

Chapter 1

Context, Purpose and Scope of the Manual

1.1. The role of capital measurement

It may be helpful to briefly recall the role that capital plays in a stylised system of national accounts. This can easily be done with a circular flow diagram, as shown in the figure below. Flows of quantities of goods and services are matched by monetary flows. In the simplest case with only consumers and producers, the basic exchange is between labour (hours worked) and consumer products. These are exchanged in the markets for labour and for consumer products and give rise to revenues and costs for producers, and expenditure and labour income for consumers. The flow of labour into the producer's sector and the flow of consumption goods out of it signal a production process whose analysis is central to many economic questions.

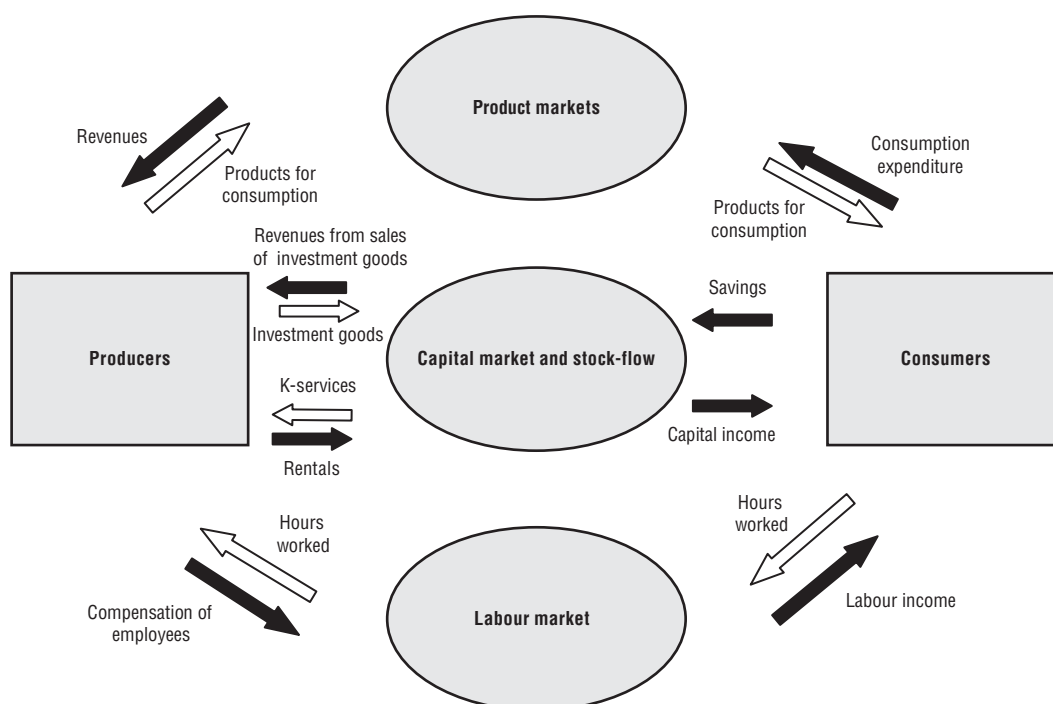
But labour is not the only input into production and this is the first instance where capital comes into play. Capital provides services to production, and is remunerated for these services with a rental when users of capital goods rent them from their owners for one or more periods. Often, users and owners are the same economic unit. The capital service is then internal to the economic unit but it exists nonetheless and should be measured for analysis. Parallel to the internal flow of capital services, an internal payment for these services can be envisioned, in the form of a price of capital services. The cost of capital in production and the associated service flow are not items that were recognized in the 1993 System of National Accounts – recently, however, the revised SNA has acknowledged these flows.

There is another instance where capital comes into play and it concerns capital as a storage of value. Producers buy capital goods and seek finance from consumers. The latter invest in capital goods by putting their savings at the disposal of producers, who in turn compensate consumers with interest or dividend payments, i.e. with capital income. The wealth aspect of capital is also where balance sheets come in – for a given date, all assets, financial and non-financial, should appear in the balance sheet of the unit that owns them to provide a comprehensive picture of economic wealth.

Because of the pivotal role of capital in an economy, it has to be measured. A large body of literature has dealt with the theoretical foundations of capital measurement and perhaps the most vocal debate in this context was the so called Cambridge debate. The present *Manual* is not the place to review or comment on this debate but it is quite clear that the measurement of capital cannot be done without some theory and capital measurement in the present text is largely done with reference to neoclassical capital theory.

Purely theoretical aspects aside, there is a central practical problem to capital measurement that raises many empirical issues – how to value stocks and flows of capital in the absence of (observable) economic transactions. This was phrased very clearly by John Hicks in *Capital and Time* (1973):

“Let us put ourselves in the position of a statistician who is asked for a figure for National Capital; and let us grant that what is asked for is a value (here a money value) of National

Figure 1.1. **Circular flow diagram – the role of capital**

Source: adapted from Hulten (2006).

Capital. [...] He has learned that for the measurement of National Income he needs a set of accounts, the running accounts (or flow accounts) of the national economy. So now, when he is asked for a measure of National Capital, he expects to serve it up in the form of a national balance sheet. But the task of constructing a national balance sheet is practically quite different.

It is characteristic of a running account, of whatever type, that most (though not all) of the items that enter into it are records of actual transactions. When an article is sold, money passes hands; so the value of the article is expressed in money terms, by buyer and seller, in the same way. When money is lent, currently, the same occurs. Thus, if it were the case that all entities within the economy [...] kept proper running accounts, and if those accounts contained nothing but transaction items, it would be possible for a national running account to be compiled from them by a purely arithmetical process. Many of the accounts which he would need for this purpose are of course not available to the national income statistician; he has to estimate them. But in making such estimates, he is estimating an actual figure [...] though information about it is not available to him [...].

What in the case of running accounts is a complication, that can thus to some extent be avoided, in the case of the capital account is central and unavoidable. The assets, the possession of which is recorded in a balance sheet, are assets that are held, not goods that are sold. They may be sold, when time comes, but they are not being sold at the date to which the balance sheet refers.”

The question of valuation is central to stocks but non-observable transactions are also a central issue when it comes to estimating volumes and prices of flows of capital services: there are some rental markets that deliver market observations on capital services but the bulk of capital is still used by its owners. The statistician then has the choice between ignoring these economic flows and estimating price and quantity of capital services that

are internal to the economic unit. As long as this is done with the necessary caution, based on good theoretical reasoning and on as much empirical information as possible, the ultimate objective of measuring capital can be advanced, namely to better understand processes of value creation and economic well-being.

1.2. Purpose of this Manual

This *Manual* serves two complementary purposes:

- To present an integrated system of stocks and flows associated with the measurement of capital;
- To provide practical guidelines for estimation of these stocks and flows. Particular care is taken to ensure consistency with the System of National Accounts.

This *Manual* is organised in three major parts. Part I presents concepts of capital measurement in a non-technical way. With the help of numerical examples, the text provides the economic and statistical rationale for the measurement of the flows and stocks associated with capital. Probably the single most important message that this *Manual* advances is that of a coherent set of flows and stocks in relation to capital: capital formation, depreciation, capital services being the key flows and the net and the productive stock being the most important stock measures in this context. If national statistical offices manage to produce such a consistent set of capital measures, much will have been achieved by way of the usefulness of the national accounts.

Part II of the *Manual* is orientated towards precision and implementation. The text aims at being as precise as possible, by way of a technical presentation of some of the concepts and measurement procedures.

Part II of this *Manual* also takes a look at some capital measures whose integration into the national accounts is still outstanding and/or may not be forthcoming although these measures would seem useful from an economic perspective and may also have become part of the more research-oriented literature. These include the imputation of full user costs to government assets, a scope of productive assets that includes land, other natural resources and inventories.

The main purpose of this Manual is to show how a coherent and analytically useful set of measures of flows and stocks of capital can be constructed.

Part III is an algebraic exposition of the measurement model underlying capital stocks and flows. This part of the *Manual* starts from a basic economic relation about asset values, and shows how expressions for depreciation, user costs, and the various types of stocks can be derived in a way that is as consistent as possible with the System of National Accounts.

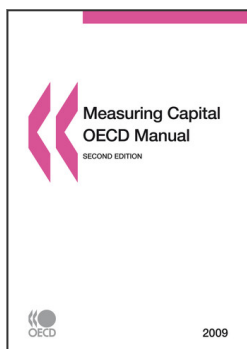
1.3. What the Manual does not cover

This *Manual* does not deal with the measurement of capital formation *as such*. The 1993 SNA and its revision enlarged the asset boundary by introducing new classes of fixed assets, such as mineral exploration, computer software and entertainment, literary and artistic originals and research and development. There are both practical problems and conceptual questions about the valuation of some of these new assets, and these specific issues are only dealt with relatively briefly here.

The *Manual* is somewhat eclectic in the choice of non-produced assets that are explicitly dealt with. The bulk of the text deals implicitly or explicitly with produced assets because they constitute the backbone of capital measurement and they are the first

candidates for measures of capital inputs into production. Land, although mainly a non-produced asset, does get special attention in the *Manual* whereas other non-produced assets such as natural resources get a less extensive treatment. There is no strong conceptual justification for this choice except that land has long been treated as a source of capital services in economics and should therefore be recognised as such. To a lesser extent, this is the case for other non-produced assets. On purely practical grounds, providing a complete guide to measuring non-financial balance sheets would not have been feasible within the time frame of the write-up of the *Manual*. Also, there is a well-developed body of international guidance concerning environmental assets, in particular in the form of the International Handbook on Integrated Environmental and Economic Accounting (United Nations *et al.* 2003) to which the reader will be referred where appropriate.

Price indices for assets are required for the measurement of capital stocks and of volume investment. Constructing price indices for fixed assets is particularly difficult because many capital goods are unique so that it is not possible to observe price changes from one period to the next. Another problem is that an important part of capital goods – for example communications and computing equipment – is subject to large technological improvements which are sometimes difficult to capture. Important measurement issues arise also in the area of price indices for dwellings and land. These issues are referred to but not treated in detail because they are seen as price index problems and are not specific to capital stock measurement.



From:
Measuring Capital - OECD Manual 2009
Second edition

Access the complete publication at:
<https://doi.org/10.1787/9789264068476-en>

Please cite this chapter as:

OECD (2009), "Context, Purpose and Scope of the Manual", in *Measuring Capital - OECD Manual 2009: Second edition*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/9789264068476-4-en>

This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of OECD member countries.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of OECD as source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to rights@oecd.org. Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Center (CCC) at info@copyright.com or the Centre français d'exploitation du droit de copie (CFC) at contact@cfcopies.com.