Japan’s Challenge to Ageing
-Demographic Trend, Health Determinants, and Public Policies-

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Keynote Speech by Haruko Noguchi
Contents of today’s speech

- Challenges in the super aged society – Japan as an example -
- Fact findings by aggregated in selected countries
  - Demographic trends
  - Health status
  - Socio-economic status

- Health Determinants - Marital status & social network - by Ms. Rong FU in tomorrow–

- Population ageing and wellbeing: lessons from Japan’s long-term care
  - Public long-term care (LTC) policy in Japan & Japan’s LTCI in comparison
  - Impacts of LTCI: policy evaluation
  - LTCI and Japanese family values

- Conclusion & discussion
Challenges in The Super-aged Japan

Japan’s shrinking population faces shortage

As Japan ages, so too does its workforce

The elderly keep on toiling

Isabel Reynolds
Bloomberg

Tokyo | Sun, May 21, 2017 | 10:16 am

With a life expectancy of 87 years, Japanese are among the longest-living people on Earth (Bloomberg/File)

LIKE many firms in Aichi prefecture, Nishijinma, a maker of machine tools, finds it hard to find workers. Its solution in a country with a drum-tight labour market is

Yasuharu Shimamura works at his home in Okagawa, Saitama Prefecture.

National

Japan’s retirees heading back to work

By Mayuko Matsunaga
KYODO

Some companies are bringing retirees back into the office gained through decades on the job.

Such workers can offer valuable insights and placement is increasingly accommodating them as Japan faces a looming shortage of labour.

Sakae Kajita, 67, retired two years ago after a career with the National Police


Some say “old age” doesn’t really start until you’re 75

How to Boost Japan’s Shrinking Workforce? Redefine Old Age

By Yoshiaki Nohara

2017-02-16 05:13 GMT | 10:00
From: Benchmarq

A woman exercises with wooden dumbbells at a temple in Tokyo. Photograph: Tomohiro Ohsumi/Bloomberg

Fact findings by aggregated in selected countries
Demographic trend (1): Rate of population 65+ in Northern Europe & East Asian countries (1950-2100)

*estimated after 2015

Rates of aging 65+ in East Asian countries will be catching up to Japan, a top runner of population aging in the world in the next several decades.

Super-Aged Society (21%<65+)
Aged Society (14%<65+)
Ageing Society (7%<65+)

Definition by WHO

### Demographic trend (1) – Summary: Velocity of population aging in the society

<table>
<thead>
<tr>
<th>Proportion of seniors 65+</th>
<th>Ageing society</th>
<th>Aged society</th>
<th>Super aged society</th>
<th>Number of years of transition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&gt;7%</td>
<td>&gt;14%</td>
<td>&gt;21%</td>
<td>7% to 14%</td>
</tr>
<tr>
<td>Denmark</td>
<td>1925</td>
<td>1978</td>
<td>2027</td>
<td>53</td>
</tr>
<tr>
<td>Finland</td>
<td>1958</td>
<td>1994</td>
<td>2017</td>
<td>36</td>
</tr>
<tr>
<td>Norway</td>
<td>1885</td>
<td>1977</td>
<td>2027</td>
<td>92</td>
</tr>
<tr>
<td>Sweden</td>
<td>1890</td>
<td>1975</td>
<td>2014</td>
<td>85</td>
</tr>
<tr>
<td>China</td>
<td>2001</td>
<td>2026</td>
<td>2038</td>
<td>25</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>1984</td>
<td>2013</td>
<td>2024</td>
<td>29</td>
</tr>
<tr>
<td>Japan</td>
<td>1970</td>
<td>1996</td>
<td>2007</td>
<td>26</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>2000</td>
<td>2013</td>
<td>2027</td>
<td>13</td>
</tr>
</tbody>
</table>


- All countries will become “Super-aged society” until 2030s
- It took 26 years for Japan to shift from aging to aged society.
- East Asian countries have been aging much faster than Nordic countries, e.g. China (25 years); Hong Kong (29 years); Japan (26 years); and Korea (13 years) from 7% to 14%; China (19 years); Hong Kong (11 years); Japan (11 years); and Korea (14 years) from 14% to 21%.
- While Denmark (53 years); Finland (36 years); Norway (92 years); and Sweden (85 years) from 7% to 14%; Denmark (66 years); Finland (42 years); Norway (70 years); and Sweden (39 years) from 14% to 21%.
Demographic trend (2): Life expectancy (LE) at birth for both genders in Northern Europe & East Asian countries (1950-2100) *estimated after 2015 every 5 years

- Korea catch up the rest countries after 2000
- The extension of LE at birth for both genders in all countries looks quite similar, except for China.

Demographic trend (3) : LE at age 60 for both genders in Northern Europe & East Asian countries (1950-2100)

*estimated after 2015 every 5 years

Demographic trend (4) : Total Fertility Ratio (TFR) (1950-2100)
*estimated after 2015

- TFR of all counties has become below replacement ratio to maintain the current size of population until the last decades of last century
- Compared to Europe, changes in TFR in Asian countries look much more drastically
- TFR↓→Younger population↓→ratio of 65+

Demographic trends - Summary

- Backgrounds of an increase in rate of population 65+
  - LE at birth and at age 60 will be expanding in the next several decades
  - A drastic decrease in TFR in Asian countries would contribute to an increase in rate of 65+ to population.

Population aging would cause:
- change in structure of disease
- increase in demand for medical and long-term care
- increase in demand for formal/informal human resources for medical and long-term care
- increase in cost of medical and long-term care
Health status (1):
A change in mortality ratio by cause (2000 and 2012)

From 2000-2015:

- In China and Finland, the ratio of mortality rate of communicable disease has decreased, while the ratio of Non-communicable diseases (NCDs) has increased in 2000-2015.
- On the other hand, in Korea and Denmark, the ratio of communicable disease increased, and the ratio of NCDs decreased.
- The ratio remains relatively stable in Japan, Norway, and Sweden.

=>Structure of disease has been changing, but the timing of the change from communicable to NCDs would vary among countries.

Source: World Health Organization “Global Health Observatory Data”
Health Status (2): Difference in LE at birth and healthy LE (2000 and 2013)

From 2000-2015:
- Both LE at birth and healthy LE without any difficulties in daily living has expanded everywhere
- In China and Japan, the difference between LE at birth and healthy LE has shrunk
- On the other hand, the difference expanded in the rest of these countries

=> The difference between LE at birth and healthy LE prospects the length of care need. Therefore, expanding the difference would imply an increase in demand for medical and long-term care

Source: World Health Organization "Global Health Observatory Data"
In East Asian countries, a major cause of a decrease of TFR would be an increase in “never married” population. The hypothesis might be applicable to Japan and Korea. In Northern Europe, the ratio seems to be U-shape curve.

Source: United Nations "Demographic Yearbook"
Socio-economic status (1b) : Ratio of female population never married at age 50 (1950-2015)

- Similar trend to male population
- U-shape curve becomes more clearly for female than male in Northern Europe
- Socio-demographic, economic, and political causes of lower TFR would vary among countries, such as “one-child policy” in China

Source: United Nations "Demographic Yearbook"
In the past decade,
- In East Asian countries, ratios of living alone or 2 person among household head 65+ has increased
- The ratio became more than 70% in Japan and Korea
- A decrease in size of household would reflect lower TFR associated with an increase in the ratio of “never married” population
- In Northern Europe, e.g. Norway, single household decreased and couple has increased

=> In contrast to an increase in demand for care (in particular long-term care), lack of informal caregivers within household might be a significant issue in Asian societies, with which Japan currently faces
A jump from 2010-2011 in Sweden. What happened?
A jump from 2010-2011 in Sweden. What happened?

Health and socio-economic status - Summary

Related to population aging:

☑ Structure of disease has been changing, but the timing of the change from communicable to NCDs would vary among countries

☑ The difference between LE at birth and healthy LE implies an increase in demand for medical and long-term

☑ In contrast to an increase in demand for care (in particular long-term care), lack of informal caregivers within household (because of shrinking size of household) might be a significant issue in East Asian societies, with which Japan currently faces.

☑ As background of such demographic trends, educational achievement has become higher and so does opportunity costs of marriage and having children among females. Consequently, female working participation rate has increased and marriage rate and TFR have been decreasing.
Population ageing and wellbeing: Lessons from Japan’s long-term care


Co-authors: Nanako Tamiya MD (co-lead author), Haruko Noguchi PhD (co-lead author), Akihiro Nishi MD, Michael Reich PhD, Naoki Ikekami MD, Hideki Hashimoto MD, Kenji Shibuya MD, Ichiro Kawachi MD, John Creighton Campbell PhD
Japan—a call for research papers

Kenji Shibuya, Lincoln C Chen, Keizo Takemi, William Summerskill

Japan achieved universal health insurance coverage in 1961 and now has the longest life expectancy in the world. Japan's strengths are, however, now becoming its weaknesses. Universal coverage is not the end but the beginning of new challenges—a rapidly ageing population, escalating health-care expenditures, and sustainability of universal coverage—that all countries will have to face in the future. How can Japan reinvigorate its health system to be more sustainable and equitable?
Scopes of this study

- Give a historical overview of the public long-term care (LTC) policy in Japan.
- Clarify the uniqueness of Japan’s Long-Term Care Insurance (LTCl-which was introduced in 2000) compared to LTC provisional systems in other countries, as a response to the society aging.
- Evaluate the impact of LTCl on old persons and informal caregivers.
- Extract global lessons from Japan’s experience.
Historical overview of Japanese health care and welfare policies for older population in Japan

<table>
<thead>
<tr>
<th>Proportion of people aged 65 or over</th>
<th>Year</th>
<th>Start and implementation of the major policies</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.7% (1960)</td>
<td>1963</td>
<td>Enforcement of Act for the Welfare of the Aged</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* Setting up special nursing homes for the aged</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* Legislation for home helpers</td>
</tr>
<tr>
<td>7.1% (1970)</td>
<td>1973</td>
<td>Free access to medical care for all the older adults</td>
</tr>
<tr>
<td>9.1% (1980)</td>
<td>1982</td>
<td>Enforcement of Medical Service Act for the Aged</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* Including the introduction of a fixed amount of copayment among older adults medical care</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Establishment of &quot;Gold Plan&quot; (a 10-year strategy for promotion of health and welfare for the aged)</td>
</tr>
<tr>
<td></td>
<td>1989</td>
<td></td>
</tr>
<tr>
<td>12.0% (1990)</td>
<td>1994</td>
<td>Establishment of &quot;New Gold Plan&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* Focalizing on home care</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A government report from a working team for care and self-support of older adults</td>
</tr>
<tr>
<td>14.5% (1995)</td>
<td>1996</td>
<td>Agreement by the ruling three parties</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* Memorandum of foundation of Long-term care insurance system</td>
</tr>
<tr>
<td></td>
<td>1997</td>
<td>Enactment of Long-term Care Insurance Act</td>
</tr>
<tr>
<td>17.3% (2000)</td>
<td>2000</td>
<td>Enforcement of Long-term Care Insurance Act</td>
</tr>
<tr>
<td></td>
<td>2005</td>
<td>Amendment of Long-term Care Insurance Act</td>
</tr>
</tbody>
</table>

* Source: This historical overview was provided by MHLW
Goals of Long-Term Care Insurance (LTCI)

- Official purpose: to help those in need of long-term care “to maintain dignity and an independent daily life routine according to each person's own level of abilities.” (Ministry of Justice 1997)

- Other goals: 1) introducing competition, consumer choice, and participation by for-profit companies into what had been a bureaucratic system, 2) achieving savings in medical spending by moving people from hospitals into the LTCI system, 3) emphasizing community-based care over institutional care, and especially 4) relieving burdens on family caregivers. (Campbell 2002; Tsutsui et al. 2007)
# International comparison of LTC policy for caregivers

<table>
<thead>
<tr>
<th>Eligibility criteria&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Austria</th>
<th>Canada</th>
<th>Germany</th>
<th>Netherlands</th>
<th>Sweden</th>
<th>USA</th>
<th>UK</th>
<th>Japan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal</td>
<td>Universal</td>
<td>Usually means tested</td>
<td>Universal</td>
<td>Universal</td>
<td>Universal</td>
<td>Medicaid: Means-tested Medicare: Universal</td>
<td>Means-tested</td>
<td>Universal</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fund&lt;sup&gt;d&lt;/sup&gt;</th>
<th>Austria</th>
<th>Canada</th>
<th>Germany</th>
<th>Netherlands</th>
<th>Sweden</th>
<th>USA</th>
<th>UK</th>
<th>Japan</th>
</tr>
</thead>
<tbody>
<tr>
<td>General taxation</td>
<td>General taxation</td>
<td>Insurance contributions</td>
<td>Insurance contributions</td>
<td>General taxation</td>
<td>Insurance contributions and general taxation</td>
<td>General taxation</td>
<td>Insurance contributions and general taxation</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cash Benefit&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Austria</th>
<th>Canada</th>
<th>Germany</th>
<th>Netherlands</th>
<th>Sweden</th>
<th>USA</th>
<th>UK</th>
<th>Japan</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;full cash&quot; allowance (care receiver &amp; caregiver)</td>
<td>Cash allowance (care receiver)</td>
<td>Unrestricted cash allowances (family based arrangements)</td>
<td>&quot;personal budget&quot; to buy formal or informal home care</td>
<td>Sometime cash benefit for family caregivers</td>
<td>No cash benefit. Formal home-based care</td>
<td>No cash benefits</td>
<td>No cash benefit. Formal care is encouraged</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Provision&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Austria</th>
<th>Canada</th>
<th>Germany</th>
<th>Netherlands</th>
<th>Sweden</th>
<th>USA</th>
<th>UK</th>
<th>Japan</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;full cash&quot; strategy</td>
<td>Government-funded services</td>
<td>Profit &amp; nonprofit providers</td>
<td>Government, nonprofit and private providers</td>
<td>Local public monopolies and private providers (small)</td>
<td>Private profit and nonprofit providers</td>
<td>Public and private providers</td>
<td>Nonprofit, public and private providers</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cash Benefit Programme&lt;sup&gt;ab,c&lt;/sup&gt;</th>
<th>Austria</th>
<th>Canada</th>
<th>Germany</th>
<th>Netherlands</th>
<th>Sweden</th>
<th>USA</th>
<th>UK</th>
<th>Japan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash allowance</td>
<td>No cash benefit</td>
<td>Option of cash allowance or care-in-kind or a combination of the two</td>
<td>Personal budget available to all those qualifying for long-term home-based care</td>
<td>Cash payments-minimum need of 17 hrs a week of care</td>
<td>Medicaid pays for a specified number of hours of a user-hired personal assistant</td>
<td>Direct payment</td>
<td>No cash benefit</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employment of relatives&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Austria</th>
<th>Canada</th>
<th>Germany</th>
<th>Netherlands</th>
<th>Sweden</th>
<th>USA</th>
<th>UK</th>
<th>Japan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>NA</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes (but not in the same house)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>NA</td>
</tr>
</tbody>
</table>

figure 1 International comparisons on LTC covering and spending

Source: Rodrigues R, Schmidt A. Paying for Long-term Care. Policy Brief; Vienna; European Centre, , 2010. Japan was not included and was estimated with data from Campbell J, Ikegami N, Gibson M. Lessons from Public Long-Term Care Insurance in Germany and Japan. Health Affairs 39:1 (January 2010), 87-95
Given the past decade of rapid expansion of LTCI services as the major response to the society ageing in Japan, it is worthwhile to evaluate the effects on the intended beneficiaries from both macro and micro viewpoints, drawing on a national representative data - the Comprehensive Survey of People's Living Conditions (CSPLC).
What kinds of outcomes should we measure as the impacts of LTCI?

• Focusing explicit/implicit LTCI’s key goals, we evaluate the effects of the LTCI on outcomes as follows:

  (1) Health status of care recipients and caregivers
      - self-rated health status (SRH)
      - instrumental activities of daily living (iADLs)

  (2) Labor participation (working/no working) of caregivers

  (3) Time allocation of caregivers
      - hours of informal care per day,
      - hours of working per week,
      - hours of other activities than informal care and working per day

  (4) Household economy
      - % spending for formal care out of household expenditure
Strategy for Program Evaluations

• Use the introduction of LTCI in the year of 2000 as a “natural experiment”.

• Adopt the simplest strategy for setting up difference-in-difference (DD) in the context of quasi-empirical design, where outcomes are observed for two groups over two time periods.
  - Define two groups for households which use formal care as “the treated (treatment group)” and for those which do not use formal care as “the controlled (control group)”.
  - Compare two periods before (1998) and after (2004) the introduction of LTCI. CSPLC was conducted in the year of 2001 just after the LTCI. However, we do not use the data in 2000 because one year must not an appropriate time frame to evaluate the impacts of universal LTC program.
Basic model for DD

\[ Y_{t,i} = \alpha + \beta D_{t,i} + \gamma After_i + \delta D_{t,i} * After_i + \varphi X_{t,i} + \varepsilon_{t,i} \]

where
- \( Y_{t,i} \) are \( i \)th individual’s/household’s outcomes at time \( t \) (SRH, iADLs, labor participation, time allocation of caregivers, household economy)
- \( D_{t,i} = 1 \) if in treatment group (formal care users) at time \( t \), \( D_{t,i} = 0 \), otherwise
- \( After_i = 1 \) after the introduction of LTCI [2004], \( After_i = 0 \), otherwise [1998]
- \( \delta \), the coefficient of interaction term \( (D_{t,i} * After_i) \) provides DD estimate
- \( X_{t,i} \) is \( i \)th individual’s characteristics at time \( t \)
- \( \varepsilon_{t,i} \) is a \( i \)th individual’s residual at time \( t \)

<table>
<thead>
<tr>
<th></th>
<th>Treatment Group</th>
<th>Control Group</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before LTCI</td>
<td>( \alpha + \beta )</td>
<td>( \alpha )</td>
<td>( \beta )</td>
</tr>
<tr>
<td>After LTCI</td>
<td>( \alpha + \beta + \gamma + \delta )</td>
<td>( \alpha + \gamma )</td>
<td>( \beta + \delta )</td>
</tr>
<tr>
<td>Difference</td>
<td>( \gamma + \delta )</td>
<td>( \gamma )</td>
<td>( \delta )</td>
</tr>
</tbody>
</table>
Data

- Comprehensive Survey of People’s Living Conditions (国民生活基礎調査-CSPLC), conducted by MHLW in the years of 1998 and 2004, before/after the introduction of LTCI

- So far, the best available national representative data with a decent number of repeated cross sectional samples

  - The baseline questionnaires of CSPLC were composed of household and health surveys. Out of district areas designed for the 1995 and 2000 Census, CSPLC randomly sampled 5,240 and 5,280 regional clusters from 47 prefectures in 1998 and 2004, respectively.

  - In 1998 and 2004, a total of 721,288 and 619,115 individuals within 247,662 and 220,836 households living in the regional clusters answered the questionnaires (response rates: 89.6% and 79.8%).
Study population

• We created two files for care recipients and informal caregivers as follows:

- Care recipients’ file: Focusing on non-institutional population, 65+ who need any supports for the daily living reside within the family (including single household). The # of elderly persons who need care in the community was 7,539 (1.0%) and 18,604 (3.0%), in 1998 and 2004.

- Informal caregivers’ file: Those who provide informal care to other family members 65+ who need any supports for daily living. The # of caregivers are 6,767 (0.9%) and 14,084 (2.3%) in 1998 and 2004. Since some caregivers lived with more than one frail elderly person, we identified an elderly person who needs the longest hours of care per day; who has been bedridden for the longest months; or the oldest as the main care recipient.
Major difficulties in CSPLC

• Selection bias in treatment and control groups
  - In CSPLC, formal care users (as treatment group) and informal care users (as control group) are not randomly selected.
  - For example, male elderly persons living alone in urban areas are more likely to use formal care than female elderly persons living with other family members in rural areas. The higher level of income would motivate the utilization of services provided by resources outside of the household.

*Propensity score matching (PSM):* Matching treated and controlled observations on the estimated probability of being treated (propensity score).
Figure 2: Trends of percent formal care use out of people age 65+ who need care by household income status before and after the long-term care insurance in 2000.

χ² = 2.7311
P value = 0.2552
n = 6432

χ² = 4.5655
P value = 0.1020
n = 4389

χ² = 7.2654
P value = 0.0264
n = 5574
One-to-one matching strategy

• Every individual caregiver who used formal services is matched one-to-one with a care recipient (and a caregiver) who does not use formal services with a similar propensity score.

• Matched on the basis of the propensity score

\[ P(X_{t,i}) = \text{Prob}(D_{t,i} = 1|X_{t,i}) \]

where
- \( X_{t,i} \) is \( i \)th individual’s characteristics at time \( t \)
- \( D_{t,i} = 1 \) if in treatment group (formal care users) at time \( t \), \( D_{t,i} = 0 \), otherwise
- Not matching for each participant with exactly the same value of \( X_{t,i} \), match on the probability of using informal care (propensity score)
A graphical image of
One-to-one matching strategy (created by Y. Todo)

Formal service users  Selection Bias  Non users

Mean difference in outcomes in these groups
"True" effects of the policy/system

Choosing non service users with similar PS to service users

"True" effects of the policy/system
Example results on balancing test after Matching

Compared unmatched with matched samples in 1998 and 2004, characteristics b/w treated and controlled group are more balanced among matched samples.

As results, we apply DD estimates to 5,042 and 4,556 care recipients and 4,224 and 4,532 informal caregivers in 1998 and 2004, respectively, out of which a half number of individuals are categorized into treatment (or control) group.
A graphical image of DD of treatment and control groups before/after the introduction of LTCI

Outcomes

Transition of means in formal service users

Transition of means in matched non formal service users

“True” effects of LTCI

Differences in various characteristics in service users and non service users

Transition of means in non formal service users

1998

Introduction of LTCI (2000)

2004

Time (year)

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Regression model</th>
<th>Entire sample</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Effects for older people</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subjective health status (excellent/very good vs fair/poor/very poor)</td>
<td>Logit</td>
<td>1.03</td>
</tr>
<tr>
<td>95% confidence intervals</td>
<td>(0.84-1.26)</td>
<td></td>
</tr>
<tr>
<td>IADL status (any difficulties in IADL vs no difficulties)</td>
<td>Logit</td>
<td>0.96</td>
</tr>
<tr>
<td>95% confidence intervals</td>
<td>(0.80-1.14)</td>
<td></td>
</tr>
<tr>
<td><strong>Effects for family caregivers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subjective health status (excellent/very good vs fair/poor/very poor)</td>
<td>Logit</td>
<td>0.98</td>
</tr>
<tr>
<td>95% confidence intervals</td>
<td>(0.82-1.18)</td>
<td></td>
</tr>
<tr>
<td>Hours of informal care per day</td>
<td>Tobit</td>
<td>-0.81</td>
</tr>
<tr>
<td>95% confidential interval</td>
<td>(-1.19--0.43)</td>
<td></td>
</tr>
<tr>
<td>Labour participation (working vs no working)</td>
<td>Logit</td>
<td>1.09</td>
</tr>
<tr>
<td>95% confidence intervals</td>
<td>(0.89-1.33)</td>
<td></td>
</tr>
<tr>
<td>Hours of working per week</td>
<td>Tobit</td>
<td>1.25</td>
</tr>
<tr>
<td>95% confidence intervals</td>
<td>(-0.36-2.87)</td>
<td></td>
</tr>
<tr>
<td>Hours for other activities than informal care and working</td>
<td>Tobit</td>
<td>0.67</td>
</tr>
<tr>
<td>95% confidence intervals</td>
<td>(0.27-1.07)</td>
<td></td>
</tr>
<tr>
<td><strong>Effects of household economy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% spending for formal care out of household expenditure</td>
<td>OLS</td>
<td>-0.05</td>
</tr>
<tr>
<td>95% confidence intervals</td>
<td>(-0.06--0.04)</td>
<td></td>
</tr>
</tbody>
</table>
Main results (summary of findings)

• Introduction of LTCI was not associated with health status of older care recipients.

• Introduction of LTCI was associated with the reduction of hours of informal care per day, but not with health status, labor participation, hours of working, or hours of other activities.

• Introduction of LTCI was associated with the reduction of % spending for formal care out of household expenditure
Main results with stratification by income level (table 1)

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>By annual income status of household†</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>&lt;=33 Percentile</td>
</tr>
<tr>
<td>Effects for older people</td>
<td></td>
</tr>
<tr>
<td>Subjective health status</td>
<td>Logit</td>
</tr>
<tr>
<td>95% confidence intervals</td>
<td>(0.63-1.31)</td>
</tr>
<tr>
<td>IADL status</td>
<td>Logit</td>
</tr>
<tr>
<td>95% confidence intervals</td>
<td>(0.57-1.05)</td>
</tr>
<tr>
<td>Effects for family caregivers</td>
<td></td>
</tr>
<tr>
<td>Subjective health status</td>
<td>Logit</td>
</tr>
<tr>
<td>95% confidence intervals</td>
<td>(0.69-1.32)</td>
</tr>
<tr>
<td>Hours of informal care per day</td>
<td>Tobit</td>
</tr>
<tr>
<td>95% confidential interval</td>
<td>(-1.13-0.23)</td>
</tr>
<tr>
<td>Labour participation</td>
<td>Logit</td>
</tr>
<tr>
<td>95% confidence intervals</td>
<td>(0.63-1.26)</td>
</tr>
<tr>
<td>Hours of working per week</td>
<td>Tobit</td>
</tr>
<tr>
<td>95% confidence intervals</td>
<td>(-3.37-2.12)</td>
</tr>
<tr>
<td>Hours for other activities than</td>
<td>Tobit</td>
</tr>
<tr>
<td>informal care and working</td>
<td></td>
</tr>
<tr>
<td>95% confidence intervals</td>
<td>(0.20-1.61)</td>
</tr>
<tr>
<td>Effects of household economy</td>
<td></td>
</tr>
<tr>
<td>% spending for formal care out of</td>
<td>OLS</td>
</tr>
<tr>
<td>household expenditure</td>
<td>(Coefficients)</td>
</tr>
</tbody>
</table>
Results in each income-stratified group

• Introduction of LTCI was not associated with health status of older care recipients over the groups.

• The effect of introduction of LTCI on the reduction of hours of informal care per day was the largest among the high income households and the smallest among the low income households. A likely explanation for this difference is that for higher-income women, the opportunity costs of caregiving are high because they can get higher wages. Note also that employers tend to offer care leave only to full-time workers with relatively high income.

• Introduction of LTCI was associated with the reduction of % spending for formal care out of household expenditure across income levels.
**From the Results of Empirical section**

- **Wellbeing of care recipients**
  The results of our before-after comparisons show no overall impacts of LTCI on either subjective health status or instrumental activities of daily living of recipients. It appears that maintenance rather than improvement in health and functional status of frail older people is the appropriate goal for LTC programs.

- **Wellbeing of caregivers**
  Caregivers’ self rated health status was not significantly affected according to our analysis.

- **Opportunity losses for caregivers**
  After the introduction of LTCI, average caregiving significantly dropped by 0.81 hours a day, and other activities rose by 0.67 hours. However, impacts differ by income level.

- **Household economy**
  The proportion of household expenditure spent on out-of pocket payment for formal long-term care decreased by 5% in 2004 compared to before LTCI was introduced. This change was almost the same across income levels (Iwamoto Y. 2010).
LTCI and Japanese family values

How it fits into the Japanese socio-cultural environment?

• Has Japan’s LTCI program solved the problems of frailty and dependence for elderly recipients and their families?
  - No... LTCI in Japan seeks to relieve the burdens of family caregivers by replacing some of their duties with formal services, thereby giving them more choice to work or pursue other interests. But..

• But does Japanese LTCI fully liberate Japanese family caregivers?

As formal services expanded they became common and accepted as natural even in the most old-fashioned rural areas--

Japan actually has a higher institutionalization rate (about 5.5% of the 65+ population) than the OECD average (3.3%) , but still long waiting lists.
Challenges, responses, and recommendations

• Are home care services appropriate?
  - The empirical evidence that LTCI has relieved caregiver burdens is thin. Providing more night visits and respite care, and helping caregivers balance work and life as would be helpful. Beyond that, Japan needs additional services aimed specifically at helping family caregivers (counseling, community based support).

• Employment opportunities for family caregivers
  - Specialized job training should be made available.

• Fiscal sustainability
  - The 2006 reform was successful (figure 3B). Constraining spending more severely would require cutting coverage, benefits, which would be quite difficult. More likely is to distribute the burden differently among age groups or between tax and premium revenues. Total government revenue (taxes and social insurance premiums) per GDP (%) 33.5% Japan, United States (34.0) the UK (41.4), Germany (43.9), France (49.6) and Sweden (56.3).

• Common problems
  - Overdependence on institutions, human resources, coordination between long-term care and medical care.
Global lessons

• Services rather than cash
  - with extensive day care, many frail older people regularly get out of the house, socialize with peers, participate in healthful activities, and are monitored by staff while their family caregivers get some time off

• Consumer choice, with assistance
  - Consumer choice as the main mechanism for quality control
  - Care managers (Germany has started)

• Comprehensive design, flexible management
  - Every three years each municipality must draw up a work plan

• Specializing in frail older people
  - The needs and preferences of most frail older people and their families differ from those of younger disabled people
Key messages

- The number of people age 65+ in Japan almost doubled in the past two decades, reaching 29 million—or 23 percent of the population—in 2010. Demographic projections estimate that number of older people will level off at about 40 million, while younger people will continue to decrease.
- In 2000 Japan implemented public, mandatory long-term care insurance (LTCI). It is one of the most generous LTC systems in the world in terms of coverage and benefits.
- A decade of experience has proved LTCI to be effective and manageable, including holding expenditures to the growth rate of the target population.
- Japan provides only services rather than “cash for care.” The most-popular service is adult day care, with 1.9 million users (6.5% of the 65+ population), benefitting both frail older people and their caregivers.
- LTCI has significantly increased use of formal care with less financial burdens, though analysis found increased labor participation among family caregivers only in higher-income households due to their high opportunity costs.
- Distinctive features including the services-only strategy, consumer choice with expert advice, and comprehensive organization with flexibility in management, and specializing in older people, offer important lessons to long-term care policy makers and experts around the world.
Reference for this lecture

• International Labor Organization (ILO) "ILOSTAT"


• OECD "OECD Stat"

• Statistics Bureau "Census"

• Statistics Bureau "Employment Status Survey"

• Statistical Bureau “Labor Force Survey”

• United Nations "Demographic Yearbook"
Tack för din uppmärksamhet!

Thank you for listening!

ご静聴ありがとうございました！