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# Development of Korean HPSA and Korean NTTA using Korean TUS Data

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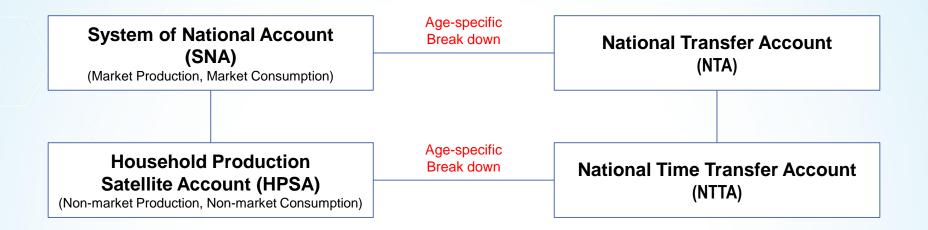
### Introduction to HPSA & NTTA

(Household Production Satellite Accounts & National Time Transfer Accounts)

#### Introduction to NTA & NTTA



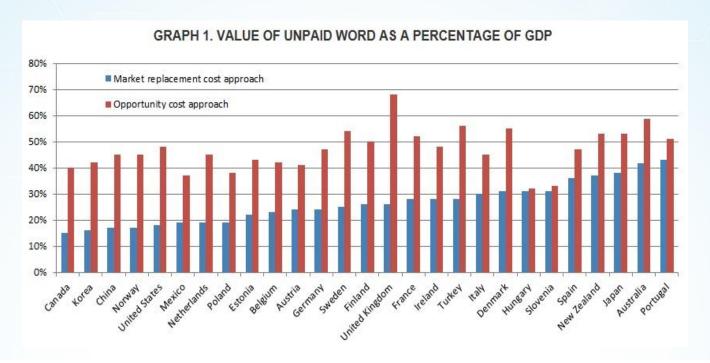
- National Transfer Account (NTA) & National Time Transfer Account (NTTA)
  - National Transfer Account (NTA) is a concept that breaks down the System of National Account (SNA) by age,
  - whereas National Time Transfer Account (NTTA) is a concept that breaks down the Household
     Production Satellite Account (HPSA) by age.



#### Value of Unpaid Work



- Comparison of unpaid work value among OECD countries
  - Value of Unpaid work as a Percentage of GDP (OECD Statistical Working Paper, 2011)



Source: Incorporating Estimates of Household Production of Non-Market Services, OECD Statistical Working Papers, October 2011, and ABS estimates based on Time Use Survey, Survey of Employee Earnings and Hours, Labour Force Survey, Australian System of National Accounts.

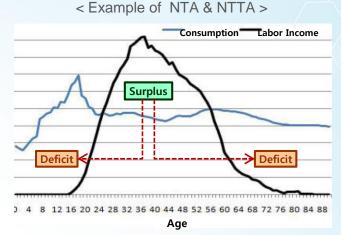
Note: Due to Time Use Survey data availability, the estimates presented are based on the most recent year available for each country, as of October 2011. This has resulted in estimates based on data from a range of years, from 1998-99 through to 2008-09. For a full list of countries and their corresponding Time Use Survey used, please see paragraph 13 of Incorporating Estimates of Household Production of Non-Market Services.

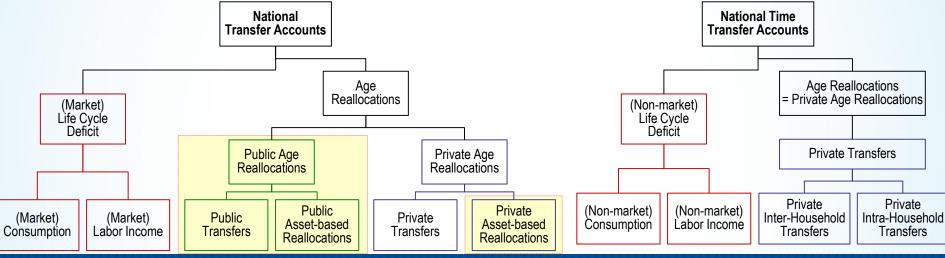
#### **Introduction to NTA & NTTA**



#### Structure of NTA & NTTA

- Both NTA & NTTA consist of the life cycle deficit and the age reallocations, respectively.
  - The life cycle deficit and age reallocations are always consistent.
- In the case of NTA, the age reallocations consist of the public age reallocations and private age reallocations.
- Unlike NTA, the age reallocations of NTTA consist of only private transfers.
  - NTTA do not have public age reallocations and private asset-based reallocations.









# Construction of Korea's HPSA (Korea's Household Production Satellite Accounts)

#### Time Use Survey (TUS)



#### Overview of Time Use Survey (TUS)

Division	Contents								
Survey Purpose	· To provide basic data required for understanding people's life style and quality of life by measuring how people spend 24 hours · To provide basic data for establishing various policies related to labor, welfare, culture and traffic as well as for academic resea								
Type of Statistics	· Designated Statistics (No.10152) (Approval Date : 1999.5.7.)								
Survey Frequency	· 5 year (Quinquennial)								
Survey Unit and Target Population Size									
Target Population	· Members of sample households, who are 10 years or older (excluding foreigners)								
Survey Reference Period and Date									
Writing Dates	· Write a time diary for each respondent during two days								
Survey Method	<ul> <li>Household related items, Personal related items: By interviews</li> <li>Time diary: Directly recorded by respondents</li> <li>Respondents write their actions for two days as if they were writing a diary in a time frame designed at 10 minute intervals (after-coded diary)</li> </ul>								
Survey Items & Activities (2014)	Household related items (10 Items), Personal related items (13 Items), Time diary (9 Items)     Activity Classification : 9 Main Activities, 42 Activities, 138 Sub-Activities								
Data Aggregation	· It is common for time utilization to vary depending on the day of the week because of the nature of the time-of-day survey, so time spent data is provided classifying by weekday (Average by Day of Week), Saturday, and Sunday.								

#### **Time Use Survey (TUS)**

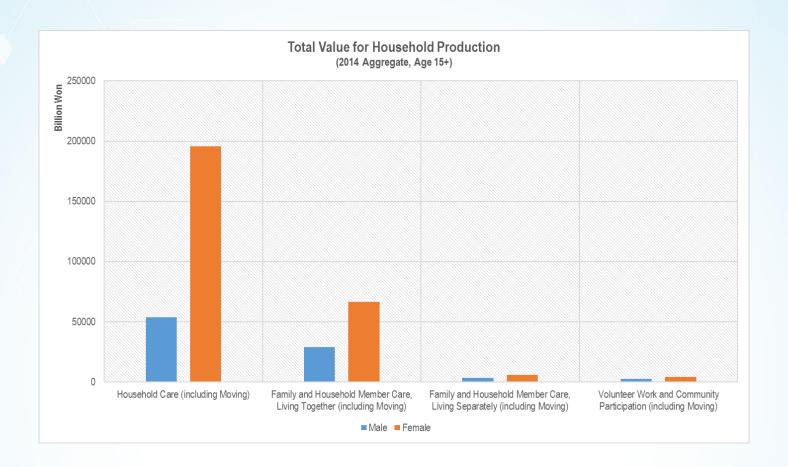


#### Main Activities of Time Use Survey (2014)

Activities	Explanation							
1. Personal Care Activities	Activities for personal care such as sleep, meals, hygiene and medical services for personal health care							
2. Employment (Work)	Activities for economic production by investing labor or capital, including activity for seeking a job to participate in economic activities.							
3. Study	Activities that take systematic learning courses such as at schools, academies, and the academy of continuing education, or related ancillary activities (including activities to learn on one's own without learning from others, such as self-learning)							
4. Household Care	Activities for maintenance or management of household work for house life, not including activities related to the household work of other's home - Activities for home care such as food preparation, laundry, housing management, and shopping							
5. Family and Household Member Care	Physical or mental care activities for a household member or family member living together  - The range of the family: immediate family, brother and sister							
6. Volunteer Work and Community Participation	Obligatory or voluntary engagement activities for the country or society or helping someone who is not a family member or family member							
7. Social Life / Recreation and Leisure	Friendship activities with neighbors, families, friends, etc. or activities for leisure or recreation							
8. Moving	Classification according to purpose of moving by major activities or activities							
9. Others	Actions not categorized in the above main activities 1 to 8							



- Results of Korea's Household Production Satellite Accounts (HPSA)
  - Macro controls for Korea's National Time Transfer Accounts





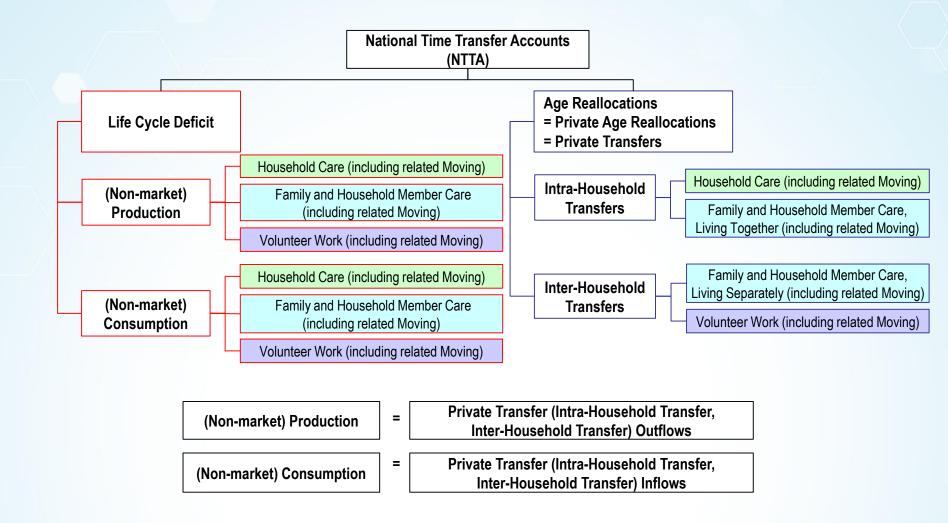


# Construction of Korea's NTTA (Korea's National Time Transfer Accounts)

#### Structure of NTTA



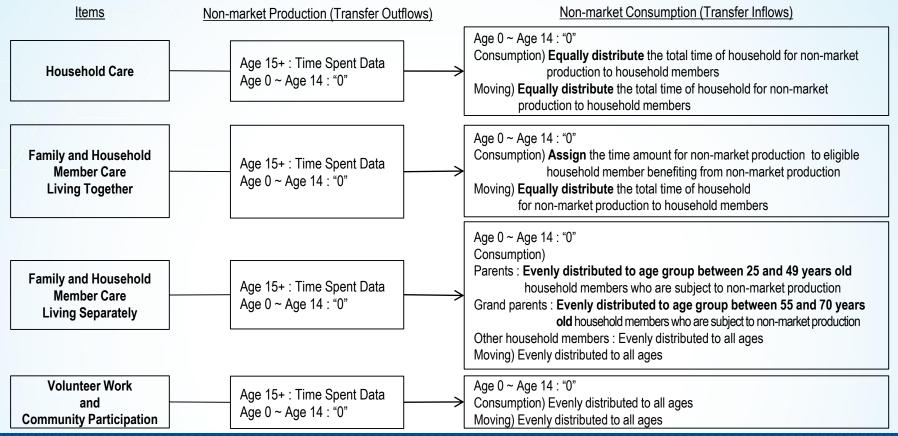
Structure of National Time Transfer Accounts





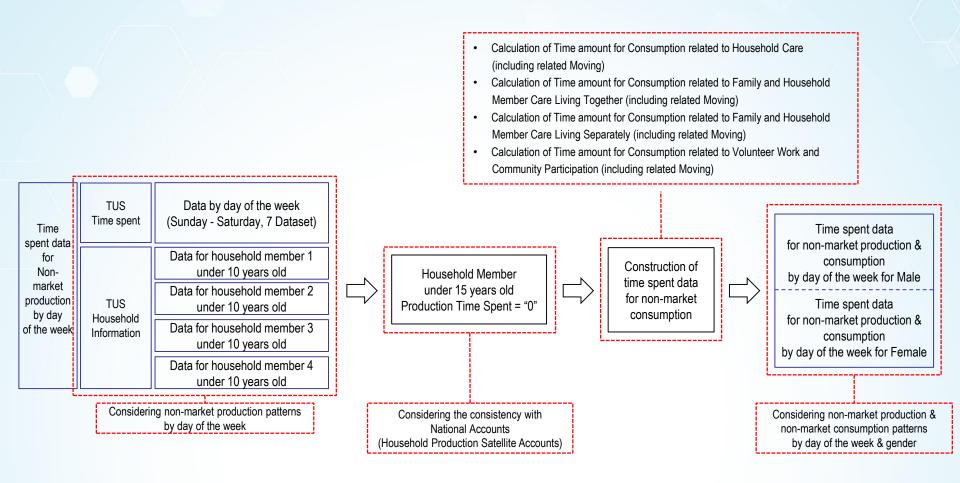
#### Construction of (individual) time spent data for non-market production & consumption

- The time amount for non-market production is calculated based on the time spent data of the Time Use Survey.
- The time amount for non-market consumption is calculated by allocating the time amount for nonmarket production to each (individual) household member subject to non-market production under some assumptions based on the NTTA methodology.



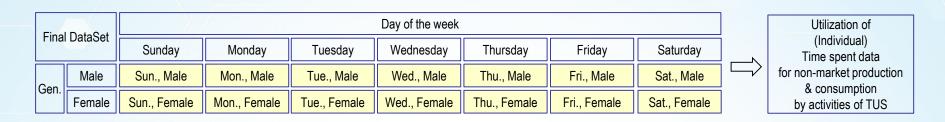


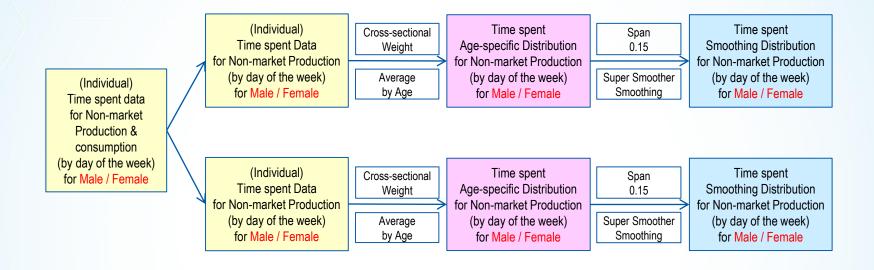
Construction of time spent data for non-market production & consumption





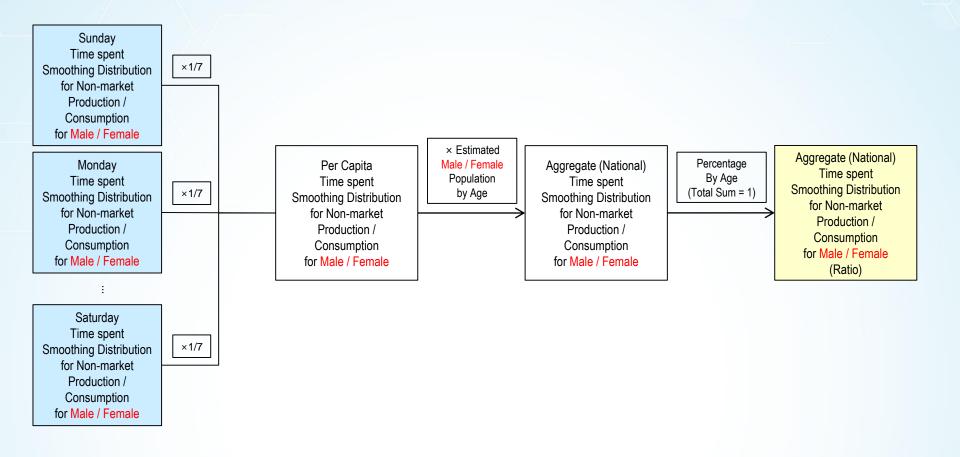
 Construction of Age-specific Distribution for Non-market Production & Consumption by day of the week & gender





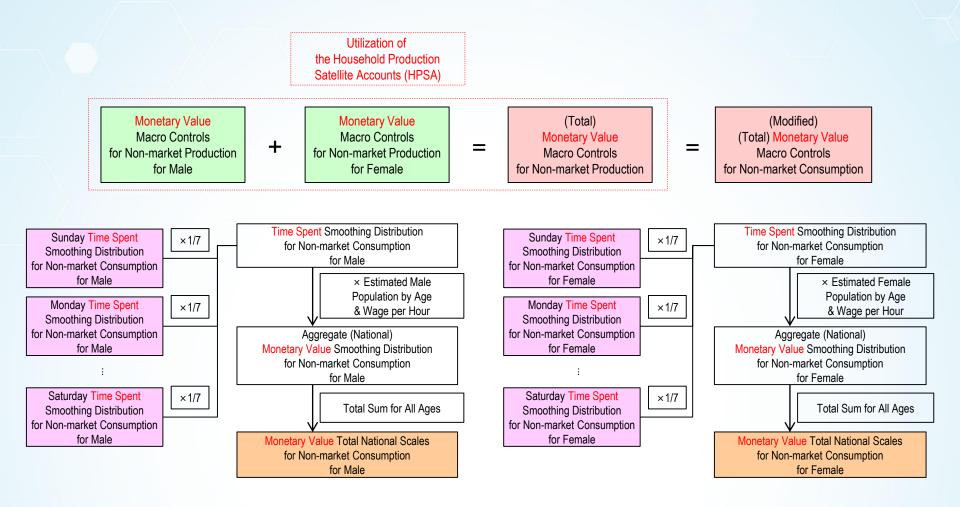


Construction of Age-specific Distribution for Non-market Production & **Consumption by gender** 





- Composition of Macro Controls for Non-market Production & Consumption
  - Utilization of the Household Production Satellite Accounts (HPSA)





Composition of Macro Controls for Non-market Consumption

+

Monetary Value
Total National Scales
for Non-market Consumption
for Male

=

Monetary Value
Total National Scales
for Non-market Consumption
for Female

X

X

(Total)

Monetary Value

Total National Scales

for Non-market Consumption

(After Modified)

Monetary Value Macro Control
for Non-market Consumption
for Male

(After Modified)
(Total)

Monetary Value Macro Control for Non-market Consumption

Monetary Value
Total National Scales
for Non-market Consumption
for Male

=

(Total)

Monetary Value

Total National Scales
for Non-market Consumption

(After Modified)

Monetary Value Macro Control
for Non-market Consumption
for Female

(After Modified)
(Total)

Monetary Value Macro Control
for Non-market Consumption

Monetary Value
Total National Scales
for Non-market Consumption
for Female

(Total)

Monetary Value

Total National Scales
for Non-market Consumption

#### **Construction of NTTA**



Composition of Life Cycle Deficit of National Time Transfer Accounts

X

X

Monetary Value Macro Control for Non-market Production / (After Modified) Non-market Consumption for Male

Aggregate (National) Monetary Value Smoothing Distribution for Non-market Production / Non-market Consumption for Male (Ratio)

Aggregate (National) Monetary Value NTTA Result for Non-market Production / Non-market Consumption for Male

Monetary Value Macro Control for Non-market Production / (After Modified) Non-market Consumption for Female

Aggregate (National) Monetary Value Smoothing Distribution for Non-market Production / Non-market Consumption for Female (Ratio)

Aggregate (National) Monetary Value NTTA Result for Non-market Production / Non-market Consumption for Female

Aggregate (National) Monetary Value NTTA Result for Non-market Production / Non-market Consumption for Male

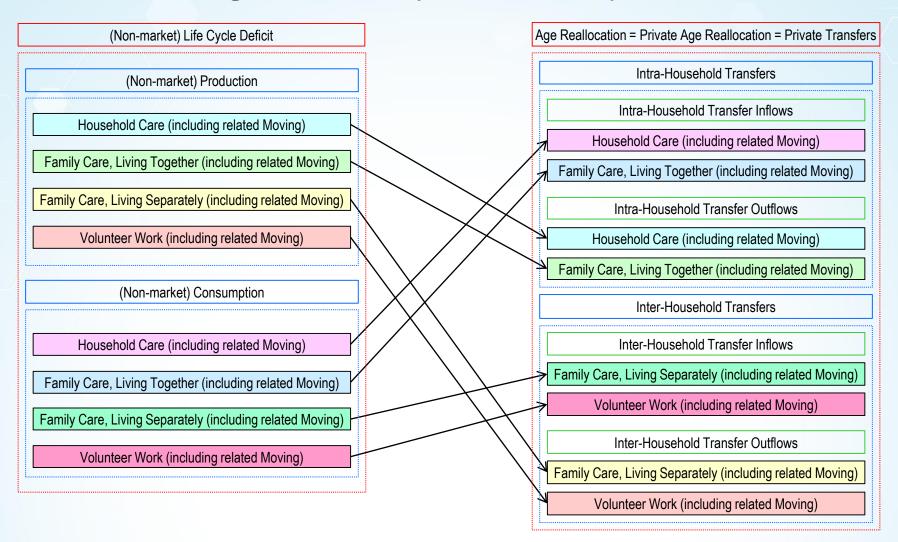
Aggregate (National) Monetary Value NTTA Result for Non-market Production / Non-market Consumption for Female

Aggregate (National) Monetary Value NTTA Result for Non-market Production / Non-market Consumption

#### **Construction of NTTA**



#### Construction of Age Reallocation (Private transfers) in NTTA



#### Main Result Table of Korea's NTTA



#### Main NTTA Result Table

Component	Macro	Age	Age	Age	Age		Age	Age	Age	Age
	Control	0	1	2	3	Щ	82	83	84	85+
(Non-Market) Life Cycle Deficit										
(Non-Market) Consumption									<i>y</i>	
Household Care (including related Moving)										
Family Care (including related Moving)										
Volunteer Work (including related Moving)										
(Non-Market) Production										
Household Care (including related Moving)										
Family Care (including related Moving)										
Volunteer Work (including related Moving)										
Age Reallocations										
Private Age Reallocation										
Private Transfers										
Intra-Household Transfers										
Household Care (including related Moving)										
Family Care, Living Together (including related Moving)										
Inter-Household Transfers										
Family Care, Living Separately (including related Moving)										
Volunteer Work (including related Moving)										
Using Household Production Satellite Accounts (HPSA	,	J L	Using Time Use Survey (TUS)						TUS)	

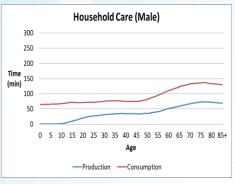


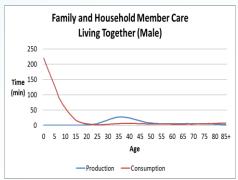


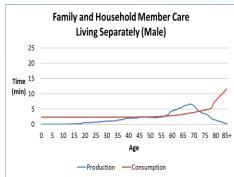
# Main Results of Korea's NTTA (Korea's National Time Transfer Accounts)

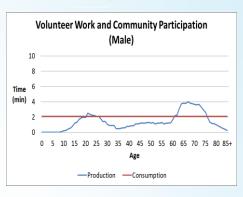


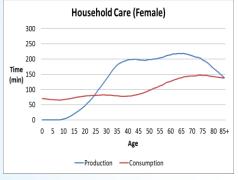
- Result of Korea's Time Use Survey (2014, Per Capita Average by Day of Week)
  - Time spent distributions of non-market production & consumption by gender & age
    - 4 Main activities : Male & Female

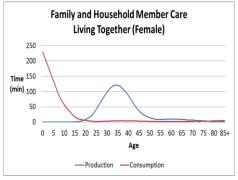


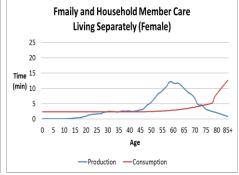


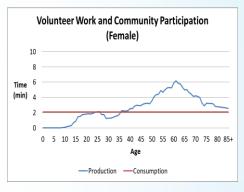






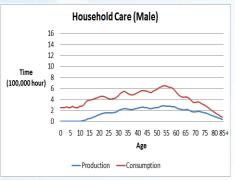


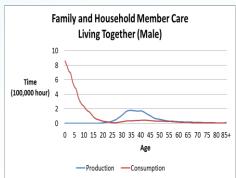


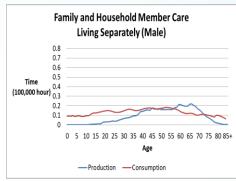


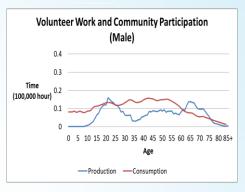


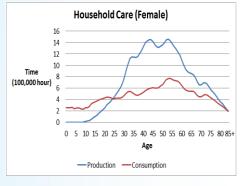
- Result of Korea's Time Use Survey (2014, Aggregate Average by Day of Week)
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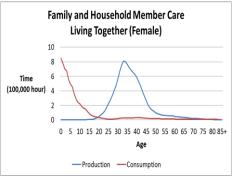


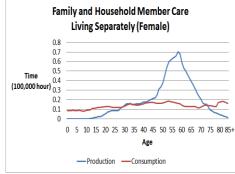


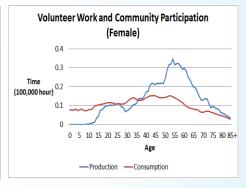






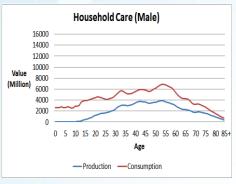


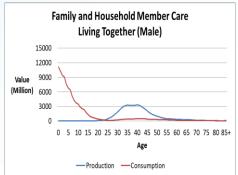


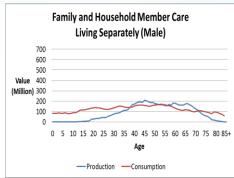


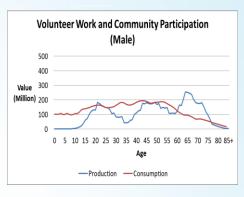


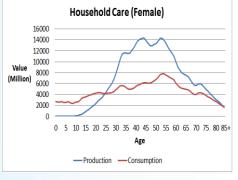
- Result of Korea's Time Use Survey (2014, Aggregate Average by Day of Week)
  - Monetary value distributions of non-market production & consumption by gender & age
    - 4 Main activities : Male & Female

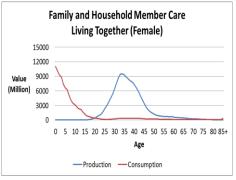


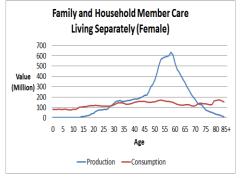


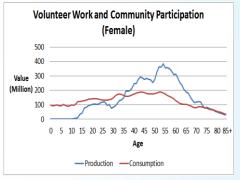






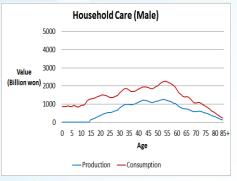


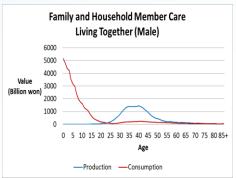


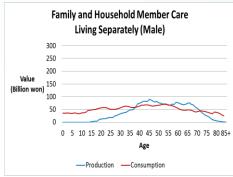


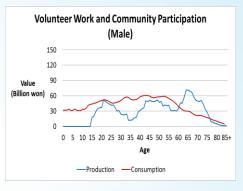


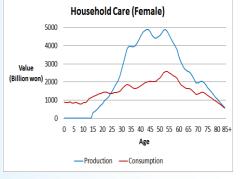
- Final Result of Korea's NTTA (2014, Aggregate Monetary Value)
  - Aggregate NTTA results of non-market production & consumption by gender & age
    - 4 Main activities : Male & Female

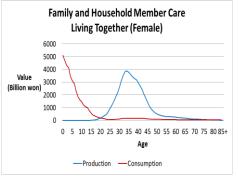


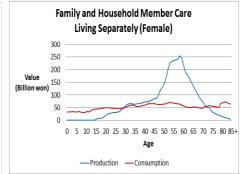


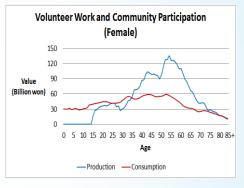






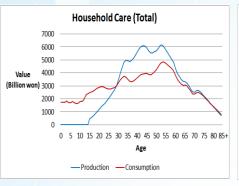


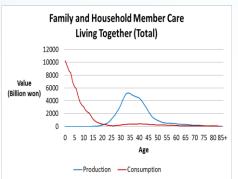


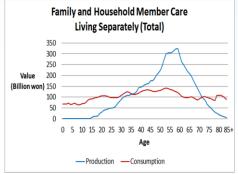


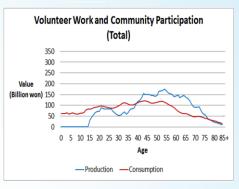


- Final Result of Korea's NTTA (2014, Aggregate Monetary Value)
  - Aggregate NTTA results of non-market production & consumption by gender & age
    - 4 Main activities : Total (Male + Female)

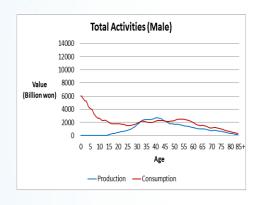


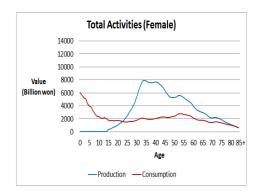


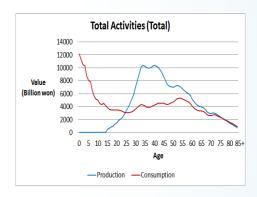




Total activities : Male, Female, Total (Male + Female)











### **Summary & Future Plans**

#### **Summary & Conclusion**



- Construction of Korea's National Time Transfer Accounts (Korea's NTTA) using Korea's Time Use Survey (Korea's TUS) data in 2014
  - Composition of Life Cycle Deficit in NTTA
    - Construction of age-specific distribution for non-market production and non-market consumption for each activity
    - Composition of Life Cycle Deficit in NTTA by multiplying macro controls and age-specific distributions
  - Composition of Age Reallocation (Private Transfers) in NTTA
    - Composition of Age Reallocation (Private Transfers) using the result of Life Cycle Deficit
- Analysis on the result of Korea's NTTA
  - The results of Korea's Household Production Satellite Accounts (Korea's HPSA) are used as a weight for each activity

#### **Future Plans**



- The results of Korea's National Time Transfer Accounts (Korea's NTTA) will be officially released in the second half of 2019.
  - The NTTA result presented in this study, which is an intermediate result in the development process, may be modified or changed in the process of future review.
- Review of macro controls on consumption by gender in National Time Transfer Accounts
  - Macro controls for non-market production, macro controls for non-market consumption, and macro controls by gender for non-market production in NTTA are generated using Household Production Satellite Account (HPSA) results, respectively.
    - The HPSA results are reflected in the values of macro controls for non-market production and non-market consumption.
      - By activities: (The results of HPSA) = (Macro controls for non-market production) = (Macro controls for non-market consumption)
    - The HPSA results by gender are reflected in the values of macro controls by gender for non-market production.
      - By activities: (The results of HPSA for male) = (Macro controls for non-market production for male) (The results of HPSA for female) = (Macro controls for non-market production for female)
  - On the other hand, macro controls by gender for non-market consumption are calculated by gender ratios for non-market production and non-market consumption, respectively.
    - The calculation method of macro controls by gender for non-market consumption is subject to further review in the future



### Thank You



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