1 Introduction

The EuroGroups Register (EGR) is the statistical business register of multinational enterprise groups in Europe and contains structural economic information on multinational enterprise groups, their constituent legal units and corresponding enterprises, having at least one legal unit located in the European Union or in a country of the European Free Trade Association (EFTA).

The purpose of the EGR is to offer users a tool for coordinating population frames across different countries.

This purpose is achieved through the European Statistical System (ESS) cooperation: Eurostat and the national statistical institutes (NSI) of European Member States (MS) and EFTA countries are pooling together their micro data to realize a complete, accurate, consistent and up-to-date picture of multinational enterprise group information.

The EGR is one component of a broader system called the European System of Business Registers (ESBRs) which is established as a complete and consistent European system of interoperable business registers comprising of National Business Registers (NBRs) and the EGR. The ultimate goal of the system is to provide a coherent set of frames to a variety of stakeholders to support the production of statistics based on directly collected data (surveys) as well as on administrative registers and other secondary sources on the national as well as the European level contributing and thereby providing high quality information on the European economy and society in a globalized context.

This paper deals with quality aspects of the EGR. As it will clearly appear in the following sections, the quality of EGR cannot be tackled in an isolated context. EGR quality depends closely on the process and data quality of the NBRs and is supported by key business function like profiling. Therefore it is important to analyze the EGR quality in this global context and to identify the capabilities in the system that are required for enabling the implementation of the EGR data quality program (DQP).

After having illustrated the current situation of the EGR quality by presenting a selection of key indicators reflecting the quality of the EGR production process, we present a general approach for improving the EGR quality. The approach is specified in the data quality program (DQP), which builds on the traditional ESS standard quality pillars: Quality reporting, quality standards, quality assessment and quality improvement.

2 Current state of the EGR

The European Statistical Law[1] specifies 7 quality criteria for the European statistical output: relevance, accuracy, timeliness, punctuality, accessibility and clarity, comparability and coherence.

The monitoring and assessment of the EGR quality are currently reflecting an initial stage of quality management by focussing mainly on relevance and accuracy. In the context of SBR "*Relevant means that the data meet current and potential needs of the users in terms of units and characteristics to support the production of statistics. Accurate means that the information recorded corresponds to reality*"[2].

As the national statistical business registers (NSBR) are the main sources for compiling the EGR, the quality management of the EGR is highly depending on the quality of the NSBR.

As the EU legislation on statistical business registers[3] in force can be seen as the expression of user needs, a first indication on EGR relevance can be derived from the completeness of the information recorded in the NSBR measured against the number of mandatory and optional characteristics described in the Regulation.

The relevant characteristics of NSBR are the identification characteristics, the demographic characteristics, the economic/stratification characteristics, information on control and ownership, links with groups, etc.[4]

According to Regulation (EC) No 177/2008, 35 characteristics are considered to be mandatory and shall be transmitted from the NSBR to the EGR. Information on those 35 characteristics is considered to be relevant for meeting the most important user needs.

The legislation supports in addition the provision on voluntary basis of 20 supplementary characteristics, which are relevant to fully meet the users' requirements.

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[1] Regulation (EC) No 223/2009, Article 12(1)

[2] United Nations Economic Commission for Europe, "*Guidelines on Statistical Business Registers*", New York and Geneva, 2015

[3] Regulation (EC) No 177/2008 in combination with implementing Regulation (EC) No 192/2009.

[4] The EGR reports 116 characteristics in total.

Table 1 provides the key figures regarding the EGR relevance on the basis of NBRs input.

Table 1: Key figures with regards to relevance

	Required according to Regulation 177/2008 [number]	Provided by NSBR to EGR [number]	Provided by NSBR to EGR [%]
Mandatory characteristics	35	29,1	83%
Additional characteristics	20	9,4	47%

Furthermore, 75% of all ESS countries provide 80% of all mandatory characteristics or more and 50% of all those countries cover at least half of the optional characteristics.

A reasonable proxy of EGR accuracy is provided by the number of errors detected throughout the EGR process. This indicator cannot be calculated in the current state of EGR process. It will be calculated in a standardized manner and used as a benchmark for quality improvements from 2017 onwards.

Several indicator sets will be calculated at different stages of the production process: input, throughput (transformation and consolidation of the input data into intermediate data) and output.

1. Input - All incoming data will pass through a validation phase. Missing mandatory information, invalid coding or invalid format of characters will generate error reports that will be analysed to evaluate the input phase.
2. Throughput – The error rates during transformation of the information in the throughput phase will also be analysed as an indication of accuracy.
3. Output – The quality of the output will be measured by comparing the population available in the EGR and the population in the national Foreign Affiliates Statistics (FATS), taking into account the conceptual differences. Separate indicators will be calculated for inward and outward FATS.

3 EGR Quality improvement

The quality of the EGR is highly depending on the quality of the national statistical business registers. Thus, to fulfil the EGR mission in the ESS, quality management and quality improvement should be considered as an integral part of the European System of Statistical Business Registers (ESBRs) ensuring high quality of the data in NSBR and in the EGR.

ESBRs quality management will be organized through the annual data quality program (DQP) that will set quality standards (targets) for input, throughput and output of SBRs processes based on the ESS quality assurance framework.

The DQP will target improving consistency, accuracy and comparability of national and international processes and outputs in the European network of SBR by:

- recommending good practices in the short run;
- harmonizing methodology and processes in the production and dissemination of NSBR and EGR as far as necessary and possible ;
- identifying best practices and promoting the use of common tools (in the longer run);
- continuously monitoring and assessing the quality of NBRs against targets.

The envisaged DQP will cover four areas: Q-reporting, Q-standards, Q-assessment, Q-improvement. The DQP will also specify the communication aspects related to quality.

The measures taken for improving the quality of SBR in Europe – by providing a better survey frames – all promote the overall goal to improve European Business Statistics in particular for statistics related to globalization.

3.1 Quality reporting

A first part of the quality framework aims to settle a standardized quality and metadata reporting for NSBRs and EGR.

The information and indicators provided with annual quality reports will be used to monitor and asses the quality of the SBR frames and their compliance towards the Regulation. The quality reports are for SBR-internal purposes only.

To better inform users on the background of SBRs, metadata report on NSBRs in general and on the EGR will be published annually. These metadata reports will follow the standardized ESS structure for metadata, the Euro SDMX Metadata Structure (ESMS).

3.2. Quality standards

The second part of the quality framework sets the quality standards to enable assessment of NSBR and EGR frames throughout the entire production processes, related exchange processes and resulting outcomes included, and measured by adequate – input, throughput and output – quality indicators. The quality standards are retrieved from legal requirements and user needs.

To help MS to achieve the quality standards, a catalogue of good practices will be set up. MS being recognized for their expertise and experience in specific domains will be asked to provide descriptions of

their good practices.

3.3 Quality assessment

The third part of the quality framework is addressing the assessment of input, throughput and output quality of NSBRs and EGR. Standardized templates for benchmarking against the target quality standards will be used to assess the SBR quality annually.

The assessment is done for each quality standard separately to identify weaknesses and lead to concrete improvement actions. These indicators and the planned actions will be in assessment reports for NSBR and the EGR. The assessment reports will be for SBR-internal purpose only.

The classification of the specific standards into quality categories shall be discussed and regularly reviewed with MS.

3.4. Quality improvement

A fourth part of the quality framework concerns the agreement and the coordination annual improvement actions aiming at:

- gradually increasing the compliance with respect to the Regulation standards
- improving the accuracy and comparability dimensions of quality.

An annual compliance round will address all MS that provide insufficient information in their NSBR according to the Regulation. MS categorized to be non-compliant have to explain the means and the envisaged timeline for solving the non-compliant issues.

To meet the quality standards in addition to compliance issues the MS annually define/revise and prioritize a list of specific SBR quality related actions aiming at better harmonizing processes and aligning methodology. This may also include the use of profiling and its integration with the EGR. A task force will be set up to develop proposals on how to deal in the best way with identified aspects in annual improvement rounds.

3.5. Communication and diffusion of aggregated information

A good and efficient communication has to be installed both inside and outside the SBR network. Several initiatives are planned, including:

- establishment of SBR contacts' and SBR roles' lists;
- promoting the use of the collaborative (Wiki) platform;

Moreover some reflections and pilot tests are going on concerning the possibility of using EGR not only to produce frames for statistical users but also to produce directly some aggregated information. Users'

feedback on such information is expected to help better identifying gaps in the EGR quality.