

Input Document Unit 5

Integration of the SNA Sequence of Accounts into SHA.

Summary

This short paper illustrates that the Health Care System as defined in SHA can also be represented through a sequence of economic accounts. As the latter makes full explicit use of SNA accounting rules, it might enable the solution of some problems currently debated within the process of the revision of the SHA

Author..... HEALTH DIVISION
Affiliation.....OECD
Submitted on11/09/2008
Document code..... SHA-REV-05005

The opinions expressed and arguments employed herein do not necessarily reflect the official views of the Organisation for Economic Co-operation and Development or of the governments of its member countries, those of the World Health Organization or those of EUROSTAT or the European Commission.

Table of Contents

Introduction.....	1
Background.....	1
Two mirror representations of the Health Care System.....	2
Advantages and disadvantages of each representation	5
Relevance of the present exercise in the SHA revision process	6
The adoption of a health classification of transactions	6
Statistical units	6
Will the compilation of the sequence of Accounts ever become compulsory?	7
Looking ahead.....	7
Conclusions.....	8
Bibliography	9

List of Figures

Figure 1 Links between the System of National Accounts (SNA) and the System of Health Accounts (SHA)	3
--	---

Introduction

1. The programme of work for the revision of the System of Health Accounts (SHA) states that "*The revised SHA will be formulated to make the relationship to the System of National Accounts (SNA) clear and explicit*". In addition, the programme of work requires the revised SHA to:
 - Produce information on the importance of the health sector within the national economy and the contribution of health care to economic development;
 - Adequately track how resources are generated and used in a health system;
 - Provide adequate input for the analysis of the financial sustainability of the health systems;
 - Contribute to the evaluation of health systems performance.
2. This paper aims to identify the methodological tools which could be used to address the requirements outlined above. The basic idea is to “borrow” some of the methodology developed over a long time in SNA and apply it to SHA. The methodology borrowed from SNA allows the development of a statistical framework to represent the health care sector – using the boundaries determined by SHA- through a sequence of accounts similar to those used in SNA to report the generation, distribution and use of income of institutional sectors. The resulting representation could on the one hand enable the relationship between the two systems to be clear and explicit as indicated in the programme of work. On the other hand, it could satisfy some of the other requirements indicated in the programme of work. Indeed, since the proposed statistical framework allows to report all the economic flows taking place between the all the actors which SHA includes in the health sector, it could also enable:
 - the estimation of the value added generated in the health sector, which is an important indicator in assessing the importance of the health sector in the economy.
 - the provision of information on the productivity of the health system as costs currently not reported in SHA 1.0 would be estimated.
 - the estimation of financial deficit/surplus which could be useful information to analysts investigating the financial sustainability of the health system.
3. We also believe that the statistical framework set out here can support the whole revision of SHA as it may contribute to the solution of some problems currently under discussion in the revision of the SHA.
4. This paper may be of benefit to national data compilers who would like to compile the SHA core tables using the same data sources employed for the compilation of SNA, as this would have the benefit of strengthening the links between aggregates included in the different datasets and hence speeding up the compilation of SHA tables.
5. It is not intended that the assembly of the set of the sequence of accounts proposed here be an integral part of the data compilation under the revised SHA methodology. Of course those institutes or ministries interested in enhancing the analytical power of SHA can use the present paper for guidance to report health expenditure in a more detailed way.

Background

6. The SHA provides a framework for standard reporting for expenditure on health and its financing. Of primary interest in the SHA is the origin and the destination of expenditure and financing flows (the “from whom to whom?” relation). As a result, SHA organises the information on flows using a set of cross-classified tables that display from where the money comes and to where the money goes, and also what kind of services and goods are purchased. Originally the SHA manual

proposed a set of 3 core cross classified tables, labelled as HPxHC (health providers x health care function), HCxHF (health care functions x financing agent) and HPxHF (providers x financing agent). With the introduction of the Joint Health Account Questionnaire (JHAQ) in 2006, the original set of tables were been enriched with the inclusion of two additional tables: the first (HFxFS) cross-classify financing sources and financing agent/schemes; the second (RCxHP) reporting the remuneration of health employees broken down by providers (see Figure 1 below).

7. The set of the five cross-classified tables included in the JHAQ is one possible way to account for expenditure in the Health Care Sector. However, a number of different options are available to represent the health care system: Van Tongeren (2006) proposed linking the SHA to the SNA through health satellite accounts, advancing the idea of using both the SNA sequence of Accounts and the Supply and Use tables approach. The latter has been analysed by Quintela (2007), while a simplified version of the sequence of Accounts for the whole Health care sector has been developed by Pan American Health Organization (PAHO) in the “Satellite Health Account (SHA) Manual”. The current paper builds on all of these earlier contributions to the development of the links between the SHA and the SNA.
8. This paper aims to further develop the idea of interpreting the Health care sector¹ as an institutional sector included in the SNA. As a result, the health sector could be represented through a typical SNA sequence of accounts, each of which includes a set of transactions taking place between the health actors (i.e. transactors). However, the approach proposed here differs from the one of PAHO in that
 - i. The boundaries the health sector are the ones set in the SHA (OECD,2000) .
 - ii. Rather than referring to the health sector as a whole, we refer to the different actors of the Health sector as classified in the providers (ICHA-HP) and Financing agents (ICHA-HF) classifications included in SHA (OECD, 2000).

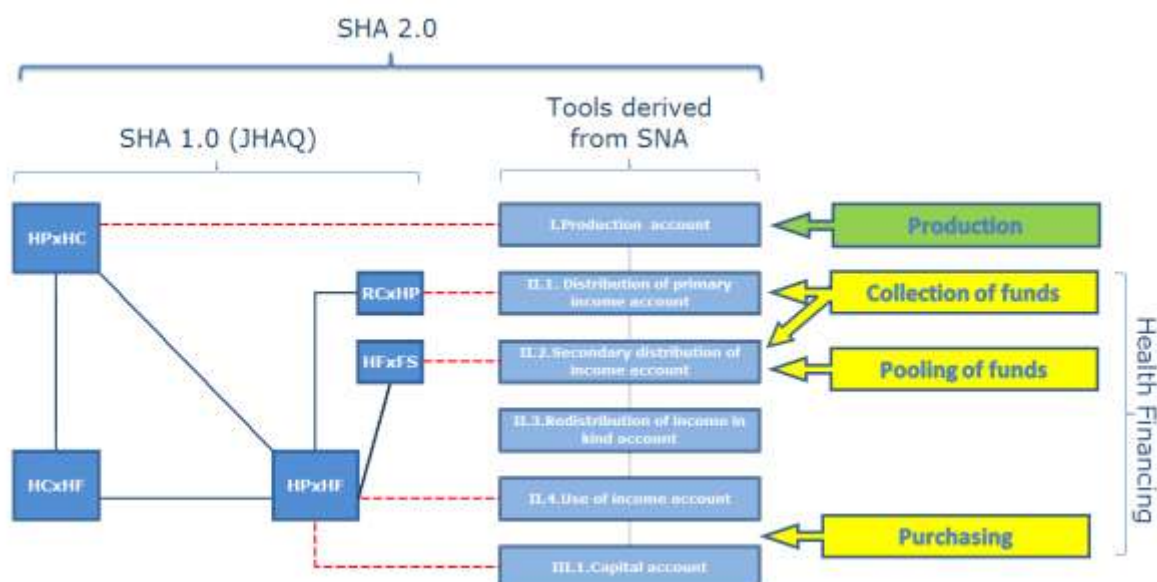
Two mirror representations of the Health Care System

9. In principal, the information included in SHA on health expenditure and its financing is also recorded in SNA, as the latter covers all economic activities taking place in a country. The two systems, however, report the information in two different ways. SHA, for example, employs its own specific classifications (i.e. ICHA classification of providers, of financing agents, and health functions) to breakdown the health expenditure at a high level of detail. In addition SHA highlights the origin and destination of the economic flows through the use of cross-classified tables. The SNA on the other hand, is composed of two main sets of tables: the sector accounts and the input-output framework (including the accounts by industry). The sector accounts provide information on how income is generated, distributed and used as final consumption or saving, while the input-output framework and the accounts by industry describe in more detail the production process (cost structure, income generated and employment) and the flows of goods and services (output, imports, exports, final consumption, intermediate consumption and capital formation by product group).
10. Although SHA employs concepts, definitions, classifications which have been largely derived from the SNA, it is not always straightforward to build up a link between the information reported on health expenditure and the macro-economic aggregates of SHA. A possible reason could be the high level of aggregation necessarily used in SNA to report information on the whole economy. As an example, consider that in SHA it may be of interest to record the social contribution paid by the

¹ It is worth emphasising that in the present exercise we refer to Health sector as defined in SHA and not as in the COFOG classification.

households to the social health insurance. In SNA the contribution to the social health insurance would not be reported separately. Instead it would be included in a broader category also including contributions to cover other risks such as unemployment, housing, social exclusion etc. Also, the entity running the social security scheme sometimes might not be identifiable separately in SNA as the scheme could be run by the Ministry of Finance which has many other functions.

Figure 1 Links between the System of National Accounts (SNA) and the System of Health Accounts (SHA)



11. Notwithstanding the difficulties mentioned above, we believe that a series of links can be established between the SHA and the SNA representations of the Health system. It is worth noting that the interest here is the difference between two possible representations of the health system. First, the health system can be reported through cross classified SHA tables. Second, the health system can be represented by a series of tools derived from SNA but applied to the health system but with the boundaries determined by SHA, not by COFOG.

12. Figure 1 above outlines the links between the two representations. The unbroken lines show the links across the tables currently included in the JHAQ, while dashes show the correspondence between SHA aggregates and their counterpart included in the relevant account in the sequence of accounts. In short, the following links can be established:

- i. Total health expenditure reported in the SHA is the sum of consumed health good and services. When broken down by providers (as in SHA table HPxHC) it also represents the value of the output of the health providers.) The same information would be recorded in SNA in the production account, which is the account showing output as a resource and the intermediate consumption as uses. The production account is one of the tools used in National Accounts to obtain the value added (or the difference between output and intermediate consumption) and in turn the gross domestic product (as sum of value added of all economic actors). Although, the production accounts are reported in SNA for either the institutional sectors or industries, they could be compiled for each single economic actor, including therefore the health providers. The resulting production accounts would then enable the estimation of the value added produced by each health provider and, summing them up, would also provide an estimate of the value added produced by the

health sector as a whole. The value added of the health sector can be used as an important indicator to assess the relative importance of the health sector compared with the rest of the economy. This enables establishing a connection between the SHA table HPxHC and a set of production accounts each referring to a health provider.

- ii.* The remuneration of employees of the health providers as reported in the RCxHP SHA table can be considered as the aggregate corresponding to the “compensation of employees” reported in the distribution of primary income account of the health providers. In the sequence of accounts, the distribution of primary income account is strictly linked to the production account as the value added estimate from that account is taken forward and included as a resource of the distribution of primary income account. The same account also provides information on the earning of self-employed practitioners, which is classified as mixed income.
- iii.* In SHA, the HFxFS table reports funds which have been transferred from the bodies collecting and pooling the funds to those purchasing health products. Health funds might be collected by different bodies (e.g. Central/Local government, Social security agency, Commercial insurance fund, Employer fund, Health care Provider etc) using a variety of contribution mechanisms (e.g. Direct taxes, Indirect taxes, payroll tax revenues, often called “social health insurance contributions”, voluntary prepayment, usually for voluntary health insurance)². In SNA, each health contribution mechanism is included in different items of the classification of economic flows (called classification of transactions) and recorded in a different stage of the sequence of accounts. Consider for instance, taxes on cigarette used in some countries to fund health care programs. In SNA they would be included under the category of taxes on products and would be reported in the “Distribution of primary income accounts”, which is the account showing how much of the value added is generated by labour in the form of compensation of employees and how much of the value of output is payable to the government in the form of taxes (less subsidies) on products. In the same way, the “social health insurance contributions” would be included in the broader category of “social contribution” and reported in the “Secondary distribution of income accounts” which reflects the redistribution of (primary) income through monetary transfers (income and property taxes, social contributions, social benefits other than social benefits in kind, other current transfers³). In conclusion, the relevant information on the collection of funds analysed in the literature is recorded in the table HFxFS in SHA, while in SNA a part is recorded the “Distribution of primary income accounts” and there remaining is accounted in the “Secondary distribution of income accounts”. The latter accounts also record all the transfer (in cash) made between the different actors (e.g. the transfer of funds from the central government onto local governments) which in the health financing literature are referred to as “pooling”.
- iv.* Once collected, the funds for health care are pooled by a wide variety of public and private agencies. These would include national health ministries, decentralized arms of health ministries, local governments, social health insurance funds, private for-profit and not-for-profit insurance funds, and community-based nongovernmental organizations. The pooling of funds is reported in SHA in the HFxFS table together with the collection of funds. In SNA all economic flows related to the redistribution of wealth are recorded in the “Secondary distribution of income accounts” if made in-cash. As a consequence, this

² See inter alia, Kutzin (2001 and 2008), Busse et al. (2007).

³ “A transfer is a transaction in which one institutional unit provides a good, service or asset to another unit without receiving from the latter any good, service or asset in return as a direct counterpart” See SNA(2008) paragraph 8-10.

account would record all transfers in-cash made by the bodies collecting the health funds onto the bodies pooling the funds, as well as the transfer in-cash received by households. If the transfer in favour of households were made in-kind, the value of the goods and services would be recorded in SNA in the “Redistribution of income in-kind”.

- v. The purchase of health products from the producers made either by the bodies pooling the funds or by households as out-of-pocket expenditure is recorded in SHA in the table HPxHF. In SNA those expenditure are recorded in the “use of disposable income account”.
 - vi. Finally, the SNA Capital account records the values of the non-financial assets that are acquired, or disposed of. The information on the acquisitions less disposals can be combined with the saving and the capital transfers to calculate the change in net worth. In SHA 1.0, only the acquisitions less disposals of capital goods are recorded. The implementation of a complete capital account in SHA (i.e. including also savings and capital transfers) could be important for the low-middle income countries, in particular as it would show to what extent investments are funded out of resources coming from abroad, and whether those resources are in the form of a loan or of a grant.
13. At this point, we can reach a first conclusion: all aggregates included in SHA to account for the major health activities of production, collection of funds, pooling of funds, purchase of health good and services could also be reported in a sequence of typical SNA accounts (Figure 1 above)

Advantages and disadvantages of each representation

14. The two representations of the health sector complement each other rather than being in competition, in that each has its own advantages as well as disadvantages:
- i. The main advantage of the system of cross classified tables as in the SHA JHAQ is that the “from whom to whom” flows are identified. In addition, the matrix approach imposes consistency on the use of different data sources and helps identifying information gaps and needs. The principle disadvantage, however, is that the cross classified tables are limited in that neither the surplus/deficit of health actors nor stocks of financial and non-financial assets are accommodated.
 - ii. On the contrary, the sequence of accounts of the SNA can provide a richer set of information and therefore increase the analytical power of the SHA. Below we set out the main advantages.
 - a. The sequence of accounts provide information on the nature of the economic flows (transactions which are currently not explicitly reported in the SHA cross-classified tables), whether funds have been collected using taxes (local or central, direct or indirect), contributions (paid by employers or employees), donations, or transfers from the rest of the world; or whether they are redistributed among actors that purchase health products; or whether the purchase is for own final use or as third party payments.
 - b. The SNA sequence of accounts details explicitly the surpluses or deficits of the actors of the health sector (balancing items which are currently not included in the SHA cross-classified tables). The analysis of surpluses or deficit is essential to address the problem of financial sustainability of health systems.
 - c. The analysis of the production structure of the health providers (production accounts), which includes the share of intermediate consumption, the integration of the health sector into the rest of the economy and its financial dependence on the rest of the world. The current cross classified tables focus only on the demand

side of the health sector. A criticism often raised on the sequence of accounts is that it is not possible to identify the origin and the destination of the transactions (“from whom to whom”). However, it is our view that, if a sufficiently detailed classification of transaction is employed, it is possible to map the relevant information to the cross classified tables currently employed in the SHA. This mapping implies the loss of the extra information (like balancing items) included in the sequence of accounts.

- iii.* The main possible disadvantage is that the actual compilation of the sequence of accounts could be more expensive and time consuming than the compilation of the SHA tables due to the richer set of information required. Indeed, the contrary can also be true as the actual implementation of the sequence of accounts has the potential to facilitate the compilation of the SHA as it may aid the mapping of the elementary data source already used in national accounts into the aggregates included in the SHA family of tables.

Relevance of the present exercise to the SHA revision process

- 15. Analysing the health sector by means of the sequence of accounts may contribute to the solution of some conceptual issues related to the revision of the SHA. At the same time, it could highlight some aspects which may not been adequately addressed in the programme of work for the revision. The framework set in the present paper brings us to focus on two specific aspects: the classification of transactions and the statistical unit. These two aspects will be mentioned briefly here as a full treatment is outside the scope of this paper.

The adoption of a health classification of transactions

- 16. SHA 1.0 states that the “accuracy and cross-national comparability of health expenditure estimates depends on precise definitions of the economic nature of underlying transactions”. The representation of the health sector through the sequence of accounts as presented in this paper also shows that a full picture of expenditure in the health sector requires the use of a classification of transactions. An issue that requires some consideration however is whether the classification of transactions included in SNA is sufficiently detailed to be employed in SHA. As an example consider the case of a Social Security Fund receiving contributions from households and transfers from the central government. Both contributions and transfer are transactions included in SNA classification of transactions. The doubt is whether the SNA categories are sufficiently detailed for analyses of financial transactions in the health sector, especially given the importance of third party transactions.

Statistical units

- 17. An important issue is the identification of the statistical unit for reporting expenditure of the Health care system. As the issue has already been analysed in depth by Van Tongeren (2005 and 2006), it will be mentioned briefly here. SHA 1.0 proposed the same statistical unit for the categories of all three classifications (providers, functions and financing agents) in order to allow for cross-classifications. However, linking the categories of each classification to the relevant international classifications in SNA results in the adoption of different statistical units (Van Tongeren (2006), i.e. the classification of providers (linked to ISIC) uses the establishment while the classification of Financing Agents associated to the institutional sector classification uses the institutional unit. As an example consider hospitals. A hospital is an entity compiling a complete set of accounts and can be regarded as the institutional unit. For the purpose of producing the SHA tables, hospitals’ output is adjusted by excluding expenditure for the education and training of health personnel; research, food, hygiene and drinking water control; environmental health; social work and pastoral care etc.

The “adjusted” hospital is a part of the institutional unit producing health products directly related to improving or maintaining health, and thus is the establishment. The distinction becomes important when considering the transfer of funds from different sources, i.e. the regional government, private insurance and a corporation. Funds are transferred to the institutional unit, i.e. the hospital to cover all expenditure, and not to the establishment, i.e. the “adjusted” hospital. Therefore to avoid inconsistencies in the cross-classified tables the funds transferred should also be adjusted. Thus the question arises: what is the best way to deal with this issue? Van Tongeren proposes that establishments should be used as the statistical unit for all the categories of SHA classifications. Thus the revision process should consider this issue and assess whether Van Tongeren’s solution is appropriate.

18. The development of a classification of transactions and the consideration of the use of statistical units for all categories of SHA classifications would have flow-on consequences for other issues in the SHA revision.

Other aspects to be explored in order to fully develop the framework.

19. Besides the two issues mentioned above (definition of the statistical unit and the development of a classification of transaction), to fully develop the framework presented in this paper, the following issues need to be analysed in depth:
 - How should SHA be linked to the rest of the economy?
 - Recording of social contribution: should SHA adopt the National account convention of recording employers’ social contributions as one of the components of compensation of employees together with wages and salaries in cash and in kind?
 - How should SHA account for the work in progress component (e.g. unfinished building of a new hospital) of the change in inventories? To what extent can the work in progress be assigned to the Health sector?
 - How should the new SHA record health goods. Should the convention introduced in SHA 1.0 (i.e. health goods producers are not included as providers in SHA) be kept or should SHA also include the institutional units that produce some products that are entirely consumed by other providers, as intermediate consumption in its process of production or for trade (see Quintela 2007).
 - Should Unit 5 also develop implementation guidelines to make the proposal operative?

Will the compilation of the sequence of Accounts ever be compulsory?

20. As stated earlier, the compilation of the sequence of accounts will not be a compulsory element of the revised SHA methodology. The scope of the present exercise is limited to the development of a sound accounting framework to support the revision of the System of Health Accounts (SHA). It is recommended here that this accounting framework will be as sound and solid as possible if it is linked to the SNA. Of course those institutes interested in enhancing the analytical power of SHA and establishing a clearer link with data source employed for the compilation of National accounts can use this paper for guidance to develop the full sequence of accounts for the Health sector. Indeed, this would have important consequences in terms of analytical use of SHA and also the potential to facilitate the compilation of the SHA cross-classified tables.

Looking ahead

21. Although the framework presented here has at this stage only a conceptual value and the assembly of the set of accounts is not required, three issues encourage us to consider the implementation of a full set of accounts:

- i.* The first is that the revised manual is likely to have a life expectancy of 10-15 years, and thus both contemporary and emerging policy issues and data availability require consideration.
- ii.* Second, although at present a lack of detailed statistical information for some variables (e.g. intermediate consumption) might be seen as a major obstacle to the compilation of the sequence of account, it is likely that the availability of elementary data source will keep increasing in the next decades due to developments in technology and data availability. Thus, information currently unavailable might well become available in the future, especially if its usefulness is recognised at the international level.
- iii.* Third, some countries currently compile their SHA accounts either based on a methodology close to that of the SNA (e.g. Latin American and Caribbean countries⁴) or follow the current SHA methodology but their data is compiled by national accountants using the rules, data and framework of SNA. Countries which fall into this latter group include Norway, Portugal and Sweden. For both sets of countries the compilation of the full set of economic accounts proposed in this paper would be relatively straightforward.

Conclusions

22. This short paper illustrates that the Health System as defined in SHA could also be represented by using the sequence of economic accounts developed in SNA. The latter could complement the current SHA (based on a set of cross-classified tables) rather than being in competition. Indeed adding the sequence of accounts could provide the users of SHA with a richer set of information and therefore increase the analytical power of the SHA. One of the advantages discussed in this paper is the possibility of explicitly accounting for the surpluses or deficits of the actors of the health sector to enable the consideration of the problem of financial sustainability of health systems. In addition, the sequence of accounts might provide information on the production structure of the health providers, the integration of the health sector into the rest of the economy and its dependence on the rest of the world. Finally, as the latter makes full explicit use of SNA accounting rules, it might enable the solution of some problems currently under consideration in the revision of the SHA.
23. In order to fully develop the framework presented in this paper, however, some issues need to be analysed in depth. Some of these are specific technical problems, whereas others need to be developed in conjunction with the development of other units of the SHA 2.0 manual.

⁴ These countries use a satellite account methodology developed under the auspices of PAHO (Pan American Health Organization, regional office of WHO). This methodology has an objective to identify clearly the linkages and relationships of the Health Accounts with the SNA including providing highly developed information on the supply of health services.

Bibliography

- [1] Busse R., Schreyögg J., and Gericke C. (2007) "*Analyzing Changes in Health Financing Arrangements in High-Income Countries. A Comprehensive Framework Approach*", HNP DISCUSSION PAPER, The World Bank (http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2007/06/06/000090341_20070606161116/Rendered/PDF/399130Analyzing0Changes01PUBLIC1.pdf)
- [2] European Parliament Policy Department Economic and Scientific Policy (2008), *Health Care Financing in the Context of Social Security* (IP/A/EMPL/ST/2006-208), February.
- [3] Eurostat (1996), *European System of Accounts: ESA 1995*, Luxembourg: Office for Official Publications of the European Communities.
- [4] Hernandez P., Poullier J-P, and van Mosseveld C. (2007) "*Measuring Health Systems' Financing Flows*", Paper presented at the Eurostat SHA Workshop in Tallinn, May 2007
- [5] Kutzin J. (2001) "*A descriptive framework for country-level analysis of health care financing arrangements.*" *Health Policy*, 56:171–204.
- [6] Kutzin J. (2008) "*Health financing policy: a guide for decision-makers*" WHO Europe, Health Financing Policy Paper (www.euro.who.int/Document/E91422.pdf)
- [7] OECD (2000), *A System Of Health Accounts*. Paris.
- [8] OECD, EUROSTAT, WHO (2007) "*Programme of Work for the SHA revision*" (<http://mcmbo1/dataoecd/57/18/40234887.pdf?contentId=40234888>)
- [9] Pan American Health Organization (2005), *Satellite Health Account (SHA) Manual*,
- [10] Quintela I. (2007), "*Incorporating Input, Output and Productivity Measurements into the System of Health Accounts*" Paper presented at the 9th Meeting Of Health Accounts Experts And Correspondents For Health Expenditure Data, Paris 8,9 October 2007, DELSA/HEA/HA(2007)5
- [11] SNA93 (1993), "*System of National Accounts 1993*", CEC, IMF, OECD, UN and the World Bank, Brussels/Luxembourg, New York, Paris, Washington, D.C.
- [12] SNA (2008), "*System of National Accounts 2008*" Pre-edited version of Volume 1, CEC, IMF, OECD, UN and the World Bank, (<http://unstats.un.org/unsd/sna1993/draftingPhase/WC-SNAvolume1.pdf>)
- [13] Van Tongeren J.W. (2005), "*Review of International Health Accounts Standards and their Relation to SNA*" PAHO Working Paper (<http://www.paho.org/spanish/dpm/shd/hp/ct2doc-jvtorgeren.pdf>)
- [14] Van Tongeren J.W. (2006), "*Review of OECD Health Accounts in Relation to SNA*", Paper presented at the 8th Meeting Of Health Accounts Experts And Correspondents For Health Expenditure Data, Paris 5,6 October 2006 DELSA/HEA/HA(2006)6