Computation of standard errors 
- Japan case -

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### Japan Data – What survey do we use?

**MHLW ”Comprehensive Survey of Living Conditions” (CSLC)**

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<th><strong>Basic Information</strong></th>
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<th><strong>Frequency</strong></th>
<th><strong>Survey Design</strong></th>
<th><strong>Object of the Survey</strong></th>
<th><strong>Sample Size</strong></th>
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<th><strong>Survey Item (Income)</strong></th>
<th><strong>(Reference) National Survey of Family Income and Expenditure (NSFIE)</strong></th>
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<tbody>
<tr>
<td></td>
<td>Ministry of Health, Labour and Welfare</td>
<td>Every Year (Large Sample Survey: Every Three Years)</td>
<td>Sample Survey</td>
<td>Private Households</td>
<td>About 36000 Households(Income Questionnaire)</td>
<td>Employment income, Business income, Agriculture income, Housing Rent, Interest, Private Pension and other private transfer</td>
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<td>Statistics Bureau (Ministry of Home Affairs)</td>
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**Survey Item (Income):**
- **Type of Market (Income):** Employment income, Business income, Agriculture income, Housing Rent, Interest, Private Pension and other private transfer.
- **Social Transfer:** Public Pension, Other Social Transfer.
- **Tax and Premium:** Income tax, Residence tax, Property tax, Social Insurance Premium.
- **Occasional Income:** Include Income.

**About the Survey:**
- **MHLW Comprehensive Survey of Living Conditions (CSLC):**
  - Frequency: Every Year (Large Sample Survey: Every Three Years).
  - Survey Design: Sample Survey.
  - Object of the Survey: Private Households.
  - Sample Size: About 36000 Households(Income Questionnaire).
- **NSFIE:”National Survey of Family Income and Expenditure”**
  - Ministry: Statistics Bureau (Ministry of Home Affairs).
  - Frequency: Five Years.
  - Survey Design: Sample Survey.
  - Object of the Survey: Two or More Persons Households and some Single Households.
  - Sample Size: About 60000 Households.
Trend of Gini Coefficient in Japan (CSLC)

- Gini coefficient in Japan was 0.336 in 2009 (based on 2010 CSLS) with stable trend since 2000.
- Gini coefficient of the elderly in Japan is higher than that of all ages and 18-64 years old. It also has stable trend since 2003.

Gini coefficient of the equivalent income based on CSLS. In this investigation, the income one year at the time of the investigation ago is asked. That is, the income is an income one year ago at the time of the investigation.

Market income: Sum of income from working, property and private transfer

Disposable income: Sum of market income, social transfer minus direct tax and social security premium

Source: The tabulation of the micro-data of "Comprehensive Survey of Living Condition of the People on Health and Welfare (income questionnaires)" by authors under the permission of the Statistical Law.
Computation of Standard Error

To Compute 95% Confident Interval of Gini Coefficient in Japan

(What indicator?)
Gini Coefficient
  Disposable Income (OECD has asked)
  Market Income
For All ages, Working age and Retirement age
(Data)
  MHLW “Comprehensive Survey of Living Conditions” (CSLC)
  2010 survey
(Method)
  Bootstrap model
  Most simple use of Stata command “ineqerr” with rep(500)
  (Sampling structure of CSLC is too complex)

(What can we find?)
  1. What extent can we have confidence on Gini coefficient?
  2. Are there any income redistribution effects?
95% Interval and Standard Error (Japan)

CSLC 2010 Survey (2009 Income)

<table>
<thead>
<tr>
<th></th>
<th>Gini(Market Income)</th>
<th>Gini(Disposable Income)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lower</td>
<td>Upper</td>
</tr>
<tr>
<td>All ages</td>
<td>0.484</td>
<td>0.492</td>
</tr>
<tr>
<td>Working age</td>
<td>0.403</td>
<td>0.413</td>
</tr>
<tr>
<td>Retirement age</td>
<td>0.685</td>
<td>0.703</td>
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95% Interval and Standard Error (Japan)

By number of rep( ) (CSLC 2010 Survey, Disposable Income)

With taking consideration of sampling structure (prefecture, trial)