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THE REVISED U.N. SYSTEM OF NATIONAL ACCOUNTS: ITS IMPLEMENTATION IN CANADA

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The revised U.N. System of National Accounts (Revised SNA), comprising 21 chapters and 4 annexes (The United Nations Secretariat, Provisional ST/ESA/Ser.F/2/Rev.4, various dates from March to September, 1992) was accepted by the UN Statistical Commission at its February, 1993 meeting in New York. We have made very detailed comments on this voluminous document in our two papers, The Revised U.N. System of National Accounts vis-à-vis The Canadian System of National Accounts (February 15, 1993) and The Revised U.N. System of National Accounts and the Canadian Input-Output Tables (April 13, 1993). The present paper highlights, in a summary fashion, certain important areas where the Canadian System of National Accounts (CSNA) will need to revise its present practices to conform to the revised SNA; the reader is encouraged to refer to our two papers, noted above, for further details. There are some areas where we may not be able to implement the recommendations of the revised SNA; in such cases, our reasons are stated and alternatives are suggested. Our occasional departures from the revised SNA guidelines are primarily prompted by pragmatic considerations. We fully recognize the importance of promoting international comparability, but it should also be recognized that the specific circumstances existing at a given time in different countries can vary, often substantially. We believe that it would prove useful, from the standpoint of encouraging wide implementation of the revised SNA, if other countries were to emulate us in sharing their own, particular adaptations of the recommended guidelines with the larger international community. Our adaptations are presented in this spirit.

We are planning to implement the revised SNA at the time of the forthcoming rebasing of the CSNA to the year 1992 from the present base of 1986. The results from this exercise are planned to be released in the summer of 1996. Our comments, below, follow the sequence of chapters in the revised SNA.

1. Production Account for Institutional Sectors

The revised SNA (Chapter VI) recommends that there should be full production accounts, full in the sense of intermediate expenses, value added and gross output. Considering their limited utility and very

significant resources that would be required to develop such estimates for the current period,we are not planning to implement this recommendation.

Given our data sources, an alternative presentation would be to develop a comprehensive production account for all the producing enterprises in three sectors: business (both corporate and unincorporated enterprises), general government, and non-profit institutions serving households. Furthermore, all three producing sectors should be disaggregated, classified by economic activity. This alternative presentation would also help us to segregate from the present cumbersome Persons and Unincorporate Business Sector a clean Household Sector.

2. Financial Intermediation Services

The recommendation for allocating intermediation services to users in the revised SNA (Chapter VI) is quite different from the approach specified in the 1968 UN SNA. In the 1968 UN SNA, imputations for banking intermediation services are made; however, such services are allocated exclusively to the business sector rather than to all borrowers and lenders, as is now recommended in the revised SNA. Within the business sector, the 1968 UN SNA does not allocate these services to each industry; instead, it uses a dummy industry which buys the entire service as an intermediate expense and generates an equivalent negative value added.

The revised SNA recommendation on the imputation and allocation of financial intermediation services to all sectors is similar to our present practice. Some minor changes will be required in the CSNA to fully implement the revised SNA, which we plan to incorporate at the time of rebasing the CSNA series.

3. Mineral Exploration

In another departure from the 1968 UN SNA, the revised SNA (Chapter VI) recommends: "Expenditures on mineral exploration are not treated as intermediate consumption. Expenditures on mineral exploration, whether successful or not, are needed to acquire new reserves and are therefore all classified as gross fixed capital formation" (paragraph 173). The revised SNA recommendation is in line with present CSNA practice.

4. Military Equipment

The revised SNA (Chapter VI) states that: "The construction of buildings for use by military

personnel, including hospitals and schools, and also of roads, bridges, airfields, docks, etc., for use by military establishments should be treated as fixed capital formation. In addition, machinery and equipment of the same type as used by civil establishments for non-military purposes should also be treated as fixed capital formation" (paragraph 178). Conversely, military hardware such as rockets, missiles and their warheads, warships, submarines, fighter aircraft and bombers should continue to be treated as intermediate expenditures.

In the 1968 UN SNA, all military expenditures on goods are treated as intermediate expenditures. We support the recommendation in the revised SNA and plan to implement it in the CSNA.

5. Consumption of Fixed Capital, Major Earthquakes, Hurricanes, etc.

The revised SNA (Chapter VI) states that: ".... losses due to war, or to major natural disasters which occur very infrequently - major earthquakes, hurricanes, tidal waves, etc. - are not included under consumption of fixed capital. There is no reason for such losses to appear in the Production Accounts as charges against output. The values of the assets lost in these ways are recorded in the Other Changes in Volume of Assets Accounts." (paragraph 193). We completely agree with the revised SNA that the destruction of property due to hurricanes or major earthquakes should have no impact on consumption of fixed capital.We plan to implement this recommendation in the CSNA.

6. General Valuation Principles

The revised SNA (Chapter VI) recommends that the preferred method of valuation of output of goods and services produced for the market be at basic prices, especially when a system of VAT, or similar deductible tax, is in operation (paragraph 224). The concept of basic prices in the revised SNA is the same as that of approximate basic prices in the 1968 UN SNA. In the Input-Output Accounts, the CSNA already uses a basis of valuation that is close to this one. A change with respect to the treatment of subsidies will be required to fully implement the revised SNA recommendation, which we plan to incorporate at the time of rebasing of the CSNA accounts.

7. Payroll Taxes

Payroll taxes are taxes payable by the employer on the wage or salary bill. Such taxes are quite commonly applied by the various governments in Canada. The CSNA mostly treats such taxes as part of compensation of employees whereas the revised SNA (Chapter VII) recommends such taxes be "treated as

taxes on production in the same way as taxes on buildings, land or other assets used in production" (paragraph 20). We plan to implement this recommendation at the time of rebasing of the CSNA accounts. Its implementation will not change GDP at market prices, but it will reduce GDP at factor cost counterbalanced by an increase of taxes on production, and it will also reduce personal income.

8. Reinvested Earnings on Direct Foreign Investment

According to the revised SNA (Chapter VII), both systems (SNA and Balance of Payments) "... require the saving or retained earnings of a foreign direct investment enterprise to be treated as if they were distributed and remitted to foreign direct investors in proportion to the ownership of the equity of the enterprise and then reinvested by them. In other words, two additional entries are required in the accounts of the enterprises and their foreign owners, one of which is the imputed remittances of retained earnings while the second is the imputed reinvestment of those earnings" (paragraph 123, emphasis in original). The CSNA does not follow this procedure at present but will implement the revised SNA recommendation, as this will harmonize the CSNA with the IMF Balance of Payments Manual and permit international comparability.

9. Final Consumption Expenditure and Actual Final Consumption

An important development, both for the CSNA and the 1968 UN SNA, is the specification in the revised SNA (Chapter IX) of the interrelationship between final consumption expenditure and actual final consumption for the three sectors (general government, NPIs and households) in which final consumption takes place (paragraphs 93-98). On a practical level, it may be noted that each of the aggregates, whether referring to consumption expenditure or actual final consumption, has to be derived from data on expenditures.

It should be emphasized that actual final consumption for the whole economy is exactly equal to final consumption expenditures.

We welcome this recommendation and plan to implement it as it would help international comparability of household consumption.

10. Plantations, Orchards, etc.

The revised SNA (Chapter X) recommends (repeating the recommendation of the 1968 UN SNA)

that trees cultivated in plantations for the products they yield year after year - such as fruit trees, vines, rubber trees, palm trees, etc. - be treated as fixed assets. The value of such fixed assets may be approximated, if necessary, by the costs incurred in their production during the period (paragraph 94).

The CSNA has not followed this recommendation. Instead, it treats these costs as intermediate expenditure.

We support the UN recommendation as it would better reflect economic reality and promote better international comparability. However, we may not be able to implement this recommendation as our data sources are quite inadequate.

11. Entertainment, Literary or Artistic Originals

The revised SNA (Chapter X) recommends treating original creations - such as films, sound recordings, manuscripts, renderings, models, literary and artistic works, etc. - as capital formation (paragraph 100). The CSNA does not capitalize the value of such originals. In some cases, it is added to inventories and in others, it is treated as intermediate consumption. Our data sources are quite weak in this area and we may not be able to implement the recommendation, although, in principle, we support it.

12. Acquisitions Less Disposals of Valuables

The revised SNA (Chapter X) recommends that the acquisition less disposals of valuables be reflected in the Capital Account. "Valuables are assets that are not used primarily for production or consumption, that do not deteriorate over time under normal conditions and that are acquired and held primarily as stores of value" (paragraph 122). The present data sources do not permit the CSNA to specify such expenditures in the Capital Finance Account; instead, they form part of the residual balancing item, net lending or borrowing requirements of the sectors. We support this recommendation in principle and will try to develop some approximations to implement this recommendation.

13. Acquisitions Less Disposals of Non-produced Non-financial Assets

The revised SNA (Chapter X) recommends that acquisitions less disposals of non-produced non--financial assets be reported in the Capital Account. These assets consist of land, sub-soil assets that may be used in the production of goods and services and intangible assets such as patented entities, leases, other transferable contracts, etc. (paragraphs 127-138). Here, too, the present data sources do not permit the CSNA to specify such expenditures in the Capital Finance Account; instead they form part of the residual

balancing item, net lending or borrowing requirements of the sectors. We support this recommendation in principles and will try to develop some approximations to implement this recommendation.

14. The Reconciliation Statement in the Balance Sheets

The revised SNA (Chapter XII) states that: "This chapter is concerned with the recording of changes in assets, liabilities, and net worth between opening and closing balance sheets that result from other flows - that is, flows that are not transactions, the transactions being recorded in the Capital Account and Financial Account of the System" (paragraph 1).

There are two kinds of changes: "The first kind consists of changes that are due to factors such as discoveries or depletion of sub-soil resources, destruction by war or other political events, or destruction by natural catastrophes, all of which actually change the volume of assets. The second kind consists of changes in assets, liabilities, and net worth due to changes in the level and structure of prices, which are reflected in holding gains and losses" (paragraph 2). The first kind of changes are further elaborated in the Other Changes in the Volume of Assets Account and the second in the Revaluation Account.

There is no separate Other Changes in Assets Account in the CSNA. Many of the items discussed, in the revised SNA, in the context of the Other Changes in Assets Account form, in principle, part of the Reconciliation Statement (not yet fully developed) in the CSNA Balance Sheets. The development and compilation of this account is of high priority in the CSNA as this will help to specify several items which still remain consolidated or unexplained, thus permitting better analysis of balance sheets.

It is worth reporting that at present, the CSNA is developing estimates of some sub-soil assets and forestry as part of the natural resource accounting work and environment satellite account. Once developed, these estimates will be incorporated in the Balance Sheets.

15. Gold

The revised SNA (Chapter XIV) , in the Rest of the World Account , differentiates the transactions in monetary gold conducted between the authorities of the different countries from other transactions in gold as a commodity. It recommends that the transactions in monetary gold be recognized as financial items and not included in the imports or exports of goods (paragraph 93). The revised SNA distinguishes three types of gold: (1) monetary gold owned by monetary authorities as a component of international reserves; (2) gold held as a store of value; and (3) other gold used for industrial purposes. A transaction in the second and third category of gold is always treated as a transaction in a commodity, no matter who the transactor

is. A transaction in monetary gold can only be conducted between the monetary authorities of one country and the monetary authorities of another country or international monetary authorities; such a transaction is always a financial transaction. All other transactions in gold are recognized as transactions in gold as a commodity.

We support this recommendation and plan its implementation in the CSNA.

16. Cross-Classification of Value Added by Sectors and Industries

The revised SNA (Chapter XV) recommends that the value added by industry in the Use tables be cross-classified by institutional sectors, such that income and consumption can readily be related (see paragraphs 105-109). Its implementation requires a well functioning business register which can readily relate establishments to enterprises and sectors. Such information needs to be current, so that one can relate the current profile of establishment-based input-output industry statistics to the institutional-based structure of the economy. It also demands a highly articulated micro database which can be readily added to provide aggregates for the System of National Accounts. These conditions are rigorous and very costly to implement. Given its demand for resources and its limited utility to relate production with income and consumption, we are not planning to implement this recommendation. An alternative would be the development of an institutional distribution of value added components for the total economy; e.g., total labour compensation may be distributed by institutional sectors. See also item 1, Production Account for Institutional Sectors.

17. Conversion of the Supply and Use Tables into Symmetric Tables

The revised SNA opts for the product (commodity) technology assumption to convert the rectangular supply and use tables into symmetric tables. The product technology assumption may be valid if one can develop a vector of inputs for each of the twenty thousand or so products identified in the market. It is, however, completely unrealistic to seek to achieve such a data base. Aggregating twenty thousand products into a manageable set of 200-300, or even 500-1000, product groups can hardly be called a replication of the commodity technology. At this level of aggregation of products or industries, there is hardly any difference between the two sets. Furthermore, it is evident that at least some important expenditures such as R&D, management skills and management style, which are industry specific or even firm specific, affect importantly and similarly all the products produced within an industry.

Our alternative presentation for symmetric tables is to use industry technology assumption.For model building purposes, the algebraic manipulation is easier using the industry technology assumption. The industry technology assumption does not require artificially transforming the basic rectangular Supply and Use tables into square tables. On the other hand, the commodity technology assumption can only work with a square table (see also the 1968 UN SNA paragraph 3.84 where it is stated: "... The assumption of a commodity technology can only be used if the number of industries is equal to the number of commodities".

18. Chain Indices

The revised SNA (Chapter XVI) recommends: "In general, the constant price series should not be allowed to run for more than five, at most ten years, without rebasing" (paragraph 76). It further recommends: "The preferred measure of year to year movements of real GDP is a Fisher Volume index, changes over longer periods being obtained by chaining: that is, by cumulating the year to year movements" (paragraph 73). We fully support this recommendation and plan to implement it.

The revised SNA further notes: "Chain indices should only be used to measure year to year movements and not quarter to quarter movements" (paragraph 73). While we agree that the quarterly chaining of unadjusted seasonal data is not desirable, we believe it can sometimes be useful to chain seasonally adjusted data on a quarterly basis. A recent example in Canada occurred when the government introduced the Goods and Services Tax (a VAT), which caused a major shift in relative prices. Users wanted quick information about the impact of the new relative price regime on the indices. The quarterly chain series, derived using seasonally adjusted data, met that requirement. The CSNA provides two sets of quarterly chain indices, one rebased and linked annually and the other quarterly.

19. Terms of Trade

The revised UN SNA (Chapter XVI) recommends estimating trading gains and losses for changes in the terms of trade for calculating real Gross Domestic Income (GDI). The revised SNA states: "... an improvement in the terms of trade makes it possible for an increased volume of goods and services to be purchased by residents out of the income generated by a given level of domestic production. Real GDI measures the purchasing power of the total incomes generated by domestic production, so that when the terms of trade change there may be a significant divergence between the movements of real GDP and real GDI. The difference between the change in real GDP and real GDI is generally described as the trading gain (or loss). These differences are not always small. If imports and exports are large relative to GDP, and if

the commodity composition of the goods and services which make up imports and exports are very different, the scope for potential trading gains and losses may be large" (paragraph 151, chapter XVI). The recommendation to calculate real GDI is not currently implemented in many countries, including Canada. We plan its implementation as this will provide a very useful additional analytical construct.

Concluding Remarks

The Revised SNA is a vast improvement over the 1968 UN SNA in terms of clarification, simplification and harmonization with other international guidelines. Some recommendations affect the level of GDP, some affect the balance of international payments while others simply provide a thoughtful articulation of certain important measures. The new measure of Actual Final Consumption will help international comparability of household consumption. The revised SNA has demystified the treatment of gold and harmonized its treatment of reinvested earnings of Direct Foreign Investment with that in the IMF Balance of Payments Manual. It has incorporated a new measure of acquisition less disposals of valuables and of non-produced non-financial assets in the accumulation accounts, thus articulating the net lending position of the institutional sectors as well as providing a link to the emerging Environmental Satellite Accounts. It has recommended that financial intermediation services be allocated to all users of such services, and that those military structures and equipment of the same type as used by civil establishments be treated as gross fixed capital formation. By and large, the recommendations are implementable and, once implemented, will provide a coherent, integrated analytical framework and a credible international comparability.