

Exercise of Product and Industry Classifications By Arthur Giesberts and Jan W. van Tongeren

The analytical potential of a *Reduced SNA Analytical Framework*, to be used jointly by national accountants and modellers, can be enhanced by an adequate system of national classifications and correspondences.

In the annex of this document is described the ideal procedure by which industry and product classifications at the macro level of a *Comprehensive SNA Analytical Framework* are derived by aggregating classification categories at the micro level of products and establishments. The aggregation of micro classification categories is carried out under the condition that unique distinctions are largely maintained between (i) products imported and locally produced, and (ii) products used in different destinations (intermediate consumption, capital formation, final consumption, and exports), and (iii) secondary production is kept to a minimum.¹

First a summary description is given of the ideal aggregation procedure applied to classification categories of micro product and establishments, as described in more detail in the annex. This is followed by an exercise, to be applied by course participants of each country in Central America, not to the micro classification categories, but to the more aggregate classification categories used in each country in the Comprehensive SNA Analytical Framework.

The classification exercise should be developed as part of a reduced SNA analytical framework.. At the present stage of the exercise, many classification shortcuts may need to be introduced, as detailed adjustments of classifications may not be feasible at this point. However, as the framework is also meant to be used in the future when developing data jointly between SNA accountants and modellers, further improvements may be introduced, which do away with some of et shortcuts. Improvements that may be attempted later on are introduced in footnotes below.

Principles of aggregating product and establishment classifications to national classification categories in the Comprehensive SNA Analytical Framework

An optimal system of national product and industry classifications and correspondences to be derived from international CPC and ISIC standards may be characterised by:

- A one to one correspondence between industries and products
- A distinction between locally produced products and imported products, avoiding as much as possible mixed categories. Such categories can be avoided by analysing supply at the most detailed level of the existing classifications, and where necessary introduce

¹ . Where possible, product categories belonging to different international CPC groups at the two-digit level and ISIC categories belonging to different alpha-numerical codes (A, B, C, etc.) of the international ISIC should not be aggregated. This is in order to maintain the correspondence with the international classifications at the two-digit level.

additional classification detail to avoid mixed output/import categories. Once classification categories at the micro product level are available, whether or not including further breakdowns of international CPC categories to avoid output/import mix, they can then be aggregated in such a manner that also at the macro level the output/import mix is avoided to the extent possible.

- A distinction between different categories of use (intermediate consumption, final consumption and capital formation). Again is needed assignment of products to the international CPC at the micro level, and further breakdowns of the international CPC categories are introduced at that level to avoid a mix between different uses. Those micro categories can then be aggregated, so that also at the macro level mixed use categories are avoided to the extent possible.

Industry and Product classification Exercise to arrive at national classifications in the Reduced SNA Analytical Framework

Application of the ideal procedure summarized above is however difficult and time-consuming, and can only be adequately applied when starting a new SNA benchmark compilation. Therefore in the present course a shortcut is suggested, in which the classifications of the reduced SNA analytical framework are derived from those of the comprehensive SNA framework used in each country. It will help participants to understand the basic principles and will improve at the same time the selected classifications and correspondences for the reduced SNA analytical framework.

The approach to be followed by participants includes the following steps:

1. Take as a starting point the existing classifications of and correspondence between industry and product classification categories used in the comprehensive SNA framework used in your country, which may vary between 50 and 200 categories.
2. Determine per product whether it is locally produced and/or imported. Do this by adding P, M or PM at the beginning of the product code. The results of the exercise will improve if the number of PM categories can be kept to a minimum. This can be achieved in particular by verifying whether individual imported products are really also produced locally; if not, only assign an M to those.
3. Determine per product its use in terms of I (for intermediate consumption), C (for final consumption) and K (for Capital formation). Add those codes to the end of the product code. Use mixed codes (CI, CK, CIK) for those products that can have different uses².
4. Determine which products are exported. In principle exports should be based on local production alone; imports that are re-exported are not included in exports or imports according the 1993 SNA. Add an X to the product code for those categories that are identified as exports.

A sample of the result of the above may look like this:

² The number of mixed categories (PM one the one hand and CI, CK and CIK on the other) could be reduced, by further breaking down categories of the comprehensive SNA framework; for the moment this may be too ambitious. Instead, it may be done in future versions of the reduced SNA analytical framework, when participants have acquired more experience in adapting classifications.

Imaginary current codes		New codes at this stage of exercise
01234	→	P01234C
01491	→	P01491C
19404	→	PM19404I
19499	→	PM19499C
23565	→	P23565CX
23139	→	M23139K
35123	→	P35123CI
37352	→	P37352CK
45137	→	M45137K

5. Aggregate categories of products that are locally produced, to arrive at a one to one correspondence with the industry classification. Preferably this aggregation should not result in mixed codes of supply (PM) and use (CI, CK, CIK, either or not followed by an X for exports), but in practice this cannot be avoided. If too many categories are PM go back to step 2, if too many categories have mixed uses determine if improvements can be made in step 3.

The problem of secondary products may be avoided in two instances: If secondary products are also produced by other industries that are close to the main products in the product classification, they may disappear if closely related product categories and corresponding industries are aggregated. If secondary products are not produced by other industries, they may simply be aggregated into the category of the main products of the industry. In all other cases – secondary products are produced by other industries and rather different (very different product codes) from the main products (e.g. trade and transport services or electricity production identified as secondary products in manufacturing) – it may not be possible in the present exercise to arrive at the preferred one to one correspondence between industries and products, even though this is unfortunate as it complicates reconciliation and analysis.³

To arrive at a limited number of industries and products only (which is needed for the reduced SNA analytical framework), similar industries (and thus the products they produce) must be further aggregated. Again, the aggregation should not result in a mixture of different supplies (P and PM) or different uses (C, I, K, CI, CK, CIK). When implementing the classification criteria described in each step, the resulting classification should also identify industry and/or product categories which need to be kept separate for analytical purposes.

6. Aggregate categories of products that are only imported, without combining different forms of use. Restrictions on the number of resulting categories will determine whether aggregation takes place at 0, 1, 2 or 3 digits of the original product codes.⁴

The result is a one to one correspondence between industries and locally produced products, and a grouping of similar imported products. Preferably the list will consist of approximately 30-40 categories. A sample of such a list may look like this:

³ In future an effort may be made to treat secondary production as a separate industry, and allocate output and intermediate uses and value added to the industries in which the products are produced as main products.

⁴ If possible, product categories belonging to different international CPC categories at the two-digit level should not be aggregated, in order to maintain the link with the international CPC classification at the two-digit level.

Previous codes		New codes at this stage of exercise	Industry
P01234C	→	P01C	A
P01491C	→		
PM19404I	→	PM19CI	B
PM19499C	→		
P23565CX	→	P23CX	C
M23139K	→	M23K	
P35123CI	→	P35CI	D
P37352CK	→	P37CK	E
M45137K	→	M45K	

7. Assign meaningful descriptions to the resulting product codes as well as to the resulting industry codes.

The result must be an optimal system of national classifications and correspondences of industries and products, which can be used to aggregate existing data of output, intermediate consumption and value added, as well as supply and use. The resulting classifications and correspondences should also be used to classify preliminary data for a future period that can be used in projections. It should be noted that the more combined categories of products and industries are used, the poorer the system of national classifications and correspondences is and this, of course, affects the quality of the estimates and projections of past and future periods, and thus their analytical potential.