

Three Vital Phenomena in Aging Japan:

**the “Silver Dividend”, the Changing Cognitive
Performance of Older Workers
and the Abrupt Value Shift of Care for the Elderly:**

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● In 2005, Japan became the **most aged society**, surpassing Italy. The proportion of those aged 65 and over is 28%.

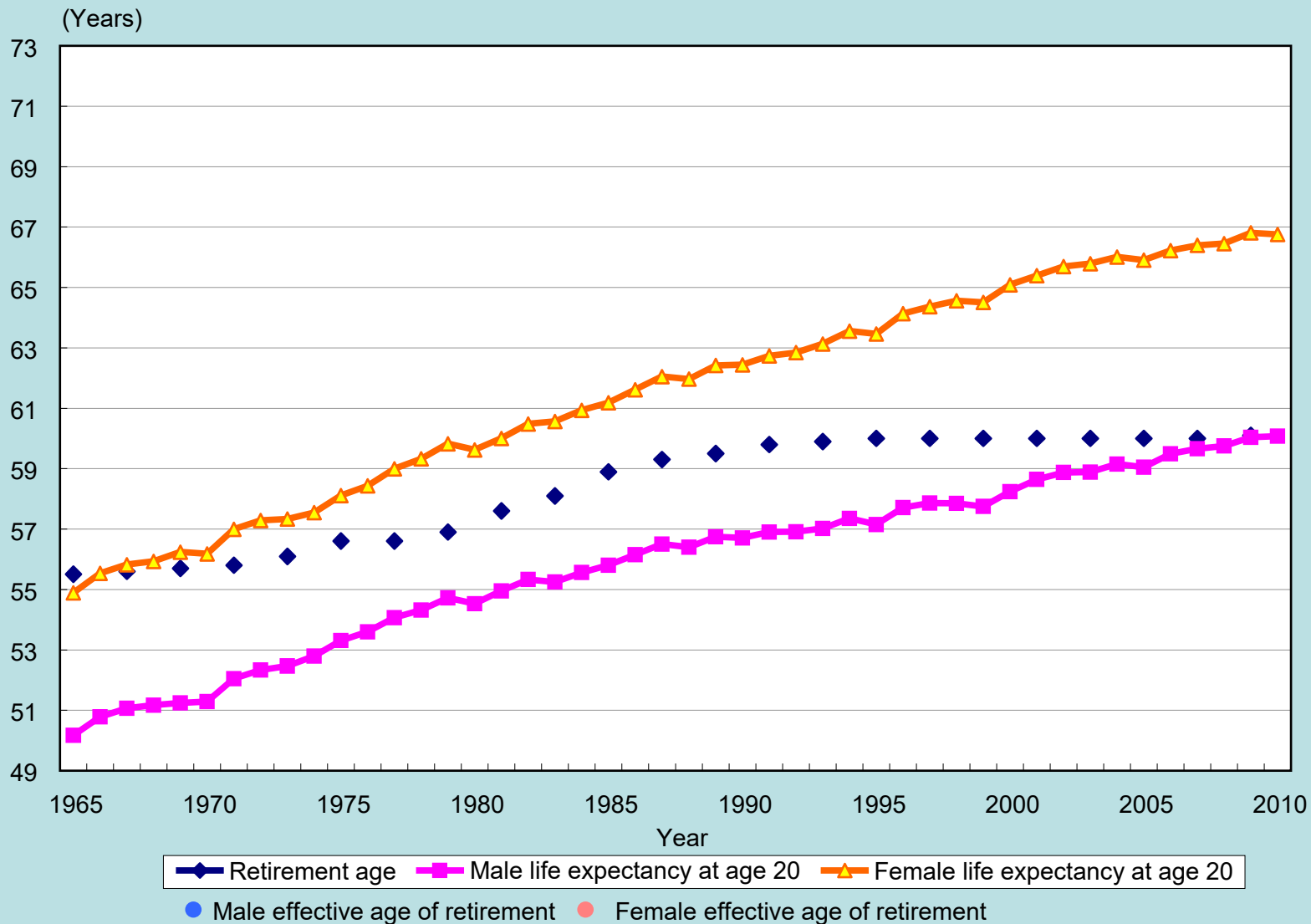
● Since 2008, Japan's population growth rate has been **negative**.

● Japan's postwar fertility decline was the **earliest to occur** in the non-Western world, and **the greatest in magnitude** among all the industrialized countries.

● Japan's life expectancy at birth improved at a dramatic pace, and is currently at the top level in the world:

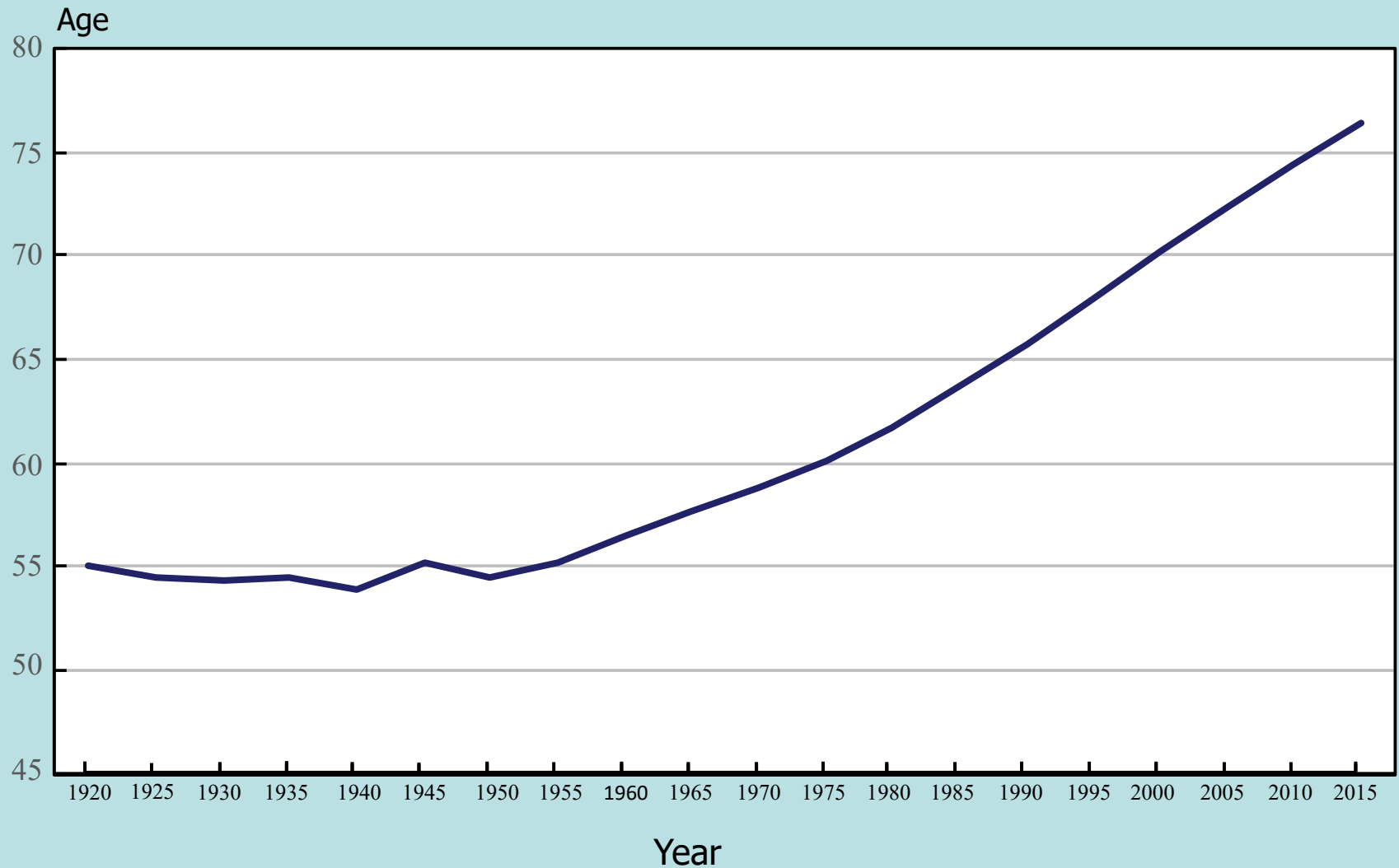
men 81.5 years (2nd highest) and women 86.9 years (No.1) in 2020.

Change in retirement age at large-scale business and life expectancy at age 20 for men and women: Japan, 1965-2010



Sources: (1) Japan Productivity Center, Productivity and Labor Information Center (2011) *Practical Labor Statistics 2011 (Katsuyo Rodo Tokei 2011)*.
 (2) Ministry of Health, Labour and Welfare (2010) *Abridged Life Tables for Japan 2009*.

Change in the mandatory retirement age, assuming that the proportion of those older than the 1920 retirement age (55 years old) remains unchanged up to 2015



The proportion of those aged 55 and over in 1920 was 11.503%.

Source: Population Census of Japan, various years

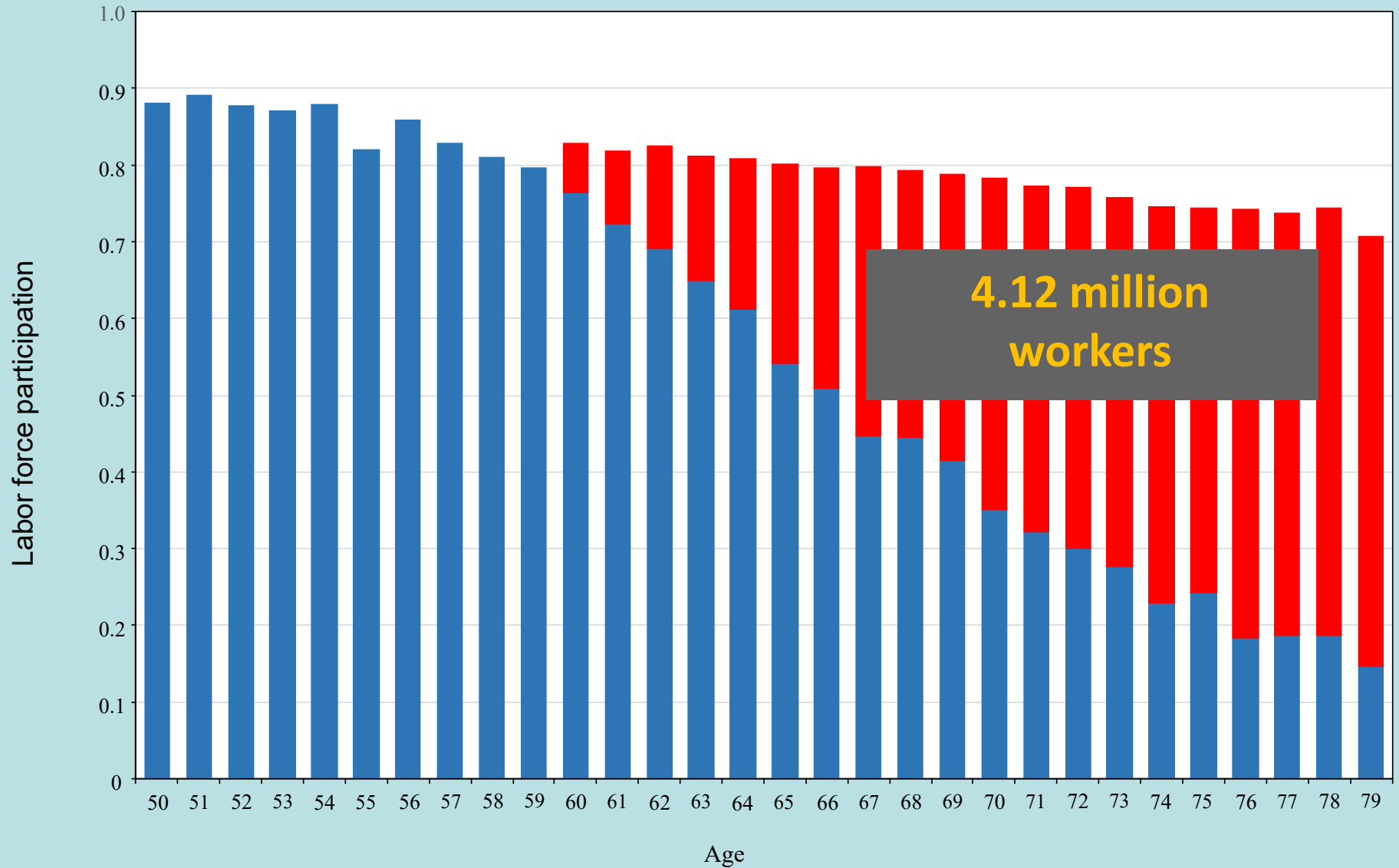
“Untapped Work Capacity”

- we have attempted to quantify the untapped work capacity in Japan in terms of health status.
- we do not include a number of factors affecting the decision of labor supply (e.g., wages) but focus on the health disability to examine to what extent the labor supply of the elderly is limited

“Untapped Work Capacity”

- The estimated regression for those 50-59 was applied to those aged 60-79 to compute the additional work force to be generated

Figure 11. Age-specific observed labor force participation rate and potential labor force participation rate in Japan



- Applied the three different wage levels:
- **Case1**: NTA's age-specific labor income profile
- **Case2**: Market wage rates
- **Case3**: Minimum wages

In Case II, the labor income to be generated by the additional elderly workers corresponds to 6.0% of Japan's real GDP in 2015.

Case I: 4.5% Case III: 3.2%

**“Silver”
demographic dividend**

Changing cognitive function among old age groups and their economic potential contributions

**The fourth demographic
dividend?**

Figure 1. Mean age-group-specific immediate recall scores in selected countries circa 2010

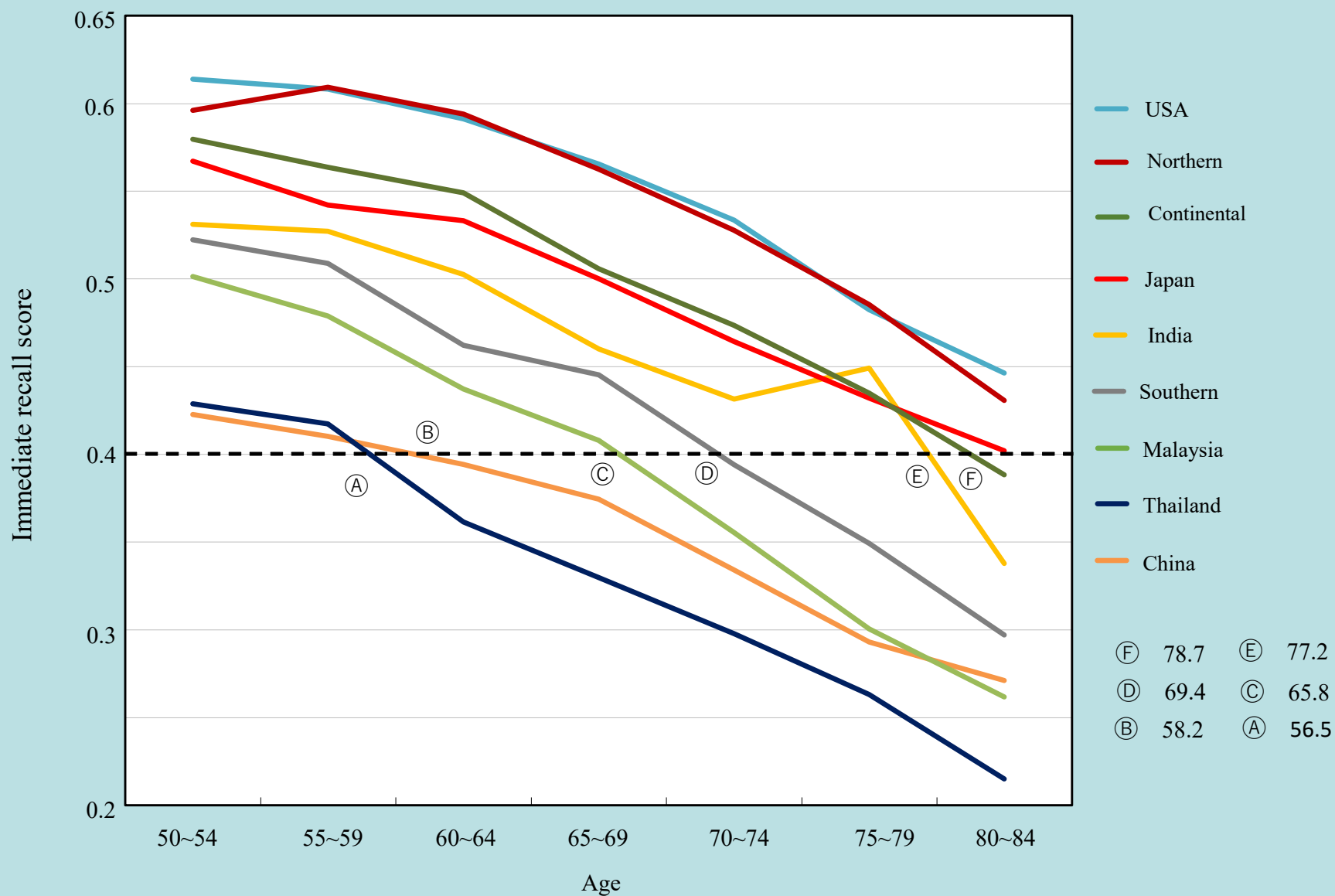


Table 1. International comparison of
the CADR scores circa 2010

| | | |
|---|-------|------|
| ● USA | | 0.10 |
| ● Northern Europe (Denmark, England, Ireland, Sweden) | | 0.12 |
| ● Continental Europe (Austria, Belgium, Czech Republic, France, Germany, Netherlands, Poland, Switzerland)... | | 0.18 |
| ● Southern Europe (Greece, Italy, Spain) | | 0.32 |
| ● Asia | | |
| Japan | | 0.19 |
| India | | 0.07 |
| China | | 0.09 |
| Thailand | | 0.08 |
| Malaysia | | 0.07 |

Source: For the scores for non-Asian countries, see Table 2 in Skirbekk, Loichinger, and Weber (2012).

Table 1. Regression Analysis of Immediate Recall Score
(Dependent variable = immediate recall score)

| Explanatory variables | Coefficient | T-value | |
|-----------------------|-------------|---------|-----|
| Age | | | |
| 50-54 | 0.215 | 3.12 | ** |
| 55-59 | 0.046 | 0.75 | |
| 60-64 † | - | - | |
| 65-69 | -0.244 | -3.93 | *** |
| 70-74 | -0.477 | -7.34 | *** |
| 75-79 | -0.776 | -5.49 | *** |
| Sex | | | |
| Man | -0.569 | -8.91 | *** |
| Woman † | - | - | |
| Marital status | | | |
| Currently married | 0.106 | 1.85 | * |
| Currently not married | - | - | |
| Work status | | | |
| Working | -0.007 | -0.16 | |
| Not working | - | - | |
| Education | | | |
| Junior high † | - | - | |
| Senior high | 0.384 | 7.22 | *** |
| Junior college | 0.491 | 6.95 | *** |
| University or higher | 0.686 | 9.39 | *** |

† denotes the reference group.

Adjusted R-squared = 0.126

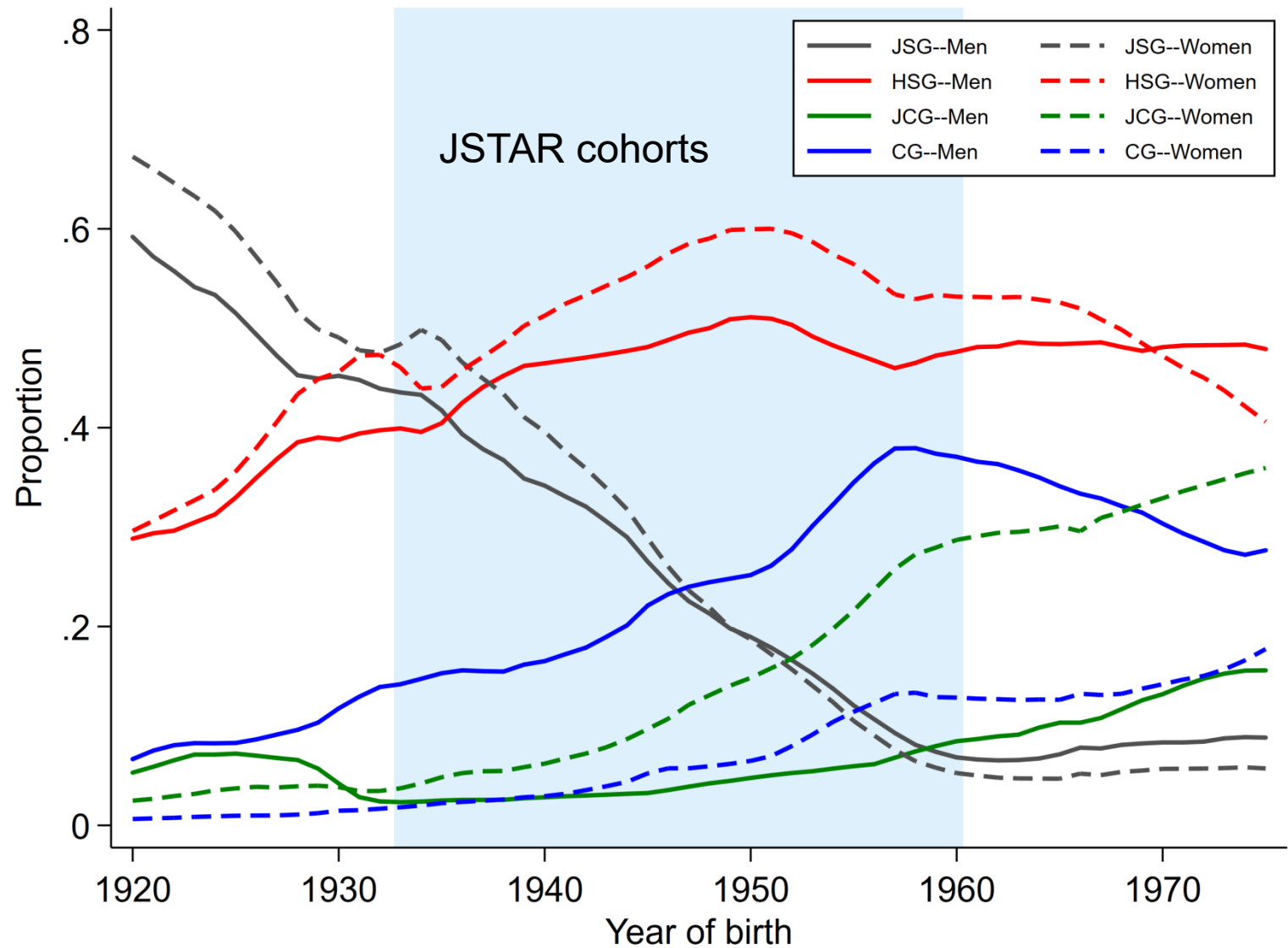
Number of observations = 6,412

Level of statistical significance: * 10% level; ** 5% level;

*** 1% level

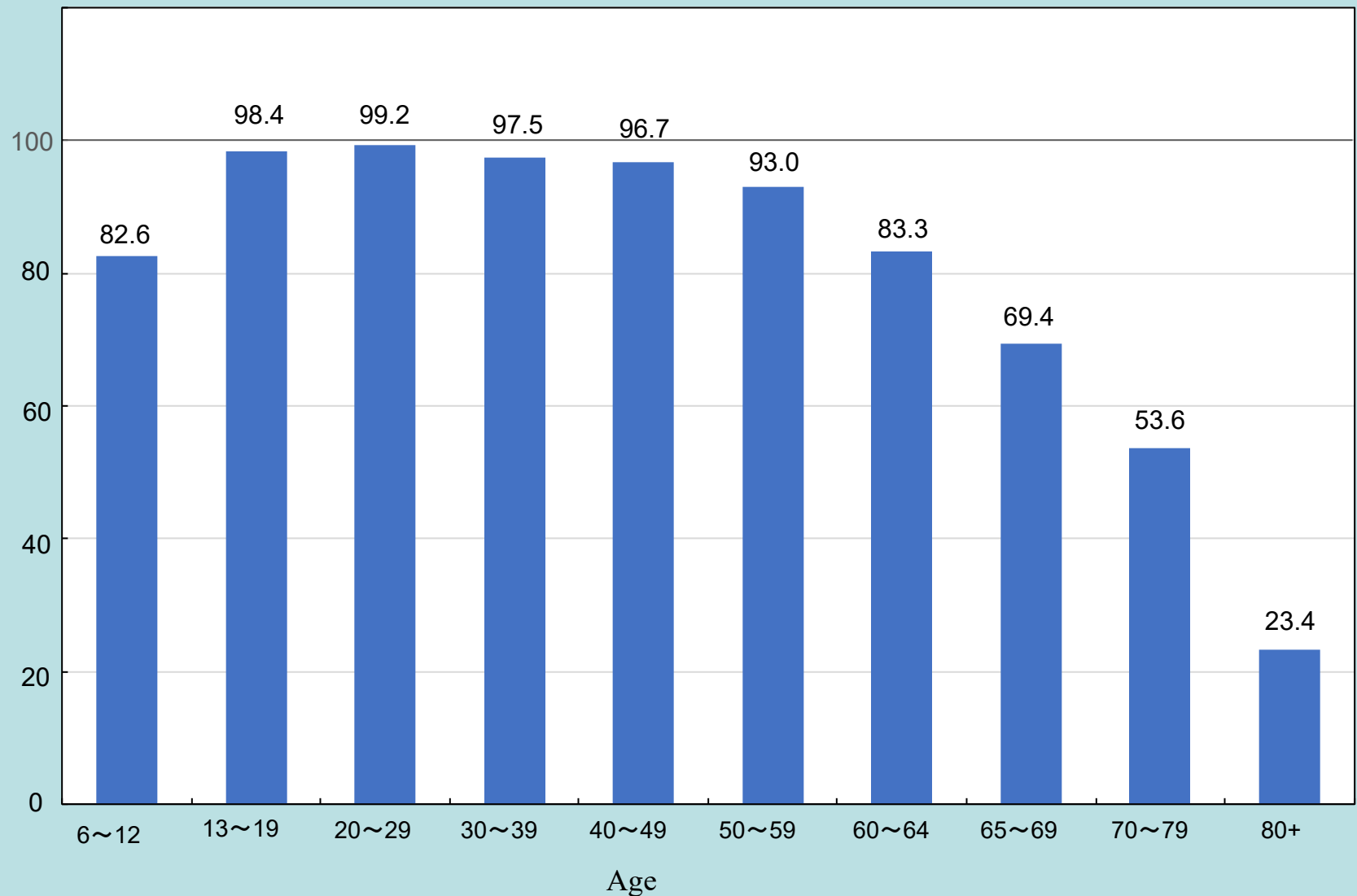
| Explanatory variables | Coefficient | T-value | |
|---------------------------------|-------------|---------|-----|
| Self-rated health status | | | |
| Excellent | 0.217 | 3.15 | *** |
| Very good | 0.171 | 2.57 | ** |
| Good | 0.151 | 2.39 | ** |
| Fair † | - | - | |
| Poor | -0.356 | -2.75 | *** |
| CESD | | | |
| ≥ 16 | -0.102 | 1.80 | * |
| < 16 † | - | - | |
| IADL | | | |
| ≥ 1 | -0.187 | -4.45 | *** |
| 0 † | - | - | |
| Height | 0.007 | 1.81 | * |
| Municipalities | | | |
| Takikawa | -0.705 | -7.56 | *** |
| Sendai | -0.072 | -0.87 | |
| Adachi | 0.000 | 0.00 | |
| Chofu | 0.291 | 2.61 | *** |
| Kanazawa | -0.136 | -1.68 | * |
| Shirakawa | -0.167 | -1.89 | * |
| Tondabayashi | -0.197 | -1.84 | ** |
| Hiroshima † | - | - | |
| Tosu | -0.289 | -3.13 | ** |
| Naha | -0.348 | -3.97 | *** |
| Intercept | 4.194 | 7.16 | *** |

Figure 4. Changes in the educational composition, by sex (1920-1980)



Source: Statistics Bureau, various years, *Population Census*.

Figure 5. Age-specific pattern of using the Internet in Japan, 2016



Source: Ministry of Internal Affairs and Communications, 2017, *Communications Usage Trend Survey*.

**Another new approach to mitigating
the burden of population aging**

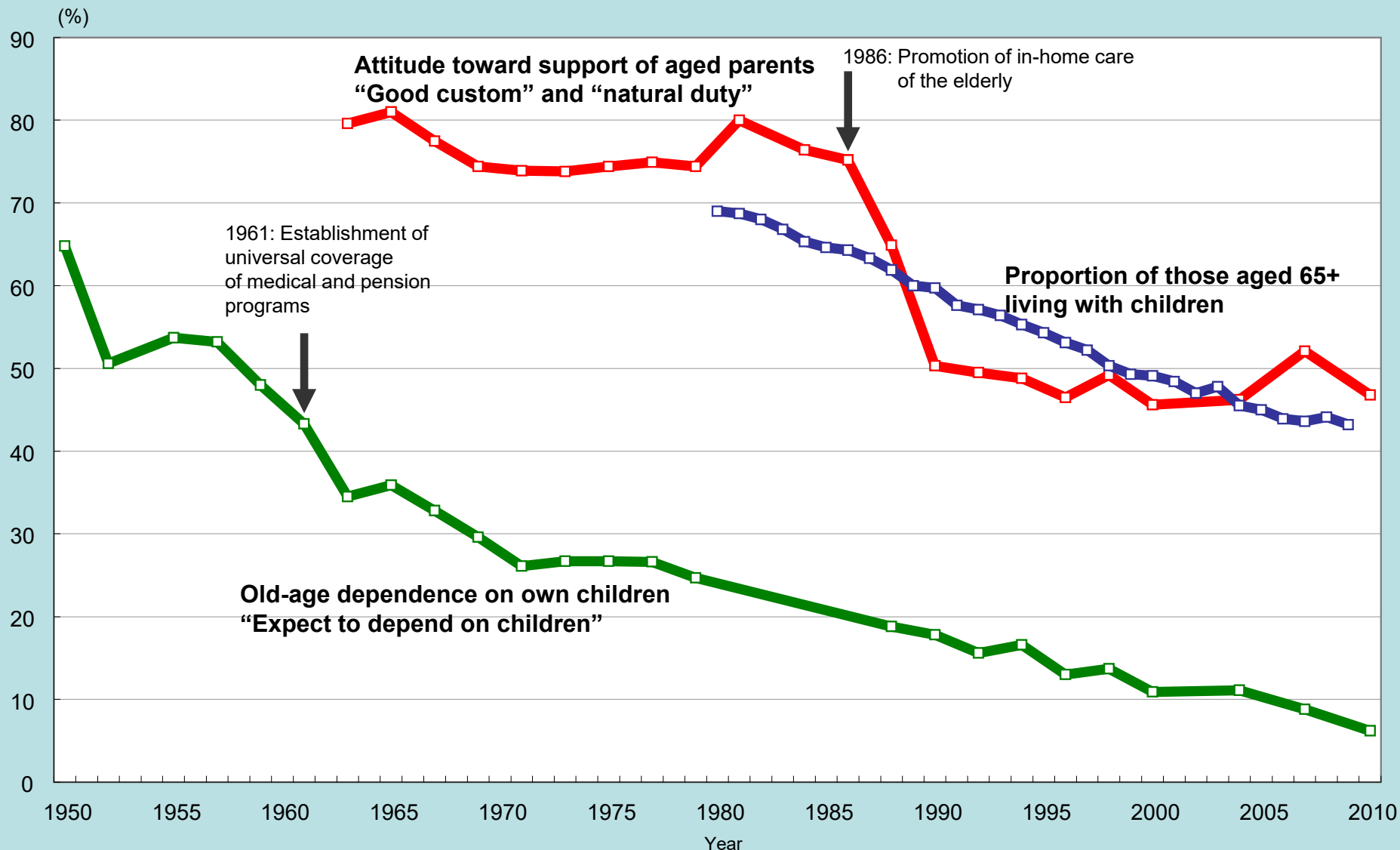
**Remeasuring population aging
based on age-specific cognitive
score among the elderly**

**and
assessing their potential
economic contributions**

Another Challenge:

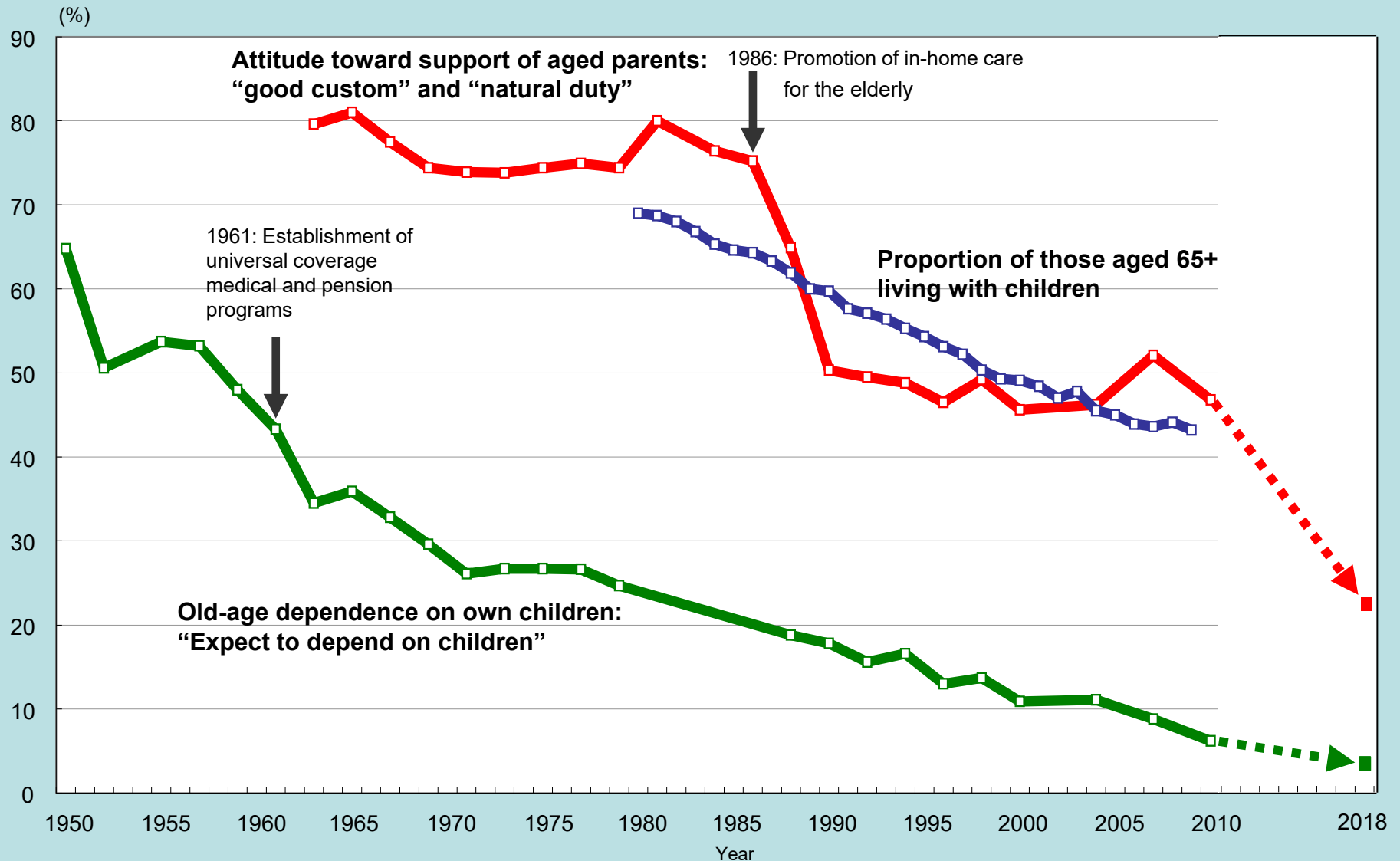
**Unprecedented
value shifts**

Trends in values and expectations about care for the elderly: Japan, 1950-2010



Sources: Mainichi Newspapers of Japan, *Summary of Twenty-fifth National Survey on Family Planning*, 20005. Mainichi Newspapers of Japan, *Summary of the 2004 round of the National Survey on Population, Families and Generations*, 2004. Nihon University Population Research Institute, *National Survey on Work and Family*, 2007 and 2010. Japan: Ministry of Health, Labour and Welfare, Japan (various years) *Basic Survey Report on Health and Welfare*. Ministry of Health, Labour and Welfare, Japan (various years) *Basic Survey of Living Conditions of the People*.

Trends in values and expectations about care for the elderly: Japan, 1950-2010



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Thank you