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Quality Report on PRODCOM*

– 2011 annual data –

Status - draft

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1. Introduction to the PRODCOM statistics and its outputs

The present report is the Quality Report on the PRODCOM statistics for the reference year 2011. This document is written in line with the recommendations in Eurostat's Standard Quality Report. Each topic starts with the relevant text from this document and is followed by the quality information on the 2011 annual PRODCOM data.

Delegates are invited to take note of the report and comment if need be.

PRODCOM statistics is a system for the collection and dissemination of statistics on production of manufactured goods. Therefore, the purpose of the PRODCOM system is to report, for each product in the PRODCOM List, how much has been produced on the EU territory during the reference period. The title comes from the French "PRODUCTION COMMUNAUTAIRE" (Community Production).

1.1. Legal basis

The basis of the survey is the Council Regulation (EEC) No 3924/91 on the establishment of a Community survey of industrial production (the PRODCOM Regulation). In accordance with Article 2(2) of this Regulation, production is to be recorded according to the product headings of the PRODCOM list. The legal basis was supplemented with the Commission Regulation (EC) No 912/2004 on the implementation of the Council Regulation.

The main regulations are listed in the following table:

Table 1 - Legal Basis of PRODCOM statistics

Description	Official references
Council Regulation (EEC) No 3924/91 of 19 December 1991 on the establishment of a Community survey of industrial production (PRODCOM) http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31991R3924:EN:HTML	OJ L 374, 31.12.1991, p. 1 - 3
Commission Regulation (EC) No 912/2004 of 29 April 2004 implementing Council Regulation (EEC) No 3924/91 on the establishment of a Community survey of industrial production http://eur-lex.europa.eu/pri/en/oj/dat/2004/l_163/l_16320040430en00710072.pdf	OJ L 163, 30.04.2004, p. 71 - 72
Amendments to Regulation (EEC) No 3924/91 resulting from the introduction of NACE Rev. 2 (Regulation (EC) No 1893/2006 of the European Parliament and of the Council of 20 December 2006 establishing the statistical classification of economic activities NACE Revision 2 and amending Council Regulation (EEC) No 3037/90 as well as certain EC Regulations on specific statistical domains) http://eur-lex.europa.eu/LexUriServ/site/en/oj/2006/l_393/l_39320061230en00010039.pdf	OJ L 393, 30.12.2006, p. 1 - 39

Description	Official references
An annual Commission Regulation for the PRODCOM List. The regulation for the 2011 List is Commission Regulation (EU) No 830/2011 of 27 July 2011 establishing for 2011 the 'PRODCOM list' of industrial products provided for by Council Regulation (EEC) No 3924/91 http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:224:0001:0283:EN:PDF	OJ L 224, 30.08.2011, p. 1–283

1.2. Coverage

The PRODCOM statistics concern all manufactured products included in the PRODCOM List. This requires enterprises active in the mining and manufacturing sectors (NACE Rev. 2 Sections B and C) to be covered by the survey.

In addition to the EU Member States, the EFTA countries Norway and Iceland are subject to the PRODCOM regulation and they conduct the PRODCOM survey and transmit their data to Eurostat. Croatia (and for some years, Turkey) also report PRODCOM data.

National data for all non-Member State countries are published individually but not included in the EU aggregates.

Eurostat publishes the following European aggregates:

Reference Year	EU Aggregates
1993-2002	EU 15 ⁽¹⁾
2003-2005	EU 15 and EU 25 ⁽²⁾
2006 onwards	EU 15, EU 25 and EU 27 ⁽³⁾

1.3. Statistical Output

The statistical outputs of the PRODCOM statistics are

- the value of production expressed in Euro⁽⁴⁾, and

1 EU 15 includes Belgium, Denmark, Germany, Ireland, Greece, Spain, France, Italy, Luxembourg, the Netherlands, Austria, Portugal, Finland, Sweden and the United Kingdom.

2 EU 25 includes EU 15 plus the Czech Republic, Estonia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Slovenia and Slovakia.

3 EU 27 includes EU 25 plus Bulgaria and Romania.

4 The Member States report in national currency which is converted if necessary to Euro before dissemination.

- the physical volume of production, expressed in the volume unit specified in the corresponding PRODCOM List.

The three concepts of production used in the framework of PRODCOM are presented in Table 2.

Table 2 – Type production in PRODCOM

Type Production	Definition	Comment
Production sold (S)	the production sold (invoiced) during the reference period	Production sold is often preferred to total production because it covers all products and provides market information.
Production intended for sale (C)	the production which has been carried out during the reference period, irrespective of whether this production has been sold or put into stock for later sale. It does not include any production used, or to be used, in further processing by the same enterprise.	This production type is not used for headings after 2004.
Total production (T)	the actual production which has been carried out during the reference period, irrespective of whether sold, put into stock or used for further processing	Total production is only required for those products that are likely to be used for further processing (about 20% of all products). Because products that are not sold cannot easily be valued, only the volume of total production is collected.

In summary, the 2011 PRODCOM statistics provide, for each heading included in the 2011 PRODCOM

List, the following statistical outputs:

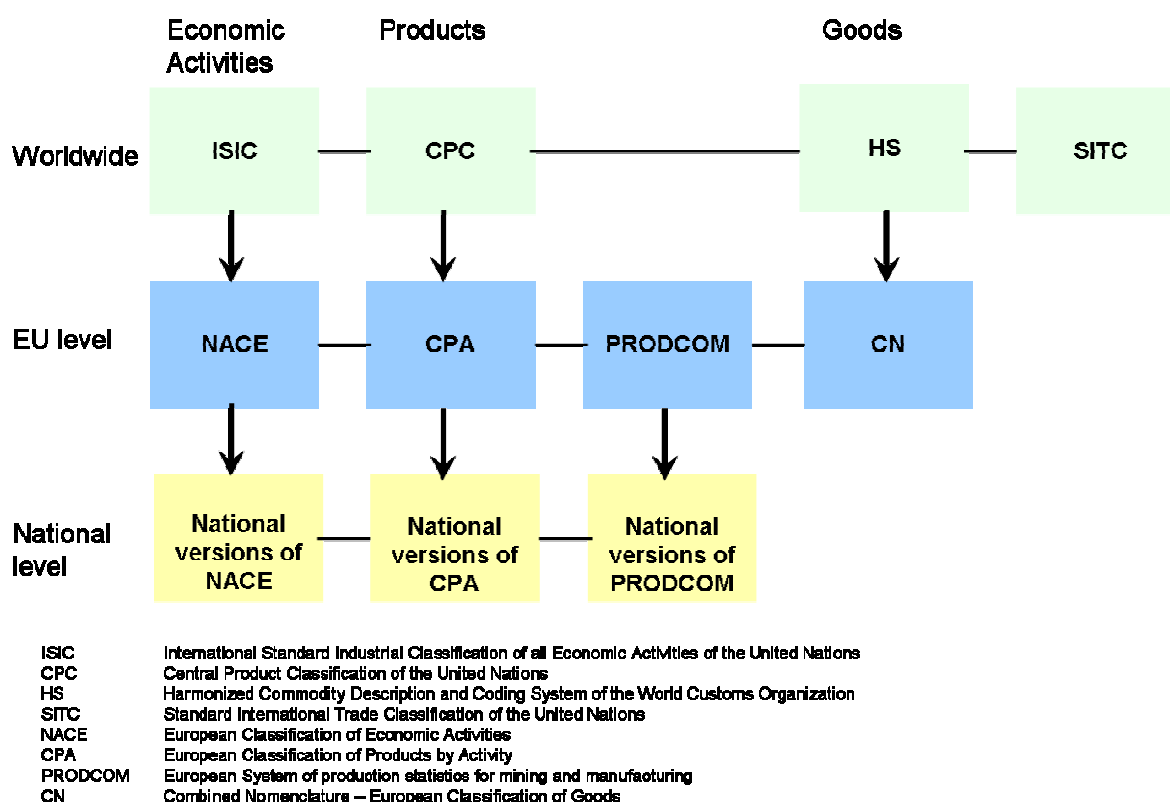
- the value of production sold in 2011;
- the physical volume of production sold in 2011 and
- the physical volume of total production manufactured in 2011 (for some headings).

1.4. PRODCOM List

The PRODCOM List provides a standardised list of products for which the statistics must be reported to Eurostat. As PRODCOM statistics have to be comparable with the external trade statistics, which are based on the Combined Nomenclature (CN), a close relationship between the two nomenclatures must be ensured. Furthermore, the basic building blocks for PRODCOM are the European Classification of Economic Activities (NACE) and the European Classification of Products by Activity (CPA). Therefore the PRODCOM list is developed in close association with these three nomenclatures.

To understand how the different nomenclatures fit together, it is useful to consider Figure 1 which gives an overview of the revised system of integrated statistical classifications. This diagram shows the clear links between the PRODCOM list and the CN, which then links up to the HS at a world-wide level.

Figure 1 – The system of integrated statistical classifications



The 2011 PRODCOM List corresponds at 4-digit level with NACE Rev. 2 and at 6-digit level with CPA 2008. In other words, it takes its first 4 digits from NACE Rev. 2 and digits 5 and 6 from CPA 2008. The NACE class indicated by the first 4 digits of the PRODCOM code is the activity class to which enterprises producing that product are most likely to be classified in the national business registers. This enables the National Statistical Institutes (NSI) to use the Business Register to identify the enterprises they should survey for each product.

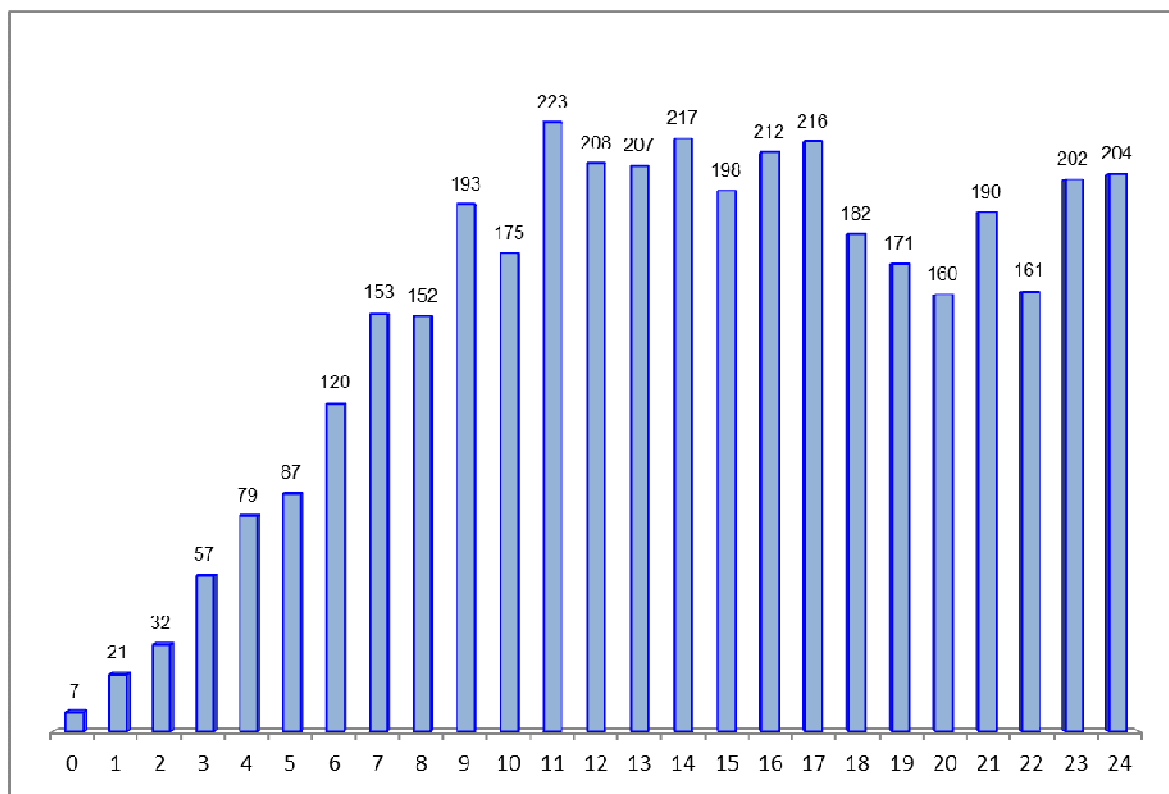
The first PRODCOM List was set up in November 1993, contained 5765 headings and was published in all nine official languages of the then European Union. Each year some changes are made to the list to improve it.

These can range from:

- a new break-down of the headings used for products;
- an improvement to the translation of a heading for a language;
- a restructuring of some headings as a result of changes in an industry;
- the introduction of new headings to cover new types of product;
- changes needed to maintain the link with the CN

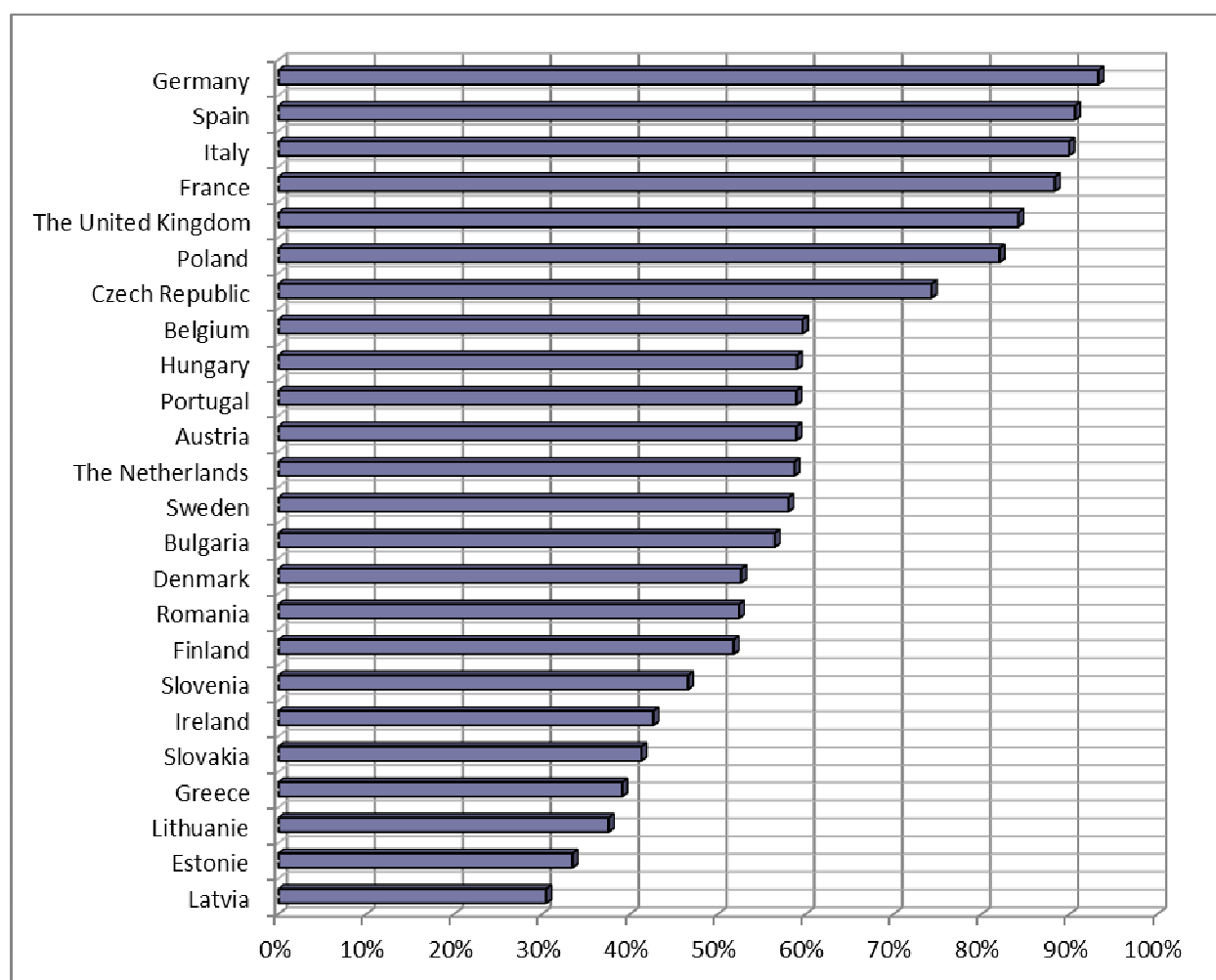
In order to respond to concerns over the burden on enterprises of responding to the survey, the list has been simplified, in particular through a major simplification in 2005. The 2011 PRODCOM list contains 3852 headings.

Chart 1 – Number of products produced by 0, 1, 2 24 countries⁵



⁵ Excluding Cyprus, Luxembourg and Malta

Chart 2 – Percentage of headings reported by each country



1.5. Principles applicable to the PRODCOM statistics

1.5.1. Codification principle

As a general principle, when a production process takes as input a material that does not match the description of the product, and produces as output something that does, then production of the product should be recorded. On the other hand, if the processing merely works on a product without changing the heading under which it is classified, it should not be recorded, since this would result in double counting.

Industrial services including "treatment", "maintenance and repairs" and "assembly work" are included in the PRODCOM List although they do not have a corresponding CN code.

1.5.2. Valuation principle

The value of production sold has to be calculated on the basis of the **ex-works selling price** obtained during the reference year. It also includes packaging costs even if they are charged separately. The following turnover components are not included:

- any turnover tax and consumer tax charged
- separately charged freight costs
- any discount granted to the customer

If finished products are hired out or leased, the price obtainable on the market for the product in question should be recorded as an estimated value.

The value of service (i.e. the fee paid), not the value of any associated physical goods, is recorded for industrial services.

1.5.3. *Contract processing*

Contract processing takes place when an enterprise (the principal) outsources the production of products to another enterprise (the subcontractor), but receives the finished goods and sells them. The principal may or may not supply the raw material. The principal pays a fee to the subcontractor which reflects the work done by the subcontractor and may or may not also include the cost of the raw material, depending on whether or not the principal supplied it. Since the regulation stipulates Member States should report production actually carried out on their territory and not production carried out in another country on behalf of one of their enterprises, the enterprise physically carrying out the production, i.e. the subcontractor, should report the production in cases of contract processing.

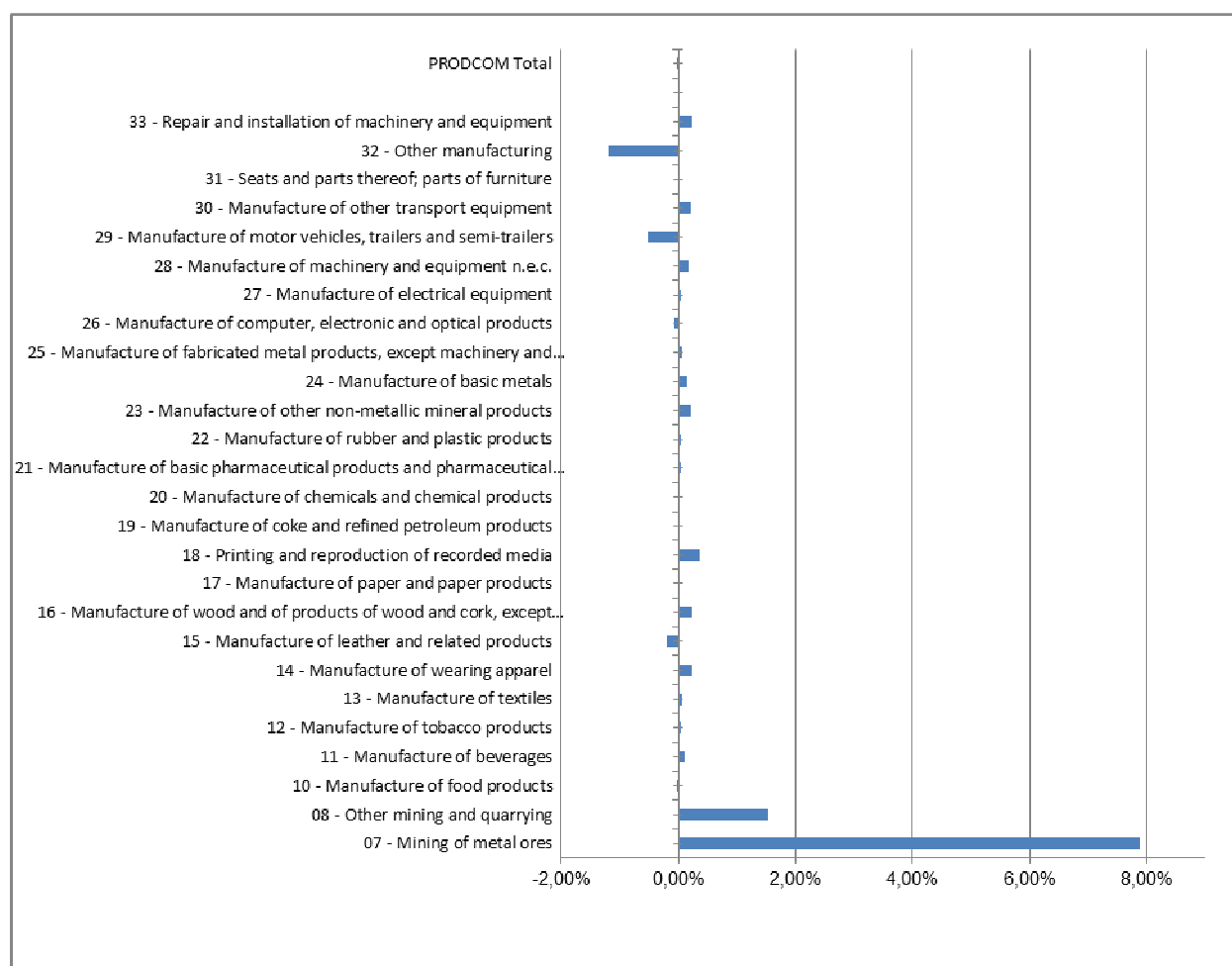
1.6. **Revision policy**

The deadline for the Member States to transmit data to Eurostat is 30 June of the year following the reference year. On this basis, Eurostat first publishes these data in mid-July, two weeks after the deadline. However reporting countries may submit revisions at any time, so Eurostat also republishes the data in the middle of any month when new data has been received since the last publication. In practice this means that data is republished in most months, sometimes even for earlier years.

Measuring the size and directions of revisions gives a general measure of "data stability" over time. Moreover, taking into account that all subsequent revisions improve data quality, it gives a measure of the data quality of the first release. Chart 3 shows, for value of production sold, the impact of data revisions between the 2011 PRODCOM data release in mid-July 2012 and the latest 2011 PRODCOM data release in October 2012.

The charts show the percentage increase or decrease for the sum of all headings. Since the volume of products is expressed in many different volume units it is not possible to do the same analysis for the physical volume.

Chart 3– Impact of revisions for the VALUE of production sold, 2011 reference year



As the chart shows, the maximum revision in term in sold value was for division 07 "Mining of metal ores" (about 482 million more than what was reported in July).

The total production value is changed by -0.01 % between July and November.

Therefore we can conclude that the data for the value of production sold is stable from the first release.

1.7. Brief overview of the history of PRODCOM statistics

The evolution of PRODCOM dates back to 1985 when there were the first meetings of the working party on "Production Statistics", whose objective was to harmonise the various ways industrial production statistics were collected in the Member States.

Although in most countries statistics were collected on production, these covered the national situation, national nomenclatures were used and different survey methods were applied.

The purpose of the PRODCOM regulation is to enable these national statistics to be compared and where possible aggregated to give a picture of the developments of an industry or product in the European context. This aim became more urgent with the creation of the single market in 1992 and, with rapid changes occurring in Europe, the statistical system had to adapt to these changes.

Before data collection could begin, it was necessary to draw up a common list of products to be covered. Drawing up the PRODCOM list was a unique opportunity for Eurostat, the NSIs and the European Trade Associations (FEBIs) to work together to produce a classification that would work on the micro, national and European level. The two principal aims were to measure production and to enable the calculation of apparent consumption by linking production statistics to external trade statistics.

The main events in the evolution of the PRODCOM statistics since its creation are presented briefly below:

The PRODCOM Council Regulation	In December 1991, the PRODCOM Regulation was adopted by the Council.
Monthly Iron and Steel	In March 2003, the Statistical Programme Committee (SPC) meeting adopted a proposal to integrate monthly Iron and Steel statistics in PRODCOM. This decision was a consequence of the expiry of the Iron and Steel Treaty.
Commission Regulation on the PRODCOM List	In 2003, it was recognised that that the PRODCOM List was not valid unless it was supported by an annual Commission Regulation.
Commission Regulation on the implementation of the Council Regulation	A Commission Regulation implementing the PRODCOM Council Regulation was adopted in April 2004.

Simplification of PRODCOM

Prompted by the fact that the PRODCOM List had become increasingly complex, with the result that many headings were not reported by Member States, discussions about possible simplifications of the List started in the SPC preparatory PRODCOM meeting in November 2003.

It was agreed that it was important to carry out simplifications so that the Member States could concentrate their efforts on the most important products. Optional headings that were not reported by all countries were of little value for European statistics; equally, quarterly data that was not reported by all countries was of little value.

In the PRODCOM SPC Preparatory Committee of June 2004 the following simplifications were agreed:

- Remove the detailed optional headings from the PRODCOM List;
- Remove the concept of production intended for sale and use sold production instead;
- Remove quarterly data;
- Where possible, remove z-headings and keep only the Z-headings (aggregates of the more detailed z-headings) that enable a link to be made to the CN;
- Remove N-headings. These were intended to provide a breakdown of products according to the class of origin, but were poorly reported;
- Remove the second volume unit for all headings;
- Remove energy headings that should be reported to Eurostat under energy statistics.

As a consequence the number of headings in the PRODCOM List was reduced from 5700 in 2004 to 4500 in 2005.

Estimation of missing figures

In the PRODCOM SPC Preparatory Committee meetings of 2004 the estimation of missing data was discussed and a method was approved. The first estimated figures for missing data for the 2003 reference year were presented to the Committee in June 2005..

Removal of monthly Iron and Steel

Monthly reporting for Iron and Steel headings is no longer required as from 2006.

Confidentiality charter

In 2006 the PRODCOM confidentiality charter was changed to ensure that EU aggregates were not suppressed unnecessarily. Implementation of these changes resulted in the number of EU aggregates that must be suppressed due to confidentiality being reduced by about 20%.

**Reporting of
production involving
subcontracting**

For several years discussions with reporting countries have been conducted in order to achieve harmonisation of the production reported when it has been undertaken by subcontractors. This is important since varying national practices can cause distortions in the EU aggregates.

The conclusion of discussions is that countries should respect the stipulation in the PRODCOM regulation, namely they should report production actually carried out on their territory and not production carried out in another country on behalf of one of their enterprises.

**Application of
rounding to protect
the confidential national
data**

From 2008 onwards Eurostat has applied controlled rounding to EU aggregates for all years in order to allow the publication of all EU aggregates, without revealing confidential national data. By this means we can publish EU aggregates that are sufficiently accurate to provide useful information, but with an element of uncertainty that prevents users from gaining too much information about the confidential national data

2. Relevance

Relevance is the degree to which statistics meet current and potential users' needs. It refers to whether all statistics that are needed are produced and the extent to which concepts used (definitions, classifications etc.) reflects user needs.

1.8. Uses of PRODCOM

The European Commission and the national governments need data to monitor industry and markets and to develop their corresponding policies. To meet these requirements, Eurostat and the Member States have developed the PRODCOM system and disseminate data which allow international comparisons between all Member States and other countries.

The enterprises benefit from data provided by the PRODCOM system which allow them to evaluate markets and opportunities for development.

Table 3 – Classification and description of the PRODCOM users

User	Description of the user	Needs in terms of statistics
DG Enterprise	The policy arm of the Commission regarding the business sector	Measurement and monitoring of the policy agenda, especially the Lisbon targets
Other directorates (DG TRADE, COMP, MARKT, etc)	Policy setting	Various, especially in the business domains
Other ESTAT Units	Environmental statistics and accounts	Statistics on products such as hazardous chemicals, products whose manufacture emits greenhouse gases and other products with an environmental impact.
	Food Safety statistics	Food safety statistics monitor the manufacture of food and beverages.
EU Entreprises and EU Trade Associations	European business sector	Market research, intra EU comparisons.
The national governments and their national authorities	National administrations	International comparisons
The public	Research institution, students, media	Varied, mainly intra EU comparisons

It is planned to put a user satisfaction survey on the Eurostat website. Users of PRODCOM data will be invited to click on a link in order to complete the survey.

1.9. Confidentiality

Reporting countries mark some data as confidential and Eurostat is legally bound to suppress such data from publication. However Eurostat is able to publish EU aggregates containing confidential data if this can be done without revealing the confidential items within the total. A "Confidentiality Charter" agreed with the Member States specifies the criteria which must be met before an EU aggregate can be considered safe to be published.

In the past, unsafe EU aggregates were suppressed from publication. From 2008 onwards, we have applied controlled rounding to EU aggregates for both recent and historic data, in order to allow the publication of all EU aggregates without revealing confidential national data. By this means we can publish EU aggregates that are sufficiently accurate to provide useful information, but with an element of uncertainty that prevents users from gaining too much information about the confidential national data.

This has the effect of giving a range within which the true total lies, without being so precise that the confidential data is revealed. For instance instead of publishing a value of 52178, a value of 52000 base 500 might be published, indicating that the true value lies somewhere between 51500 and 52500.

Table 4 shows the proportion of rounded figures by NACE Rev. 2 Division, 2011 reference year.

Table 4 – Proportion of rounded EU aggregates by NACE Rev. 2 Division, 2011 reference year

NACE Rev. 2 Division	Percentage of EU aggregates that are rounded		
	Value of Production Sold		Physical Volume of Production Sold
	Percentage by number of headings	Percentage by value	Percentage by number of headings
Mining of metal ores	14,29%	48,63%	33,33%
Other mining and quarrying	21,88%	47,77%	21,88%
Manufacture of food products	20,86%	30,08%	24,86%
Manufacture of beverages	25,93%	67,54%	33,33%
Manufacture of tobacco products	20,00%	0,15%	20,00%
Manufacture of textiles	17,21%	17,53%	7,91%
Manufacture of wearing apparel	20,80%	29,92%	24,80%
Manufacture of leather and related products	18,75%	11,63%	14,58%
Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	20,31%	33,25%	21,88%
Manufacture of paper and paper products	8,65%	10,28%	11,54%
Printing and reproduction of recorded media	36,36%	23,23%	18,18%
Manufacture of coke and refined petroleum products	0,00%	0,00%	0,00%
Manufacture of chemicals and chemical products	15,01%	15,93%	17,45%
Manufacture of basic pharmaceutical products and pharmaceutical preparations	14,89%	7,10%	10,64%

NACE Rev. 2 Division	Percentage of EU aggregates that are rounded		
Manufacture of rubber and plastic products	10,79%	20,67%	13,67%
Manufacture of other non-metallic mineral products	10,97%	22,49%	18,06%
Manufacture of basic metals	13,49%	6,09%	14,19%
Manufacture of fabricated metal products, except machinery and equipment	13,02%	15,61%	12,70%
Manufacture of computer, electronic and optical products	20,72%	18,98%	28,83%
Manufacture of electrical equipment	11,96%	20,44%	15,31%
Manufacture of machinery and equipment n.e.c.	16,10%	20,90%	21,11%
Manufacture of motor vehicles, trailers and semi-trailers	15,63%	17,64%	14,06%
Manufacture of other transport equipment	18,92%	38,50%	27,03%
Seats and parts thereof; parts of furniture	37,04%	45,29%	29,63%
Other manufacturing	21,53%	33,97%	19,44%
Repair and installation of machinery and equipment	40,68%	36,01%	25,00%
Whole 2011 PRODCOM List	16,72%	21,94%	18,21%

Accuracy

Accuracy in the general statistical sense denotes the closeness of computations or estimates to the exact or true values.

The information contained in this section gives an overview of the practices in reporting countries as described in the Quality Reports provided by some countries.

Revisions can be seen as an indicator of accuracy. Chart 3 shows, for value of production sold, the impact of data revisions between the 2011 PRODCOM data release in July 2012 and the data release in October 2012.

1.10. Sampling issues relevant for PRODCOM surveys

1.10.1. Target population

The target population covers all enterprises which manufacture at least one product included in the PRODCOM List. The link with the NACE classification is used to identify the enterprises which are most likely to manufacture products included in the PRODCOM List.

The PRODCOM regulation states that all EU enterprises which carry out one of the activities in "Mining and Quarrying" and "Manufacturing", (i.e. sections B and C of NACE Rev. 2) should be covered by the PRODCOM survey.

1.10.2. Sampling frame

The Statistical Business Register (SBR) is the main source for drawing and maintaining the sampling frame of the PRODCOM survey. The sampling frame of the PRODCOM survey includes all enterprises, authorities and organisations that carry out any target industrial activity and have 20 employees or more.

In order to optimise the number of surveyed enterprises and/or to minimise/avoid the respondent burden on small enterprises, most reporting countries drop from the

sampling frame the enterprises under a threshold limit (in terms of number of employees and/or turnover). This approach is taken under the assumption that the missing units introduce negligible bias in the estimations at national level as well as for each product included in the PRODCOM List (i.e. heading level).

The sampling unit and the observational unit are the same, namely the enterprise. Taking into account that the PRODCOM statistics measure production of manufactured goods, the reporting unit may be either the local unit or the KAU^(‡‡) or the local KAU, depending on the organisational system applied in each reporting country.

1.10.3. *Sampling design*

The Member States decide themselves which sampling design they apply to collect data for PRODCOM survey but the national sample of enterprises has to be designed in such a way that it leads to representative results of the national economy level and of each product included in the PRODCOM List (i.e. heading level).

In undertaking the PRODCOM survey, there are three conditions to be met:

- in each Member State at least 90% of production in each (four-digit) NACE class must be recorded;
- all enterprises of 20 or more employees in Sections B and C of NACE Rev. 2 should be covered;
- if a Member State's production in a NACE class represents less than 1% of the Community total for that NACE class, then data for the headings in that class does not need to be collected. In this case production should be reported as zero. Three Member States (Cyprus, Luxembourg and Malta) are below this threshold in all NACE classes, so are exempt from reporting the PRODCOM data to Eurostat.

The approach most commonly used in the national PRODCOM surveys is the non-probabilistic sampling and the sample is a **cut-off sample**. Very few countries draw up a probabilistic sample according to the simple random sampling design for small enterprises. The sample of small enterprises is drawn up especially for those NACE classes where the enterprises employing 20 or more employees do not cover at least 90% of the national production.

1.10.4. *Sampling errors*

Sampling errors do not occur in the PRODCOM survey, as these statistics are collected by non-probability sampling which means that it is a full coverage survey with a cut-off threshold (i.e. cut-off sample). The part of the sample drawn up by a

‡‡ Kind of Activity Unit

simple random sampling design is so negligible as to make the collection of the corresponding CVs^(§§) unnecessary.

1.11. Non-sampling errors

1.11.1. Coverage errors

The coverage of the PRODCOM survey is impossible to assess because it is not possible to identify all enterprises which manufacture goods included in the PRODCOM List. No reporting country has the resources to produce a corresponding sampling frame. Consequently, since the SBR does not offer information on products but only on economic activities, the coverage of PRODCOM survey is generally assessed by using the enterprises' turnover as a reference. This method ensures a wide/very general assessment and it has to be viewed with caution.

The approach most used by reporting countries to assess the coverage of the PRODCOM survey is in terms of turnover (or total production value) as the ratio between

- the total turnover (or total production value) by NACE class of all observational units in sections B and C of NACE Rev. 2 surveyed in PRODCOM,
- the total turnover (or total production value) by NACE class of all relevant enterprises (i.e. enterprises with primary and secondary activity within sections B and C of NACE Rev. 2 surveyed in Structural Business Statistics (SBS)).

However, this approach does not guarantee that the biggest enterprises by total turnover/total production value actually also cover 90% of the industrial activities (i.e. sections B and C of NACE Rev. 2).

Additionally, there are coverage errors due to the divergence between the quality of the SBR as the source for the sampling frame and the effective enterprise population, namely:

- under-coverage: there are targeted population units which are not accessible via the sampling frame. The under-coverage errors have no impact on the PRODCOM survey since the vast majority of enterprises not accessible via the sampling frame are, in principle, new enterprises having less than 20 employees;
- over-coverage: there are units accessible via the sampling frame which do not belong to the target population (i.e. out of scope units);
- multiple listing: some units may be present more than once in the sampling frame.

To reduce all these errors it is recommended that the sampling frame be updated as close as possible to the end of the reference period.

§§ Coefficient of variation

1.11.2. *Measurement errors*

The main reason that a measurement error can occur is erroneous information on the products produced by an enterprise. The enterprises are not using the PRODCOM List for their own needs and it could be hard for an enterprise to update its internal registries in order to report according to the PRODCOM demands. More precisely, a measurement error by the respondent may concern:

- wrong industrial product codes;
- wrong volume unit or reporting a volume unit inconsistent with the PRODCOM list;
- which heading has to be reported (sold and/or total);
- reporting of work under subcontracting;
- making a clear distinction between production and industrial services (i.e. production activity or assembly activity).

The approach most used to minimise the measurement errors is to use customised questionnaires by pre-printing PRODCOM codes wherever this is possible. Also, particular attention is paid to providing professional guidance to respondents and keeping a close contact with them.

A very efficient and powerful approach to minimising errors in general and measurements errors in particular, is to develop electronic questionnaires and to use internet facilities as far as possible. But that depends heavily on the resources and internal environment of each reporting country.

1.11.3. *Processing errors*

Processing errors occur during the process from the point when data are collected to the point when they are ready to be analysed: coding data entry, data editing, imputation, and so on.

It is not possible to present a general description of data processing for PRODCOM survey due to the high diversity in practices in the reporting countries. Actually all reporting countries fulfil similar tasks. The difference is given by their logical order and means (i.e. scanning, manually entry, automatically entry, fax use, software used, etc.).

Summarising, a lot of micro and macro plausibility checks are performed at different aggregation levels, between historical data and actual data, and last but not least, with other sources (i.e. business surveys, STS and SBS especially). These operations are highly interconnected and interdependent and could be grouped as follow:

- logical checks;
- checking coherence at a single product (i.e. PRODCOM heading) level by comparing the value of different indicators (i.e. mean value,

minimum/maximum value, median value) for a given variable (i.e. value, volume, total production);

- checking coherence between different variables(i.e. sold/total production) at different aggregates level(i.e. observational unit, observational unit and product, product, and so on);
- checking coherence within monthly/annual data;
- checking coherence with external sources (i.e. STS data, SBS data, External Trade data).

In addition, there are cases where some micro data (e.g. sensitive units and/or products) are individually checked by the statisticians on the basis of their experience and information about the individual unit and the economic branch concerned.

Missing data is completed with extra enquiries by phone or e-mail, with estimates based on previous data or turnover data or with data obtained from the internet home pages of enterprises.

As with measurement errors, the past experience of most of reporting countries has shown very clearly that processing errors can be minimised to a great extent when electronic facilities (i.e. electronic questionnaires, WEB questionnaire, scanning, electronic/online checks, and so on) are used.

1.11.4. *Non response errors*

The unit non-response is adjusted by imputation methods and auxiliary information where it is available. The item non-response is adjusted either by imputation methods or estimation methods.

Normally, no imputation or estimation methods should be applied for new observation units (i.e. units included for the first time in the survey and no time data series is available for them) since these are not in a position to respond within the reporting period.

Reducing non-response and ensuring a high coherence within the final data set should be the main aims for the NSIs to improve data accuracy in the PRODCOM survey.

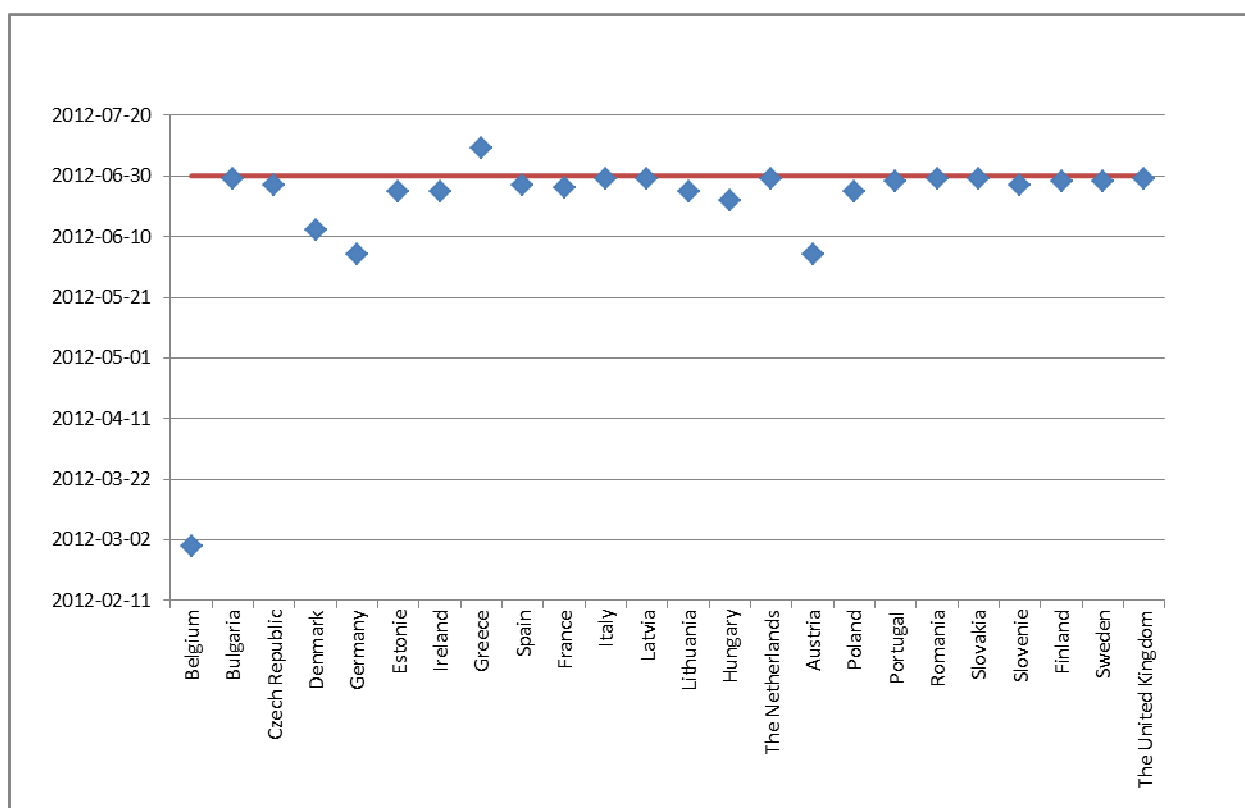
3. Timeliness and punctuality

Timeliness of information reflects the length of time between its availability and the event or phenomenon it describes.

Punctuality refers to the time lag between the release date of data and the target date when it should have been delivered, for instance, with reference to dates announced in some official release calendar, laid down by Regulations or previously agreed among partners.

According to the PRODCOM Regulation, Art. 7, "Member States shall send the findings relating to a one-year period to the Statistical Office of the European Communities within **six months after the end of the reference year**".

Chart 4 – First transmission of PRODCOM data to Eurostat by country, 2011 reference year



Eurostat applies a combined compliance score for both punctuality and completeness of the data. The formula is $m * 5 + e * 2 + d$ where

- m = the percentage of missing data
- e = the percentage of data which were estimated by the country
- d = the number of days late.

Countries with a score of 20 or less are assessed as VG (Very Good), 21 - 40 as G (Good), 41- 100 as P (Partially compliant) and over 100 as N (Not compliant).

If a country has sent more than one file, the score for the second file may be better or worse, depending on the extent of any improvement in completeness set against the additional days late. In all cases the most favourable score for the country has been used in Table 5. For this reason the entry for some

countries shows transmission after the deadline even though they sent a less complete file by the deadline.

Table 5 – Compliance score by country, 2011 reference year

Country	Number of days after the deadline	No. of missing value headings (%)	No. of estimated value headings (%)	No. of missing volume headings (%)	No. of estimated volume headings (%)	Compliance score	Overall assessment
Belgium	0	1	0	5	0	15	Very Good
Bulgaria	0	0	0	0	0	0	Very Good
Czech Republic	0	0	0	0	0	0	Very Good
Denmark	0	0	2	0	8	10	Very Good
Germany	0	0	2	1	5	9,5	Very Good
Estonie	0	0	0	0	0	0	Very Good
Ireland	19	0	0	0	0	19	Very Good
Greece	0	0	0	0	0	0	Very Good
Spain	0	0	1	0	1	2	Very Good
France	0	0	5	0	5	10	Very Good
Italy	0	0	0	0	0	0	Very Good
Latvia	0	0	0	0	0	0	Very Good
Lithuania	0	0	0	0	0	0	Very Good
Hungary	0	0	0	0	0	0	Very Good
The Netherlands	0	0	1	1	18	21,5	Good
Austria	0	0	0	0	0	0	Very Good
Poland	0	0	0	0	0	0	Very Good
Portugal	0	1	0	2	0	7,5	Very Good
Romania	0	0	0	0	0	0	Very Good
Slovakia	0	0	0	0	0	0	Very Good
Slovenie	0	1	0	2	0	7,5	Very Good

Country	Number of days after the deadline	No. of missing value headings (%)	No. of estimated value headings (%)	No. of missing volume headings (%)	No. of estimated volume headings (%)	Compliance score	Overall assessment
Finland	0	1	0	2	0	7,5	Very Good
Sweden	0	0	4	0	4	8	Very Good
The United Kingdom	0	0	1	0	16	17	Very Good
EU 27 average						5,6	Very Good

Accessibility and Clarity

Accessibility refers to the physical conditions in which users can obtain data: where to go, how to order, delivery time, clear pricing policy, convenient marketing conditions (copyright, etc.), availability of micro or macro data, various formats (paper, files, CD-ROM, Internet...), etc.

Clarity refers to the data's information environment whether data are accompanied with appropriate metadata, illustrations such as graphs and maps, whether information on their quality also available (including limitation in use...) and the extent to which additional assistance is provided by the NSI.

Table 8 – Dissemination of the PRODCOM statistics

Media	Description	Frequency	Comments
Eurostat website	Database:	Monthly	Europroms is the name given to published PRODCOM data. It differs from PRODCOM in that it combines Production data from PRODCOM with Import and Export data from the External Trade database. The PRODCOM team loads new and revised data to the internal Comext database once per month. The Comext team transfers the data from Comext to Easy-Comext each month following this update. Easy-Comext can be viewed from the Eurostat website. In addition a new interface, the Data Explorer, allows users to access the data. http://epp.eurostat.ec.europa.eu/portal/page/portal/prodcom/data/database The data are supported by their corresponding statistical metadata. Free of charge.
	EUROPROMS via Easy-Comext and the Data Explorer		
Paper Publication	• A Panorama of Annually European Business Facts and Figures • Eurostat Yearbook • Pocketbook: Key figures on Europe • Statistics in Focus • Statistics Explained (planned)		These publications include extracts or summaries of the PRODCOM data. The publications can be downloaded free of charge on the Eurostat Free Dissemination website.

Media	Description	Frequency	Comments
Distribution on DVD		Monthly	Monthly creation by Comext team of DVD containing External Trade and PRODCOM data and Europroms. The DVDs are distributed to subscribers. The DVD has a user interface identical to the internal Comext database.

4. Comparability

Comparability aims at measuring the impact of differences in applied statistical concepts and measurement tools/procedures when statistics are compared between geographical areas, nongeographical domains, or over time. We can say it is the extent to which differences between statistics are attributed to differences between the true values of the statistical characteristic.

There are three main approaches under which comparability of statistics is normally addressed:

1.12. Comparability between countries

The geographical component of comparability emphasises the comparison of statistics between countries and/or regions in order to ascertain, for instance, the meaning of aggregated statistics at European level.

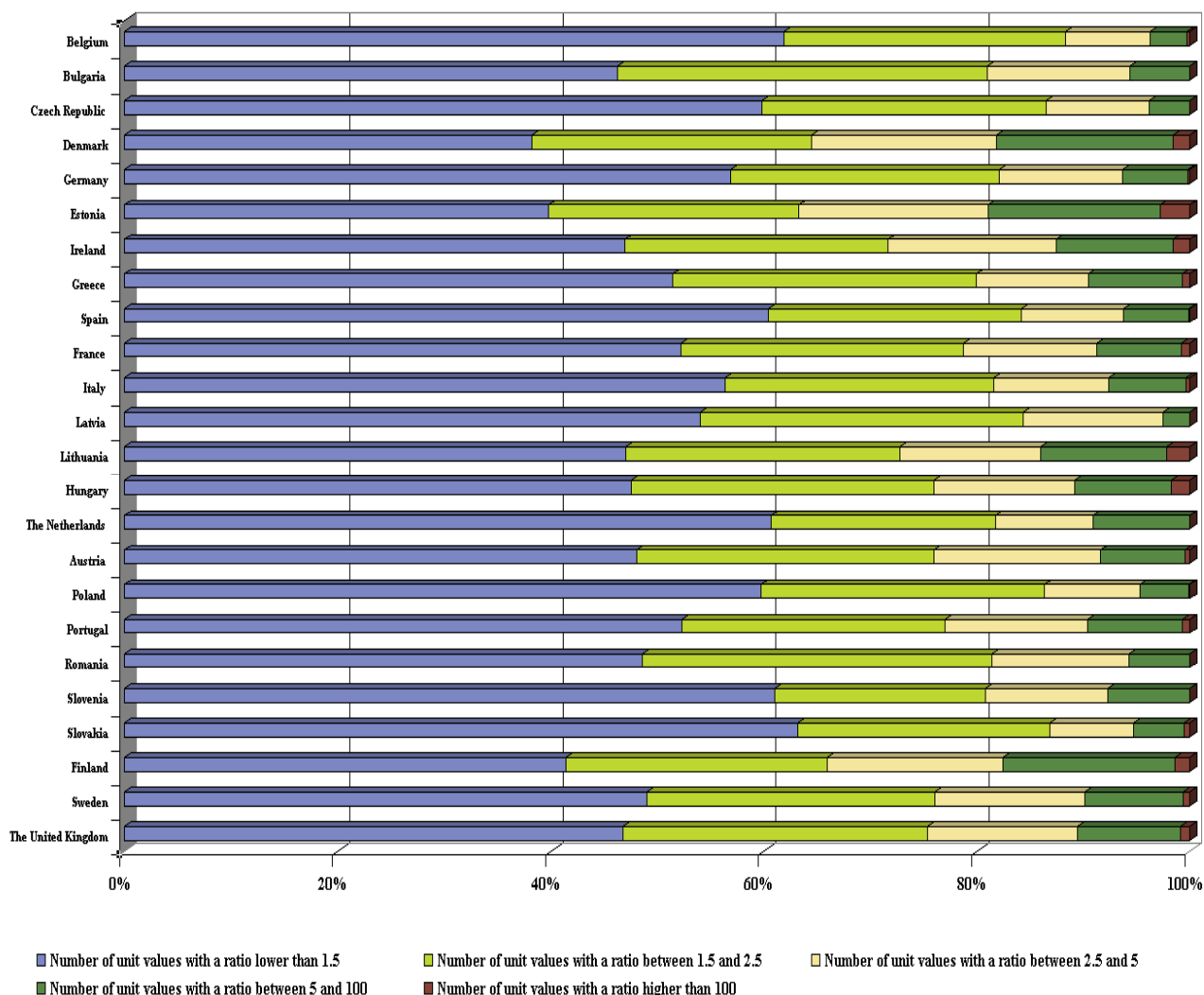
The harmonisation of PRODCOM surveys in reporting countries is needed to ensure comparability of the data. To achieve this, the Council Regulation CEE no. 3924/91 specifies the conditions under which production data should be transmitted to Eurostat, including the definitions of variables, the reference period and the scope of the survey (i.e. coverage). This is supplemented by the annual PRODCOM List which defines the products to be surveyed and is supported by a Commission Regulation.

For 2002 data onwards the unit values for each country have been calculated and compared with those for other countries. To achieve this, we calculate the ratio of each country's unit value to the median unit value of all countries for each product (see Chart 5). Whichever was larger of the country/median ratio and the median/country ratio is taken so that a large distance from the median is always represented by a high value.

In conclusion, to get comparable results at the Community level, the national PRODCOM surveys are coordinated with respect to the definition of the population, the type of statistical unit, the definitions of the variables, the reporting on each type production, and so on.

Comparability at Community level is determined strongly by the quality of the survey results at National level. In this context National Quality Reports [provided on a voluntary basis] are an important means of assessing the quality of the statistics produced by the Member States in order to get comparable and reliable outcomes at the Community level.

Chart 5 – Ratio of unit values to the median, 2011 annual data



1.13. Comparability between years/versions

Comparability over time refers to comparison of results, derived normally from the same statistical operation, at different times.

Comparisons over time are made by checking that PRODCOM data are reasonably in line with data for previous years. In terms of time, the PRODCOM data are fully comparable between successive periods. However, the production statistics are subject to a certain dynamic because of

- many changes occurring in the target population;
- evolution due to product innovations (depending on its amplitude);
- changes in the PRODCOM List

1.14. Comparability between domains

Comparability between domains refers to non-geographical domains, for instance between industrial sectors, between different types of households, etc.

1.14.1. Comparisons to external trade statistics

Users can calculate apparent consumption from the production and trade statistics (production + imports - exports). This gives only a rough estimate based on two sets of statistics collected independently - the production statistics from PRODCOM and the external trade statistics from Comext. They use different product classifications and there are a number of differences in the way the surveys are carried out:

Type of difference	External trade statistics	PRODCOM statistics
Valuation principle	It uses the value of the goods when they are exported or imported, which may include transport costs, profit by intermediaries etc.	PRODCOM goods are valued at the price at which they are sold by the manufacturing enterprise.
Coverage	Only external trade relating to sold production is included.	It includes production sold on both the domestic and external markets.
	A product could cross borders more than once.	A product can be manufactured only once.
	Includes the trade with non-EU countries.	PRODCOM does not include production data of non-EU countries.
Lack of detail	Confidential data is classified in separate fictitious codes rather than the code it would normally be classified to.	Confidential data is suppressed at national level but included in the appropriate code at EU level.
Volume unit	A comparison of trade and production data is not possible if different volume units are used in the two systems.	

Even though we can usually reconcile external trade products in the Combined Nomenclature with production products in the PRODCOM List, there can be differences of interpretation by respondents as to where certain products should be classified.

For all these reasons apparent consumption can only be taken as a rough guide and sometimes it results in a negative figure. For this reason the figures for apparent consumption are no longer published.

1.14.2. *Comparisons to Structural Business Statistics (SBS)*

PRODCOM data can be directly compared with data on turnover from the annual structural business statistics in the production sector on the basis of KAUs. However, there are differences in coverage between PRODCOM, which focuses on products, and SBS, which focuses on activities. It is very important to note that the NACE codes on which PRODCOM headings are based merely serve to identify the enterprises that should be surveyed for PRODCOM purposes. There is sometimes a poor correlation between the NACE code indicated by the PRODCOM code and the NACE activity class of the producer.

In addition, the sum of the value of production of goods produced by enterprises classified to a NACE class is not necessarily equal to the turnover reported for that NACE class. Enterprises may carry out other activities besides production that contribute to turnover, for instance finishing, repair, installation and maintenance. Also, enterprises not classified to manufacturing might produce products included in the PRODCOM List which makes the comparison between the two statistics more difficult.

In conclusion, only a rough equivalence/comparability can be expected between production reported in PRODCOM and turnover reported in SBS.