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本地生產總值及生產範圍
GDP and the Production Boundary

本地生產總值及生產範圍 GDP and the Production Boundary

「本地生產總值」是量度一個經濟體系的經濟表現的重要指標。它廣泛地應用於宏觀經濟分析、市場研究和比較不同經濟體系社會及經濟情況的研究。

本文闡述本地生產總值的概念，包括從「生產面」、「收入面」及「開支面」計算本地生產總值及生產範圍的概念。

Gross Domestic Product (GDP) is an important indicator for measuring the economic performance of an economy. GDP is widely used in macroeconomic analysis, market research and comparative studies of the social and economic situations among different economies.

This article discusses concepts of the GDP, including the production approach, the income approach and the expenditure approach to measure GDP and concepts of the production boundary.

如對本文有任何查詢，請致電政府統計處國民收入統計組(二)一（電話：2116 5112）。

If you have any enquiries on this article, please call National Income Section (2)1, Census and Statistics Department (Tel. : 2116 5112).

本地生產總值及生產範圍

GDP and the production boundary

1. 引言

1.1 「本地生產總值」是量度一個經濟體系的經濟表現的重要指標。它廣泛地應用於宏觀經濟分析、市場研究和比較不同經濟體系的社會及經濟情況的研究。

1.2 本地生產總值的水平通常廣泛用作反映經濟規模的指標。它很多時會用作分母與其他變數作比較，從而評估不同經濟體系的經濟及社會情況。例如貨物及服務的出口總值對本地生產總值的比率，可用作比較各經濟體系的「對外開放」程度。而政府在教育或醫療等服務的開支對本地生產總值的比率，可比較不同經濟體系政府在這方面開支的相對重要性。

1.3 本文闡述本地生產總值的概念，包括從「生產面」、「收入面」及「開支面」計算本地生產總值及生產範圍的概念。

2. 本地生產總值的概念

2.1 本地生產總值是指一個國家或地區的所有常住生產單位，在一個指定的期間內的淨產值。淨產值是以增加價值量度，其定義是生產總額減去中間投產消耗(中間投產消耗是指生產過程中所耗用的貨物和服務的價值)。

2.2 本地生產總值可從「生產面」、「收入面」及「開支面」計算。這顯示從不同角度看本地生產總值的成分。

1. Introduction

1.1 Gross Domestic Product (GDP) is an important indicator for measuring the economic performance of an economy. GDP is widely used in macroeconomic analysis, market research and comparative studies of the social and economic situations among different economies.

1.2 The level of GDP is often used as a broad measure of the size of the economy. It is commonly used as a denominator for comparison with other variables for assessing the economic and social situations among different economies. For example, the ratio of total exports of goods and services to GDP provide indications of the degree of external orientation (i.e. extent of “openness”) of different economies. The ratio of government expenditure on such services as education or health to GDP provides indications of the relative significance of the related government spending among different economies.

1.3 This article discusses concepts of the GDP, including the production approach, the income approach and the expenditure approach to measure GDP and concepts of the production boundary.

2. Concepts of the GDP

2.1 GDP is a measure of the total value of net output of all resident producing units of a country or territory in a specific period. Net output is measured by value added, which is defined as the value of gross output *less* the value of intermediate consumption (i.e. the value of goods and services used up in the course of production).

2.2 GDP may be compiled by using the production approach, the income approach and the expenditure approach. These approaches also represent how components within the GDP can be viewed from different perspectives.

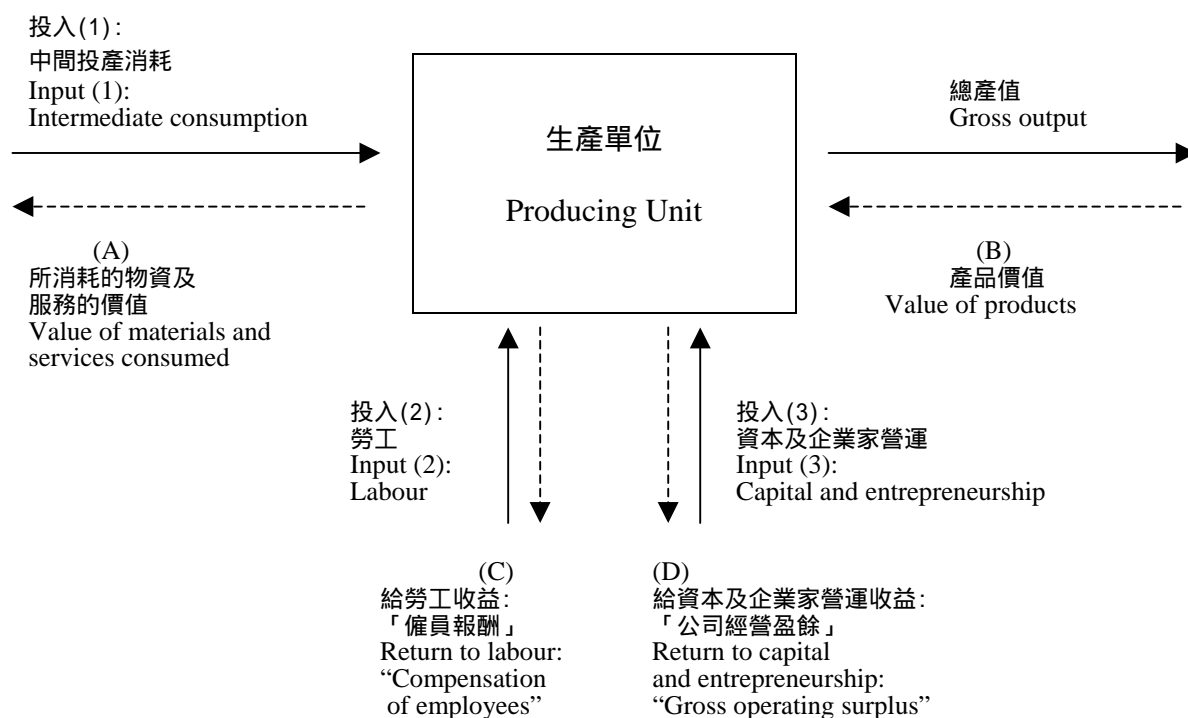
從「生產面」計算

2.3 以生產面編製的本地生產總值(簡稱生產面產值)是所有在一個國家或地區內的常住生產單位的增加價值的總和。一個生產單位的增加價值,是其貨物及服務生產總額減去在生產過程中所消耗的貨物及服務價值,即中間投產消耗。圖一可以說明增加價值的概念。

Production Approach

2.3 GDP by production approach (abbreviated as GDP(P)) is the sum of value added of all resident producing units of a country or territory. Value added of a producing unit is the value of goods and services it produces ('gross output') less the value of goods and services it uses up in the course of production ('intermediate consumption'). The concept of value added can be illustrated in **Chart 1**.

圖一
Chart 1



——> 實質流動
Physical flow

- - - -> 價值流動 (即金錢或相類者)
Value flow (i.e. money or equivalent)

$$(B) = (A) + (C) + (D)$$

$$(B) - (A) = (C) + (D)$$

$$= \text{「增加價值」 “Value added”}$$

2.4 特別要指出，政府和非牟利機構亦屬生產單位。它們生產作最終用途的服務(例如：社會、醫療及教育服務)供社會各界共同消耗。它們所生產的貨物及服務價值是按投入成本(包括員工薪酬及其他營運成本)計算。

2.5 按不同行業分析一個國家或地區的增加價值數字，可用以了解不同行業對本地生產總值的相對貢獻。

從「收入面」計算

2.6 從收入面計算的本地生產總值，是指一個國家或地區內的常住生產單位，其生產要素(勞工、資本及企業家貢獻)從生產貨物及提供服務所獲得的收益回報。要素收益包括「僱員報酬」(包括工資、薪金及其他僱員福利)及公司「經營盈餘總額」。

2.7 圖一顯示從收入面計算，生產單位的增加價值亦等於僱員報酬和經營盈餘的總和。從這角度來看，或收入面計算，本地生產總值作為各生產單位的增加價值，亦等於把在整個經濟體系內的僱員報酬和所有本地生產者的經營盈餘加起來。

2.8 從收入面分析本地生產總值，可以研究僱員報酬與公司經營盈餘的相對比率。僱員報酬與公司經營盈餘的比率會因不同的經濟行業而有分別。

從「開支面」計算

2.9 生產的貨物和服務可用於消耗，或累積成為資本貨物及存貨，或出口。從開支面編製

2.4 It should be noted that government and non-profit institutions are also regarded as producing units. They produce final services (e.g. social, medical and educational services) for collective consumption by the community. The value of services produced is compiled based on the input costs (including salary payment to staff and other operating costs).

2.5 Figures of the value added of a country or territory analysed by different sectors give an idea of the relative contribution of the different sectors to the total GDP.

Income Approach

2.6 Under the income approach, GDP is calculated as the sum of incomes for the factors of production (labour, capital and entrepreneurship) distributed by the resident producing units in a country or territory, as rewards to their production of goods and provision of services. Factor incomes include 'compensation of employees' (comprising wages, salaries and other employee benefits) and 'gross operating surplus' of enterprises.

2.7 In Chart 1, it is shown that the value added of a producing unit is also equal to the sum of its compensation of employees and gross operating surplus. Viewed from this angle, or the income approach, GDP, being the value added of all producing units, is thus equal to the sum of the compensation of employees at the economy-wide level and the gross operating surplus of all resident producers.

2.8 Analysing GDP from the income approach, we can study the relative shares of compensation of employees (CE) and gross operating surplus (OS) of enterprises. The ratio of CE to OS would vary among different economic activities.

Expenditure Approach

2.9 Goods and services produced are either consumed, accumulated as capital goods and

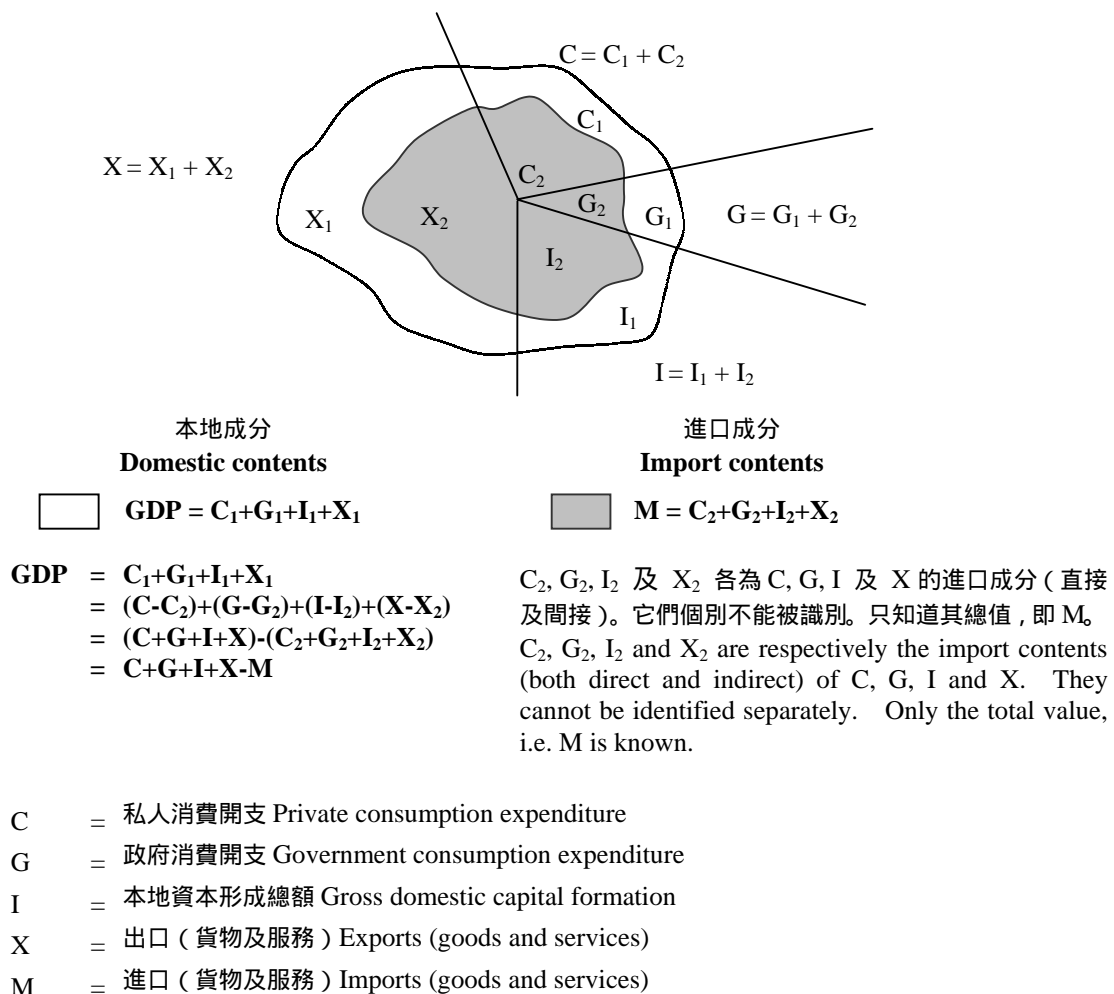
的本地生產總值(簡稱開支面產值)的計算方法是私人消費開支(C)、政府消費開支(G)、本地資本形成總額(I)及貨物出口和服務輸出價值的總和(X)，減去貨物進口和服務輸入價值(M)。

inventories or exported. Thus, the GDP by expenditure approach (abbreviated as GDP(E)) can be computed as the sum of private consumption expenditure (C), government consumption expenditure (G), gross domestic capital formation (I), and exports of goods and services (X), less imports of goods and services (M).

2.10 要注意一點的是C, G, I 及 X 每一個組成部分均包括進口成分(直接或間接的進口成分)。但由於不可能將進口成分從個別組成部分中扣除，因此進口成分是整體地扣除。有關扣除進口成分的概念和方法的更詳細解釋見圖二。

2.10 It should be noted that each of the components C, G, I, X has import contents (both direct and indirect import contents) but it is not possible to remove such. The import contents are removed collectively. The concept and method for deducting the import contents are illustrated in further detail in Chart 2.

圖二
Chart 2



2.11 亦要注意一點的是開支面產值是以作最終用途的貨物和服務計算。如產品只作其他生產過程的中間消耗，則不應計算在內，否則會引致重覆計算。

2.12 理論上，從不同方面計算的本地生產總值應該是相等的。但實際上，由於涉及不同資料來源和估算方法，從不同方面計算的本地生產總值是會出現統計差額的。

3. 生產範圍

3.1 生產範圍的概念對了解本地生產總值的編製方法很重要。生產範圍把甚麼活動應算為生產作出定義，從而把有關活動包括在本地生產總值的編製內。

3.2 香港本地生產總值及其他國民收入統計（例如本地居民生產總值）是根據聯合國出版的「一九九三年國民經濟核算體系」的國際標準而編製。

3.3 國民收入統計的發展是起源於 1930 年代世界經濟大蕭條期間，由凱恩斯的經濟理論而引發的。凱恩斯及當時其他經濟學家提出生產下降及大量失業是可藉有計劃的財政及金融政策而改善。

3.4 國民收入統計，可用以評估一個經濟體系在各方面的表現，正是制定這些經濟政策的重要工具。「國民經濟核算體系」始於 1947 年聯合國出版一份有關國民收入統計的定義及編製方法的書籍。第二、第三及第四版（即最新版本）的「國民經濟核算體系」分別在 1953、1968 及 1993 年出版。經常更新「國民經濟核算體系」，可確保國民收入統計系統能充分反映經濟體系的發展。

2.11 It should also be noted that the GDP(E) is compiled based on goods and services for final use. Goods and services used as intermediate input for production should not be included, otherwise there will be double counting.

2.12 In theory, GDP compiled using different approaches should be identical. However, in practice, statistical discrepancy exists between GDP compiled based on different approaches because different data sources and methods of estimation are used in the compilation process.

3. The Production Boundary

3.1 The concept of production boundary is fundamental to the understanding of the compilation framework of the GDP. It defines what activities are regarded as production and hence included in the compilation of the GDP.

3.2 International standards as set out in the 1993 System of National Accounts (1993 SNA) published by the United Nations are followed in compiling the GDP and other national income statistics (e.g. GNP) of Hong Kong.

3.3 National income statistics were first developed in the 1930s under the influence of John Maynard Keynes when the world was suffering from deep economic depression. Keynes and other economists propagated that falling production and large scale unemployment could be regulated through well-planned fiscal and monetary policies.

3.4 National income statistics, which can be used to assess various aspects of the performance of an economy, are vital in the formulation of the related economic policy. The origins of SNA could be traced back to 1947 when the United Nations published its first report concerning the definitions and measurement of the national income statistics. The second, third and fourth (the latest) editions were published in 1953, 1968 and 1993 respectively. The SNA is constantly updated so as to ensure that the compilation framework of national income statistics can adequately reflect developments in the economy.

3.5 「國民經濟核算體系」大致上採用以下的準則界定生產活動：

- (一) 該活動把貨物及服務、勞工及資產的投入，轉換成貨物及服務的產出。這過程在圖一中顯示；
- (二) 該過程必須是在機構單位的負責、控制及管理下所進行的；及
- (三) 貨物及服務的產出可在市場出售，或至少能由一個單位向另一單位提供，收費或不收費均可。

3.6 並非所有活動都包括在生產範圍內。例如，沒有人為參與或指揮的自然資源的生長不包括在生產範圍內。一種活動被視為生產活動的必要條件是它必須在某些單位的負責、控制及管理下所進行(即第 3.5 段所述的條件(二))。所以，在公海中自然生長的魚不被視為是生產活動，但在公海中捕魚及在魚塘或魚排養殖魚類則是生產活動。

3.7 由家庭成員提供給自己家庭的服務(例如清潔、做飯、照顧小孩)傳統上是不包括在生產範圍內。相反地，由家庭傭工提供相同的家務服務卻包括在生產範圍內。

3.8 其實，若根據國民經濟核算的慣例，由家庭成員提供給自己家庭的服務也可以包括在生產範圍內。但經過很多國際國民經濟核算專家的廣泛討論後，最後決定不將這些家庭服務包括在生產範圍內。達致這個共識，是考慮到要平衡兩方面：一方面是顧及「國民經濟核算體系」的全面性；另一方面是避免用作分析市場行為的流動受到非貨幣價值的影響。

3.5 The SNA generally adopts the following criteria to define production activities:

- (a) The activity transforms inputs of goods and services, labour and capital into outputs of goods and services. This process is illustrated in Chart 1;
- (b) There must be a unit that assumes responsibility, control and management of the process; and
- (c) The outputs of goods and services can be sold on markets or at least be capable of being provided to other units, with or without charge.

3.6 Not all activities are included in the production boundary. For example, the growth of natural resources without human involvement or direction is not included in the production boundary. A necessary condition for an activity to be treated as production is that the activity should be carried out under the responsibility, control and management of a unit (i.e. criterion (b) mentioned in paragraph 3.5). Therefore, the natural growth of fish in open sea is not regarded as production whereas the catching of fish in open sea and the culture of fish in fish ponds or rafts are regarded as a production activities.

3.7 Domestic services (for example cleaning, preparing meals, taking care of children) provided by members of households for consumption within the same households are traditionally not included in the production boundary. On the contrary, the same services provided by domestic helpers are included.

3.8 In fact, domestic services provided by members of households for consumption within the same households could have been included in the production boundary according to national accounts convention. However, after a wide-ranging debate among international national accounts experts on the issue, it was finally decided to exclude these domestic services from the production boundary. The consensus was the result of striking a balance between the need for maintaining the comprehensiveness of SNA and the need for preventing flows used for the analysis of market behavior from being swamped by non-monetary values.

3.9 事實上，由家庭成員或由家庭傭工提供的相同家務服務，所帶來的流動的經濟意義有很大的分別。由家庭傭工提供的家務服務，當中有實質的貨幣流動(由家庭支付工資給家庭傭工)。這些流動會影響其他經濟環節，例如通過家庭傭工的消費及儲蓄。但由家庭成員提供同樣的服務，該服務是由同一家庭使用(即經濟用語中的強迫消費)，而儲蓄亦不可能，因沒有實質的金錢流動。

3.10 由自住業主提供的房屋服務包括在生產範圍內。自住業主是指居住在自己擁有該物業的家庭。這些家庭向自己提供房屋服務，代替租住房屋。在國民核算體系中，租住房屋予他人是生產活動。因自住業主向自己提供的房屋服務其實是和租住房屋的性質一樣，故此，它亦包括在生產範圍內。

3.11 由業主自用的非住宅物業(例如寫字樓、工廠、商店)，相關的樓宇服務是不包括在生產範圍內。因為該自用物業者享用的樓宇服務，是業主公司的一項開支(中間投產消耗)亦同時是一項收入(生產總額)。正因如此，這類服務對增加價值並沒有構成影響。

4. 本地生產總值概念的參考資料

4.1 如欲參考更多有關本地生產總值概念的資料，請參閱政府統計處出版的小冊子《理解本地生產總值及本地居民生產總值的概念》及《本地生產總值、本地居民生產總值、國際收支平衡統計簡介》。這兩本小冊子可從政府統計處的網站免費下載(網址：<http://www.info.gov.hk/censtatd/>)。

3.9 Indeed, the economic significance of the flows involved in the two cases, i.e. domestic services provided by members of households and those provided domestic helpers, is very different. In the case of hiring domestic helpers, there are genuine monetary flows (households paying salaries to the helpers). These flows will in turn have effects on an economy, for example, through consumption and savings of the helpers. In the case of domestic household services provided by members of households, the services must be consumed by the same households (that is forced consumption in economic term) and savings is not possible since there are no genuine monetary flows.

3.10 Housing services provided by residential owner-occupiers are included in the production boundary. Owner-occupiers of residential properties are households living in dwellings that they own. Instead of renting dwellings from others, these households provide housing services to themselves. Renting dwellings to other persons is considered production activity in national accounts. As the housing services provided by owner-occupiers are in essence of the same nature as renting, they are also included in the production boundary.

3.11 For owner-occupiers of non-residential properties (e.g. offices, factories, shops in the business sector), housing services are not included in the production boundary. This is because any housing services consumed by the owner-occupier firm will simultaneously be an expense (intermediate consumption) and a receipt (gross output) of the same firm. This will not have an effect on the value added.

4. Reference Materials on Concepts of the GDP

4.1 For more details on the concepts of GDP, readers may refer to the booklets “Understanding the Concepts of Gross Domestic Product and Gross National Product” and “Introduction to Gross Domestic Product, Gross National Product, Balance of Payments Statistics” published by the Census and Statistics Department. The two booklets can be downloaded free of charge from the website of the Census and Statistics Department (address : <http://www.info.gov.hk/censtatd/>).