02 CLASSIFICATIONS

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NACE Rev. 2
Introductory Guidelines

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Preface

The European Classification of Economic Activities (NACE) is the European reference for the production and the dissemination of statistics related to economic activities.

Since its development in 1970, EU Member States have used NACE or national classifications derived from NACE: it is integral part of the statistical infrastructure used within the European statistical system for producing comparable statistics. Because of its relation to the International Standard Industrial Classification of all Economic Activities (ISIC), NACE is an important tool for comparing statistical data on economic activities at world level.

This publication presents NACE Rev. 2, which was adopted in 2006 and replaces NACE Rev. 1.1.

The main concepts, the history, the methodological guidelines for understanding and applying NACE Rev. 2 in the statistical production process are introduced here.

NACE Rev. 2 is the outcome of a five year long consultation process, which involved EU National Statistical Institutes, European Trade and Business associations, the European Central Bank and the United Nations Statistical Division. The work has been coordinated by Eurostat.

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List of abbreviations

CN	Combined Nomenclature – European Classification of Goods
CPA	European Classification of Products by Activity
CPC	Central Product Classification of the United Nations
EC/P	European Parliament and Council
EEC	European Economic Community
ESA	European System of National and Regional Accounts
EU	European Union
HS	Harmonized Commodity Description and Coding System of the World Custom Organization
ISIC	International Standard Industrial Classification of all Economic Activities of the United Nations
KAU	Kind of Activity Unit
NACE	European Classification of Economic Activities
PRODCOM	European System of production statistics for mining and manufacturing
RAMON	Eurostat's online server for metadata http://ec.europa.eu/eurostat/ramon/index.cfm?TargetUrl=DSP_PUB_WELC
SITC	Standard International Trade Classification of the United Nations
SNA	System of National Accounts
SPC	Statistical Programme Committee
UN	United Nations
BEC	Classification by Broad Economic Categories of the United Nations

CHAPTER 1

NACE: introduction and background

1.1 NACE and the integrated system of classifications of economic activities and products

1. NACE is the acronym[1] used to designate the various statistical classifications of economic activities developed since 1970 in the European Union. NACE provides the framework for collecting and presenting a large range of statistical data according to economic activity in the fields of economic statistics (e.g. production, employment, national accounts) and in other statistical domains.

2. Statistics produced on the basis of NACE are comparable at European and, in general, at world level. The use of NACE is mandatory within the European Statistical System.

The international system of economic classifications

3. The comparability at world level of statistics produced on the basis of NACE is due to the fact that NACE is part of an integrated system of statistical classifications, developed mainly under the auspices of the United Nations Statistical Division. From the European point of view, this system can be represented as follows:

	Economic Activities	**Products**		**Goods**	
World level	ISIC ····>	CPC <········		HS ····>	SITC
EU level	NACE →	CPA →	PRODCOM <····	CN	
National level	National versions of NACE →	National versions of CPA →	National versions of PRODCOM		

↓ is the reference classification. Classifications are linked by the structure

⋮ is the reference classification. Classifications are linked by conversion tables

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[1] NACE is derived from the French title "**N**omenclature générale des **A**ctivités économiques dans les **C**ommunautés **E**uropéennes" (Statistical classification of economic activities in the European Communities)

Where:
- ISIC[2] is the United Nations' International Standard Industrial Classification of all Economic Activities.
- CPC[3] is the United Nations' Central Product Classification.
- HS[4] is the Harmonized Commodity Description and Coding System, managed by the World Custom Organisation.
- CPA[5] is the European Classification of Products by Activity.
- Prodcom[6] is the classification of goods used for statistics on the industrial production in the EU.
- CN[7] stands for the Combined Nomenclature, a European classification of goods used for foreign trade statistics.

4. Such an integrated system allows the comparability of statistics produced in different statistical domains. As a consequence, for instance, statistics on the production of goods (reported in the EU according to Prodcom surveys) could be compared with statistics on trade (in the EU produced according to CN). More details on the system and its components are provided in Chapter 4.

5. NACE is derived from ISIC, in the sense that it is more detailed than ISIC. ISIC and NACE have exactly the same items at the highest levels, where NACE is more detailed at lower levels.

6. In order to ensure international comparability, the definitions and the guidelines established for use of NACE within the EU are consistent with those published in the introduction to ISIC.

1.2 NACE: scope and characteristics

Statistical classifications

7. All observations that are to be described in terms of statistics require systematic classification. Classifications partition the universe of statistical observations according to sets that are as homogeneous as possible with respect to the characteristics of the object of the statistical survey.

8. Statistical classifications are characterised by:
   a. exhaustive coverage of the observed universe;
   b. mutually exclusive categories: each element should be classified in only one category of the classification;
   c. methodological principles which allow the consistent allocation of the elements to the various categories of the classification.

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[2] http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=27&Lg=1
[3] http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=16&Lg=1
[4] Harmonized Commodity Description and Coding System, maintained by the World Customs Organization (established in 1952 as the Customs Co-operation Council - CCC).
[5] Link to CPA 2008 will be added
[6] http://ec.europa.eu/eurostat/ramon/nomenclatures/
[7] Combined Nomenclature – a further breakdown of the Harmonized System (http://ec.europa.eu/taxation_customs/customs/customs_duties/tariff_aspects/combined_nomenclature/index_en.htm.)

9. More specifically, hierarchical classifications are characterised by a finer and finer partition of categories, which makes it possible to collect and present the information at various levels of aggregation.

NACE as the EU classification of economic activities

10. NACE is the European standard classification of productive economic activities. NACE presents the universe of economic activities partitioned in such a way that a NACE code can be associated with a statistical unit carrying them out.

11. An economic activity takes place when resources such as capital goods, labour, manufacturing techniques or intermediary products are combined to produce specific goods or services. Thus, an economic activity is characterized by an input of resources, a production process and an output of products (goods or services).

12. An activity as defined here may consist of one simple process (for example weaving), but may also cover a whole range of sub-processes, each of which mentioned in different categories of the classification (for example, the manufacturing of a car consists of specific activities such as casting, forging, welding, assembling, painting etc.). If the production process is organised as an integrated series of elementary activities within the same statistical unit, the whole combination is regarded as one activity.

13. NACE does not *per se* provide categories for specific types of statistical units: units may perform several economic activities, and can be defined in different ways according to specific characteristics (related e.g. to location, see part on "statistical units" below).

Scope and limitations of NACE

14. NACE does not draw distinctions according to kind of ownership of a production unit's type of legal organization or mode of operation, because such criteria do not relate to the characteristics of the activity itself. Units engaged in the same kind of economic activity are classified in the same category of NACE, irrespective of whether they are (part of) incorporated enterprises, individual proprietors or government, whether or not the parent enterprise is a foreign entity and whether or not the unit consists of more than one establishment. Therefore, there is no link between NACE and the Classification of Institutional Units in the System of National Accounts (SNA) or in the European System of Accounts (ESA).

15. The manufacturing activities are described independently of whether the work is performed by power-driven machinery or by hand, or whether it is done in a factory or in a household. Modern versus traditional is not a criterion for NACE.

16. NACE does not distinguish between formal and informal or between legal and illegal production. Classifications according to kind of legal ownership, kind of organization or mode of operation may be constructed independently. Cross-classification with NACE could provide useful extra information.

17. In general, NACE does not differentiate between market and non-market activities, as defined in SNA/ESA, even if this distinction is an important feature of the SNA/ESA. A breakdown of economic activities according to this principle is useful in any case where data are collected for activities that take place on both a market and a non-market basis. This criterion should then be cross-classified with the categories of NACE. Non-market services in NACE are only provided by government organizations or non-profit institutions serving households, mostly in the field of education, health, social work etc.

18. NACE includes categories for the undifferentiated production of goods and services by households for own use. These categories may refer, however, to a portion of households' economic activities only, as clearly identifiable households' activities are classified in other parts of NACE.

Structure and coding of NACE

19. NACE consists of a hierarchical structure (as established in the NACE Regulation), the introductory guidelines and the explanatory notes. The structure of NACE is described in the NACE Regulation as it follows:
    i. a first level consisting of headings identified by an alphabetical code (sections),
    ii. a second level consisting of headings identified by a two-digit numerical code (divisions),
    iii. a third level consisting of headings identified by a three-digit numerical code (groups),
    iv. a fourth level consisting of headings identified by a four-digit numerical code (classes).

    The code for the section level is not integrated in the NACE code that identifies the division, the group and the class describing a specific activity. For example, the activity "Manufacture of glues" is identified by the code 20.52, where 20 is the code for the division, 20.5 is the code for the group and 20.52 is the code of the class; the section C, to which this class belongs, does not appear in the code itself.

20. The divisions are coded consecutively. However, some "gaps" have been provided to allow the introduction of additional divisions without a complete change of the NACE coding. These gaps have been introduced in sections that are most likely to prompt the need for additional divisions. For this purpose, the following divisions code numbers have been left unused in NACE Rev. 2: 04, 34, 40, 44, 48, 54, 57, 67, 76, 83 and 89.

21. In cases where a given level of the classification is not divided further down in the classification, "0" is used in the code position for the next more detailed level. For example, the code for the class "Veterinary activities" is 75.00 because the division "Veterinary activities" (code 75) is divided neither into groups nor into classes. The class "Manufacture of beer" is coded as 11.05 since the division "Manufacture of beverages" (code 11) is not divided into several groups but the group "Manufacture of beverages" (code 11.0) is divided into classes.

22. Whenever possible, residual groups or classes of the type "others" and/or "n.e.c. (not elsewhere classified)" are characterised by the digit 9 (for instance group 08.9 "Mining and quarrying n.e.c." and class 08.99 "Other mining and quarrying n.e.c.")

1.3 NACE: historical background and legal context

From NICE to NACE Rev. 2

23. Between 1961 and 1963, the "Nomenclature des Industries établies dans les Communautés Européennes" (NICE) (Classification of Industries Established in the European Communities) was developed. The original (1961) version had broad divisions with entries down to 3 digits. The revised (1963) version had more detailed subdivisions. NICE covered extractive, energy-producing and manufacturing industries and construction.

24. In 1965, the "Nomenclature du commerce dans la CEE" (NCE) (Classification of Trade and Commerce in the European Communities) was developed to cover all commercial activities.

25. In 1967, a classification for services was developed, followed by one for agriculture, both in broad divisions.

26. In 1970, the "Nomenclature générale des activités économiques dans les Communautés Européennes" (NACE - General Industrial Classification of Economic Activities within the European Communities) was developed. As its name implies, it was a classification covering the whole range of economic activity.

27. This first version of NACE suffered of two major drawbacks:
    - As it had not been established as part of the Community legislation, data were often collected according to the already existing national classifications and then transformed into the NACE format by means of conversion keys, which did not produce satisfactory comparable data;
    - As NACE Rev. 1970 had not been developed within a recognized international framework, it offered poor comparability with other international classifications of economic activities.

28. It was then decided to consider the alignment of NACE to the international standards. Through a joint United Nations Statistical Office/Eurostat working group, Eurostat and representatives of the EU Member States were closely involved in the third revision of the International Standard Industrial Classification of All Economic Activities (ISIC Rev.3), which was adopted by the United Nations Statistical Commission in February 1989.

29. Subsequently, a working group promoted by Eurostat with representatives of Member States developed a revised version of NACE, called NACE Rev. 1. Starting from the structure of ISIC Rev.3, details were added to reflect European activities that were inadequately represented in ISIC. NACE Rev. 1 was established *via* the Council Regulation No 3037/90 of 9 October 1990.

30. In 2002, a minor update of NACE Rev. 1, called NACE Rev. 1.1, was established. NACE Rev. 1.1 introduced a few additional items and some changes to titles. The aim of the update was to reflect:
    - New activities which did not exist when NACE Rev. 1 was developed (e.g. call centres).
    - Activities which had manifestly grown in importance since NACE Rev. 1 was developed, due to either technological or organisational changes.
    - Correction of errors in NACE Rev. 1.

31. In 2002, the activities for revising NACE started. The Regulation establishing NACE Rev. 2 was adopted in December 2006, and its text is presented in Annex II. It includes provisions for the implementation of NACE Rev. 2 and the coordinated transition from NACE Rev. 1.1 to NACE Rev. 2 in various statistical domains. NACE Rev. 2 is to be used, in general, for statistics referring to economic activities performed from 1st January 2008 onwards (Art. 8 of the NACE Regulation provides details on NACE implementation).

The NACE Regulations: main features

32. Member States and the Commission established that the use of NACE should be mandatory in the EU. Therefore, the regulations establishing NACE include provisions for that. Statistics collected by EU Member States involving classification by economic activity must be compiled according to NACE or a national classification derived from it.

33. The NACE Regulations allow Member States to use a national version derived from NACE for national purposes. Such national versions must, however, fit into the structural and hierarchical framework of NACE. Most of the Member States have developed national versions, usually by adding a 5th digit for national purposes.

34. The Commission and a Committee of representatives of Member States (the SPC) are charged with monitoring the implementation of the Regulation, making minor amendments (for example to reflect technological change) and liaising with international organizations concerned with classifications of economic activities.

1.4 The revisions of NACE

35. The change of economic structures and organisations, as well as technological developments, gives rise to new activities and products, which may supersede existing activities and products. Such changes imply a constant challenge for the compilation of statistical classifications. The intervals between revisions must not be too long, since the relevance of the classification diminishes with time, nor must they be too short, since otherwise the comparability of the data over time is adversely affected. Any revision of a classification, particularly if it includes structural changes, leads to breaks in the time series.

36. A major revision of international and European classifications of economic activities and products, known as "Operation 2007", took place between 2000 and 2007. The revision concerned all the classifications of the integrated system of economic classifications, as described in section 1.1. The main criteria driving the revision were:
   - relevance to the actual world economy,
   - better comparability with other national and international classifications and
   - continuity with their previous versions.

Several consultations have been organised since 2002, with all stakeholders, including Commission Services and National Statistical Institutes, as well as European business and trade associations, asking for proposals and modifications of NACE Rev. 1.1.

37. The overall characteristics of NACE remained unchanged. NACE Rev. 2 represents a balance between the level of detail requested by the main users and the workload in the statistical institutes.

38. Details on the main changes from NACE Rev. 1.1 to NACE Rev. 2 are presented in Chapter 5.

CHAPTER 2

NACE: Definitions and Principles

2.1 Criteria adopted developing NACE

39. The criteria used to define and delineate classification categories at any level depend on many factors, such as potential use of the classification and availability of data. These criteria are applied differently at different levels of the classification: the criteria for detailed levels of the aggregation consider similarities in the actual production process, while this is largely irrelevant at more aggregated levels of the classification.

Criteria for classes

40. The criteria concerning the manner in which activities are combined in, and allocated among, production units are central in the definition of classes (most detailed categories) of NACE. They are intended to ensure that the classes of NACE will be relevant for the detailed industrial classification of units, and that the units falling into each class will be as similar, in respect of the activities in which they engage, as is feasible.

41. NACE Rev. 2, reflecting the fourth revision of ISIC, generally gives more importance to the production process in the definition of individual classes. This means that activities are grouped together when they share a common process in producing goods or services, using similar technologies.

42. In addition, the classes of NACE are defined so that the following two conditions are fulfilled whenever possible:

    a. The production of the category of goods and services that characterizes a given class accounts for the bulk of the output of the units classified according to that class;

    b. The class contains the units that produce most of the category of goods and services that characterize it.

43. Another major consideration in defining classes in NACE is the relative importance of the activities to be included. In general, separate classes are provided for activities that are prevalent in most EU countries, or that are of particular importance in the world economy. For attaining international comparability, certain classes have been introduced in the structures of ISIC and, therefore, included in NACE.

Criteria for groups and divisions

44. Unlike for classes, the actual production process and technology used in production activities become less important as a criterion for grouping them at more aggregated levels. At the highest level (sections), the general characteristics of the goods and services produced, as well as the potential use of the statistics, for instance in the framework of SNA and ESA, becomes an important factor.

45. The main criteria applied in delineating groups and divisions of NACE concern the following characteristics of the activities of production units:
    - the character of the goods and services produced,
    - the uses to which the goods and services are put and

- the inputs, the process and the technology of production.

46. In the case of the character of the goods and services produced, account is taken of the physical composition and stage of fabrication of the items and the needs served by them. Distinguishing categories of NACE in terms of the nature of goods and services produced provides the basis for grouping production units according to similarities in, and links between, the raw materials consumed and the sources of demand and markets for the items.

47. The weight assigned to the criteria described above varies from one category to another. In a number of instances (for example food manufacturing, the textile, clothing and leather industries, the machinery and equipment manufacturing, as well as the service industries) the three specific aspects are so highly related that the problem of assigning weights to the criteria does not arise. In the case of intermediate products, the physical compositions, as well as the stage of fabrication of the items, were often given the greatest weight. In the case of goods with complicated production processes, the end use, the technology and the organization of production of the items are frequently given priority over the physical composition of the goods.

2.2 Principal, secondary and ancillary activities

48. A unit may perform one or more economic activities described in one or more categories of NACE.

49. The principal activity of a statistical unit is the activity which contributes most to the total value added of that unit. The principal activity is identified according to the top-down method (see section 3.1) and does not necessarily account for 50% or more of the unit's total value added.

50. A secondary activity is any other activity of the unit, whose outputs are goods or services are suitable for delivery to third parties. The value added of a secondary activity must be less than that of the principal activity.

51. Distinction should be made between principal and secondary activities, on the one hand, and ancillary activities, on the other. Principal and secondary activities are generally carried out with the support of a number of ancillary activities, such as accounting, transportation, storage, purchasing, sales promotion, repair and maintenance, etc. Thus, ancillary activities are those that exist solely to support the principal or secondary economic activities of a unit, by providing goods or services for the use of that unit only.

52. An activity is ancillary if it fulfils all the following conditions:
    a. it serves only the unit or units referred to;
    b. the inputs contribute to the costs of the unit;
    c. the outputs (usually services, seldom goods) are not part of the unit's final product and do not generate gross fixed capital formation;
    d. a comparable activity on a similar scale is performed in similar production units.

53. For instance the following are not to be regarded as ancillary activities:
    a. production of goods and services that are part of capital formation; for example, construction work for own account, which would be separately classified to construction if data are available; software production;
    b. production of outputs, a significant part of which is sold on the market, even if part of it is consumed in connection with principal activities;
    c. production of goods or services which subsequently become an integral part of the output of the principal or secondary activity (e.g. production of boxes by a department of an enterprise for packing its products);

d. production of energy (an integrated power station or coking plant), even if the whole output is consumed by the parent unit;

e. purchase of goods for resale in an unaltered state;

f. research and development, as these activities do not provide a service that is consumed in the course of current production.

54. In all these cases, where separate data are available, separate units should be distinguished and recognised as kind-of-activity units (see next section), and then classified according to their activity.

2.3 Definitions of statistical units

55. In order to draw a complete statistical picture of the economy, a wide range of information is required, and the organizational level at which it is feasible to collect the information varies according to the type of data. For example, profits data for a company may be available from only one geographically central location referring to several different locations, whereas product sales data may be available referring to each of the separate locations. To observe and analyse the data satisfactorily, it is therefore necessary to define a system of statistical units. These form the reference building blocks in respect of which data can be collected and classified according to NACE.

56. Different types of statistical units meet different needs, but each unit is a specific entity, which is defined in such a way that it can be recognized and identified and not confused with any other unit. It may be an identifiable legal or physical entity or, as for example in the case of the unit of homogeneous production, a statistical construct.

57. The following are the units that are described in the Council Regulation on statistical units[8]:

a. The enterprise group;
b. the enterprise;
c. the kind-of-activity unit (KAU);
d. the local unit;
e. the local kind-of-activity unit (local KAU);
f. the institutional unit;
g. the unit of homogeneous production (UHP);
h. the local unit of homogeneous production (local UHP).

The relationship between the different types of statistical units is illustrated in the following table:

	One or more locations	A single location
One or more activities	Enterprise Institutional unit	Local unit
One single activity	KAU UHP	Local KAU Local UHP

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[8] Council Regulation (EEC) No 696/93 of 15 March 1993 on the statistical units for the observation and analysis of the production system in the Community (OJ No L 76, 30.3.1993, p 1).

The system of administrative and statistical units can be illustrated in the following graph:
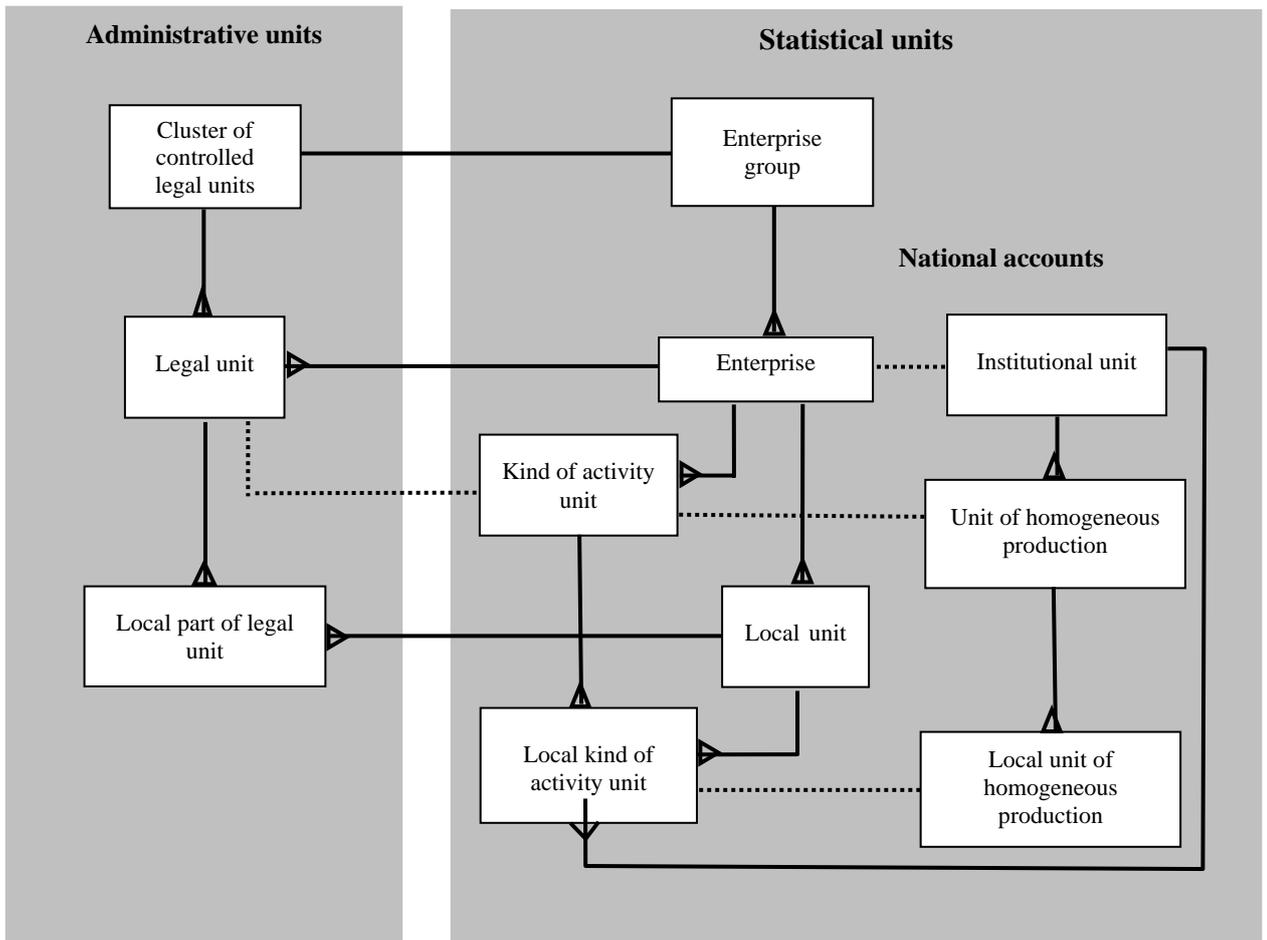
CHAPTER 3

Classification rules for activities and units

3.1 Basic classification rules

58. One NACE code is associated to each unit recorded in statistical business registers[9], according to its principal economic activity. The principal activity is the activity which contributes most to the value added of the unit. The assignment of the NACE code is helped by: the explanatory notes of NACE, decisions taken by the NACE management committee, correspondence tables and reference to other classification systems such as the ISIC, CPA, HS, CN, etc.

59. In the simple case where a unit performs only one economic activity, the principal activity of that unit is determined by the category of NACE which describes that activity. If the unit performs several economic activities (other than ancillary activities, cfr. section 2.2), the principal activity is determined on the basis of the value added associated to each activity, according to the rules presented below.

60. Value added is the basic concept for the determination of the classification of a unit according to economic activities. The gross value added is defined as the difference between output and intermediate consumption. Value added is an additive measure of the contribution of each economic unit to the Gross Domestic Product (GDP).

Value added substitutes

61. In order to determine the principal activity of a unit, the activities carried out by the unit and the corresponding share of value added have to be known. Sometimes it is not possible to obtain the information on value added associated with the different activities carried out, and the determination of the activity classification has to be done by using substitute criteria. Such criteria could be:

   a. Substitutes based on output:
   - gross output of the unit that is attributable to the goods or services associated with each activity
   - value of sales or turnover of those groups of products falling within each activity;

   b. Substitutes based on input:
   - wages and salaries attributable to the different activities (or income of self-employed)
   - number of staff involved in the different economic activities of the unit;
   - time worked by staff attributable to the different activities of the unit.

62. Such substitute criteria should be used as proxies for the unknown value added data, to obtain the best approximation possible compared to the result which would have been obtained on the basis of the value added data. The use of substitute criteria does not change the methods used to determine the principal activity, as they are only operational approximations of value added data.

63. However, the simple use of the above listed substitute criteria may be misleading. This will always be the case when the structure of the substitute criteria is not directly proportional to the (unknown) value added**.**

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[9]   Council Regulation (EEC) No 2186/93.

64. When using sales (turnover) as a proxy for value added, it should be taken into account that in certain cases turnover and value added are not proportional.   For example, turnover in trade usually has usually a much lower share of value added than turnover in manufacturing. Even within manufacturing the relation between sales and the resulting value added may vary between and within activities. For some activities turnover is defined in a specific way which makes comparison with other activities not useful, e.g. financial intermediation activities or insurance activities. The same considerations should be borne in mind when using gross output data as substitute criteria.

65. Many units perform trade and other activities. In such cases trade turnover figures are the most unsuitable indicators for the unknown value added share of the trade activity. A much better indicator is the gross margin (difference between the trade turnover and purchases of goods for resale adjusted by changes in stocks). However, the trade margins may vary within a single wholesale and retail trade and also between trade activities. In addition, one has to consider the specific classification rules for trade as set out in section 3.4.

66. Similar precautions have to be considered when input-based substitute criteria are applied. The proportionality between wages and salaries or employment on one hand, and value added on the other is not reliable if the labour intensity of the various activities is different. Labour intensity may vary substantially between different economic activities and also between activities of the same NACE class. Example: the production of a good by hand vs. the production of a good using a mechanized process.

3.2 Multiple and integrated activities

67. Instances may arise where considerable proportions of the activities of a unit are included in more than one class of NACE. These cases may result from the vertical integration of activities (for example, tree felling combined with sawmilling, or activities in a clay pit combined with brick-works), or the horizontal integration of activities (for example, manufacture of bakery products combined with manufacture of chocolate confectionery), or any combination of activities within a statistical unit. In these situations, the unit should be classified according to the rules set out in this section.

68. If a unit performs activities falling in only two different positions of NACE, there will always be one activity that accounts for more than 50% of value added, except in the highly unlikely case that both activities of the different positions have equal shares of 50%. The activity that represents more than 50% of the value added is the principal activity and determines the NACE Rev. 2 classification of the unit.

69. In the complex case where a unit performs more than two activities falling into more than two different positions of NACE, with none of them accounting for more than 50% of value added, the activity classification of that unit has to be determined by using the "top-down" method, as described below.

The top-down method

70. The top-down method follows a hierarchical principle: the classification of a unit at the lowest level of the classification must be consistent with the classification of the unit at the higher levels of the structure. To satisfy this condition the process starts with the identification of the relevant position at the highest level and progresses down through the levels of the classification in the following way:
    a. Identify the section which has the highest share of the value added.

b. Within this section identify the division which has the highest share of the value added within this section.

c. Within this division identify the group which has the highest share of the valued added within this division.

d. Within this group identify the class which has the highest share of value added within this group.
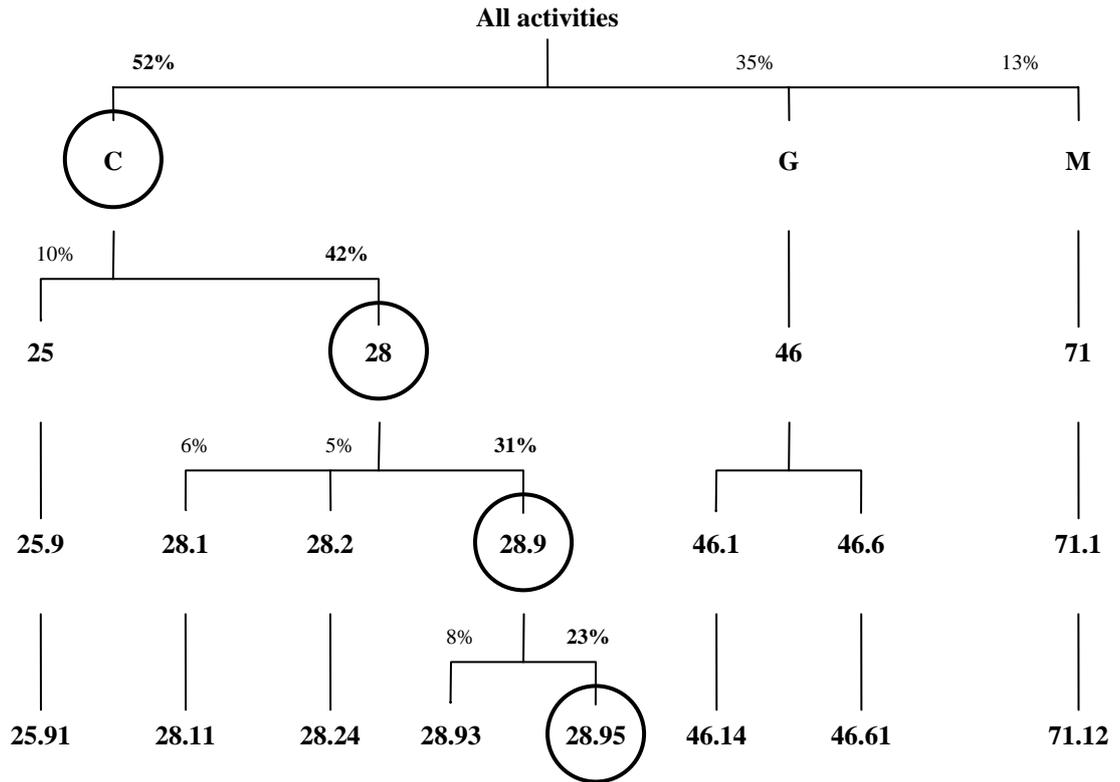
71. Example: a unit carries out the following activities (shares in terms of value added):

Section	Division	Group	Class	Description of the class	Share
C	25	25.9	25.91	Manufacture of steel drums and similar containers	10%
	28	28.1	28.11	Manufacture of engines and turbines, except aircraft, vehicle and cycle engines	6%
		28.2	28.24	Manufacture of power-driven hand tools	5%
		28.9	28.93	Manufacture of machinery for food, beverage and tobacco processing	23%
			28.95	Manufacture of machinery for paper and paperboard production	8%
G	46	46.1	46.14	Agents involved in the sale of machinery, industrial equipment, ships and aircraft	7%
		46.6	46.61	Wholesale of agricultural machinery, equipment and supplies	28%
M	71	71.1	71.12	Engineering activities and related technical consultancy	13%

- Identify the main Section among Section C Manufacturing (52%), Section G Wholesale and retail trade; repair of motor vehicles and motorcycles (35%) and Section M Professional, scientific and technical activities (13%).

- Identify the main Division within main Section C:
  Division 25   Manufacture of fabricated metal products, except machinery and equipment
        10%
  Division 28   Manufacture of machinery and equipment n.e.c.
        42%

- Identify the main Group within the main Division 28:
  Group 28.1   Manufacture of general-purpose machinery
        6%
  Group 28.2   Manufacture of other general-purpose machinery
        5%
  Group 28.9   Manufacture of other special-purpose machinery
        31%

- Identify the main Class within the main Group 28.9:
  Class 28.93   Manufacture of machinery for food, beverage and tobacco processing   23%
  Class 28.95   Manufacture of machinery for paper and paperboard production
        8%

Therefore the correct class is 28.93 Manufacture of agricultural and forestry machinery, although the class with the biggest share of value added is class: 46.61 Wholesale of agricultural machinery, equipment and supplies.

The following picture represents the decision path followed in the example.

All activities

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                        All activities
       52%                   35%              13%
      ( C )                   G                M
   10%      42%               |                |
    25     (28)              46               71
        6%   5%    31%      46.1  46.6        71.1
    25.9 28.1 28.2 (28.9)
                   8%   23%
 25.91 28.11 28.24 28.93 (28.95) 46.14 46.61  71.12
```

72. Because of the difficulties between ISIC and NACE at group and class levels, the application of the top-down method to NACE may give allocations different from those which would be obtained applying the method to ISIC. If possible, the method should be followed first in terms of ISIC, identifying the ISIC class, and then in terms of NACE. This would ensure alignment to world classifications.

73. When applied to section G "Wholesale and retail trade", a specific adaptation of the top-down method is required. See paragraphs 93-99 below for details.

Changes of the principal activity of the unit

74. Units may change their principal activity, either at once or gradually over a period of time, either because of seasonal factors or because of a management decision to vary the pattern of output. While all these cases call for the classification of the unit to be changed, too frequent changes could result in inconsistencies between short term (monthly and quarterly) and longer term statistics, making their interpretation extremely difficult.

75. Whenever a unit performs two activities both contributing to around 50% of the value added, a stability rule has been established in order to avoid frequent changes not reflecting a substantial change in the economic reality. According to this rule, the change of the principal activity should be made when the current one had been accounting less than 50% of the value added for at least two years.

Treatment of vertically integrated activities

76. Vertical integration of activities occurs where the different stages of production are carried out in succession by the same unit and where the output of one process

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serves as input to the next. Examples of common vertical integration include tree felling and subsequent sawmilling, a clay pit combined with brickworks, or production of wearing apparels in a textile mill.

77. When applying NACE Rev.2, vertical integration should be treated like any other form of multiple activities, i.e. the principal activity of the unit is the activity accounting for the largest share of value added, as determined according to the top-down method. This treatment has changed from previous versions of NACE. For vertical integration of specific situations in Agriculture, see paragraph 92.

78. If value added or substitutes cannot be determined for the individual steps in a vertically integrated process directly from accounts compiled by the unit itself, comparisons with similar units could be used. Alternatively, valuation of intermediate or final products could be based on market prices.

Treatment of horizontally integrated activities

79. Horizontal integration of activities occurs when activities are carried out simultaneously using the same factors of production. The principle of value added, has to be applied, following the top-down method, and the same precautions for using substitutes as listed above apply here.

3.3 Rules for specific activities

Activities undertaken on a fee or contract basis and outsourcing of activities

80. In this section, the following terminology is applied:
    a. Principal= unit that enters in a contractual relationship with another unit (here called contractor) to carry out some part of the whole production process. Sometimes, the terms "converter" or "contractor" had also been used.
    b. Contractor= unit that carries out a specific production process based on a contractual relationship with a Principal. The term "subcontractor" had been used too. In NACE, the activities performed by the contractor are denominated "on a fee or contract basis".
    c. Outsourcing= contractual agreement according to which the principal requires the contractor to carry out a specific production process. Sometimes, the term "subcontracting" is used as well.
    Examples of parts of the production process that can be outsourced are: manufacturing activities, employment services, support functions, etc.
    The principal and the contractor may be located in the same economic territory or in different economic territories: the actual location does not affect the classification of either one of these units.

81. Contractors, i.e. units carrying out an activity on a fee or contract basis, are usually classified with units producing the same goods or services for their own account, except in Trade (see paragraphs 93-99 below and explanatory notes to Section G) and in Construction (in the case of outsourcing of construction activities, the principal should be classified in 41.10 and the contractor in 41.20).

82. In manufacturing, the principal provides the contractor the technical specifications of the manufacturing activity to be carried out on the input material. The input material (raw or intermediate good) can either be provided (owned) by the principal or not. Examples of such activities are: metal manufacturing (forging, casting, cutting, stamping and foundry works), processing of metals (e.g. chrome plating),

manufacturing of apparels, finishing of apparels and similar elementary operations parts of the production process.

83. The principal which completely outsource the transformation process should be classified into manufacturing only if it owns the raw material used as input to the production process (and therefore owns the final output).

A principal who outsource only part of the transformation process is to be classified into manufacturing.

In all other cases, the principals should be classified according to the value added principle: it might be in Section G "Wholesale and retail trade" (according to the activity and the specific good sold, see paragraphs 93-99 below), or in other Sections as, e.g., M "Professional, Scientific and technical activities", or N "Administrative and support service activities.

84. In the case of outsourcing of employment services a distinction should be made between - firstly - whether it is on a fixed or on a temporary basis and - secondly - whether the contractor serves only one or more than one principals:

- If the outsourcing is on a temporary basis and the contractor serves only one principal, both the principal and the contractor are to be classified according to the activity actually performed (e.g. manufacturing).

- If the outsourcing is on a temporary basis and the contractor serves more than one principal, the principals are to be classified according to the activity actually performed and the contractor is to be classified to 78.20 (temporary employment agency activities).

- If the outsourcing is on a fixed basis and the contractor serves only one principal, both the principal and the contractor are to be classified according to the activity actually performed.

- If the outsourcing is on a fixed basis and the contractor serves more than one principal, which are mainly carrying out similar activities, both the principals and the contractor are to be classified according to the activity performed.

- If the outsourcing is on a fixed basis and the contractor serves more than one principal, which are mainly carrying out different activities, the contractor is to be classified to 78.30 (other human resources provision).

Treatment of outputs of outsourced activities in CPA

85. In the previous section, it was noted that in general the classification of activities does not depend on the criterion of carrying them out on own account or on a contract or fee basis. While the activities are not distinguished in NACE, the corresponding output is different, depending on whether the input material is owned by the manufacturing unit or not. In the second case, the output of the activity is the service performed on and incorporated in the input material, and this is what the contractor is paid for.

86. Therefore, in general, CPA distinguishes between goods produced for own account and the services performed on goods on a fee or contract basis. Specific categories and sub-categories, usually coded zx.yy.9 and zx.yy.99 respectively, have the heading "subcontracted operations as part of manufacturing of…".

87. In CPA 2002 and CPC ver. 2, these outputs are called "industrial services" and "manufacturing services" respectively.

On-site installation

88. Units principally engaged in the installation or assembly of items or equipment in buildings for their functioning are classified in the construction section (division 43).

89. Installation of machinery and other equipment other than those linked to the functioning of buildings (or civil engineering works) is classified in group 33.2 "Installation of industrial machinery and equipment".

Repair and maintenance

90. Units that repair or maintain goods are classified into one of the following categories, depending on the types of goods:
    a. group 33.1 "Repair of fabricated metal products, machinery and equipment"
    b. division 43 "Specialised construction activities"
    c. group 45.2 "Maintenance and repair of motor vehicles"
    d. division 95 "Repair of computers and personal and household goods" .

91. Units that overhaul aircrafts, locomotives and ships are classified in the same class as the units that manufacture them.

3.4 Section specific rules and definitions

This section presents rules and definitions to be taken into account when classifying units in specific sections. General descriptions, definitions and characteristics of sections are presented in the corresponding explanatory notes.

Section A: Agriculture, Forestry and Fishing

92. In Agriculture, a frequent situation where the decomposition of the value added presents difficulties is when the unit produces grapes and manufactures wine from the own-produced grapes, or when it produces olives and manufactures oil from the own-produced olives. In these cases the most suitable proxy variable is the "number of hours worked", and its application to these vertically integrated activities would generally lead to the classification of the units in Agriculture. In similar cases, units will be classified in agriculture by convention, in order to guarantee a harmonised treatment.

Section G: Wholesale and retail trade; repair of motor vehicles and motorcycles

93. In section G, trade is distinguished between wholesale and retail sale, apart from the trade in motor vehicles. It may happen that a unit performs horizontally integrated trade activities under various possible forms: both wholesale and retail sale, or sale in store and not in stores, or many goods are sold. If the goods sold by the unit do not comprise a unique class accounting for at least 50% of the value added, then the application of the top-down method requires special caution and the consideration of additional levels.

94. Within division 46 "Wholesale trade", first an additional level of distinction has to be considered: group 46.1 "Wholesale on a fee or contract basis" and the aggregation of groups 46.2-46.9. Therefore, the first decision to take is the allocation of the unit to one of these two possibilities, on the basis of the value added principle. If the choice

is for the aggregation level 46.2-46.9, then the second step consists in deciding between "Non specialised" vs. "Specialised" (see below). Finally, the choice has to be made, always applying the top-down method, among groups and classes.

95. The figure below represents the decision tree to be used for the allocation of a unit to a specific class in Division 46 "Wholesale trade":

Division 46

Specialized and non specialised wholesale trade 46.2 – 46.9

Wholesale on a fee or contract basis 46.1

Non specialised 46.9

Specialised 46.2 – 46.7

46.2 **46.3** **46.4** **46.5** **46.6** **46.7**
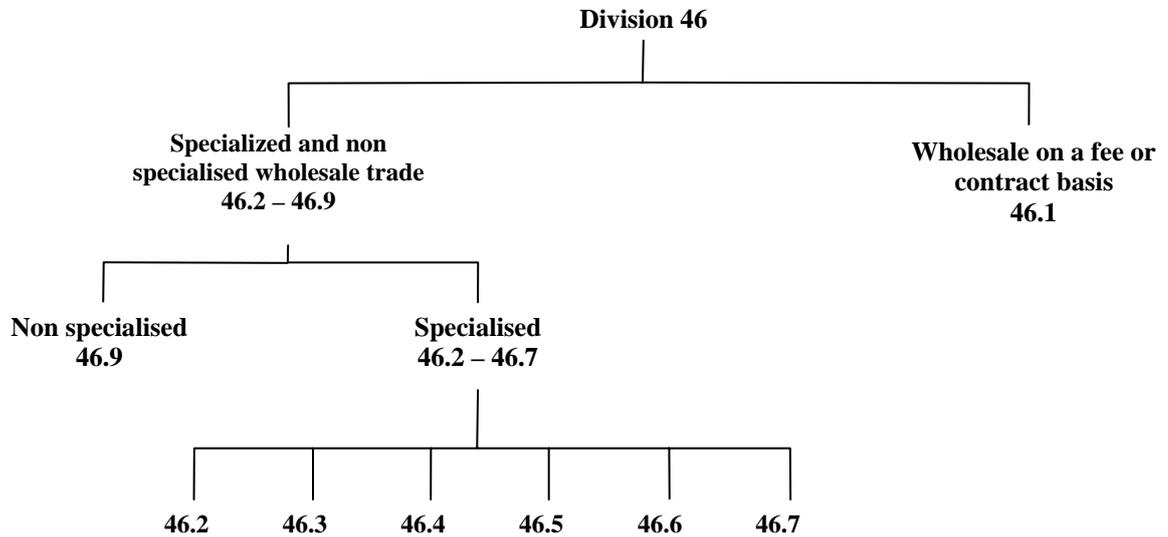
Further subdivided according to the correspondent products

96. Within division 47 "Retail trade", first an additional level of distinction has to be considered: the aggregation of groups 47.1 to 47.7 "Retail trade in stores" and the aggregation of groups 47.8-47.9 "Retail sale not in stores". Therefore, the first decision to take is the allocation of the unit to one of these two possibilities on the basis of the value added principle. If the choice is for the aggregation level "Retail sale in stores", then the second step consists in deciding between "Non specialised" vs. "Specialised" (see below). Finally, the choice has to be made, always applying the top-down method, to the groups and classes.
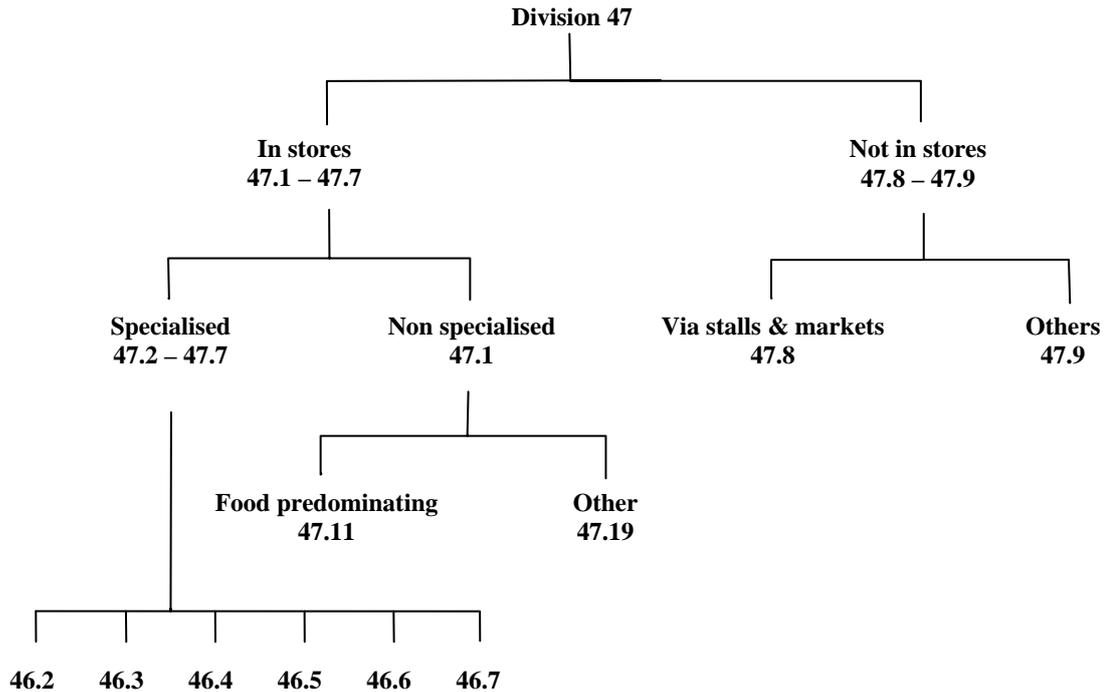
97. The figure below represents the decision trees to be used for the allocation of a unit to a specific class in Division 47 "Retail trade".

Further subdivided according to the correspondent products

98. Both in wholesale and in retail sale trade, the distinction between "specialised" and "non specialised" is based on the number of classes comprising the goods sold, where the classes to be considered each account for at least 5% percent (and less than 50%) of the value added:

a. If the products sold comprise up to four classes in any of the groups 46.2 to 46.7 (for wholesale) or 47.2 to 47.7 (for retail sale), the unit is considered to be in "specialised trade". It is then necessary to determine the principal activity applying the top-down method on the basis of the value added, selecting first the main group and then the class within that group:

Class	Case A	Case B	Case C
47.21	30%	30%	20%
47.25	5%	15%	5%
47.62	45%	40%	35%
47.75	20%	15%	40%
Final allocation	Class 47.62	Class 47.21	Class 47.75

b. If the products sold comprise five or more classes in any of the groups 46.2 to 46.7 (for wholesale) or 47.2 to 47.7 (for retail sale), then the unit should be classified as non-specialised. In retail trade, it is therefore allocated to group 47.1. If food, beverages and tobacco represent at least 35% of value added, allocation will be made to NACE Rev. 2 class 47.11. In all other cases allocation should be to class 47.19.

Class	Case A	Case B	Case C
47.21	5%	20%	5%
47.22	10%	15%	5%
47.42	15%	10%	45%
47.43	25%	10%	40%
47.54	45%	45%	5%

| Final allocation | Class 47.19 | Class 47.11 | Class 47.19 |

99. The allocation rules are always based on the retail activity of the unit. If, in addition to its retail trade, a unit has a secondary activity, the allocation of the unit to the appropriate class is determined only by the conditional composition of its retail activity.

Sections K: Financial and insurance activities, and M: Professional, Scientific and technical activities

100.   In section K, two classes have been introduced that go beyond the traditional scope of NACE in covering economic production, namely class 64.20 "Activities of holding companies" and 64.30 "Trusts, funds and similar financial entities". Units classified in these two classes do not have any revenue from the sale of products, and usually do not employ staff (except possibly one or a few persons acting as legal representatives). Sometimes these units are called "brass plates", or "postal boxes" or "empty boxes", or "special purpose entities - SPE", as they just have a name and an address. They are numerous in some countries because of tax advantages.

101.   When classifying a unit according to these two classes, attention should be paid also to other classes (two of them in section M, division 70) namely classes 70.10 "Activities of head offices" and 70.22 "Business and other management consultancy activities".

102.   More specifically:
a) class 64.20 "Activities of holding companies" refers to activities of holding companies, whose principal activity is owning the group, and that do not administer or manage the group;
b) class 64.30 "Trusts, funds and similar financial entities" is very particular in NACE, as it does not refer to an economic activity, but to units.
c) class 66.30 "Fund management activities" includes activities carried out on a fee or contract basis;
d) class 70.10 "Activities of head offices" includes the overseeing and managing of the related units, exercising the operational control and day-to-day managing;
e) Class 70.22 "Business and other management consultancy activities" includes the consultancy activities related to issues like corporate strategic and organisational planning, marketing objectives and policies, human resources policies etc.

The identification of the principal activity of a unit performing several activities among those just mentioned should be made, as usual, on the basis of the value added principle. It should be taken into account that capital gains do not constitute value added, and therefore they should not be considered. The introduction of the above mentioned classes represents a major change with respect to NACE 1.1.

Section O: Public administration and defence; compulsory social security

103.   NACE does not make any distinction regarding the institutional sector (as defined in SNA and ESA) in which the institutional unit is classified. Moreover, there is no NACE category that describes all activities carried out by the government as such. Consequently, not all government bodies are automatically classified in Section O "Public administration and defence; compulsory social security". Units carrying out activities at the national, regional or local levels that are specifically attributable to other areas of NACE are classified in the appropriate section. For example, a school for secondary education administered by the central or local government is allocated to group 85.3 (Section P), or a public hospital is allocated to class 86.10 (Section Q).

On the other hand, not only government bodies are classified in section O: private units performing typical "public administration activities" are also classified here.

Section T: Activities of households as employers; Undifferentiated goods- and services-producing activities of households for own use

104.   Division 97 includes only the activities of private households as employers of domestic personnel. The output of this activity is considered as production in the SNA, and for this purpose and for certain surveys this division has been included in NACE Rev. 2. The activities of domestic personnel are not classified here: for instance, the baby-sitting activities are to be classified in 88.91, or washing of textile is to be classified in 96.01, the valet activities are classified in 96.9 etc.

105.   The need to describe activities for own use has emerged in data collections such as labour force or time use surveys. While market activities should generally be described according to existing rules for identifying the correct NACE code, the application of these rules to activities for own use has proved difficult because, contrarily to market activities, it is difficult to quantify the value added. These activities often combine agricultural, construction, textile manufacturing, repair and other services. Division 98 "Undifferentiated goods- and services-producing activities of private households for own use" corresponds to Divisions 96 and 97 of NACE Rev. 1, which where introduced in order to cover these activities. Division 98 is not relevant in EU business statistics, but in data collections covering household and subsistence activities.

CHAPTER 4

Relations between NACE Rev 2 and other classifications

106.   This chapter presents the relationships between NACE and other linked classifications. The main reference is the scheme on paragraph 3 of this document. First the relationships with international classifications based on the UN system are described in some detail, as NACE and many EU classifications mirror, in various forms, the correspondent world classifications. Then the relations with the other EU classifications are shown. Finally the relations with other multinational classifications are listed, together with the aggregated structures used in the context of National accounts.

107.   RAMON, the online Eurostat's server for metadata, provides information and detailed structures on international, regional, national statistical classifications developed for many statistical areas: economic analysis, environment, education, occupations, national accounts, etc. The information covers various aspects, including general descriptions, structure of the classifications (i.e. codes and headings), explanatory notes, correspondence tables between classifications, methodological documents, and other general information relating to classifications.

Whenever available, the information is presented in all EU official languages.
The RAMON server can be publicly accessed on the Web at the following address: http://www.europa.eu.int/comm/eurostat/ramon/.

4.1 Relations with international classifications

The International Family of Economic and Social Classifications

108.   The international family of economic and social classifications is comprised of classifications registered in the United Nations Inventory of Classifications, reviewed and approved as guidelines by the United Nations Statistical Commission or other competent intergovernmental boards on such matters as economics, demographics, labour, health, education, social welfare, geography, environment, time use and tourism. It also includes those classifications on similar subjects that are registered in the Inventory and are derived or related to the international classifications and are primarily, but not solely, used for regional or national purposes (as NACE and CPA).

109.   The international family of economic and social classifications is comprised of three major types: reference, derived and related classifications.

110.   *Reference classifications* of the family are those economic and social classifications that are a product of international agreements approved by the United Nations Statistical Commission or another competent intergovernmental board, such as that of the International Labour Organization (ILO), the International Monetary Fund (IMF), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the World Health Organization (WHO), or the World Customs Organization (WCO) depending upon the subject matter area. Thus reference classifications have achieved broad acceptance and official agreement and are approved and recommended as guidelines for the preparation of derived classifications. They may be used as models for the development or revision of other classifications, both with respect to the structure and with respect to the character and definition of the categories. ISIC is the reference classification for the classification of economic activities.

111.   *Derived classifications* of the family are based upon reference classifications. Derived classifications may be prepared either by adopting the reference

classification structure and categories, and then possibly providing additional detail beyond that provided by the reference classification, or they may be prepared through rearrangement or aggregation of items from one or more reference classifications. Derived classifications are often tailored for use at the national or multi-national level. NACE is a derived classification of ISIC.

112. *Related classifications* are those that partially refer to reference classifications, and for which correspondence tables (sometimes called also concordance tables) are necessary in order to compare statistics. NAICS (see below) is a reference classification of ISIC.

The UN Integrated System of Classifications of Activities and Products

113. The UN Statistical Commission proposed in 1989 a set of classifications that together form an integrated system for classifying activities, goods and services and that could be used in different kinds of economic statistics at world level. ISIC, CPC, SITC and BECs are the main components of this system, and are strongly interrelated:
   - ISIC represents the activity side of the system,
   - CPC is the central instrument for classifying goods and services,
   - SITC is the aggregated classification of transportable goods for international trade statistics for comparison purposes,
   - BECs[10] is the classification of goods according to Broad Economic Categories for purposes of economic analysis.

114. When referring to goods, both CPC and SITC use the headings and sub-headings of the Harmonized Commodity Description and Coding System (HS) as building blocks for their categories, i.e. each heading at the lowest level of the CPC corresponds exactly to at least one heading of the HS or to an aggregation of two or more HS headings or subheadings. There are some situations, especially in Agriculture, where an HS heading is split over several CPC items.

115. HS is the international customs product classification drawn up by the World Customs Organisation for foreign trade. HS is used for both customs tariff and foreign trade statistics purposes. HS is hierarchically structured, and provides the detailed definitions and characteristics of about 5000 goods. It is structured into 96 chapters, each identified by a two-digit numerical code; chapters are subdivided into headings, which are in turn subdivided into subheadings. The headings are identified by means of a four-digit numerical code and the subheadings by a six-digit numerical code. Although the HS basically covers goods, i.e. products which have a physical dimension, it also encompasses electricity. HS does not cover services, but does include the physical "manifestations" of services (e.g. architects' plans, diskettes with software, even art originals and antiques more than 100 year old, etc.). It also includes goods which are not produced, such as used equipment. The latest revision of HS was implemented in 2007; HS is revised each year.

116. CPC arranges products according to the physical characteristics and intrinsic nature of goods or on the nature of the services rendered. 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. For this reason, the CPC coding system is independent of ISIC.

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[10] *Classification by Broad Economic Categories: Defined in Terms of SITC, Rev. 3,* Statistical Papers, No. 53/Rev.3 and corrigendum (United Nations publication, Sales No. E.86.XVII.4 and Corr.1).

117.   Despite this specific approach, however, the CPC has also taken into consideration the criterion of economic origin. According to this criterion (adopted in the EU for NACE and CPA), a product classification combines in one category goods or services that are the output of only one economic activity. Thus efforts were made to define headings at the lowest level of the CPC in such a way that as many products as possible, at this level, can be allocated to a single category of ISIC: the CPC publication includes the correspondences between CPC sub-classes and the relevant ISIC class. However, the application of the origin criterion is not always practicable, even using the most detailed level of HS.

118.   A revised version of CPC, CPC ver. 2, was adopted by the UN Statistical Commission in March 2006.

119.   SITC follows a traditional order in which the materials used, the stage of processing and the end use are the main considerations.

120.   BEC is designed to serve as a means for converting data compiled on the basis of SITC to meaningful aggregates for purposes of economic analysis, based on the SNA distinction between capital goods, intermediate goods and durable/non durable consumer goods. There is no direct relationship between ISIC and BEC, as it rearranges the SITC categories in 19 BEC categories. BEC was revised in 1986, based on the third revision of SITC, and the definition of BEC categories in terms of HS subheadings has subsequently been changed to reflect changes made to the HS in 2002 and 2007.

NACE link to ISIC

121.   NACE is a derived classification of ISIC: categories at all levels of NACE are defined either to be identical to, or to form subsets of, single ISIC categories. The first level and the second level of ISIC Rev.4 (sections and divisions) are identical to sections and divisions of NACE Rev. 2. The third and fourth levels (groups and classes) of ISIC Rev.4 are subdivided in NACE Rev. 2 according to European requirements. However, groups and classes of NACE Rev. 2 can always be aggregated into the groups and classes of ISIC Rev.4 from which they were derived. The aim of the further breakdowns in NACE Rev. 2, as compared with ISIC Rev. 4, is to obtain a classification more suited to the structures of the European economies.

122.   Also the coding systems used in ISIC and NACE are, as far as possible, the same: to easily distinguish the two, NACE presents a dot between the first two digits (division level) and the last two digits (groups and classes). Since some groups and classes of ISIC Rev 4 are disaggregated into NACE groups and classes, without introducing additional hierarchical levels, some codes of ISIC differs from the corresponding codes of NACE. An activity at the level of groups or classes may therefore have a numerical code in NACE Rev. 2, which differs from that in ISIC Rev. 4.

NACE links to other international classification

123.   There are other classifications developed by the United Nations, or other intergovernmental organs, that have some relationship with ISIC or that make use of parts of ISIC in defining their own scope or categories. As a consequence, they have relations with NACE.

124.   These classifications have been developed for the description of statistics on occupations, employment, expenditures, education, tourism and environment. The main ones are listed in the following. The interested reader will find detailed

information in the UN Statistical division web-site
(http://unstats.un.org/unsd/cr/registry/class_default.asp):

- The Classifications of the Functions of Government (COFOG);
- The International Standard Classification of Education (ISCED)[11];
- the International Standard Classification of Occupations (ISCO)[12];
- the Tourism Satellite Account (TSA)[13];
- the Information and Communication Technology Sector Classification (ICT)[14];
- the Content and media industries sector definition.

4.2 Relations with EU classifications

Classification of Products by Activity - CPA

125.   CPA[15] is the European version of the CPC, and the purposes it serves are in line with those of the CPC. In the EU, classifications for specific statistical domains 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. In general, CPC subclasses are re-arranged according to their economic origin. The link between the CPA and NACE Rev. 2 is evident in the CPA code: at all levels of the CPA, the coding of the first 4 digits is identical with that used in NACE Rev. 2, with very few exceptions. As a tool in the practical everyday statistical work, CPA, as the other product classifications, can be used in delineating the characteristic products of the individual activities. It has to be noted, however, that in certain cases the activity - product link is a convention: this happens when the same products are outcomes of different activities, with different production processes. National versions of the CPA exist in the same way as national versions of NACE Rev. 2.

Combined Nomenclature - CN

126.   CN[16], the Combined Nomenclature is the classification used within the EU for the purposes of foreign trade custom tariffs and statistics and provides a degree of detail going beyond that in the HS. The CN was introduced in 1988. Headings in the CN are identified by means of an eight-digit numerical code, adding two digits to the relevant HS code. The CN is revised every year and, as a Council Regulation, is binding on the Member States.

PRODCOM

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[11] *International Standard Classification of Education* (ISCED 1997) (Paris, UNESCO, November 1997).

[12] International Standard Classification of Occupations (ISCO-1988) (Geneva, ILO, 1988).

[13] Commission of the European Communities, Organisation for Economic Cooperation and Development, United Nations and World Tourism Organization, *Tourism Satellite Account: Recommended Methodological Framework,* Statistical Papers, No. 80 (United Nations publication, Sales No. E.01.XVII.9).

[14] Insert link to the relevant OECD website

[15]   Council Regulation (EEC) No 3696/93 of 29 October 1993 on the statistical classification of products by activity (CPA) in the European Economic Community, OJ L 342 of 31 December 1993.

[16]   Link to CN regulation will be inserted

127.　"PRODCOM"[17] is the abbreviation for the EU system of production statistics for mining and manufacturing (i.e. excluding services, other than "industrial services"). The product classification (PRODCOM list), upon which production statistics are based, is drawn up each year by the PRODCOM committee. The headings of the PRODCOM list are derived from the CN, but their code is a further breakdown of CPA code. PRODCOM headings are coded using an eight digit numerical code, the first six digit of which are identical to those of the CPA code. The PRODCOM list is therefore linked to, and therefore consistent with, CPA. The link with CPA emphasizes the link with NACE, enabling the enterprises producing the products to be identified, while the link with CN allows comparisons between production statistics and foreign trade statistics.

Main Industrial Groupings – MIG's

128.　MIGs[18] is the acronym for Main Industrial Groupings, a European classification which groups industries in terms of demand-based products: capital goods, intermediate goods, consumer durable goods, consumer non- durable goods and energy. MIGs are used for several indicators: among them, the index of industrial production (expressed in terms of value added and principle based on KAU) and the index of producer prices.

Balance of Payment: classification for Foreign Direct Investment statistics

129.　Balance of Payment[19] uses an aggregation of NACE categories for reporting data on Foreign Direct Investment (FDI): the activity breakdown levels are mainly expressed in terms of NACE divisions.

4.3 Relations with other multinational classifications

NAICS

130.　NAICS is the North American Industry Classification System. NAICS was developed in the mid -90 to provide common industry definitions for Canada, Mexico, and the United States, to facilitate economic analyses of the economies of the three North American countries. NAICS is developed on the basis of a production-oriented conceptual framework, and classifies units, not activities. As a result, the structures of ISIC and NAICS are substantially different. However, statistical data collected according to NAICS can be aggregated into the two-digit divisions of ISIC Rev.4/NACE Rev.2, ensuring comparability of data. In many cases, more detailed links are possible. A detailed concordance between NAICS and ISIC is published on the NAICS Internet web site (USA: http://www.census.gov/naics, Canada: http://www.statcan.ca/).

ANZSIC

17　Link to Prodcom regulation will be inserted

18　Commission regulation (EC) 86/2001 http://eur-lex.europa.eu/pri/en/oj/dat/2001/l_086/l_08620010327en00110014.pdf

19　Link to BoP Regulation EC No 184/2005, Annex 1 table 7 will be inserted

131. The Australian and New Zealand Standard Industrial Classification (ANZSIC) was developed for use in both countries for the production and analysis of industry statistics. In the development of ANZSIC great emphasis has been placed on alignment with the international standards. ISIC Rev. 3 had been used as the international standard for reference purposes. Broad concordances between the ANZSIC and the ISIC can be found at the ABS web site: http://www.statistics.gov.au/. ANZSIC is much closer to ISIC/NACE than NAICS, as its structure broadly follows the ISIC one, where categories at the division and more detailed levels can be aggregated into the two-digit categories of ISIC. Therefore, conversion of data according to ANZSIC into ISIC/NACE is possible at a fairly detailed level.

Other classifications

132. In addition to the EU Member States, Norway and Switzerland are committed to use a national version derived from NACE. Moreover, about ten other countries outside the EU, or candidate countries like Croatia and Turkey, are referring to NACE for their classification of economic activities. More than 150 countries in the world are using classifications of economic activities based either on NACE or ISIC.

4.4 Aggregated structures for National Accounts

133. National accountants have identified a need for two standard aggregations of ISIC/NACE categories to be used for SNA data reporting from a wide range of countries. The first one, denominated "*high-level aggregation*", aggregates the ISIC/NACE sections into 10/11 categories; the second one, denominated "*intermediate aggregation*", aggregates divisions and is composed of 38 categories. The two aggregated structures are not integral part of ISIC/NACE, but are fully integrated into their hierarchical structure (high-level aggregation, sections, intermediate aggregation, divisions, groups and classes).

134. The following table presents the "High-level SNA/ISIC aggregation A*10/11"

	ISIC Rev. 4/ NACE Rev. 2 sections	Description
1	A	Agriculture, forestry and fishing
2	B, C, D and E	Manufacturing, mining and quarrying and other industry
2a	*C*	*Of which: manufacturing*
3	F	Construction
4	G, H and I	Wholesale and retail trade, transportation and storage, accommodation and food service activities
5	J	Information and communication
6	K	Financial and insurance activities
7	L	Real estate activities*
8	M and N	Professional, scientific, technical, administration and support service activities
9	O, P, and Q	Public administration, defense, education, human health and social work activities
10	R, S, T and U	Other services

* which includes imputed rents of owner-occupied dwellings

The table below presents the "Intermediate SNA/ISIC aggregation A*38":

	A*38 code	ISIC Rev. 4/ NACE Rev. 2	Divisions
1	A	Agriculture, forestry and fishing	01 to 03
2	B	Mining and quarrying	05 to 09
3	CA	Manufacture of food products, beverages and tobacco products	10 to 12
4	CB	Manufacture of textiles, wearing apparel, leather and related products	13 to 15
5	CC	Manufacture of wood and paper products, and printing	16 to 18
6	CD	Manufacture of coke, and refined petroleum products	19
7	CE	Manufacture of chemicals and chemical products	20
8	CF	Manufacture of pharmaceuticals, medicinal chemical and botanical products	21
9	CG	Manufacture of rubber and plastics products, and other non-metallic mineral products	22 + 23
10	CH	Manufacture of basic metals and fabricated metal products, except machinery and equipment	24 + 25
11	CI	Manufacture of computer, electronic and optical products	26
12	CJ	Manufacture of electrical equipment	27
13	CK	Manufacture of machinery and equipment n.e.c.	28
14	CL	Manufacture of transport equipment	29 + 30
15	CM	Other manufacturing, and repair and installation of machinery and equipment	31 to 33
16	D	Electricity, gas, steam and air-conditioning supply	35
17	E	Water supply, sewerage, waste management and remediation	36 to 39
18	F	Construction	41 to 43
19	G	Wholesale and retail trade, repair of motor vehicles and motorcycles	45 to 47
20	H	Transportation and storage	49 to 53
21	I	Accommodation and Food service activities	55 + 56
22	JA	Publishing, audiovisual and broadcasting activities	58 to 60
23	JB	Telecommunications	61
24	JC	IT and other information services	62 +63
25	K	Financial and insurance activities	64 to 66
26	L	Real estate activities*	68
27	MA	Legal, accounting, management, architecture, engineering, technical testing and analysis activities	69 to 71
28	MB	Scientific research and development	72
29	MC	Other professional, scientific and technical activities	73 to 75
30	N	Administrative and support service activities	77 to 82
31	O	Public administration and defence, compulsory social security	84
32	P	Education	85
33	QA	Human health services	86
34	QB	Residential care and social work activities	87 + 88
35	R	Arts, entertainment and recreation	90 to 93
36	S	Other services	94 to 96
37	T**	Activities of households as employers; undifferentiated goods and services producing	97 + 98*

		activities of households for own use	
38	U**	Activities of extra-territorial organizations and bodies	99*

*including imputed rents of owner-occupied dwellings
**All of U and part of T (division 98) are outside the SNA production boundary, and will be empty for SNA data reporting, but are included for completeness.

CHAPTER 5

Changes from NACE Rev 1.1 to NACE Rev. 2

135. While some of the rules for the application of NACE have been changed, and criteria for the construction of the classification, as well as the formulation of explanatory notes, have been reviewed, the overall characteristics of NACE remain unchanged.

136. New concepts at the highest level of the classification have been introduced, and new detail has been created to reflect different forms of production and emerging new industries. At the same time, efforts have been made to maintain the structure of the classification in all areas that do not explicitly require change based on new concepts.

137. The detail of the classification has substantially increased (from 514 to 615 classes). For service-producing activities, this increase is visible at all levels, including the highest one, while for other activities, such as agriculture, the increase in detail affected mostly the lower level of the classification.

5.1 Changes in the structure

138. NACE Rev. 1.1 had 17 sections and 62 divisions; NACE Rev. 2 has 21 sections and 88 divisions. At the highest level of NACE, some sections can be easily compared to the previous version of the classification. However, the introduction of some new concepts at the section level, e.g. the Information section or the grouping of activities linked to environment, makes an easy overall comparison between NACE Rev.2 and its previous version not possible.

139. The following table presents the broad correspondence between the sections of NACE Rev. 1.1 and NACE Rev. 2. Please note that this table presents only the one-to-one rough correspondence between the sections: further additional details are necessary to establish a complete correspondence.

NACE Rev. 1.1		NACE Rev. 2	
Section	Description	Section	Description
A **B**	Agriculture, Hunting and Forestry Fishing	**A**	Agriculture, Forestry and Fishing
C	Mining and quarrying	**B**	Mining and quarrying
D	Manufacturing	**C**	Manufacturing
E	Electricity, gas and water supply	**D**	Electricity, gas, steam and air conditioning supply
		E	Water supply, sewerage, waste management and remediation activities
F	Construction	**F**	Construction
G	Wholesale and retail trade: repair of motor vehicles, motorcycles and personal and household goods	**G**	Wholesale and retail trade; repair of motor vehicles and motorcycles
H	Hotels and restaurants	**I**	Accommodation and food service activities
I	Transport, storage and communications	**H**	Transportation and storage
		J	Information and communication
J	Financial intermediation	**K**	Financial and insurance activities
K	Real estate, renting and business activities	**L**	Real estate activities
		M	Professional, scientific and technical activities
		N	Administrative and support service activities
L	Public Administration and defence; compulsory social security	**O**	Public administration and defence; compulsory social security
M	Education	**P**	Education
N	Health and social work	**Q**	Human health and social work activities
O	Other community, social and personal services activities	**R**	Arts, entertainment and recreation
		S	Other service activities
P	Activities of private households as employers and undifferentiated production activities of private households	**T**	Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use
Q	Extraterritorial organizations and bodies	**U**	Activities of extraterritorial organizations and bodies

140. The following table presents the changes, in numerical terms, between NACE Rev. 1.1 and NACE Rev. 2:

	NACE Rev. 1.1	NACE Rev. 2	Difference
Sections	17	21	+4
Divisions	62	88	+26
Groups	224	272	+48
Classes	514	615	+101
	Manufacturing section		
Sections	1	1	0
Divisions	23	24	+1
Groups	103	95	-8
Classes	242	230	-12
	Other sections		
Sections	16	20	+4
Divisions	39	64	+25
Groups	121	177	+56
Classes	272	385	+113

141. In order to have an idea of the impact of changes on official statistics due to the implementation of NACE Rev. 2, it is useful to distinguish the following types of correspondences comparing NACE Rev. 1.1 with NACE Rev. 2.
- 1 to 1 correspondences: 196 classes of NACE Rev. 1.1 corresponds exactly to one class of NACE Rev. 2 and vice-versa;
- n to 1 correspondences: 87 cases, where two or more classes of NACE Rev 1.1 correspond to one class in NACE Rev. 2;
- 1 to m correspondences: 17 classes , where one NACE Rev. 1.1 class is split into two or more classes of NACE Rev 2;
- n to m correspondences: 214 cases, where two or more classes of NACE Rev. 1.1 correspond to two or more classes in NACE Rev. 2.

Units classified in classes associated with 1 to 1 and n to 1 correspondence can be automatically re-coded when implementing NACE Rev. 2 in business registers.
This statement should be adapted, for each country, according to the national version of NACE.

142. The substantial changes from NACE Rev. 1.1 to NACE Rev. 2 are too numerous to be listed here in their entirety. Nonetheless, the most prominent ones are listed below.

143. The NACE Rev. 1.1 sections for agriculture and fishing have been combined. However, the detail under this new section A (Agriculture, forestry and fishing) has been substantially increased. This is a response to continuing requests for more detail in ISIC, mostly due to the fact that agriculture is an important part for the economic structure in many developing countries.

144. New divisions in manufacturing, representing important new industries or old industries that have increased their economic or social relevance, have been created, such as division 21 (Manufacture of basic pharmaceuticals products and pharmaceutical preparations) and division 26 (Manufacture of computer, electronic and optical products). The scope of the latter differs from division 30 (Manufacture of office machinery and computers) in NACE Rev. 1.1, making it a better tool for statistics on high-tech activities. Other new divisions, such as division 11 (Manufacture of beverages) and 31 (Manufacture of furniture) have resulted from

splitting existing divisions and therefore elevating their components, which have existed at group level before, to the division level.

145.   Most of the remaining divisions in section C (Manufacturing) are unchanged, except NACE Rev. 1.1 divisions 22 (Publishing, printing and reproduction of recorded media) and 37 (Recycling), of which substantial portions have been moved to other sections (see below).

146.   The repair and installation of machinery and equipment, which was formerly classified under the manufacturing of the corresponding type of equipment, is now separately identified in division 33 (Repair and installation of machinery and equipment). All specialised repair activities are now separately classifiable in NACE, although no high-level aggregate for "Repair" has been created.

147.   A new section E (Water supply; sewerage, waste management and remediation activities) has been created, which includes the "sanitation" activities of NACE Rev. 1.1 division 90, water collection and distribution activities of NACE Rev. 1.1 division 41 and materials recovery activities, which largely correspond to NACE Rev.1.1 division 37. This section now groups activities of a common policy interest, but is also based on the actual organization of these activities in a large number of countries. The detail of these activities has been substantially increased.

148.   The concept of "specialised construction activities" (also known as "special trades") has been introduced in NACE Rev. 2, replacing the division structure of the previous version, which was based largely on the stage of the construction process.

149.   The repair of household goods has been removed from section G (Wholesale and retail trade; repair of motor vehicles and motorcycles) of NACE Rev. 1.1. However, the exception for classifying trade and repair activities of motor vehicles and motorcycles in division 45 of NACE Rev. 2 (corresponding to division 50 in NACE Rev. 1.1) has been retained for comparability and continuity reasons.

150.   The detail in section I (Accommodation and food service activities) has been increased to reflect the different nature and specialization of activities carried out.

151.   A new section J (Information and communication) has been created, combining activities of production and distribution of information and cultural products, the 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. The main components of this section are publishing activities, including software publishing (division 58), , motion picture and sound recording activities (division 59), radio and TV broadcasting and programming activities (division 60), telecommunications activities (division 61) and information technology activities (division 62) and other information service activities (division 63). These activities were included in NACE Rev. 1.1 sections D (Manufacturing), I (Transport, storage and communications), K (Real estate, renting and business activities) and O (Other community, social and personal service activities), therefore impacting strongly on comparability to the previous NACE version. However, this new treatment of Information and communication activities provides a more consistent approach than the previous version of NACE, based on the character of the activities carried out.

152.   In section K (Finance and insurance activities), two classes have been introduced that go beyond the traditional scope of NACE in covering economic production, namely class 64.20 (Activities of holding companies) and 64.30 (Trusts, funds and similar financial entities).

153.   The NACE Rev 1.1 section for Real estate, renting and business activities has been split up into three sections in NACE Rev. 2. Real estate is now represented as a stand-alone section (section L) due to its size and importance in the System of

National Accounts. The remaining activities have been separated into a section M (Professional, scientific and technical activities), covering activities that require a high degree of training and make specialised knowledge and skills available to users, and a section N (Administrative and support service activities), covering activities that support general business operations and do not focus on the transfer of specialised knowledge. Computer and related activities (NACE Rev. 1.1 division 72) is no longer part of this section. Computer repair activities have been grouped with repair of household goods in section S, while software publishing and IT activities have been grouped in new section J.

154.   The scope of education (section P) has been changed to explicitly include specialised sport, cultural and other education and to also include specialised support services.

155.   More detail has been created under section Q (Human health and social work activities), resulting in the creation of three divisions instead of one, as in the previous version of NACE. In addition, the focus has been narrowed and includes only "human health" activities, providing a better tool for measuring this important part of the economy. As a result, veterinary activities have been removed from this section and placed as a division in section M (Professional, scientific and technical activities).

156.   Substantial components of NACE Rev. 1.1 section O (Other community, social and personal service activities) have been moved to NACE Rev. 2 sections E (Water supply; sewerage, waste management and remediation activities) and J (Information and communication), as described above. The remaining activities have been regrouped in two new sections for Arts, entertainment and recreation (section R) and Other service activities (Section S). As a result, activities such as creative arts, library activities and gambling activities have been raised to the division level. The repair of computers and personal and household goods is now included in this new section S.

5.2 Correspondence tables: scope and use

157.   Correspondence tables are important tools for comparing statistical data collected and presented using different classifications. They become necessary when the classification changes over time, or when different underlying frameworks do not allow classifications to be closely related. Correspondence tables between different versions of the same classification are used to describe the detailed changes that have taken place in the revision process.

158.   Since NACE is used for the collection and presentation of statistics in many areas, there has been a strong need for correspondence tables between the current NACE and its previous version. Complete detailed correspondences between NACE Rev. 2 and NACE Rev. 1.1, and vice versa, are available electronically, but not included in this publication.

159.   When drafting NACE Rev. 2 and simultaneously CPA 2008, a strong link was established between the two classifications. By defining the goods in CPA in terms on CN whenever possible, a detailed correspondence table between CN, CPC, ISIC and NACE was established.

160.   All correspondence tables are available in electronic format only and can be accessed   at   RAMON (http://ec.europa.eu/eurostat/ramon/index.cfm?TargetUrl=DSP_PUB_WELC) or at the United Nations Statistics Division web site (http://unstats.un.org/unsd/class).

ANNEX I

Glossary

This glossary gives a further description of some of the terms used throughout the NACE Rev. 2 Introduction and Explanatory Notes. Every attempt has been made to ensure that the descriptions are consistent with the definitions of the terms when used elsewhere, but these descriptions are not intended to give all-purpose definitive meanings of the words. The purpose of this glossary is merely to help the user of NACE to interpret it correctly.

By-product An exclusive by-product is a product technologically linked to the production of other products in the same group, but which is not produced in any other group (for example, molasses linked to the production of sugar). Exclusive by-products are used as inputs for the manufacture of other products. An ordinary by-product (i.e. a by-product which is not exclusive to a single group) is a product technologically linked to the production of other products, but which is produced in several groups (for example, the hydrogen produced during petroleum refining is technologically linked to that produced in petrochemical manufacture and coal carbonization and identical to that produced in the group comprising other basic chemical products).

Commodity A commodity is a transportable good that may be exchanged. It may be one of a run from a production line, a unique item (Mona Lisa) or the material medium for a service (software diskette). This is the concept used for customs classifications.

Capital goods Capital goods are goods, other than material inputs and fuel, used for the production of other goods and/or services. They include factory buildings, machinery, locomotives, lorries and tractors. Land is not usually regarded as a capital good.

Industrial process A transformation process (whether physical, chemical, manual or whatever) used in the manufacture of new products (whether consumer, intermediate or investment goods), in the processing of used products or in the provision of services to industry as defined in Sections B (extractive industries), C (manufacturing industry), D (production and distribution of electricity, gas and steam) E (Water supply, sewerage, waste management and remediation activities) and F (construction industry).

Machinery: domestic or household   Machinery and equipment of a type designed principally for use by private households, for example, household washing machines.

Machinery: industrial   Machinery and equipment of a type designed principally for use in non-domestic premises, for example, machine tools, laundry-type washing machines.

Manufacturing industry All activities included within Section C. Both cottage industry and large-scale activities are included. It should be noted that the use of heavy plant or machinery is not exclusive to Section C.

Product A product is the outcome of economic activity. It is the generic term applied to goods and services.

Finished product Products for which processing has been completed.

Semi-finished product   Products that have undergone some processing but require further processing before they are ready for use. They may be sold to other manufacturers or transferred to sub-contractors for further processing. Typical examples would include rough metal castings sold or transferred for finishing elsewhere.

Production   Production is an activity resulting in a product. It is used with reference to the whole range of economic activities. The term is not reserved for the agricultural, mining or manufacturing sectors. It is also used in relation to the service sector. More specific terms may be used to denote production: provision of services, processing,

manufacturing, etc., depending on the branch of activity. Production may be measured in various ways either in physical terms or according to value.

Transformation Transformation is a process that modifies the nature, composition or form of raw materials, semi-finished or finished products for the purpose of obtaining new products.

Treatment A process that is carried out, inter alia, for the purpose of protecting certain products, for giving them certain properties or for preventing any harmful effects that might otherwise result from their use. Examples are the treatment of crops, wood, metals and waste.

Value added The gross value added at basic price is defined as the difference between output at basic prices and intermediate consumption at purchaser's prices.