ON EXPLANATIONS OF DECLINING LABOUR FORCE PARTICIPATION AMONG OLDER MALES

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The Centre will not have any views on policy; individuals will.
1. In Australia the labour force participation rate of 60-64 year old men fell from 79.4 per cent to 47.7 per cent between 1966 and 1982.

2. Previous research has stressed the importance of two factors in the explanation of this decline: the deterioration in the labour market in the second half of the 1970s and the increased generosity of, and changes in eligibility provisions for, pensions. The evidence presented in this paper questions the validity of both these explanations.

3. Economic theory suggests that the appropriate theoretical framework for considering retirement decisions is a life-cycle model, in which the individual plans and prepares for retirement over the entirety of his working life. Events happening in the twilight years of labour market activity would be expected to have relatively minor effects.

4. The trend towards early retirement largely reflects both the tendency of individuals with ten years to retire at age 60 rather than age 65, and changes in tastes towards leisure induced by the increases in wealth which occurred in the two decades prior to 1973.

5. Between 1973 and 1982 actual participation rates fell by 28.4 percentage points. On the basis of a 1973 Survey we predict a decline in labour force participation of 24.2 percentage points. Thus, retirement expectations formed prior to 1973 account for 85 per cent of the 28.4 percentage point decline in the participation rate of 60-64 year olds between 1973 and 1982.

6. This analysis suggests that retirement expectations formed by 1973 can be used to predict, reasonably accurately, participation rates for later years. In other words, much of the decline in participation rates over the 1970s is the result of the realisation of plans formed prior to 1973.

7. The depressed nature of the labour market in the late 1970s and the substantial changes to the social security system after 1973, would appear, therefore, to have had a more limited impact than suggested.
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I. INTRODUCTION

Throughout most Western economies, including Australia, there have been dramatic changes in the labour force behaviour of older men. The most prominent of these changes is the trend towards early retirement. Thus in Australia, the labour force participation rate of 65-69 year old men fell from 79.4 per cent to 47.7 per cent between 1966 and 1982. Over the same period the labour force participation rate of males aged 65 or more years declined by 14.1 percentage points, from 23.3 per cent to 9.2 per cent. For 55-59 year olds there is a decline of 12 percentage points, and this is concentrated in the post-1976 period.

A number of Australian researchers have attempted to add to our understanding of the early retirement decision. Stricker and Sheehan (1981) undertook the important task of setting out the basic facts on the labour market performance of older males in Australia, documenting change in key magnitudes thought likely to affect the work/leisure decision, and presenting a preliminary investigation of this decision. There are a number of important points raised by Stricker and Sheehan. First, the effects of changes in conditions and relative value of pension benefits has been that the incentive to draw pensions rather than be employed increased significantly between 1971 and 1975, but since then has declined a little. Second, during the 1970's the Second World War veterans were moving into pensionable age groups in large numbers, and this is expected to exercise an important influence on the behaviour of the group aggregate. Third, the deterioration in the labour market since 1974 appears to have played an important part in the higher pension 'take-up' rate.

Research by Merrilees (1982) and Dunlop and Williams (1982) develop the ideas put forward by Stricker and Sheehan. Merrilees analyses the...

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* Helpful comments from Bob Gregory, Fred Gronen, Bill Merrilees and Paul Volker are acknowledged.
labour force behaviour of males aged 65 or more years over the
1964(1)-1977(4) period.\(^1\) He establishes that pension benefits, wealth
(proxied by a time trend\(^2\)), the cyclical state of the labour market, and
pension means test criteria have all influenced, in a statistical sense,
the labour market status of older males. Dunlop and Williams provide
further statistical support for the assertions of Stricker and Sheehan.
They estimated equations for three older age groups, 55-59 year olds, 60-64
year olds, and 65 plus years. The data were quarterly observations from
1966(3) to 1981(4). Their results suggest that the real wage rate, pension
benefits, unemployment rate, eligibility for the service pension, and
non-labour income (proxied by a time trend) all contribute to the
explanation of older male labour force participation rates.

Australian researchers appear to agree, therefore, that the recent
dramatic increase in early retirement is associated with the deterioration
of the labour market in the late 1970's, the demographic effect of the
Second World War veterans moving into pensionable age groups, and with
changes in the value of, and eligibility provisions attached to, social
security benefits.

Two major areas of disagreement remain, however. The first of these
relates to whether or not a number of other factors have affected
retirement decisions. Thus while Merrilees' analysis suggests that wealth
effects are important, and Dunlop and Williams evidence the importance of
non-wage income (eg. superannuation, dividends), Stricker and
Sheehan (page 64) suggest that the effect of the level of wealth should be
of relatively minor importance in the explanation of the dramatic changes
in participation behaviour that occurred in the second half of the 1970's.
Furthermore, while Stricker and Sheehan draw attention to significant
crises of benefit usage effects among ex-service personnel, Merrilees' pension usage model does not support this proposition. The
second area of disagreement relates to the relative importance of some of
the significant influences. For example, the magnitude of the recession
reduced unemployment estimated by Stricker and Sheehan far exceeds the
estimate provided by Merrilees.

In this paper we provide further evidence on the early retirement
issue. Our study is novel in a number of respects. One feature is the
interpretation of the retirement decision in a life-time context in
reference to the contemporaneous interpretation favoured by previous
researchers.\(^3\) A second feature is the focus on expectations. Data from a
1973 national survey which contains retirement plans formed before both the
onset of the deterioration in the labour market and the substantial changes
to the social security system emphasised in previous research are used to
predict participation rates for 65-64 year olds between 1973 and 1983. In
general the differences between the predicted and actual participation
rates are reasonably small. That is, changes in the labour force
attachment of older males since 1973 can be viewed largely as the result of
decisions made prior to 1973. The depressed state of the labour market in
the late 1970's, and the substantial changes to the social security system
after 1973, would appear, therefore, to have had a more limited impact than
suggested by existing Australian studies. Discussion within a life-time
context provides a plausible explanation for the findings.

The plan of the paper is as follows. Section II examines the expected
retirement age of employed males. In Section III these expectations are
used to predict labour force participation rates between 1973 and 1983, and

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1. Estimates are also presented for the periods 1964(1)-1981(3) and
1964(1)-1974(3). Full-time and part-time participation rate equations
are also estimated using annual data for 1966-81.

2. The estimated net personal wealth per capita series presented by
Williams (1983) suggests the linear time trend used by Merrilees might
be a poor proxy for wealth.

3. Hughes (1982) is an exception.
II EXPECTED RETIREMENT AGE

(i) Data

The data analysed are from a survey conducted for the Social Mobility in Australia Project in 1973 [referred to as A.N.U.(73)]. This project was undertaken by the Department of Sociology in the Research School of Social Sciences at the Australian National University. There were 3166 male respondents aged between 38 and 69 years in this national survey. The important feature of the data set for this study is that employed persons were asked the age at which they intended to retire. Moreover, these retirement expectations data are available for single-year age categories. This enables us to avoid the problems inherent in attempting to allocate retirement decisions to individual years within the 5-year age brackets provided in alternative data sets.

There are two notable features of the expected retirement age data. First, the range of expected retirement ages is quite large, the minimum age being 38 years, the maximum 95 years. Most ages within this 65 year range are represented. Second, there tends to be a 'pile-up' of responses at 'threshold ages' - at each 5th year between ages 45 and 75. The data also illustrate the importance of institutionally determined retirement ages of 60 and 65 years. The mean expected retirement ages is 61.9 years, the standard deviation 4.9 years.

4. Details on the survey are presented in Brown, Duncan-Jones, Jones and McDowell (1977).

(ii) Retirement Expectations: Basic Facts

To establish the reliability of the A.N.U.(73) data we make a number of comparisons with data on intended retirement age presented in the Australian Bureau of Statistics' publications Persons Aged 50-69 Ceasing Full-Time Work, Australia[5] [referred to as A.B.S.(88)]. Table 1 presents the distribution of expected retirement ages for four age groups. The first part of this table presents data from A.B.S.(88). Data from A.N.U.(73) are presented in the second part. The expected retirement age and age variables in the A.N.U.(73) data have both been aggregated to 5-year age brackets to facilitate comparison with the A.B.S.(88) data.

| TABLE 1 |
| DISTRIBUTION OF RETIREMENT EXPECTATIONS CROSS-CLASSIFIED BY AGE, MALES |

<table>
<thead>
<tr>
<th>Age</th>
<th>55-59</th>
<th>60-64</th>
<th>65-69</th>
<th>70+</th>
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<tbody>
<tr>
<td>50-54</td>
<td>4.2</td>
<td>29.3</td>
<td>64.0</td>
<td>1.9</td>
</tr>
<tr>
<td>55-59</td>
<td>1.9</td>
<td>43.1</td>
<td>53.0</td>
<td>2.0</td>
</tr>
<tr>
<td>60-64</td>
<td>14.5</td>
<td>52.4</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>65-69</td>
<td>68.0</td>
<td>48.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A.N.U.(73) (1973)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-54</td>
<td>8.8</td>
<td>45.8</td>
<td>41.7</td>
<td>3.7</td>
</tr>
<tr>
<td>55-59</td>
<td>2.1</td>
<td>52.9</td>
<td>4.8</td>
<td></td>
</tr>
<tr>
<td>60-64</td>
<td>16.4</td>
<td>77.8</td>
<td>5.8</td>
<td></td>
</tr>
<tr>
<td>65-69</td>
<td>61.5</td>
<td>38.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Although there is a seven year difference in survey dates, comparison of these data sets should provide some indication of the reliability of the A.N.U.(73) data. For the age groups 55-59, 60-64 and 65-69 the two sets are quite similar. Thus, among 55-59 year olds, the A.B.S.(88) data indicates that 2 per cent expect to retire between ages 55 and 59, 43

5. Only persons stating an actual retirement age are considered in this analysis. The small number of respondents who indicated they were never going to retire, or would work as long as they were able (4 per cent in A.N.U. (73)), have been eliminated. Individuals who did not state an intended retirement age have been allocated proportionately.
per cent between ages 60 and 64, 53 per cent between ages 60 and 69 and 2 per cent aged 70 or more years. Corresponding figures from A.N.U.(73) are 2 per cent, 40 per cent, 53 per cent and 5 per cent. Retirement expectations for the 50-54 age group differ between the two data sets, however. The major difference is the higher proportion (15 percentage points) in A.N.U.(73) who expect to retire between the ages of 60 and 64 years. However, we suggest that this is simply a cohort effect: the 50-54 age cohort in the 1973 survey would contain a large number of World War II veterans, for whom retirement at age 60 is more likely. By 1980, this cohort would be aged 57-61 years - the slightly higher percentage of 55-59 year olds in the 1980 survey who expect to retire between ages 60 and 64 could thus have a similar explanation. We note that this interpretation is consistent with Stricker and Sheehan's findings [see Section I above].

III PREDICTING LABOUR FORCE PARTICIPATION RATES

In this section we apply conventional mortality table-type analysis to the raw retirement expectations data discussed in Section II to derive predictions of labour force participation for a number of years. This amounts to assuming that retirement expectations formed by 1973 are realised.

(1) Predictions For 1973-1983

Before proceeding with the analysis we emphasise the significance of using retirement expectations data for 1973. 1973 pre-dates both the deterioration of the labour market and most of the changes in the social security system which have been emphasised in previous research. Thus, the male unemployment rate was generally less than 2 per cent up to 1973(4). But after 1973(4) unemployment rates increased dramatically, as indicated in Figure 1. Furthermore, whilst some major pension changes had taken
place by 1973, major changes were implemented afterwards, and certainly the
increase in the value in 1974 and 1975 is a post-A.N.U.(73) survey
phenomenon. Figure 2, reproduced from Strickler and Sheehan, illustrates
this point.

Examination of the saturation dates of the retirement expectations of
various age cohorts in 1973 permits the prediction of labour force
participation rates of the 60-64 year age group in the post-1973 period.6
Thus, we ask: What would be the labour force participation rate in 1974 of
the 1973 cohort of 59-63 years olds (that is, 60-64 year olds in 1974) if
their retirement expectations were realised? Similarly for each 1973 age
group from 59-62 year olds through to 50-54 year olds (= 60-64 year olds in
1983). A brief exposition of our methodology follows.

Define

\[ A_i = \text{individual } i\text{'s chronological age in 1973} \]
\[ E_{t} = \text{individual } i\text{'s expected age of retirement as at 1973} \]
\[ t = \text{number of years since the survey date (1973)} \]
\[ E_{t} = \text{individual } i\text{'s status } t \text{ years after the survey date} \]
\[ = 1 \text{ if } E_{t} > A_i + t \quad \text{[i.e., in workforce]} \]
\[ = 0 \text{ if } E_{t} < A_i + t \quad \text{[i.e., retired]} \]

Then, the labour force participation rate of 60-64 year olds in each \( t \)
year after 1973 is found by

(i) restricting the sample to respondents aged between \( (60-t) \) and \( (64-t) \)
years in 1973,

(ii) calculating \( \sum_{i=1}^{N} E_{t} / N \), where \( N \) is the number of respondents in the
restricted sample.

6. Statistical analysis relating expected retirement ages to the
characteristics of respondents indicated that military service reduced
the expected retirement age, but no evidence indicated that any independent
influence on the expected retirement age of employed males.

Table 2 presents predicted labour force participation rates derived in
this manner.

<table>
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<tbody>
<tr>
<td>Actual</td>
<td>76.1</td>
<td>72.4</td>
<td>68.6</td>
<td>64.6</td>
<td>62.2</td>
<td>59.8</td>
<td>58.1</td>
<td>51.2</td>
<td>47.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Predicted</td>
<td>77.6</td>
<td>75.7</td>
<td>72.6</td>
<td>66.3</td>
<td>66.0</td>
<td>63.0</td>
<td>59.2</td>
<td>57.0</td>
<td>54.7</td>
<td>53.4</td>
<td>54.5</td>
</tr>
<tr>
<td>% Error</td>
<td>2.0</td>
<td>4.6</td>
<td>5.8</td>
<td>3.6</td>
<td>3.6</td>
<td>6.1</td>
<td>5.7</td>
<td>10.7</td>
<td>13.8</td>
<td>6.8</td>
<td>11.9</td>
</tr>
</tbody>
</table>

The first line of this table lists actual labour force participation, the
second line predicted participation and the third line prediction errors.
In general the predictions track actual participation rates quite well.
Between 1973 and 1982 actual participation rates fell by 28.4 percentage
points. We predict a decline in labour force participation of 24.2
percentage points. Thus, retirement expectations formed prior to 1973
account for 85 per cent of the 28.4 percentage point decline in the
participation rate of 60-64 year olds between 1973 and 1982. As might be
expected, the accuracy of the predictions is greatest in the period 1973-78
than for later years. However, even the largest prediction error is a
reasonable 13.8 per cent. This occurs in 1980.

(iii) A Digression: The Service Pension Take-up Rate

Strickler and Sheehan present evidence [Table 5.5] of a vast increase
in the proportion of ex-servicemen who are in receipt of a pension. Thus,
Table 5.5 of Strickler and Sheehan indicates that in 1973 24.4 per cent of
active service veterans were drawing a pension, 41.8 per cent in 1978 and
47.4 per cent in 1980. Strickler and Sheehan attribute this increase to the
deteriorating labour market. Examination of A.N.U.(73) data, however,
casts some doubt upon the Strickler and Sheehan interpretation. Thus, the
retirement expectations data in A.N.U. (73) indicate that 25.2 per cent of 60-64 year old males with military service7 expected to be retired in 1973, 44.1 per cent retired in 1978, and 50.7 per cent retired in 1980. The strong upward trend in these predictions suggests that much of the rise in benefit usage reflects the realisation of life-time plans, with the depressed state of the labour market having a more limited influence than Strickler and Sheahan suggest. It is noted that Merrilees’ pension usage model also suggests that cyclical factors have had a minor impact on the pension take-up rate.

(iii) Conclusion

This analysis suggests that retirement expectations formed by 1973 can be used to predict, reasonably accurately, participation rates for later years. That is, much of the decline in participation rates over the 1970’s is the result of the realisation of plans formed prior to 1973. Moreover, the increased pension take-up rate emphasised by Strickler and Sheahan is a planned decision, and one which appears not to be related to the post-1973 events discussed above. Therefore, it is suggested that two reasons for the labour force withdrawal of older males hitherto given prominence in the Australian debate, namely the deterioration of the labour market in the late 1970’s and the increased generosity of, and changes in the eligibility provisions for, various pensions, should be heavily discounted.

Should one express such surprise at the finding that recent labour market and institutional changes have exerted only a minor impact upon retirement decisions? Possibly not! For economic theory suggests that the appropriate theoretical framework for considering retirement decisions is a life-cycle model. In this type of model, the individual plans and prepares for retirement over the entirety of his working life. Events happening in the twilight years of labour market activity would be expected to have relatively minor effects. Unfortunately, the focus of existing Australian empirical studies has been on current contingencies rather than on the life-cycle underpinnings.

It is conjectured, therefore, that the changing retirement plans are largely reflections of change in individual preferences which derive from the greater life-time income/wealth of today’s 60-64 year old cohort vis-a-vis earlier 60-64 year old cohorts. Hughes (1982) appears to share this view:

Hours of work studies have established clearly the proposition that for full-time workers the income effect of a real wage increase kills the associated substitution effect. Part of this net income effect, it is generally accepted, comes out in reduced working hours over the year. Another part, however, is viewed in a life-time context and suggests earlier retirement at the end of one’s career, normally a great many years after the original wage increase as the cohort reaches retirement. Successive waves of real wage increases therefore send ripples into older participation rates many years later.

Under this argument, therefore, the growth in net wealth per capita [see Williams (1983)] during the 1960’s and early 1970’s would have led to a progressive downward revision to the expected age of retirement, the implications of which are only now being witnessed in the form of declining older male labour force participation rates. The growth in per capita wealth levelled off around 1973, implying that A.N.U. (73) respondents should not have had to subsequently revise their expectations in response to wealth changes. The minor discrepancies between our predictions (or plans formed by 1973) and actual labour force participation rates may be attributable to other unforeseen events such as unexpected health limitations or particularly adverse local labour market conditions.

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7. We would prefer information on service in a ‘theatre of war’. Around three quarters of ex-service personnel served in a ‘theatre of war’, however.

8. Note that under this explanation, the recent decline in labour force participation among older males is consistent with an unchanged wealth elasticity of retirement.
(iv) A Look into the Future!

Similar to the use of the A.N.U. (73) expectations data to project labour force participation rates between 1974 and 1983, we can predict labour force participation rates for other years. Thus, examination of the retirement expectations of the 45-49, 40-44 and 35-39 year age groups suggests the labour force participation rate of the 60-64 age group will be around 47 per cent in 1988, 55 per cent in 1993, and 58 per cent in 1998. A feasible explanation for this particular pattern of participation rate changes is that it reflects the passage of the Second World War veterans through the 60-64 year age groups (which causes the initial fall in the labour force participation rate to be followed by an increase), coupled with the underlying influence of the trend towards early retirement (which affects the decline in participation rates between 1993 and 1998).

III CONCLUSION

The decline in the labour force participation of older males is one of the major puzzles facing labour economists in Australia. Previous research has stressed the importance of two factors in the explanation of this decline: the deterioration in the labour market in the second half of the 1970’s and the increased generosity of, and changes in eligibility provisions for, pensions. The evidence presented in the present paper questions the validity of these explanations, however. Data from a 1973 national survey which contains retirement plans formed before both the onset of the deterioration of the labour market and the substantial changes to the social security system are used to predict participation rates for various age groups in 1983. In general there are only minor differences between the predicted and actual participation rates. Our interpretation

9. See, for example, the age distribution of ex-servicemen presented in the Australian Bureau of Statistics’ publication Ex-Servicemen, Widows and Children, October 1979, Catalogue No. 4403.0

10. The importance of this influence has been acknowledged by most researchers.
BIBLIOGRAPHY

Australian Bureau of Statistics, (1979), Ex-Service Personnel, Widows and Children, October, Catalogue No. 4483.0

Australian Bureau of Statistics, (Various Years), The Labour Force, Catalogue No. 6204.0

Australian Bureau of Statistics, (1988), Persons Aged 50-69 Years Ceasing Full-Time Work, Australia, April, Catalogue No. 6235.0


