

NTA and the Macro Economy

Constructing macro controls for
National Transfer Accounts

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I. Introduction

- Goal of session: To construct aggregate controls for NTA based on UN System of National Accounts (SNA)
- Insures that NTA is consistent with SNA, the mainstay for describing the aggregate economy
- Some NTA variables do not have a direct counterpart in SNA: For these variables aggregate controls cannot be based on SNA

Preparing to construct macro controls

- Read chapter 4 of the NTA Manual
- Prepare a macro inventory (Appendix D)
- Obtain appropriate SNA data for the year for which NTA are being constructed (see website for sample SNA data used in the examples)

NTA flow constraint and accounts

$$C - Y_l = \underbrace{\tau_g + Y_{Ag} - S_g}_{\text{Public age reallocations}} + \underbrace{\tau_f + Y_{Af} - S_f}_{\text{Private age reallocations}}$$

Lifecycle
account

Public age
reallocations

Private age
reallocations

- Three summary accounts are constructed:
 - Lifecycle account
 - Public age reallocations
 - Private age reallocations

Lifecycle account

Table 4.11 Aggregate lifecycle flows,
UNSNA 2008

Lifecycle Deficit	29.5
Consumption	1,266.0
Public Consumption	352.0
Private Consumption	914.0
Labor Income	1,236.5
Earnings	1,194.8
Self-employment Labor Income	41.7

Calculated from
SNA with
adjustments

Calculated
from
components

Public age reallocations

Table 4.20 Aggregate public age reallocations, UNSNA 2008

Public Age Reallocations	12.3
Public transfers	-29.7
Public transfer inflows	471.3
Public transfer inflows, in-kind	352.0
Public transfer inflows, cash	119.3
Public transfer outflows	500.9
Taxes and other revenues	458.9
Transfer deficit(+)/surplus(-)	42.0
Net public transfers from ROW	-29.7
Public asset-based reallocations	42.0
Public asset income	-20.0
Public capital income	0.0
Public property income	-20.0
Public property income inflows	22.0
Public property income outflows	42.0
Public saving	-62.0

Calculated from
SNA with
adjustments

Sum of
components

Public transfer
inflows +
transfers from
ROW

Gap between
taxes and
transfer
outflows

Sum of
components

Table 4.21 Aggregate private age reallocations, UNSNA 2008

Age Reallocations	29.5
Private Age Reallocations	17.2
Private transfers	-8.3
Private transfer inflows	na
Private transfer inflows, interhousehold	na
Private transfers inflows, intrahousehold	na
Private transfer outflows	na
Private transfer inflows, interhousehold	na
Private transfers inflows, intrahousehold	na
Net Private transfers from ROW	-8.3
Private asset-based reallocations	25.5
Private asset income	292.5
Private capital income	266.5
Private capital income, corporations and NPISHS	184.3
Private capital income, owner occupied housing	69.0
Private capital income from mixed income	13.2
Private property income	26.0
Private property income inflows	375.0
Private property income outflows	349.0
Consumer credit	14.0
Other private property income outflows	335.0
Private saving	267.0

Sum of components

Sum of components

Sum of components

Residual

Not available from SNA

Estimated from SNA

II. Differences and similarities between SNA and NTA

Institutions: NTA and SNA

- In SNA

- Households
- Financial and non-financial corporations
- Government
- Non-profit institutions serving households (NPISHs)
- Non-resident units called the rest of the world

- In NTA

- Private
- Public
- Rest of the world

In NTA all flows are from the perspective of age groups (or the individuals that make up those age groups)

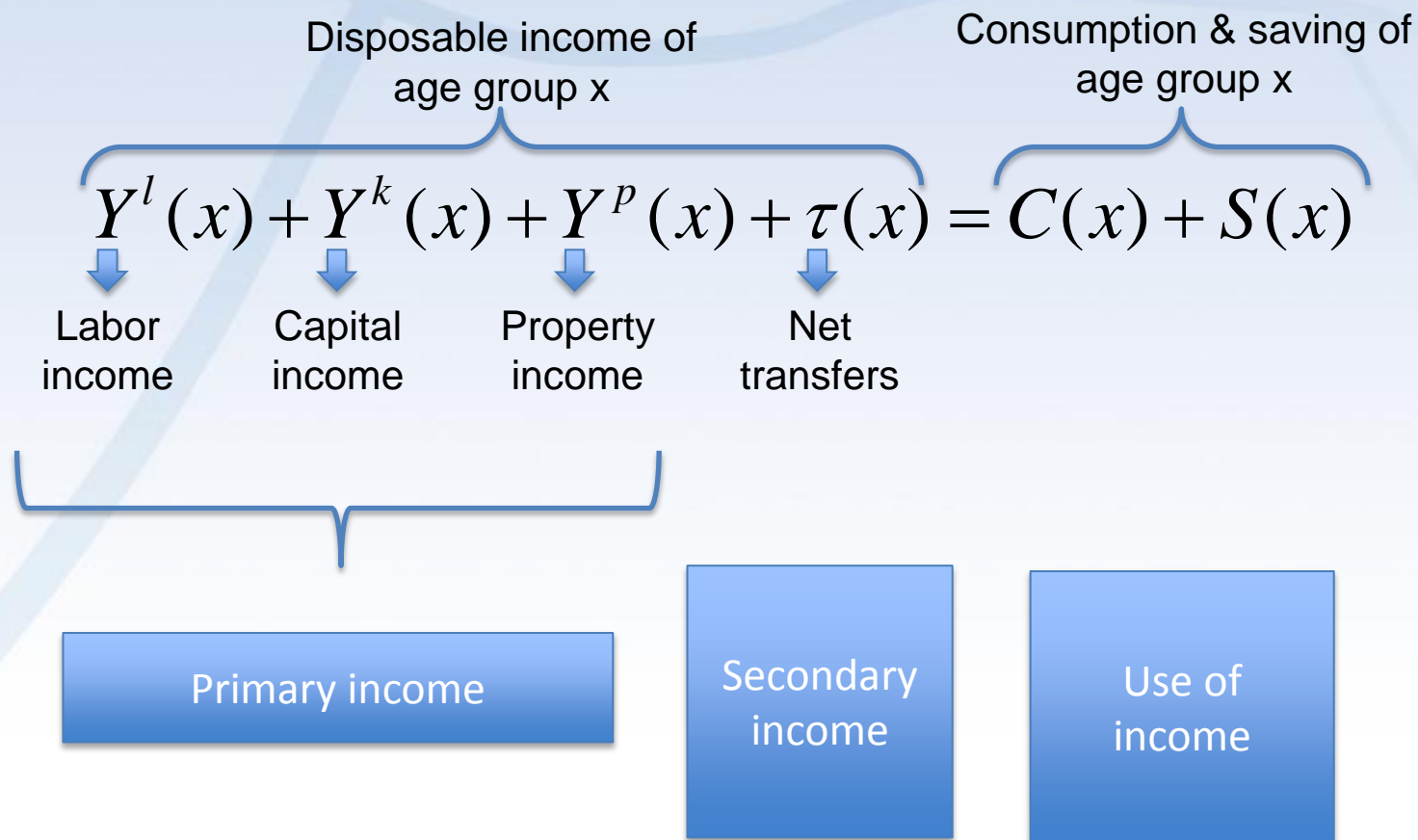
Terminology

- SNA flows are classified to as *resources or uses*
- NTA terms are inflows and outflows
- Inflows or resources are also called receipts
- Outflows or uses are also called disbursements
- In NTA flows are always classified from the perspective of the age group (or individual members of the age group)

Organization of accounts

- In NTA:
 - Lifecycle account
 - Public age reallocation account
 - Private age reallocation account
- In SNA:
 - Generation of income account
 - Allocation of primary income account
 - Secondary distribution of income account
 - Use of disposable income account

Relationship between NTA and SNA

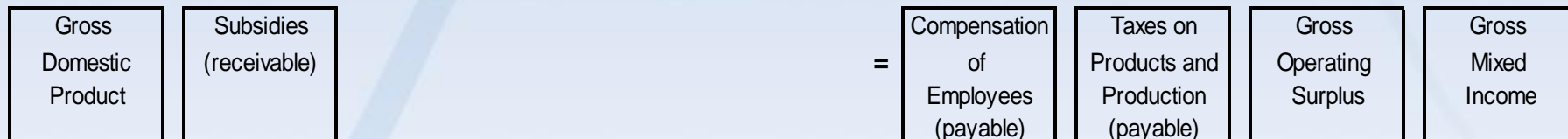


Schematic of flow accounts in the SNA

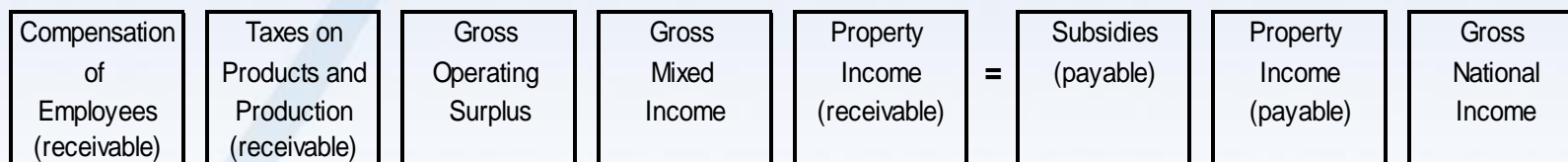
RESOURCES

USES

Generation of Income Account:



Allocation of Primary Income Account:



Secondary Distribution of Income Account:



Use of Disposable Income Account:



III. Steps for constructing macro controls

1. Calculate NTA primary income using SNA allocation of primary income account:
 - Labor income
 - Capital income
 - Property income
2. Calculate consumption and saving using SNA use of income account
3. Construct lifecycle account
4. Construct public and private asset-based reallocations

Note: Methods documented on *LC and RA* sheet, *Macro control based on UNSNA 2008.training version.xlsx*

III. Steps for constructing macro controls (continued)

5. Calculate public and private transfers based on SNA secondary distribution of income account (See *Transfers* sheet)
6. Construct NTA public and private age reallocation summaries (See *NTA Tables* sheet)
7. Review results (See *NTA Tables* sheet)

Calculating primary income

System of National Accounts

Components of primary income

Compensation of employees
Operating surplus of corporations
Mixed income of households
Property income
Taxes on production less subsidies

National Transfer Accounts

Components of NTA primary income

Labor income
Capital income
Property income

Consumption

Note that primary income is less in NTA than in SNA to the extent that SNA primary income includes taxes on consumption

Calculating primary income

Adjustments to convert SNA components into NTA components

- Allocate mixed income between capital income and labor income:
 - In SNA income from household enterprises does not distinguish the returns to capital from the returns to labor
 - In NTA 2/3 of gross mixed income is allocated to labor income and 1/3 to gross capital income
- Taxes on products and production less subsidies:
 - In NTA, treated as taxes on labor income, asset income, or consumption
 - Labor income and capital income are adjusted upward to compute pre-tax values
 - Consumption is adjusted downward to obtain pre-tax value
 - Included in outflows along with other taxes that fund public transfer outflows
- Net capital income:
 - Gross capital income less capital consumption

Adjusting for taxes on products and production less subsidies

Table 4.4

SNA flow	NTA adjustment
Taxes on products	Tax on consumption; consumption reduced.
Other taxes on production	Allocated to labor in proportion to share of labor income
	Allocated to capital in proportion to share of gross capital income
Subsidies on products	Tax on consumption; consumption reduced
Other subsidies on production	Allocated to labor in proportion to share of labor income
	Allocated to capital in proportion to share of gross capital income

Calculating consumption and saving

- Private and public consumption are distinguished in NTA:
 - In SNA private and public consumption are reported in the Use of income account for households and NPISHs (final consumption expenditure)
- Adjustments:
 - Taxes on products and production less subsidies
 - In some cases, mostly health consumption funded by the public, private consumption is reclassified as public consumption
- Saving in NTA:
 - Disposable income less consumption
 - Equivalent to SNA value reported in the *Use of Disposable Income Account*

Overview of transfers

- Public transfers:
Between private or ROW and public
- Private transfers:
Between private and ROW and private
- Public to public are not relevant

Transfer matrix and NTA flows			
Inflows to	Outflows from		
	Private sector	Public sector	Rest of the world
Private sector	Inter- and intra-household transfers	Cash and in-kind transfer inflows	Inter-household transfers
Public sector	Taxes	Not relevant	Taxes
Rest of the world	Inter-household transfers	Cash transfer inflows	Not relevant
	Private		Public

Overview of transfers

- SNA Flows are total inflows and outflows for each sector
- NTA requires estimates of flows between the three NTA sectors
- Private-sector flows from SNA are not useful for NTA

Transfer matrix, SNA2008				
	Total	Outflows from		
		Private sector	Public sector	Rest of the world
Inflows to	1229	964	248	17
Private sector	807	Not relevant	Public transfer inflows	
Public sector	367	Public transfer outflows	Not relevant	
Rest of the world	55			Not relevant
Available from SNA		Needed for NTA		

Estimating full transfer matrix

- Values may be available from statistical agency
- Many values can be assigned to the proper cell on *a priori* grounds:
 - Current taxes on income and wealth (private sector uses)
 - Public transfer, in-kind
- Some values are estimated using simple distribution rules (see calculation spreadsheet)

Macro control spreadsheet

- A macro control spreadsheet is available on the NTA website:
http://ntaccounts.org/web/nta/repository/UN_SNA%202008%20to%20NTA
- Calculates simple macro controls based on UN SNA 2008 model data
- Can be used to calculate macro controls by substituting SNA data for any country

Supplementary slides

Example: public transfer inflows

Table 4.20 Aggregate public age reallocations

Public Age Reallocations	12.3
Public transfers	-29.7
Public transfer inflows	471.3
Public transfer inflows, in-kind	352.0 → from public consumption
Public transfer inflows, cash	119.3
Public transfer outflows	500.9
Taxes and other revenues	458.9
Transfer deficit(+)/surplus(-)	42.0
Net public transfers from ROW	-29.7
Public asset-based reallocations	42.0
Public asset income	-20.0
Public capital income	0.0
Public property income	-20.0
Public property income inflows	22.0
Public property inc. outflows	42.0
Public saving	-62.0

Table 4.14. SNA Secondary Distribution of Income, UNSNA 2008

	Private		General Gov.		Total Econ.		ROW		Total	
	Res.	Uses	Res.	Uses	Res.	Uses	Res.	Uses	Res.	Uses
National income, net	1471		171		1642				1642	
Current transfers	807	964	367	248	1174	1212	55	17	1229	1229
Current taxes on income, wealth, etc.		212	213	0	213	212		1	213	213
Net social contributions	283	333	50		333	333	0	0	333	333
Social benefits other than social trans. in kind	384	272		112	384	384	0	0	384	384
Other current transfers	140	147	104	136	244	283	55	16	299	299
Disposable income, net	1314		290		1604					

Domestic Other current transfers excluding transfers within government

		Outflows from		
		Private	Public	Total
Inflows to		124.4	7.6	132.0
Private	125.7	118.5	7.3	
Public	6.3	5.9	0.4	
Total	132			

Example: macro controls for consumption

Table 4.8 Allocation of taxes and subsidies on products and production

	Total	Compens. of employees	Self-empl. labor income	Capital income	Consumption
Taxes on products	141				141
Subsidies on products	-8				-8
Taxes on production	94	66	2	26	
Subsidies on production	-36	-25	-1	-10	
Total	191	41	1	16	133

Table 4.11 Aggregate lifecycle flows, UNSNA 2008

Lifecycle Deficit	30
Consumption	1,266
Public Consumption	352
Private Consumption	914
Labor Income	1,236
Earnings	1,195
Self-employment Labor Income	42

Table 4.10 SNA Use of Disposable Income, Net

	Private		General Government		Total Economy		ROW		Total	
	Resources	Uses	Resources	Uses	Resources	Uses	Resources	Uses	Resources	Uses
Disposable income, net	1314		290		1604				1604	
Final consumption expenditure		1047		352		1399				1399
Adjustment for the change in pension entitlements	11	11			11	11	0	0	11	11
Saving, net		267		-62		205				205
Current external balance								-13		-13

Example: macro controls for labor income

Table 4.5 SNA Allocation of Primary Income Account, UNSNA, 2008

	Private		General Government		Total Economy		ROW		Total	
	Resources	Uses	Resources	Uses	Resources	Uses	Resources	Uses	Resources	Uses
Operating surplus, gross	425		27		452				452	
Operating surplus of corporations and NPISHs, gross	341				341				341	
Operating surplus of households, gross	84				84				84	
Mixed income, gross	61	$\times 2/3$			61				61	
Operating surplus, net	238		0		238					
Operating surplus, net, corporations, NPISHs	169				169					
Operating surplus, net, households	69				53					
Mixed income, net	53				53					
Compensation of employees	1154				1154		2	6	1156	6
Taxes on production and imports			235		235				235	
Subsidies			-44		-44				-44	
Property income	375	349	22	42	397	391	38	44	435	435
National income, net	1471		171		1642					

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NTA identities and evaluating results

- Aggregate lifecycle flows:
 - Lifecycle deficit = Consumption – Labor income
 - Consumption = Public consumption + Private consumption
 - Labor income = Earnings + Self-employment labor income

NTA identities and evaluating results

- public age reallocations:
 - $\text{Public age reallocations} = \text{Public transfers} + \text{Public asset-based reallocations}$
 - $\text{Public transfers} = \text{Public transfer inflows} - \text{Public transfer outflows}$
 - $\text{Public transfer inflows} = \text{Public transfer inflows, in-kind} + \text{Public transfer inflows, cash}$
 - $\text{Public transfer outflows} = \text{Public transfer inflows} - \text{Net public transfers from ROW}$
 - $\text{Transfer deficit/surplus} = \text{Public transfer outflows} - \text{Taxes and other revenues}$
 - $\text{Public asset-based reallocations} = \text{Public asset income} - \text{Public saving}$
 - $\text{Public asset income} = \text{Public capital income} + \text{Public property income}$
 - $\text{Public property income} = \text{Public property income inflows} - \text{Public property income outflows}$

NTA identities and evaluating results

- Private age reallocations:
 - Private age reallocations = Private transfers + Private asset-based reallocations
 - Private transfers = Net private transfers from ROW
 - Private asset-based reallocations = Private asset income – Private saving
 - Private asset income = Private capital income + Private property income
 - Private capital income = Private capital income, business and non-profits + Private capital income, owner-occupied housing
 - Private property income = Private property income inflows – Private property income outflows

NTA identities and evaluating results

- After private transfers by age have been constructed:
 - $\text{Private transfers} = \text{Private transfer inflows} - \text{Private transfer outflows}$
 - $\text{Private transfer inflows} = \text{Private transfer inflows, interhousehold} + \text{Private transfer inflows, intrahousehold}$
 - $\text{Private transfer outflows} = \text{Private transfer outflows, interhousehold} + \text{Private transfer outflows, intrahousehold}$

NTA identities and evaluating results

- Across the aggregate sub-accounts:
 - Age reallocations = Public age reallocations + Private age reallocations
 - Lifecycle deficit = Age reallocation