

**UP-TO-DATE DEVELOPMENT
OF INTERNATIONAL STATISTICAL
CLASSIFICATIONS DEDICATED TO ECONOMIC ACTIVITY
AND PRODUCTION TYPES**

Summary. The paper considers the current state of statistical classifications concerning types of economic activity and production. Significant attention is paid to consideration of issues connected with improvement of current versions of these classifications, particularly to preparation of new editions of these classifications by the UN International Working Group.

Development of different kinds of classifications with the objective to establish a strict co-ordination scheme for a large number of individual characteristics studied by statistics represents a principal area of statistical activities. That is why information about processes and phenomena within economic and social spheres can not be perceived without its systematization on the basis of logical regulation. Hence, any description of economic processes by means of statistical data requires to set up clear distinctions and relationships of the elements underlying any phenomenon. A statistical data set can be divided into more homogeneous categories by characteristics that are subject to study by use of a classification. As regards classifications as such, these represent a system of symbolic codes to be used in messages about different kinds of processes and phenomena so as to describe the latter statistically.

Classifications practice involves decomposition by three levels, at which statistical classifications are produced:

- word-wide (international) level, which aim towards obtaining and analysis of statistical information related to any country of the word (level United Nations);
- multinational (such as European) level, which aims towards obtaining and analysis of statistical information related to economic and social processes in a given group of countries located in a given region;
- national level, which aims towards obtaining and analysis of statistical information in an individual country.

- Economically developed countries use certain international statistical classifications in their statistical practice. The classifications concerning economic activity and production are the central ones.

- International Standard Industrial Classification of All Economic Activities — ISIC, Rev. 3.1;

- Central Product Classification — CPC, Ver. 1.1;

- Harmonized Commodity Description and Coding System — HS;

- Standard International Trade Classification — SITC, Rev. 3.

- Central statistical classifications European Union are:

- Statistical Classification of Economic Activities in the European Community — NACE, Rev. 1.1;

- Classification of Products according to their Activities — CPA Rev. 1;

- Central Products Classification for use in the European Communities — CPC-COM,

- Products of the European Community — PRODUCTION COMMUNAUTAIRE — PRODCOM;

- Combined Nomenclature — CN.

- Central statistical classifications of Ukrainian are:

- Classification of Economic Activities (KVED);

- Stat Classifier of Products and Services (DKPP);

- Ukrainian Commodities Classification of External Economic Activities (UKTZED).

- The activities by international statistical organizations in the area of statistical classifications are being performed to meet the following ends:

- development of classifications;

- their maintenance (design of new versions of classifications, their revised edition, design of official multilingual versions);

- arrangements to assist in introduction of international classifications in the practice of different national statistical services;

- to ensure succession (consistency) between new and traditional classifications;

- formulation of strategies in the area of classifications development.

- History witnesses that the first versions of the worldwide statistical classifications have been designed due to the necessity of reflecting world economic effectiveness. The process of designing worldwide, European and national central statistical classifications is presented in picture 1 in historical aspect.

- Development of the central statistical classifications on the all levels has been continuing from the beginning of the XXI century. ISIC Rev. 3.1 and CPC Ver. 1.1 have become effective from the 1st Jan 2003 on the international level and NACE Rev. 1.1 and CPA Rev. 1 have been enforced from the 1st Jan 2003 on the European level. Scientists

from the Scientific Research Institute of Statistics and specialists from the State Statistical Committee have designed renewed wording of the Classification of Economic Activities (KVED) and Central Statistical Classification of Products instead of the State Classifier of Products and Services (DKPP).

Case history of the worldwide, European and national central statistical classifications has been described in a few international and national publications [3—9]. In this connection there is a necessity to examine questions concerning the design of new wording of the international classifications concerning economic activities and products which will have become effective from the 1st Jan 2007.

At its thirtieth session in 1999, the Statistical Commission agreed that the International Standard Industrial Classification of All Economic Activities (ISIC) and the Central Product Classification (CPC) should be revised every five years, thereby keeping the classifications relevant while avoiding major disruptions in time series. According to this revision cycle, the next planned revision for ISIC and the CPC will be in 2007. The purpose and rationale for these revisions is to repair weaknesses in the classifications, to reflect changes in technology or economic organization, to respond to new and permanent demands for data and to achieve greater comparability or convergence among different classifications.

Three driving forces condition any revision: continuity, relevance and comparability. For example, for the 2002 revision of ISIC (ISIC Rev. 3.1) continuity was the most important factor, such ISIC Rev. 3 and ISIC Rev. 3.1 have the structures (table 1).

Reconsideration of ISIC for 2007 provides for paying attention to comparison requirements, which are connected with relativity and continuity requirements. There are some multinational and national classifications now that are not comparable enough (for countries of European Union — NACE, for countries of North American — NAICS, for Australia and New Zealand — ANZSIC, for Japan — JSIC, for China — NatSIC) and it complicates country-by-country statistical data comparison.

Reconsideration of international classifications concerning economic activities and products is influenced by globalization of international trade and organizational changes in production. International statistical agencies working out and maintaining statistical classifications also have received many proposals on improving classifications of economic activities in such fields as tourism, industry, protection of the environment and biotechnology lately. Re-

consideration of ISIC also provides for detailed analysis of conceptual issues of designing two multinational classifications NACE and NAICS for using progressive (on methodological questions) solutions of multinational classifications design problems during reconsideration of ISIC.

Table 1

STRUCTURE OF ISIC REV. 3 AND ISIC REV. 3.1

Economic activities		Divisions	
Category	Description	ISIC Rev. 3	ISIC Rev. 3.1
A	Agriculture, hunting and forestry	2	2
B	Fishing	1	1
C	Mining and quarrying	5	5
D	Manufacturing	23	23
E	Electricity, gas and water supply	2	2
F	Construction	1	1
G	Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	3	3
H	Hotels and restaurants	1	1
I	Transport, storage and communications	5	5
J	Financial intermediating	3	3
K	Real estate, renting and business activities	5	5
L	Public administration and defence; compulsory social security	1	1
M	Education	1	1
N	Health and social work	1	1
O	Other community, social and personal service activities	4	4
P	Private households with employed persons	1	3
Q	Extra-territorial organizations and bodies	1	1
Add		60	62

The following conceptual issues are addressed:

- For ISIC:
 - Purpose and criteria: activities versus industries;
 - Statistical units;
 - Classification principles: treatment of vertical integration, the top-down approach and the value added criterion;
 - Principle of grouping and the production process principle;
 - Activity — product links;
 - Hierarchical structure and level to be adopted by countries.
- For CPC:
 - Purpose, scope and coverage;
 - Aggregation structure and links to other classifications.

The problem of the aim of ISIC during reconsideration of this classification is solved in such a way. Existing ISIC is an industrial classification of all economic activities and its primary objective is to provide categories of activity that can be used for collecting and presentation of statistics in accordance with existing industries. Branches of industry are formatted as unit of grouping by the general primary activity so ISIC can be used in statistics of activity or industrial statistics by enterprises and establishments as well as by the other units of activity.

As for the conceptual issue of reconsideration of ISIC statistical units the Group advises to use these conceptions on the basis of the System of National Accounts 1993 (SNA93).

The Group recommends not to change existing principles of classifying as for approach to units classifying while reconsidering ISIC as such an approach guarantees better coherence of data generalization excepting different unit classifications on the different levels.

The principal activities of the unit should be determined by reference to the value added by the goods sold or services rendered. In practice it is other not possible to obtain the information on value added for individual products. It is therefore recommended that in such cases, the principal activity be determined by other criteria as an approximation, such as:

- the proportion of the gross output of the unit that is attributable to the goods or services associated with these kinds of activity;
- value of sales of those groups of products;
- employment if that can be allocated approximately by kinds of activity.

The Group also considered the present treatment of integration in ISIC where a unit with a vertically integrated chain of activities should generally be classified to the class indicated by the nature of

the final product. Since the classification of all other cases of multi-activity units are made according to the value added criteria the Group strongly recommended that this also be the case for vertical integration.

This would be a change from the current ISIC treatment, but it would mean the deletion of a large number of conventions or exceptions and would ensure a coherent treatment. The group also noted that in practice this would further convergence with NAICS.

Presently in ISIC production units are grouped either by input, process or output. The TSG considered the adoption of a single underlying principle for creation of both the elementary categories and the upper level aggregates of ISIC. The Group considered the production process principle as used in NAICS and noted that for NAICS it makes theoretical economic sense, made the whole system more coherent, made it much easier to do the work and put a stop to long drawn-out discussions.

The Group agreed that in reality there is a link between activity and product classifications, since products were the output of industries, and the most products were the outcome of a single industry. Both activity and industry classification systems always contain lists of products that are the outputs of the production processes used in the industry. Lists of products are important, both for their own purposes (much data is collected on products, price indexes for example) and for classification work itself. The TSG recommended that in view of the fact that there is a demand for such a link which facilitates the statistical processing of data from the surveys for the National Accounts it should be provided.

The question of an appropriate definition of the scope of the CPC has a strong impact on any subsequent decisions, such as structure and building blocks. Though some changes have been made in CPC Ver. 1.1 there are still some questions to be resolved with respect to the scope of the CPC. To reach a conclusion, further discussion is necessary to decide whether the CPC should primarily serve (a) particular statistical programmers or (b) as a central link to other existing product classifications, while also filling gaps in areas not covered by other product classifications.

The Group for discussion by the statisticians has prepared the preceding solutions of conceptual issues of ISIC and CPC reconsideration. The following structure of ISIC on the highest level of groups classifying are proposed for discussion:

1. Agriculture, forestry, fishing hunting.
2. Mining, quarrying.

3. Manufacturing.
4. Repair and maintenance.
5. Electricity and gas.
6. Construction.
7. Trade.
8. Accommodation and food services.
9. Transport and storage.
10. Information.
11. Finance and insurance.
12. Real estate, rental and leasing.
13. Professional, scientific and technical services.
14. Administration and support services.
15. Public administration.
16. Sanitation.
17. Education.
18. Healthcare and social assistance.
19. Arts, entertainment and recreation.
20. Other services.
21. Private households.
22. Extraterritorial organizations.

Given set of possible classificatory groups doesn't involve operations directed towards the formation of the new section. The Group follows an idea of identification on the high technologies sections level to achieve comparability and relativity regardless of whether it unites with the other branches of industry or with telecommunication facilities.

Methodological principles of creating ISIC 2007 classificatory groups presented in the article aren't eventual but they are only proposed and submitted for discussion by the International Working Group.

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Central statistical classifications of UN						
ISIC		ISIC (Rev. 1)	ISIC (Rev. 2)	ISIC (Rev. 3)	ISIC (Rev. 3.1)	
				CPC Ver. 0.1	CPC Ver. 1.1	
				HS		
List 1938	SITC	SITC (Rev. 1)	SITC (Rev. 2)	SITC (Rev. 3)		
Central statistical classifications of EU						
		N.I.C.E.	N.E.C.	NACE	NACE (Rev. 1)	NACE (Rev. 1.1)
				CPA		CPA Rev. 1
				PRODCOM		
				CN		
Central statistical classifications of Ukrainian						
					KVED	KVED-1
					DKPP	TSKP
					UKTZED	
1940	1950	1960	1970	1980	1990	2000

Case history of the worldwide, European and national central statistical classifications