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The measurement of intangibles in macroeconomic statistics Peter Hill and Richard Youngman

Recording and Classifying Intangibles: Towards a new asset boundary and a new taxonomy in the SNA

Introduction

The international System of National Accounts, or SNA, distinguishes first between financial assets and non-financial assets. A fundamental distinction is then drawn between those non-financial assets that have been produced and those that have not. The term ‘produced’ is used in a precise technical sense to mean that the asset is an output from a physical activity that falls within the production boundary as defined in the SNA and generally understood in economics. The activity is of kind which can be represented in economic theory by a mathematical ‘production function’ in which the outputs are a function of the inputs.

Produced assets recognized in the SNA consist of the following types of asset:

- Fixed assets, of which
 - tangibles -- machinery, equipment, buildings and other structures
 - intangibles* -- artistic, entertainment originals, software, mineral exploration
- Inventories -- stocks of goods used as inputs or produced as outputs
- Valuables -- precious metals, jewelry, works of art, etc.

Non-produced assets consist of the following:

- Tangibles -- natural assets, such as mineral deposits, oil and gas fields, water resources
- Intangibles -- ‘constructs of society evidenced by legal or accounting actions’

Produced and non-produced assets can also be classified according to whether or not they are themselves used in production. This distinction is not used explicitly in the SNA. If it were, the following groupings would be obtained:

Assets used in production

- Fixed assets, both tangible and intangible. (Fixed assets are, in fact, defined as produced assets that are used repeatedly or continuously in production over long periods of time.)
- Inventories
- Natural assets

Assets not used in production

- Valuables -- they are not used for anything; they are held as stores of value, or investments, and are not expected to depreciate

- Intangible non-produced assets

The production account is central to the SNA. GDP, the most widely monitored macro economic indicator used by governments, business, the press etc., consists of aggregate gross value added for the economy as a whole as defined in the system's production account. From a SNA perspective, the production account is more fundamental and of more analytical interest than the income or profit and loss account. National accountants have rather different priorities from business accountants. This helps to explain why so much importance is attached in the SNA to whether or not an asset has been produced and whether or not it is itself used as an input into production.

Limitations of the existing asset classification

There are two major problems with the existing SNA asset classification. The first is that, even if we accept the system's own criteria and definitions, there are entities that qualify as assets but are not being recorded as such. The principles underlying the classification are not being properly implemented. The asset boundary is drawn too tightly. It is clear that some intangible assets exist, both fixed assets and non-produced intangibles, that are not recognized as such by the System. Some of the headings or categories within the existing classification also need to be refined and subdivided. New, more precise categories need to be introduced.

The second problem is that there are no human assets in the SNA. This may be a more fundamental problem. Educational services are treated as final consumption. Training provided by businesses is intermediate consumption.

Intangible fixed assets

The existing SNA classification has been unduly influenced by short term practical considerations, namely the feasibility of collecting the relevant data at the present time and the difficulties of measuring and valuing the assets and accounting for them over time. These are not acceptable reasons for not recognizing the assets. Drawing the asset boundary too narrowly and using a conceptually inappropriate, outdated and inadequate classification merely serves to perpetuate the existing difficulties. The data will not be forthcoming if they are not requested.

For example, R and D is generally accepted to be a productive activity in an SNA sense but its outputs are not recognized as assets. At the time of the 1993 revision of the SNA, many national statistical offices objected to capitalising R and D because they stated they could not implement such a treatment. However, the SNA is presented as being a conceptual system in which economic theory and principles take precedence. In general, difficulty of implementation is not accepted as sufficient reason for not doing something.

There are other kinds of produced assets, such as those produced by market research and advertising. Such assets are also not recognised in the SNA, but even if they were, it is not certain that they would qualify as fixed assets. It is necessary to consider exactly how such assets might be specified in econometric production functions. A priori, it is possible that there might be produced intangibles that are not fixed assets, just as there are produced tangibles that are not fixed assets.

The project will systematically work through the entire range of intangibles that can be treated as outputs from production processes in an SNA sense and consider what is the most appropriate

way to classify them from the point of view of economic theory. It makes no difference from a conceptual point of view whether they are produced in house or by specialist producers.

Non-produced intangible assets

The concept of a non-produced intangible asset is not clear and not satisfactory in the SNA. Such assets may be created in some way but are not produced as outputs from processes of production. They are described as ‘constructs of society that are evidenced by legal or accounting actions’. This may be too restrictive even as a general description. The kinds of assets that could fall under the heading of non-produced intangibles are:

- Patents and copyrights
- Licences, franchises
- Contracts and leases
- Trade marks, brand names
- Customer loyalties.

The list is meant to be illustrative and not exhaustive. It does not include ‘knowledge’ assets which are considered separately below

Certain characteristics shared by the assets listed above may be noted. For example, most seem to have in common that they are related to property rights in one way or another. They may be intended to impose restrictions on the activities of actual or potential competitors by making it more difficult, or more expensive, for them to compete. They are not expected to increase productive efficiency but rather to make markets less perfect. The assets often involve relationships with third parties, either competitors or customers. In this respect, they have some similarities with financial assets and liabilities.

Most of these kinds of assets do not even get a mention in the SNA. Licences are not mentioned although they have recently attracted a lot of attention among national accountants because of the auctioning of mobile phone licences.

As with intangible fixed assets, the project has to work through the entire range of possible non-produced assets to see how they affect production and GDP and what kind of economic function they serve. These factors may have to be taken into account when classifying the assets in the SNA and not only the way the assets are perceived by individual firms concerned.

It has been observed that produced intangible assets, especially new products or processes discovered by R and D, may be public goods in an economic sense. They are non-rival in use. Their use by one firm does not diminish the possibility of other firms from using them. On the other hand, non-produced assets such as patents are designed to exclude others from using them in order to increase their value to their owners. Other intangibles are designed to protect or increase market shares. Non-produced intangibles may serve quite a different function from produced ones, a fact that underlines the need to distinguish between produced and non-produced assets. Some assets may be profitable to the individual firms that own them but could have a negative impact on GDP and productivity for the economy as a whole because of their restrictive role.

Human capital and knowledge assets

The treatment of human capital in national accounts is controversial. At the present time, knowledge is not treated as an asset in the SNA and does not figure anywhere in the existing asset classification even though in economics it is generally accepted that the knowledge and skills possessed by individuals are assets. On the other hand, the SNA does treat information, or at least some kinds of information, as an intangible asset: for example, the information obtained by mineral exploration. Knowledge possessed by people should be distinguished from information, as information can exist and be stored independently of people in media such as paper, tapes or disks. The output of R and D is essentially new information and can be classified as a produced intangible asset within the SNA without introducing human capital into the System.

The SNA is a comprehensive system that includes households as well as businesses. If the knowledge and skills possessed by people were to be recognised as intangible 'knowledge assets', it would be appropriate to treat them as being owned by households, not businesses. Households can increase their assets by consuming educational and training services that are provided by educational institutions or businesses. The more knowledge assets that individuals possess, the better the quality of the services they can provide to their employers. The services are more valuable to the employers, and the employees are more highly remunerated in consequence.

This approach to knowledge assets counts them as assets but would not count them as assets of the firms in which they work. Investment in knowledge assets increases the productivity of the individuals concerned and possibly the profitability of the businesses employing them. Businesses can try to tie in skilled employees by offering long term contracts or inducements to prevent them leaving, in which case there may be scope for treating some knowledge assets as effectively 'belonging' to the business, at least for a time. In general, however, knowledge assets belong to individuals or households. They continue to exist and be valuable even if the businesses that make use of them cease to exist. Even if knowledge assets are recognised as intangible assets within the system, it is difficult to see how they can be attributed to the business sector.

The treatment of human capital and knowledge assets therefore raises more complex issues than other intangibles.

Next Steps

It is clear this paper has the furthest to go at this point. In part that is because it is fed by the previous two. At this point we have tried to outline the problems that need dealing with, rather than to suggest solutions, even tentative ones. We are at too early a stage for solutions. We have tried to give an SNA perspective and explain why some kinds of assets that otherwise we might be happy to lump together need to be separated for SNA purposes.

The next phase will see us develop these thoughts more clearly towards solutions.