



## The System of National Accounts – Staying on Track

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This paper sets out some of the current challenges for core national accounts, and suggests that rather than expanding the system to cover more unobservable and unmeasurable features of the economy, we should put our own house in order. We should concentrate on compiling a core set of national accounts, based on a system of articulated accounts showing observable and measurable estimates. The paper draws on the arguments advanced by John Hicks in his book “*Social accounting*” [or as we would now call it “National Accounts”], published in 1943.

Hicks sets out the basic principles and concepts underlying national accounts at that time, as follows:

1. The economy is the cooperative production of goods and services to meet the wants of consumers in society, through a system of exchanges using money as the medium of exchange. These exchanges take place in a market where competition determines prices which reward the producers sufficiently at the same time as meeting the wants of consumers at a price they judge they can afford.
2. The exchanges are governed by principles, such as
  - a. The value of an exchange is the same for both parties;
  - b. An exchange takes place at the same time for both parties;
  - c. The players in the economy are units in control of their spending decisions – these can be business units, households, government and foreign agents.
3. When the various exchanges are aggregated across players who behave in a similar manner, and across the nation as a whole, then the aggregate exchanges can be displayed in a set of accounts, representing different aspects of how producers and consumers interact to enable the wants of the consumers to be met.
4. How the economy operates and can be measured, paraphrasing Hicks, is as follows:
  - a. Producers employ labour and capital, together with purchases of perishable goods and services, to add value by producing output which either another producer wants to continue the chain of production, or meets directly the want of a final consumer such as households.
  - b. The transactions can be measured through the need for the players in the market to know both the quantity and the price which applies to every transaction in goods and services. This information is revealed through an exchange where the value and timing of the exchange is identical for both supplier and receiver. This observable information is key to compiling national accounts on a sound basis.
  - c. Where transactions are not directly observable, the system should only impute (guess) values for transactions where the wants of those using the system of accounts will benefit without fear of the imputations being so unreliable that they undermine the usefulness of derived macro-economic measures.

5. There are two occasions where imputations are most useful:
  - a. when an exchange occurs in one period, but the economic effect is felt in other periods; and
  - b. Where an exchange takes place where no market price is observable.
6. In the first case, an economically significant phenomenon is when a durable good contributes to production or consumption well beyond the period of exchange. So capital assets such as factories and offices are acquired for use at a point in time in one year, and the economic benefit for the user is experienced for many years after the exchange. It would be hard to understand how the economy works if the value of acquiring the building was taken to represent the use of the building, and was wholly registered in the accounts at the time and price of acquisition. A more useful measure of value added is to measure the use of labour, intermediate goods and services, and use of capital as they occur in each succeeding period as unavoidable costs, so that the net operating surplus in the later years better reflected the earnings of the business each year.
7. But this poses a challenge for the accountant – can we measure how a capital asset is used up over time so that a useful measure of the value added by the production process over time is achieved. We must estimate how long the building will last, and the rate at which it is used up in each year of use, and the price of the service provided as it is used.
8. A similar challenge faces us on the consumer side. A consumer may purchase a durable good to meet their wants over several years, and the benefit is spread accordingly. Buying a bed meets a want over many years, and the durability of the bed affects future spending on beds.
9. So if we wish to measure how production adds value over time, and consumers benefit over time, we should allow for the use of capital and consumer goods as they meet wants, and not simply at the time of acquisition.
10. But as with the capital assets used in production, on the consumer side the rate at which a bed is used up must be a matter of estimation rather than direct observation through the market.
11. National accountants have adopted pragmatic views on such issues ever since the mathematical discipline of national accounting began. For capital goods which can be of great value and last a long time, it has been decided that estimates of their use over time should be made, as is done for financial reporting of the affairs of corporations. These estimates are measures of capital consumption. Of course this moves us away from the safe observable haven of observed exchanges at market prices as they are used up, but such estimates should be provided if we judge that users can benefit significantly from the provision of estimates which are sufficiently reliable on which to base economic and policy analysis.
12. A similar challenge faces us when measuring consumer use. But here the values are lower, and critically, the durable goods are used up over a shorter period than the capital assets

acquired by business. So the pragmatic decision of national accounts is that there should not be inclusion of the real use of durable goods over time beyond the period of acquisition, and assumes that they are wholly consumed at the moment of exchange.

13. So another difficult decision is made – not to account for the delayed use of consumer goods, unlike the decision over capital goods.
14. It can be readily appreciated that the arguments for the two contradictory approaches are swayed by pragmatic views on how best to provide robust estimates to economists, policy makers etc. There is no absolute right or wrong, and the decision must be swayed by the use to which the accounts are put. Is it better to provide analytically useful estimates which suffer from a loss of accuracy, or to have reliable figures which do not measure key aspects of the economy?
15. Each user and indeed supplier of national accounts is quite likely to have a different view. The concern of this paper is that the balance which in the time of Hicks and the birth of modern national accounting favoured reliability at the expense of analytical usefulness, is swinging too much towards imputation and estimation, with insufficient attention paid to reliability of the estimates.
16. Some issues are set out below which illustrate the issue, and by their detail help to illuminate the challenge to compilers. Some are manifestations of the clash between reliable measurements versus analytical usefulness, and some arise from a mistaken modification of the basic concepts.

#### EXAMPLE A. Economic growth

17. Economy policy makers and users of statistics for fiscal application reject the key imputation of capital consumption by treating Gross Domestic Product (and Gross National Income) as the most useful measure of economic activity, despite the fact that they fully understand that this does not account for the using up of capital over time in the economy. In the European Union, budget contributions are largely determined by level of gross measures – measures that do not allow for the consumption of fixed capital.
18. GDP in volume terms remains the measure of choice of analysts for economic growth. Users have made the choice between measurability and theoretical appropriateness. In practice, for most economies the measures of gross and net output move very much in line. Given this universal choice, the role of allowing for capital consumption is not given prominence in the national accounts, and measures of GDP and GNI are the universal headline figures in publications of national accounts.
19. This seems like an even-handed compromise – the system provides measures untainted by capital consumption adjustments, but also presents the adjusted figures using standard methods for the estimation of the capital consumption. Users have a choice.

## EXAMPLE B. The role of government

20. Government is not a player in the business of producing goods and services for sale. The original view as described by Hicks was that government is a consumer of goods and services on behalf of society, and that these transactions should not be considered production of government services in the same way that companies acting for profit, produce goods and services for sale in the market. So final consumption was taken to be government purchases of goods and services, labour and capital, acquired for society in the same way that household purchases are made for the good of the members of the household.
21. The purchases of goods and services, capital goods and the employment of government servants, enable government to provide collective services for the benefit of members of society, such as military defence, activities for the redistribution of income and wealth, etc. These results are not due to producing goods and services in the market for competitive sale to consumers, but rather the provision of services for the benefit of the country as a whole, which will not reflect the mechanics of the market in the same way as other economic transactions. In the System of National Accounts, there has been a distinction of non-market services provided by government into ones which can be identified with individuals, and ones which are for the general good. But this distinction, while useful for comparison of economies in countries with different social arrangements to deliver health and education services, can lead to false assumptions regarding the nature of the services provided. Even services which directly benefit individuals in an observable and measurable manner, are collective in nature.
22. Hicks is quite clear on this point, that all government activity is essentially collective, and individuals do not receive benefit as a consequence of their own wants, but the wants of society as interpreted through government policy. The customers for public health services and public education are not the patients and pupils, or even the parents of the patients and pupils, when they are the decision-makers. The parents of pupils benefitting from government-provided education are not "service users" in the same way that those parents who pay for their offspring to receive an education. The appearance of service provision between private and public agents is the same, but the economic transactions could not be more different. Private education meets the wants of the parents paying for their children's education, public education meets the wants of society as manifested through the policy of the government. The customers are different.
23. This misunderstanding of the nature of government service provision has resulted in much effort in measuring the output of "individual" public services of education and health through observable outcomes and applying these performance indicators to national accounts' measures of real output. This analysis has the potential to be a useful measure of government performance, outside the discipline of national accounts. But for national accounts, government purchases goods and services and employs civil servants on behalf of society, and these costs are determined by the policy of government, not the "wants" of the recipients of the government services. So we have no choice but to recognise that government is its own customer, and this is recognised in the national accounts treatment at current prices. The identification of individual government services meeting a quasi-market style "want" of customers in society, seems driven by the desire to apply productivity style

techniques to the “production function” of government, where government outputs are measured as if they had a real market-style existence, with associated volume measures reflecting an imputed price.

24. SNA 2008 shows no doubt about the appropriate measures of volume output for government. Paragraph 15.116 reveals evidence of a productivity agenda behind “improvement” to the national accounts system. It states without rationale or reference, that:

*“The current value of the output of non-market goods and services produced by government units or NPISHs is estimated on the basis of the sum of costs incurred in their production, as explained in Chapter 6. This output consists of individual goods and services delivered to households and collective services provided to the community as a whole. The fact that such output is valued on the basis of the value of inputs needed to produce them does not mean that it cannot be distinguished from the inputs used to produce it. In particular, the change in volume of output can be different from the change in the volume of inputs. Changes in productivity may occur in all fields of production, including the production of non-market services”.*

25. The next three paragraphs describe three different approaches to measuring volume output, which will enable real output to be compared to real inputs and so generate productivity measures of government activity. Again, there is no alternative but to quote from them to illustrate the problems of measurement they meet.

- a. Pseudo output price indices.

Paragraph 15.117 *“The first [approach] is to derive a pseudo output price index such that when it is compared to the aggregate input price index the difference reflects the productivity growth thought to be occurring in the production process. Pseudo output price indices can be derived in various ways, such as by adjusting the input price index according to the observed productivity growth of a related production process or by basing the growth of the pseudo output price index on the observed output price indices of similar products. However such data are rarely available for goods and services produced by government and NPISHs”*

This paragraph proposes a self-defining method of obtaining a productivity measure equivalent to that observed in the production of “similar products”. Luckily, the conclusion is that such data is rarely available, so the approach is effectively discarded. It is difficult to understand why market services such as those that provide privately funded health and education are not looked at. The reason is of course that despite appearances, the two kinds of activity are so fundamentally different (market v non-market) in economic terms that any assumption of productivity from the private sector would be wrong, and immediately appears as the productivity measure for publicly provided non-market services.

b. Output volume method.

Paragraph 15.118 says *“The second approach, the “output volume method” is recommended for individual services, in particular, health and education. It is based on the calculation of a volume indicator of output using adequately weighted measures of output of the various categories of non-market goods and services produced. These measures of output should fully reflect changes in both quantity and quality.”*

But we seek in vain in the following paragraphs how the outputs should be chosen in practice. Market sales bring with them their own self-selection according to the values of sales for each product sold. But non-market output has no such consumer choice of product measure, unless of course we turn back to input costs reflecting government choices.

Paragraph 15.120 attempts to define the non-market outputs through the example of health. *“The benefit to the patient constitute the output associated with (these) input activities.”* But who is to say what these benefits are for an individual patient? Longer life? Degraded longer life? Without the measuring stick provided through market transactions, we are grasping at straws.

Paragraph 15.121 describes what we should not do – we should not use inputs as a proxy, and we should not use outcome measures affected by context and environment. It does say *“What should be measured is the service rendered to the customer”*. But that is not helpful (unless of course it means to describe the activities rendered, reflecting the input costs).

It is therefore difficult to accept the first sentence of paragraph 15.122 which says *“In the light of these observations, the ‘output volume method’ is the recommended method for compiling indicators of volume change of non-market services”*. It is no surprise to read in the next paragraph the following.

Paragraph 15.123 *It is recommended these volume indicators be tested for a substantial period of time with the aid of experts in the domain prior to their incorporation in the national accounts. Expert advice is particularly relevant in the areas of health and education, which usually dominate the provision of individual services. Further, the consequences of the estimates including the implications for productivity measures should be fully assessed before adoption. Unless and until the results of such investigations are satisfactory, it might be advisable to use the second best method, the input method.*

The second part of this paragraph reads as if it turns out that the results do not produce the expected productivity answer, go back and try again, or give up.

26. The above seems to demonstrate that the current SNA 2008 is extremely unsure about the “best” way to measure government volume output, and the message is so mixed that compilers are left wondering what they should do in practice, and how much effort they should put into pursuing the recommended best method.

## EXAMPLE C: SNA 2008 steps too far.

### EXAMPLE C.1 The treatment of non-life insurance.

27. Broadly speaking, ignoring the conceit of premium supplements, the output of the non-life insurance industry is measured by the difference between premiums paid in by customers and the claims paid out. This is typical of an activity that makes its money through margins. Another example is the retailing industry which buys in goods for resale at one price, and then sells them for another higher (retail) price.
28. There seems no conceptual difference between how the two activities earn profits. But if a retailer is going through a bad patch, and sales have plummeted so that stock is sold off at a dramatic loss, then the science of accounting supplies a perfectly logical result, that
  - a. Output for a period is negative, as output is defined as the margin earned on goods bought for resale
  - b. Value added is negative as the huge losses reflected in negative operating surplus swamp the income from employment component of the value added measure.
29. There is nothing impossible or improbable about a business that runs on margins having both a negative output and negative value added for a limited time. For retailing, should we should lower the value of the purchases so that we regain a positive output and positive value added in the difficult period, and then reduce future margins to smooth it all out over time? This would be to misrepresent the dire state of the core business of the retailer – he is losing such a lot of money on the business in one period that his profits are losses, and so big that even his margin is negative. The overwhelming benefit of using the standard estimation of margins through these periods is that the dire state of the industry is represented both in the reduced output and potentially negative value added – both caused by very large losses on the business.
30. The approach adopted in the SNA 2008 for non-life insurance requires the estimation of adjusted claims – reduced amounts paid out in the period of unexpectedly large claims, which is then recovered by showing larger payments out for claims in more favourable times. This has the effect of smoothing away exceptionally low output and value added measures for the non-life insurance activity and re-allocating the adjustments to reducing future (or conceivably past) time periods. But the cost of this disregard of the normal accounting rules is to corrupt the measurement of the most publicly used measure of economic accounts, GDP. This seems such a dramatic outcome, that we must look to the SNA 2008 for the rationale behind it.
31. SNA 2008 paragraph 6.184 describes the business of non-life insurance, explains how the insurance company benefits from interest on investments of any ongoing excess of premiums over claims to lower the implicit charges for the insurance service. At the end of the paragraph, the statement is made “*Within the SNA, the output of the insurance industry is determined in a manner to mimic the premium setting policies of the insurance companies.*” But the effect of the SNA adopting this approach this is to break assumptions at the very core of national accounts with regard to the calculation of output and value added.



The hiding of the trials and tribulations of the non-life insurance industry by inflating profits in difficult times and compensating by reducing them in better times gives a misleading picture of the economic viability of the activity.

32. The accounts balance in the national accounts through a compensating transfer from the insurance company to households in either the redistribution of income, or in the capital account in the case of catastrophe. But this balancing, necessary to produce a correct figure for the financial deficit, does not provide users with a realistic picture of the behaviour of the insurance activity.
33. The point is not to deny the issue that arise when insurance companies suffer a difficult year. But the current SNA solution feels like we are avoiding the issue, smoothing everything out, rather than sticking to the rules and allowing the dramatic losses to be reflected in the national accounts estimates of operating surplus and value added. We shouldn't care so much about the business model of the insurance companies, as sticking to universal rules in measuring production, and presenting measures of economic reality for all users of the accounts. Is it necessary to break these rules to avoid difficulties in interpretation? Surely a new more difficult issue arises in that the value added and operating surplus of non-life insurance is shown as unaffected by catastrophes such as hurricanes, whereas common sense suggests that their profits will be hammered and GDP will reflect this. The alternative of spreading output over years seems to misrepresent reality. As would accepting premiums only as a measure of gross output.
34. Retaining this unexpected measure of output and value added will correctly represent the losses in the production account, and the capital and financial accounts will reveal the need for exceptional financing to keep the business going until better times come round again.
35. Producing time series of real output and real value added is a problem when negative values occur in the series. But this is a problem for national accounts that can be tackled through approaches which do not break the accounting rules of national accounts. For example, an industry where output is defined as a margin, real estimates of output can be derived by constructing real estimates of the premiums and claims, with the real output the difference between the two, rather than trying to deflate the current price margin estimates.

**Example C.2 The recognition that non-financial assets can take negative values**

36. This phenomenon is explicitly recognised in two different parts of SNA 2008:
  - a. Contracts, leases and licences; and
  - b. Large power plants with significant decommissioning costs.
- a. In recognising some contracts as a non-produced asset, a positive value for the asset can be ascribed to one party who has obtained advantage through a price movement in materials specified to be used as part of a fixed-price contract. Given the bilateral nature of contracts, this inevitably must ascribe an equal and opposite value to the other party to the contract, who suffers from the change in price. This results in one party holding a non-produced non-financial asset with a negative value.

- b. The treatment for nuclear power stations with large decommissioning costs in the current SNA is to impute a negative value to the power plant in its last period, which is nullified by capital spending on decommissioning the asset.

37. I am not aware of any rationalisation of this new phenomenon, that non-financial capital assets can take negative values, with an implied negative price.

### **Example C.3 Extension of the production boundary to include the creation of R&D assets**

38. The SNA 2008 definition of production, in line with previous versions of the SNA is as follows:

*Paragraph 6.24 Economic production may be defined as an activity carried out under the control and responsibility of an institutional unit that uses inputs of labour, capital and goods and services to produce outputs of goods and services.*

39. An R&D asset (an idea) can be discovered, invented or “thought up” by a person with no economic inputs of the kind described in the definition of production. Ideas are not produced in that sense, but “discovered”. As no production of the idea is involved, then no economic good can be said to be produced and so no corresponding fixed asset can be recognised as the counterpart to the production.

40. It follows that the creation of intangibles should be recognised through the other changes in the volume of assets account.

### **Example C.4 The model underpinning the recording of intangible assets in the national accounts**

41. The model used in SNA 2008 Chapter 6 Section 10 “The production of originals and copies” is that Research and Development (R&D) results in an original, and this is followed by a second stage - the production of copies of the original. The sale of copies generates revenue. It is worth repeating here the whole of paragraph 6.208.

*The production of books, recordings, films, software, tapes, disks etc. is a two stage process of which the first stage is the production of the original and the second stage the production and use of copies of the original. The output of the first stage is the original itself over which legal or de facto ownership can be established by copyright, patent or secrecy. The value of the original depends on the actual or expected receipts from the sale or use of copies at the second stage, which have to cover the costs of the original as well as costs incurred at the second stage.*

42. Paragraph 6.208 sets out a theoretical foundation for the handling of R&D in the national accounts which generates inconsistencies. There are difficulties with this paragraph, in that it is not clear if the “original” refers to the original concept or the first tangible record of the concept through which the idea can be shared. An example would be for a play – the concept is the complete play as created by the author in their mind, and the first “host” (to use terminology suggested by Hill (Hill, 2014)) is the first manuscript to be written by the author – this first record can be called various names in different kinds of R&D – a blueprint, a master, etc. The distinction is critical, as the two possess different economic characteristics, as follows:

- I) The concept is an intangible – with no material existence, and a “public good” to be accessed by a client without detriment to the benefit enjoyed by other clients accessing at the same time. It has the attributes of a capital asset in that it is identifiable and separable, lasts a long time, provides future economic benefits and ownership can be protected through legal acts, secrecy and other safeguards. The concept is not “produced” in the economic sense of the word, and as defined in SNA 2008 paragraph 6.2: “*Production is an activity, carried out under the responsibility, control and management of an institutional unit that uses inputs of labour, capital, and goods and services to produce outputs of goods and services.*” In the case of intangibles, an input is not purchased, nor is a production activity carried out with an output at the end. The concept is invented, discovered, or created in the mind. Interestingly, the Oxford English Dictionary gives the origin of invent as “from Latin invent- 'contrived, discovered'”;
- II) The first recording of the concept is a tangible good, which may or may not have the characteristics of a capital asset. This record is produced through a process satisfying the SNA definition of production – it requires input of labour, capital and current goods and services. For a play, the author has to write or dictate his concept so that a material record is produced in the tangible form of a script. This record can then be copied and these copies distributed for sale.

- 43. So we can see that if by the “original” is meant the original idea, this is quite different from an “original” which is the first material record used to provide access to the idea – the “host” that Hill refers to, the “access device” to use the terminology of Lynch. Note that the concept cannot be copied – but it can be shared through hosts. On the contrary, the master-host and subsequent hosts can be copied and thus enable the sharing of the concept.
- 44. SNA 2008 paragraph 6.208 does not distinguish between these two different uses of the term “original”. It describes the original (original-as-concept) as the output of a first stage, but then refers to the original (original-as-master-host) being used to make copies. Given they are so different in economic character; using the same term to describe the concept as well as the master-host causes difficulties in subsequent analysis.
- 45. Paragraph 6.209 describes the creation of the intangible as production, with an equivalent recognition of gross fixed capital formation on acquisition by a user. Under the alternative proposed model, the intangible is discovered and so is a non-produced capital asset, with similar properties to other non-produced assets such as land. It follows that payments for access to the intangible are similar in nature to rent – income transfers for permission to share in the intangible, rather than service payments to pay for use of the intangible. As the intangible is non-produced under this alternative model, it appears in the “Other changes in volume of assets account” rather than as an output in the production account.
- 46. Paragraph 6.209 then says that the value of the original may be estimated on the basis of its production costs with a mark-up. But as the original-as-concept has only one cost – the time of the inventor – this valuation is arbitrary. Paragraph 6.209 later accepts that the valuation is arbitrary, stating that the mark-up depends on the discounted value of future receipts, “*however uncertain*”, that determines its [the original-as-concept’s] value.

47. Paragraph 6.210 then switches from talking about the original-as-concept to the original-as-master-host. Paragraph 6.210 in full is:

*The owner of the asset may use it directly to produce copies in subsequent periods. The value of the copies made is also recorded as production separately from the production involved in making the original. Consumption of fixed capital is recorded in respect of use of the asset in the making of the copies in the same way as for any other fixed asset used in production.*

48. This paragraph is a consequence of the lack of clarity in the definition of terms. What is meant by “the asset” of the first sentence? If it is the intangible, then we are faced with the contradiction that concepts cannot be copied; only shared. If it is the original-as-master-host, then this can be copied but this is not the intangible asset itself, it is the master-host being copied to produce other hosts by means of which the concept can be shared.
49. The second sentence states that “Consumption of fixed capital is recorded in respect of the use of the asset in making copies the same way as for any other fixed asset used in production.” But the concept is not “used” to make copies – the concept is the intangible which is being shared by means of the copies – there is no real consumption of the concept in the making of a copy. There can be capital consumption of the master-host and subsequent hosts if these are classified as tangible capital assets. For example, the performance of a screen-play can be recorded on a master-copy of the film which can be used to generate further copies for sale. In this case, the master-copy satisfies the requirements to be classified as a capital asset and will suffer wear and tear and potential obsolescence “as for any other fixed asset used in production”. But the original concept does not suffer wear and tear, and the only change in value is due to a change in price (obsolescence). This change in price is not due to a decrease in value on the making of a copy of the master-host – indeed the making of a copy can increase the value of the underlying intangible as the concept becomes more popular.

### **An alternative model of intangibles**

50. The alternative model of how intangible assets should be recorded can be summarised as follows:
- a. Intangibles are not produced according to the definition of economic production adopted for the SNA, they are a creation of the mind, discovered or invented, ;
  - b. Intangibles possess all the attributes of a capital asset except material substance, and should be recognised as such in the national accounts, as non-produced assets similar to land;
  - c. Their discovery is recognised through new entries in the other changes in the volume of assets account;
  - d. Payments for access to the intangible assets are income transfers, analogous to payments of rent for land;
  - e. Access to the intangible asset is usually achieved through the production of a master-copy a host for or access device to the intangible. This material device allows others to

share in the concept. Copies can be produced of the master record, and the master and copies can be classified as capital assets if they have the standard characteristics of assets;

- f. The master and subsequent copies of the master can be termed “hosts” when they are material, but a more general term suggested is “access devices”. The performance of a play (the provision of a service) acts as the means of sharing in the original concept, and “access device” seems a more appropriate term than “host” in these cases;
- g. Payments for copies of the master or for a service providing access to the original concept will cover two costs rent for access to the concept, and a payment for the acquisition of host or access device used to access the concept. For a book, the costs are for access to the story and the purchase of the book – the author receives copyright transfers of income from the publisher.

51. Given that the intangible is the result of creative thinking and not economic production, it follows that the intangible cannot itself provide an economic service after creation. The value of the intangible is transferred to others through sharing – it is a public good in that many people can benefit with no reduction in the benefit to others. In terms of the contribution of intangibles to production, they determine the nature of a production function, rather than provide capital services as part of the production function. This is revealed through the property of intangibles that they do not suffer wear and tear – this would entail the use of the intangible with an associated real service provided. This is exactly equivalent to how the use of land is treated in the national accounts – land does not wear away, and so the use of land is not represented by a capital service, but as a rent – a form of income transfer.

52. SNA2008 Paragraph 10.104 says *“R&D should be recognised as capital formation. In order to achieve this, several issues have to be addressed. These include deriving measures of R&D, price indices and service lives. Specific guidelines, together with handbooks on methodology and practice, will provide a useful way of working towards solutions that give the appropriate level of confidence in the resulting measures.”*

53. In my view, pursuit of solutions to the issues identified so clearly in SNA 2008, has not yet provided practical solutions. This is compounded by the faulty model of originals and copies in SNA 2008, and the misleading premise that R&D is production in the SNA sense resulting in intangible assets, as opposed to creative acts of discovery and invention.

**Example C.5 The unresolved clash between the properties of an institutional unit as defined in the SNA, and the recognition of overseas units as institutional units without those properties.**

54. SNA 2008 defines institutional units as either households or legal entities. Paragraph 1.9 says that: “The defining characteristic of an institutional unit is that it is capable of owning goods and assets, incurring liabilities and engaging in economic activities and transactions with other units in its own right.”

55. The advent of multi-national corporations and their increasing use of units abroad to handle aspects of their business has emphasised a conceptual clash between the idea of an institutional unit with relative powers of independence, and Special Purpose Enterprise (SPEs) set up abroad

from the parent company. These SPEs are controlled by the parent company, and so in that sense do not qualify as institutional units. The case when they are in the same country as the parent results in their activity being classified as ancillary and they are not recognised as institutional units separate from the parent.

56. However, the requirement that transactions and flows across national borders are recorded to allow a balance of payments to be drawn up, and the Rest of the World sector to be represented in the national accounts, has resulted in these SPEs being recognised as institutional units, with unfortunate consequences.
57. There have been examples of governments setting up SPEs abroad raising money through government backed bond which has then been channelled back to the home country and so avoiding a debt to be scored against the government. This caused sufficient anxiety in Europe where deficit and debt measures are key fiscal monitors of economic stability, that a special convention was brought in to ensure that any such loan raising activity would be reflected in the government accounts, despite the apparent independence of the loan as the SPE was recognised as an institutional unit in the national accounts.
58. The relevant paragraph in SNA 2008 is worth quoting in total:

*Paragraph 4.67 says that “General government may also set up special units, with characteristics and functions similar to captive financial institutions and artificial subsidiaries. Such units do not have the power to act independently and are restricted in the range of transactions they can engage in. They do not carry the risks and rewards associated with the assets and liabilities that they hold. Such units, if they are resident, are treated as an integral part of general government and not as separate units. If they are non-resident they are treated as separate units. Any transactions carried out by them abroad are reflected in corresponding transactions with government. Thus a unit that borrows abroad is then regarded as lending the same amount to general government, and on the same terms, as the original borrowing.”*

59. The relevant paragraphs for corporations are

*4.63 A subsidiary corporation, wholly owned by a parent corporation, may be created to provide services to the parent corporation, or other corporations in the same group, in order to avoid taxes, to minimize liabilities in the event of bankruptcy, or to secure other technical advantages under the tax or corporation legislation in force in a particular country. For example, the parent may create a subsidiary to which ownership of its land, buildings or equipment is transferred and whose sole function is to lease them back again to the parent corporation; the subsidiary may be the nominal employer of all the staff who are then contracted to other corporations in the group, the subsidiary may keep the accounts and records of the parent on a separate computer installation; the role of the subsidiary may be established to take advantage of favourable funding or regulatory treatments and so on. In some cases, corporations may create “dormant” subsidiaries that are not actually engaged in any production but which may be activated at the convenience of the parent corporation*

*4.64 In general, these sorts of corporations do not satisfy the definition of an institutional unit in the SNA because they lack the ability to act independently from their parent corporation and may be subject to restrictions on their ability to hold or transact assets held on their balance*

*sheets. Their level of output and the price they receive for it are determined by the parent that (possibly with other corporations in the same group) is their sole client. They are thus not treated as separate institutional units in the SNA but are treated as an integral part of the parent and their accounts are consolidated with those of the parent. As noted above, the accounts for passive SPEs (those on autopilot) are also consolidated with their parent corporation unless they are resident in an economy different from that where the parent is resident.*

60. The paragraphs quoted raise the unavoidable question – if it makes sense for governments, doesn't it also make sense for private corporations? The private corporation captives abroad are an integral part of the home corporation, no matter in which country they are located. A mirror set of transactions and balances should be maintained for the parent, reflecting all the characteristics of the captives as if it were in the home country, exactly as the government solution presents.

## **Conclusion**

61. This paper describes what are in my view weaknesses in the current system of national accounts. They are given as examples to support the argument that rather than increasing the scope of the core national accounts to include increasingly unobservable and unmeasurable concepts, national accountants should focus their attention on a set of core accounts and ensure that they are based on sound concepts reflecting those of the original creators of the accounts, rather than seeking extensions. Recent initiatives to expand the scope of the accounts to allow for pensions, capital services, research and development as production leading to the creation of intangible assets, etc. all push the statistics presented in the national accounts beyond the boundary of acceptable observable and measurable economic phenomena. These extensions should be dealt with through satellite accounts.

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