Statistics Norway

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Documents

Changes in inventories in the Norwegian National Accounts

Eurostat project report

Statistics Norway/Division for National Accounts

Contents

1. Background

Changes in inventories in the Norwegian National Accounts (NNA) is estimated as a residual in the supply and use tables. Hence, the figures are a mix of actual changes in inventories and statistical errors. Due to this inadequate method, changes in inventories are considered a weak point in the compilation of national accounts in Norway.

In theory, it is reasonable to assume inventories fluctuate according to production and demand. However, in the NNA, changes in inventories have been positive for every year since 1970, the first year for which the accounts according the SNA93 regulations were published. Introducing direct estimation of changes in inventories will enhance the quality of NNA.

Two main types of data sources are available for changes in inventories: the Structural Business Statistics (SBS) and quarterly inventories statistics collected through short-term indicators. These two statistics provide value data by industries, but not by products. The source situation for inventories has improved in recent years, mainly because an increasing number of enterprises are covered by the statistics. The SBS are primarily based on accounting forms for enterprises, but have been broken down to establishment level. At present, SBS data are utilised in NNA calculations of items like output, intermediate consumption and compensation of employees. On the other hand, the figures for gross fixed capital formation are considered less reliable, and hence the figures are sometimes adjusted before they are used in the compilation of the NNA.

The short-term statistics of inventories have primarily been directed for use in the quarterly NNA, while SBS data is used in the annual NNA. Alternative statistics have been examined in the effort to find more reliable sources for estimations of changes in inventories. Unfortunately, none of these projects led to any recommendations for appropriate statistics for changes in inventories. The utilisation of SBS has greatly improved in recent years, though the uses for SBS data to estimate changes in inventories remain to be fully exploited.

As mentioned above, neither the SBS nor the quarterly inventory statistics are utilized in the NNA for estimations of changes in inventories. This report, therefore, aims to assess whether one or both of these statistics should be used in calculating changes in inventories in the NNA.

Furthermore, this report focuses on the quality of these statistics, and aims to answer the following questions:

1. How reliable are the SBS and the quarterly statistics of inventories?
2. Could and should inventory statistics be implemented in the NNA?
3. What should be further investigated?

This report emphasise current price estimates. The main focus is how the statistics could be utilised on industry level and implemented in the NNA. To answer these questions a time series of inventories from 2000-2003 is used.

Chapter 2 describes the current NNA method for estimating changes in inventories, and points to insufficiencies in this method. In chapter 3 features of SBS are presented, and in chapter 4, the quarterly inventory statistics are explored. The results of the analyses are presented in chapter 5. In chapter 6 conclusions and recommendations are made based on our findings.

2. Changes in inventories in the Norwegian national accounts

2.1 Calculating changes in inventories in NNA

In SNA93 the value of changes in inventories is defined as the value of inventories acquired by an enterprise less the value of the inventories disposed of during the accounting period.

In the Norwegian National Accounts changes in inventories are estimated by products and not by industries. The changes in inventories are classified in 6 groups; 1) changes in inventories, goods, 2) changes in inventories, services, 3) work in progress - ships, 4) work in progress, large constructions, 5) work in progress, cultivated assets as livestock and fish raised commercially, and 6) cultivated assets as forest and fruit trees.

Changes in inventories on products are calculated as a residual, total supply less total use. Work in progress on cultivated assets (livestock, fish breeding, forest etc) is calculated directly based on primary source statistics. Information on products comes from a variety of sources. Supply data by product are mainly from the external trade statistics, the SBS and the production statistics on manufacturing (PRODCOM), and statistics on agriculture, forestry and fishing.

The external trade statistics are classified by the Harmonised system (HS). In addition to the HS, NNA uses a national version of CPA (NRCPA) for production of goods and services. Since there is no information on industries in the external trade statistics, and the NNA is balanced by product, the changes in inventories cannot be linked to the different industries.

The statistics on agriculture, forestry and fishing provide data on products, while the SBS-based statistics on manufacturing provide little information on products. Therefore, the NNA use information from PRODCOM to calculate the distribution by products. PRODCOM is based on enterprises while SBS for manufacturing is based on establishments, which means that links between the two sources are required.

Different SBS are the main sources for calculation of intermediate consumption, though these sources have information on products are scarce. Therefore, the distribution by products is primarily done by expert judgements. An exception is the manufacturing industry, where a survey of the product breakdown regarding intermediate consumption is conducted every five years. This provides the structure for intermediate consumption within manufacturing and constitutes the basis for the years in between if no other information is available. As mentioned above, SBS on manufacturing is accounted for on the establishment level, while other SBS are accounted for on the enterprise level.

Investments are calculated by using SBS, where different kinds of investment items are specified, such as machinery, buildings etc. Household consumption is calculated by using the Household Budget Survey, in which products are classified according to NRCPA. The export data is incorporated from the external trade statistics and reclassified from HS to NRCPA.

2.2 Insufficiencies in the calculation

Reporting errors in the different NNA statistical sources can produce errors in the residual estimates of changes in inventories. Errors may occur in the grossed-up sample figures in the SBS-based statistics, in which lack of focus on time series leads to undetected errors. The use of different nomenclature may also lead to product distribution errors, though these errors do not affect aggregated figures. However, biases in certain goods may be attributed to inconsistencies in the different statistics.

As mentioned in chapter 1, when linking from enterprise level to establishment level, assumptions on the product structure can lead to error in the distribution by products in the NNA.

In addition, valuation may be a source of errors. The same commodity will be given a different price in various statistics. One example is the value of imports, which differ from the value of domestic consumption due to trade margins and taxes. In the NNA each product is attributed a trade margin and a tax rate (mainly value added tax). Especially, trade margins by product can be of low quality as surveys on trade margins are carried out only occasionally. Also, respondents may report different prices on the same product because they are both producer and user of the product, leading to another valuation problem associated with internal-pricing, taxation and accounting rules.

The main problem however, as mentioned in chapter 1, is to separate statistical errors and actual changes in inventories in the NNA. Today's estimation method has led to a positive inventory change since 1970. These estimates imply increasing stocks for the whole period.

To further utilise information from the SBS-based statistics, expert judgements on what kind of goods the different companies have in stock is necessary. A possibility is to develop and issue questionnaires on this matter. Then, based on these expert judgement or questionnaires, a classification of changes in inventories from SBS to NRCPA products can be made, allowing calculations for changes in inventories on products in the NNA. Of course, proper calculations are only plausible if data quality within the SBS is reliable.

2.3 Recordings of oil-platforms, oil-rigs, modules and other equipment to be used for extraction of oil and gas

Norway has chosen to consider domestic production and imports of oilrigs, oil platforms, modules and other related equipment to be used for extraction of oil and gas in Norway, as gross fixed capital formation (GFCF) during the course of their production. In accordance with SNA93/ESA95, production and imports of this type of capital goods should therefore not lead to changes in inventories of "work in progress". To be more specific, domestic production of such assets delivered to domestic enterprises, should not be part of inventories of work in progress in the NNA. However, in the NNA, minor inventories of these capital goods can be present as it is sometimes difficult to distinguish between different modules delivered to for instance offshore boats and to oil platforms. Clearly, such inventories might be caused by production for future exports, but might also be due to problems in the balancing process when identifying the different products.

2.4 The Figures

In Table 1 the changes in inventories for the NNA are shown as aggregated two-digit NRCPA numbers. There are some aggregates that have larger inventory entries than others, and 26xxxx (*Other non-metallic mineral products*), 28xxxx (*Fabricated metal product, except machinery and equipment*), 29xxxx (*Machinery and equipment*), 31xxxx (*Electrical machinery and apparatus*) and 34xxxx (*Motor vehicles, trailers and semi-trailers*) have large entries for all years. For these NRCPA's, particular problems arise in balancing supply and use.

Table 1. NRCPA products, 2000-2003. Million NOK

NRCPA	2000	2001	2002	2003
01xxxx	271	244	64	463
02xxxx	-344	-764	-126	-209
05xxxx	243	78	1226	840
10xxxx	243	461	296	339
11xxxx	1 025	3 488	-1 059	-534
13xxxx	-507	-431	-202	-224
14xxxx	67	537	72	-752
15xxxx	2 905	4 627	2 509	-460
16xxxx	200	297	392	344
17xxxx	-267	-521	-630	-1 175
18xxxx	-613	-1 464	-1 487	-2 339
19xxxx	-244	-697	-791	-738
20xxxx	1 783	2 492	2 060	1 356
21xxxx	-136	-647	-322	-923
22xxxx	1 086	784	-331	-1 006
23xxxx	8 528	-549	-1 214	5 124
24xxxx	2 552	910	1 256	1 359
25xxxx	407	74	-348	-569
26xxxx	3 069	2 012	4 400	4 101
27xxxx	-1 483	-1618	-2 783	-3 257
28xxxx	1 920	1 838	3 189	4 205
29xxxx	1 057	3 628	992	542
30xxxx	508	464	442	-226
31xxxx	2 470	2 799	1 087	1 714
32xxxx	2 895	-338	-924	206
33xxxx	43	-216	1 266	1 493
34xxxx	1 592	2 105	2 112	4 813
35xxxx	-252	-929	-1 214	-1 428
36xxxx	1 666	578	1 234	2 005
37xxxx	718	166	603	878
Total	**31 402**	**19 408**	**11 769**	**15 942**

3. The Structural business statistics

3.1 Introduction

This section gives a presentation of the structural business statistics in Statistics Norway. In addition the chapter defines the different inventory records that originate from trading statements (NO). These records are utilized to produce figures for changes in inventories.

3.2 Some facts about the statistics

The structural business statistics (SBS) were adopted by ESA in 1995 and implemented by Statistics Norway in 1997. The industries included are Industrial manufacturing (NACE 13-37), Construction (NACE 45), Domestic trade (NACE 50-52), Hotel and Restaurants (NACE 55), Transport (NACE 60-63), Postal services and Telecommunications (NACE 64), Real estate and business activities (NACE 70-74), and Cultural and Sporting activities (NACE 92). The figures are in million Norwegian kroner (NOK) and published annually.

The SBS for manufacturing industries are based on information from questionnaires and different administrative registers. All manufacturing enterprises with at least ten employees submit a trading statement form and a standard financial report to the tax authorities. The Trading statement (NO) covers both income statements and balance sheets. The balance sheet includes figures for inventories, which will be studied in detail in this report.

For the remaining establishments – from other industries – total figures are estimated based on annual accounts, employment and sales. All joint-stock companies are required to send their annual accounts to the Norwegian Register of Company Accounts in Brønnøysund, Norway. The annual accounts include an income statement and a balance sheet, but the specifications vary and are not as detailed as the trading statements (NO).

Since 2000, an increasing number of enterprises receive and return the trading statement form (NO) electronically, hence increasing the response rate for enterprises and dramatically reducing data entry efforts for Statistics Norway. The consequence is a gradual increase in the sample size and thus improved data quality in SBS. In 2004, the sample was close to the complete number of enterprises in most industries.

3.3 Definitions and figures

SBS and the trading statements (NO) contain several records for economic input and output. These figures constitute the foundation for the compilation of the NNA. The records of concern in this report are those that provide information on the level of inventories and changes in inventories. The different records regarding inventories in SBS are defined below. Records reflecting the values of inventories at the end of year (31.12) are identified as number p110, p120, p130, p140, p150, p1130, p4295, p4995 and p1400. In addition each enterprise reports the value of inventories at the beginning of the year (01.01.), denoted by an “x” at the end of the record number.

p110/p110x: Value of raw material – 31.12/01.01

p120/p120x: Value of "work-in-progress” – 31.12/01.01

p130/p130x: Value of finished goods – 31.12/01.01

p140/p140x: Value of goods for resale – 31.12/01.01

p150/p150x: Total inventories, sum p110 to p140 – 31.12/01.01

p1130/p1130x: Inventories of pre-fabricated construction sites and machinery – 31.12/01.01

p4295/p4295x: Changes in "work -in- progress" inventories of semi-manufactured and fabricated goods – 31.12/01.01

p4995/p4995x: Changes in inventories of construction goods per 31.12/01.01

p1400/p1400x: Total inventories – 31.12/01.01

Table 2. Total inventories per 31.12 and 01.01(p1400/p1400x), 2000-2003. Million NOK

	2000		2001		2002		2003	
Industry	**p1400**	**p1400x**	**p1400**	**p1400x**	**p1400**	**p1400x**	**p1400**	**p1400x**
Construction	5 471	5 381	7 748	6 087	7 185	7 266	6 085	5 709
Wholesale and retail trade	73 837	72 443	74 099	73 886	74 181	73 758	66 513	66 205
Hotel, transports and restaurants	2 961	2 789	3 387	3 224	3 132	3 375	3 466	3 628
Real estate and business activities	6 929	8 930	13 393	9 013	15 321	14 525	11 902	14 098
Manufacturing	52 982	50 932	68 291	67 632	43 973	50 044	42 503	42 494
Total	**142 180**	**140 475**	**166 919**	**159 841**	**143 791**	**148 969**	**130 469**	**132 135**

Table 2 shows the level of inventories on an aggregated scale. Obviously, some of the industries have larger inventories than others due to distinctive production. One can reasonably assume that Manufacturing and construction, which produce physical goods, have larger levels of inventories than service producing industries like Transport and Telecommunication services.

The levels of inventories are also high for real estate and business activities and domestic trade. These levels can be explained by the fact that a large share of the establishments in these industries holds inventories of goods for resale. The breakdown of inventories on different record types (p110, p120, p130, p140 and p150) is found in the appendix. For real estate and business activities we find small values for the records p110 to p130, and substantial values for record p140, goods for resale. These figures are further analysed in chapter 5 and presented in detail in the appendix.

3.4 Quality and consistency in SBS

Quality and consistency in SBS data must be carefully considered when assessing the incorporation of new data into National Accounts. When evaluating the appropriateness of the SBS, a natural starting point is to require that record p150 (total inventories) is equal to the sum of sub-records p110 to p140. Consistency can also be tested through comparing end-of-year figures for the previous year (31.12 in year *t-1*) to start-of-year figures for the current year (01.01 in current year *t*). Values for the records p110 to p150 in year *t-1* ought to be equal to p110x to p150x year *t*.

In addition a quality check regarding records that relate to the same figures is feasible. For example, record p150 and p1400, in which both reflect the total sum of inventories, should therefore be equal. The same argument applies for record p4295, which should be the sum of records p120 and p130 minus the sum of p120x and p130x. Whether the consistency requirements are met or not will be commented in chapter 5.

Establishments in Norway are obliged by law to value inventories by the FIFO (first in-first out) method or average prices. The FIFO method implies that goods taken out of stock are valued at the purchase price of the oldest remaining good, and goods brought into stock have the same value. This valuation method is deviant of the recommendations in SNA 1993; inventories should be valued according to existing prices. In the case of the FIFO method changes in inventories will deviate from SNA but be approximately coherent with the sum of inventories.

3.5 Comments on use of SBS in national accounts calculations

As mentioned above, quality and consistency in results from the SBS are necessary if they are to be used as data sources in the compilation of NNA. A number of divisions within Statistics Norway report that data in records p110 through p150 are often incomplete or poorly controlled. On the other hand, these divisions report that records p1130 through p4995 are more consistently reliable. These latter records (p1130 to p4995), are controlled by an authorized state accountant as required by law. However, the records p110 through p150 are not necessarily controlled by the state accountant. The conclusion is that records p1130 to p4995 are more reliable indicators of inventories then records p110 to p150.

A further complication in using SBS data in the NNA calculations of changes in inventories is that SBS calculates data by industry, while NNA calculates the figures by product. One solution might be to assume different distributions of products for each industry, though this method is a poor substitute for actual data.

4. Quarterly statistics on stocks in manufacturing industries

4.1 Some facts about the statistics

The quarterly statistics on stocks in manufacturing are legally based on Council Regulation No. 1165/98 concerning short-term statistics of 19 May 1998. The statistics have been published since 1996, though a revision was conducted in 2003. The statistics aim at monitoring changes in value and volume of inventories, finished goods and goods still undergoing processing, for the so-called order based industries. The order-based industries are (according to the NACE (2002) classification): textile and textile products (17, 18), pulp, paper and paper products (21), basic chemicals (24), basic metals (27), fabricated metal products (28), machinery and equipment (29), electrical and optical equipment (30-33), oil platforms and modules (35114/5) and transport equipment (34-35(-114/5)). The units in question are establishments except sole proprietors. The industries in the statistics reflect both the guidelines as part of the regulation as well as the industry structure of Norway. A plausible assumption is that these industries have higher levels of inventories than other manufacturing industries. Unfinished goods that require many man-hours to produce, tend to accumulate in the production process.

The statistics are published as indices (1995 = 100) representing the level of inventories at the end of each quarter. Even though the statistics are published as indices, the estimated population levels are available for the compilation of national accounts (NA).

The statistics are survey-based. The sample includes about 900 establishments, representing about 15 per cent of the number of units and 80 per cent of turnover in the population. All units with 100 employees or more are included in the sample. A number of different revision routines are adopted to ensure the quality of the reported data. The problem of non-response is low (less than 5 per cent of the sample units) partly because the enterprises are non-responses are re-contacted and non-response can be fined.

The method to gross-up the inventories is based on the use of a ratio estimator. Turnover figures from the VAT Register are used as auxiliary variables.

For a detailed documentation of the statistics, see http://www.ssb.no/english/subjects/08/03/lsi_en/

The definitions of inventories, finished goods and goods still being processed, in the survey are in accordance with the definitions in the NA. One important exception, as described in section 2.3, is that Norway records production and imports of oil-platforms, modules and other related equipment *to be used* in Norway, as gross fixed capital formation (GFCF). Value added stemming from work on a specific oil-module ought to increase GFCF and not affect the level of inventories (inventories of work in progress).

4.2 The figures

If quarterly statistics are utilised in the production of yearly NNA, only the estimated level of inventories at the end of each 4th quarter are of interest (in NA inventories for a given year t ought to refer to the level of inventories at end of the year). Change in inventories in a given year t is defined as inventories at the end of the 4th quarter year t minus inventories at the end of the 4th quarter in year *t-1*.

In Table 3 the first row "Order based manufacturing" shows current values of total level of inventories (sum of inventories of finished goods and goods still being processed) in million NOK for the industries covered by the statistics. The value varies from 25.6 billion NOK in 2003 to 37.2 billion NOK in 2001.

Table 3. Inventories in order based manufacturing. Million NOK

	1999	2000	2001	2002	2003
Manufacturing (order based)	35 814	30 089	37 159	40 312	25 697
Of this: Production of oil platforms	14 027	8 182	11 425	18 114	5 696

The second row in table 3 shows the level of inventories in the oil-platform industry. The variation in this time series is large. The inventories in this industry consist mainly of unfinished platforms and equipment (work in progress). In the NNA platforms and equipment is not to be recorded as inventories, as mentioned earlier.

Table 4 presents total inventories less inventories in the platform-industries (NACE 35114-35115) divided on finished goods and goods still being processed, and in Table 5 the corresponding changes in inventories are presented. Tables 6 and 7 categorize the changes in inventories presented in Table 5. Table 6 and 7 show changes related to production of ships and boats (NACE 34-35 except oil platforms 35114/5) and changes related to other industries in the aggregate. It follows from Table 6 that inventories of finished, and especially "ships and boats in progress" play an important role for the trends seen in the inventories for order-based industries. The "ship-producing" industries account for about half of the variation in the inventories aggregate presented in Table 4 and 5. The remaining variation in the aggregate presented in Table 4 are related to the other industries, see Table 7.

As an example on how the tables might be used in detail, Table 5 for 2001 shows that the accumulation of inventories in the order based industries less "oil platforms" was 3 827 million. It follows from Table 6 that NOK 1 855 million of the NOK 3 827 million were related to the ship building industries of which 1 691 million NOK were related to "ships in progress". Table 7 confirms that the residual 1 972 million (1 972 = 3 827 - 1 855) of the change in inventories according to Table 5 was related to the other industries. In 1999-2003 inventories in other industries evolved to some extent the same way as stocks in the ship building industries; at least this was the case for 2001 and 2002.

Table 4. Inventories by type in order based manufacturing, except production of oil platforms. Million NOK

	1999	2000	2001	2002	2003
Finished goods	10 253	10 122	11 392	9 324	9 742
Work in progress	11 534	11 785	14 341	12 874	10 259
Inventories	21 787	21 907	25 734	22 198	20 001

Table 5. Change in inventories by types in order based manufacturing, except production of oil platforms. Million NOK

	2000	2001	2002	2003
Finished goods	-131	1 270	-2 068	418
Work in progress	251	2 556	-1 467	-2 615
Inventories	120	3 827	-3 536	-2 197

Table 6. Change in inventories by type in manufacture of transport equipment (oil platforms not included). Million NOK

	2000	2001	2002	2003
Finished goods	642	163	-242	-425
Work in progress	404	1691	-1 425	-2 580
Inventories	1 045	1 855	-1 668	-3 004

Table 7. Change in inventories by type in order based manufacturing, except manufacture of oil platforms and transport equipment. Million NOK

	2000	2001	2002	2003
Finished goods	-773	1 107	-1 826	843
Work in progress	-153	865	-42	-35
Inventories	-925	1 972	-1 868	807

5 Analysis and results

5.1 Introduction

This part of the report aims to analyse inventories figures from 2000 to 2003 employed in SBS and NNA. Furthermore, the structure of the chapter is generally divided into two parts. The first part of the chapter assesses the consistency of the SBS. The second part evaluates and compares SBS and NNA figures.

The quality is first evaluated through several tests within the SBS framework discussed in section 5.2. Here SBS is subject to three broad consistency tests for all industries. The tests are carried out for SBS since a number of records from the Trading Statements (NO) reflect the same figures.

Thereafter section 5.3 tests SBS on a detailed level in the case of the wholesale and retail industry, where the industry is broken down to two-digit NACE. In this section a number of tests between records are executed in addition to an assessment of industry characteristics.

Section 5.4 evaluates SBS against the quarterly statistics on stocks in manufacturing. The comparison gives a benchmark for the quality of the SBS. Section 5.5 includes a brief discussion of "work in progress" regarding transport equipment.

Finally after a close evaluation of SBS, section 5.6 compare NNA and SBS figures for inventories. The results from this section are further discussed in the concluding chapter (Chapter 6).

5.2 Consistency tests

This section evaluates the consistency in SBS using three different tests. These tests inspect the quality of the statistics, and identify which records in SBS provide the best information.
The three tests are defined as:

1. Test 1: p1400 = p150

2. Test 2: (p120-p120x) + (p130-p130x) = p4295

3. Test 3: p1400x year *t* = p1400 year *t-1*

5.2.1 Test 1

This test controls if the sum of raw materials, work in progress, finished goods and goods for resale record p150 (from page 1) in the Trading Statements (NO) is the same as total inventories record p1400 (from page 3).

In Table 8 the value of records p1400 and p150 are presented for year 2003 (see Appendix A for all years). According to the table, there are differences for all industries between p1400 and p150, and especially Manufacturing, Business services and Wholesale and retail trade have particularly large discrepancies.

Table 8: Record p1400 and p150 for SBS industries. 2003. Million NOK

	p1400	p1400x	p150	p150X	p1400-p150	p1400x -p150x
Industry (NACE)						
Construction (45)	6 085	5 709	6 191	5 633	-106	76
Wholesale and retail trade (50-52)	66 513	66 205	83 232	81 311	-16 719	-15 106
Hotel, transport and postal and tele services (55-64)	3 466	3 628	3 555	3 381	-89	247
Business services (70-74)	11 902	14 098	20 617	32 155	-8 715	-18 057
Manufacturing (15-37)	42 503	42 494	22 668	22 635	19 835	19 859

Based on information from those responsible for the different SBS in Statistics Norway, the page in the trading statements including record 150 is often incomplete as this portion of the form is not controlled by audits or by Statistics Norway. The resulting data seem to show that record p1400 generally has a larger value than p150. Table 8 shows that this is not the case in 2003, where both Wholesale and retail trade and Business services have substantially larger values for p150 than p1400. One explanation for this is problems associated with grossing up the sample figures.

5.2.2 Test 2

This test controls if the sum of the changes in work in progress and finished goods (p120 and p130, from page 1) in the NO is the same as changes in inventories regarding work in progress and finished goods (p4295, from page 3).

Table 9 includes a comparison for selected industries for record p4295 and the changes in the sum of records p120 and p130. In Appendix B figures for all industries are presented.

Table 9: p4295 and p120+p130 for Construction, Wholesale and Real Estate Activities. Million NOK

	2001	2002	2003
Industry (Nace)			
Construction (45)			
P4295	-542	-76	45
p120+p130	676	111	-194
Wholesale (51)			
P4295	155	55	112
p120+p130	-112	99	-44
Real Estate Activities (70)			
P4295	-195	72	437
p120+p130	437	371	-2 983

The table shows quite substantial differences between the records, which underlines the problems reported under test 1, i.e. the lack of control of the records on page 1 in the NO.

It seems that enterprises understand finished goods differently, and below some problems using these inventory records from the SBS are addressed. In figure 1 the changes in inventories on these items for construction are depicted.

Figure 1: Changes in inventories for work in progress and finished goods, Construction

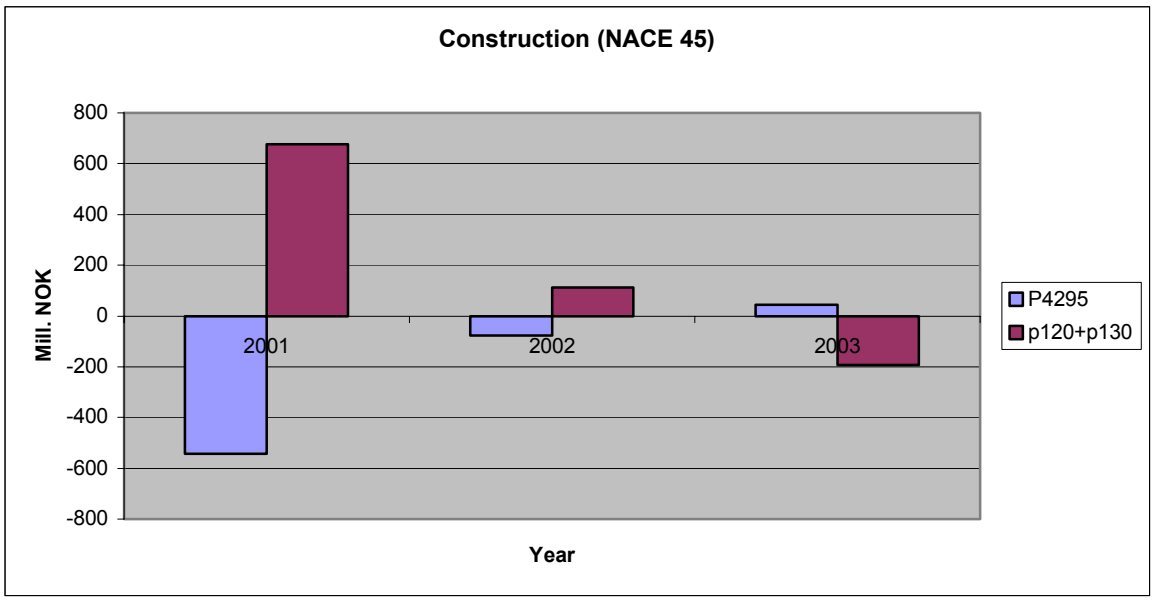
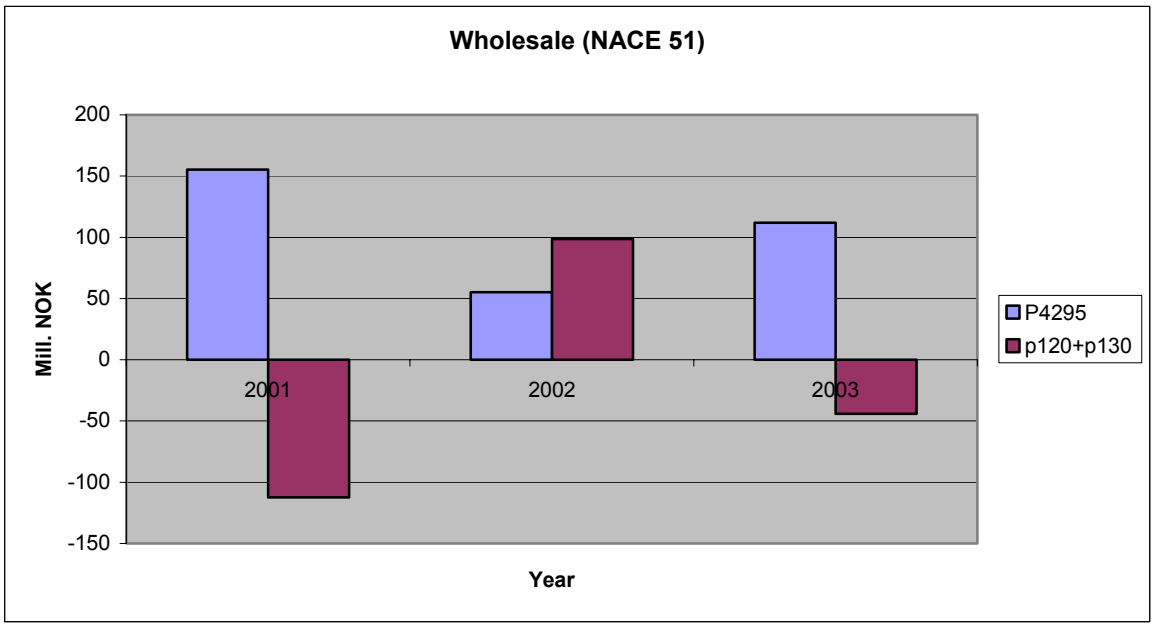


Figure 1 shows discrepancies in the different records, but also large values of finished goods and work in progress for the Construction industry. The reason for this is that some enterprises enter values for buildings under construction in the records for changes in inventories. According to SNA/ESA production under contract is regarded as gross fixed capital formation, while production without contract is regarded as changes in inventories. In this case it is difficult to establish whether the construction is done with or without contracts.

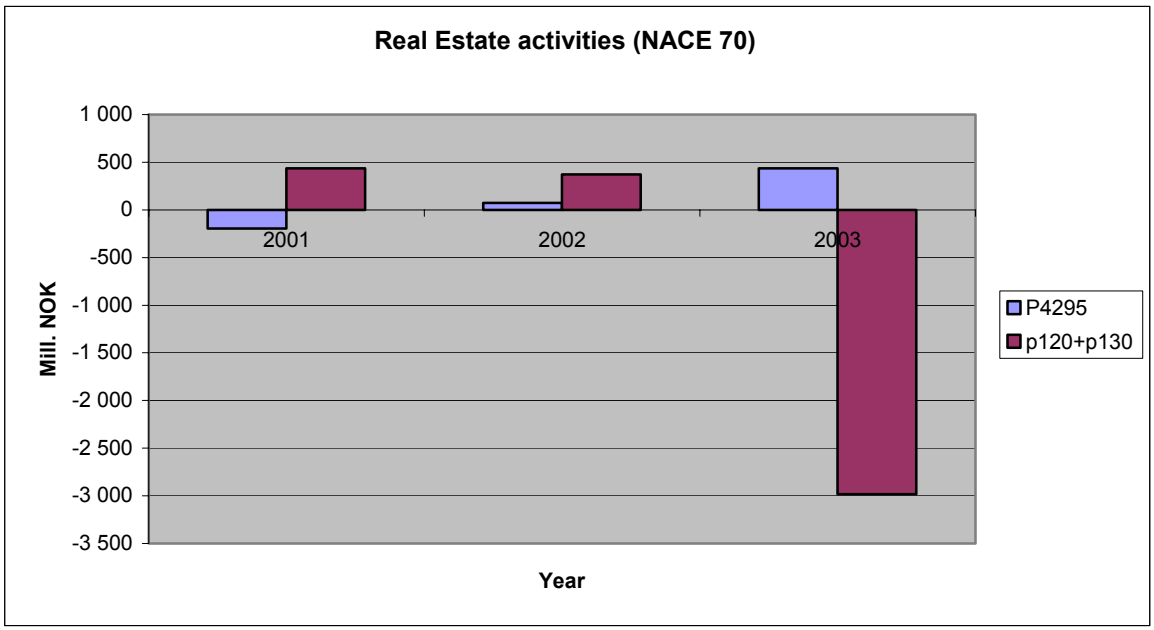
Figure 2: Changes in inventories for work in progress and finished goods, Wholesale



In figure 2 we see that the Wholesale industry also has large values on changes in inventories related to work in progress and finished goods. Detailed information on the Wholesale industry reveals problems when moving from enterprise level to establishment level, i.e. there are establishments under

the enterprise that actually produce goods. This is not separated out in the SBS for the Wholesale industry. Section 5.3 explores the Wholesale and retail trade more closely.

Figure 3: Changes in inventories for work in progress and finished goods, Real Estate Act.



In Real Estate Activities the figures are quite small, except in 2003. This shift is due to incorrect accounting placement of construction of buildings within NACE 70.112 *Other development and sale of real estate*. This production, for the Construction industry, should be regarded as GFCF and not changes in inventories.

5.2.3 Test 3

This test controls if the value of inventories at the beginning of year *t* is the same as the value of inventories at the end of year *t-1*.

In Table 10, the closing and opening balance sheets for the different industries are presented.

Table 10: Closing and opening balance sheets in SBS. Million NOK

	1400	1400x	1400-1400x
Industry (NACE)	(31.12 2002)	(1.1 2003)	
Construction (45)	7 185	5 709	1 476
Wholesale and retail trade (50-52)	74 181	66 205	7 976
Hotel and restaurants, transport and postal and telecommunication services (55-64)	3 132	3 628	-497
Business services (70-74)	15 321	14 098	1 223
Manufacturing (15-37)	43 973	42 494	1 479

According to Table 10, there are discrepancies between the opening and closing balance sheet for all industries. However, these results are not unreasonable as establishments declare bankruptcy, merge or conduct revisions within a single year. Due to these effects, the closing balance sheet in year *t-1* is, in most cases, larger than the opening balance year *t*, even though revisions could lead to the opposite.

Nevertheless, those responsible for the SBS in Statistics Norway indicate that these differences are not irregular.

In the next chapter we examine consistency in more depth using Wholesale and retail trade as an example.

5.3 The case of wholesale and retail trade industry

This chapter aims to analyse the structure of inventories in the wholesale and retail trade industry. This industry is of special interest because it covers two aspects of the inventories approach in NNA. First, wholesale and retail trade provide an example of how inventories are recorded for various industries covered by SBS, and problems associated with SBS. Second, it shows the size of inventories that belong to this industry valued at producers' prices .The goods are valued at producers' prices due to removal of gross profit of services, which is the characteristic product in Wholesale and retail trade. Recall that in the NNA, inventories are distributed by products and not by industries, and in this sense inventories are located in the manufacturing rather than the wholesale and retail industry.

Through an examination of the figures, problems of balancing the NNA with respect to supply and use are illustrated. The data is derived from SBS and covers the period from 2000-2003. The industry contains trade and maintenance of motor vehicles (NACE 50), agency and wholesale trade excluding motor vehicles (NACE 51), and retail trade excluding motor vehicles (NACE 52). Below in Table 11, figures for inventories are presented from records p110 to p150 in the trading statements in 2000. Table 11 clearly shows that inventories in the wholesale and retail trade industry are substantial (See Appendix C for time series).

Table 11: Inventories per 31.12 and 01.01 from 2000. Million NOK

					2000					
Industry (NACE)	p110	p110x	p120	p120x	p130	p130x	p140	p140x	p150	p150x
Trade and maintenance of motor vehicles (50)	242	323	20	7	19	18	10 279	10 163	10 600	10 511
Agency and wholesale trade (51)	958	802	119	201	88	117	25 437	23 439	26 603	24 559
Retail trade (52)	453	457	17	16	10	11	16 392	14 949	16 872	15 433
Share of inventories	**0,03**	**0,03**	**0,00**	**0,00**	**0,00**	**0,00**	**0,96**	**0,96**	**1**	**1**

Considering the assumption above, that the industry mainly redistributes manufactured goods, this ought to affect inventories records (p110 to p140) defined in chapter 3. The various records, p110 to p150, containing inventories figures are assumed to show a different pattern than traditional manufacturing industry. Most of the inventories in the industry should constitute record p140, the quantity of inventories that consist of pre-manufactured goods, given the assumption above is correct. Furthermore, the rest of the records are assumed to be 0 or very small. Table 11 shows the records reported to the tax authorities for the year 2000. In the last line calculations of each record's share of total inventories (record p150) is shown. The figures for inventories in Table 11 are consistent with the assumption that the industry consists of pre-manufactured goods, and only a small share of semi-manufactured, manufactured or raw materials. In addition, all records p110 trough p140 add up to record p150. These characteristics are an indication of quality and consistency in the SBS within a year.

The next step is to consider the consistency and quality of time series in figures from SBS. First, we inspect the initial and end-of-year values of inventories. Theoretically, total value of inventories at the end of the year in t-1 should equal the initial value of inventories in year t. Hence record p150 (t-1) ought to equal p150x (t). In Table 12, a time series of record p150 and p150x from 2000-2003 are

presented. Obviously the quality and consistency measure described above is violated. As an example, the sum of inventories at the end of 2000 is valued at 54 075 million NOK, and at the beginning of 2001 inventories are valued at 79 759 million NOK. Figures can of course deviate due to statistical errors, mergers and bankruptcies within the industry. But 25 684 million NOK cannot adequately be explained by statistical errors and changes in industry. A possible additional source of error may occur in the inflation of figures from the sample selection. Each year data is inflated to reflect all units in the industry, but as a comparison with other records show below this does not always function well.

In more recent years, with an increasing sample size, differences between end of the year and initial value of inventories are decreasing, but are still large enough not to be fully explained by statistical errors or industry changes such as mergers and bankruptcy.

Table 12: Time series of inventories 31.12 and 01.01 from 2000-2003, record p150/p150x. Million NOK

	2000		2001		2002		2003	
Industry (NACE)	**p150**	**p150X**	**p150**	**p150X**	**p150**	**p150X**	**p150**	**p150X**
Trade and maintenance of motor vehicles (50)	10 600	10 511	16 022	16 116	15 799	15 285	15 528	15 461
Agency and wholesale trade (51)	26 603	24 559	41 764	39 828	34 802	35 560	39 477	39 753
Retail trade (52)	16 872	15 433	26 081	23 815	26 685	24 968	27 831	25 763
Sum inventories	**54 075**	**50 503**	**83 867**	**79 759**	**77 285**	**75 813**	**82 835**	**80 976**

Below in Table 13 calculation changes in inventories are computed. The method employed is simple and based on the inventories figures from the current year minus inventories figures from the preceding year. This method (hereafter referred to as method 1) is equivalent to adding record p110 through p140 in the current year minus the sum of p110 through p140 in the preceding year. Also consistent with method 1, is p150 in the current year minus p150 in the preceding year yields an equivalent figure. The result shows great variation and is not plausible for an industry that consists of 7,6 percent of GDP.

Table 13: Time series of changes in inventories from 2001-2003, method 1 with p150. Million NOK

	2001	2002	2003
Industry (NACE)			
Trade and maintenance of motor vehicles (50)	5 423	-223	-271
Agency and wholesale trade (51)	15 161	-6 963	4 675
Retail trade (52)	9 208	604	1 146
Sum changes in inventories	**29 792**	**-6 582**	**5 550**

An alternative method of calculating changes in inventories is carried out in Table 14. This method (hereafter referred to as method 2) utilises data from the same year to calculate changes in inventories. Thus, record p150 is subtracted from record p150X both from the current year. The results show smaller variation, and seem more reliable which amplify the assumption that data within the same year are consistent.

Table 14: Time series of changes in inventories from 2000-2003, method 2 with precord 150. Million NOK

	2000	2001	2002	2003
Industry (NACE)				
Trade and maintenance of motor vehicles (50)	89	-94	514	67
Agency and wholesale trade (51)	2 044	1 937	-758	-276
Retail trade (52)	1 440	2 266	1 717	2 068
Sum changes in inventories	**3 572**	**4 109**	**1 473**	**1 859**

The quality and consistency of the SBS regarding start-of-year and end-of-year figures vary. Figures seem rather consistent within each year, but show lack of quality when records from different periods are compared. Hence, a last test is conducted to determine consistency. Record p1400, mentioned in chapter 3, is ought to reflect the sum of inventories, i.e. be equal to record p150. Fortunately record p1400 is subject to inspection by an authorized public accountant, which indicates better quality control. If records p1400 and p150 are consistently equal, then the quality of the SBS data should be satisfactory. Table 15 below shows a time series for records p1400/p1400x similar to Table 12.

Table 15: Time series of inventories 31.12 and 01.01 from 2000-2003, record p1400/p1400x. Million NOK

	2000		2001		2002		2003	
Industry (NACE)	p1400	p1400x	p1400	p1400x	p1400	P1400x	p1400	p1400x
Trade and maintenance of motor vehicles (50)	15 198	15 744	16 121	17 215	15 963	15 982	13 876	14 279
Agency and wholesale trade (51)	30 242	29 702	33 676	33 137	34 037	34 352	29 706	29 932
Retail trade (52)	28 396	26 997	24 302	23 534	24 182	23 423	22 931	21 995
Sum inventories	**73 837**	**72 443**	**74 099**	**73 886**	**74 181**	**73 758**	**66 513**	**66 205**

Table 15 confirms that record p1400 is more consistent and stable compared with the corresponding figures in Table 12. The changes in inventories from one year to the next are not as volatile as in table 12, and hence the figures in table 15 seem more plausible. Records p1400/p1400x do not evidence the problems linked to end-of-year (*t-1*)/start-of-year (*t*) balances. Recall that these balances ought to be equal. The deviations are minor in all years except for 2002/2003 where p1400 in 2002 is 74 181 and p1400X in 2003 is 66 205 million NOK. The difference between 31.12 and 01.01 2000/2001 is only 49 million NOK and 341 million NOK from 2001/2002. This is a considerable improvement compared with the differences in Table 12 where the deviations between end-of-year balance from the preceding year and initial balance from the current year exceeded 25 000 million NOK. Table 15 also reveals that grossed-up figures cannot be a source of error; figures for p1400 and p150 ought to be equal since the same method of grossing-up is applied.

Changes in inventories based on records p1400 and p1400x both within the current year are presented in Table 16, similar to Table 14 for record p150. Table 16 shows less variation and seems more plausible, since inventories are something firms are assumed to minimize.

Table 16: Time series of changes in inventories from 2000-2003, method 2 with p1400. Million NOK

	2000	2001	2002	2003
Industry (NACE)				
Trade and maintenance of motor vehicles (50)	-545	-1 094	-20	-402
Agency and wholesale trade (51)	540	539	-316	-226
Retail trade (52)	1 399	768	759	936
Sum changes in inventories	**1 394**	**213**	**424**	**308**

Table 17 compares records p1400 and p150. The figures reflect differences as p150 is subtracted from p1400. The overall picture is that NACE 50 shows positive figures in differences, and 51 and 52 show negative figures. Negative figures indicate that record p150 is larger than p1400, which is unexpected, as records on page one are often incomplete. Hence one would expect that record p150 would be smaller than record p1400 on an aggregated level. This seems not to be the case for NACE 51 and 52. These results deserve more attention but will not be further investigated in this report.

As far as grossing up the figures the same method is applied to both figures since they reflect the same figures and is thus not a problem

Table 17: Comparison of record p1400 and p150. Million NOK

	2000		2001		2002		2003	
Industry (NACE)	p1400-p150	p1400x-p150x	p1400-p150	p1400x-p150x	p1400-p150	p1400x-p150x	p1400-p150	p1400x-p150x
Trade/maintenance of vehicles (50)	4 598	5 233	99	1 099	164	698	-1 651	-1 182
Agency and wholesale trade (51)	3 639	5 142	-8 088	-6 691	-765	-1 208	-9 771	-9 821
Retail trade (52)	11 524	11 565	-1 779	-281	-2 503	-1 545	-4 900	-3 768
Sum differences	**19 762**	**21 940**	**-9 768**	**-5 873**	**-3 104**	**-2 055**	**-16 322**	**-14 771**

5.4 A comparison of figures from the quarterly statistics with figures from the structural business statistics

For a number of manufacturing industries, namely those covered by the quarterly statistics on stocks, Statistics Norway has two sources of information regarding change of inventories, The structural business statistics (SBS) and the quarterly statistics on stocks (QSS). If any of the sources is to be used in the national accounts calculations, the preferred source of information *ex ante* would be the SBS. The argument is that SBS covers all industries within manufacturing as well as the service-producing industries and includes all types of inventories (e.g. material and supplies and goods for resale). The SBS is also the source used for calculation of other national accounts variables, like production and intermediate consumption.

In an ideal situation where SBS is the preferred source of information for compiling changes in stocks in NNA, QSS results correspond with SBS. If the results are "opposite" at least one of the two sources are not reliable. If, on the other hand, the results are quite similar, both sources are probably reliable. For NACE 24, 27 and 29 the results for finished goods, "work in progress" and the sum of the these two types of inventories from the two sources have been compared for the four years 2000-2003. In addition to a presentation of the results from the two statistics by tables, the data observations for each NACE industry are presented in figures. In the figures, or plots, the horizontal axis shows the value for the Structural business statistics (SBS) in million NOK and along the vertical axis are measured the quarterly statistics on stocks (QSS). Hence, the four points in each figure (one point per year) represents the results of the two sources for that same year. A linear trend (the trend function in the EXCEL software has been applied) for the observed values is presented. For each of the NACE industries, coefficients of correlation (CC) between the two statistics have been calculated. The value for CC and the slope of the trend line are also presented along the plots.

Due to the fact that the two statistical sources in principle should measure the same - all observations will lie on a straight line with slope equal to 1, an angle of 45 degrees, passing through origo (0,0) if the results from the two statistics correspond perfectly. For example, the two points (-100, -100) and (300, 300) are both on this imaginary line. When all data lie along this line, the coefficient of correlation (CC) between the two sources is also equal to 1. To summarize; data from the two sources are identical when both the CC and the slope of the trend line is equal to 1.

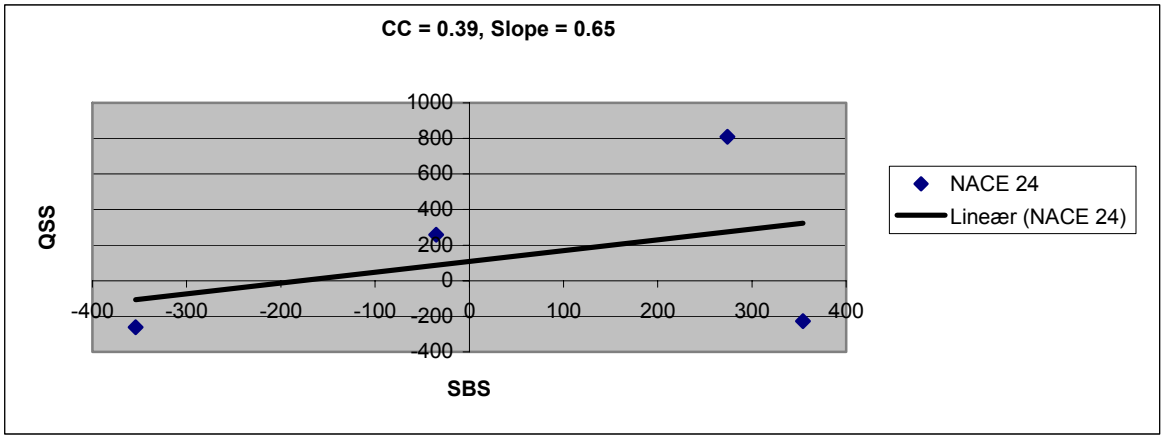
NACE 24; Manufacture of chemicals and chemical products

According to table 18 changes in inventories are equal only in 2002 and 2003, i.e. two out of four years. The deviations in changes in inventories are substantial for the two years 2000 and 2003; 582 and 535 million NOK, respectively. Note that the range of variation for both types of inventories is larger in the quarterly statistics than for the yearly statistics. The slope of the trend line, see figure 4, is 0.65 and the CC is 0.39, indicating a weak correspondence between the two sources

Table 18. Change in inventories, NACE 24, SBS and QSS. Million NOK

	2000	2001	2002	2003
NACE 24, Structural statistics				
Finished goods	296	-80	-309	179
Non finished goods	58	45	-45	95
Stocks	354	-35	-354	274
NACE 24, Short term statistics				
Finished goods	-769	-113	-353	613
Non finished goods	541	372	91	196
Stocks	-228	259	-262	809

Figure 4: Change in inventories in million NOK, NACE 24, SBS and QSS



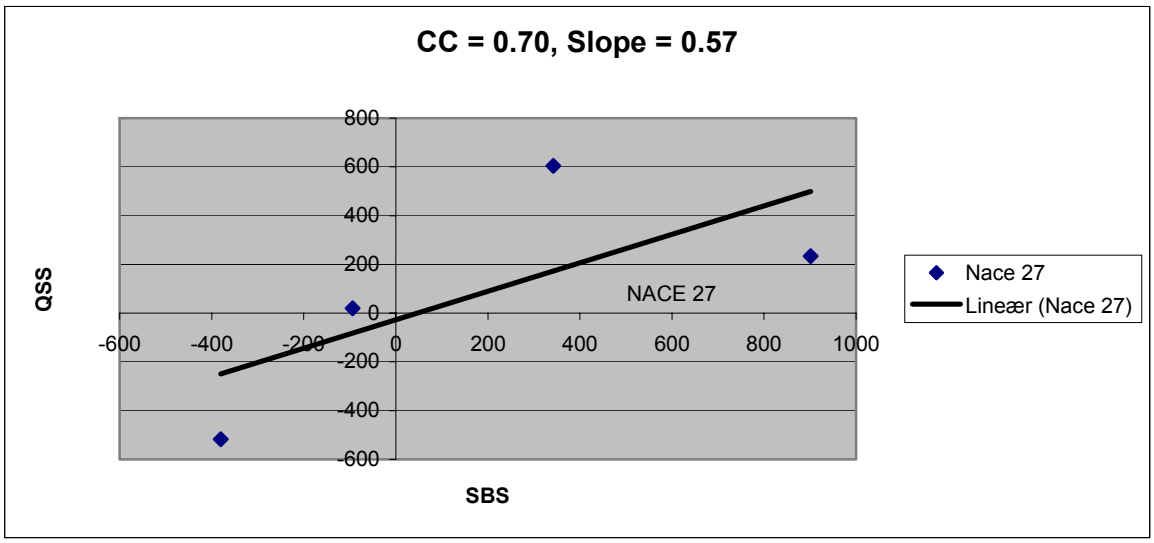
NACE 27; Manufacture of basic metals

Table 19 shows that the sign for change in inventories are equal between the two sources in three out of four years. As for NACE 24, the deviation is most substantial in 2000, 667 million NOK. The differences are "smaller" for the other three years. The evolution in the time series for inventories is quite similar for the two sources, which is supported by the level for CC at 0.70. The slope of the trend line is 0.57.

Table 19. Change in inventories, NACE 27, SBS and QSS. Million NOK

	2000	2001	2002	2003
NACE 27, Structural statistics				
Finished goods	664	-44	-345	262
Non finished goods	237	-50	-35	80
Stocks	901	-94	-380	342
NACE 27, Short term statistics				
Finished goods	276	-80	-410	410
Non finished goods	-43	101	-106	193
Stocks	234	20	-517	604

Figure 5: Change in inventories in million NOK, NACE 27, SBS and QSS



NACE 29 Manufacture of machinery and equipment

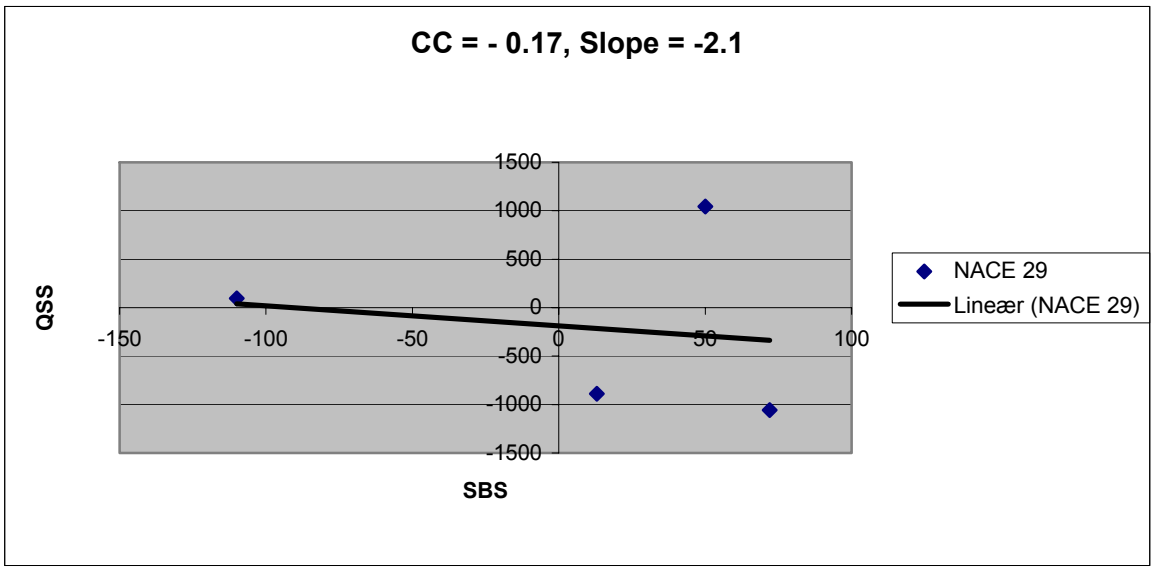
The figures from SBS are small for both types of inventories and for all four years. The figures from QSS are considerably larger. It is reasonable to believe that the figures from the SBS are incorrect. According to figure 6 CC is equal to -0.17 and the slope of the trend line is -2.1

The size of the changes in inventories is quite large for this industry according to the QSS. According to the QSS the changes were about 1000 million NOK for each of the three years 2000-2003. The changes in inventories related to work in progress seems to follow the changes in inventories of finished goods.

Table 20. Changes in inventories, NACE 29, SBS and QSS. Million NOK

	2000	2001	2002	2003
NACE 29, Structural statistics				
Finished goods	3	0	53	-66
Non finished goods	10	50	19	-44
Stocks	13	50	72	-110
NACE 29, Short term statistics				
Finished goods	-38	835	-692	49
Non finished goods	-850	210	-365	46
Stocks	-888	1 045	-1 057	95

Figure 6: Change in inventories in million NOK, NACE 29, SBS and QSS



5.5 Record p1130 in the Trading Statement (NO)

According to SNA 1993 and ESA 1995 output from the building and construction industries (dwellings, other buildings, bridges and so on) are to be recorded as GFCF during the process of production if sales contracts have been signed by producer and purchaser. If sales contracts are not present, production should be recorded as changes in inventories ("work in progress"). However, for transport equipment, e.g. ships, air-crafts, trains, cars and other means of transport, production are to be recorded as changes in inventories - "work in progress" - during the production process, independent of whether sales contracts have been signed or not.

It is a difficult task to separate ongoing production of buildings and structures into the two categories; production according to sales contracts and production for own account (no sales contract are present). It is reasonable to assume that all such production are regulated by contracts between the parties, which also is taken to be true in the compilation of the Norwegian National Accounts.

The record numbered p1130 in the Trading Statement (NO) and part of the SBS, asks for inventories of pre-fabricated construction sites and machinery at end of, and at beginning of, the year in question (1130/1130X). In 2003 the value for NACE 24, 27 and 29 at end of year were 2.2, 3.9 and 0.04 billion NOK. The corresponding changes, p1130 less p1130x, have been recorded as GFCF.

The comparison of the results from the QSS and the SBS showed substantial discrepancies for NACE 29. The differences were also high for NACE 35. The values of inventories of "work in progress" for NACE 35 (less production of oil platforms 35.133-4) were 4.8 and 0.5 billion NOK at beginning of 2003 in the QSS and SBS, respectively. Note that the figures from the SBS in this case were based on NO records p120 and p130.

To check out the differences it is relevant to study the figures in record p1130. For NACE 29, the value for p1130 was 0.04 and 0.08 billion NOK at end of, and at beginning of 2003, respectively. For NACE 35 (less production of oil platforms) the values were 0.06 and 0.4 billion NOK, respectively. Only 3 out of the about 100 ship-producing enterprises had recorded non-zero values in p1130. The low values and the few non-zero entries in the NO-records makes us believe that p1130 reflect the values of non-finished capital goods produced by other enterprises. It might be the case that purchasers of ships record the value of the unfinished ships - or at least the share they own according to contract - on record p1130. However, a substantial share of production of ships (and parts of ships)

is exported. As of today it seems difficult to identify the true value of "ships in progress" on basis of the SBS.

On the discrepancies between QSS and SBS regarding NACE 29 and 35: they are not reduced after taking record p1130 into account. The changes in inventories generated by NACE 35 and 29 in the QSS are not found in the SBS.

5.6 A comparison of figures from the Norwegian national accounts with figures from the structural business statistics

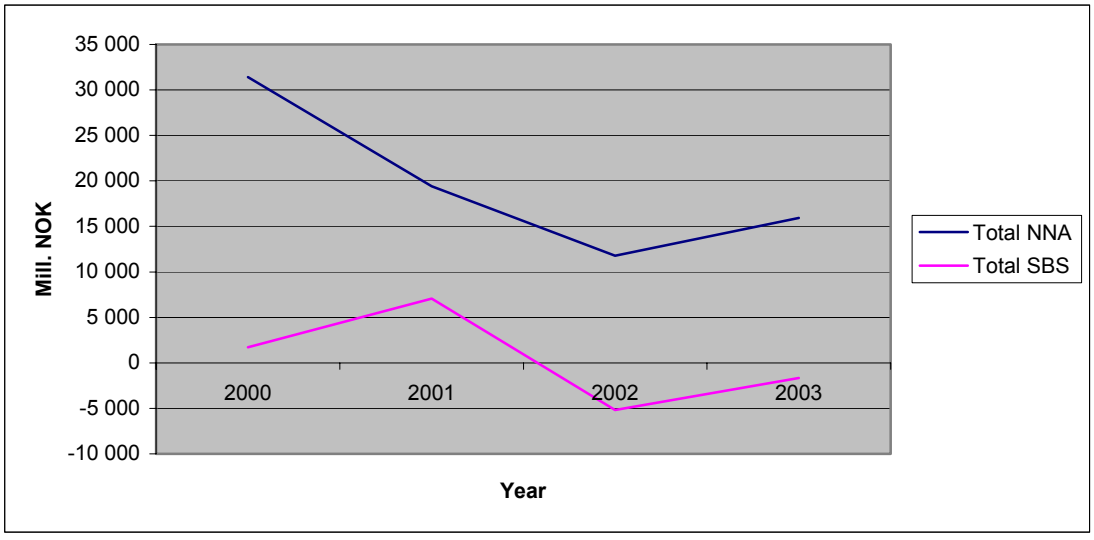
Table 21 shows a comparison between changes in inventories from NNA and changes in inventories from SBS. The changes in inventories from SBS are calculating by subtracting p1400x (opening sheet) from p1400 (closing sheet) each year. It also shows manufacturing's share of the total changes. NNA has positive changes in inventories for all years with a quite large magnitude, while the SBS figures show both positive and negative changes. The levels of changes in inventories from the SBS are not comparable with the NNA-figures as they do not cover all industries. In table 21 "Manufacturing NNA" is the sum of changes in inventories of manufactured products and is not to be compared to changes in inventories in manufacturing industries.

Table 21: Total changes in inventories, NNA and SBS. 2000-2003. Million NOK

	2000	2001	2002	2003	Accumulated
Total NNA	31 402	19 408	11 769	15 942	78 521
Manufacturing NNA	30 404	15 795	11 498	16 019	73 716
Total SBS	1 705	7 078	-5 178	-1 665	1 940
Manufacturing SBS	2 050	659	-6 072	9	-3 353

In figure 7 the changes in inventories are depicted for NNA and SBS from 2000-2003. Even though the levels of changes in inventories is not comparable, the graphs show corresponding development from 2001 to 2003, while they deviate from 2000-2001

Figure 7: Total changes in inventories NNA and SBS



6. Conclusion and Recommendations

In Chapter 1, three questions regarding the use of inventory statistics in the Norwegian national accounts (NNA) where presented. This chapter summarises the findings presented throughout this paper, organized according to these questions.

1. How reliable are the structural business statistics (SBS) and the quarterly statistics on inventories?

Analysis of the different records in the trading statements (NO) and SBS, revealed a lack of consistency for several records. Record p150 developed differently than p1400 (See page 6 for code descriptions). Similar problems arose for changes in p120+p130 and p4295. By definition these records should reflect the same figures.

Records p1400 and p4295 are inspected by an authorised public accountant and are also revised by Statistics Norway. This is not the case for record p110 through p150. In addition, the records on page 3 in the NO are already utilised to calculate figures for other variables in the NNA such as output, intermediate consumption and investments. Furthermore, record 1400 gives results that are more plausible and consistent with respect to closing and opening balances.

Some findings in chapter 5 indicate poor reliability. An example is the inconsistency in closing and opening balances of record p150, where the test in the case of Wholesale and Retail industry showed great differences. In addition, record p150 was significantly different from record p1400 though they should be equal. On the other hand, record p110 through p150 showed a plausible pattern in the case of Wholesale and Retail industry. Recall that 96 percent of total inventories belonged to record p140 (pre-manufactured goods), which are consistent with expectations for this industry.

The poor quality of the records on page 1 of the NO, which are more detailed, leads to the conclusion that the NO is of desired quality on an aggregated level but poor quality on a detailed level.

Based on the arguments above, the first page of the Trading Statements (NO) gives unreliable results. This is also confirmed by those responsible for the different SBS in Statistics Norway. However, the quality of the records on page 3 in the NO (records p1400 and p4295) seems reliable. Though reliable, the product - industry linkage is problematic, and SBS do not cover all industries in NNA (i.e. inventory figures for general government and agriculture are not registered).

There are reasons to believe that quarterly statistics for inventories of finished goods and goods still being processed, and its changes, are quite accurate for at least part of the industries. The sample size is large, and that the revision routine seems well adapted. In addition the statistics on inventories have been compiled and published for many years and are well established.

2. Could and should the inventory statistics be implemented in NNA?

Implementing SBS statistics on inventories by industries in the NNA as of today might lead to miscalculations. Recall that the NNA calculate inventories by products not by industry. In addition SBS do not cover all industries. However, on an aggregated level (records p1400 and p4295) SBS figures can be utilised as a guideline in balancing the NNA inventories on the global level in the future.

The quarterly inventory statistics cover only a limited number of industries and do not cover stocks of raw materials, hence the statistics are not appropriate for guiding estimations of changes in inventories in NNA.

3. What should be further investigated?

Based on the findings in this report it is clear that further investigations are needed. First of all, inventory figures should be revised and examined more thoroughly within SSB. Secondly, the coverage of inventory statistics should be extended, i.e include inventories for the missing industries, and thirdly, surveys should be pinpointed according to NNA needs.

Appendix A

Record p1400 and p150 for SBS industries. 2003. Million NOK

	2000					
Industry (NACE)	p1400	p1400x	p150	p150x	p1400-p150	p1400x -p150x
Construction (45)	5 471	5 381	5 431	4 881	40	500
Wholesale and retail trade (50-52)	73 837	72 443	53 428	49 794	20 409	22 649
Hotel, transport and postal and tele services (55-64)	2 961	2 789	2 692	2 382	269	407
Business services (70-74)	6 929	8 930	7 924	7 793	-995	1 137
Manufacturing (15-37)	52 982	50 932	24 384	22 400	28 598	28 532

	2001					
Industry (NACE)	p1400	p1400x	p150	p150X	p1400-p150	p1400x -p150x
Construction (45)	7 748	6 087	6 793	5 544	955	543
Wholesale and retail trade (50-52)	74 099	73 886	82 906	78 826	-8 807	-4 940
Hotel, transport and postal and tele services (55-64)	3 387	3 224	2 860	2 623	527	601
Business services (70-74)	13 393	9 013	13 078	7 939	315	1 074
Manufacturing (15-37)	68 291	67 632	26 693	25 289	41 598	42 343

	2002					
Industry (NACE)	p1400	p1400x	p150	p150X	p1400-p150	p1400x -p150x
Construction (45)	7 185	7 266	6 488	5 906	697	1 360
Wholesale and retail trade (50-52)	74 181	73 758	77 631	76 119	-3 450	-2 361
Hotel, transport and postal and tele services (55-64)	3 132	3 375	3 494	3 133	-362	242
Business services (70-74)	15 321	14 525	12 767	11 753	2 554	2 772
Manufacturing (15-37)	43 973	50 044	25 289	23 076	18 684	26 968

	2003					
Industry (NACE)	p1400	p1400x	p150	p150X	p1400-p150	p1400x -p150x
Construction (45)	6 085	5 709	6 191	5 633	-106	76
Wholesale and retail trade (50-52)	66 513	66 205	83 232	81 311	-16 719	-15 106
Hotel, transport and postal and tele services (55-64)	3 466	3 628	3 555	3 381	-89	247
Business services (70-74)	11 902	14 098	20 617	32 155	-8 715	-18 057
Manufacturing (15-37)	42 503	42 494	22 668	22 635	19 835	19 859

Appendix B

p4295 and p120+p130 for All industries. Million NOK

	2001	2002	2003
NACE 45			
P4295	-542	-76	45
p120+p130	676	111	-194
NACE 50			
P4295	2,1	274	12
p120+p130	0,5	31	-12
NACE 51			
P4295	155	55	112
p120+p130	-112	99	-44
NACE 52			
P4295	-6,8	-2,4	-11
p120+p130	32	-34	-14
NACE 55			
P4295	6,3	2,5	-3,3
p120+p130	2,8	5,6	-2,3
NACE 60			
P4295	26	-1,5	-33
p120+p130	-0,1	6,6	39
NACE 61			
P4295	-1,1	0,6	0,5
p120+p130	1,1	-1,3	3,3
NACE 62			
P4295	0,0	0,0	0,0
p120+p130	-13	1,4	7,4
NACE 63			
P4295	-0,3	2,5	-0,3
p120+p130	-0,4	0,8	1,7
NACE 64			
P4295	-0,6	-2,1	7,0
p120+p130	0,6	103	-10
NACE 70			
P4295	-195	72	437
p120+p130	437	371	-2 983
NACE 71			
P4295	-1,8	-0,8	-2,4
p120+p130	0,0	0,2	0,5
NACE 73			
P4295	-5,7	1,9	11
p120+p130	4,8	6,1	-10
NACE 74			
P4295	19	-15	112
p120+p130	16	-4,5	105
NACE 92			
P4295	2,8	-3,8	-2,2
p120+p130	-2,7	30	43

Appendix C

Inventories per 31.12 and 01.01 from 2000. Million NOK

2000										
Industry (NACE)	p0110	p0110x	p0120	p0120x	p0130	p0130x	p0140	p0140x	p0150	p0150x
Trade and maintenance of motor vehicles (50)	242	323	20	7	19	18	10 279	10 163	10 600	10 511
Agency and wholesale trade (51)	958	802	119	201	88	117	25 437	23 439	26 603	24 559
Retail trade (52)	453	457	17	16	10	11	16 392	14 949	16 872	15 433
Sum	1 654	1 583	156	224	117	145	52 108	48 551	54 075	50 503
Share	0,03	0,03	0,00	0,00	0,00	0,00	0,96	0,96	1,00	1,00

2001										
Industry (NACE	p0110	p0110x	p0120	p0120x	p0130	p0130x	p0140	p0140x	p0150	p0150x
Trade and maintenance of motor vehicles (50)	326	336	21	26	55	49	15 620	15 704	16 022	16 116
Agency and wholesale trade (51)	2 015	1 906	185	179	893	1 027	38 672	36 716	41 764	39 828
Retail trade (52)	497	424	66	42	118	109	25 400	23 240	26 081	23 815
Sum	2 837	2 666	272	248	1 065	1 185	79 693	75 660	83 867	79 759
Share	0,03	0,03	0,00	0,00	0,01	0,01	0,95	0,95	1,00	1,00

2002										
Industry (NACE	p0110	p0110x	p0120	p0120x	p0130	p0130x	p0140	p0140x	p0150	p0150x
Trade and maintenance of motor vehicles (50)	249	233	64	59	305	280	15 180	14 713	15 799	15 285
Agency and wholesale trade (51)	2 048	2 023	278	212	1 055	1 022	31 421	32 303	34 802	35 560
Retail trade (52)	680	587	70	110	169	162	25 766	24 109	26 685	24 968
Sum	2 977	2 843	412	381	1 529	1 463	72 368	71 125	77 285	75 813
Share	0,04	0,04	0,01	0,01	0,02	0,02	0,94	0,94	1,00	1,00

2003										
Industry (NACE	p0110	p0110x	p0120	p0120x	p0130	p0130x	p0140	p0140x	p0150	p0150x
Trade and maintenance of motor vehicles (50)	254	313	56	49	289	307	14 929	14 791	15 528	15 461
Agency and wholesale trade (51)	2 030	2 163	262	207	871	970	36 314	36 413	39 477	39 753
Retail trade (52)	609	617	57	52	163	181	27 001	24 912	27 831	25 763
Sum	2 893	3 093	375	308	1 322	1 459	78 245	76 116	82 835	80 976
Share	0,03	0,04	0,00	0,00	0,02	0,02	0,94	0,94	1,00	1,00

Skatteetaten

Næringsoppgave 2 for 2003

For aksjeselskap og andre foretak som utarbeider årsregnskap etter regnskapsloven
Om fortegnsbruken i skjema, se rettledningen
Vedlegg til selvangivelsen/selskapsoppgave

Foretakets navn, adresse mv.:

Regnskapsperiode		Fra		Til	
Navn		Organisasjonsnummer		Fødselsnummer	Antall årsverk i regnskapsåret
Nærings-(kontor) adresse					
Postnr./-sted			Er reglene for små foretak, jf. RL § 1-6, benyttet?	☐ Ja	☐ Nei
Næring (virksomhetens art)			Foretaket har ikke årsregnskapsplikt etter regnskapsloven	☐ Kryss av	

Regnskapsfører:

Regnskapsførers navn		Regnskapsførers organisasjonsnr.	
Forretningsadresse		Postnr./-sted	
Er næringsoppgaven fylt ut av ekstern regnskapsfører?	☐ Ja ☐ Nei	Er regnskapet ført av ekstern regnskapsfører?	☐ Ja ☐ Nei

Tilleggsopplysninger og spesifikasjoner (i hele kroner):

Varelager	Skattemessig verdi 31.12.2003	Regnskapsmessig verdi 31.12.2003 (post 1400)	Skattemessig verdi 31.12.2002	Regnskapsmessig verdi 31.12.2002 (post 1400)
0110 Råvaret og innkjøpte halvfabrikata				
0120 Varer under tilvirkning	+	+	+	+
0130 Ferdige egentilvirkede varer	+	+	+	+
0140 Innkjøpte varer for videresalg	+	+	+	+
0150 Sum varelager				

Bruttofortjeneste på innkjøpte varer for videresalg

0210 Avgiftspliktig salg	0220 Avgiftsfritt salg	0230 Sum salgsinntekter	0240 Varekostnad	0250 Bruttofortjeneste
	+	=	÷	=

Utregning av *skattemessig* verdi på fordringer

		2003	2002
0410	Kundefordringer til pålydende		
0420	2002 Konstaterte tap på kundefordringer 2003 + 2002 Kredittsalg 2003 x 4 x Kundefordringer pr. 31.12.2003	÷	÷
0430	Skattemessig verdi på kundefordringer (post 0410 + post 0420)	=	=
0440	Andre fordringer, herunder fordringer på konsernselskap, ansatte, eiere o.l. til pålydende	+	+
0450	Sum skattemessig verdi på fordringer	=	=
0460	Nyetablert virksomhet i 2001 eller senere? ☐ Ja ☐ Nei		

Årets anskaffelser og salg av driftsmidler (se rettledningen)

		Anskaffelse	Salg			Anskaffelse	Salg
0510	Forskning, utvikling og andre immatr. eiendeler			0550	Skip, rigger, fly mv.		
0520	Bygninger og anlegg			0560	Varebiler mv.		
0530	Tomter og andre grunnareal			0570	Kontormaskiner		
0540	Boliger inkl. boligtomter			0580	Personbiler, maskiner, inventar og andre driftsmidler		

Andre offentlige organers bruk av opplysninger i RF-1167B

For å samordne og forenkle oppgaveinnleveringen fra næringslivet, kan opplysninger som avgis i Næringsoppgave 2, RF-1167B, helt eller delvis bli benyttet også av andre offentlige organer som har hjemmel til å innhente de samme opplysningene, jf. lov om Oppgaveregisteret §§ 5 og 6. Opplysninger om evt. samordning kan fås ved henvendelse til Oppgaveregisteret på telefon 75 00 75 00, eller Skattedirektoratet på telefon 22 07 70 00.

Resultatregnskap 2003 i (hele kroner)

		2003	2002
3000	Salgsinntekt og uttak, avgiftspliktig		
3100	Salgsinntekt og uttak, avgiftsfri		
3200	Salgsinntekt og uttak, utenfor avgiftsområdet		
3300	Spesielle offentlige avgifter vedrørende salg	÷	÷
3400	Offentlige tilskudd/refusjon		
3500	Uopptjent inntekt		
3600	Leieinntekt fast eiendom		
3695	Annen leieinntekt		
3700	Provisjonsinntekt		
3800	Gevinst ved avgang av anleggsmidler		
3900	Annen driftsrelatert inntekt		
9000	Sum driftsinntekter		
4005	Varekostnad		
4295	Beholdn.endring av varer under tilvirkning og ferdig tilv. varer		
4500	Fremmedytelse og underentrepnse		
4995	Beholdn.endring av egen-tilvirkede anleggsmidler	÷	÷
5000	Lønn, feriepenger mv.		
5300	Annen oppgavepliktig godtgjørelse		
5400	Arbeidsgiveravgift		
5420	Innberetningspliktig pensjonskostnad		
5600	Arbeidsgodtgjørelse til eiere i ANS mv.		
5900	Annen personalkostnad		
6000	Avskriving på varige dr.m. og immaterielle eiendeler		
6050	Nedskriving på varige dr.m. og immaterielle eiendeler		
6100	Frakt og transportkostnad vedrørende salg		
6200	Energi, brensel mv. vedrørende produksjon		
6300	Leie lokale		
6340	Lys, varme		
6395	Renovasjon, vann, avløp, renhold mv.		
6400	Leie maskiner, inventar, transportmidler o.l.		
6500	Verktøy, inventar mv. som ikke skal aktiveres		
6600	Reparasjon og vedlikehold bygning		
6695	Reparasjon og vedlikehold annet		
6700	Fremmed tjeneste (regnskap/ revisjon/rådgivning o.l.)		
6995	Kontorkostnad, telefon, porto mv.		
7000	Drivstoff transportmidler		
7020	Vedlikehold mv. transportmidler		
7040	Forsikring og avgifter på transportmidler		

		2003	2002
7080	Bilkostnader, bruk av privat bil i næring		
7099	Privat bruk av næringsbil	÷	÷
7155	Reise-/diett og bilgodtgjørelse, oppgavepliktig		
7165	Reise- og diettkostnader, ikke oppgavepliktig		
7295	Provisjonskostnad		
7330	Salgs- og reklamekostnader		
7370	Representasjonskostnader		
7490	Kontingent og gave		
7500	Forsikringspremie		
7565	Garanti- og servicekostnad		
7600	Lisens, patentkostnad royalty o.l.		
7700	Annen kostnad		
7800	Tap ved avgang av anleggsmidler		
7830	Tap på fordringer		
9010	Sum driftskostnader		
9050	Driftsresultat		
8005	Netto positiv resultatandel vedr. investering i DS, TS og FKV		
8030	Renteinntekt fra foretak i samme konsern		
8050	Annen renteinntekt		
8060	Valutagevinst (agio)		
8070	Annen finansinntekt		
8080	Verdiøkn. av markedsbaserte finansielle omløpsmidler		
9060	Sum finansinntekter		
8006	Netto negativ resultatandel vedr. investering i DS, TS og FKV		
8100	Verdired. av markedsbaserte finansielle omløpsmidler		
8115	Nedskrivning av finansielle eiendeler		
8130	Rentekostnad til foretak i samme konsern		
8150	Annen rentekostnad		
8160	Valutatap (disagio)		
8170	Annen finanskostnad		
9070	Sum finanskostnader		
9100	Ordinært resultat før skattekostnad		
8300	Betalbar skatt		
8310	Refusjon skatt etter skatteloven § 16-50		
8320	Endring utsatt skatt/ skattefordel		
9150	Ordinært resultat		
8400	Ekstraordinær inntekt		
8500	Ekstraordinær kostnad		
8600	Betalbar skatt		
8620	Endring utsatt skatt/ skattefordel		
9200	Årsresultat		

Avstemming av egenkapital skal føres i skjema RF-1052
Rettledning til RF-1052 er gitt i RF-1168 (Rettledning til næringsoppgave 2)

Balanse-regnskapsmessige verdier (i hele kroner)

Eiendeler		31.12.2003	31.12.2002
ANLEGGSMIDLER			
1000	Forskning og utvikling		
1020	Konsesjoner, patenter, lisenser o.l.		
1070	Utsatt skattefordel		
1080	Goodwill (saldogruppe b)		
1105	Forretningsbygg (saldogruppe i)		
1115	Bygg og anlegg, hotell o.l. (saldogruppe h)		
1117	Elektroteknisk utrusting i kraftforetak mv. (saldogr. a)		
1130	Anlegg, maskiner under utførelse		
1150	Tomter og andre grunnareal		
1160	Bolig inkl. boligtomter, hytter mv.		
1205	Personbiler, maskiner, inventar mv. (saldogruppe d)		
1221	Skip, rigger mv. (saldogruppe e)		
1225	Fly, helikopter mv. (saldogruppe f)		
1239	Vare- og lastebiler, busser mv. (saldogruppe c)		
1280	Kontormaskiner o.l. (saldogruppe a)		
1290	Andre driftsmidler		
1312	Investeringer i deltagerliknede datter- og konsernselskap		
1313	Investeringer i andre datter- og konsernselskap		
1320	Lån til foretak i samme konsern		
1331	Investeringer i deltakerliknede tilknyttede selskap		
1332	Investeringer i andre tilknyttede selskap		
1340	Lån til tilknyttet selskap og felles kontrollert virksomhet		
1350	Investeringer i aksjer, andeler og verdipapirfondsandeler		
1360	Obligasjoner		
1370	Fordringer mot eiere, styremedl. o.l.		
1380	Fordringer på ansatte		
1390	Andre fordringer		
9300	**Sum anleggsmidler**		
OMLØPSMIDLER			
1400	Varelager		
1500	Kundefordringer, inkl. i samme konsern		
1530	Opptjent, ikke fakturert driftsinntekt		
1560	Andre fordringer på selskap i samme konsern		
1565	Kortsiktige fordringer mot eier/styremedl. o.l.		
1570	Andre kortsiktige fordringer		
1780	Krav på innbetaling av selskapskapital		
1800	Ikke-markedsbaserte aksjer og andeler		
1810	Markedsbaserte aksjer og verdipapirfondsandeler		
1830	Markedsbaserte obligasjoner, sertifikater mv.		
1840	Andre obligasjoner og sertifikater		
1880	Andre finansielle instrumenter		
1900	Kontanter		
1920	Bankinnskudd		
9350	**Sum omløpsmidler**		
9400	**Sum eiendeler**		

Egenkapital og gjeld		31.12.2003	31.12.2002
INNSKUTT EGENKAPITAL			
2000	Aksjekap./EK andre foretak		
2010	Egne aksjer (negativt beløp) Felleseid andelskapital		
2020	Overkursfond		
2030	Innskutt annen egenkapital		
OPPTJENT EGENKAPITAL			
2041	Fond for vurd.forskj. i dts.		
2042	Fond for vurderingsforskjeller i andre selskap		
2050	Annen egenkapital		
2080	Udekket tap		
9450	**Sum egenkapital**		
LANGSIKTIG GJELD			
2100	Pensjonsforpliktelser		
2120	Utsatt skatt		
2160	Uopptjent inntekt		
2180	Andre avsetninger for forpliktelser		
2200	Konvertible lån		
2210	Obligasjonslån		
2220	Gjeld til kredittinstitusjoner		
2250	Gjeld til ansatte og eiere		
2260	Gjeld til selskap i samme konsern		
2280	Stille interessentinnskudd og ansvarlig lånekapital		
2290	Annen langsiktig gjeld		
9500	**Sum langsiktig gjeld**		
KORTSIKTIG GJELD			
2310	Konvertible lån (byggelån mv.)		
2320	Sertifikatlån		
2380	Kassakreditt		
2400	Leverandørgjeld		
2500	Betalbar skatt, ikke utlignet		
2510	Betalbar skatt, utlignet		
2530	Refusjon skatt etter skl. § 16-50		
2600	Skattetrekk og andre trekk		
2740	Skyldig merverdiavgift		
2770	Skyldig arbeidsgiveravgift		
2790	Andre offentlige avgifter		
2800	Avsatt utbytte		
2900	Forskudd fra kunder		
2910	Gjeld til ansatte og eiere		
2920	Gjeld til selskap i samme konsern		
2949	Lønn, feriepenger o.l.		
2950	Påløpt rente		
2970	Uopptjent inntekt		
2980	Avsetninger for forpliktelser		
2990	Annen kortsiktig gjeld		
9550	**Sum kortsiktig gjeld**		
9650	**Sum egenkapital og gjeld**		

Beregning av næringsinntekt (i hele kroner)

0600	Årsresultat fra post 9200 (side 2)			
Tillegg for	0610 Ikke fradragsberettiget representasjonskostnad			
	0620 Ikke fradragsberettigede kontingenter/gaver			
	0630 Sum skattekostnad			
	0640 Rentekostnad på tilknet skatt			
	0650 Andre ikke fradragsberettigede kostnader (spesifiseres i eget vedlegg)			
	0660 Tilbakeføring av negativ resultatandel vedrørende investering i datterselskap, tilknyttet selskap og felleskontrollert virksomhet (se post 8006)			
	0670 Foreslått utbytte fra datterselskap og tilknyttet selskap ved bruk av egenkapitalmetoden			
	0680 Tilbakeføring av verdireduksjon av markedsbaserte finansielle omløpsmidler (se post 8100)			
	0690 Regnskapsmessig tap ved realisasjon av aksjer og andre verdipapirer			
	0700 Skattemessig gevinst ved realisasjon av aksjer og andre verdipapirer			
	0710 Regnskapsmessig nedskriving av aksjer og andre verdipapir som er kostnadsført i året			
	0720 Andel av regnskapsmessig underskudd i deltakerliknede selskaper			
	0730 Andel av skattemessig overskudd i deltakerliknede selskaper			
	0740 Regnskapsmessig tap ved realisasjon av andel i deltakerliknede selskaper			
	0750 Skattemessig gevinst ved realisasjon av andel i deltakerliknede selskaper			
	0760 Annen inntekt			+
Fradrag for	0800 Renteinntekt på tilbakebetalt skatt			
	0810 Andre fradrag (må spesifiseres i eget vedlegg)			
	0815 Evt. egne sykepenger ført som inntekt i resultatregnskapet (inntektsføres i selvangivelsens post 2.7.5/2.7.6 eller 2.7.7)			
	0820 Tilbakeføring av positiv resultatandel vedrørende investering i datterselskap, tilknyttet selskap og felleskontrollert virksomhet (se post 8005)			
	0830 Tilbakeføring av verdiøkning av markedsbaserte finansielle omløpsmidler (se post 8080)			
	0840 Regnskapsmessig gevinst ved realisasjon av aksjer og andre verdipapirer			
	0850 Skattemessig tap ved realisasjon av aksjer og andre verdipapirer			
	0860 Reversering av tidligere års nedskrivning på aksjer mv. som er inntektsført (se rettledningen)			
	0870 Andel av regnskapsmessig overskudd i deltakerliknede selskaper			
	0880 Andel av skattemessig underskudd i deltakerliknede selskaper			
	0890 Regnskapsmessig gevinst ved realisasjon av andel i deltakerliknede selskaper			
	0900 Skattemessig tap ved realisasjon av andel i deltakerliknede selskaper			+
0930	Endringer i forskjeller som påvirker forholdet mellom regnskapsmessig og skattemessig inntekt fra post 100 i skjemaet RF-1217 «Spesifikasjon av forskjeller...»			
0940	Sum, skal overføres til «Skjema for beregning av personinntekt» (RF-1224)			
0950	Fradrag for renteinntekter og inntektsført avkasting på livsforsikring (Posten fylles ikke ut av deltagerliknede selskap)			+
0960	Tillegg for gjeldsrenter (Posten fylles ikke ut av deltagerliknede selskap)			+
0970	Fradrag for aksjeutbytte (Posten fylles ikke ut av deltagerliknede selskap)			+
For sam. virke foretak	0980 Fradrag for avsetning til kjøpsutbytte til medlemmer av samvirkeforetak			+
	0990 Fradrag for avsetning til fellseid andelskapital for samvirkeforetak (se rettledningen)			+
0999	Næringsinntekt overføres til selvangivelsen Deltagerliknede selskap skal overføre beløpet til selskapsoppgaven (se rettledningen)			
0998	Næringsunderskudd overføres til selvangivelsen Deltagerliknede selskap skal overføre beløpet til selskapsoppgaven (se rettledningen)			

Er virksomheten revisjonspliktig? ☐ Ja ☐ Nei | Skal det for virksomheten fastsettes personinntekt etter skattelovens kap. 12? ☐ Ja ☐ Nei

Underskrift				Dato	
Henvendelse rettes til				Telefonnr.	
Revisors underskrift		Revisors org.nr.		Revisjonsselskapets navn	
Revisors navn		Adresse		Postnr./-sted	

Vi viser til rettledning som er utarbeidet til hjelp ved utfyllingen av næringsoppgavene, RF-1168

Fastsatt av Skattedirektoratet med hjemmel i Finansdepartementets Delegeringsvedtak av 24. oktober 1991, jf. likningsloven § 4-4 nr. 7

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