



## Estimation of NTA by Sub-Region

Mathana Phananimamai

NUPRI-TDRI

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## Why estimate NTA by sub-region?

- NTA allocate aggregate variables taken from NI to individuals.
- Rules: according to the age profile of each variable taken from household survey data.
- Each region has different characteristics in the age structure of the population, age profile and others, hence NTA by sub-region can provide some implications of these differences on social and economics policy.

## How to proceed ?

- Repeat the method used in national NTA.
- Adjust the method so that different characteristics in each region can be highlight.

## Municipal and Non-municipal Areas

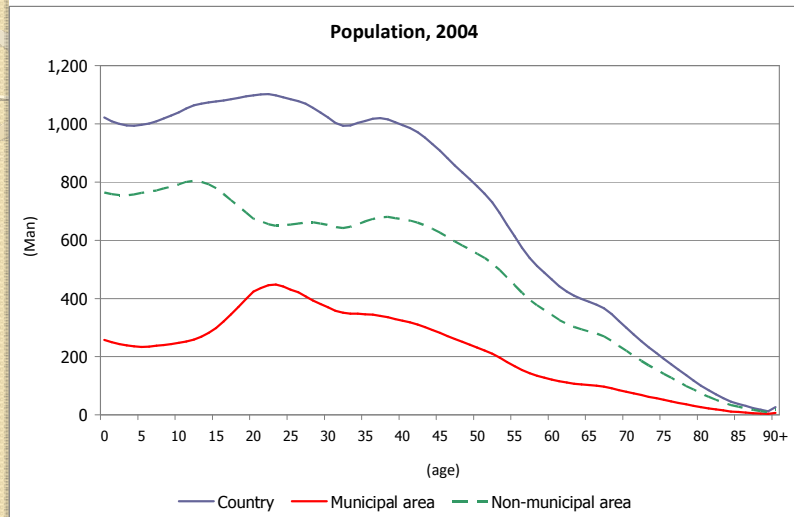
- Age structure of the population
- The structure of employment
  - Employee vs. Self-employment
  - Income level
- Private consumption
- Public consumption
  - Social security programs in Thailand mostly classified by work status. Government subsidize education mainly through public institutions
  - Residents in different regions do not receive equal benefits from these program.

## Problem with aggregate control

- Availability of NI by sub-region?
- If not, some assumption must be made.
  - Discrepancy between NI figures and those obtained from multiplying age profiles and population is the same in all sub-region.

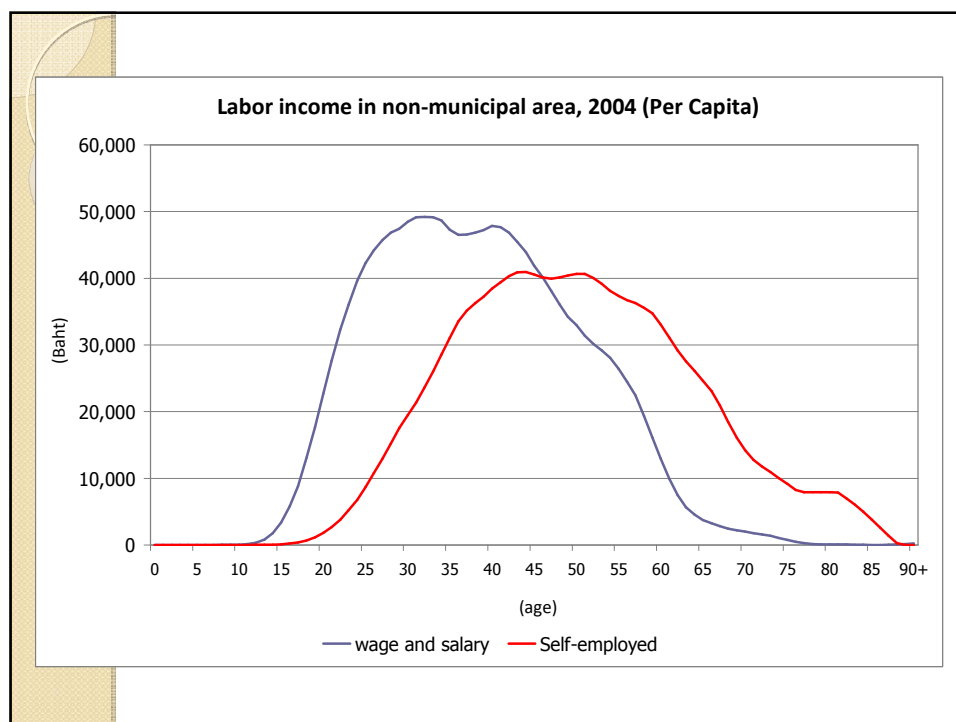
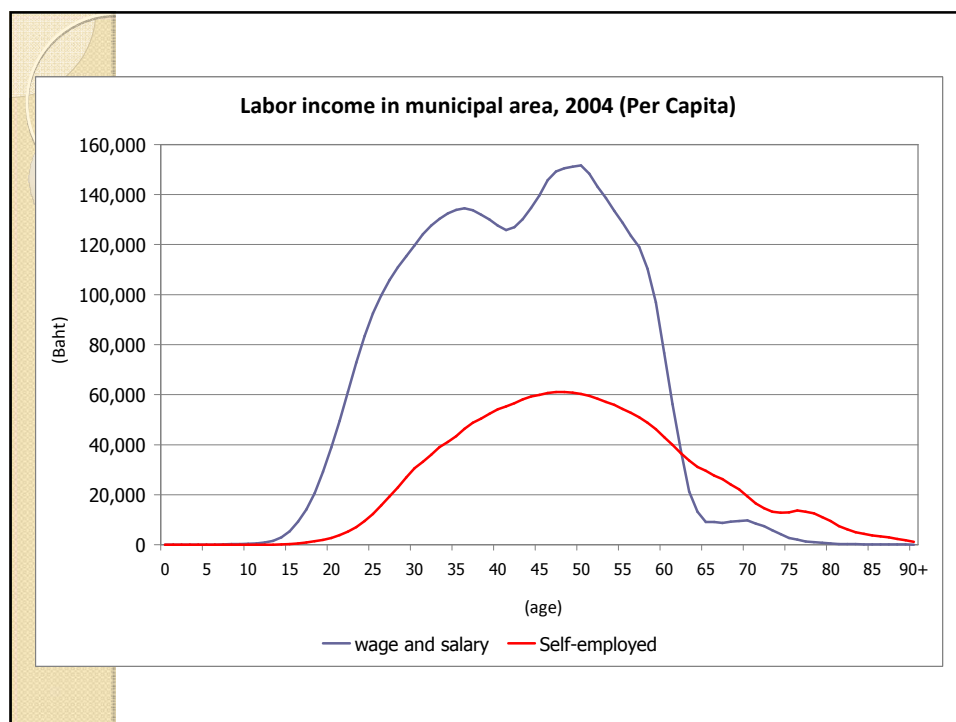
Preliminary results of

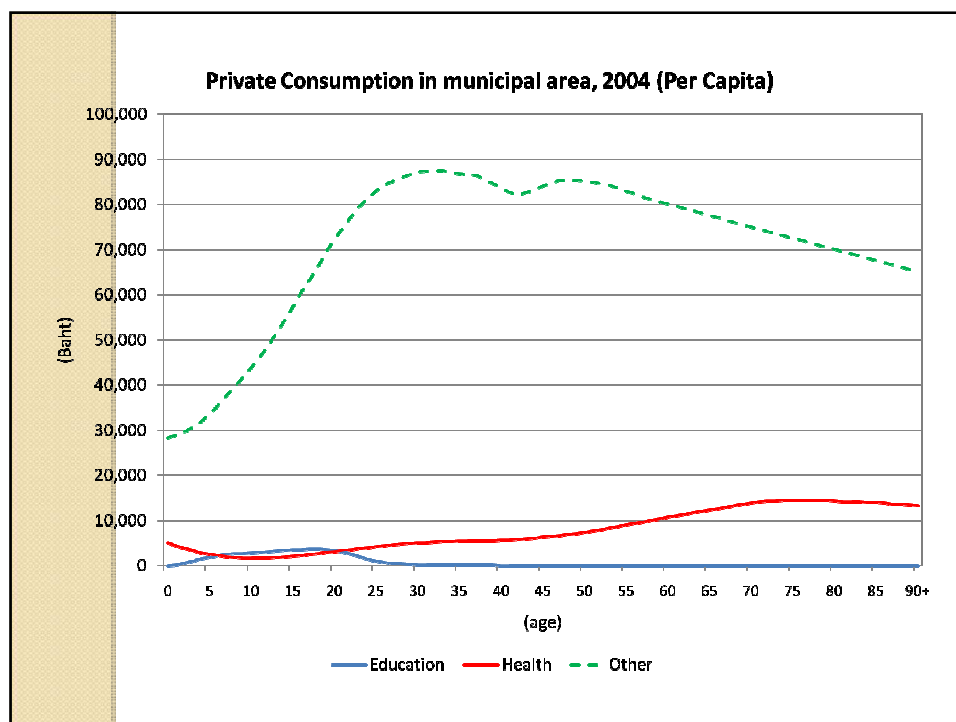
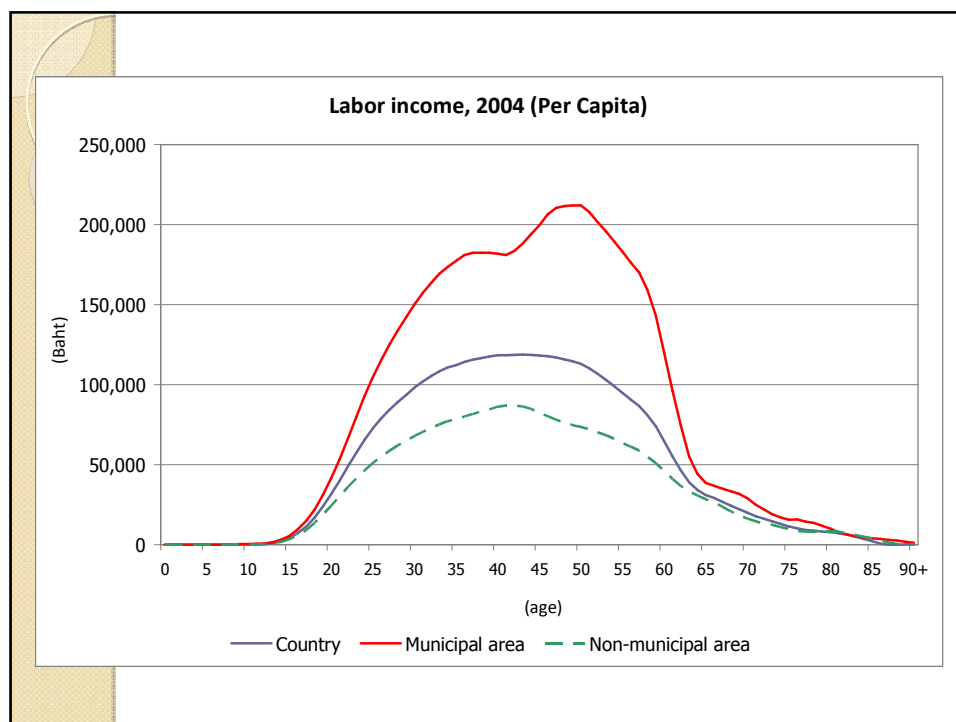
NTA Thailand by municipality

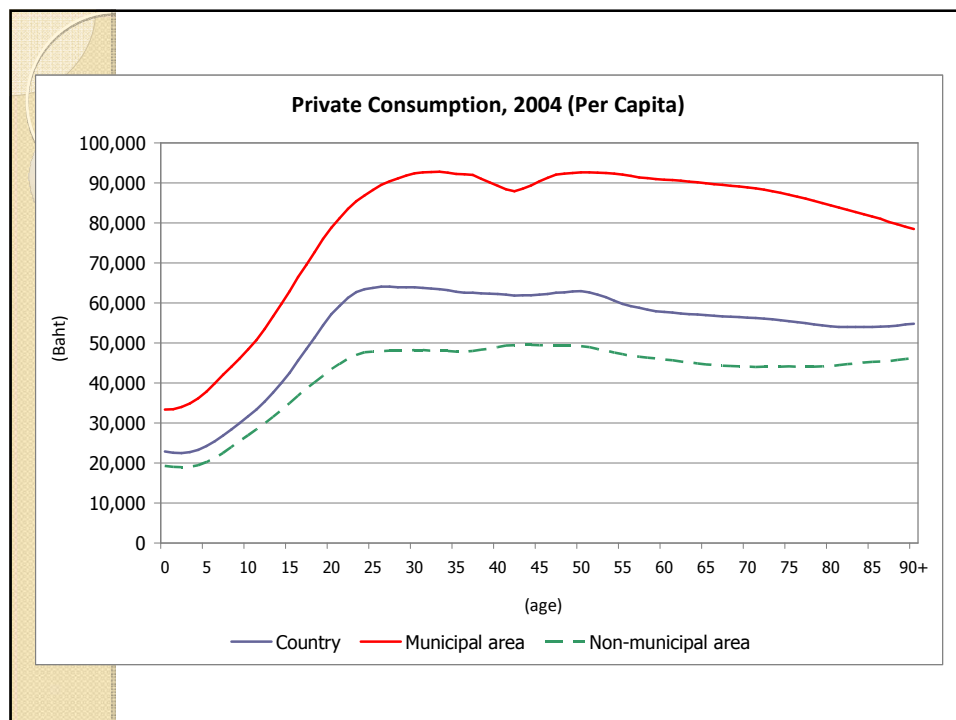
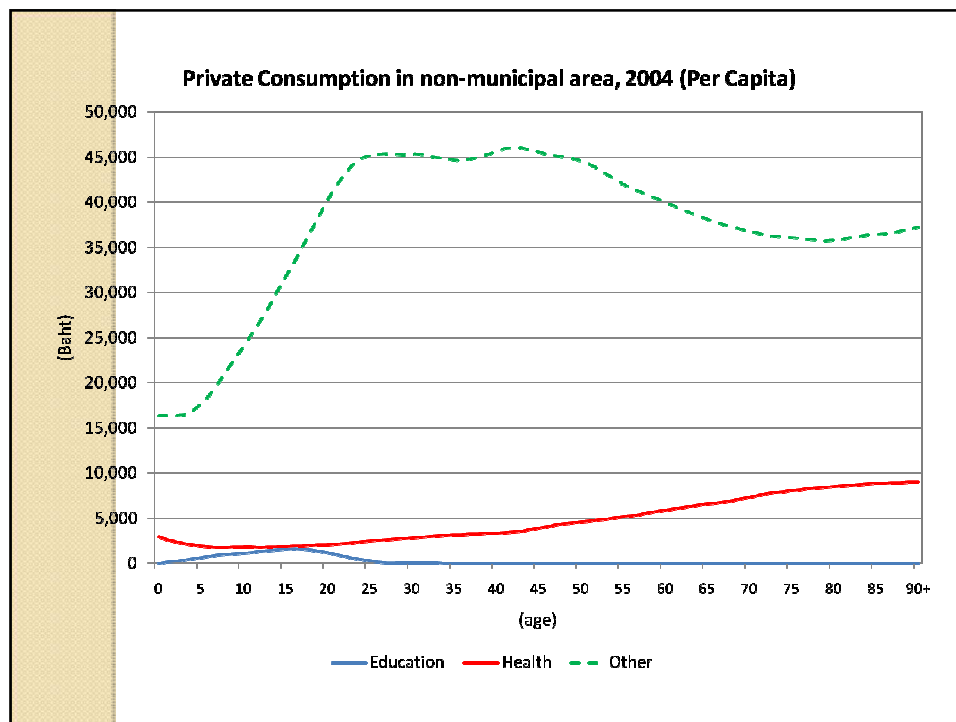


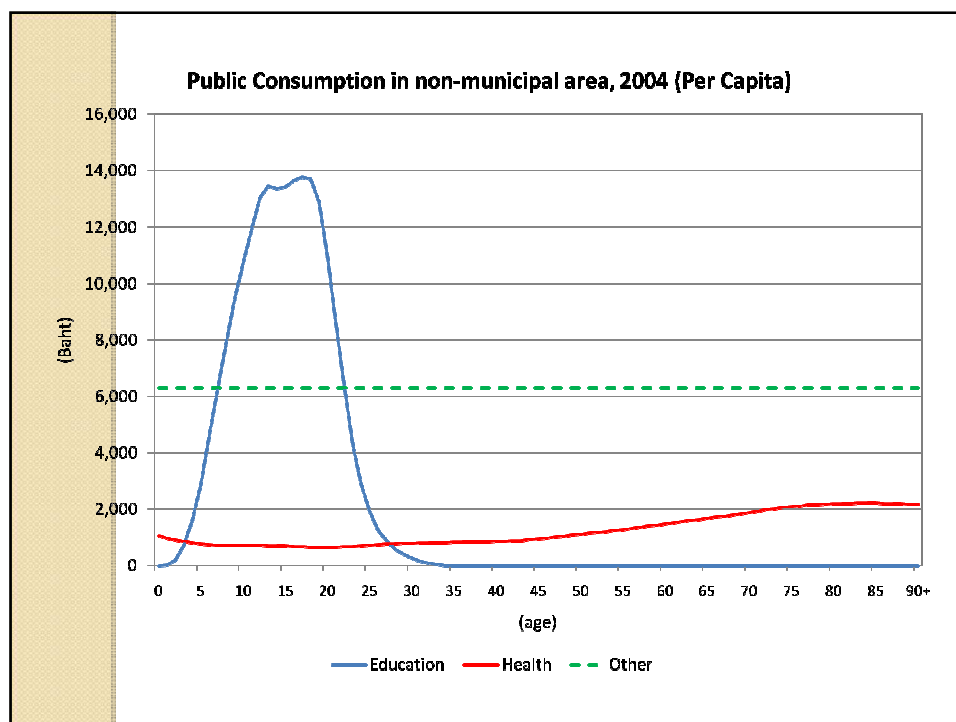
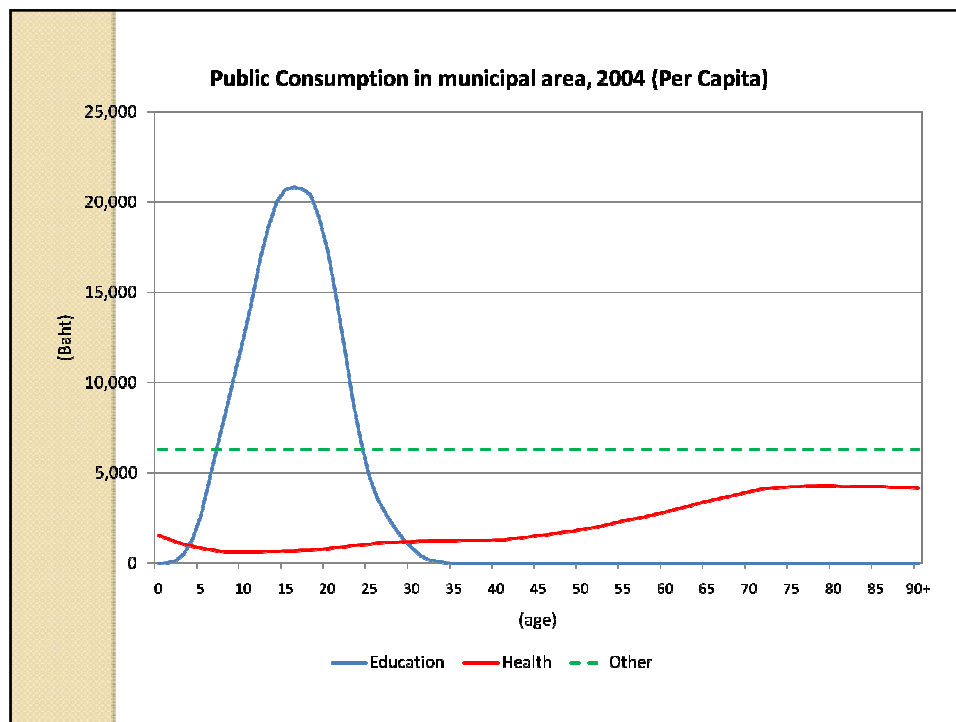
## School Enrolment in 2006

Age	Whole Country	Municipal Areas	Non-municipal Areas
6-11	99.15	98.99	99.20
12-14	97.07	97.21	97.02
15-19	68.03	70.02	67.19
20-24	18.91	27.68	12.67

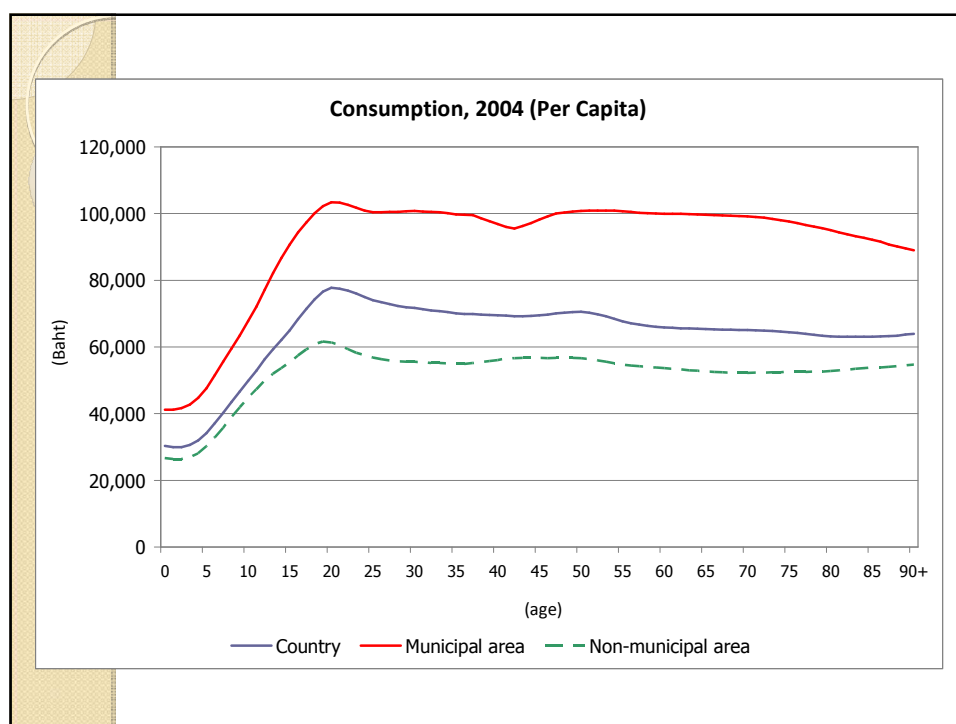
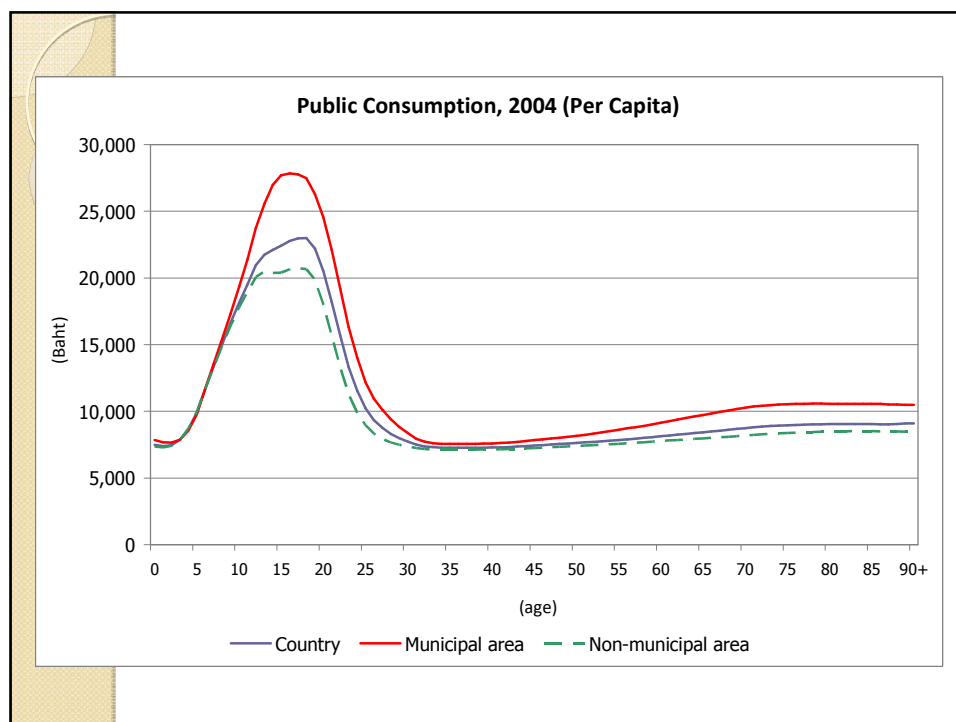


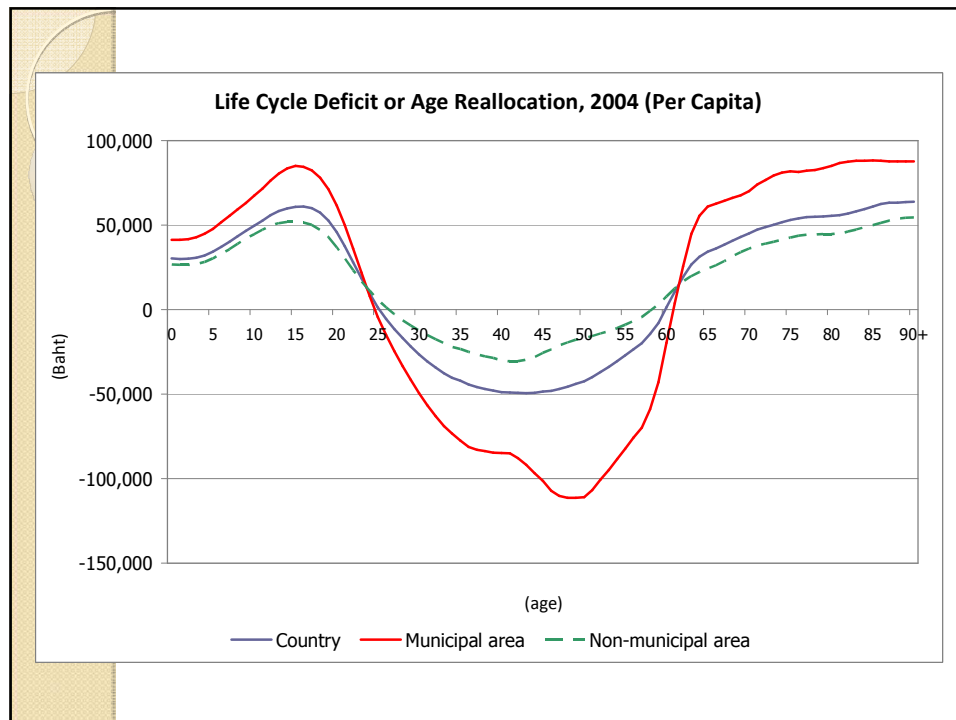












## How to deal with unequal benefits from public programs received by residents in sub-region?

- Government subsidies in education mainly through public school, and a higher proportion of rural students attending public schools.
- How should be the allocation rule to highlight the differences by region?

## Proportion of enrolment in public school

Level	Whole Kingdom	Municipal Area	Non-municipal Areas
Pre-primary	86.32	69.17	91.04
Primary	88.33	74.58	92.74
Lower Secondary	90.85	83.99	93.23
Upper Secondary	89.76	85.33	92.26
Certificate	69.11	59.77	73.67
Post-secondary	70.48	61.69	77.07
Bachelor Degree	80.72	77.06	89.97
Post Bachelor Degree	88.26	91.37	66.85

## Comparing private expenditure in public and private schools

	Public School				Private School			
	Total	Tuition \$ Fee	Instrument	Others	Total	Tuition \$ Fee	Instrument	Others
Municipal								
All levels	13,449	2,006	1,113	10,331	30,494	12,955	1,824	15,715
Pre-primary	5,367	666	399	4,302	18,566	8,679	881	9,006
Primary	6,971	283	679	6,009	23,579	9,146	1,472	12,961
Lower Secondary	12,472	1,039	1,068	10,365	30,876	10,508	1,969	18,399
Upper Secondary	16,764	1,879	1,377	13,508	34,903	13,601	2,126	19,175
Bachelor or higher	32,355	8,361	2,305	21,689	57,761	27,647	3,545	26,570
Non-municipal								
All levels	6,472	517	686	5,269	18,344	6,320	1,460	10,564
Pre-primary	2,987	169	228	2,590	11,120	4,339	701	6,080
Primary	3,785	33	484	3,268	14,423	4,490	1,269	8,665
Lower Secondary	7,592	314	820	6,458	14,892	3,087	1,331	10,474
Upper Secondary	11,890	1,119	1,219	9,552	20,319	6,283	1,681	12,356
Bachelor or higher	22,676	5,571	1,919	15,187	37,204	14,862	2,871	19,471

## Lessons learned

- Estimation of NTA by sub-region requires more detail aggregate control than NI at the national level can provide.
- By replication, NTA by sub-region seems to be able to bring out different characteristics in labor income and private consumption quite well, but not with public consumption.
- Some modification in the method of estimation may be needed.

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Thank you