

Regional Workshop on Statistical Business Registers and Industrial Classifications

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Session 8: Industrial classification systems - ISIC, Rev. 5

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Outline of presentation

- What is ISIC
- Main concepts and application rules
- Latest Development – ISIC, Rev. 5
- Implementation of ISIC in the SBR

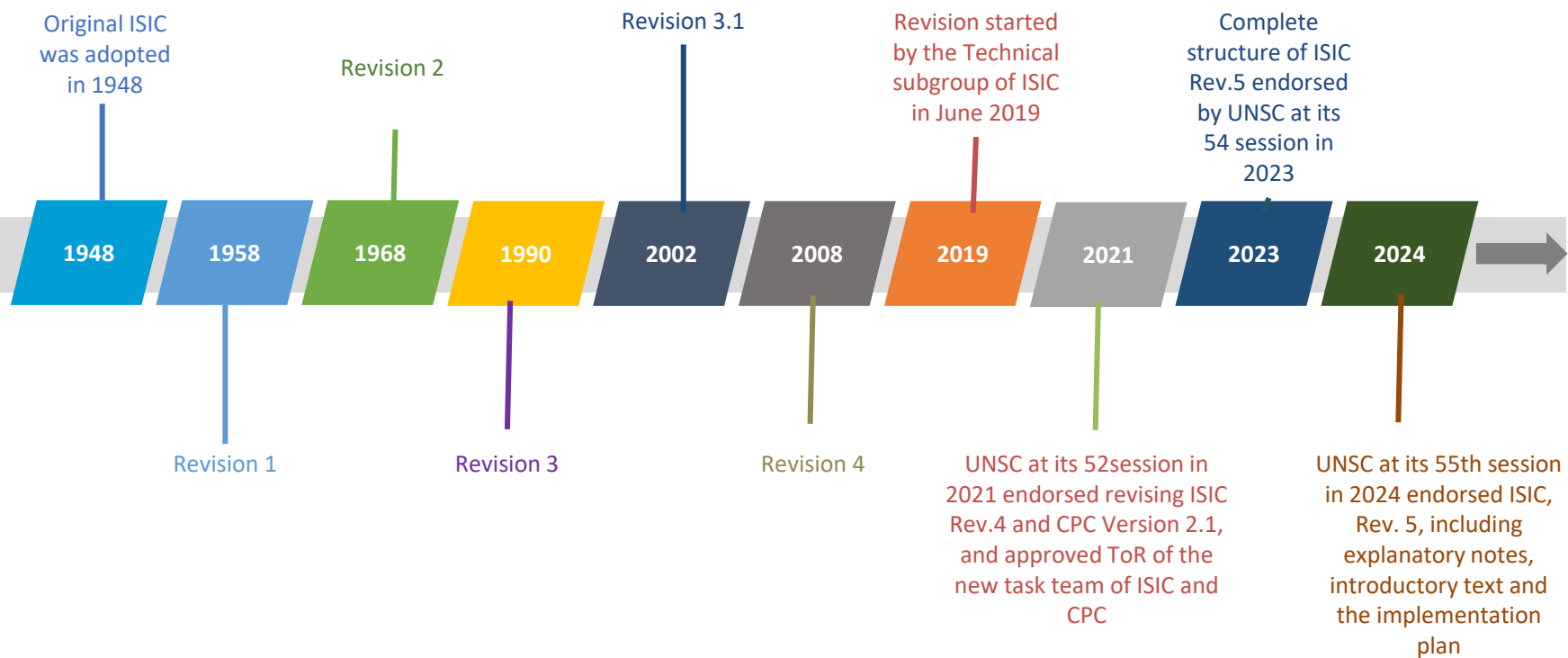


What is ISIC

- ISIC stands for International Standard Industrial Classification of All Economic Activities
- It is the international standard classification of economic activities
- It is used to group statistical units into industries, e.g. the industry of “raising camels and camelids” as defined in ISIC, Rev. 5 class 0143
- It is increasingly used for administrative purposes, such as in tax collection, issuing of business licenses, etc.



History of ISIC



Main Features of ISIC

- Hierarchical structure with four levels
- Categories are mutually exclusive and collectively exhaustive

Example on the wholesale trade industry:

Level of ISIC, Rev. 5	Code	Title
Section	G	Wholesale and retail trade
Division	46	Wholesale trade
Group	464	Wholesale of household goods
Class	4641	Wholesale of textiles, clothing and footwear

Main concepts and application rules of ISIC



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Economic stratification characteristics

Principal economic activity

- *Purpose:* The principal economic activity code of a unit is a key stratification characteristic.
- The activity code is based on a classification of economic activities. The recommended international classification for economic activities is ISIC

Secondary economic activity (activities)

1. Practical guidance in assigning and maintaining principal and secondary economic activity codes is provided in chapter 7 of the SBR guidelines.



Main principles

- In ISIC, economic activities are subdivided in a hierarchical, four-level structure of mutually exclusive categories.
 - **Sections:** The sections are the highest level of aggregation. The sections are labelled alphabetically and listed in figure B1.
 - **Divisions:** The next level contains two-digit divisions. Examples are Division 03; Fishing and aquaculture; Division 13: Manufacture of textiles.
 - **Groups:** The third level contains three-digit groups. Examples are Group 031 Fishing; Group 131: Spinning, weaving and finishing of textiles.
 - **Classes:** The most detailed level contains four-digit classes. Examples are Class 0312: Freshwater fishing; Class 1312: Weaving of textiles.



Main principles

- ISIC classifies statistical units according to their principal activity
- At each level of ISIC, a statistical unit is assigned to one and only one ISIC code. The set of statistical units that are classified into the same ISIC category is often referred to as an “industry”. Examples are:
 - The furniture industry – all units classified in ISIC division 31 (Manufacture of furniture).
 - The construction industry – all units classified in ISIC section F (Construction).



Main principles

■ Units

- Theoretically, all types of units can be classified
- However, structure and detail of ISIC is geared toward measuring production and establishment and kind-of-activity unit are the most suitable units
- Ideally, units should be homogeneous with respect to activities and location
 - However, the choice of unit is not really an ISIC issue
 - Limitations are often set by data availability



Main principles

- “Activity”
 - Classification of units is based on their actual activity, not their appearance or setup
 - E.g. a shipyard that only dismantles ships is classified in 3830 (Materials and other waste recovery) according to its activity (ship-breaking), although similar-looking units are in 3011 (Building of ships and floating structure).



Main principles

- All ISIC categories at each level of the classification are mutually exclusive.
- The principles and criteria for delineation are based on
 - the inputs of goods, services and factors of production;
 - the process and technology of production; the characteristics of outputs;
 - and the use to which the outputs are put.
- Economic activities that are similar in respect of these criteria have been grouped together in the categories of ISIC.



Main principles

- “Similar” activities are grouped together
 - Similarity is based on the three defining components for activities
 - However, at lowest level, emphasis is given to similarities in the process
 - At higher levels, the analytical use of the categories becomes more important
- A strict application of a ranking of the three defining components would often lead to categories that are not useful (e.g. by process in manufacturing)
 - A pragmatic approach of applying the criteria for grouping has been maintained, as in previous versions of ISIC



Main principles

- Although output (products) is related to the activity, it cannot always be used to determine the activity of a unit
- However, with some caveats, it provides a good tool
 - Classes of ISIC are defined so that as far as possible the following two conditions are fulfilled:
 - (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 to that class;
 - (b) The class contains the units that produce most of the category of goods and services that characterize it.



Main principles

- Since a unit can carry out several activities, rules are necessary to identify the primary activity of a given unit
 - This still requires knowledge about the individual activities (elementary activities) of a unit



ISIC – application rules

- Concepts
 - Top-down method
 - Vertical integration
 - Outsourcing
- Application and impact depends strongly on the selection of units
 - ISIC does not define units, but provides information and definitions
 - Int. Recommendations for Industrial Statistics (IRIS 2008) gives guidance
 - Choice of unit depends on statistics collected and on organizational settings
 - ISIC can theoretically be applied to all units



Top-down method



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Top-down method

- Method has not changed from previous versions of ISIC
 - Applies to units carrying out multiple activities
- > selection of unit is important ! (but this is not an ISIC issue)



Top-down method

- 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:



Top-down method

- Step 1. Identify the section that has the highest share of the value added.
- Step 2. Within this section, identify the division that has the highest share of the value added.
- Step 3. Within this division, identify the group that has the highest share of the value added (see below for exception in the case of wholesale and retail trade activities).
- Step 4. Within this group, identify the class that has the highest share of value added.



Example of an enterprise engaging in multiple activities

Section	Division	Group	Class	Description of the class	Share of value added (percentage)
C	25	251	2512	Manufacture of tanks, reservoirs and containers of metal	7
		281	2816	Manufacture of lifting and handling equipment	8
	28	2821		Manufacture of agricultural and forestry machinery	3
		2822		Manufacture of metal-forming machinery and machine tools	21
		2824		Manufacture of machinery for mining, quarrying and construction	8
G	29	293	2930	Manufacture of parts and accessories for motor vehicles	5
		461	4610	Wholesale on a fee or contract basis	7
	46	465	4659	Wholesale of other machinery and equipment	28
N	71	711	7110	Architectural and engineering, and related technical consultancy activities	13

Top-down method

Section	Division	Group	Class	Description of the class	Share of value added (percentage)
D ✓	28	281	2812	Manufacture of tanks, reservoirs and containers of metal	7
		291	2915	Manufacture of lifting and handling equipment	8
	29 ✓	292	2921	Manufacture of agricultural and forestry machinery	3
		292	2922	Manufacture of machine-tools	21
		292	2924	Manufacture of machinery for mining, quarrying and construction	8
	34	343	3430	Manufacture of parts and accessories for motor vehicles and their engines	5
G	51	511	5110	Wholesale on a fee or contract basis	7
		515	5159	Wholesale of other machinery, equipment and supplies	28
K	74	742	7421	Architectural and engineering activities and related technical consultancy	13

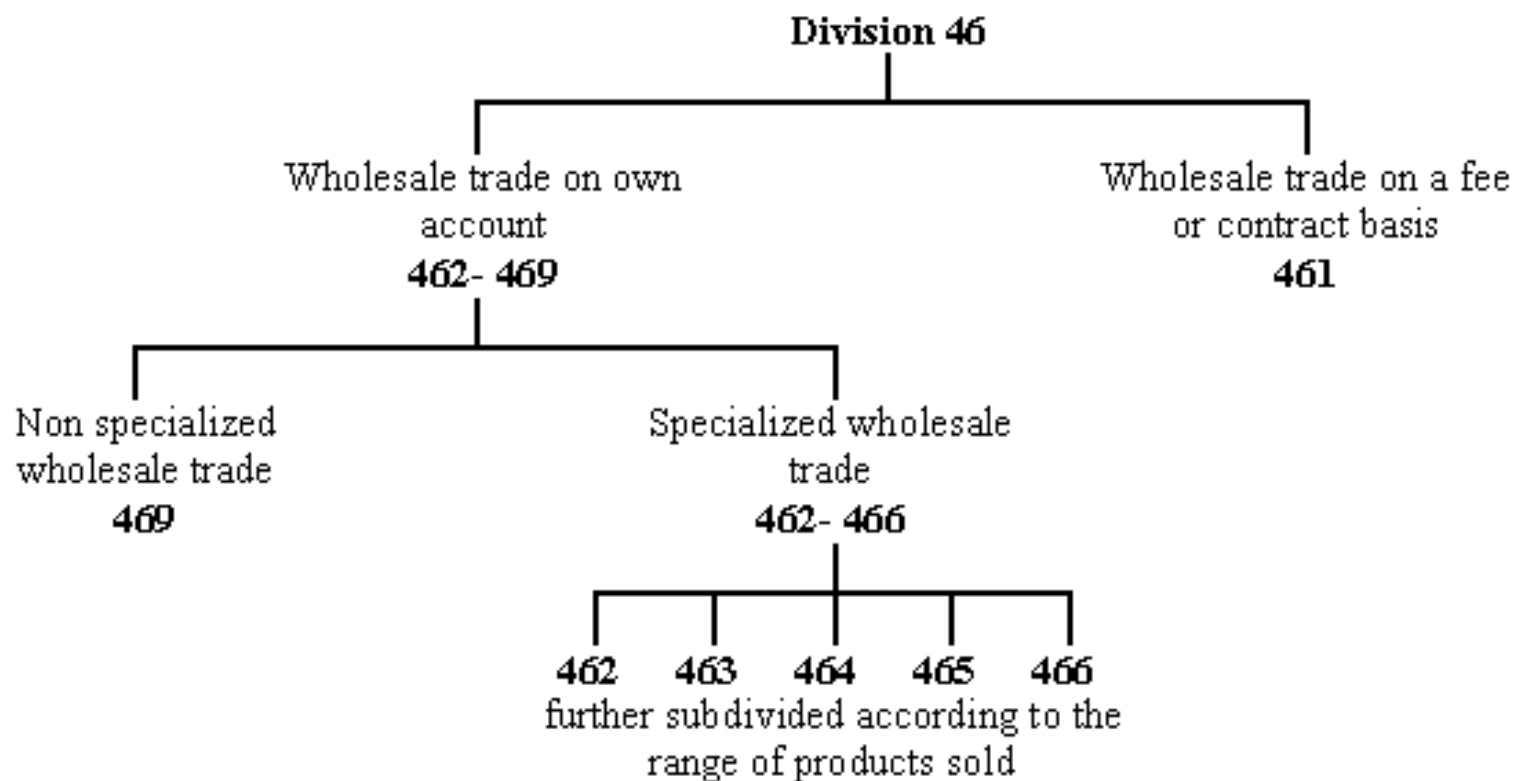
Top-down method

- For wholesale and retail trade, step 3 has to be refined
- Why?
 - Additional levels exist that are not part of the ISIC structure itself, e.g.
 - Own-account vs. fee-based
 - Specialized vs. non-specialized
 - Similar distinctions do not exist for other activities, such as manufacturing.
- The principal activity is then determined as follows
 - Step 1: Identify the section
 - Step 2: Identify the division
 - Step 3a: Identify specialized or non-specialized trade
 - Step 3b: Identify the group
 - Step 4: Identify the class



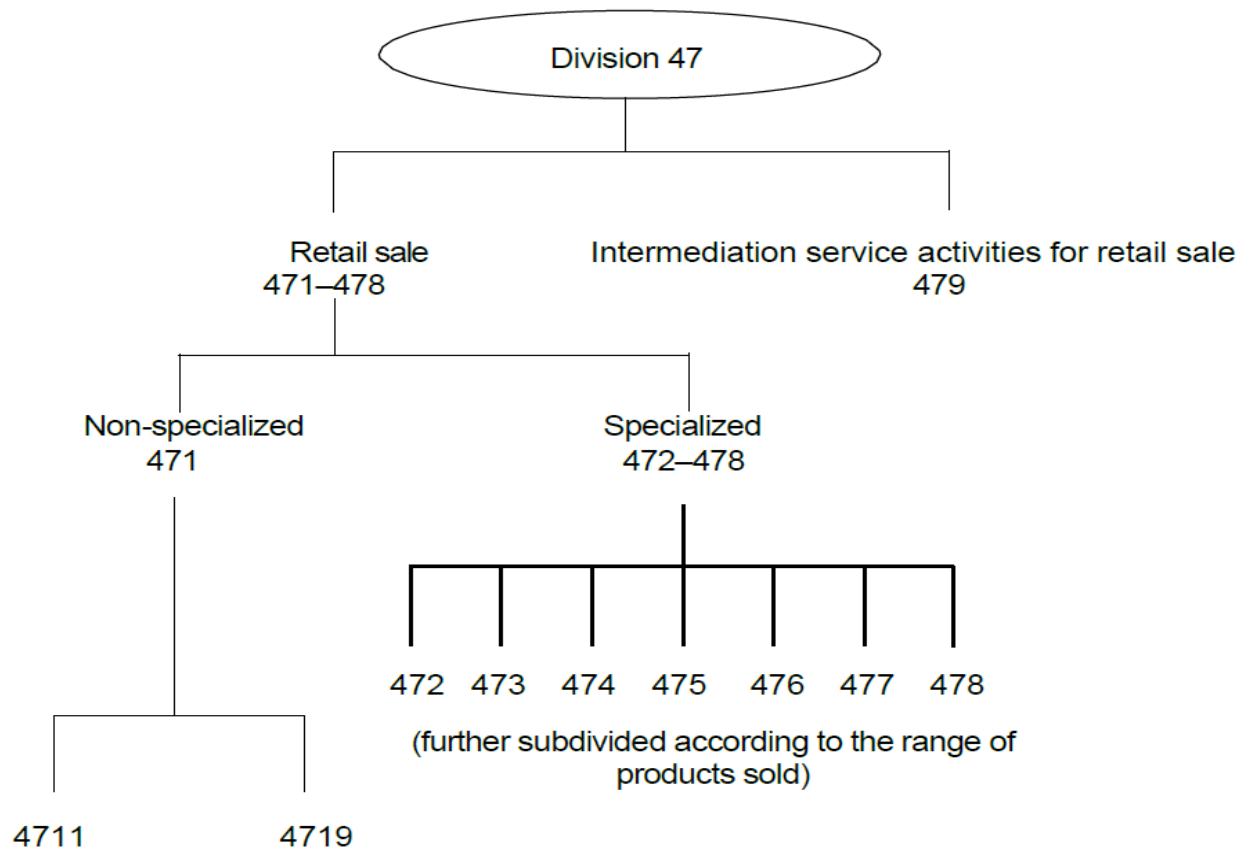
Top-down method

Wholesale



Top-down method

Retail sale



Top-down method

The rules may sound complicated, but:

- Reflect more complex composition of trade activities in ISIC
 - Driven by the desire for more detail in this area
- Provide necessary definitions for specialized vs. non-specialized trade activities



Top-down method

- Criteria for specialized vs. non-specialized trade
- Idea:
 1. “Non-specialized” should involve a significant number of different product lines
 2. “Noise items” should be ignored
- Implementation:
 - It is considered to be “non-specialized” trade if products from five or more classes from ISIC groups 472-478 are involved (excluding those who make up less than 5% of value added), and if none of them make up more than 50% of value added.
 - Only trade activities are taken into account when computing percentages.



Vertical integration



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Treatment of vertically integrated activities

- 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 serves as input to the next.
- Examples of common vertical integration:
 - tree felling and subsequent sawmilling
 - production of wearing apparel in a textile mill



Treatment of vertically integrated activities

- 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 by the top-down method.
- 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 vertically integrated activities

- Impact of the changed rule should be minimal, since in many cases units will be broken up statistically if portions are substantial



Outsourcing



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Outsourcing

Can take many forms:

- Outsourcing of labour
- Outsourcing of support functions
- Outsourcing of parts of a production process
- Outsourcing of the complete production process



Outsourcing - Terminology

- 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.
- Contractor = unit that carries out a specific production process based on a contractual relationship with a Principal. The term "subcontractor" had been used too. The activities performed by the contractor are denominated "on a fee or contract basis".
- 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.



Outsourcing - Terminology

- Other terminology is sometimes used (e.g. in recent OECD documents), where in this context:
 - “insourcing” and “outsourcing” refers to relationship between units involved
 - “offshoring” refers to transactions between economic territories
- This terminology is not used here.



Outsourcing

- 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.



Outsourcing

- 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



Outsourcing - manufacturing

- 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.



Outsourcing - manufacturing

- A principal who outsources only part of the transformation process is to be classified into manufacturing.
- The activity of a principal who completely outsources the transformation process should be classified into manufacturing **only if** he owns the raw material used as input to the production process (and therefore owns the final output).



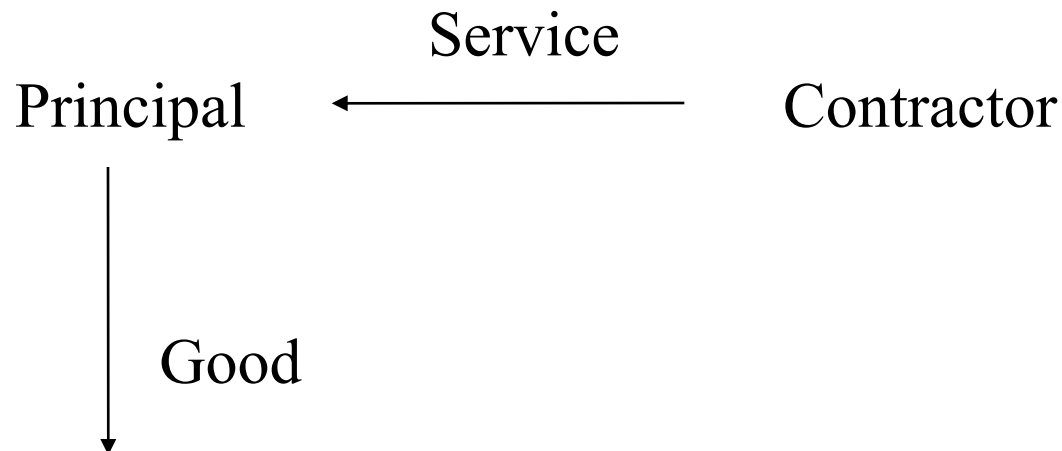
Outsourcing - manufacturing

- In all other cases, the activity of the principal should be classified in Section G "Wholesale and retail trade" (according to the type of operation and the specific good sold).
 - In this case the principal buys the good from the contractor and re-sells it without transformation



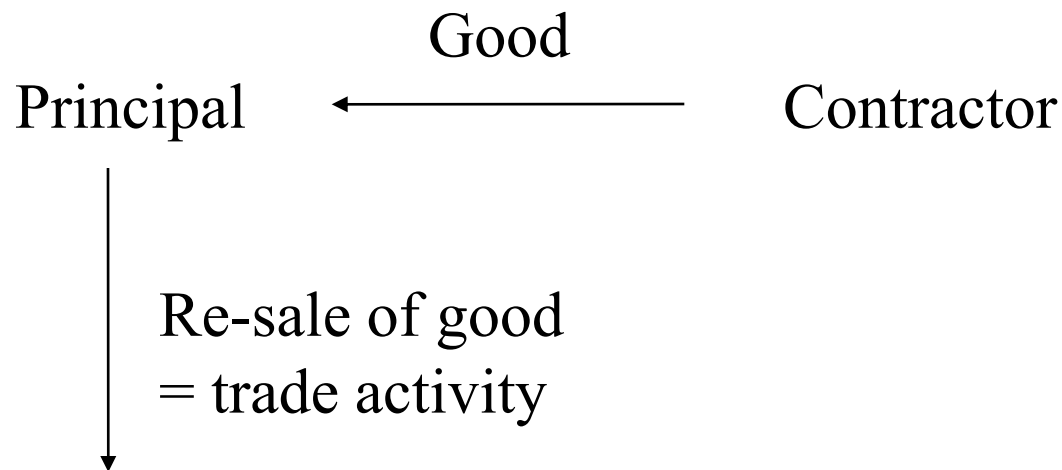
Outsourcing - manufacturing

- Output of outsourced activities:
 - If principal owns the input materials:



Outsourcing - manufacturing

- Output of outsourced activities:
 - If principal does not own the input materials:



Outsourcing – manufacturing

- Some remarks:
 - A unit classified in Manufacturing can have two types of outputs:
 - a manufactured good
 - a manufacturing service
 - Both are identified in the product classification
 - Manufacturing is defined as a (mechanical or chemical) transformation process
 - This implies that the “manufacturer” has to have ownership of the good before and after the transformation process



Outsourcing – manufacturing

- Some remarks:
 - Proposals for classification (in this case) are often driven by a reference to “risk”
 - To take the risk of manufacturing, you need to have a liability in this process
 - Owning the concept is not sufficient
 - Owning the concept does not imply ownership of the produced good
 - Sale of goods
 - Wholesale/retail sale is defined as “buying and reselling without transformation”
 - Simply selling the goods that you produce does not make you a wholesaler/retailer



Outsourcing – services

- For services, the concept of a “service retailer” does not exist
- If the whole process (service provision) is outsourced, both the principal and the contractor are classified to the same ISIC class
- If only a portion of the process is outsourced, the principal remains classified as if it were carrying out the complete process
- If a separate class exists for the outsourced portion, the contractor is classified to that portion, otherwise to the same class as the principal



Outsourcing – support functions

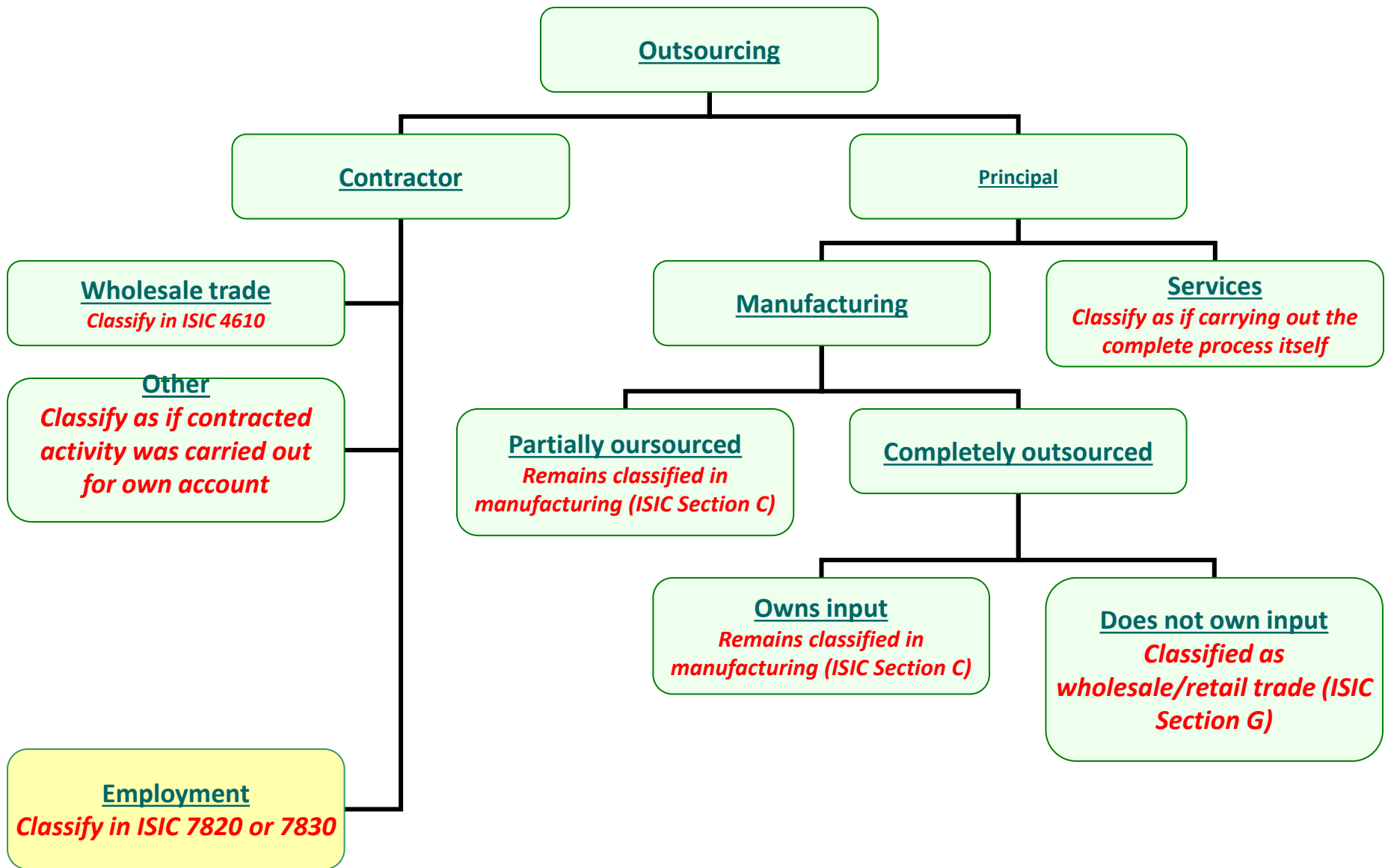
- This applies to the outsourcing of functions like accounting, computer services etc.
- In this case, the principal is classified as if it were carrying out the complete core process. (In other words, support functions do not influence the classification of a unit.)
- The contractor is classified to the specific support function it is carrying out.



Outsourcing – employment

- Increasingly, companies emerge that provide only the labour force to their clients.
- In turn, producers (e.g. manufacturers) may have little or no employment
- In this case the principal is classified as if it were operating with own employees.
- The contractor is classified to ISIC 7820 or 7830, depending on the type of contract.
- Important: Define the line between off-site employees and independent providers





Also: outsourcing of labour or support functions does not influence the classification of the principal.

Change of principal economic activity

1. The principal activity may be assumed to be positively correlated with the continuity of the production factors. This criterion, however, is probably not relevant for multi-activity enterprise groups, where relatively small changes to one part of the group may cause a major change to the economic activity code of the group as a whole. In addition, a gradual shift in activities may (after respecting an appropriate stability rule) eventually cause a change in economic activity code, resulting in a reclassification of the enterprise group. In such cases, there is continuity and the change of activity may be disregarded.
2. To use the principal economic activity in determining continuity requires following the mix of economic activities of the group members in terms of value added, if available, or, if not, turnover. Employment may also be used, in particular in cases where no reliable turnover is available for each enterprise, only consolidated turnover for a VAT group. It has also been found that employment is also generally more stable over time than turnover.
3. For multi-activity groups, use of principal economic activity in determining continuity is very sensitive to the definition of the principal activity (especially at four-digit level) and also to whether some pre-defined threshold (such as 50 per cent) is used. Thus, principal activity as a single criterion is not a good approach. For all-resident groups in particular, however, a sudden change of principal economic activity when combined with some other changes, for example of group head or employment, is a strong indication of discontinuity. At global level, principal economic activity as a criterion is more difficult to apply.



Miscalculation of principal economic activity

- Misclassification of principal activity of units in a frozen frame leads to undercoverage or overcoverage in the subsets of the frame corresponding to specific industries. Special efforts should be made to correct for this kind of error as it leads to increase in variance (due to overcoverage) and bias (due to undercoverage) in the following way. After a frozen frame is produced, a survey frame derived, and a survey sample is drawn, the resulting observation units complete a questionnaire. This may have the following outcomes:
 - It may turn out that a respondent reports that the registered activity code of the observation unit is not correct. In this case this frame error should be corrected in the survey dataset, because otherwise the observation will be attributed to the wrong industry. This does not cause bias but increases the variance of estimates.
 - Alternatively, it may be that units were not included in the survey frame because of being misclassified to out-of-scope industries. This introduces negative bias in the estimates.

ISIC statistical unit model

		Partition by location	
		No	Yes
Partition by activity	No	Enterprise	Local unit
	Yes	Kind-of-activity unit	Establishment (local kind-of-activity unit)



Latest development - ISIC, Rev. 5



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Objectives of the ISIC revision

- Relevance
 - Reflect new industries, new production pattern, new needs for economic analysis
- Comparability
 - Improve linkages to major regional classifications
- Continuity
 - Maintain close links to the previous version of ISIC
- Main task: balancing these three objectives



Main changes in ISIC, Rev. 5 – intermediation services

- Identification of intermediation service activities
- Definition of non-financial intermediation service
- No distinction in the ISIC classification criteria between “digital” and other means (face-to-face, telephone, mail, email, etc.)
- A number of groups and classes were created exclusively for intermediation services
 - ✓ ...
 - ✓ 4790 Intermediation service activities for retail sale
 - ✓ ...
 - ✓ 5540 Intermediation service activities for accommodation
 - ✓ ...
 - ✓ 6120 Telecommunication reselling activities and intermediation service activities for telecommunication
 - ✓ ...



Main changes in ISIC, Rev. 5 – FGP

- Updated criteria for defining Factoryless Goods Producers (FGPs)
 - Ownership of input also includes intellectual property products (IPP)
 - FGPs should cover some aspects of the control of the transformation process, including quality control and oversight of the production process

- FGPs will continue to be classified in the same class where they would be classified if they carried out the manufacturing process themselves in Section C (Manufacturing).



Main changes in ISIC, Rev. 5 – section G (Wholesale and retail trade)

- Elimination of distinction between online and in-store sales channels in section G
- New treatment of wholesale and retail trade and repair of motor vehicles and motorcycles
 - ISIC, Rev. 4 division 45 (Wholesale and retail trade and repair of motor vehicles and motorcycles) was removed, and its activities were moved to other divisions.
 - The activities of maintenance and repair of motor vehicles and motorcycles
 - moved away from ISIC section G to section T (Other service activities)
 - placed in Division 95 (Repair and maintenance of computers, personal and household goods, and motor vehicles and motorcycles), together with the repair of computers and personal and household goods.
 - Activities on the wholesale and retail trade of motor vehicles and motorcycles were moved to the respective divisions on wholesale and retail trade.

Main changes in ISIC, Rev. 5 – new activities in ICT and finance

- A split of ISIC, Rev. 4 Section J (Information and communication) into two
 - ISIC Rev.5 Section J - Publishing, content production and distribution
 - ISIC Rev.5 Section K - Telecommunications, computer programming, consultancy, computing infrastructure, and other information service activities.
- The distinction at the group level between wired, wireless, and satellite telecommunications activities has been removed.
- A new group, ISIC Rev. 5 group 631 “Computing infrastructure, data processing, hosting and related activities” containing a single class “Computing infrastructure, data processing, hosting and related activities” has been created to include activities such as cloud infrastructure , platform provision and cloud computing
- A new group, ISIC Rev. 5 group 639, “Web search portal activities and other information service activities”.
- Cybersecurity activities will be integrated in activities of software development, programming, consultancy activities and incident/information management

Main changes in ISIC, Rev. 5 – new activities in finance

- More breakdowns for financial activities and updated explanatory notes to reflect new technology
- Compared to section K in ISIC, Rev. 4, the new section L (Financial and Insurance activities) includes some new classes for financial services
 - ...
 - 6422 Activities of financing conduits
 - 6431 Activities of money market funds
 - 6491 Financial leasing activities
 - ...



Main changes in ISIC, Rev. 5 – education, arts, culture

- Updated the structure of section P on education to better align with International Standard of Classification of Education (ISCED).
 - For example, ISIC Rev. 4 Group 851 - "Pre-primary and primary education" was split into two new groups: "Pre-primary education" and "Primary education".
- More breakdowns for activities related to Section S on arts and cultural activities.
 - The structure of ISIC Rev. 4 division 90 - "Creative, arts and entertainment activities" and division 91 - "Libraries, archives, museums, and other cultural activities" were reorganized to distinguish arts creation activities, performing arts, museums, collections, historical sites, and monuments activities, 913 - Conservation, restoration and other support activities for cultural heritage, etc.



Main changes in ISIC, Rev. 5 –environment, and others

- Environmental Issues
 - Division 39 (remediation and other waste management service activities): inclusion of carbon remediation, capture and storage activities
 - New classes 3511 and 3512 on electric power generation activities from non-renewable sources vs. renewable sources
 - New class 8413 - Regulation of the activities of providing environmental services
 - Class 8130 (Landscape service activities) - Improved explanatory notes to reflect selected activities on managing and conserving ecosystem and biodiversity
 - Separate Nature reserve activities (9412) from Botanical and zoological garden activities (9411)
- Other changes at the class level
 - Further breakdown of 2610: new class for the manufacture of solar cells and panels, and photovoltaic inverters vs. for other electronic components
 - Further breakdown of 3100: news class for the manufacture of wooden furniture vs. for other furniture

Changes in the ISIC, Rev. 5 explanatory notes

- Comprehensive review of specific activities. A few examples among the many changes are given below:
 - Quails are explicitly included in 0146 (Raising of poultry).
 - Manufacture of intercontinental ballistic missiles (ICBM) is removed from 3030 (Manufacture of air and spacecraft and related machinery) and implicitly included in 2520 (Manufacture of weapons and ammunition)
 - Distinction between 5510 (Hotels and similar accommodation activities) and 5520 (Other short term accommodation activities) in the relevant explanatory notes
- Alignment with SNA guidance notes
 - Treatment of crypto assets with and without liabilities in 6310, 6499, 6612, 6619 and 8299
 - No change in ISIC, Rev. 5 on Islamic finance



ISIC, Rev. 5 Introduction

- Drafted based on the ISIC Rev.4 introduction
- Increased alignment with 2008 SNA (e.g., para 39 on the characteristics of activities)
- Updated description on the treatment of repair and maintenance activities (pp. 138-139)
- Updated definition and treatment of FGPs, based on feedback from the ongoing SNA revision (pp. 140-150)
- New discussion on intermediation services (pp. 157-159)
- New discussion on financial activities (e.g. SPEs, in pp. 160-164)
- List of changes from ISIC, Rev. 4 to Rev. 5 (Part Four – Changes in ISIC, Rev. 5)



Changes in the ISIC, Rev. 5 introductory text

- Increased alignment with 2008 SNA (e.g., para 39 on the characteristics of activities)
- Updated description on the treatment of repair and maintenance activities (pp. 138-139)
- Updated criteria on FGPs (pp. 146-150)
- New discussion on intermediation services (pp. 157-159)
- New discussion on financial activities (e.g. SPEs, in pp. 160-164)
- List of changes from ISIC, Rev. 4 to Rev. 5



Decision items for the UNSC 55th session

ISIC, Rev. 5 introductory text, explanatory notes, and implementation plan are submitted as separate background documents for endorsement, and were subsequent endorsed.

- Introduction: https://unstats.un.org/UNSDWebsite/statcom/session_55/documents/BG-4e-ISIC5-Introuction-E.pdf
- Explanatory notes: https://unstats.un.org/UNSDWebsite/statcom/session_55/documents/BG-4e-ISIC5_Exp_Notes-E.pdf
- Implementation plan:
https://unstats.un.org/UNSDWebsite/statcom/session_55/documents/BG-4e-ISIC5_Implementation_plan-E.pdf



Increased detail of ISIC during each revision process

	ISIC Rev.3	ISIC Rev.4	ISIC Rev.5
Sections	17	21	22
Divisions	60	88	87
Groups	159	238	258
Classes	292	419	463



The way forward with ISIC, Rev. 5

- Planned work on correspondences:
 - ISIC, Rev. 4 – ISIC, Rev. 5
 - ISIC, Rev. 5 – NACE, Rev. 2.1
 - ISIC, Rev. 5 – CPC Ver. 3.0
- More planned work on ISIC
 - Develop other supplementary materials, such as alphabetical index, a case law center, alternative structure, implementation guidelines, etc.
 - Establish a Standing Task Team on ISIC and CPC, make ISIC revision process more predictable and transparent in the future, and keep ISIC responsive to new user needs and emerging issues.



ISIC, Rev. 5 Implementation Plan

- Targets for implementation to support wider high-level engagement and identify actions at the global level to support implementation in countries
- Provides a general direction for the steps to be taken in setting up an implementation programme at the national and regional level
- The components of the work for the implementation plan include the development of national industry classifications adapted from ISIC revision 5 and the application of those national adapted classifications in statistical programmes.



Draft ISIC Rev.5 Implementation Plan

Proposed Outline

- Overall objectives of the implementation
- Approach/main elements for providing assistance to countries
 - Capacity building
 - Development of guidelines, materials and tools to support compilation
 - Strengthening collaboration
- Components of work
 - Development of national classifications
 - Application of the ISIC Rev.5 in the national context
 - Recommended timetable
- Implementation plan and revision cycle (to be developed)
- Update of revised ISIC in other international statistical framework and classification
- Institution arrangements
- Monitoring implementation
- Resourcing the implementation plan
- Communication and advocacy



Draft ISIC Rev.5 Implementation Plan

Component of works

1. Development of national classifications
2. Application of the ISIC Rev.5 in the national context
 - a) Updating of business registers
 - b) Use of the ISIC Rev.5 in economic census and economic surveys
 - c) Use of ISIC Rev.5 in national accounts
 - d) Use of ISIC Rev.5 in population census and household surveys
 - e) Use of ISIC Rev.5 in other area of official statistics, such as environmental-economic accounts, energy statistics, etc.
 - f) Use of ISIC Rev.5 in administrative and legal process



Draft ISIC Rev.5 Implementation Plan

Proposed timetable

Implementation plan	Statistical Domain	ISIC Rev.5
Adaption of national classification		By 2025
Adaption of Business register		By 2026
Use of ISIC Rev.5 in statistical programme		Starting in 2027
	Economic Census, business survey	2027
	National accounts	2027
	Environmental-Economic Accounts	2027
	Environment, waste and energy statistics	2027
	Population census and household surveys	2027



Implementation of ISIC in the SBR



A Statistical Business Registry is a structured database of economic units and their **characteristics or attributes** integrated from various sources. It is built, maintained, improved by national statistics agencies through a cyclical process and used for statistical purposes.


Characteristics and Attributes



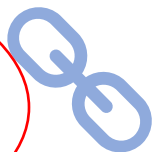
Identification and contact



Demographic



Economic/stratification



Links and external references

Classification or stratification

Purpose	Characteristics
<ul style="list-style-type: none">• Classification for compiling data and producing statistics• Stratification for surveys	<ul style="list-style-type: none">• Legal form• Legal activity status• Institutional sector and sub-sector• Principal and secondary economic activity• Market orientation• Consolidated turnover• Number of employees or persons employed



Identification and contact

Purpose	Characteristics
<ul style="list-style-type: none">• Uniquely identify statistical units• Link them to related legal, administrative or other statistical units• Provide contact information for surveys or SBR maintenance	<ul style="list-style-type: none">• Type of unit• Type of and role within enterprise group (if applicable)• Identification number(s)• Value added tax (VAT) registration number• Name(s)• Address• Communication – phone number, email address, website, mailing address, etc.



Demographic

Purpose	Characteristics
<ul style="list-style-type: none">• Document the 'enterprise life cycle' – birth, structural changes, death• Signify the creation of new or updating of existing enterprises• Determine the status of enterprises	<ul style="list-style-type: none">• Date of incorporation, official recognition• Date of commencement, final cessation of economic activity• Date of merger, takeover, split or break



Planning of the recoding process

- Estimation of work oad
 - Number of units to be recoded
- System setup
 - Preparing of environment separate from production environment;
dual coding options
- Identification of possible sources
- Setting of timeline



Planning of recoding process

- Communication of changes
 - To internal users
 - To external users



Requirements

- For the recoding exercise it is assumed that:
 - A business register exists, coded to the previous classification
 - A detailed correspondence table exists between the old and the new classification



Goal

- The primary goal of recoding the business register is to update the codes of the units in the register to the new classification
- Verifying the current coding of the units is not a primary objective, although wrong codes may be detected (and corrected along the way)



General approach

- The “recoding” suggests that existing information will be used to arrive at the new classification code, rather than a straight “coding” of each unit in the register
- Since the old code is known, the existing correspondence table should be used to find out where this unit is coded in the new classification



General approach

- Applying the correspondence table to the code of a given unit results in a list of possible codes for that unit in the new classification
- If only one code appears as an option (the 1-1 or m-1 cases), the unit is simply recoded to this new code
- The real work starts if more than one code is possible (the 1-n or m-n cases)



Recoding units in m-n cases

- All units in the business register need to be recoded
- Due to resource constraints, one will often limit the amount of m-n cases
- As not all units are statistically significant, a determination of which units should be recoded and which units should be “approximated” can be made



Internal sources

- Existing business activity descriptions
 - Incl. existing information from past profiling activities
- Product data
- “in-house” sources
 - E.g specialists for industry branches

External sources

- Administrative sources
 - Tax authorities (wages, VAT, etc.)
 - Social security (activity and existence)
- Commercial sources
 - Trade associations
 - Chambers of commerce
- Others
 - Telephone directories, 'Yellow Pages'
- Early inclusion of external sources in the revision process improves usefulness of information

Profiling

- Profiling is used for large and complex enterprises
 - Too important to rely on estimates or possibly incorrect information
 - Complex structure needs to be explored to correctly assign statistical units
- Can be done by personal visit, telephone etc.
 - Existing administrative sources might work for simple structures
- Example: In Canada for manufacturing less than 500 units are profiled, accounting for over 80 per cent of value added

Surveys

- If internal and external sources or profiling do not provide enough information, surveys can be carried out
- Options:
 - Special surveys just to determine the new code
 - Register surveys (regular or special)
 - Product surveys
 - Add-ons to existing surveys to allow a decision on the new classification code



Probabilistic methods

- Useful only if a large number of not statistically insignificant units has to be recoded
- Methods will assign a code on a probability basis
 - Individual units may be coded incorrectly
 - Aggregated information is correct
 - In later regular surveys, coding of these small units will be corrected



Probabilistic methods

- General approach:
 - A sample of the population to be recoded is surveyed to establish the new classifications code
 - A conversion matrix is developed based on the result, showing probabilities of the units in old code A to be coded to new codes B1, B2 etc.
 - Invalid links are removed (e.g. due to change in activity)
 - Verification of matrix is necessary
 - The matrix is applied to the full population



Priority rules

- If information is available from different sources for a given unit, priority rules should be established to deal with potential discrepancies



Recoding process

- Setting timetables
- Keeping supporting information in the register
- Use of indexes
- Use of computer-aided coding systems
- Treatment of corrections



Relevant website

- ISIC, Rev. 5 and other UNSD classifications on economic statistics
 - <https://unstats.un.org/unsd/classifications/Econ>
- International Family of Classifications
 - <https://unstats.un.org/unsd/classifications/Family>



Thank you!



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