**UNITED
NATIONS**

E

**Economic and Social
Council**

Distr.
GENERAL

ECE/CES/2007/29
25 April 2007

ENGLISH ONLY

ECONOMIC COMMISSION FOR EUROPE

STATISTICAL COMMISSION

CONFERENCE OF EUROPEAN STATISTICIANS

Fifty-fifth plenary session
Geneva, 11-13 June 2007
Item 6 of the provisional agenda

SEMINAR ON MEASURING CAPITAL – BEYOND THE TRADITIONAL MEASURES
SESSION II

Measuring capital stocks in Korea

Submitted by Korea National Statistical Office

INTRODUCTION

1.   Capital stocks are essential in measuring the results of economic development at a given time. They show basic information for establishing national development policies, and also provide material for formulating the national balance sheet. The Korea Statistical Office (KNSO) has released statistics from the Korea National Wealth Survey (KNWS) four times. Even though this direct survey contained an increased amount of information by region, industry, institute and type of asset, its cost was too much in terms of the large budget required and in terms of efficiency. Several researchers have estimated capital stocks according to their own interests. For this reason, the KNSO set up a plan to estimate annual capital stocks. Finally, the KNSO decided to release the last ten years of capital stocks at the end of this year. This paper provides an overview of what the KNSO has been doing and the applied methodology.

I.   KOREA NATIONAL WEALTH SURVEY

2.   The last KNWS was conducted as of 31 December 1997, following the first Survey in 1968, the second in 1977 and the third in 1987. The survey covered all sectors, including general government, incorporated and unincorporated establishments, non-profit institutions, and

GE.07-

households. Information was collected on tangible fixed assets, inventory by region and by industry, and consumer durables and semi-durables. Almost 25,000 incorporated establishments, and 60,000 unincorporated establishments were sampled in the last survey, along with 5,000 households.

II. HISTORY OF THE ESTIMATION ON CAPITAL STOCKS IN KNSO

3.   In December of 1999, the KNSO decided not to conduct the KNWS but instead, to estimate capital stocks annually. From 2000 to 2002, the KNSO conducted the retirement surveys and contracted with some experts to find the retirement function by type of fixed assets and then estimate produced tangible and intangible fixed assets. From 2003 to 2004, the KNSO estimated land, forestry, software and produced tangible fixed assets using more detailed data sources. In 2005, the KNSO contracted with experts to estimate inventories and subsoil assets. From 2006, the KNSO has maintained a Task Force Team with the Bank of KOREA (BOK) that makes the gross fixed capital formation in the Korea System of National Accounts (KSNA) and plans to make the national balance sheet. The Task Force team has held the meetings and discussed all aspects related to capital stocks in '93 SNA every month.

4.   To date, the KNSO has expanded internally the asset's coverage to non-produced tangible assets such as subsoil assets and forestry. In addition, it has tried to improve the accuracy of the estimates through cooperation with related ministries or institutes, exports, and so on.

III. MEASUREMENT METHOD

5.   The KNSO uses the Perpetual Inventory Method (PIM) which involves the accumulation of past capital formation over its estimated service life. For the PIM, the KNSO uses the 1997 KNWS results as the initial benchmark estimates of tangible fixed assets, consumer durables and inventories, and Winfrey function which is a result from the retirement survey for the assets. To obtain the net capital stocks, the KNSO usually uses the geometric depreciation for tangible fixed assets and straight-line depreciation for intangible fixed assets.

6.   Since the 1997 KNWS results are used as the initial estimates, it is important to improve the consistency between the survey's results and gross capital formation. In 2004, the BOK completed the rebasing of the KSNA to the reference year of 2000 and the implementation of '93 SNA recommendations. Afterwards, the KNSO reclassified the 1997 KNWS results in accordance with the flow data in the KSNA again.

7.   For example, consumer durables in the 1997 KNWS have been reclassified by the Classification of Individual Consumption According to Purpose (COICOP), since durable goods follow this classification in the final consumption expenditure of households.

8.   Entertainment, literary or artistic originals contain movie film originals, literary works and music recordings. For produced intangible fixed assets, the KNSO uses the PIM with gross intangible fixed capital formation extending back over its service life.

9.   Land assets are estimated by multiplying average land price per unit by land area. In the case of forestry the quantity of trees (cubic meters) and price per volume are used while Hoskold's method is used for subsoil assets.

IV.   CLASSIFICATION BY TYPE OF ASSET

10.   The KNSO covers consumer durables as a memorandum item and capital stocks related to "non-financial assets" as defined in the '93 SNA except valuables, water resources and non-produced intangible assets due to data deficits. The classification by type of asset is as follows:

    (a) produced assets: tangible fixed assets, intangible fixed assets and inventories;
    (b) non-produced tangible assets: Land, forestry and subsoil assets;
    (c) consumer durables in the final consumption expenditure of households.

11.   Even compiling capital stocks by more detailed asset classifications (see Table 1), the KNSO will publish the statistics less detailed than Table 1.

V.   CLASSIFICATION BY INSTITUTIONAL SECTOR

12.   The KNSO identifies four institutional sectors, including general government, financial corporations, non-financial corporations, and households, and doesn't distinguish non-profit institutions serving households separately from households.

VI.   CLASSIFICATION BY KIND OF ACTIVITY

13.   For most kinds of analytic studies, capital stocks and flows will need to be classified according to kind of activity. So the KNSO divides produced tangible fixed assets into thirteen different kinds of economic activity in accordance with the capital flows.

Table 1. Type of detailed asset

Assets		Detailed Assets
Produced assets	Tangible fixed assets	Residential buildings, Non-residential buildings, Other construction, Transport equipment, Other machinery and equipment
	Intangible fixed assets	Mineral exploration, Computer software, Entertainment, literary or artistic originals
	Inventories	Materials and supplies, Work-in-progress, Finished goods, Goods for Sale
Non-produced tangible assets	Land	By region, By land category
	Forestry	By forest physiognomy, by tree age-class
	Subsoil assets	Metallic mineral (includes natural gas), Non-metallic mineral
Consumer durables		Furniture, Household appliances, Transport, Audio-visual equipment, Other

* * * * *