

Results of the AEG e-discussion on Measurement of Database in National Accounts

Introduction

1. The AEG in December 2004 meeting considered an issue paper on measurement of database containing the following recommendations made by the Canberra II Group (i) the reference to “large” databases should be dropped; (ii) all databases, including those built on own-account, should in principle be treated as fixed capital formation, and (iii) the current label in the classification of assets for the category comprising software and databases (AN.1122) should be changed from ‘computer software’ to ‘computer software and databases’, with software and databases treated as sub-classes. The paper also proposed a procedure for deriving macro-based estimates (based on labour input method) of own-account production of databases.

2. The AEG after detailed deliberations of the issues agreed that the present SNA recommendation that large databases should be treated as fixed capital was ambiguous because “large” was a subjective qualification. This word should be dropped. The AEG tentatively agreed

(a) that all databases were candidates for treatment as fixed capital but requested the Canberra II group (i) to provide a definition of “database” and a definition showing exactly which databases should be included (or excluded) in fixed capital; (ii) to consider the distinction between creation and maintenance and the implication for the inclusion in fixed capital; and (iii) to add precision to the nature of employees to be included in the recommended means of valuing own account databases; and

(b) to include a single category in the classification of assets for “software and databases” with a subsequent disaggregation into “software” and “databases”.

3. The concerns of the AEG were discussed by the Canberra II Group at its meeting in March – April 2005 which has made the following recommendations for the consideration of the AEG:

(i) A database is a tool that provides access to information. The value of the database reflects the value of the DBMS (software), which may already be capitalised in the accounts, plus the costs of converting data from one medium/format to the medium/format required for access by the DBMS. The value of the database does not however include the value of the information that can be accessed by it;

(ii) Only the loading costs for data and metadata and DBMS application costs that have an expected service life of more than one year should be recorded as fixed capital formation. All updates to a database that satisfy the one year rule should also be treated as fixed capital formation.

- (iii) Maintenance merely returns an asset that has depreciated through wear and tear back to its original state, there is no such thing as maintenance of the data embodied in a database. Since, no wear and tear occurs (depreciation is through obsolescence) and the addition of new items improves the quality of the database, taking it beyond its original state. So, these changes should be viewed as fixed capital formation if the data that are added are expected to be used for more than one year and as expenses otherwise.
- (iv) In practice the software component of databases will already be recorded elsewhere as software. Quite often this will have been estimated using a macro-based method, meaning that the software component of databases is not easily identifiable. As such it seems simpler to adopt the convention that own-account databases only include the costs involved in converting data from one medium/format to that required by the DBMS, including the application costs (adapting the software for this particular application, including setting up the structure of the database, loading metadata, etc.). This allows for macro-based estimates of databases to be derived as follows:

*Total number of employees working on converting data with an expected working life of more than one year from one medium/ format onto that required by the database and on the DBMS application **

*Average remuneration **

Proportion of time spent on these activities+

Other intermediate costs used in these activities (not including any costs associated with the acquisition of data) +

Notional operating surplus related to these activities (costs of capital services, for example capital services of scanning machines and computers)

Response received

4. The aforesaid recommendations of the Canberra II Group were referred (document no. SNA/M1.05/19.1) to the AEG members soliciting their opinions through a questionnaire. The questions asked of AEG members and responses received through e-discussions have been summarized in the following table:

Table: Questions asked of the AEG members and response received

No.	Question(s)	Response received	
		Yes	No
1	Do you agree that all databases holding data with a useful life of more than one year are a fixed asset?	16	0
2	Do you agree that the valuation of a database should be that of Definition 2, but exclude the value of the DBMS, which should continue to be recorded as a software asset?	16	1
3	Do you agree there is no maintenance entailed with databases and that all set-up and updating costs should be recorded as capital formation?	15	1
4	Do you agree with recommended method for deriving estimates of own account database capital formation?	15	1

Conclusions

5. The consultation showed that AEG members participating in the e-discussion overwhelmingly supported the recommendations that (a) the value of the database should only include the costs (labour and other costs) of developing the database excluding the value of the software used for converting information from one media/format onto the electronic media and format needed for storage, and (b) all databases holding data with a useful life of more than one year are fixed assets. Significant majority of the members supported the recommendations that there is no maintenance entailed with databases and that all set-up and updating costs should be recorded as capital formation. The procedure proposed for deriving macro-based estimates (based on labour input method) of own-account production of databases, received overwhelming support of members.

A summary of comments is annexed.

Summary of Comments Made by Members in the Questionnaire

The original response and full comments are available on the UN website¹. The objective of this annex is only to give limited extracts to entice readers to read the full comments of the AEG members.

Question 1

Some clarification is needed in relation to the treatment of (i) databases that are part of a comprehensive IT system, i.e. should these databases individually be identified or treated as software? and (ii) DBMS that were exclusively developed and are only used for the management of the underlying database, i.e. should they be treated as software or as part of the database?

Question 2

One member *disagrees* with the proposal and prefers to consider the knowledge (information) as an asset. While agreeing with the proposal some members have observed that in some cases, the information as such may actually have a value and should be recorded as an asset. An example is the sale/purchase of information (in line with goodwill and marketing assets). Therefore, in addition to databases, one may consider the inclusion of an additional asset category: "revealed information assets" to the extent of actual purchases/sales. The value of the information to the extent of actual purchases/sales may be capitalized and recorded in other changes of volume of assets account.

Question 3

One member *disagrees* with the recommendation and has desired to see a clarification on maintenance to the effect that although setup and updating costs of the database are capital formation, there could also be some kind of maintenance that need to be treated differently.

Question 4

One member *disagrees* with the proposed procedure for deriving macro-based estimates of own-account production of databases and thinks that it will be impossible to distinguish the proportion of time spent on the relevant activities. In his opinion it will already be a major achievement if we are able to make a proper estimate of the total of activities for the in-house development of software and database.

¹ <http://unstats.un.org/unsd/sna1993/viewquestions.asp?tID=12&stID=0&sstID=0>