ESRI International Conference 2025

Measuring Advancement of Economy and Society: Economic Growth and Well-Being

31 July 2025

Session 2: Evolution of the System of National Account (SNA)

Discussion for Prof. David Cutler, Harvard University

Masako Ii, Hitotsubashi University

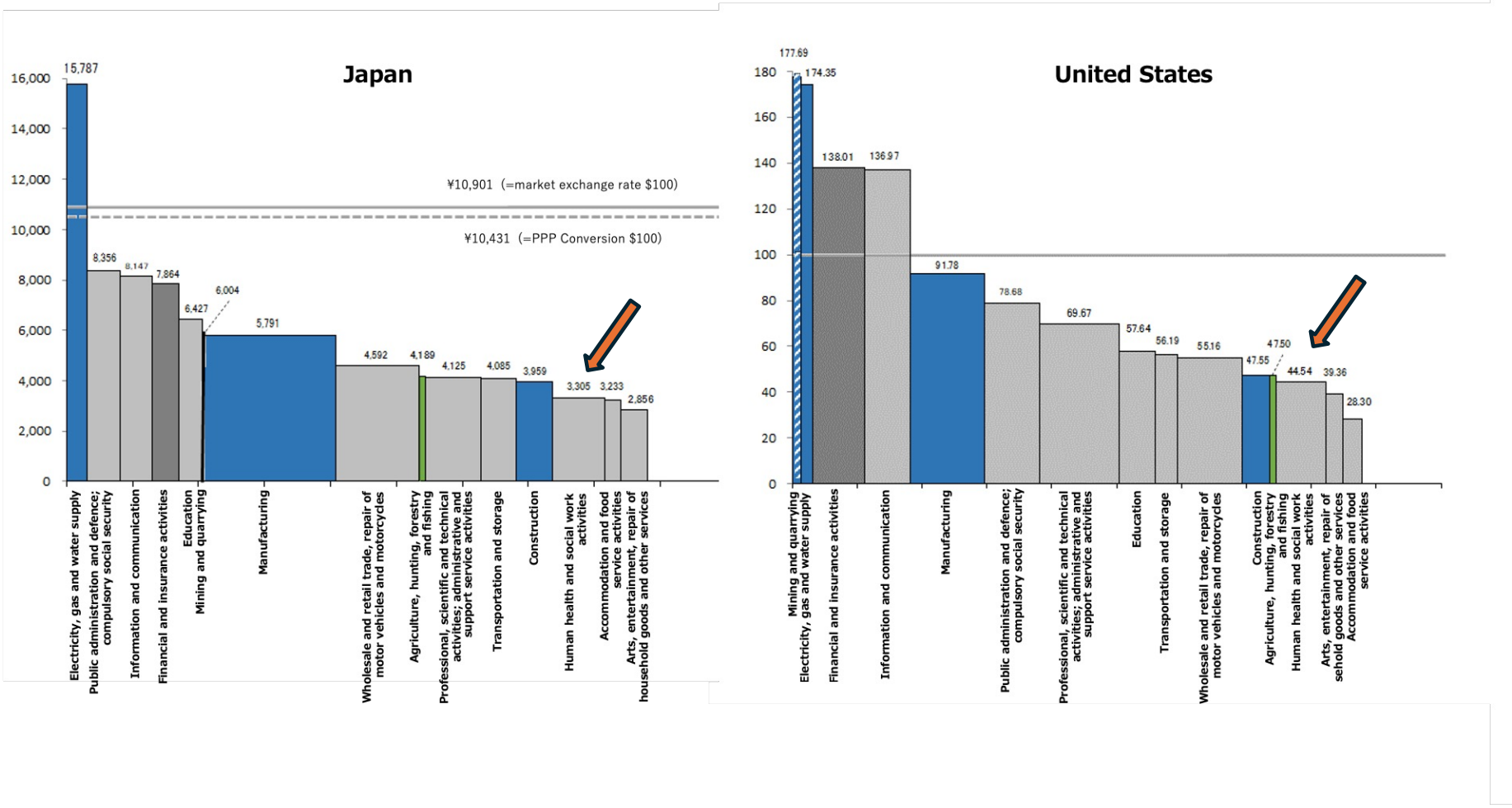
Outline of My Discussion

1. Labor Productivity: Japan- United States Comparison
2. Comments and questions on Prof. Cutler's presentation
3. Japanese CPI for medical treatment

    1) issues, 2) proposals

4. Health expenditure (OECD) should be used in international comparisons. However, there are several major issues with the estimation of health expenditure in Japan.

Japan–U.S. Comparison of Labor Productivity Levels by Industry



Source：Ueda and Tsuruoka (2023) using OECD statistics

TABLE 1. Characteristics of the United States and Japan Datasets[a]

United States					
N (%) or Mean (± SD)	**CABG**	**AAA[b]**	**Colectomy**	**Pancreatectomy**	**Gastrectomy**
Cases	231,719 (52.1%)	62,910 (14.1%)	117,571 (26.4%)	14,265 (3.2%)	18,509 (4.2%)
Cases per state	4544 (± 4411)	1234 (± 1181)	2305 (± 2240)	280 (± 303)	363 (± 403)
Median (IQR)	3212 (4852)	867 (1315)	1489 (2430)	186 (319)	240 (320)
Deaths	7853 (3.4%)	2671 (4.2%)	11,645 (9.9%)	692 (4.9%)	1572 (8.5%)
Complications	75,173 (32.4%)	11,218 (17.8%)	38,914 (33.1%)	3887 (27.2%)	6095 (32.9%)
FTR[c]	6076 (2.6%)	1750 (2.8%)	8739 (7.4%)	592 (4.2%)	1238 (6.7%)
LOS	10.5 (± 8.3)	4.9 (± 7.0)	12.5 (± 10.9)	13.2 (± 11.8)	13.8 (± 12.4)
Cost[d]	$29,630 (± 27,602)	$19,127 (± 18,617)	$21,723 (± 26,338)	$24,925 (± 29,245)	$24,881 (± 31,303)

Japan					
N (%) or Mean (± SD)	**CABG**	**AAA[b]**	**Colectomy**	**Pancreatectomy**	**Gastrectomy**
Cases	6935 (10.2%)	6649 (9.8%)	27,917 (41.0%)	4292 (6.3%)	22,295 (32.7%)
Cases per prefecture	148 (± 167)	141 (± 139)	594 (± 539)	91 (± 81)	474 (± 400)
Median (IQR)	102 (103)	104 (142)	472 (536)	62 (84)	344 (498)
Deaths	262 (3.8%)	161 (2.4%)	542 (1.9%)	95 (2.2%)	332 (1.5%)
Complications	1097 (15.8%)	812 (12.2%)	4051 (14.5%)	1118 (26.0%)	3237 (14.5%)
FTR[c]	113 (1.6%)	74 (1.1%)	220 (0.8%)	46 (1.1%)	159 (0.7%)
LOS	34.6 (± 28.5)	21.0 (± 21.0)	26.7 (± 22.9)	46.3 (± 29.4)	27.4 (± 23.1)
Cost	$45,797 (± 21,349)	$29,956 (± 14,961)	$16,068 (± 9261)	$28,709 (± 12,355)	$19,167 (± 9266)

Source: Hurley, Schoemaker, et al. (2016)

Comments and Questions on Prof. Cutler's Presentation

A major achievement that evaluates health sector productivity by analyzing spending and outcomes across 80 conditions using a vast set of individual-level data over a long period.

1. The study evaluates elderly populations who often have multiple comorbidities. How has multimorbidity been considered in productivity measurement?

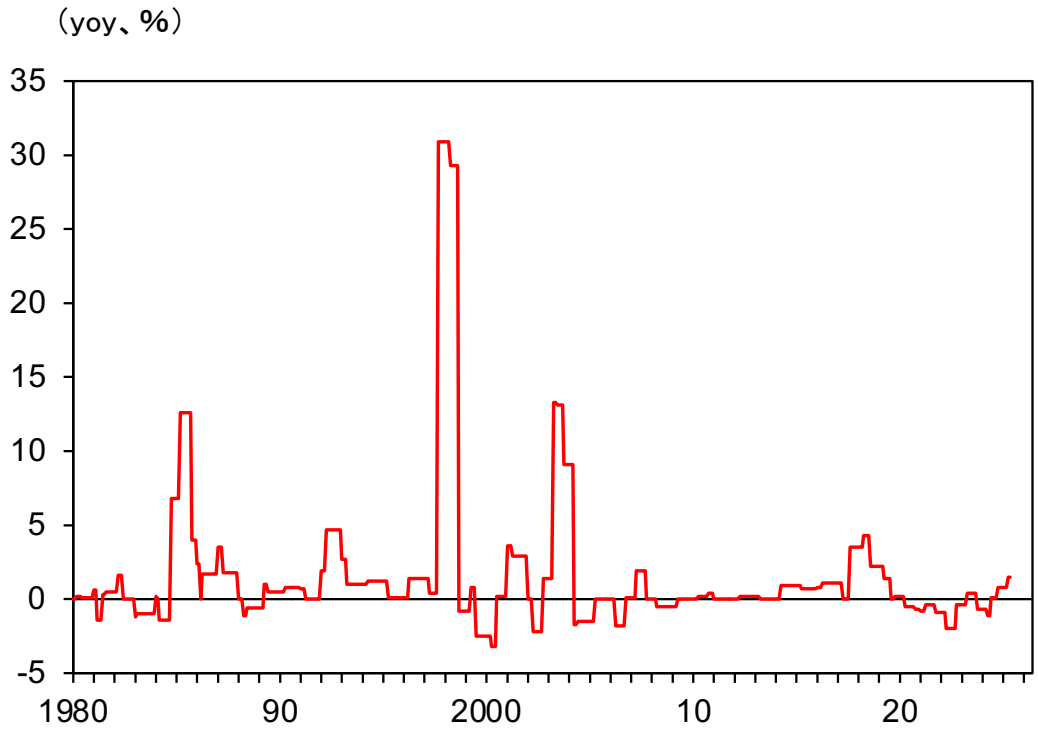
2. Medical care and long-term care are often intertwined for older adults. Did your analysis specifically isolate medical services from long-term care services?

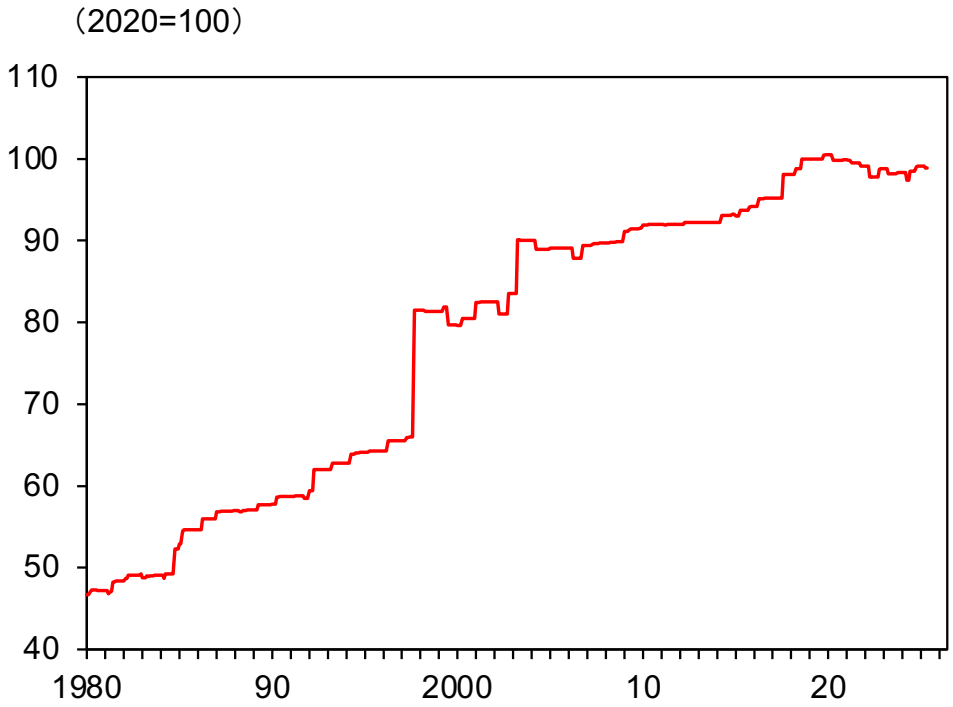
3. The study period (1999–2012) is somewhat outdated. Have you considered updating your analysis with recent data?

4. Clarify if the spending analysis comprehensively includes all sources (patients, government, insurers).

5. Impressive use of satellite health accounts to track individual treatment histories longitudinally.

Trend in Japanese CPI for Medical Treatment





Source: Statistics Bureau, Ministry of Internal Affairs and Communications

Japanese CPI for Medical Treatment

The movement of the medical deflator in Japan's SNA is largely explained by changes in the "medical consultation fees" component of the Consumer Price Index (CPI).

In the CPI, medical consultation fees refer to the out-of-pocket payments (patient copayments) for insured medical services. Called CPI for medical treatment

The figure shows the trend of CPI for medical treatment, which represent a core item in health and medical care, with a weight of 2.40%.

While the overall trend is upward, the changes occur in a stepwise pattern.

(The weight reflects the share of household spending on each item—i.e., how much households spend on medical consultation fees in a year.)

Japanese CPI for Medical Treatment

Seems to be strongly affected by policy changes – especially changes in copayment rates

Historical Policy Changes and CPI Movements

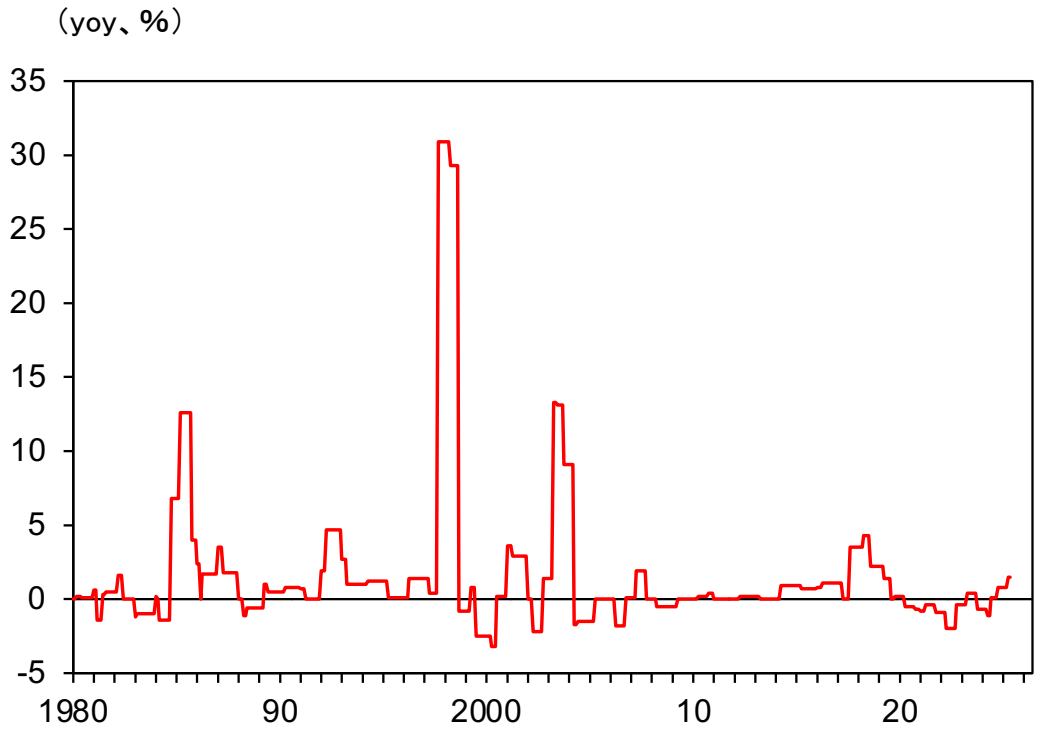
1. September 1997:
Copayment rate for the working-age population (under 70) raised from 10% to 20%
→ CPI rose from 66.0 to 81.5

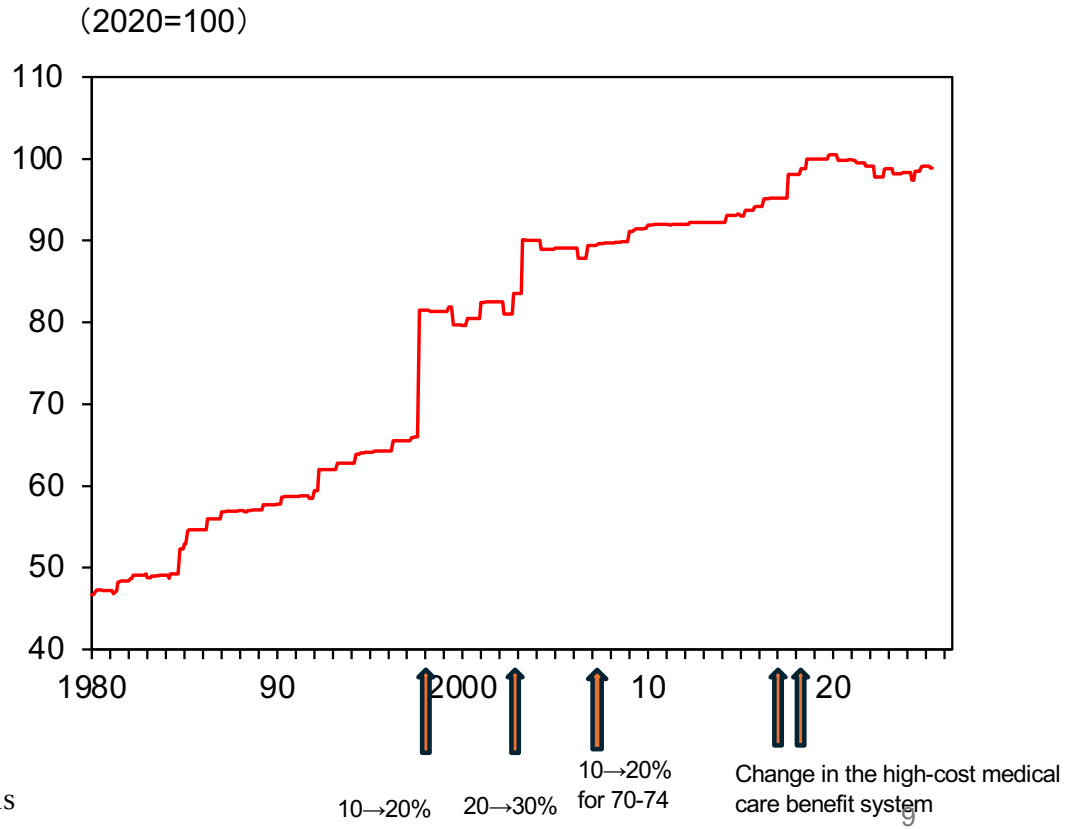
2. April 2003:
Copayment rate for the working-age population raised from 20% to 30%
→ CPI rose from 83.5 to 90.1

3. April 2006:
Copayment rate for those aged 70–74 raised from 10% to 20%
→ CPI fell from 89.1 to 87.8

4. August 2017 and 2018:
Increase in the cost-sharing ceiling for the high-cost medical care benefit system (Kōgaku Ryōyōhi Seido)
→ CPI rose from 95.2 to 98.1 in 2017, 98.8 to 100 in 2018

Trends in Japanese CPI for Medical Treatment





Source: Statistics Bureau, Ministry of Internal Affairs and Communications

Quality-Adjusted Medical Deflator (Nishizaki & Kuwabara, 2023)

Data source: National Database (NDB)

Method: Adjusted for healthcare quality via detailed disease classification

Key Findings: Estimated deflator shows a gradual upward trend

Substantial and impressive work based on a massive dataset

Issue 1: CPI for Medical Treatment - Impact of Policy Changes

Observations

. CPI is based on **individual out-of-pocket payments** for medical care services.

As a result, whenever the co-payment rates change—from 10% to 20% to 30%—the CPI **appears to inc**rease, even though **the unit price of services has not changed**.

1 Currently, co-payment rates for those aged 70 and over vary by income:
Age 70–74: 20% or 30%
Age 75 and over: 10%, 20%, or 30% .

It is unclear how population aging is affecting CPI. The method of adjustment is not clearly described.

2. The expansion of free medical care for children also puts downward pressure on the CPI.

3. The high-cost medical care benefit system (Kōgaku Ryōyōhi Seido) also affects CPI trends.

Issue 2: Limited Impact of Consumption Tax Increases on CPI

April 2014: Consumption tax raised from 5% to 8%
→ CPI (medical treatment): 92.2 → 93.1

October 2019: Consumption tax raised from 8% to 10%
→ CPI (medical treatment): 100.0 → 100.4

CPI medical treatment were not significantly affected.
This is because core medical service fees (shinryōhōshū) are exempt from consumption tax.
(In 2019, a compensation of 0.41% was applied to offset increased costs.)

<u>Point of Concern:</u>
Prescription drugs, which are subject to consumption tax, may be included in the CPI category of “medical treatment.”
This raises the question of whether the CPI fully reflects the tax-exempt status of medical services.

Issue 3　Limitations of Using National Medical Expenditure as Base Data

National Medical Expenditure covers only insured services
Five categories:
1) Inpatient　2) Outpatient　3) Dental　4) Dispensed drugs　5) Other services

Drug costs appear in multiple categories (not only 4))

Excluded items:
- Drugs in long-term care facilities
- Vaccines (e.g., immunization programs)

Pharmaceuticals = taxable, so they strongly impact CPI

Proposals

1 . CPI is based on **individual out-of-pocket payments** for medical and long-term care services.

CPI for medical treatment may need to reflect total medical costs, not just out-of-pocket.

2. While medical service fees are tax-exempt, pharmaceutical expenditures are subject to consumption tax. It is important to analyze the impact of the consumption tax. In Japan, drug costs account for a relatively large share of total healthcare spending.

Trends in Pharmaceutical Sales by Therapeutic Category（in million Yen）

	2011FY		2020FY	% change from 2019
1. Agents Acting on the Renin-Angiotensin System	657,754	1. Anticancer Drugs	1,518,683	5.1%
2. Anticancer Drugs	631,510	2. Drugs for Diabetes Treatment	610,563	4.4%
3. Lipid-Modifying Agents	447,558	3. Immunosuppressants	478,616	3.4%
4. Drugs for Acid-Related Disorders	437,158	4. Drugs for Thrombosis Prevention	419,930	-5.1%
5. Drugs for Diabetes Treatment	392,479	5. Ophthalmologicals	359,590	1.3%
6. Antibiotics	390,202	6. Drugs for Acid-Related Disorders	347,155	-1.4%
7. Drugs for Thrombosis Prevention	365,982	7. Agents Acting on the Renin-Angiotensin System	293,419	-6.0%
8. Psychotropic Drugs	308,548	8. Other Central Nervous System Drugs	289,765	-6.1%
9. Drugs for Asthma and COPD	303,241	9. Lipid-Modifying Agents	272,177	-11.0%
10. Other Central Nervous System Drugs	275,767	10. Drugs for Asthma and COPD	263,793	-12.5%
Total Sale	9,481,578	Total Sale	10,347,565	-2.7 %

Source：IQVIA, adapted in Ii（2024）

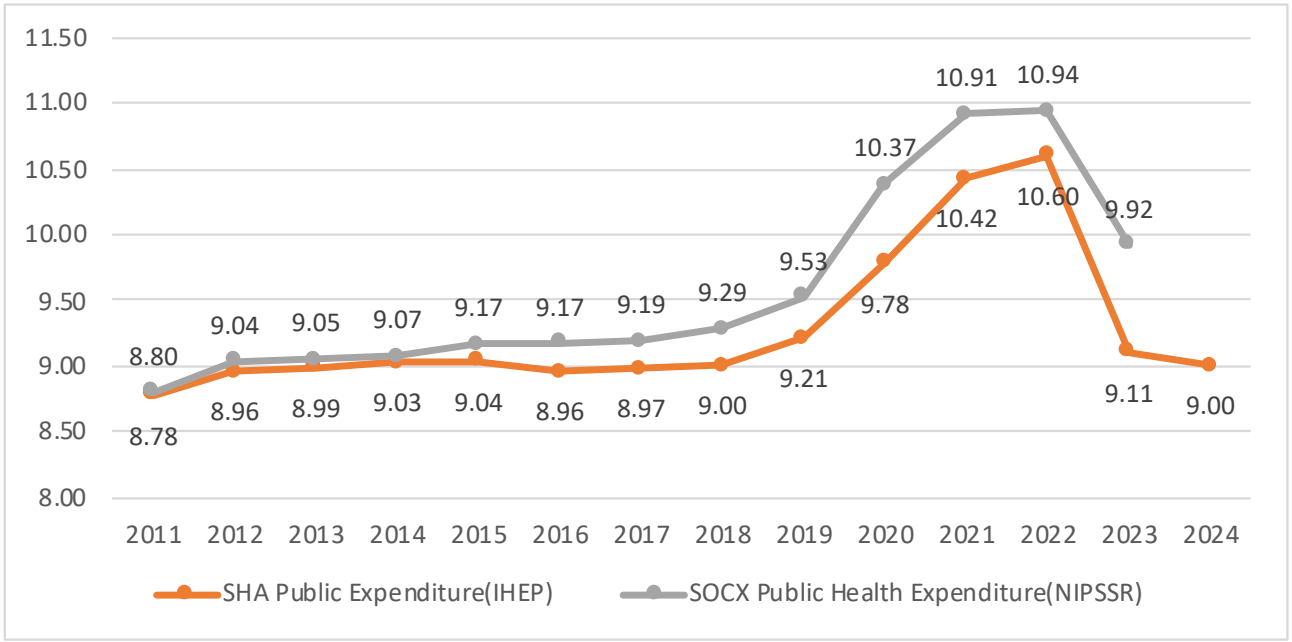
Proposals (continued)

3. Use SHA (System of Health Accounts), internationally standardized, not National Medical Care Expenditure, for health policy discussions.

4. Disclose international quality indicators for healthcare and long-term care. (OECD health statistics)

Reference 1.

Deviation between SHA and SOCX data on public health expenditure (as % of GDP)



A reduction in COVID-related expenditures

Source: SHA Public Expenditure - OECD stat.
SOCX Public Health Expenditure - National Institute of Population and Social Security Research(NIPSSR)

Reference 2

"*Fiscal Sustainability of Health Systems*" by OECD (2024)

p.35:

"For Japan and Korea, where COVID-19 cases remained relatively low in 2020 (OECD/WHO, 2022), health spending growth in 2020 was below the OECD average, and negative in the case of Japan, due in part to a reduction in activity in the health sector. While health spending in 2021 sharply accelerated by 17% in Korea, growth in Japan remained moderate, at half the OECD average."

p.57:

"The growth in Japan, however, is underestimated as medical expenditure in Japan largely exclude almost all COVID-19 related spending."