Health and Labor Force Participation among Older Singaporeans

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The Question

• What is the role of health in intention to re-enter the labor force among older retired Singaporean men?
Outline of the talk

• Background and significance
• The question
• Theoretical framework
• Data and methods
• Results
• Take-home message
Young Country, Ageing Population:
Singapore’s age group composition, 1965-2045

The “demographic dividend” accounts for $\frac{1}{4} \sim \frac{2}{5}$ of the economic “miracle”. (Bloom and Williamson, 1998)

*Source: Korea National Statistical Office (2006)*
Is the demographic window of opportunity closing?

Trend in “Old-age Dependency Ratio”

Old-age dependency ratio = \( \frac{65 + \text{population}}{15 - 64 \text{ population}} \times 100 \)


Apocalyptic fear is often aroused: “the silver tsunami” and elder-quake

• More sick and poor elderly population
  – ↑ Health care expenditure (propelled by expensive tech)
  – ↑ Long-term care expenditure (nursing home, etc)
  – ↑ Informal care (labor market costs of family caregivers)
  – ↑ Public support for needy elderly

• Fewer working-age population
  – ↓ Tax revenue (worsened if many quit job for caregiving)
However…

As the saying goes, “age is only a number”.

So is the old-age dependency ratio.
What if more elderly (65+) remain in labor force?

“Effective old-age dependency ratio” = \[ \frac{\text{economically inactive 65+ population}}{\text{economically active 15+ population}} \times 100 \]

<table>
<thead>
<tr>
<th>Old-age dependency ratio</th>
<th>10</th>
<th>→</th>
<th>80</th>
<th>vs.</th>
<th>80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective old-age dependency ratio</td>
<td>+</td>
<td>→</td>
<td>++++</td>
<td>VS.</td>
<td>++</td>
</tr>
</tbody>
</table>
Even more, what about quality of elderly workforce?

- Not only more elderly (65+) remain in the labor force but the elderly workforce could also be of better “quality” and more productive.
  - Physically and cognitively healthier
  - Better-trained in job
- Not easily captured by number (same even for Effective ODR)
Potential (+) behavioral implications

With more years of working in old age expected,

- Greater **investment in education and training** while younger
  - Improved quality of labor force

- **Savings**
  - In old age (↑/→)
  - In younger age (↑/→/↓)
Benefits both at individual & societal levels: Well-matched employment in old age could...

- provide **better protection against poverty and catastrophic out-of-pocket spending**, thus relieving burden on public financing
- lead to **better psychological and physical health**, thereby reducing care burden by family and society
- result in **more active/productive/successful ageing**, thus creating more economic opportunities by and for the elderly
Ministerial Committee on Ageing: Key Pillars and Strategic Thrust

- Enhance employment and financial security
- Provide holistic, affordable healthcare and eldercare
- Enable ageing in place
- Promote active ageing

| Economic competitiveness | Fiscal impact | Socio-political impact |

Re-employment of Older Employees

“...workers should be given the option to stay on their jobs if they are medically fit and show satisfactory job performance...”

Enactment of the Re-employment Legislation

- Full implementation as a law in 2012

- Employers will be required to re-employ eligible employees who attain the statutory minimum retirement age of 62 years* on or after 1 January 2012

*or contractual retirement age, whichever is higher

http://www.re-employment.sg/
Longer life expectancy & working more years are happening in other advanced economies, too

<table>
<thead>
<tr>
<th>Country</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td>• Increase pension benefits if person works more years and retires later.</td>
</tr>
<tr>
<td></td>
<td>• Pension benefit eligibility age for women, increased from 60 to 65.</td>
</tr>
<tr>
<td></td>
<td>Equalizing to eligibility age for men, age 65.</td>
</tr>
<tr>
<td>USA</td>
<td>• Eligibility age for Social Security benefits raised from age 65 to 67.</td>
</tr>
<tr>
<td></td>
<td>Reform started 2000 and to be completed 2022.</td>
</tr>
<tr>
<td></td>
<td>• When reform is completed in 2022, benefits will reduce by 30%.</td>
</tr>
<tr>
<td>Japan</td>
<td>• Eligibility for flat rate part of pension increased to age 65 for men</td>
</tr>
<tr>
<td></td>
<td>in 2013 and to age 65 for women in 2018.</td>
</tr>
<tr>
<td></td>
<td>• Eligibility for earnings based part of pension increased to age 65 for</td>
</tr>
<tr>
<td></td>
<td>men in 2025 and to age 65 for women in 2030.</td>
</tr>
</tbody>
</table>
Labor Force Participation Rates 65+ (%)

Sources: Singapore – Calculation from figures Census of Population 2010, Singapore Department of Statistics; all other countries – OECD data
More Older Persons Work

Employed Males

Employed Females

Source: Ministry of Manpower Labor Force Survey 2010
Older male workers (60+), by category

Source: Ministry of Manpower Labor Force Survey 2010
Older female workers (60+), by category

Source: Ministry of Manpower Labor Force Survey 2010
Stylized facts on older workers in labor force

- 77% of firms with workers past the retirement age of 62 (MOM, 2011)
- 80% of firms re-employ workers aged 62 for an additional year (MOM, 2011)
- Older workers tend to be in the services sector, be plant and machine operators and be cleaners and laborers (MOM, 2010)
Does health matter?:
Problems Faced by Employed Senior Citizens (55+)

<table>
<thead>
<tr>
<th>Problems faced</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not as strong as before</td>
<td>16.2</td>
</tr>
<tr>
<td>Feel tired easily</td>
<td>15.4</td>
</tr>
<tr>
<td>Not as fast as before</td>
<td>14.3</td>
</tr>
<tr>
<td>Cannot think as fast before</td>
<td>6.4</td>
</tr>
<tr>
<td>Poor eyesight</td>
<td>4.9</td>
</tr>
<tr>
<td>Feel out of breath</td>
<td>3.9</td>
</tr>
<tr>
<td>Lower opportunities given</td>
<td>3.4</td>
</tr>
<tr>
<td>Younger colleagues tend to mix with their peers</td>
<td>3.2</td>
</tr>
<tr>
<td>Younger colleagues do not provide much support to me in my work</td>
<td>2.6</td>
</tr>
</tbody>
</table>

Research Question

- What is the role of health in intention to re-enter the labor force among older retired Singaporean men?

  - Why focus on men only?
    - retirement is poorly defined among women
    - much more likely to be a joint decision with husband’s employment
    - data limitation
Theoretical framework (1)

Intention to work again

Income (perceived adequacy, transfer from children, ...)

Health

Other factors (demographic, education, etc)

Retirement (vs. Still working)
Theoretical framework (2): Why health might matter and in what direction?

- **Better** health may increase intention to re-enter
  - It’s simply less difficult to work in better health
  - Longer subjective life expectancy, more income required

- **Poorer** health may increase intention to re-enter
  - Leisure would be less enjoyable in poorer health
  - Greater medical expenditures, more income required

- Direction is not unambiguous
  - Depends on which direction is dominant
  - Empirical question
Empirical issues

• Sample selection: Re-entry can only be asked among retirees
  → Probit model with sample selection estimated

• “Justification bias”: Poor (self-reported) health as reason for not intending to work (& not working currently)
  → Separate analysis by subjective health measure and objective health measures
Data & Variables

• **Data**: MCYS Social Isolation, Health, and Lifestyles Survey (2009)
  – Nationally representative sample of elderly Singaporeans (≥ 60 y) (N=5,000)
  – Analysis restricted to males aged 60+ but <80, no missing var. (N=1,745)

• **Dependent variable**
  – Intention to re-enter: 1 if yes to “Would you like to be working?”
  – Selection indicator (retirement): 1 if “retired and not working”

• **Two types of health measure**
  – **Subjective**: Self-reported health status (Very healthy/Healthier than average/Of average health/Somewhat unhealthy/Very unhealthy)
  – **Objective**: 1) three categories of # difficulties in physical ability, 2) cognition score, 3) depressive symptom score, and 4) any hospital admission in the past year

• **Control variables**: Age, ethnicity, education, years of working, perceived income adequacy, marital status, coresidence with child, and transfer from children
### Key numbers for the sample (M, 60-79)

<table>
<thead>
<tr>
<th>Still in labor force (38%)</th>
<th>Retired (62%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&quot;Would you like to be working?&quot;</td>
</tr>
<tr>
<td></td>
<td>Yes (17%)</td>
</tr>
<tr>
<td></td>
<td>No (83%)</td>
</tr>
</tbody>
</table>
Distribution of self-reported health

- Very unhealthy: 1.3
- Somewhat unhealthy: 12.4
- Of average: 61.2
- Healthier than average: 19.3
- Very healthy: 5.8
Self-reported overall health and intention to work

“Would you like to be working?”

<table>
<thead>
<tr>
<th>Self-reported Health</th>
<th>Re-entry</th>
<th>Retirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Healthy</td>
<td>0.28</td>
<td>0.51</td>
</tr>
<tr>
<td>Healthier than Average</td>
<td>−0.09 (0.08)</td>
<td>0.09* (0.04)</td>
</tr>
<tr>
<td>Of Average Health</td>
<td>−0.16* (0.08)</td>
<td>0.11* (0.04)</td>
</tr>
<tr>
<td>Somewhat Unhealthy</td>
<td>−0.21* (0.09)</td>
<td>0.21** (0.05)</td>
</tr>
<tr>
<td>Very Unhealthy</td>
<td>−0.22* (0.10)</td>
<td>0.20* (0.10)</td>
</tr>
</tbody>
</table>

*p<0.05, **p<0.01, marginal effects (average pred prob) with SE in parentheses
Objective measures of health and intention to work

"Would you like to be working?"

<table>
<thead>
<tr>
<th># of items with difficulty in physical ability</th>
<th>Re-entry</th>
<th>Retirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1</td>
<td>0.15</td>
<td>0.61</td>
</tr>
<tr>
<td>0.61 (Reference)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-3</td>
<td>0.03 (0.05)</td>
<td>0.07 (0.05)</td>
</tr>
<tr>
<td>0.07 (Reference)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4+</td>
<td>-0.12** (0.05)</td>
<td>0.21** (0.07)</td>
</tr>
<tr>
<td>0.21 (Reference)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p<0.05, ** p<0.01, marginal effects (average pred prob) with SE in parentheses

- Hospital admission: (−) & stat. sig.
- Cognitive/depressive sx. score: n.s.
## Other variables

<table>
<thead>
<tr>
<th></th>
<th>Re-entry</th>
<th>Retirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Older age group</td>
<td>–</td>
<td>+</td>
</tr>
<tr>
<td>More education</td>
<td>Not significant</td>
<td>–</td>
</tr>
<tr>
<td>Greater difficulty to meet expenses</td>
<td>+</td>
<td>Not significant</td>
</tr>
<tr>
<td>Kin members as first source of income support</td>
<td>Not significant</td>
<td>+</td>
</tr>
<tr>
<td>Married</td>
<td>Not significant</td>
<td>Not significant</td>
</tr>
</tbody>
</table>
Summary of key findings

- **Poorer health** (both in subjective and objective measures) was associated with lower intention to re-enter the labor force among older, retired Singapore men.
- **Perceived income inadequacy** was also associated with greater likelihood of re-entry.
- Variables that predicted retirement were not always predictive of re-entry.
Policy implications

• Health status may matter substantially in older workers’ labor force participation decisions (not only on retirement but also on re-employment).

• Special policy considerations are required for poor older adults in poorer health status.

• Investment in public health can have positive long-term economic effects.

• More questions raised than answered – Singapore’s re-employment act provides great opportunities for research on health and economic impacts from multidisciplinary angles.
Take-home message

• **Adult health** will be an increasingly important factor in Singapore’s economy, through older workers’ labor force participation.

• Successful **labor market policy** for older adults requires good population health and effective **health policy** to combat common chronic diseases.

• **The economic impacts of population ageing** will be influenced by public policy choice.
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Thank you!

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