

## Revision

### The Capital Stock of Thailand 1990-2018 Edition

The compilation of the Capital Stock of Thailand 1990-2018 edition has been revised back to 1990. This publication presents the new series of the Capital Stock of Thailand starting from 1990 to 2018. The major revisions include the following topics.

1. Revise the concepts, methodology, and classifications in compliance with the latest international standard, especially the adoption of the volume measure estimates using chain-linked volume measures (CVMs), with 2002 as the reference year, and the conformity to the new series of national income, rather than using the traditional fixed-base-year method, with 1988 as the base year.
2. Revise the capital stock data to be consistent with the gross fixed capital formation that was published on the National Income of Thailand 2017 edition and Gross Domestic Product of Thailand in Q3/2018.
3. Revise the indicators according to the latest data available from original data sources.
4. In this publication, the growth rate was measured from the gross domestic product using chain-linked volume measures, published in the National Income of Thailand 2017 edition and the Gross Domestic Product of Thailand in Q3/2018.
5. Revise the statistical table presentation of all economic activities by industry in this publication in compliance with that of the Gross Domestic Product according to the Thailand Standard Industrial Classification (TSIC) 2009.
6. There are 2 letters assigned to the tables: r and p. Letter “r” is assigned to previous data that has been revised as more complete and accurate information is available. Letter “p” is assigned to preliminary annual figures.

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## The revision of the Capital Stock of Thailand 1990- 2018 edition

### Introduction

The NESDC has continuously been carrying out and publishing the Capital Stock of Thailand according to the System of National Accounts (SNA) using an indirect compilation technique called the Perpetual Inventory Method (PIM). This method has the objective to estimate all of the fixed assets value over an annual period which comprises the investments in the capital since its first year operated and combine with new investment for the next period then deduct the retirement from the production process covering the last year of service lives, which wants to measure. The value of fixed assets at current year prices which haven't subtracted the consumption of fixed capital called Gross Capital Stock. In practical, fixed assets would deteriorate during the production process reducing assets' value every year according to usage condition, the loss in value of an asset in each year is called Depreciation or Consumption of fixed capital (CFC). To calculate the remaining fixed assets value at current prices, using initial capital stock minus accumulated depreciation, the result is called net capital stock. The value of fixed assets in each year, which applies in capital stock statistics, must be compatible with fixed assets value from the national accounts.

Since the newly publicized national accounts of Thailand has been revised the data back to 1990 covering all the value at current market prices and constant prices, especially in changing the traditional fixed-base year method of national income by using a new technique, which was recommended in the latest System of National Accounts called Chain-linked Volume Measures (CVMs) to replace the Fixed-Weighted Volume Measures. However, to compile capital stock statistics and depreciation statistics, the data is still received from fixed assets value at constant prices with 1988 as the base year namely the old series method, which has been used for 30 years. Presently, there have been the majority changes in the correlation of price structure, the economic structure reforms, the technological improvement, and the additional coverage of the investment according to the latest System of National Accounts (SNA), for example in research and development, the investment of hydrocarbon exploration, and computer program, etc. Together with the valuation of fixed assets in the national accounts has been updated and disseminated. Those factors would affect the accuracy of the real national capital stocks measurement at the old series.

Consequently, the NESDC has to update its compilation method of capital stock and depreciate at current prices and at constant prices to comply with recent national accounts. Particularly, changing the compilation method from the traditional fixed-base volume method to chain-linked volume measures (CVMs) to get the result which conforms to the latest System of National Accounts and receives data that can accurately and practically indicate the situation.

### **Summary of major revisions**

The capital stock and the depreciation compilation method have been improved by using chain-linked volume measures (CVMs) in the 1990-2018 series. There are five significant improvements to the following topics below.

#### **1) Increasing in the coverage of the capital stock estimation**

Regarding adding up the coverage of Gross Fixed Capital Formation (GFCF) estimation in the national accounts in compliance with the System of National Accounts 2008, the National Accounts Division has already applied CVMs to estimate GDP and GFCF, and then it is necessary to adapt CVMs in other related accounts to be consistent overall national accounts. Besides, the National Accounts Division compiles the capital stock and the depreciation by the Perpetual Inventory Method, which is the aggregate of GFCF for each year according to its average service lives for each type. After adding up the coverage, the estimation of the capital stock and the depreciation has to be modified to add more completion in the accounts. Details of updating coverage are mentioned below.

1. Increase in the coverage of the expenditure in repairing civil construction such as road, bridge, and dam. Regarding the traditional national accounts compilation, the expense of this section was defined as wasteful expenses and was included in government consumption expenditure, because it was difficult to determine its service lives from this type of construction. Moreover, it was complicated to differentiate between minor and major repairing expenditure (according to the SNA, the major repair is included in the investment, but the minor repair is included in the expenditure). Consequently, for practical convenience, the initial investment in this type of construction is defined to be gross capital stock and net capital stock at a constant amount permanently. Since the improvement of the compilation of the national accounts has determined the expenditures of repairing the road, bridge, and dam to be investment, according to the System of National Accounts 2008, which specifies the depreciation and the assets from this type to be the investment, since it can add marginal value to the economy. For

the consistency between the values within the related accounts, adding the depreciation from the constructions consisting of the roads, bridges, and dams is necessary. As a result of including the depreciation, it significantly increases the overall depreciation value from the old series.

2. Change the construction and repair for national defence by the Ministry of Defence which was included in the government consumption expenditure in the old series to the public investment expenditure.
3. Military equipment and machinery expenditure for national defence belonged to the government consumption expenditure but the improvement collects computer software expenditure, machinery and equipment expenditure, office equipment expenditure and weapon systems expenditure including tanks, warships, and military aircraft to the investment expenditure. However, ammunition is still included in the government consumption expenditure.
4. Mineral exploration expenditure of the state enterprises and the private sector is stated as the investment and is included in the capital stock.

## **2) Re-classification**

Change land development for agriculture from its specific category in fixed capital formation to other construction categories. Subsequently, the value of construction improves but doesn't have a consequence on the GCFC and capital stock.

## **3) Improve the estimation of the average service lives of assets**

There is assets' improvement in construction and machinery and equipment categories which make its service lives shorter.

## **4) Improve the mortality functions or retirement function**

The delay linear retirement model had previously been used, where the retirement rate was considered to be delayed even after the retirement period. Presently, the Bell-shaped Winfrey Curves is used where every asset is likely to be average-retired, which can reflect the behaviour of the use of assets in the production process. However, this improvement after considering long-term values will not affect the capital stock and the depreciation.

## **5) Revision of calculating the real value**

Change calculating technique of gross capital stock, net capital stock, and depreciation from the fixed-base year method, with 1988 as the base year to the chain-linked volume measure or CVMs with 2002 as the reference year.