Population Aging and Intergenerational Transfers in Taiwan

(NTA Workshop III)

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Outline

I. Progress and problems
   ✓ time series; cross-country (MLTLM)...
   ✓ Problems: population, macro, micro data, ...

II. US-Taiwan Comparison
   ✓ from Taiwan’s perspective

III. An Application
   ✓ economic returns of childrearing
I. Progress

- **time series:**
  - 1981-2003
  - LCD: private C, public C, YL, ...

- **MLTLM:** Taiwan 1998 vs. US 2000
real LCD
(deflated by 2001 GDP deflator)

1981
2003
real LCD, per capita
(deflated by 2001 GDP deflator)
real LCD, per capita
(deflated by 2001 GDP deflator)
real LCD, by cohort
(deflated by 2001 GDP deflator)
real LCD, per capita, by cohort
(deflated by 2001 GDP deflator)
Observations

- LCD: higher on both ends, lower in the middle part
- Cohort trend: earlier to retire, (but later to work?)...

(cross-country comparison reported later.)
Problems of data

- **population accuracy**
  - survival rate $>1$ for young ages $\rightarrow$ backward extrapolation
  - No detail for 80+/90+ in some $\rightarrow$ use lifetable,…

- **macro controls**
  - NHI not included in Gov! $\rightarrow$ need separate estimates
  - education and health: gov C on edu $\neq$ (public) edu exp.
  - change of accounting system: SNA68 to SNA93 last year

- **micro data**
  - change in definition, coding …
II. US and Taiwan

- Taiwan in 1998 vs. USA in 2000
  - data: MLTLM
  - perspective: relevance for Taiwan
per capita LCD
Taiwan 1998 vs. USA 2000

Note: normalized by Mean YL, age 20-40
Per Capita LCD
Taiwan 1998 vs. US 2000

Note: normalized by Mean YL, age 20-40
Observations (1)

Large lifecycle differences

- Americans retire later than Taiwanese.
- American elderly consume more than the non-elderly and Taiwanese, ...
Observations (2)

Differences in C benefits

- Taiwan: more spent on (private) education
- US: more spent on health

Differences in C financing

- Taiwan: more from *inter vivos* transfers
- US: from asset reallocation (capital income and dis-saving) or public transfers
Consumption by Components

[Bar chart showing consumption by age group (0-19, 20-64, 65+) and components (Health Private, Health Public, Education Private, Education Public, Other Private, Other Public) for Taiwan and USA.]
Finance of C
age 0-19 (per capita)

---|---
Inter Vivos Transfers | Work
---|---
37.6 | 5.8
29.6 | 3.4
Public Transfers | Public Transfers
---|---
56.6 | 67.8
Finance of C
age 65+ (per capita)
Questions Not Yet Answered

¿ future Taiwan ≈ current US?

¿ implications?
Past records and future challenges

(a) first approximation – varying weights
(b) current USA as analog – LCD patterns
(c) data by cohort – adjustment on trend
(d) Japan as analog – shifting expectations

(source: Ogawa & Matsukura, 2005)
(a) Impact of Aging
Population Aging in Taiwan

![Graph showing population aging in Taiwan from 1998 to 2030. The graph compares the number of persons across different age groups. The population is expected to decrease significantly after the age of 60 by 2030.]
LCD of Taiwan
weighted by size of age group

Note: normalized by Mean YL, age 20-40
Impact of Aging on LCD
weighted by size of age group

Note: normalized by Mean YL, age 20-40
1st Approximation

- the same LCD profile, with older population structure,
- a substantial rise for the elderly
- with minor reduction for the young, and little change for the working age group.
(b) US as Future of Taiwan

Findings from MLTLM

- Relative to Mean Consumption Age 20-64
  - Taiwan
  - USA

- Percentage of Consumption:
  - Work
  - Asset Reallocations
  - Inter Vivos Transfers
  - Public Transfers
  - Bequests

---|---
7.2 | -14.5
36.7 | 29.3
55.4 | 39.3
15.2 | 30.6
12.4 | 30.6
US as Proxy of Future Taiwan

- US elderly spend more
- US elderly rely more on public transfers or self-help (from dis-saving..), rather than family support,…

Q: Is Taiwan more like the US over time?
(c) LCD by Cohorts
(cohort born 1898~1998, p.c. ,, real 2001 GDP deflator)
LCD Increase on Both Sides

- Increase in LCD for both the young and the elderly over time,
- larger contribution during working age
(d) Effect of Expectations

Macro evolution is based on micro behavior.

- People are forward-looking, therefore expectation matters (Lucas Critique)
- What to do in long-term projection?
Japan vs. Taiwan

- Similarity in culture: Confucianism, ...
- Ahead of Taiwan in many aspects
  - “Flying geese” in industrial development
  - Demographic transformation: e.g., aging and decline in population size
  - Norm and expectations: e.g., family support
Trends in norms and expectations about care for the elderly: Japan, 1950-2004

Questions asked of married women, age 15-49, by mainichi shimbun, quoted from Ogawa and Matsukura (2005)
Japan’s Plight Applicable to Taiwan?

Ogawa and Matsukura (2005)

- private transfers: reduced family supports
- public transfers: not to be relied on?
- demographic changes: aging + lowest low fertility
- HC quality: lower performance of young HC

⇒ Applicable to Taiwan, too?
What to Expect (1)

Findings from changes in weights, behavior, expectation:

- Aging
- US mode
- Cohort trend
- Japan case

larger LCD for the elderly
larger LCD for the young
more reliance on public sector
reduced private transfers (both norm and expectation)
What to Expect (2)

- Implications
  - Competition between the elderly and the young
  - Allocation between public and private transfers

- Problems
  - Funding to the young, who have no votes, may be crowded out?
  - Vicious circle: low HC investment, low growth, less resources available for both old and young, ...