



MONASH University



# CSIRO-Monash Superannuation Research Cluster

## CLUSTER PROJECT 9: POST-RETIREMENT WEALTH AND ITS EFFECT ON HEALTH AND WELLBEING



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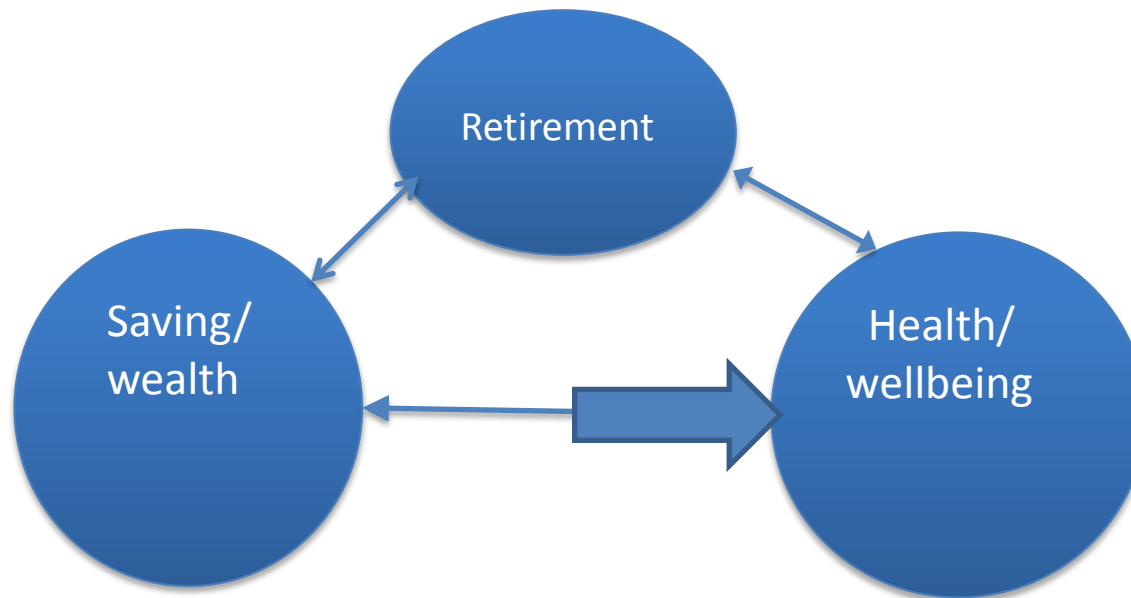
# Output to date

- Frijters P, Johnston DW, Shields MA, Sinha K. A lifestyle perspective of stock market performance and wellbeing.” submitted for journal publication earlier version available as <http://www.buseco.monash.edu.au/centres/che/pubs/workingpaper02-14.pdf>

# Wellbeing effects of retirement and the mediating role of income

- **Question: what is an adequate level of income in retirement?**
  - **Traditional answer based on replacement ratio – income needed to replace pre-retirement income**
  - **How does health and wellbeing change with retirement and how much income is needed to achieve a level of wellbeing over time?**

## The inter-relationship between wellbeing, income/wealth and retirement



## Literature

- **Retirement behaviour influenced by health factors:**
  - Magnitude of the effect of health on labour market behaviour
  - Effect of change in Social Security Disability Insurance on the work force attachment of older men
  - Health shocks influence labour market participation
- **Income determines savings and retirement planning:**
  - Literature suggests retirement behaviour is influenced by financial incentives
- **Health is influenced by income and wealth**
  - Rich people are healthier than poor people
- **Health is influenced by retirement status**
  - Many studies and most find –ve effect but some +ve; suggested differences by type of worker socioeconomic status

**Q.1: Are those who are retired in better or worse physical or mental health on average than those who are not? Are there groups (income) with different effects**

**Q.2 How does health change after retirement? Is it improved by higher pensions**

Use a longitudinal sample of the population, HILDA 2001-2012, who are either retired or not

3 main issues in identifying the size (sign) of causal relationships

Retire  $\longrightarrow$  Health and Pensions  $\longrightarrow$  Health of retirees

1. Definition of retirement

2. Selection:

- those who have retired may have been more unhealthy prior to retiring and that may persist leading to an association between poor health and retirement

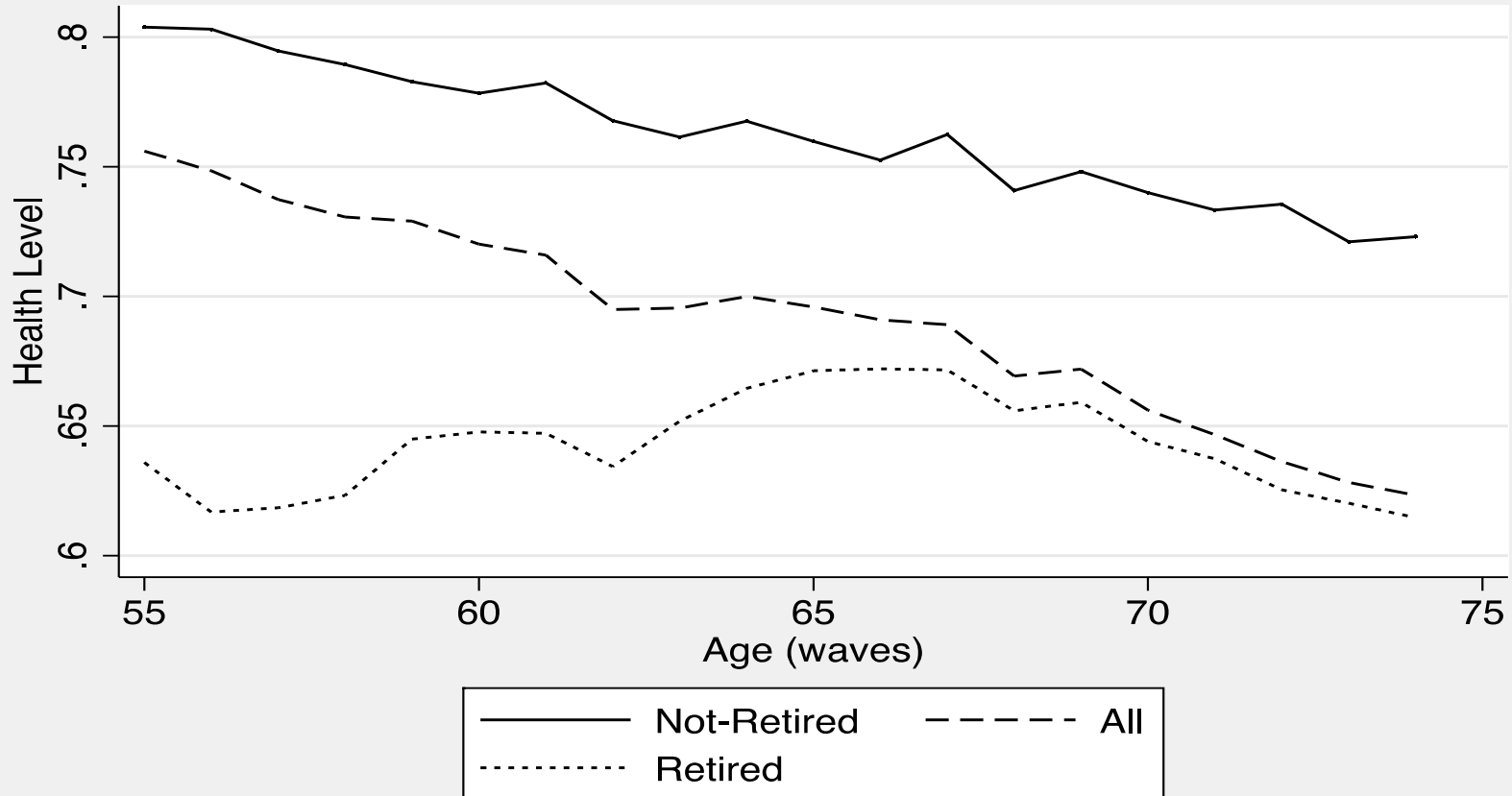
3. Confounding:

- good health may allow people to earn and save more and then retire earlier causing retirees to have higher income and better health

# Measuring health

- Actual health is not observed.
- Past health affects decision to retire and influences current health
- Retirees have a tendency to misreport health in order to justify their retirement decision.
- To address these biases we constructs a Health Index employing Bound et al (1999) method based on current self report and past health conditions.
- In addition we use include:
  - SF-36 Mental health (average); SF-36 Physical Health (average); Life satisfaction; Financial satisfaction

## Average Health Movements - Health Level HILDA (2001-2013)





# Defining retirement

- Existing literature has used the following variables to define retirement:
  - Self reported retirement status
  - Hours worked per week for individuals aged 50 and above (e.g.<20)
  - Not working (unemployed and not in labour force)
- For the purpose of the present analysis we have defined retirement as 54 years and above and not-working

# 3 approaches to causal effects of retirement and (pension) income on health

1. Instrumental variables (IV) for retirement assume wealth as exogenous (affects health independent of retirement)
2. IV for retirement and look at occupational subgroups as proxy for modifier of retirement effect on health from exogenous income/wealth (i.e. not directly influenced by health)
3. Predict health over time of retirees controlling for health prior to retirement modified by effect of state pension

## Two models estimated

Model 1 age 50+

$$H_{it} = \beta X_{it} + \omega_1 R_{it} + \varepsilon_{it} \dots \dots (1)$$

Model 2: Retired people

$$\Delta H_{it} = \beta X_{it} + \omega_1 DR_{it} + \varepsilon_{it} \dots \dots (2)$$

$H_{it}$  : Health of individual  $i$  at time  $t$ .

$X_{it}$  : Individual characteristics

$\Delta H_{it}$  : Change in health since retirement

$R_{it}$  : Retirement status

$DR_{it}$  : Time since retirement

Retirement (R) is endogenous but DR assumed exogenous. We look at the effect of income (independent of retirement decision) by stratifying by occupation in (1) and state pension in (2)

## Health effects of retirement – HILDA (2001 – 2013)

|                        | Health Index<br>(1) | Mental Health<br>(2) | Physical Health<br>(3) | Financial Satisfaction<br>(4) | Life Satisfaction<br>(5) |
|------------------------|---------------------|----------------------|------------------------|-------------------------------|--------------------------|
| Retired <sup>†</sup>   | -12.00***           | -12.64***            | -19.35***              | -2.65                         | -5.0**                   |
| log(per capita wealth) | 1.9***              | 0.9***               | 1.9***                 | 3.8***                        | 0.30                     |

<sup>†</sup>Retired is instrumented with predicted value of expectations of retirement at age 65 and age 75. All indices 0=worst 100=best

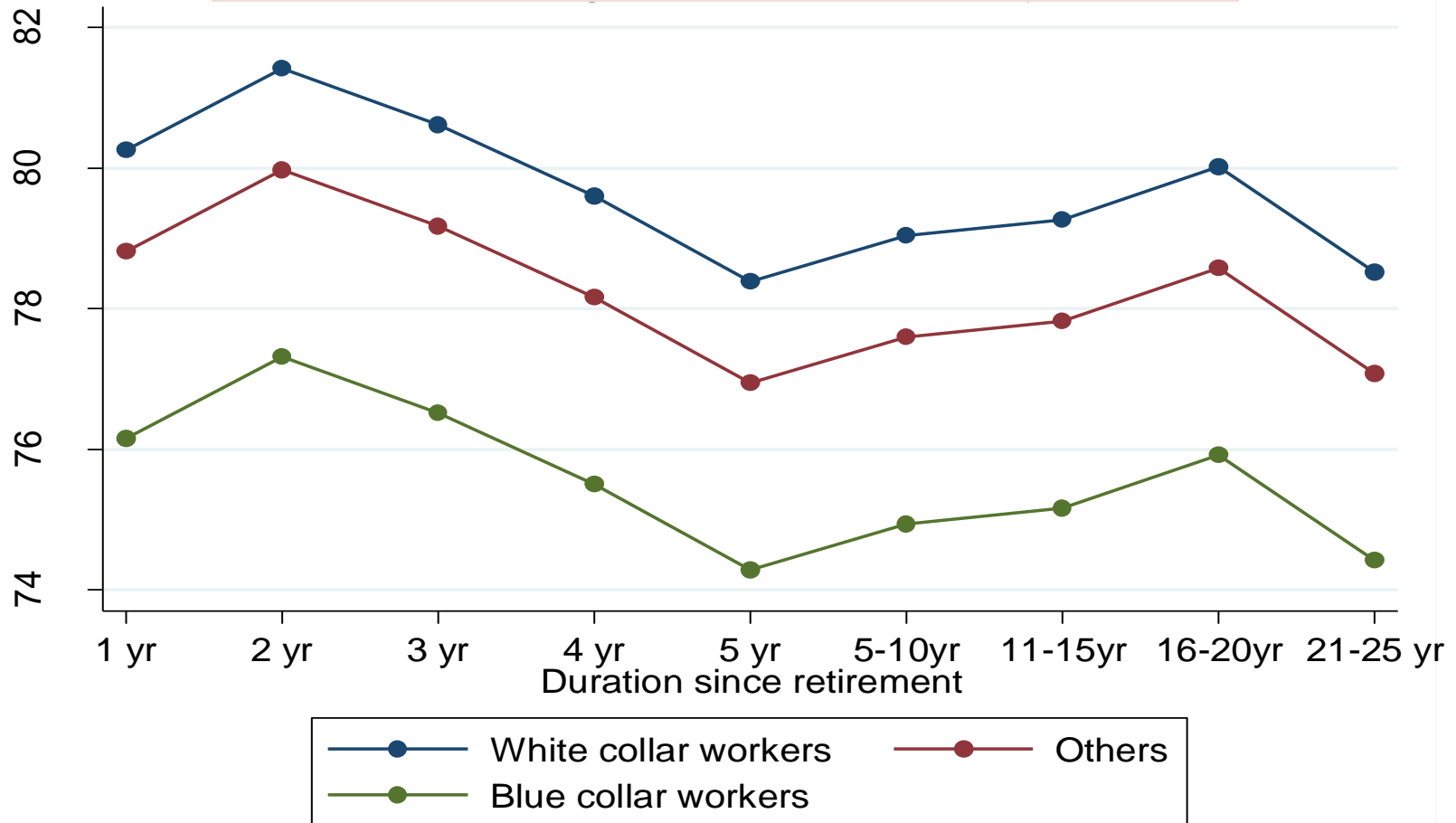
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Health effects of retirement by occupation – HILDA (2001 – 2013)

| VARIABLES              | Managers | Professionals | Technical/<br>Trade<br>Workers | Community/<br>Personal<br>Service | Clerical/Adm Sales<br>in Workes<br>Workers | Machinery<br>Workers | Labourers |           |
|------------------------|----------|---------------|--------------------------------|-----------------------------------|--|----------------------|-----------|-----------|
| Health Index           | -2.86*   | -3.04*        | -9.97***                       | -1.70                             | -9.87***                                   | -1.56                | -15.6***  | -4.46     |
| SF-36 Mental Health    | -2.55    | -4.670***     | -8.33***                       | -7.80***                          | -9.270***                                  | -9.55**              | -14.59*** | -8.71**   |
| Sf-36 Physical Health  | -2.959   | -3.701**      | -12.70***                      | -5.075                            | -10.83***                                  | -6.221               | -21.08*** | -6.183    |
| Life Satisfaction      | -1.30    | -2.61**       | -5.83***                       | -3.85                             | -2.38                                      | -6.48                | 1.38      | -2.44     |
| Financial Satisfaction | -2.77    | -5.31***      | -7.89***                       | -6.79**                           | -1.49                                      | -10.72**             | -8.67**   | -14.70*** |

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Mental health since retirement by occupation



Mental Health by Income Since Retirement

