the (in)flexibility of start and finish time) and the needs of workers with health problems. However, to our knowledge, studies of how health status affects participation behaviour have not extended into studies of why this relationship exists. Thus, the important question of whether the labour market disadvantage suffered by older workers with health problems could be ameliorated by workplace policies that respond to their particular needs has not, to our knowledge, been addressed. Given that the ageing of the workforce is likely to be associated with an increase in the number of employees with health problems, this issue is worthy of research and policy development work.*

Table 6: The Impact of Health Status on Older Women's Labour Force Participation, Selected Studies

Study/ Country/ Year/ Sample	Main Findings
Hanoch and Honig (1983) United States: 1969, 1971, 1973 and 1975 Unmarried women aged 58 to 69 years.	Having a health limitation had a negative impact on labour force participation. Having a disability had a negative impact on labour force participation.
Nagase (1999) Japan: 1983 and 1992 Women aged 55 to 69 years.	Being in better self-assessed health had a positive impact on labour force participation.
Campolieti (2001) Canada: 1976 to 1997 Women aged between 45 and 64 years.	Life expectancy had a positive impact on labour force participation.
Mete and Schultz (2002) Taiwan: 1989, 1993 and 1996 Women aged 50 to 66 years.	A higher score on an index of activities for daily living had a positive impact on labour force participation. Being in better self assessed health had a positive impact on labour force participation.
Cai and Kalb (2004) Australia: 2001 Women aged 50 to 60 years.	Being in better health had a positive impact on labour force participation.
Birch (2005) Australia: 1992 Women aged 40 to 59 years.	Being in better self-assessed health had a positive impact on labour force participation.

4.2 Partners' Health Status

A related but poorly researched topic is the impact of other family members' health status on the labour force participation decisions of older women. Theoretically, participation in paid work may not be possible if a partner or other family member's need for care is high. However, the financial imperative to participate may increase when a partner or other family member falls ill – either to compensate for a drop in family income or to help meet additional medical expenses. Once again, the actual participation behaviour that eventuates needs to be understood in the context of the support given to women in these circumstances to combine work and caring roles.

Unfortunately, there is a dearth of studies of the impact of family members' health status on older women's participation, partly as a result of the lack of data on this factor. Birch (2005a), Vistnes, (1994), and Clark, Johnson and McDermed (1980) are among the few studies that have attempted an analysis.

More information is available on the role of partner's and other family member's health needs on women's retirement decision. Woolcott (1998) reports that, apart

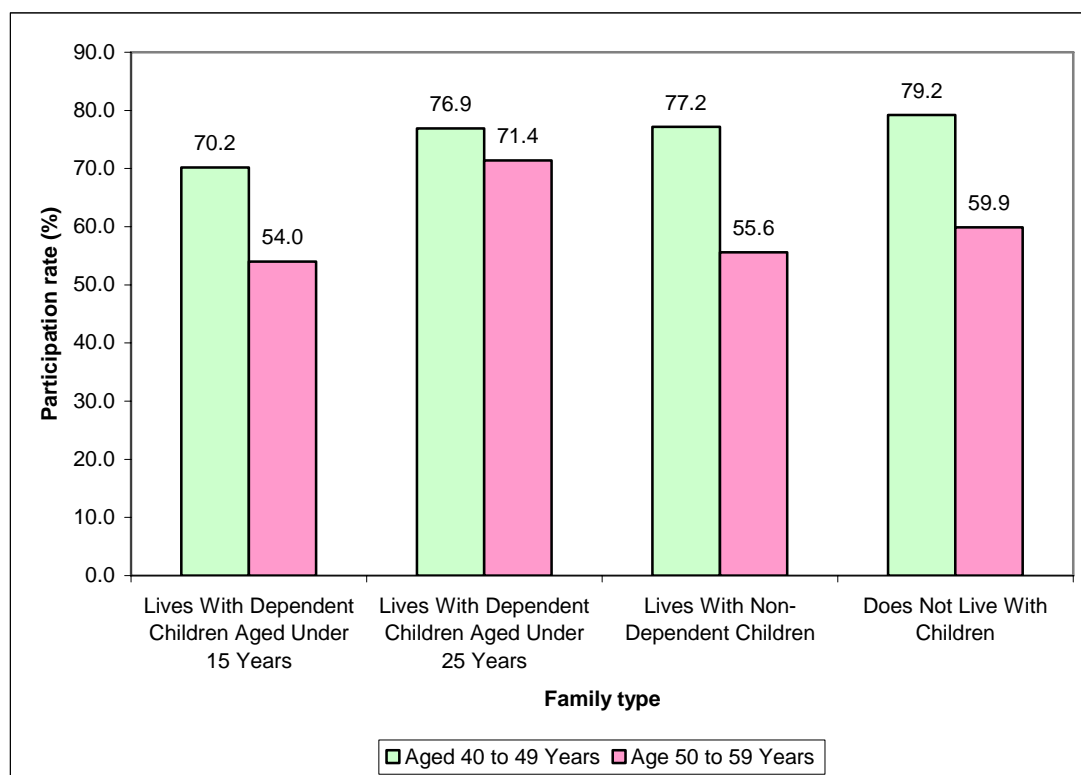
from poor health, the main reasons that women cite for their retirement, are the needs of others in their household or family, including the decision of a spouse to retire, the desire to spend more time with family, or to care for family members (also see ABS, 1998).

4.3 Children

A type of caring role that is commonly recognised as affecting the participation behaviour of women relates to the care of children. Most studies of the determinants of all women's labour supply take into account the impact of children on participation behaviour. The review of these studies by Birch (2005b) found that the impact of children on women's labour supply is commonly seen to vary by the number of children they have, and the age of their children. Women with a larger number of children or children of a younger age are typically found to have a considerably lower likelihood of participation than women with a smaller number of children, or women with older children.

Figure 8 provides some basic, cross-tabulated data on the participation rates of women aged 40 to 59 years by their family type, to give some background to the literature on this topic. It shows that women who live with children (or a child) under the age of 15 years have a considerably lower labour force participation rate than women who live with older children or do not live with a child. For example, labour force participation rates of women aged 40 to 49 years are 70.2 per cent for those living with children aged under 15 years, 77.2 per cent for those living with non-dependent children, and 79.2 per cent for those who do not live with children.

Figure 8: Labour Force Participation Rates of Victorian Women Aged 40 to 59 Years by Family Type, 2001



Source: ABS (2001).

Several detailed econometric studies of older women's participation behaviour have found that the presence of children in a household continues to affect behaviour once account is taken of other explanatory factors (see Table 7). For example, Birch (2005a) found that women aged 40 to 49 years with four or more children had a likelihood of participating in the workforce that was 16 percentage points lower than the likelihood of labour force participation for women without children. The reduction in the likelihood of labour force participation was 14 percentage points for women aged 50 to 59 years.

However, another Australian study – by Miller and Volker (1983) – did not identify a significant effect associated with the number of children. Studies by Hill (2002) and McCarty (1990), using data from the United States, are perhaps more challenging as they identify a *positive* relationship between the number of household members and older women's labour force participation. Given that Hill (2002) and McCarty (1990) do not control for the age of family members in their studies, their findings could be

a result of the costs of having a large number of adult children in the household, where a mother increases her labour force participation to cover these costs⁸.

Some studies have found that the negative impact of children on older women's labour force participation rates is more pronounced for women with younger children than for women with older children (see Birch, 2005a and Wang and Cai, 2004). For instance, the study by Birch (2005a) reports that women aged 40 to 49 years with a youngest child aged under five years have a probability of participation that is 37 percentage points lower than that recorded by women who do not live with children. Women aged 40 to 49 years with a youngest child aged five to nine years were found to have a probability of labour force participation that was 15 percentage points lower than the probability for women without children.

However, once again it is important to note that other Australian studies have produced different results. For example, Cai and Wang (2004) did not find a statistically significant relationship between the number of children in a household aged under 15 years and a woman's participation in the paid workforce.

Summary Point: *The statistical evidence on the effect of children on older women's participation behaviour is mixed. As the number of women in this group with very young children is likely to be relatively small, the more important evidence concerns the relationship between the number and ages of older children and women's participation. Most studies conclude that the presence of older children does not significantly impede participation, while some studies go further and identify a positive link between the number of children and participation.*

Table 7: The Impact of Family Size on Older Women's Labour Force Participation, Selected Studies

Study/ Country/ Year/ Sample	Main Findings
Clark, Johnson and McDermed (1980) United States: 1969, 1971 and 1973 Married women aged 58 to 59.	The number of dependent children in the household did not significantly influence labour force participation.

⁸ The study by Birch (2005a) reports that women aged 20 to 59 years who live with adult children have a considerably higher probability of participating in the labour market than women without adult children and attributes this finding to the costs of having adult children living in the household.

Miller and Volker (1983)

Australia: 1976
Married women aged 45 to 64 years.

The number of children did not have a significant impact on labour force participation.

McCarty (1990)

United States: 1969 and 1973
Married women aged over 50 years.

Women with a larger number of dependent children had a higher probability of participating in the labour market.

Hill (2002)

United States: 1997
Women aged 60 to 74 years.

Women living in households with a larger number of family members had a higher probability of participating in the labour market.

Cai and Kalb (2004)

Australia: 2001
Women aged 50 to 60 years.

The number of children aged under 15 years did not have a significant impact on labour force participation.

Lam, Leibbrandt and Ranchhod (2004)

South Africa: 1996 and 2000
Women aged 50 to 75 years.

Women living in household with a larger number of family members aged under 18 years had a lower probability of labour force participation.

Wang and Cai (2004)

China: 2000
Women aged over 45 years.

Women with children aged under 6 years had a lower probability of labour force participation.

Birch (2005a)

Australia: 1992
Women aged 40 to 59 years.

Women with a larger number of children had a lower probability of labour force participation.
Women with a younger aged child had a lower probability of labour force participation.
Age of the eldest child did not have a significant impact on labour force participation.

5. Partners' Earnings and other Sources of Income

The final determinant of older women's participation behaviour reviewed in this report concerns a factor that is given prominence at the theoretical level – namely women's access to non-labour market sources of income (either through transfers from a spouse or other family member, through past savings, or through government transfers). The prominence given to this factor reflects, in part, the presumption of the dominant (neo-classical) theory that the key motivation for individuals to work is access to income. This carries the implication that if people can access income without working then they will choose not to work. In the following paragraphs we examine, first, the literature on transfers from, especially, spouses and the effects this may have on older women's participation. Following this, we examine the literature on the effect of retirement incomes and policy settings.

5.1 Spouse Income

In the empirical literature on older women's participation behaviour a common additional assumption is that the key potential source of non-labour market income is the income of other family members. Thus, non-labour market income is often represented by husbands' wages, husbands' accumulated savings and husbands' investments. The question of women's access to this income *within* the family is rarely explored.

Reflecting this, in part, it has been common for studies of older women's participation behaviour to use data samples restricted to married women. Examples of these studies include Greenhalgh (1977), Clark, Johnson and McDermed (1980), Miller and Volker (1983), McCarty (1990), Vistnes (1994) and Chase (1995)⁹. Other studies typically include marital status variables in the estimating equations (for example, see Hill, 2002; Cai and Kalb, 2004; Clark and Anker, 1990; Birch, 2005a; Wang and Cai, 2004; Mete and Schultz, 2002; Clark, York and Anker, 1999 and Lam, Leibbrandt and Ranchhod, 2004). Of these studies, many have found that married women have a lower likelihood of participating in the labour market than non-married women (Hill, 2002; Cai and Kalb, 2004; Wang and Cai, 2004 and Birch, 2005a). For example, Birch (2005a) reports that married women aged 50 to 59 years have probabilities of labour force participation that are 34.5 percentage points lower than the probabilities for their never married counterparts.

On the specific question of the influence of spouses' income on participation behaviour, most Australian studies have reported a negative relationship (see Birch, 2005a and 2005b) for an overview). For example, Miller and Volker (1983) suggest that a 10 per cent increase in non-labour market income (measured by the average income of married men) is associated with a 3.9 per cent decrease in the likelihood of labour force participation for married women aged 15 to 64 years.

Several other studies that have used other measures of non-labour market income have also found that it reduces older women's labour force participation (see Table 8). For example, Hanoch and Honig (1983) suggest that in the United States, a

⁹ The study by Hanoch and Honig (1983) estimates the determinants of labour force participation for unmarried women.

\$1,000 increase in a woman's non-labour income will decrease her chances of labour force participation by 3 percentage points. The Australian study by Birch (2005a) reports that women who receive more than \$40 a week in income from investments or more than \$125 a week in income from other sources have probabilities of participating in the labour force that are 13.5 and 32.5 percentage points lower than the probabilities for their counterparts who do not receive these two types of unearned income. Chase (1995) suggests that a 10 per cent increase in husbands' earnings reduces the likelihood of labour force participation for wives in Slovakia by 2.8 per cent and Nagase (1999) indicates that a 10,000 Yen increase in other family income reduces the chances of labour force participation for older women in Japan by 5.3 per cent.

However, there have been some studies that have produced opposite findings. For example, Vistnes (1994) found that net family housing wealth did not influence older women's labour force participation in the United States, and Birch (2005a) found that husbands' earnings had a positive impact on older women's labour force participation.

There are three main factors that might help account for the inconsistencies between the empirical relationship found between spouse income and older women's labour force participation and the basic theoretical expectation¹⁰ (see Birch, 2005a). First, there are difficulties in capturing an individual's actual access to spouse income and other sources of non-labour market income. There are a few data sets which capture all potential sources of non-labour market income and, as such, many studies use variables that are only indicative of it. This can cause results that are misleading. In particular, the use of a husband's wages to measure the non-labour market income of a woman may under estimate the wife's non-labour market income if income pooling within the family does not occur. Thus, although a woman's *measured* level of non-labour market income may be high (given her spouse's wage)

¹⁰ Another factor is associated with the sensitivity of labour supply models in terms of their specification. Birch (2005a) and Killingsworth (1983) argue that many findings in the empirical literature are sensitive to how the estimating equations in the labour supply models are specified.

her actual level of income may be low and, thus, the financial need to work still exists.

Second, a phenomenon, known as assortative mating, may be at work. This occurs where men and women seek out partners that have similar levels of education, career interests and life aims as their own. One of the implications of assortative mating is that women who are, for example, relatively career orientated are more likely to end up partnered to men with high levels of involvement in paid work (see Apps, 1981; Birch and Miller, 2005; and Becker, 1981). This will also produce a positive correlation between husbands' income and wives' participation behaviour.

Finally, the tendency for men and women in partnered relationships to coordinate their retirement plans is likely to also contribute to a measured positive relationship between husbands' income and wives' participation behaviour (see Vistnes, 1994; Honig, 1998; and Blau, 1998). The features of the current taxation/age pension system which base pension entitlements on the measured income of both partners adds to the incentive for women not to participate once their partner has retired.

Table 8: The Impact of Non-Labour Market Income on Older Women's Labour Force Participation, Selected Studies

Study/ Country/ Year/ Sample	Main Findings
Greenhalgh (1977) United Kingdom: 1971 Married women aged 40 to 64 years (in age cohorts).	Hourly earnings of married men working in manufacturing industries had a negative impact on labour force participation.
Hanoch and Honig (1983) United States: 1969, 1971, 1973 and 1975 Unmarried women aged 58 to 69 years. Miller and Volker (1983) Australia: 1976 Married women aged 45 to 64 years (in age cohorts).	Total family non-wage income had a negative impact on labour force participation. Married male income did not influence the labour force participation of women aged 45 to 54 years but it had a positive impact on the labour force participation of women aged 55 to 64 years.
McCarty (1990) United States: 1969 & 1973 Married women aged 50 to 65 years (in age cohorts). Vistnes (1994) United States: 1971 to 1979 Married women aged 57 to 66 years (in age cohorts).	Non-labour income had a positive impact on labour force participation. Couples' net housing did not influence labour force participation. Couples' net non-housing wealth did not influence labour force participation.
Chase (1995) Czech Republic and Slovakia: 1984 and 1993 Married women aged over 50 years.	Husbands' earnings had a positive impact on the labour force participation of women in the Czech Republic in 1984 and 1993 and women in Slovakia in 1984. Husbands' earnings had a negative impact on the labour force participation of women in Slovakia in 1993.
Nagase (1999) Japan: 1983 and 1992 Women aged 55 to 69 years (in age cohorts).	Other family income had a negative impact on labour force participation.
Mete and Schultz (2002) Taiwan: 1989, 1993 and 1996 Women aged 50 to 66 years.	A higher score on a household possession index had a negative impact on labour force participation.
Hill (2002) United States: 1997 Women aged 60 to 74 years (in age cohorts).	Non-wage income had a negative impact on labour force participation.
Birch (2005a) Australia: 1992 Women aged 40 to 59 years (in age cohorts).	Income from investments and other non-labour sources had a negative impact on labour force participation. Husbands' earnings had a positive impact on labour force participation.

Summary Point: *The empirical literature on the importance of spouse income on older women's participation behaviour is inconclusive. There are theoretical arguments (supported by some empirical studies) that suggest that participation should be less likely as access to non-labour market sources of income expands. However, there are other arguments (and various empirical studies) that suggest an opposite relationship.*

Cohen and Bianchi (1999) provide some way of resolving this issue when they note that, for all women, the importance of partners' income in the determination of women's participation behaviour has fallen in recent decades. They describe participation in the labour market as becoming a more permanent and central feature of women's life experience and less something that women do when other sources of family income are poor.

However, this still leaves open the possibility (if not likelihood) that older women will coordinate their retirement decisions with those of their partner – especially if tax/benefit regimes continue to encourage this. Thus, the retirement behaviour of men will continue to be a factor affecting participation rates among older women.

5.2 Retirement Income

For older women, one potential component of their non-labour market income is their own retirement savings, or the (shared) savings of their partner. Several studies of older women's labour force participation have considered the how levels of self-funded retirement income and levels of government-funded retirement pensions affect behaviour (for example, see, Hanoch and Honig, 1983; McCarty, 1990; Vistnes, 1994; Fortin and Fortin, 1999; and Nagase, 1999). Characteristics of the retirement income systems have also been examined (see Clark and Anker, 1990; and Clark, York and Anker, 1999). These studies (which are summarised in the table below) have all been conducted in countries other than Australia. Thus, the institutions surrounding retirement income differ and, as a result, it is likely that the incentive structures they create will be different from those affecting older Australian women.

Table 9 outlines a number of interesting findings. It has been revealed that the level of government-funded age-pensions¹¹ has a negative impact on labour force participation. For example, Hanoch and Honig (1983) report that for the United States, accumulated government funded retirement pensions reduce labour force participation for women. Likewise, using data from Japan, Nagase (1999) indicates that a 10,000 Yen increase in government pensions decreases the probability of women's labour force participation by 2.1 per cent.

It has also been revealed that the total level of accumulated retirement income (both self-funded and government-funded security) has a negative impact on older women's labour force participation (see McCarty, 1990; and Vistnes, 1994). For instance, the American study by McCarty (1990) suggests that for every \$10,000 increase in social security wealth, older women's labour force participation decreases by 1 percentage point.

Table 9 also indicates that women living in countries which have older and more mature social security systems have a lower probability of participating in the labour force than women living in countries where the social security systems are not as well established. For example Clark and Anker (1990) suggest that for every additional year that the social security system has been in place in a country, older women's labour force participation is reduced by 0.12 of a percentage point.

In addition, Table 9 shows that women's labour force participation decision is influenced by the age which they can receive their retirement income. Hence, Clark, York and Anker (1999) found that women aged 55 to 59 years, had a 6 percentage point higher probability of participating in the labour force if their social security system had an eligibility age of 60 years or more compared to women whose social security system had a younger eligibility age. The increase in labour force participation was even greater for women who could not access their social security system until the ages of 65 years or more. These women had labour force

¹¹ In the US these pensions are referred to a 'social security'. It appears that individuals can contribute to their own entitlements

participation probabilities that were 13 percentage points higher than the probabilities for women who could assess their retirement income at an earlier age.

Table 9: The Impact of Pension Systems on Older Women's Labour Force Participation, Selected Studies

Study/ Country/ Year/ Sample	Type of Social Security and Impact Considered	Main Findings
Hanoch and Honig (1983) United States: 1969, 1971, 1973 and 1975 Unmarried women aged 58 to 69 years.	Examines the impact of potential government social security income (Primary Insurance Amount-PIA) on labour force participation. Examines the impact of the years since earnings received PIA coverage on labour force participation. Examines the impact of having interrupted PIA coverage on earnings, on labour force participation.	Potential PIA wealth had a negative impact on labour force participation. Years since earnings had PIA coverage had a negative impact on labour force participation. Having interrupted PIA coverage on earnings had a positive impact on labour force participation.
Clark and Anker (1990) 151 countries (pooled):1985 Women aged over 64 years.	Examines the impact of the length of time a country has had a social security system on labour force participation. Examines the impact of the age at which individuals can receive the government's retirement income on labour force participation.	Living in countries which have had a social security system in place for a longer period of time has a negative impact on labour force participation. The age which an individual can receive their pension did not influence labour force participation.
McCarty (1990) United States: 1969 and 1973 Married women aged over 50 years.	Examines the impact of the total estimated social security wealth (present value of social security wealth and the value of the expected future social security wealth) on labour force participation.	Total estimated social security wealth had a negative impact on labour force participation.
Vistnes (1994) United States: 1971 to 1979 Married women aged 57 to 66 years.	Examines the impact of a change in total estimated social security wealth (present value of social security wealth and the value of the expected future social security wealth) on labour force participation.	A positive change in total estimated social security wealth had a negative impact on labour force participation.
Clark, York and Anker (1999) 134 countries (pooled): 1985 Women aged over 54 years.	Examines the impact of the length of time a country has had a social security system on labour force participation. Examines the impact of the age at which individuals can receive the retirement income on labour force participation. Examines the impact of whether the social security system is government funded or employer funded on participation.	Living in countries which have had a social security system in place for a longer period of time has a negative impact on labour force participation. Living in countries where the individual receives retirement income at a later age, or where retirement income is funded by employers had a positive impact on labour force participation.
Fortin and Fortin (1999) Canada: 1969 to 1996 Women aged over 54 years.	Examines the impact of the average real social security benefit on labour force participation.	Average real social security benefit did not influence labour force participation.
Nagase (1999) Japan: 1983 and 1992 Women aged 55 to 69 years.	Examines the impact of the total amount of government pension on labour force participation.	Total amount of government pension had a negative impact on labour force participation.

Summary Point: *Much of the literature on the effects of changes in retirement incomes on the participation behaviour of older women has been conducted in countries other than Australia. This is an important and under-researched field in Australia. The findings of the international studies of the issue suggest that the Federal Government's move to reduce the age-pension to a safety net arrangement, and to increase reliance on self-funded retirement savings, will 'encourage' older women to work longer (in order to secure a retirement income). Changes to the retirement age and entitlement age for either the age-pension or access to retirement savings are also likely to affect participation behaviour.*

A further under-researched area in Australia relates to the impact of income tax rates and benefit withdrawal rates on older women's participation. In the very small international literature on these topics, McCarty (1990) found that for women in the United States high payroll taxes reduced the labour force participation rates of women aged over 50 years. Another study, by Mete and Schultz (2002) found that in Taiwan the introduction of a national health care insurance reduced older women's labour force participation.

6. Summary and Conclusion

This report has reviewed the empirical literature on the determinants of women's labour force participation. It has had a particular focus on studies which examine the labour force participation decisions of women aged in their forties, fifties and sixties. The material covered shows that older women's labour force participation decisions are influenced by a wide range of factors that can be related to their labour market opportunities, their ability to respond to these opportunities, and their financial need to engage in paid work.

The review produced a number of specific findings about older women's labour force participation. The first is that labour force participation rates vary substantially across the group of older women. Participation rates for women aged over 60 years tend to be very low, while those for women aged 40 to 50 years are relatively high. This highlights the importance of not treating older women as a homogeneous group and the need for studies of the determinants of participation rates to be sensitive to

the different factors affecting the participation behaviour of women in their forties, fifties and sixties.

Our second finding from the literature was that older women's decision to participate in the paid labour market is significantly affected by their wage opportunities. Studies have found that the responsiveness of participation behaviour of women in their forties to wage opportunities is high compared to younger women, older women and men. We noted that this result has potential policy significance because it suggests that changes in net wage rates (for example, through the manipulation of tax rates) will have the greatest chances of increasing labour supply if they are targeted at this particular group of women.

A related finding (although mainly based on international evidence) was that older women's participation behaviour is positively related to employment growth in the local labour market. This topic was one of the many areas we identified as needing an Australian perspective.

Our review of the theoretical and empirical literature pointed to a strong link between education and participation. However, we noted that some Australian studies have questioned whether a causal relationship does in fact exist between these two factors once other factors are taken into account.

At a theoretical level, a woman's experience in the labour market will also affect the chances of participation when she is older. However, once again, this is an under-researched field in Australia and the pattern of this particular relationship is not certain.

From the current literature, English skills appear to be a crucial factor in determining older women's ability to participate in the labour market. If older migrant women have limited access to retirement income from their home countries they may also confront a greater financial need to participate in the labour market. Beyond this, the various possible links between older women's cultural and linguistic background and their involvement in the world of paid work is an under-researched field.

Health status also appears in the literature as a critical factor affecting older women's ability to participate in the paid labour market. This may reflect a current mismatch between standard working arrangements (such as hours of work and the (in)flexibility of start and finish times) and the needs of workers with health problems. However, to our knowledge, studies of *how* health status affects participation behaviour have not extended into studies of *why* this relationship exists. Thus, the important question of whether the labour market disadvantage suffered by older workers with health problems could be ameliorated by workplace policies that respond to their particular needs has not, to our knowledge, been addressed. Given that the ageing of the workforce is likely to be associated with an increase in the number of employees with health problems, we identify this as an issue especially worthy of research and policy development work.

Women's caring roles – relating to other family members with health problems and, more generally, children – have been examined in several studies of older women's participation behaviour. The statistical evidence on the effect of children on older women's participation behaviour is mixed with most studies concluding that the presence of older children does not significantly impede participation, while some studies go further and identify a positive link between the number of children and participation. The effect of family members' health problems on women's participation is a further poorly researched area.

The empirical literature on the importance of spouse income on older women's participation behaviour was found to be inconclusive. There are theoretical arguments (supported by some empirical studies) that suggest that participation should be less likely as access to non-labour market sources of income expands. However, there are other arguments (and various empirical studies) that suggest an opposite relationship. However, it is likely that the importance of partners' income in the determination of women's participation behaviour has fallen in recent decades. Participation in the labour market has become a more permanent and central feature of women's life experience and, thus, it is no longer just something that women do when other sources of family income are poor.

A further and important gap in the current literature on older women's participation concerns the effects of changes in retirement incomes. The findings of the international studies of the issue suggest that the Federal government's move to reduce the age-pension to a safety net arrangement, and to increase reliance on self-funded retirement savings, will 'encourage' older women to work longer (in order to secure a retirement income). Changes to the retirement age and the entitlement age for either the age-pension or access to retirement savings are also likely to affect participation behaviour. The impact of income tax rates and benefit withdrawal rates on older women's participation is yet another area in need of Australian studies.

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