

1 INTRODUCTION

The National Transfer Accounts (NTA) is an internationally recognized framework that measures economic flows across age groups within a population. It extends conventional macroeconomic accounts by incorporating the age dimension into the analysis of production, consumption and redistribution of resources.

While the national accounts provide aggregate measures of income and expenditure for the economy, NTA disaggregates these aggregates by single year of age. This enables the examination of how economic resources are generated and utilized at different stages of the life cycle.

The framework focuses on the economic life cycle, which reflects the imbalance between labour income and consumption over age. Typically, children and older persons consume more than they produce through labour, resulting in a life cycle deficit, while working-age individuals generate a surplus.

The life cycle deficit is financed through intergenerational transfers and asset-based reallocations. NTA therefore provides important insights into the sustainability of economic support systems, especially in the context of population ageing and demographic transition.

The compilation of NTA, Malaysia, 2022 follows the standards and guidelines developed by the National Transfer Accounts Project. The estimates are aligned with the principles of the System of National Accounts to ensure consistency with macroeconomic aggregates.

2 NATIONAL TRANSFER ACCOUNTS (NTA) FRAMEWORK

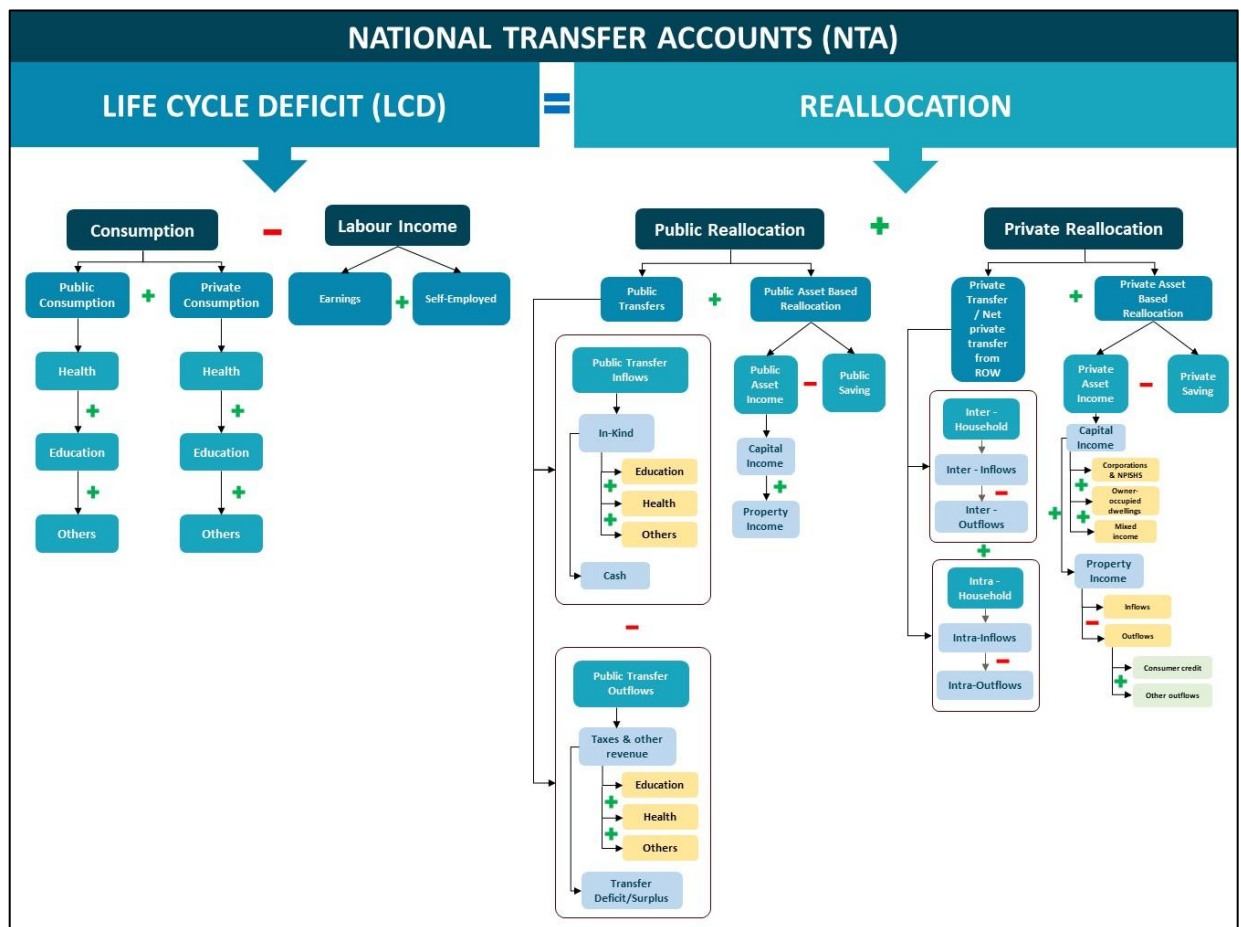


Figure 1: Structure of the National Transfer Accounts Framework

2.1 Overview

The National Transfer Accounts (NTA) framework provides a comprehensive age-based accounting structure that links the economic life cycle to intergenerational resource flows. It extends the macroeconomic structure of the System of National Accounts (SNA) by incorporating the age dimension into the measurement of production, consumption and redistribution.

The framework is organized into two principal components:

- i. **Life Cycle Deficit (LCD)**
- ii. **Age Reallocation**

The life cycle deficit captures the imbalance between consumption and labour income at each age. This imbalance is financed through public and private reallocations, ensuring that total uses and sources of resources remain equal for every age group.

2.2 Life Cycle Deficit

Life Cycle Deficit refers to the difference between consumption and income at a given age. It reflects the level of economic dependency that typically occurs at younger and older ages, when consumption exceeds income. In contrast, during the working-age period, individuals generally generate a surplus when income exceeds consumption.

The life cycle deficit at age x is expressed as:

$$LCD(x) = C(x) - Y^L(x)$$

where:

$C(x)$ is per capita consumption at age x

$Y^L(x)$ is per capita labour income at age x

A positive $LCD(x)$ indicates a life cycle deficit, where consumption exceeds labour income at a given age. This condition typically occurs at younger and older ages and must be financed through reallocation mechanisms such as public transfers, private transfers, or asset use. Conversely, a negative $LCD(x)$ indicates a life cycle surplus, where labour income exceeds consumption, and the surplus can be used for savings or to support other age groups through transfers.

Consumption consists of:

- **Public consumption**, including expenditure on education, health and other government-provided services allocated by age.
- **Private consumption**, derived from household expenditure and allocated to individuals.

Income consists of compensation of employees and mixed income for the self-employed.

2.3 Age Reallocation Mechanisms

The life cycle deficit is financed through age reallocations. These reallocations operate through two institutional sectors:

- i. Public age reallocation
- ii. Private age reallocation

2.4 Public Age Reallocation

Public age reallocation consists of public transfers and public asset-based reallocations.

a) Public Transfers

Public transfers represent redistributive flows mediated through the government.

They include:

Public transfer inflows

- i. In-kind transfers such as education and health services*
- ii. Cash transfers including pensions, social assistance and other benefits*

Public transfer outflows

- i. Taxes on income*
- ii. Taxes on production*
- iii. Social contributions and other government revenues*

Net public transfers at each age are defined as public transfer inflows minus public transfer outflows.

b) Public Asset-Based Reallocation

Public asset-based reallocation reflects the role of government assets and liabilities in financing age-specific consumption.

It includes:

- i. Public asset income*
- ii. Public saving*

2.5 Private Age Reallocation

Private age reallocation consists of private transfers and private asset-based reallocations.

a) Private Transfers

Private transfers represent resource flows within and between households.

They include:

- i. Inter-household transfers (net), such as remittances and monetary support between household.*
- ii. Intra-household transfers (net), which reflect the redistribution of resources among household members.*

b) Private Asset-Based Reallocation

Private asset-based reallocation reflects the accumulation and use of assets over the life cycle.

It includes:

- i. Private asset income, such as capital income and imputed rental of owner-occupied housing.*
- ii. Private saving (net), representing the portion of disposable income not used for current consumption.*

During working ages, individuals typically accumulate assets, while at older ages assets may be drawn down to finance consumption.

2.6 Accounting Identity

The NTA framework ensures that, for each age, total uses of resources are equal to total sources of financing.

The financing of the life cycle deficit is expressed as:

$$LCD(x) = [\tau^+(x) - \tau^-(x)] + [Y^A(x) - S(x)]$$

Rearranging yields the full accounting identity:

$$C(x) + S(x) = Y^L(x) + Y^A(x) + \tau^+(x) - \tau^-(x)$$

This identity guarantees internal consistency within the NTA system and alignment with macroeconomic aggregates.

3 CONCEPTS

3.1 Economic Life Cycle

The economic life cycle describes the age pattern of labour income and consumption. Labour income includes earnings and mixed income from self-employment activities attributable to individuals.

Consumption consists of private consumption and public consumption allocated to individuals by age. Private consumption includes household expenditure on goods and services, while public consumption includes government expenditure on education, health and other age-related services.

Life Cycle Deficit (LCD) at age x is defined as:

$$LCD(x) = C(x) - Y^L(x)$$

where:

$C(x)$ = Per capita consumption at age x

$Y^L(x)$ = Per capita labour income at age x

A positive LCD indicates the consumption exceeds labour income, while a negative LCD indicates a life cycle surplus.

3.2 Transfers

Transfers are reallocations of resources that occur without a direct exchange of goods or services.

a) Public Transfers

Public transfer inflows include benefits received from the government, such as publicly funded education, healthcare services and social protection programmes. Public transfer outflows mainly consist of taxes and production, as well as social contributions paid by individuals.

b) Private Transfers

Private transfers are divided into inter-household transfers, which occur between households, and intra-household transfers, which represent the redistribution of resources among household members.

3.3 Asset-Based Reallocations

Asset-based reallocations refer to the use of assets to finance consumption at different stages of life. These include asset income and saving. Asset income consists of interest, dividends, rental income and other returns from financial and non-financial assets. Saving is defined as disposable income not used for current consumption.

The financing of the life cycle deficit is expressed as:

$$LCD(x) = [\tau^+(x) - \tau(x)] + [Y^A(x) - S(x)]$$

where:

$\tau^+(x)$ = Transfer inflows

$\tau(x)$ = Transfer outflows

$Y^A(x)$ = Asset income

$S(x)$ = Saving

This identity ensures that the life cycle deficit is fully financed through net transfers and asset-based reallocations.

4 METHODOLOGY

4.1 Scope and Coverage

The National Transfer Accounts (NTA) estimates presented in this publication refer to Malaysia for the year 2022. The age coverage includes single years of age ranging from 0 to 85 years, with all monetary values expressed in current prices in Ringgit Malaysia. Additionally, the age profiles are constructed on a per capita basis and later aggregated using mid-year population estimates.

4.2 Data Sources

The compilation of NTA is based on official data sources, including national accounts statistics, household surveys, labour force statistics and government administrative records. Household survey data are primarily used to derive age-specific profiles of labour income, private consumption and private transfers, while administrative data are utilised to allocate public expenditure on education, health and social protection across different age groups. The data used in this compilation were obtained from various government agencies and divisions, including the Ministry of Economy, Ministry of Health Malaysia (MOH), Ministry of Education Malaysia (MOE), Ministry of Higher Education (MOHE), Ministry of Economy, Ministry of Human Resources (MOHR), Employees Provident Fund (EPF), Public Service Department (JPA), as well as the National Accounts Statistics Division (BPAN), the Prices, Income and Expenditure Statistics Division (BPHPP) and Malaysian Bureau of Labour Statistics (MBLS), Department of Statistics Malaysia (DOSM).

4.3 Construction of Age Profiles

Age profiles are first estimated from microdata on a per capita basis. Where necessary, smoothing techniques are applied to reduce irregular fluctuations across adjacent ages while preserving the overall pattern. The profiles are then adjusted proportionately to ensure consistency with macroeconomic control totals.

4.4 Macro Controls and Consistency

Macro controls are applied to ensure that aggregated NTA estimates are consistent with the corresponding aggregates reported in the national accounts.

$$\sum_x C(x) = C$$

$$\sum_x Y^L(x) = Y^L$$

where:

C = Total consumption

Y^L = Total labour income

4.5 Limitations

Survey based estimates may be subject to sampling errors and underreporting. Certain components of public expenditure are allocated using distributional assumptions due to data limitations. In addition, estimates at older ages may be affected by smaller sample sizes.

5 REALLOCATION MECHANISM

5.1 Overview

In the NTA framework, the life cycle deficit at each age is financed through two main mechanisms: transfers and asset-based reallocations. Transfers redistribute resources across individuals and generations without direct exchange, while asset-based reallocations involve the building up of assets during surplus years and the drawing down of assets during deficit years over the life cycle.

5.2 Public Reallocation

Public sector reallocations consist of public transfer inflows and outflows. Public transfer inflows are allocated by age using administrative expenditure data, with education expenditure distributed primarily across school going ages, while health expenditure is allocated according to age utilisation profiles. Public transfer outflows, including taxes on income and production as well as social contributions, are allocated using age specific income profiles derived from household survey data.

5.3 Private Reallocations

Private transfers include both inter-household and intra-household transfers. Inter-household transfers are estimated directly from survey reported remittances and cash transfers between households. Intra-household transfers are estimated by comparing individual consumption with individual disposable income within the household and the balancing process ensures that total inflows equal total outflows within each household.

6 ESTIMATION OF INTRA-HOUSEHOLD TRANSFERS

Balancing Approach

Intra-household transfers are not directly recorded in survey data. Therefore, their values are estimated as a residual after accounting for other components.

For each household, the difference between individual consumption and individual disposable income represents either a transfer received or a transfer given.

$$T_{intra}(x) = C(x) - Y^L(x) - Y^A(x) + C(x)$$

The sum of intra-household transfer inflows equals the sum of intra-household transfer outflows within each household.

7 POPULATION DATA

Population Estimates

Age profiles are weighted using mid-year population estimates for 2022. The population data are disaggregated by single year of age from 0 to 85 years. Aggregated estimates are obtained by multiplying per capita age profiles by the corresponding population.

8 DATA QUALITY AND RELIABILITY

8.1 Data Validation

Consistency checks are conducted to ensure alignment between microdata aggregates and macroeconomic control totals. Age profiles are also reviewed to ensure plausible economic patterns across childhood, working ages and older ages.

8.2 Limitations

Some survey variables may be subject to underreporting, particularly asset income and inter-household transfers. The allocation of certain public expenditure components may rely on proportional assumptions due to limited age-disaggregated data. In addition, estimates for older ages may exhibit higher variability due to smaller sample sizes.

9 REVISION POLICY

The National Transfer Accounts (NTA) estimates are subject to revision in line with updates to national accounts, survey data, or methodological improvements. Such revisions may arise as new or revised data become available or when improvements are made to estimation techniques and assumptions used in the compilation process to enhance accuracy and consistency. Any revisions to the estimates will be clearly documented and explained in subsequent editions of this publication, ensuring transparency and continuity in the reporting of results over time.

10 SYMBOLS AND ABBREVIATIONS

NTA	:	National Transfer Accounts
LCD	:	Life Cycle Deficit
SNA	:	System of National Accounts
GDP	:	Gross Domestic Product
RM	:	Ringgit Malaysia
DOSM	:	Department of Statistics Malaysia
HIES	:	Household Income and Expenditure Survey
MOH	:	Ministry of Health
MOE	:	Ministry of Education
MOHE	:	Ministry of Higher Education
BPAN	:	National Accounts Statistics Division
BPHPP	:	Prices and Household Income & Expenditure Statistics Division
MOHR	:	Ministry of Human Resources
EPF	:	Employees Provident Fund
JPA	:	Public Service Department
MBLS	:	Malaysian Bureau of Labour Statistic
ABR	:	Asset-based Reallocations
TFR	:	Total Fertility Rate
CBR	:	Crude Birth Rate
CDR	:	Crude Death Rate
NPISHs	:	Non-Profit Institutions Serving Households
ROW	:	Rest of the World