

# **The statistical environment of INFORUM models – Major changes ahead**

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# Introduction

INFORUM modelling is dependent on the available statistical data.

The nature of the data and the access to the data are limiting factors for all modelling activities.

Two major changes in the statistical environment will happen in the near future:

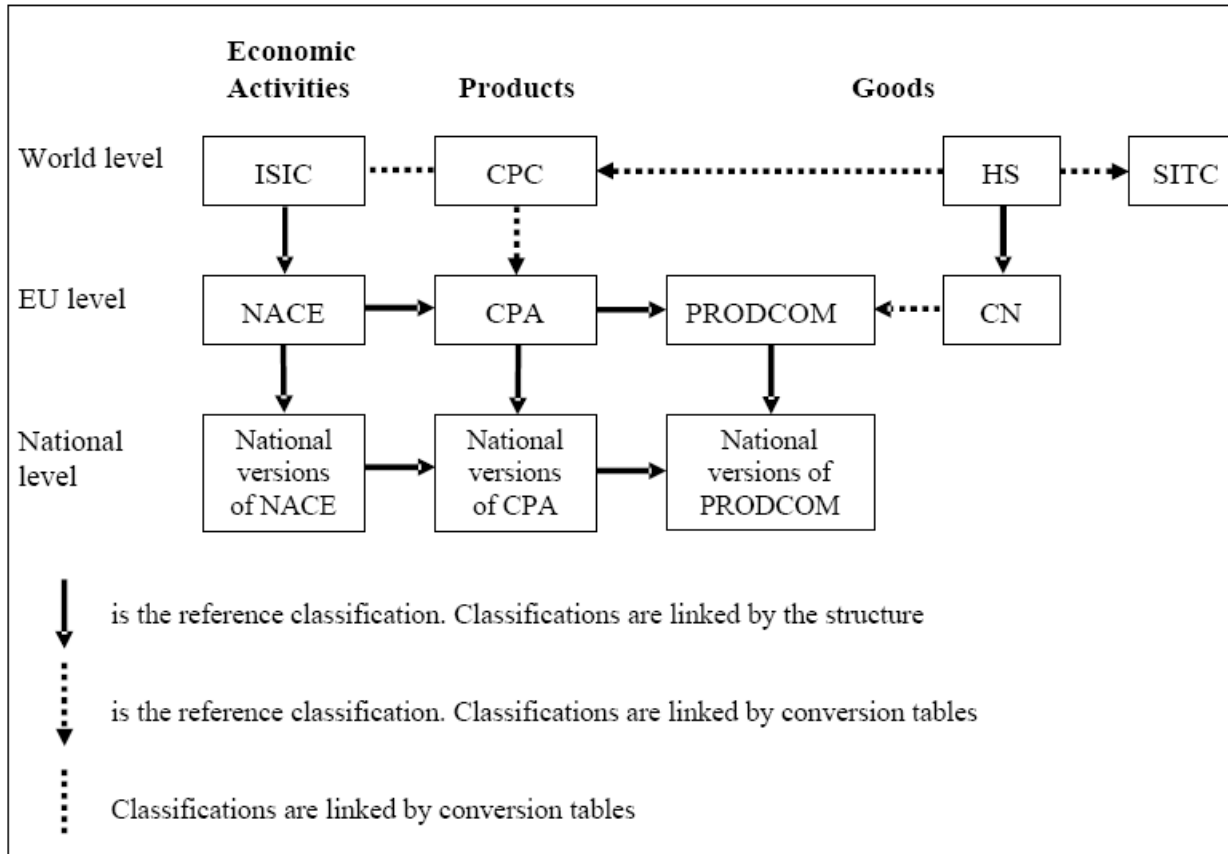
- o Revision of all major classification systems
- o Revision of the system of national accounts

The aim of this paper is to provide some background information on the changes in the statistical environment ahead.

Emphasis will be on the European situation.

# New classification systems

## The family of international classifications





# New classification systems

## Activity classifications

ISIC Rev. 3.1		ISIC Rev. 4	Draft
NACE Rev. 1.1		NACE Rev. 2	Regulation

## Commodity classifications

CPC Ver. 1.1		CPC Ver. 2	Draft
CPA 2002		CPA 2008	Regulation

# ISIC Rev. 4

## Main objectives of the ISIC revision

- o To reflect new industries,
- o to improve the comparability to major regional classifications,
- o to guarantee a certain link to the previous version of ISIC.

## Major changes - compared to ISIC Rev. 3.1 – are:

- o Increase in top-level categories,
- o increase in overall detail,
- o new concepts (information, professional services, support services),
- o more emphasis on services.

	ISIC Rev. 4	ISIC Rev. 3.1
Sections	21	17
Divisions	88	60
Groups	238	159
Classes	419	292

# ISIC Rev. 4

## New sections:

<u>E</u>	Water supply; sewerage, waste management and remediation activities
<u>J</u>	Information and communication
<u>L</u>	Real estate activities
<u>M</u>	Professional, scientific and technical activities
<u>N</u>	Administrative and support service activities
<u>Q</u>	Human health and social work activities
<u>R</u>	Arts, entertainment and recreation

A complete table of correspondence at lowest level will be available on the UNSD website (<http://unstats.un.org/unsd/cr/registry>).

# ISIC Rev. 4

## **New sections:**

### Section J

Comprises activities, which were previously classified under manufacturing, transportation, business services and personal services. Section J covers activities involving production and distribution of information and cultural products, provision of the means to transmit or distribute these products, as well as data or communications, information technology activities and the processing of data and other information service activities.

Sections L, M and N are more or less the result of a disaggregation of Section K of ISIC Rev. 3.1, Q and R more or less the result of a disaggregation of Section O of ISIC Rev. 3.1.



## ISIC Rev. 4

### Other major changes:

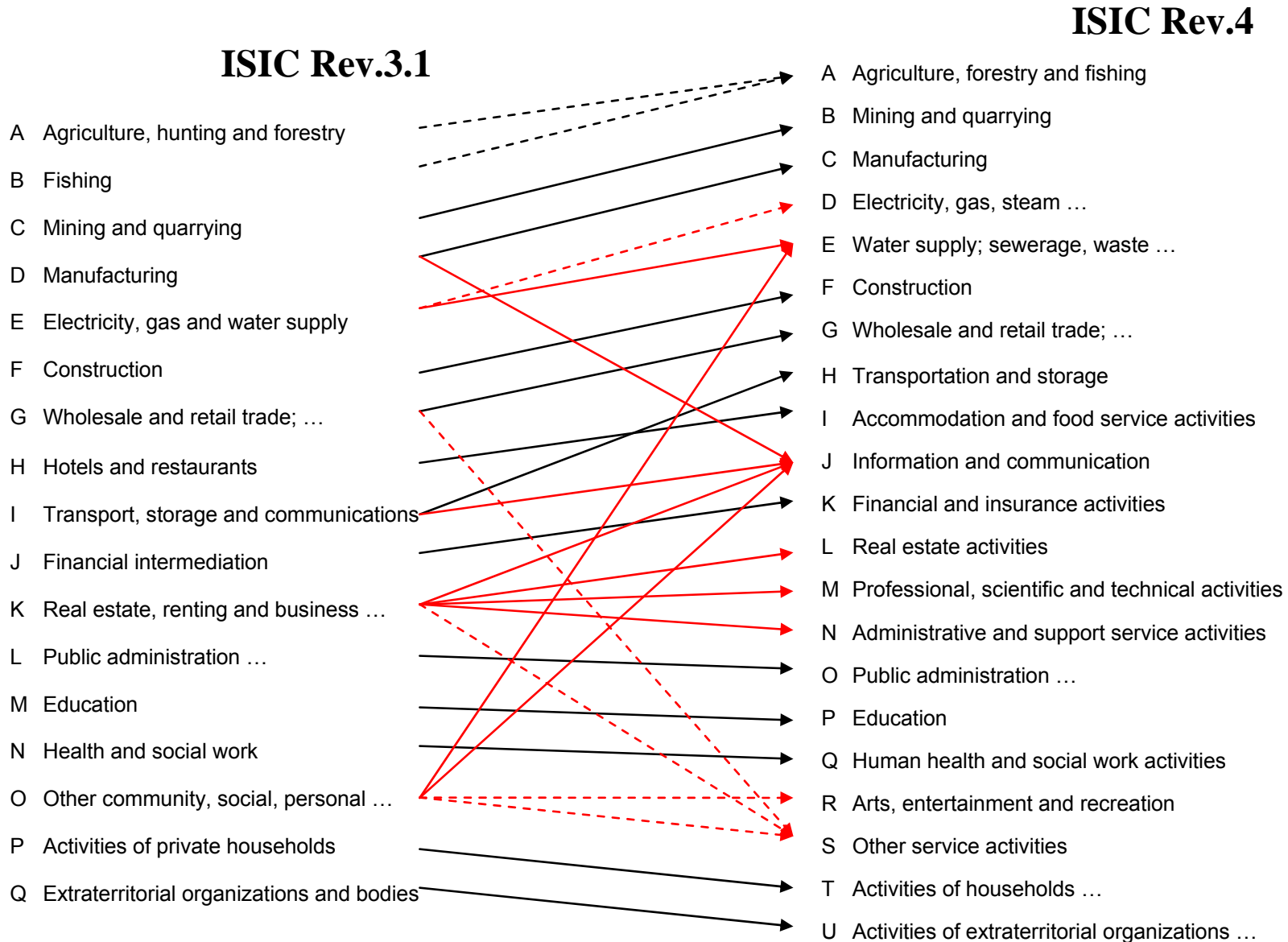
Within manufacturing repair and installation of machinery and equipment, which was formerly classified under manufacturing of the corresponding type of equipment, is now identified separately in Division 33 (Repair and installation of machinery and equipment).

Manufacture of basic pharmaceutical products and pharmaceutical preparations is now a separate Division.

Recycling is no longer classified under the heading manufacturing (Section C) but included in Section E.

Section K (Finance and insurance activities) now also covers activities of holding companies and of trusts, funds and similar financial entities.

# High-level concordance



## NACE Rev. 2

NACE Rev. 2 has already been established by Regulation (EC) No 1893/2006. A second Regulation (EC) No 973/2007 amends 10 EC Regulations on specific statistical domains implementing the statistical classification of economic activities NACE Rev. 2.

The implementation of the revised classifications NACE and CPA in the EU with all its far reaching consequences is carried out in a special project called “Operation 2007”.

The implementation of the revised NACE in EU statistics also implies a disruption of all time series based on NACE Rev. 1 or NACE Rev. 1.1.

In order to achieve a certain harmonization of methods in the EU, a handbook on backcasting was produced, aiming at providing information to statisticians implementing NACE Rev. 2 in the European Statistical System.

## NACE Rev. 2

Four types of correspondences between NACE Rev. 1.1 and NACE Rev. 2 can be distinguished:

### **1 to 1 correspondences:**

195 classes in NACE Rev. 1.1 correspond exactly to one class in NACE Rev. 2 and vice-versa;

### **n to 1 correspondences:**

86 cases, where two or more classes in NACE Rev 1.1 correspond to one class in NACE Rev. 2;

### **1 to m correspondences:**

18 cases, where one NACE Rev. 1.1 class is split into two or more classes in NACE Rev 2;

### **n to m correspondences:**

215 cases, where two or more classes in NACE Rev. 1.1 correspond to two or more classes in NACE Rev. 2.

## NACE Rev. 2 – Dates of implementation

Short term business statistics for manufacturing already started to use NACE Rev. 2, starting with the reference year **2008**.

Short term business statistics for trade and services will follow starting with the reference year **2009**. All short term indicators (with new base year 2005 = 100) will be based on NACE Rev.2 also starting **2009**.

National accounts data disaggregated by NACE Rev. 2 categories will be available from September **2011** onwards. For national accounts five different levels of aggregation are planned (as of May 2008):

Current transmission obligations have been translated as

A6	→	A*10
A17	→	A*21
A31	→	A*38
A60	→	A*64

## **NACE Rev. 2 – Dates of implementation**

Data according to Table 1 of the Transmission Program has to be provided back to 2000 in 2011, back to 1995 or 1990 in 2012.

As regards the length of the time series which have to be made available the transmission program will make a distinction between “old member countries” and “new member countries”, a distinction which will lead to a certain “two-class society”.

Tables 15 (supply table) and 16 (use table) have first to be transmitted using the P\*64 breakdown for the reference period 2008 by 31 December 2011.

Tables 17, 18 and 19 (symmetric input-output tables, product by product) have first to be transmitted using the P\*64 breakdown for the reference period 2010 by 31 December 2013.

For supply-use and input-output tables no backward data is requested.

## CPC Ver. 2

The revised Central Product Classification CPC is still in the stage of a draft. The draft is available at <http://unstats.un.org/unsd/cr>.

CPC arranges products according to the physical characteristics and of the services. This criterion includes, for example, the type of raw material used, the production process involved, the purpose for which the goods are intended, etc.

Although this criterion is often the same as the one used for the classifications of economic activities, the CPC is not a product classification depending on the classification of economic activities. The CPC coding system is independent of ISIC.

## CPA 2008

CPA is the EU version of the CPC. The use of CPA 2008 is mandatory in the EU and based on Regulation (EC) No 451/2008 of the European Parliament and of the Council.

In the EU, product classifications for specific statistical domains (such as PRODCOM) are linked to the CPA unless the CPA is itself used as a survey classification.

Although the CPA is the European counterpart of the CPC, it differs from the latter not only in that it is usually more detailed, but also as regards its structure. The EU adopted the criterion of economic origin for its development, with NACE as the reference framework. Therefore, up to the fourth level (classes) the structure of CPA corresponds to NACE.



# Revision of the system of national accounts

## SNA 2003 Rev – SNA 2008

In 2003, the UN Statistical Commission called for an update of the SNA 1993 to bring the System into line with the new economic environment, with advances in methodological research and to remove inconsistencies in the SNA 1993.

The revision is sometimes called SNA 2003 Rev, sometimes SNA 2008.

Early in the revision process general agreement was reached that the revision should deal with issues emerging from new economic developments such as globalisation, but that **no fundamental changes should be made** in the System.

A close coordination of the update of the 1993 SNA and the revision of the Balance of Payments Manual, Fifth Edition is another goal.

# Revision of the system of national accounts

## SNA 2003 Rev – SNA 2008

The majority of the recommendations relate to

- o units and transactions that represent characteristics of an increasingly globalized economy;
- o come from increased interest in the sources of wealth and debt;
- o recognize the increasing role of intangible nonfinancial assets;
- o take into account further innovation in financial markets;
- o reflect the interest in better measures of the impact of pension liabilities in the context of an ageing population;
- o recognize the need for better measures of government and public-sector debt and deficit.

# **Revision of the system of national accounts SNA 2003 Rev – SNA 2008**

The revised SNA will be provided in a two-part delivery.

Volume 1 was already submitted to the UN Statistical Commission in March 2008 and is available at the homepage. Volume 1 comprises the full set of chapters that represent the SNA framework in terms of accounting conventions, the accounts, and the integration of the accounts.

Volume 1 incorporates the adopted recommendations on the 44 issues on which full consensus was reached.

Volume 2 comprises mainly the interpretation of the accounts and various extensions such as satellite accounts. According to the schedule it should be ready by December 2008 and should be submitted to the UN Statistical Commission in March 2009.

# **Revision of the system of national accounts SNA 2003 Rev – SNA 2008      Main changes**

## **Issue 9 Research and development**

Research and development should be treated as gross fixed capital formation. It should be defined as in the Frascati manual. This definition should not be interpreted as including human capital as capital formation within the SNA. Since much R&D is carried out on own account, it should be valued at cost.

## **Issue 15 Cost of capital services**

A new chapter will be added explaining the role and appearance of capital services in the System and stressing the desirability of calculating capital services, capital stock and consumption of fixed capital in an integrated and consistent manner. No changes will be made to standard entries in the accounts to show capital services but an explanation will be provided of how optional, supplementary items or tables could be derived and presented.

# **Revision of the system of national accounts SNA 2003 Rev – SNA 2008      Main changes**

## **Issue 16 Government and other non-market producers: cost of capital of own assets**

No agreement was reached concerning the proposal that a return to fixed capital owned and used by non-market producers should be included in the estimation of the output of those producers in addition to estimates of consumption of fixed capital.

## **Issue 19 Military expenditures**

All military expenditure that meets general SNA criteria for capital formation — that is, being used in production over a period in excess of one year — will be treated as capital formation in the revised SNA. Weapon systems and military inventories would be distinguished within fixed capital formation and inventories, respectively.

# Revision of the system of national accounts

## SNA 2003 Rev – SNA 2008      Main changes

### Issue 40 Goods for processing

Imports and exports should be recorded on a strict change of ownership basis. Goods being processed in one country on behalf of a unit residing in an another country would no longer be part of imports and exports in the balance of payments and SNA.

This decision has implications for the input-output tables, which on the proposed basis will reflect what each unit contributes to the production process rather than the physical technology, as it was the case before.

# Revision of the system of national accounts SNA 2003 Rev – SNA 2008

## Measurement in volume terms (1)

How to measure transactions in volume terms does not show up among the issues considered in the revision process. Nevertheless the Draft SNA 2008 (Volume 1 – 15.166) shows a certain re-orientation:

- a. Volume estimates of transactions in goods and services are best compiled in a supply and use framework, preferably in conjunction with, and at the same time as, the current value estimates. This implies working at as detailed a level of products as resources permit.
- f. The preferred measure of year-to-year movements of GDP volume is a Fisher volume index; changes over longer periods being obtained by chaining: that is, by cumulating the year-to-year movements.

# Revision of the system of national accounts SNA 2003 Rev – SNA 2008

## Measurement in volume terms (2)

Draft SNA 2008 (Volume 1 – 15.166):

**h.** Chain indices that use Laspeyres volume indices to measure year-to-year movements in the volume of GDP and the associated implicit Paasche price indices to measure year-to-year inflation provide acceptable alternatives to Fisher indices.

**i.** Chain indices for aggregates cannot be additively consistent with their components whichever formula is used, but this need not prevent time series of values being compiled by extrapolating base year values by the appropriate chain indices.



# Revision of the system of national accounts SNA 2003 Rev – SNA 2008

## Measurement in volume terms (3)

A provision similar to the one in the SNA 1993 that “disaggregated constant price data should be compiled and published in addition to the chain indices for the main aggregates. The need to publish two sets of data that may appear to conflict with each other should be readily appreciated by analysts engaged in macroeconomic modelling and forecasting” (SNA 1993, 16.75) is missing.

# Revision of the system of national accounts

## European system of national accounts ESA

In the European Union national accounting is governed by legally binding regulations because results of national accounts are to a large extent directly used for operational/administrative purposes.

The European system of national accounts ESA is broadly consistent with the SNA as regards definitions, accounting rules and classifications.

When SNA is flexible and includes several alternatives, ESA generally chooses a particular option to guarantee full comparability at EU level.

The revision of the SNA will be followed by a revision of the ESA.

Changes will cover both methodological references and data transmission requirements.

# Revision of the system of national accounts European system of national accounts ESA

The plan is to terminate the process of drafting and discussing the new ESA until February 2009. The discussion on the amended transmission programme should also be finished by February 2009.

The adoption of the regulation by the European Parliament and the Council is scheduled for the first quarter of 2011. The new ESA methodology and the new transmission programme should become legally binding in **2014**.

# Consequences for INFORUM Modelling

The changes in the activity and product classification systems in the near future will probably have more severe consequences on INFORUM modelling activities than the revision of national accounts.

The needs of model builders were not taken into account in the revision process which led to the new classifications:

- o Industries on the two digit level are still extremely inhomogeneous
- o No attempts were made to reduce vertical integration with all its undesired consequences for economic analysis in general and input-output analysis in particular.

# Consequences for INFORUM Modelling

The change in the classifications will necessarily lead to disruptions in many time series.

In cases in which there is no 1 to 1 correspondence or a n to 1 correspondence between NACE Rev 1.1 and NACE Rev.2 the range of meaningful parameter estimation will depend on two factors:

- o Whether the Statistical Offices will be ready to produce long homogeneous series, even beyond what is mandatory according to EU regulations.
- o On the methods used for the backcasting process in the cases of 1 to m and n to m correspondence.

In this context it will be of crucial importance that this backcasting is done within a coherent methodological framework.

# Consequences for INFORUM Modelling

If the backcasting is done for each of the series independent from one each other parameter estimation will be seriously biased reflecting differences in the backcasting procedures and not economic behaviour.

In the EU the data situation in the transition period 2008 to 2011 will be very specific. National account results will be presented in a disaggregation by NACE Rev.1.1. The underlying basic statistics, however, are already produced in NACE Rev.2 breakdown and the coverage of statistics is also already determined by NACE Rev.2 criteria.

National accountants will have to do a lot of extra modelling work and be quite creative to re-arrange the input data according to the new classifications into an old framework.

Consequently, even the final results for 2008 and 2009 will not be fully compatible with the results of the reference years before 2008.

# Consequences for INFORUM Modelling

Only minor changes in the overall statistical environment will occur because of the revision of the SNA.

The fact that the entire statistical system in the EU is governed by regulations has one advantage for INFORUM modelling: Planning is made easier. Model builders know well in advance which kind of statistical information will be available when.

In the next years the statistical environment will experience considerable changes:

A real challenge for those engaged in INFORUM modelling.

**Thank you for your attention**