Hung Q Vu and Karl Eirik Engebretsen

Documents

Quality Report on the Structural Business Statistics for Nace Section F, G, H, I, and K with reference year 2004

Department of Industry Statistics/Division for Construction and Service Statistics

Content

List of figures

List of tables

Introduction

This document is a result of the yearly quality report on Structural Business Statistics (SBS) from Division for Transport and Tourism and Division for Construction and Service Statistics. The first quality reports with reference years 2000-2002 were carried out separately by each division. For the reference years 2003 and 2004 only one quality report was made, since both divisions have applied the same sampling method. With this respect Karl Eirik Engebretsen was responsible for the contents, tables and figures related to NACE sections H and I, while Hung Q. Vu had the same responsibility as to NACE sections F, G, and K. The document as a whole has been outlined by Hung Q. Vu.

We would also acknowledge Ove Viggen for his technical support in presenting and controlling the quality indicators. The theoretical and technical framework had been laid down by Leiv Solheim and Matz Ivan Faldmo.

1. Statistics Norway's Quality Report on the Structural Business Statistics (SBS), with Reference Year 2004

1.1 OBJECTIVE

The objective of this paper is to implement the SBS Quality Regulation (Council Regulation (EC, EURATOM) No 58/97) concerning the criteria for the evaluation of quality of Structural Business Statistics as adopted by Statistics Norway. In this order a clarification of the quality regulation, focussing on the transmission format and the aggregations, which is referred to as Annex 1 to the Compliance Report on the QR, DOC.6.2/EN/EUROSTAT/D3/SBS/APR05, is also carried out from 2004 onwards. This implies generally a technical format for the transmission of quality indicators and especially a regrouping of size classes in terms of Series 1B.

In an explanatory note[1] on this Quality Regulation it is specifically mentioned that Member states are asked to adopt a *pragmatic* approach to calculate the indicators laid down in the regulation and which have to be reported. This is also true regarding this Quality Report by both Division for Transport and Tourism and Division for Construction and Service Statistics.

For this exercise of quality measurement it was decided to take into account only three main factors, which are the non-response impact, the misclassification impact and the sampling error impact.

For a quick view of the results, please look for Tables 5-8 in the List of tables in this report.

1.2 CONTENTS

The following report consists of three parts. Part one in Chapter 2 gives a description of the survey strategy. Part two in Chapter 3 is a report on the methods used for determination of principal activity for the units involved in SBS. Part three in Chapter 4 contains estimates of quality indicators: coefficients of variation and non-response rates.

2. Survey Strategy

There are five general steps in a sampling investigation of a *finite population*, that is, a collection of distinct units such as enterprises, according to Valliant, Dorfman, and Royall (2000)[2]:

1.   Define the scope and objectives of the SBS study, including
*   goal (or initial) population, that is the population to be studied;
*   general information to collect, as explained in Section 2.1
2.   Choose tools and techniques for making observations, as explained in Section 2.2
3.   Choose a sample, as explained in Section 2.4
4.   Gather data on the sample, as explained in Section 2.3
5.   Analyze the data and make inference, as explained in Chapter 4

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[1] E. Raulin (Eurostat-D2-31/03/99), "*Criteria for the Quality Measurement in Structural Business Statistics- explanatory document*".

[2] Richard Valliant, Alan H.Dorfman, and Richard M. Royall (2000), *"Finite Population Sampling and Inference - A Prediction Approach"*, pp. 1-2. John Wiley & Sons, Inc.

Sampling theory concentrates on step 3 (choosing samples), and step 5 (analysing data and making inferences). Steps 1, 2, and 4 are critically important to a successful investigation but are relatively more dependent on informal judgment, experience, and administrative skill.

In order to obtain data to the structural business statistics a combination of *administrative sources*[3] and *sample surveys*[4] has been used, and it is important to distinguish between these two categories of practices. The first category consists of several different national <u>computerised registers</u>. These registers contain information and key data about economic activity of business units relevant to the structural business statistics. And the second category has in common that they are based on a coordinated sample design for all Nace Section F, G, H, I, and K.

2.1 DATA SOURCES[5]

Data were obtained from the General Trading Statements and an additional form from enterprises included in the main sample. For enterprises included in the supplementary sample data were obtained from a simplified form. And for the set of nonsample enterprises, that is, the remainder of the population, the Register of Company Accounts, the Census of Entrepreneurs liable to Value Added Tax (the VAT-register), and the Register of Employees and Employers were used to obtain the necessary data required in the SBS.

A normal procedure in the SBS is to name these data sources by their Norwegian abbreviations:

NO - Directorate of Taxes' General Trading Statements are forms containing an enterprise's profit and loss account and balance sheet. SLN - NO by electronic means.

RiB - The Register of Company Accounts is used to obtain main figures in the General Trading Statements. All private and public limited companies (enterprises) are obliged to submit their annual accounts, including the auditor's report, to the Register of Company Accounts. All accounts received will be announced after registration and all subsequent information will be made available to the general public.

Moms - Information on *turnover* is obtained from the VAT-register. Business enterprises are required to send VAT returns to the county tax assessment office six times a year. Business enterprises with an annual turnover of less than NOK 1 million may apply to submit VAT returns annually.

LTO - Information on *wages and salaries* is obtained from the Directorate of Taxes' End of the Year Certificate Register.

AA-register - Information on number of employees is obtained from The Register of Employees and Employers.

SSB's TS - Additional forms are used to obtain the most detailed variables of accounting data in SBS direct from the business enterprises included in the main sample.

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[3] Administrative data is the set of units and data derived from an administrative source. An administrative source is the organisational unit (Division for Business Register) responsible for implementing an administrative regulation (or group of regulations) for which the corresponding register (BoF) of units and the transactions are viewed as a source of statistical data.

[4] A sample survey is a survey which is carried out using a sampling method, i.e. in which a portion only, and not the whole population is surveyed.

[5] The institutional, administrative, sample survey and/or census based information that serve as principal inputs for compiling statistical aggregates.

SSB's SS - Simplified forms, compared to the additional forms, are used to obtain information on *turnover* direct from the business enterprises included in the supplementary sample.

2.2 ADMINISTRATIVE SOURCES

The Central Register of Establishments and Enterprises of Statistics Norway (BoF), which is maintained by the Division for Business Register, was used to obtain basic information on the business enterprises from other computerised registers such as the AA-register, the VAT-register, and the Register of Business Enterprises which is connected to the Central Coordinating Register for Legal Entities (E-register). The E-register contains basic data to the Register of Employees and Employers, the Value Added Tax Registration List, the Register of Business Enterprises, the (Division for) Business Register of Statistics Norway, the Corporate Taxation Data Register or the County Governors' Register of Foundations.

It is important to stress that contrary to the other data registers mentioned above, the BoF-register is also used as the tool to form the basis for sampling, revision, and producing the SBS statistics in 2004.

2.3 COLLECTION OF DATA

Data are obtained through postal questionnaires (simplified and additional forms (SS/TS)) or extracted from electronic files. The Structural Business Statistics' sample survey consists of two kinds of samples of enterprises, the *main* sample and the *supplementary* sample. Enterprises included in the main sample for the statistics of 2004 received the additional forms on April 29th 2005, with return of forms (SSB's TS and NO) by mail or electronic means of transmission due by June 1st 2005. Failure to respond is subject to fines. A supplementary sample is described as other enterprises that lacked all the data sources on turnover (NO, RiB, and Moms) and the enterprises must be single establishments (from 2004). Enterprises included in the supplementary sample for the statistics of 2004 (SSB's SS) received the simplified forms on January 17th 2005 with return of forms by mail due by February 14th 2005. For the *set of nonsample* enterprises, that is, the remainder of the population data are extracted from electronic files (computerised registers).

Also, the finite population consists of the sample (both the main sample and the supplementary sample considered) and the nonsample.

A complete set of statements (the Norwegian Directorate of Taxes' General Trading Statements (NO) with additional forms (SSB's TS)) was obtained from the units in the net[6] main samples F (1 741), G (5 322), and K (3 560) as shown in Tables 1-3. Likewise the net main samples H (1 129) and I (3 015) as seen in Table 4. For 20 990 enterprises (Nace Section F) we received the NO by electronic (SLN), 30 120 (Nace Section G), 5 585 (Nace section H), 12 934 (Nace section I) 41 872 (Nace Section K). For the other enterprises, sales figures and other essential accounting data were obtained for 1 800 (Nace Section F), 5 537 (Nace Section G), 915 (Nace section H), 1 045 (Nace section I) and 9 423 (Nace Section K) enterprises from annual accounts in the Register of Company Accounts in Brønnøysund. Sales figures were furthermore obtained for 12 002 (Nace Section F), 15 514 (Nace Section G), 2 226 (Nace section H), 5 740 (Nace section I) and 21 746 (Nace Section K) enterprises from the "VAT Register" and the turnover of the other 208 (Nace Section F), 673 (Nace Section G), 275 (Nace section H), 349 (Nace section I), and 3 246 (Nace Section K) enterprises were collected in the Structural Survey in Statistics Norway (SSB's SS).

The results of the sample survey helped us to split the basic accounting data obtained from the business enterprises into detailed components. Missing data for any unit are imputed.

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[6] For a definition of *net main sample* see Chapter 4 on **Non-response rate**.

An overview of these figures on the collection of data is given in the tables below for each population F, G, H, I, and K.

Table 1   Population, Construction Statistics 20047

Source 2004	Enterprise		Turnover	
	Total	Percentage	MNC[2]	Percentage
Total NACE 45	**36 741**	**100 %**	**180 881**	**100 %**
Complete set of NO with additional forms (the net main sample)	1 741	4,7 %	87 008	48,1 %
Statistics Norway's Structural Survey (the net supplementary sample)	208	0,6 %	13	0,01 %
NO received by electronic and employment from the AA-register[1]	20 990	57,1 %	71 422	39,5 %
Register of Annual Company Accounts in Brønnøysund and employment from the AA-register[1]	1 800	4,9 %	14 426	8,0 %
Register data (turnover from the VAT Register, employment from the AA-register[1])	12 002	32,7 %	8 012	4,4 %
(Nonsample)	(34 792)	(94,7 %)	(93 860)	(51,9 %)

* Excl. NACE 45.120.
[1] AA-registeret = The Register of Employees and Employers.
[2]MNC = National currency in millions.

Figure 1 The Number of Enterprises and the Turnover according to Table 1 for Nace Section F
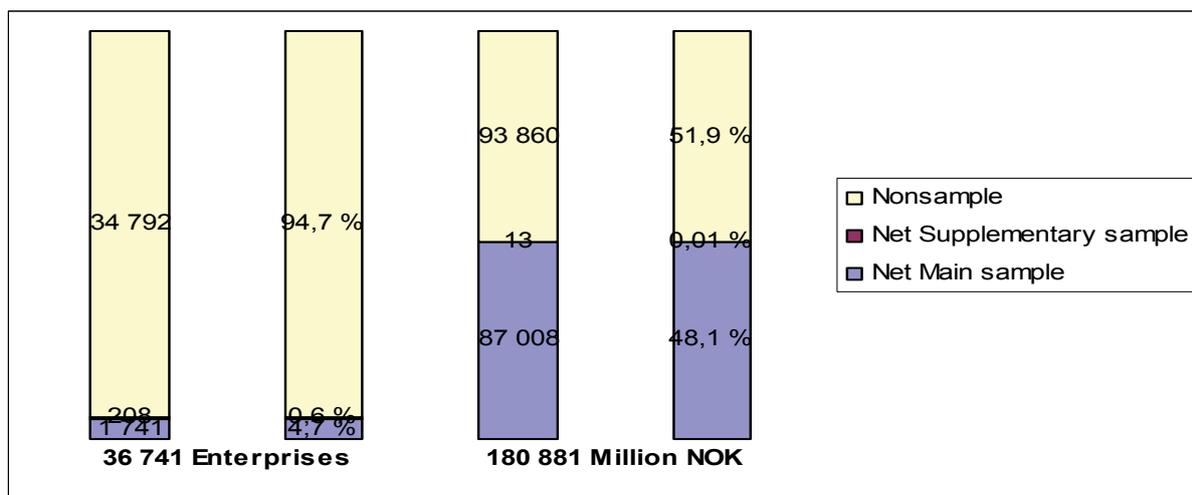
Figures 1-3 show how the net main sample is not large regarding number of units but regarding turnover. The nonsample consists of enterprises other than the net main sample and the net supplementary sample in Tables 1-3.

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[7] Official Statistics of Norway (NOS)

Table 2 Population, Wholesale and Retail Trade Statistics 20048

Source 2004	Enterprise		Turnover	
	Total	Per cent	MNC	Per cent
NACE 50, 51 and 52 Wholesale and retail trade, total	**57 166**	**100 %**	**981 906**	**100 %**
Complete set of NO with additional forms (the net main sample)	5 322	9,3 %	643 347	65,5 %
Statistics Norway's Structural Survey (the net supplementary sample)	673	1,2 %	95	0,0 %
NO received by electronic and employment from the AA-register1	30 120	52,7 %	241 498	24,6 %
Register of Annual Company Accounts in Brønnøysund and employment from the AA-register1	5 537	9,7 %	61 023	6,2 %
Register data (turnover from the VAT Register, employment from the AA-register1)	15 514	27,1 %	35 943	3,7 %
(Nonsample)	(51 171)	(89,5 %)	(338 463)	(34,5 %)
NACE 50 Sale, maintenance and repair of motor vehicles and motorcycles; retail sale of automotive fuel.	**8 938**	**100 %**	**164 084**	**100 %**
Complete set of NO with additional forms (the net main sample)	925	10,3 %	98 915	60,3 %
Statistics Norway's Structural Survey (the net supplementary sample)	47	0,5 %	6	0,0 %
NO received by electronic and employment from the AA-register1	5 185	58,0 %	49 754	30,3 %
Register of Annual Company Accounts in Brønnøysund and employment from the AA-register1	768	8,6 %	10 138	6,2 %
Register data (turnover from the VAT Register, employment from the AA-register1)	2 013	22,5 %	5 271	3,2 %
NACE 51 Wholesale and commission trade, except of motor vehicles and motorcycles	**18 475**	**100 %**	**545 295**	**100 %**
Complete set of NO with additional forms (the net main sample)	1 703	9,2 %	386 215	70,8 %
Statistics Norway's Structural Survey (the net supplementary sample)	160	0,9 %	22	0,0 %
NO received by electronic and employment from the AA-register1	10 099	54,7 %	105 436	19,3 %
Register of Annual Company Accounts in Brønnøysund and employment from the AA-register1	2 523	13,7 %	37 365	6,9 %
Register data (turnover from the VAT Register, employment from the AA-register1)	3 990	21,6 %	16 257	3,0 %
NACE 52 Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods	**29 753**	**100 %**	**272 527**	**100 %**
Complete set of NO with additional forms (the net main sample)	2 694	9,1 %	158 217	58,1 %
Statistics Norway's Structural Survey (the net supplementary sample)	466	1,6 %	68	0,0 %
NO received by electronic and employment from the AA-register1	14 836	49,9 %	86 307	31,7 %
Register of Annual Company Accounts in Brønnøysund and employment from the AA-register1	2 246	7,5 %	13 520	5,0 %
Register data (turnover from the VAT Register, employment from the AA-register1)	9 511	32,0 %	14 415	5,3 %

[1] AA-registeret = The Register of Employees and Employers.

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[8] Official Statistics of Norway (NOS)

Figure 2   The Number of Enterprises and the Turnover according to Table 2 for Nace Section G
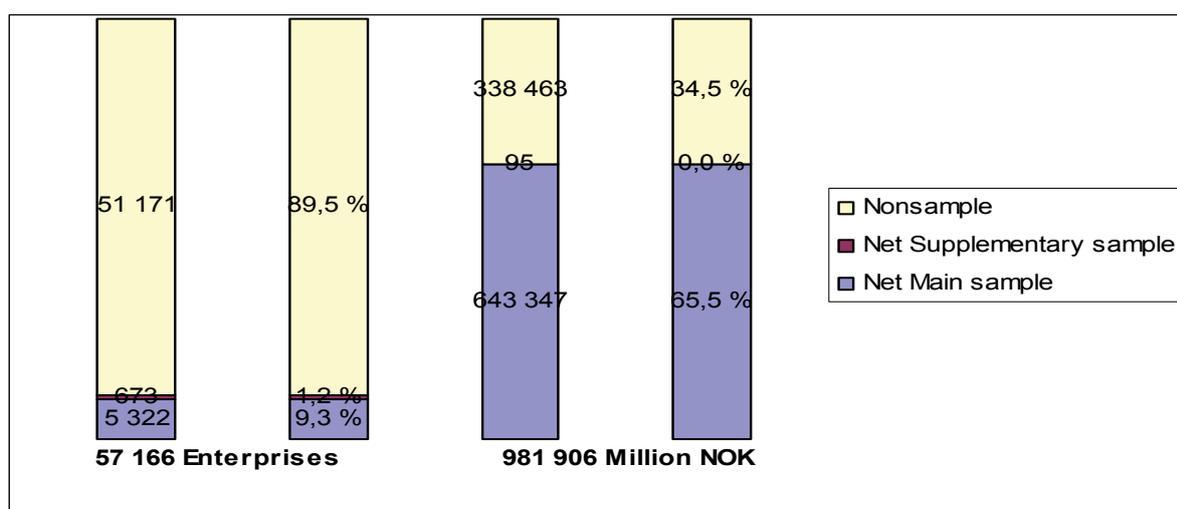
Table 3   Population, Statistics for Real estate, Renting and Business activities 2004[9]

Source 2004	Enterprise		Turnover	
	Total	Percentage	MNC	Percentage
NACE 70, 71, 73 and 74 Section K *	**79 847**	**100,0 %**	**244 637**	**100,0 %**
Complete set of NO with additional forms (the net main sample)	3 560	4,5 %	94 461	38,6 %
Statistics Norway's Structural Survey (the net supplementary sample)	3 246	4,1 %	1 246	0,5 %
NO received by electronic and employment from the AA-register1	41 872	52,4 %	100 678	41,2 %
Register of Annual Company Accounts in Brønnøysund and employment from the AA-register1	9 423	11,8 %	30 711	12,6 %
Register data (turnover from the VAT Register, employment from the AA-register1)	21 746	27,2 %	17 540	7,2 %
(Nonsample)	(73 041)	(91,5 %)	(148 930)	(60,9 %)
NACE 70 Real estate activities	**34 419**	**100,0 %**	**97 688**	**100,0 %**
Complete set of NO with additional forms (the net main sample)	1311	3,8 %	20 206	20,7 %
Statistics Norway's Structural Survey (the net supplementary sample)	1 388	4,0 %	924	0,9 %
NO received by electronic and employment from the AA-register1	19 699	57,2 %	49 966	51,1 %
Register of Annual Company Accounts in Brønnøysund and employment from the AA-register1	5 239	15,2 %	17 247	17,7 %
Register data (turnover from the VAT Register, employment from the AA-register1)	6 782	19,7 %	9 345	9,6 %

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[9] Official Statistics of Norway (NOS)

NACE 71 Renting of machinery and equipment without operator and of personal and household goods	**2 580**	**100,0 %**	**12 005**	**100,0 %**
Complete set of NO with additional forms (the net main sample)	252	9,8 %	6 380	53,1 %
Statistics Norway's Structural Survey (the net supplementary sample)	48	1,9 %	12	0,1 %
NO received by electronic and employment from the AA-register1	1358	52,6 %	3 632	30,3 %
Register of Annual Company Accounts in Brønnøysund and employment from the AA-register1	254	9,8 %	1 029	8,6 %
Register data (turnover from the VAT Register, employment from the AA-register1)	668	25,9 %	952	7,9 %
NACE 73 Research and development	**392**	**100,0 %**	**5 418**	**100,0 %**
Complete set of NO with additional forms (the net main sample)	72	18,4 %	4 480	82,7 %
Statistics Norway's Structural Survey (the net supplementary sample)	17	4,3 %	5	0,1 %
NO received by electronic and employment from the AA-register1	140	35,7 %	429	7,9 %
Register of Annual Company Accounts in Brønnøysund and employment from the AA-register1	86	21,9 %	307	5,7 %
Register data (turnover from the VAT Register, employment from the AA-register1)	77	19,6 %	197	3,6 %
NACE 74 Other business activities	**42 456**	**100,0 %**	**129 526**	**100,0 %**
Complete set of NO with additional forms (the net main sample)	1 925	4,5 %	63 395	48,9 %
Statistics Norway's Structural Survey (the net supplementary sample)	1 793	4,2 %	305	0,2 %
NO received by electronic and employment from the AA-register1	20 675	48,7 %	46 652	36,0 %
Register of Annual Company Accounts in Brønnøysund and employment from the AA-register1	3 844	9,1 %	12 129	9,4 %
Register data (turnover from the VAT Register, employment from the AA-register1)	14 219	33,5 %	7 046	5,4 %

* Excl. NACE 70.201 and 74.150.
[1] AA-registeret = The Register of Employees and Employers.

Figure 3   The Number of Enterprises and the Turnover according to Table 3 for Nace Section K

73 041	91,5 %	148 930	60,9 %
		1 246	0,5 %
3 246	4,1 %	94 461	38,6 %
3 560	4,5 %		
79 847 Enterprises		**244 637 Million NOK**	

Legend: Nonsample; Net Supplementary sample; Net Main sample
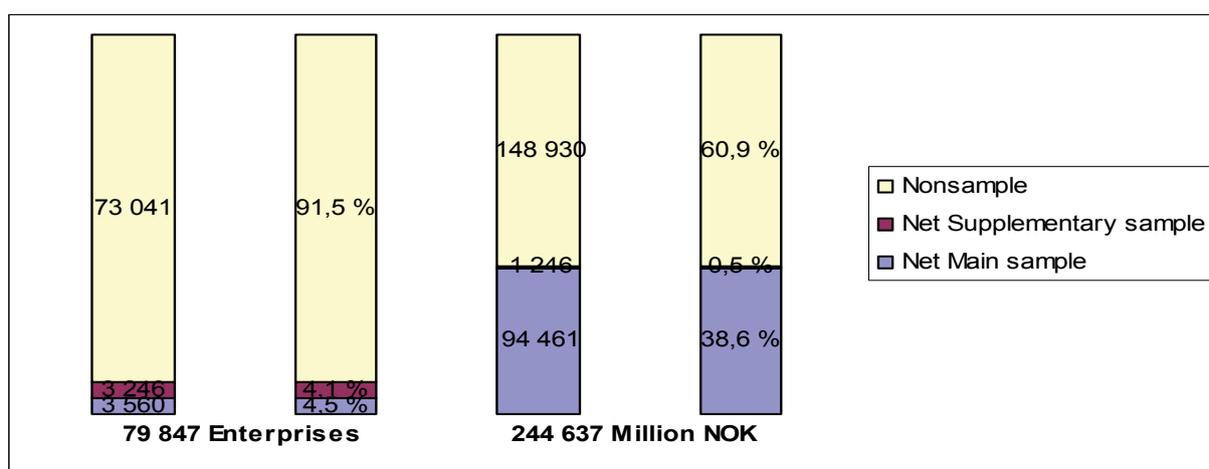
Table 4   Population, Transport, tourism and communication Statistics 2004

Source 2004	Enterprise		Turnover	
	Total	Percentage	NOK million	Percentage
Total population Transport, tourism and communication	**45 950**	**100.0**	**430 947**	**100.0**
Complete set of NO with additional forms (the net main sample)	5 008	10.9	325 709	75.6
NO received by electronic and employment from the AA-register[1]	26 394	57.4	69 947	16.2
Register of Annual Company Accounts in Brønnøysund and employment from the AA-register[1]	2 936	6.4	15 697	3.6
Statistics Norway's Structural Survey (the net supplementary sample)	1 438	3.1	339	0.1
Register data (turnover from the VAT Register. employment from the AA-register[1])	10 174	22.1	19 254	4.5
Total NACE 55 Hotels and restaurants	**10 130**	**100.0**	**41 420**	**100.0**
Complete set of NO with additional forms (the net main sample)	1 129	11.1	21 161	51.1
NO received by electronic and employment from the AA-register	5 585	55.1	14 169	34.2
Register of Annual Company Accounts in Brønnøysund and employment from the AA-register[1]	915	9.0	3 474	8.4
Statistics Norway's Structural Survey (the net supplementary sample)	275	2.7	77	0.2
Register data (turnover from the VAT Register. employment from the AA-register[1])	2 226	22.0	2 538	6.1
Total Nace 60 Land transport (Except for 60.3 Transport via pipelines	**16 801**	**100.0**	**47 987**	**100.0**
Complete set of NO with additional forms (the net main sample)	1 124	6.7	21 057	43.9
NO received by electronic and employment from the AA-register	10 384	61.8	18 893	39.4
Register of Annual Company Accounts in Brønnøysund and employment from the AA-register[1]	484	2.9	2 498	5.2
Statistics Norway's Structural Survey (the net supplementary sample)	130	0.8	48	0.1
Register data (turnover from the VAT Register. employment from the AA-register[1])	4 679	27.8	5 490	11.4
Total Nace 61 Water transport	**1 649**	**100.0**	**107 475**	**100.0**
Complete set of NO with additional forms (the net main sample)	838	50.8	98 997	92.1
NO received by electronic and employment from the AA-register[1]	497	30.1	4 744	4.4

Register of Annual Company Accounts in Brønnøysund and employment from the AA-register[1]	164	9.9	1 826	1.7
Statistics Norway's Structural Survey (the net supplementary sample)	19	1.2	35	0.0
Register data (turnover from the VAT Register. employment from the AA-register[1])	131	7.9	1 873	1.7
Total Nace 62 Air transport	**62**	**100.0**	**21 512**	**100.0**
Complete set of NO with additional forms (the net main sample)	35	56.5	20 273	94.2
NO received by electronic and employment from the AA-register[1]	19	30.6	58	0.3
Register of Annual Company Accounts in Brønnøysund and employment from the AA-register[1]	1	1.6	0	0.0
Statistics Norway's Structural Survey (the net supplementary sample)	1	1.6	0	0.0
Register data (turnover from the VAT Register. employment from the AA-register[1])	6	9.7	1 181	5.5
Total Nace 63 Supporting and auxiliary transport activities; activities of travel agencies	**3 193**	**100.0**	**79 060**	**100.0**
Complete set of NO with additional forms (the net main sample)	875	27.4	59 761	75.6
NO received by electronic and employment from the AA-register[1]	1 306	40.9	10 728	13.6
Register of Annual Company Accounts in Brønnøysund and employment from the AA-register[1]	323	10.1	3 061	3.9
Statistics Norway's Structural Survey (the net supplementary sample)	160	5.0	80	0.1
Register data (turnover from the VAT Register. employment from the AA-register[1])	529	16.6	5 430	6.9
Total Nace 64 Post and telecommunications	**1 378**	**100.0**	**72 296**	**100.0**
Complete set of NO with additional forms (the net main sample)	143	10.4	66 978	92.6
NO received by electronic and employment from the AA-register[1]	728	52.8	3 300	4.6
Register of Annual Company Accounts in Brønnøysund and employment from the AA-register[1]	73	5.3	1 025	1.4
Statistics Norway's Structural Survey (the net supplementary sample)	39	2.8	18	0.0
Register data (turnover from the VAT Register. employment from the AA-register[1])	395	28.7	975	1.3
Total Nace 71.1 Renting of automobiles and 71.2 Renting of other transport equipment	**723**	**100.0**	**3 561**	**100.0**
Complete set of NO with additional forms (the net main sample)	104	14.4	2 282	64.1
NO received by electronic and employment from the AA-register[1]	413	57.1	839	23.6
Register of Annual Company Accounts in Brønnøysund and employment from the AA-register[1]	92	12.7	269	7.6
Statistics Norway's Structural Survey (the net supplementary sample)	9	1.2	1	0.0
Register data (turnover from the VAT Register. employment from the AA-register[1])	105	14.5	169	4.7
Total Nace 72 Computer and related activities	**9 372**	**100.0**	**45 702**	**100.0**
Complete set of NO with additional forms (the net main sample)	428	4.6	24 983	54.7
NO received by electronic and employment from the AA-register[1]	6 021	64.2	16 147	35.3
Register of Annual Company Accounts in Brønnøysund and employment from the AA-register[1]	763	8.1	3 246	7.1
Statistics Norway's Structural Survey (the net supplementary sample)	535	5.7	39	0.1
Register data (turnover from the VAT Register. employment from the AA-register[1])	1 625	17.3	1 287	2.8

2.4 SAMPLING DESIGN

In the SBS 2004 the same BoF situation file, which lays down the *sampling frame[10]* (an initial population opposite to the final population as presented in Tables 1-3), and the same sampling method has been carried out for all Nace Section F, G, H, I, and K according to a *coordinated sampling design*, that is, a plan including all sample surveys in the SBS.

A *sample design[11]* is defined as a method of assigning probabilities in order to extract units from the initial population to the sample. As a result it is outlined a number of criteria in fulfilling such a plan.

Important criteria are those that concern with defining the goal population and those that refer to stratification of the goal population. However this QR will not deal with detailed information on the population for each Nace Section F, G, H, I, and K.

2.4.1 Stratification before Undertaking Sampling Procedures
The stratification of the population before drawing the sample is from reference year 2000 determined by two factors, division (by subclass at 5 digit NACE SN2002[12]) and employment (by size). The grouping of enterprises into sizes is as follows:
- 0 employee, or
- 1 employee, or
- 2-9 employees, or
- 10-19 employees, or
- 20-49 employees, or
- 50-99, employees, or
- at least 100 employees

The population is also organised according to strata before undergoing the procedures for sampling. Once the population is stratified, a main sample, a supplementary sample, and a nonsample, which constitute the population, are obtained for each Nace Section F, G, H, I, and K.

2.4.2 Results from the Sampling
The main sample for F, G, and K consists of 2 164, 6 337, and 4 355 enterprises selected from the entire population. For H and I the main sample consists of 1 358 and 3 705 enterprises selected from the entire population. Enterprises with more than 100 employees are always included in the sample for each stratum, or the main sample by subclass at 5 digit Nace must contain at least 10 units. The contribution rate (turnover of the sample in percentage of turnover of the population) is 53 per cent in all for Nace Section F, 69 per cent in all for Nace Section G, 59 per cent in all for Nace section H, 89 per cent Nace section I and 46 percent for Nace Section K in all.

The supplementary sample for F, G, and K consists of 1 283, 3 065 and 9 791 enterprises defined as the goal population excluded those belonging to the main sample and the nonsample. The supplementary sample for H and I consists of 5 738 enterprises.

Clearly this explains that merely the main sample had undergone the real sampling procedures as embraced by the terminology *sample design*. Because of the technical and theoretical difficulty level attached to the procedures of sampling, it is not natural to go further into details on how the main sample had been extracted.

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[10] A list of all members of a population used as a basis for sampling.

[11] The sample design provides information on the target and final sample sizes, strata definitions and the sample selection methodology.

[12] The Standard Industrial Classification (SN2002) in Statistics Norway, which is based on the EU standard NACE Rev. 1.

3. Determination of Principal Activity for Enterprises in the Central Register of Establishments and Enterprises of Statistics Norway.

3. 1 DATA SOURCES FOR PRINCIPAL ACTIVITY

Every newly registered legal unit carries a code for its principal activity (by NACE REV.1) as it enters the Central Register of Establishments and Enterprises (BoF) at Statistics Norway (SSB). This code is routinely determined on the basis of information on purpose of activity the unit has submitted to the E-register. Organisational form and name also give help in deciding the right activity code. An activity code may be determined or changed due to information from units involved in our yearly structural business surveys, in i.e. additional forms (SSB's TS). In the case of a reporting unit carrying out a mixed range of activities, the activity code is determined by the unit's principal activity. The BoF-register contains a copy of the E-register, which is responsible for updating changes on legal units in private sector. However, decisions for changing or determining activity codes are taken by the responsible Division for Construction and Service Statistics regarding the Nace Section F, G, and K. And by the responsible Division for Transport and Tourism Statistics regarding the Nace Section H and I. Change in one register implies change in the other and vice versa.

As the new legal unit enters BoF the system automatically generates one local kind of activity unit (local KAU) and one enterprise unit, thereby giving the register its characteristic name the Central Register of Establishments[13] (local KAUs) and Enterprises of Statistics Norway. Both of these units, together with the original legal unit, are connected and given the same activity code as the one carried by the legal unit. This group of connected units – Legal, Local KAU, Enterprise - is an enterprise at birth in the BoF-register. Besides activity code, other attributes such as address and number of employees (if any) are attached to the enterprise. At present time only the terms enterprise (= legal unit) and local KAU are in use in BoF.

3. 2 CLASSIFICATION ALGORITHM

Enterprises shall be classified according to the unit's principal activity. The Regulation to NACE Rev.1.1 states that the identification of a principal activity is necessary to allocate a unit to a particular NACE Rev.1.1 heading. Further it says that the "principal activity" is identified by the "top down" method in terms of the activity that contributes most to the total value added of the entity being under consideration.

As a matter of fact we look to number of employees and/or turnover as size criteria for determining principal activity for a reporting unit. The priority on the size criteria is following:

1. Value added (if information is at hand)
2. Number of employees (if no information 1.)
3. Turnover (if no information 1. and 2.)

The activity code allocated to an enterprise is often the same as for the/those largest local KAUs in the unit, but not always.

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[13] According to the Regulation on statistical units the local kind-of-activity unit (local KAU) corresponds to the operational definition of the establishment. According to the European System of Accounts (ESA) the local KAU is called the establishment in the System of National Accounts (SNA) and ISIC Rev. 3.

The algorithm used to determine principal activity for a unit (local, enterprise etc.) in BoF takes account of the hierarchical nature of NACE rev.1. The method is top-down. The simplest way to describe this method is by an example. Consider the following fictitious enterprise: From the Annual Structural Business Survey we know that the enterprise carries on activities of a mixed character corresponding to the following NACE classes. We also know for each class its number of employees.

EXAMPLE:

Stage 1: A reporting unit may carry out the following activities

Local KAUs	SECTION	DIVISION	SUBCLASS	NUMBER OF EMPLOYEES
A	D	28	28.710	13
B		29	29.400	3
C			29.530	15
D		34	34.300	8
E	G	51	51.140	7
F			51.660	28
G	K	74	74.209	13
ENTERPRISE			**29.530**	**87**

The principal activity is determined by number of employees as follows:
Stage 2: Identify the largest section
            Sum Section D   39
            Sum Section G   35
            Sum Section K   13

Stage 3: Identify the largest division
            Sum Division 29   18
            Sum Division 28   13
            Sum Division 34   8

Stage 4: Identify the largest subclass
            Subclass 29.530   15
            Subclass 29.400   3

The largest subclass is 29.530, and we allocate this activity code to the reporting unit. The enterprise has now a principal activity with the activity code 29.530.

This algorithm is applied to any type of unit in BoF for which data of the above type are available: Local KAUs and Enterprise Units. However, the number of employees for activities as in the example may be taken from different sources. If the Annual SSB's structural survey is the data source then the data on employees are based on information from a simplified form for enterprises included in the supplementary sample, as explained in Chapter 2. Another source for obtaining information on the number of employees is the AA-register, also attached to BoF.

4. Quality Indicators: Coefficient of Variation and Non-response Rate

Member States shall, by Eurostat requirement[14], report the coefficient of variation for various characteristics and activity levels. The coefficient of variation (CV) shall take into account three main factors:

- Sampling error
- Misclassification error
- Non-response error

The following Tables 4-6 convey the requested estimates of coefficients of variation from the Norwegian SBS for Nace Section F, G, H, I, and K with reference year 2004.

The following Tables 7-8 convey the requested non-response rates from the Norwegian SBS for Nace Section F, G, H, I, and K with reference year 2004.

Table 4 refers to the following six characteristics:

- 11 11 0 The number of enterprises
- 12 11 0 Turnover
- 12 15 0 Value added
- 13 31 0 Labour costs
- 15 11 0 Gross Investments
- 16 13 0 Number of Employees

Table 5 refers to the following three characteristics:

- 11 11 0 The number of enterprises
- 12 11 0 Turnover
- 12 15 0 Value added

Table 6 refers to the following three characteristics:

- 11 21 0 The number of local kind of activity units (local KAUs)
- 13 32 0 Wages and Salaries

4.1 VARIANCE ESTIMATION

4.1.1 Stratification before Undertaking Procedures of Variance Estimation
The population consists of all enterprises in the relevant industry divisions with registered activity in the reference year 2004 and undergone manual revision. The population is divided into subpopulations called strata. The statistics on total employment and turnover represent **full-census survey** data for the entire population. Because we do not have all the data for all the units covered by other statistics, some estimates must be made. These estimates are based on sample data with varying degrees of coverage in the various strata. The population for the relevant industry Section F, G, H, I, and K is organized according to strata before the estimates are undertaken. The number of strata for each section is from reference year 2000 determined by two characteristics, division (by subclass at 5 digit NACE SN2002[15]) and employment (by size), as follows:

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[14] Having regard to the Commission Regulation (EC) No 1618/1999 of 23 July 1999.

[15] The Standard Industrial Classification (SN2002) in Statistics Norway, which is based on the EU standard NACE Rev. 1.1.

Division:	Section F:
	20 groups, all classes/subclasses in NACE division 45 the lowest level (4- or 5-digit level)
	Section G:
	131 Groups, all Classes/ Subclasses in the given NACE divisions 50, 51 and 52 at the lowest level (4- or 5-digit level)
	Section H:
	11 Groups, all Classes/ Subclasses in the given NACE division 55 at the lowest level (4- or 5-digit level)
	Section I:
	42 Groups, all Classes/ Subclasses in the given NACE divisions 60, 61, 62, 63 and 64 at the lowest level (4- or 5-digit level)
	Section K:
	45 groups, all classes/subclasses within the given NACE divisions 70, 71, 72, 73 and 74 at the lowest level (4 or 5 digit level)

Employment: 4 groups,
1) enterprises with 0 employed (applies to individual enterprises, companies with shared liability and enterprises with liability),
2) enterprises with 0-9 employed (for enterprises with 0 employed they are required not to be individual enterprises, enterprises with shared liability or enterprises with liability),
3) enterprises with 10-49 employed,
4) enterprises with 50 or more employed

This yields 4 strata per division. However, since the stratification process is carried out separately for the net main sample enterprises, each of the net main sample enterprises has five possible strata due to the requirement that each stratum must contain at least five enterprises for all Nace Section F, G, H, I, and K. If the number is less, then the employment groups are combined together with the others until the requirement for at least five enterprises is met.

The number of strata was 57 for section F, 292 strata for section G, 34 for section H, 109 for section I and 129 for section K.

Once the stratification work had been accomplished, a complete set of variables was produced as they appear in the net main sample (additional form (SSB's TS) and the General Trading Statements (NO)), on all enterprises and establishments (local KAUs) for the net supplementary sample and the nonsample, see the Tables 1-3. This really means that only observations from the net main sample had been used to make inferences about the entire population, including the prediction of statistics and variance estimations.

Finally, referring to this complete set of variables estimations of variance had been conducted.

4.1.2 The Ratio Model for Estimation of the Totals
The method used to calculate variance by Statistics Norway is referred to as *"the Ratio Model for Estimation of the Totals"*. This method is described in Valliant, Dorfman, and Royall (2000)[16].

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[16] Richard Valliant, Alan H.Dorfman, and Richard M. Royall (2000), *"Finite Population Sampling and Inference - A Prediction Approach"*, pp. 27-29. John Wiley & Sons, Inc.

Because of the technical and theoretical difficulty level attached to the procedures of variance estimation, it is not natural to go further into details on how the figures in the Tables 5-7 had been conducted.

However, the reason for this method lies in the way we use a combination of questionnaires (an additional and simplified form) and administrative data in order to fulfil the SBS regulation. The survey strategy as described in Chapter 2 has therefore two important consequences in terms of variance estimation. Firstly, since the statistics on total employment and turnover represent full-census survey data for the entire population, hence the variance on these two statistics Number of employees and Turnover is nothing but zero, it is assumed that all auxiliary values, which are based on the characteristic Turnover, are known for each unit in the entire population. And secondly, it is not possible to calculate the exact variation, but we have made estimations of variance.

Therefore, estimations conducted by using the ratio model have only involved the three characteristics **12 15 0** (Value added), **13 31 0** (Labour costs), and **15 11 0** (Gross investments)**.** For Labour costs the sample and the population had to be different from the sample and the population as applied to Value added and Gross investments. The reason is partly extensive use of administrative data and partly a large number of units actually had no employment (per definition no labour costs at all). The respective characteristic samples are determined by the different sources used in the process of data collection. Hence RiB, NO received from the sample survey and by electronic constitute the sources applied to the characteristic Labour costs, while the characteristic Value added has NO received from the sample survey and by electronic (SLN), and the characteristic Gross investments has SSB's TS (the additional form) received from the main sample survey and equally a number of other enterprises where values for this characteristic were manually collected from RiB/NO. This explains how Gross investments has the smallest sample as basis for estimations of the coefficients of variation, and *therefore it is likely to be expected that estimated CVs referring to this characteristic are higher than those of the other two characteristics .*

The characteristic - **11 11 0** (Number of enterprises) - is given "0" in coefficient of variation since all units in the population are accounted in one way or another, this is, by means of the different data sources as presented in the Tables 1-3. And the characteristics - **12 11 0** (Turnover) and **16 13 0** (Number of employees) **-** are also given "0" in coefficient of variation since the statistics on total employment and turnover represent full-census survey data for the entire population.

4.1.3 Sampling Error
Our calculations of estimates of CV are in fact sampling error described by a coefficient of variation.

4.1.4 Misclassification.
Misclassification is defined in the requirement notes in the sense that a unit may be classified in one activity at the sampling occasion and in another activity at the time of estimation. However, since the most recent information on activity is used to form the strata, we assume there is no contribution to the coefficient of variation from this source in the SBS 2004.

4.2 NON-RESPONSE RATE

When the survey strategy had been carried out we actually counted a number of cases of misclassification. For instance when a respondent tells us that the responsible unit has a principal activity different from what is preclassified (preprinted on the additional form (SSB's TS)) or is simply gone out of business. Clearly, cases of misclassification are not cases of non-response. Only the units

which should respond according to their current characteristics have to be taken into account for measuring the non-response rate[17].

Only the set of main sample units as defined in Section 2.4, has been taken into the calculations of non-response.

Item non-response rate is treated as the same as unit non-response rate. A unit involved in the main sample survey is either completely accepted, completely rejected or completely missing.

Calculations of the non-response rates are determined by two gross main samples and the net main sample by groups at 3 digit NACE:

non-response rate:	=	round (1000 * (1- (numerator/denominator2)))
non-response:	=	denominator2 - numerator
main sample:	=	all enterprises included in the main sample as defined in Section 2.4
denominator1:	=	gross main sample1
denominator2:	=	gross main sample2
gross main sample1:	=	all enterprises in the main sample excluded units out of business, exceptions, returns, and units misclassified (with divisions other than F, G, and K), and also excluded units with NACE 45.120, 70.201 and 74.150 in the final population as presented in the Tables 1-3
gross main sample2:	=	all units identified by the enterprises' organisation numbers in the gross main sample1 and NACE in the final population as presented in the Tables 1-3. The gross sample2 is equal to the gross main sample1 in number of units as a whole but may differ in number of units at 3 digit NACE due to change of activity during the year 2004.
numerator:	=	net main sample
net main sample:	=	the net main sample as presented in the final population in Tables 1-3
unit:	=	enterprise as defined by the BoF-register

The main sample Nace Section F (2 164), G (6 337) and K (4 355). The gross main sample1 Nace Section F (1 894), G (5 753), and K (3 763), and in sum (F+G+K=11 410). The gross main sample2 section F (1 908), G (5 717), and K (3 775). The net main sample section F (1 742), G (5 322), and K (3 456). Thus, for the three Nace Section F, G, and K as a whole we have the total net main sample (10 520), and similarly, the total gross main sample2 (11 400). Then, the non-response rate for all three Nace Section is 77 per thousand (or 7.7 percent) when measured[18] by number of units:

$$ROUND(INR) = ROUND(1000 * (1 - \left(\frac{1742 + 5322 + 3456}{1908 + 5717 + 3775}\right), 0)) =$$

$$ROUND(1000 * (1 - \left(\frac{10520}{11400}\right), 0)) = \underline{77‰}$$

The non-response rate for H and I:

$$ROUND(1000 * (1 - \left(\frac{4139}{4601}\right), 0)) = \underline{100‰}$$

INR and IRR are indicator codes for non-response and item non-response rates shown in Tables 8-9.

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[17] For a definition of non-response rate see "*Criteria for the Quality Measurement in Statistical Business Statistics-explanatory document*", E. Raulin (Eurostat-D2-31/03/99).

[18] When measured by turnover the non-response rate is 35 per thousand totally.

4.3 RESULTS OF VARIANCE ESTIMATION AND NON-RESPONSE RATE

Numeric value of quality indicator (%) multiplied by 10 and subsequently rounded to the nearest integer. With the quality indicator codes ICV, INR, and IRR (QIC), we have:

$$ROUND(QIC) = ROUND(1000 * QIC, 0)\ ^{[19]}$$

For example in case of the variable Value added with variance of the estimator of 295617008 and an expected value of 5022773 for the Nace Rev. 1.1 45.1, the ICV-value has to be coded '3':

$$ROUND(ICV) = ROUND(1000 * \frac{\sqrt{Variance\_of\_the\_estimator}}{Expected\_value}, 0)$$

$$ROUND(ICV) = ROUND(1000 * \frac{\sqrt{295617008}}{5022773}, 0) = \underline{3‰}$$

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[19] DOC.6.2A1/EN/EUROSTAT/D3/SBS/APR05, Annex 1.

Table 5   Coefficient of Variation (‰) by 3 Digit NACE20 Rev.1.1 for Six Characteristics for Series 1A (Annual Enterprise Statistics)

	NACE	Number of Enterprises	Turnover	Value Added	Labour Costs	Gross Invest.	Number of Employees
1.	45.1	0	0	3	2	138	0
2.	45.2	0	0	3	1	88	0
3.	45.3	0	0	2	1	363	0
4.	45.4	0	0	3	2	155	0
5.	45.5	0	0	12	10	724	0
6.	50.1	0	0	8	3	231	0
7.	50.2	0	0	3	1	56	0
8.	50.3	0	0	10	2	192	0
9.	50.4	0	0	10	6	215	0
10.	50.5	0	0	4	1	335	0
11.	51.1	0	0	8	5	386	0
12.	51.2	0	0	16	2	62	0
13.	51.3	0	0	11	3	41	0
14.	51.4	0	0	7	7	163	0
15.	51.5	0	0	7	7	54	0
16.	51.8	0	0	4	2	67	0
17.	51.9	0	0	11	6	161	0
18.	52.1	0	0	4	7	42	0
19.	52.2	0	0	6	5	105	0
20.	52.3	0	0	2	1	50	0
21.	52.4	0	0	1	1	64	0
22.	52.5	0	0	62	31	519	0
23.	52.6	0	0	7	3	64	0
24.	52.7	0	0	16	20	555	0
25.	55.1	0	0	3	1	253	0
26.	55.2	0	0	10	9	305	0
27.	55.3	0	0	2	1	913	0
28.	55.4	0	0	9	5	140	0
29.	55.5	0	0	14	2	215	0
30.	60.1	0	0	0	0	0	0
31.	60.2	0	0	4	5	40	0
32.	61.1	0	0	8	16	114	0
33.	61.2	0	0	13	0	107	0
34.	62.1	0	0	0	0	8	0
35.	62.2	0	0	80	106	119	0
36.	63.1	0	0	24	11	142	0
37.	63.2	0	0	29	64	47	0
38.	63.3	0	0	9	6	125	0
39.	63.4	0	0	6	5	392	0
40.	64.1	0	0	16	14	427	0
41.	64.2	0	0	4	7	424	0
42.	70	0	0	23	13	130	0
43.	71.1	0	0	12	3	145	0
44.	71.2	0	0	19	13	219	0
45.	71.3	0	0	37	37	107	0
46.	71.4	0	0	8	5	153	0
47.	72.1	0	0	17	13	140	0
48.	72.2	0	0	6	2	388	0
49.	72.3	0	0	1	0	4	0
50.	72.4	0	0	62	11	493	0
51.	72.5	0	0	2	1	661	0
52.	73	0	0	66	15	1	0
53.	74.1	0	0	2	3	104	0

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[20] Exclusive NACE 45.120 (without population), 70.201, 74.150.

Obs	NACE						
54.	74.4	0	0	20	6	272	0
55.	74.5	0	0	4	4	195	0
56.	74.6	0	0	2	2	66	0
57.	74.7	0	0	5	5	315	0
58.	74.8	0	0	8	3	165	0
59.	74A	0	0	24	11	32	0

Table 6 Coefficient of Variation (‰) by 3 Digit NACE Rev.1.1 and Size Class for Three Characteristics for Series 1 B (Annual Enterprise Statistics)

Obs	NACE	Size class	Number of Enterprises	Turnover	Value Added
1.	45.1	0-9	0	0	4
2.	45.1	10-19	0	0	10
3.	45.1	20-49	0	0	10
4.	45.1	50-249	0	0	0
5.	45.1	>=250	0	0	0
6.	45.2	0-9	0	0	3
7.	45.2	10-19	0	0	7
8.	45.2	20-49	0	0	6
9.	45.2	50-249	0	0	7
10.	45.2	>=250	0	0	26
11.	45.3	0-9	0	0	3
12.	45.3	10-19	0	0	5
13.	45.3	20-49	0	0	8
14.	45.3	50-249	0	0	6
15.	45.3	>=250	0	0	0
16.	45.4	0-9	0	0	3
17.	45.4	10-19	0	0	10
18.	45.4	20-49	0	0	13
19.	45.4	50-249	0	0	0
20.	45.5	0-9	0	0	12
21.	45.5	10-19	0	0	25
22.	45.5	20-49	0	0	132
23.	45.5	50-249	0	0	0
24.	50.1	0-9	0	0	15
25.	50.1	10-19	0	0	13
26.	50.1	20-49	0	0	17
27.	50.1	50-249	0	0	8
28.	50.2	0-9	0	0	6
29.	50.2	10-19	0	0	14
30.	50.2	20-49	0	0	4
31.	50.2	50-249	0	0	7
32.	50.2	>=250	0	0	0
33.	50.3	0-9	0	0	12
34.	50.3	10-19	0	0	30
35.	50.3	20-49	0	0	27
36.	50.3	50-249	0	0	0
37.	50.3	>=250	0	0	0
38.	50.4	0-9	0	0	18
39.	50.4	10-19	0	0	0
40.	50.4	20-49	0	0	0
41.	50.5	0-9	0	0	9
42.	50.5	10-19	0	0	8
43.	50.5	20-49	0	0	25
44.	50.5	>=250	0	0	0
45.	51.1	0-9	0	0	10
46.	51.1	10-19	0	0	16
47.	51.1	20-49	0	0	40

48.	51.1	50-249	0	0	0
49.	51.2	0-9	0	0	47
50.	51.2	10-19	0	0	85
51.	51.2	20-49	0	0	0
52.	51.2	50-249	0	0	51
53.	51.2	>=250	0	0	0
54.	51.3	0-9	0	0	25
55.	51.3	10-19	0	0	29
56.	51.3	20-49	0	0	49
57.	51.3	50-249	0	0	25
58.	51.3	>=250	0	0	0
59.	51.4	0-9	0	0	14
60.	51.4	10-19	0	0	18
61.	51.4	20-49	0	0	16
62.	51.4	50-249	0	0	32
63.	51.4	>=250	0	0	0
64.	51.5	0-9	0	0	15
65.	51.5	10-19	0	0	30
66.	51.5	20-49	0	0	16
67.	51.5	50-249	0	0	15
68.	51.5	>=250	0	0	0
69.	51.8	0-9	0	0	7
70.	51.8	10-19	0	0	16
71.	51.8	20-49	0	0	15
72.	51.8	50-249	0	0	17
73.	51.8	>=250	0	0	29
74.	51.9	0-9	0	0	21
75.	51.9	10-19	0	0	38
76.	51.9	20-49	0	0	0
77.	51.9	50-249	0	0	0
78.	52.1	0-9	0	0	15
79.	52.1	10-19	0	0	7
80.	52.1	20-49	0	0	9
81.	52.1	50-249	0	0	4
82.	52.1	>=250	0	0	0
83.	52.2	0-9	0	0	11
84.	52.2	10-19	0	0	28
85.	52.2	20-49	0	0	41
86.	52.2	50-249	0	0	0
87.	52.2	>=250	0	0	0
88.	52.3	0-9	0	0	15
89.	52.3	10-19	0	0	12
90.	52.3	20-49	0	0	0
91.	52.3	50-249	0	0	0
92.	52.3	>=250	0	0	0
93.	52.4	0-9	0	0	3
94.	52.4	10-19	0	0	5
95.	52.4	20-49	0	0	5
96.	52.4	50-249	0	0	9
97.	52.4	>=250	0	0	0
98.	52.5	0-9	0	0	41
99.	52.6	0-9	0	0	22
100.	52.6	10-19	0	0	26
101.	52.6	20-49	0	0	150
102.	52.6	50-249	0	0	0
103.	52.7	0-9	0	0	10
104.	52.7	10-19	0	0	43
105.	52.7	20-49	0	0	0
106.	55.1	0-9	0	0	11
107.	55.1	10-19	0	0	9

108.	55.1	20-49	0	0	8
109.	55.1	50-249	0	0	5
110.	55.1	>=250	0	0	13
111.	55.2	0-9	0	0	9
112.	55.2	10-19	0	0	37
113.	55.2	20-49	0	0	311
114.	55.2	50-249	0	0	0
115.	55.3	0-9	0	0	5
116.	55.3	10-19	0	0	4
117.	55.3	20-49	0	0	4
118.	55.3	50-249	0	0	4
119.	55.3	>=250	0	0	0
120.	55.4	0-9	0	0	21
121.	55.4	10-19	0	0	24
122.	55.4	20-49	0	0	23
123.	55.4	50-249	0	0	0
124.	55.5	0-9	0	0	11
125.	55.5	10-19	0	0	23
126.	55.5	20-49	0	0	6
127.	55.5	50-249	0	0	43
128.	55.5	>=250	0	0	0
129.	60.1	0-9	0	0	221
130.	60.1	10-19	0	0	0
131.	60.1	>=250	0	0	0
132.	60.2	0-9	0	0	2
133.	60.2	10-19	0	0	9
134.	60.2	20-49	0	0	12
135.	60.2	50-249	0	0	11
136.	60.2	>=250	0	0	32
137.	61.1	0-9	0	0	8
138.	61.1	10-19	0	0	19
139.	61.1	20-49	0	0	49
140.	61.1	50-249	0	0	16
141.	61.1	>=250	0	0	33
142.	61.2	0-9	0	0	33
143.	61.2	10-19	0	0	0
144.	62.1	0-9	0	0	0
145.	62.1	20-49	0	0	0
146.	62.1	50-249	0	0	0
147.	62.1	>=250	0	0	0
148.	62.2	0-9	0	0	75
149.	62.2	10-19	0	0	0
150.	62.2	20-49	0	0	0
151.	62.2	50-249	0	0	84
152.	63.1	0-9	0	0	28
153.	63.1	10-19	0	0	48
154.	63.1	20-49	0	0	53
155.	63.1	50-249	0	0	69
156.	63.1	>=250	0	0	0
157.	63.2	0-9	0	0	29
158.	63.2	10-19	0	0	74
159.	63.2	20-49	0	0	43
160.	63.2	50-249	0	0	37
161.	63.2	>=250	0	0	0
162.	63.3	0-9	0	0	31
163.	63.3	10-19	0	0	28
164.	63.3	20-49	0	0	33
165.	63.3	50-249	0	0	0
166.	63.3	>=250	0	0	0
167.	63.4	0-9	0	0	24

168.	63.4	10-19	0	0	50
169.	63.4	20-49	0	0	14
170.	63.4	50-249	0	0	0
171.	63.4	>=250	0	0	0
172.	64.1	0-9	0	0	17
173.	64.1	10-19	0	0	0
174.	64.1	20-49	0	0	69
175.	64.1	50-249	0	0	40
176.	64.1	>=250	0	0	1
177.	64.2	0-9	0	0	62
178.	64.2	10-19	0	0	127
179.	64.2	20-49	0	0	25
180.	64.2	50-249	0	0	7
181.	64.2	>=250	0	0	3
182.	70	0-9	0	0	3
183.	70	10-19	0	0	60
184.	70	20-49	0	0	1
185.	70	50-249	0	0	66
186.	70	>=250	0	0	0
187.	71.1	0-9	0	0	22
188.	71.1	10-19	0	0	0
189.	71.1	20-49	0	0	0
190.	71.1	50-249	0	0	0
191.	71.2	0-9	0	0	19
192.	71.2	10-19	0	0	0
193.	71.3	0-9	0	0	18
194.	71.3	10-19	0	0	77
195.	71.3	20-49	0	0	307
196.	71.3	50-249	0	0	0
197.	71.3	>=250	0	0	0
198.	71.4	0-9	0	0	22
199.	71.4	10-19	0	0	31
200.	71.4	20-49	0	0	0
201.	71.4	50-249	0	0	0
202.	72.1	0-9	0	0	45
203.	72.1	10-19	0	0	15
204.	72.1	50-249	0	0	0
205.	72.2	0-9	0	0	11
206.	72.2	10-19	0	0	14
207.	72.2	20-49	0	0	15
208.	72.2	50-249	0	0	13
209.	72.2	>=250	0	0	0
210.	72.3	0-9	0	0	22
211.	72.3	10-19	0	0	0
212.	72.3	20-49	0	0	0
213.	72.3	50-249	0	0	0
214.	72.3	>=250	0	0	0
215.	72.4	0-9	0	0	127
216.	72.4	10-19	0	0	26
217.	72.4	20-49	0	0	40
218.	72.4	50-249	0	0	0
219.	72.5	0-9	0	0	22
220.	72.5	10-19	0	0	0
221.	72.5	20-49	0	0	0
222.	72.5	50-249	0	0	0
223.	72.5	>=250	0	0	0
224.	72.6	0-9	0	0	66
225.	73	0-9	0	0	96
226.	73	10-19	0	0	802
227.	73	20-49	0	0	88

228.	73	50-249	0	0	0
229.	73	>=250	0	0	0
230.	74.1	0-9	0	0	4
231.	74.1	10-19	0	0	4
232.	74.1	20-49	0	0	8
233.	74.1	50-249	0	0	8
234.	74.1	>=250	0	0	22
235.	74.4	0-9	0	0	11
236.	74.4	10-19	0	0	39
237.	74.4	20-49	0	0	84
238.	74.4	50-249	0	0	82
239.	74.4	>=250	0	0	0
240.	74.5	0-9	0	0	18
241.	74.5	10-19	0	0	26
242.	74.5	20-49	0	0	10
243.	74.5	50-249	0	0	11
244.	74.5	>=250	0	0	3
245.	74.6	0-9	0	0	22
246.	74.6	10-19	0	0	38
247.	74.6	20-49	0	0	32
248.	74.6	50-249	0	0	0
249.	74.6	>=250	0	0	0
250.	74.7	0-9	0	0	7
251.	74.7	10-19	0	0	8
252.	74.7	20-49	0	0	10
253.	74.7	50-249	0	0	13
254.	74.7	>=250	0	0	0
255.	74.8	0-9	0	0	9
256.	74.8	10-19	0	0	31
257.	74.8	20-49	0	0	22
258.	74.8	50-249	0	0	9
259.	74.8	>=250	0	0	17
260.	74.A	0-9	0	0	14
261.	74.A	10-19	0	0	48
262.	74.A	20-49	0	0	49
263.	74.A	50-249	0	0	8
264.	74.A	>=250	0	0	0

The number of strata for each section in Table 6 series 1B is determined by two factors, division (by subclass at 5 digit NACE SN2002[21]) and employment (by size classes: 0-9, 10-19, 20-49, 50-249, ≥250).

For some size classes (observation number 5, 87, 186, 197, 239) the values of CV for the characteristic Value added are given nil, which are greened out in the Table 6, the (stratum) sample equals the (stratum) population. In such case we find that both the sample and the population contain exactly one enterprise, and the statistics for this characteristic are therefore confidential.

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[21] The Standard Industrial Classification (SN2002) in Statistics Norway, which is based on the EU standard NACE Rev. 1.1.

Table 7   **Coefficient of Variation (‰) by NUTS 2 Region and 2 Digit NACE Rev.1.1 for Two Characteristics for Series 1 C (Annual Regional Statistics)**

Obs	NACE	NUTS	Number of LKAUs	Wages and salaries
1.	45	no01	0	4
2.	45	no02	0	4
3.	45	no03	0	3
4.	45	no04	0	3
5.	45	no05	0	3
6.	45	no06	0	5
7.	45	no07	0	3
8.	50	no01	0	11
9.	50	no02	0	13
10.	50	no03	0	8
11.	50	no04	0	13
12.	50	no05	0	10
13.	50	no06	0	10
14.	50	no07	0	9
15.	51	no01	0	9
16.	51	no02	0	11
17.	51	no03	0	8
18.	51	no04	0	10
19.	51	no05	0	12
20.	51	no06	0	10
21.	51	no07	0	17
22.	52	no01	0	13
23.	52	no02	0	4
24.	52	no03	0	8
25.	52	no04	0	4
26.	52	no05	0	3
27.	52	no06	0	4
28.	52	no07	0	5
29.	55	no01	0	11
30.	55	no02	0	6
31.	55	no03	0	4
32.	55	no04	0	7
33.	55	no05	0	4
34.	55	no06	0	4
35.	55	no07	0	5
36.	60	no01	0	6
37.	60	no02	0	11
38.	60	no03	0	6
39.	60	no04	0	7
40.	60	no05	0	4
41.	60	no06	0	7
42.	60	no07	0	7
43.	61	no01	0	34
44.	61	no02	0	46
45.	61	no03	0	37
46.	61	no04	0	86
47.	61	no05	0	24
48.	61	no06	0	36
49.	61	no07	0	171
50.	62	no01	0	25
51.	62	no02	0	0
52.	62	no03	0	0
53.	62	no04	0	0
54.	62	no05	0	60
55.	62	no06	0	0
56.	62	no07	0	17

57.	63	no01	0	9
58.	63	no02	0	41
59.	63	no03	0	15
60.	63	no04	0	15
61.	63	no05	0	14
62.	63	no06	0	26
63.	63	no07	0	18
64.	64	no01	0	10
65.	64	no02	0	15
66.	64	no03	0	12
67.	64	no04	0	15
68.	64	no05	0	24
69.	64	no06	0	36
70.	64	no07	0	11
71.	70	no01	0	16
72.	70	no02	0	28
73.	70	no03	0	14
74.	70	no04	0	26
75.	70	no05	0	16
76.	70	no06	0	22
77.	70	no07	0	23
78.	71A	no01	0	72
79.	71A	no02	0	43
80.	71A	no03	0	29
81.	71A	no04	0	48
82.	71A	no05	0	40
83.	71A	no06	0	67
84.	71A	no07	0	34
85.	71.3-71.4	no01	0	46
86.	71.3-71.4	no02	0	43
87.	71.3-71.4	no03	0	16
88.	71.3-71.4	no04	0	50
89.	71.3-71.4	no05	0	62
90.	71.3-71.4	no06	0	37
91.	71.3-71.4	no07	0	27
92.	72	no01	0	8
93.	72	no02	0	9
94.	72	no03	0	9
95.	72	no04	0	10
96.	72	no05	0	17
97.	72	no06	0	33
98.	72	no07	0	13
99.	73	no01	0	208
100.	73	no02	0	62
101.	73	no03	0	463
102.	73	no04	0	162
103.	73	no05	0	35
104.	73	no06	0	5
105.	73	no07	0	57
106.	74	no01	0	3
107.	74	no02	0	8
108.	74	no03	0	5
109.	74	no04	0	5
110.	74	no05	0	5
111.	74	no06	0	6
112.	74	no07	0	6

The number of strata for each section in Table 7 series 1C is determined by two factors, division (by subclass at 5 digit NACE SN2002[22]) and NUTS 2 (NO01-NO07 are the territorial units for regions for NORWAY). However, since the CV values were asked for local KAUs this time, the sources applied to the characteristic Wages and salaries are the Norwegian Directorate of Taxes' General Trading Statements (NO) received from the sample survey, in addition to NO by electronic, and certificates from the End of the year Certificate Register (LTO) only if the relation between a local KAU and its enterprise[23] is 1:1.

Table 8   Unit Non-Response Rate (‰) by 3 Digit NACE Rev.1.1

Obs	NACE	Non-response rate
1.	45.1	102
2.	45.2	89
3.	45.3	94
4.	45.4	62
5.	45.5	107
6.	50.1	74
7.	50.2	32
8.	50.3	63
9.	50.4	33
10.	50.5	28
11.	51.1	58
12.	51.2	131
13.	51.3	76
14.	51.4	65
15.	51.5	55
16.	51.8	59
17.	51.9	68
18.	52.1	70
19.	52.2	81
20.	52.3	52
21.	52.4	71
22.	52.5	130
23.	52.6	143
24.	52.7	175
25.	55.1	58
26.	55.2	148
27.	55.3	112
28.	55.4	261
29.	55.5	80
30.	60.1	100
31.	60.2	105
32.	61.1	74
33.	61.2	143
34.	62.1	0
35.	62.2	125
36.	63.1	175
37.	63.2	88
38.	63.3	87
39.	63.4	88
40.	64.1	194
41.	64.2	141

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[22] The Standard Industrial Classification (SN2002) in Statistics Norway, which is on the EU standard NACE Rev. 1.1.

[23] The term *single establishment enterprise* is used by BoF to describe this 1:1 relation between a local KAU and its legal unit.

42.	70	74
43.	71.1	43
44.	71.2	143
45.	71.3	115
46.	71.4	111
47.	72.1	167
48.	72.2	145
49.	72.3	100
50.	72.4	211
51.	72.5	125
52.	72.6	200
53.	73	14
54.	74.1	62
55.	74.4	139
56.	74.5	125
57.	74.6	111
58.	74.7	86
59.	74.8	109
60.	74.A	102

The level of non-response rate in number of units was 87‰ for Construction (Nace Section F), 69‰ for Whole sale and Retail trade (Nace Section G), and 85‰ for Real estate, Renting and Business activities (Nace Section K), making 77‰ overall. Overall non-response rate for Section H and I was 100‰

As stated earlier, only the set of main sample units, as described in Section 2.4, has been taken into the calculations of non-response. Hence, the non-response rate is different of 0, although coefficients of variation are 0 for the characteristic Number of enterprises in Table 5.

5. References

Footnotes

1   Commission Regulation (EC) No 1668/1999 of 23 July 1999

2   Raulin (Eurostat-D2-31/03/99), "Criteria for the Quality Measurement in Structural siness Statistics- explanatory document".

3   Richard Valliant, Alan H.Dorfman, and Richard M. Royall (2000), "Finite Population Sampling and Inference - A Prediction Approach", pp. 1-2. John Wiley & Sons, Inc.

4   The Eurostat Concept and Definitions Database/ Glossary: Administrative source:
            - http://forum.europa.eu.int/irc/dsis/coded/info/data/coded/en/gl009864.htm

5   The Eurostat Concept and Definitions Database/ Glossary: Sample survey:
            - http://forum.europa.eu.int/irc/dsis/coded/info/data/coded/en/gl011120.htm

6   The Eurostat Concept and Definitions Database/ Glossary: Data source, types of:
            - http://forum.europa.eu.int/irc/dsis/coded/info/data/coded/en/gl012662.htm

8-10   Official Statistics of Norway (NOS):
            - *D308*: Bygge- og anleggsstatistikk 2004
            - *D307*: Varehandelsstatistikk 2004
            - *D309*: Statistikk over eigedomsdrift, forretningsmessig tenesteyting og
                   utleigeverksemd 2004

11   The Eurostat Concept and Definitions Database/ Glossary: Sampling frame:
            - http://forum.europa.eu.int/irc/dsis/coded/info/data/coded/en/gl011124.htm

12   The Eurostat Concept and Definitions Database/ Glossary: Sample design:
            - http://forum.europa.eu.int/irc/dsis/coded/info/data/coded/en/gl007247.htm

15   The Eurostat Concept and Definitions Database/OECD Glossary of Statistical Terms: Establishment – ESA:
            - http://cs3-hq.oecd.org/scripts/stats/glossary/detail.asp?ID=859

21   Annexes to the Compliance Report on the QR:
            - ..\..\..\..\..\Eurostat\Info\G2003\doc.6.2 - Annex 1 -ClarificationAmendments.doc