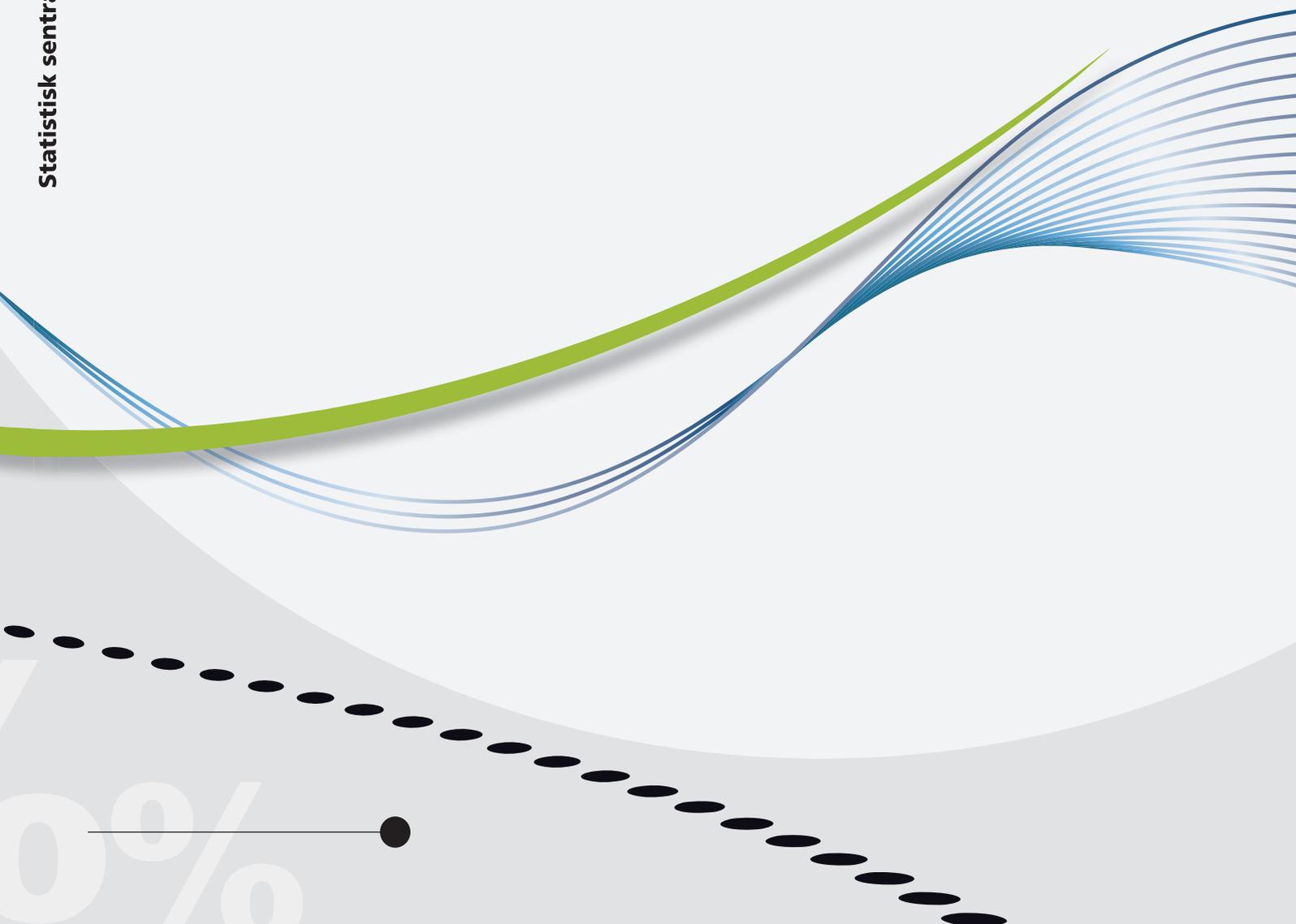




Karen Oftedal Eikill and Steinar Todsén

Changes in inventories in the Norwegian National Accounts

Accounting data as a source for changes in inventories



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In the series Documents, documentation, method descriptions, model descriptions and standards are published.

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Preface

Changes in inventories in the Norwegian National Accounts (NNA) are estimated as a residual in the supply and use tables. The figure is considered a weak point in the compilation of national accounts in Norway.

Inventories and changes in inventories should fluctuate according to production and demand. In the NNA, changes in inventories and statistical errors have been positive every year since 1970. Changes in inventories and statistical errors as a proportion of gross domestic product (GDP) have been large and increasing since 2004.

This implies that the figures of the changes should be examined and, preferably, improved. This report aims to assess this topic, evaluating whether we can use accounting data retrieved from corporations as a source to changes in inventories.

Statistics Norway, 27.01.2017

Lise D. Mc Mahon

Abstract

Changes in inventories in the Norwegian National Accounts (NNA) are estimated as a residual in the supply and use tables. Hence, the changes are a mix of actual changes in inventories and statistical errors, which makes the figure hard to interpret. In the NNA, changes in inventories have been positive every year since 1970. Changes in inventories and statistical errors as a proportion of gross domestic product (GDP) have been large and increasing since 2004.

This implies that the figures of the changes should be examined and, preferably, improved. This report aims to examine these changes in inventories and statistical errors, including considering whether we can use accounting data retrieved from corporations as a source to changes in inventories.

Ideally, we would like to estimate changes in inventories and statistical errors directly. This requires having one or several good and reliable sources to calculate these changes. Good sources for changes in inventories in Norway have been missing. However, the income statement for corporations (“Næringsoppgave” in Norwegian, referred to as “NO”) provides us with value data for changes in inventories. If we want to calculate the direct changes of inventories, using an available source in Norway, we must use these “NO” data. This report examines whether the quality of the “NO” figures have improved in a way that enable us to use it as a source for changes in inventories.

The report includes theory concerning how the inventory and changes in inventory should be valued in the NNA and in Norwegian accounting, and how similar countries calculate the figures. In our analysis, we start by presenting how the NNA figure has evolved in recent years. Further we compare these with the relevant figures retrieved from the “NO” data. The figures for changes in inventories retrieved from “NO” data can explain only a small fraction of the total changes in inventories and statistical errors in the NNA. Additionally, because changes in inventories may be due to both changes in the number of goods as well as price changes we split the changes in inventories in these two. This implies that an even smaller fraction of the NNA changes in inventories can be explained by “NO” data. Additionally, there are several other issues with the “NO” data that need to be considered.

Even though our analysis still leaves a lot of the NNA figures for changes in inventories and statistical errors unexplained, our analysis concludes that the “NO” figures can, at least, be an estimate for some of the changes in inventories, an estimate that has been missing until now.

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1. Background

Changes in inventories in the Norwegian National Accounts (NNA) are estimated as a residual in the supply and use tables. Hence, the changes are a mix of actual changes in inventories and statistical errors, which makes the figure hard to interpret. The figure is considered a weak point in the compilation of national accounts in Norway.

Inventories and changes in inventories can be expected to fluctuate according to production and demand. In the NNA, changes in inventories and statistical errors have been positive every year since 1970.¹ As a proportion of gross domestic product (GDP) they have been large and increasing since 2004. This implies that the figures should be examined and, preferably, improved. This report aims to assess this topic, as well as examine whether an improvement of the figures is possible.

Ideally, we would like to estimate changes in inventories directly. This requires having one or several good and reliable sources to calculate these changes. Then we could separate the changes in inventories from the statistical errors, making us capable of keeping track of the actual changes in inventories. This would again give us better knowledge about why this residual always has been positive, and why it has been increasing the last years. Errors in the changes in inventories calculated in the NNA could also be identified.

Good sources for changes in inventories in Norway have been missing.² However, the Structural Business Statistics (SBS) provide data for inventories by industries,³ retrieved from the income statement for corporations (“Næringsoppgave” in Norwegian, later referred to as “NO”). Over the years, an increasing number of enterprises have been included in the SBS. This implies that the source situation for changes in inventories has improved, or at least should have been improved. If we were to calculate the direct changes of inventories directly, using an available source in Norway, we must use the SBS, or at least figures from where the SBS is retrieved, figures from “NO.”⁴

The SBS are primarily based on accounting forms for enterprises. Enterprises must report their figures to the Norwegian Tax Administration (Tax Norway). They report their figures in the mentioned “NO.” “NO” figures are thus on an enterprise, not an establishment, level. Hence, some enterprises are required to report more figures to Statistics Norway in the annual SBS sample survey.⁵ For those enterprises, figures are broken down to an establishment level. SBS data are utilized in NNA calculations for several figures: output, intermediate consumption and compensation of employees. Some figures, as gross fixed capital formation, are considered less reliable, and are therefore sometimes adjusted before they are used in the compilation of the NNA. “NO” and the SBS provide value data on an enterprise or an establishment level, not by products, as the NNA does, and they are only available annually.

¹ 1970 was the first year for which the accounts using the SNA93 regulations were published.

² From 1995-2010 the industry had their own quarterly statistics for inventories, collected through short-term indicators. These statistics was not used as a source in the NNA.

³ The SBS presents figures for inventories in the opening and closing balance of the fiscal year for enterprises. The changes in inventory could therefore be calculated as the difference between these. In the SBS some of the inventory changes are also given directly.

⁴ Alternative statistics have been examined: Unfortunately, these have not been recommended for appropriate statistics for changes in inventories (Gimming, Jacobsen and Løkkevik, 2005).

⁵ “Tilleggsskjema” in Norwegian.

This report aims to evaluate whether the quality of the “NO” figures have improved in a way that enable us to use it as a source for changes in inventories. Because the inventory figures in the NNA consist of both changes in inventory as well as statistical errors, comparing NNA figures directly with inventory figures from “NO” or the SBS does not make sense. However, the relationship between these figures is important, because we want to know how much of the changes in inventory and statistical errors in the NNA that could be explained by “NO” figures. If the quality of the inventory figures from the “NO” is high, they could be used as a source for some of the changes in inventories in the future. The aim of this paper is therefore to examine the quality of the “NO” figures. Hence, the question we want to answer in this paper is: has the quality of inventory “NO” data improved in such a way that we can use them as an estimate for inventory variables in the NNA?

In the following we start by presenting how inventory and changes in inventory should be valued in the NNA and in Norwegian accounting. Section 2 also presents how similar countries calculate the figures. Further, we present our analysis in section 3. We begin our analysis by presenting the figures for changes in inventory in the NNA. Then we present inventory figures from “NO” delivered to The Norwegian Tax administration (“Tax Norway”). The analysis presents how these figures relate to each other, and how the data from the “NO” could and should be analyzed. How the changes in inventories should be calculated, and how these changes should be split into transactions and revaluations are included. Issues evolving these measures are also presented. In section 4 we present our conclusions.

2. Calculating inventory and inventory changes

This section presents how (changes in) inventories are valued in the NNA and in Norwegian accounting rules, which is the basis for the NO/SBS data. If they differ, the NO/SBS data have to be adjusted before they are used in the NNA.

2.1. Norwegian National Accounts

National accounts are used to compare the economy in different countries. Therefore, the NNA, as well as other countries national accounts, follows international guidelines. The main standard is the System of National Accounts (SNA), developed by the United Nations (UN) in the 1950s. SNA have been revised several times, with SNA 2008 being the last revision (SNA 2008). The European Union (EU) has their own standard for National Accounts – the European System of National and Regional Accounts (ESA). ESA is based on the SNA, though targeted more to the needs in the EU. ESA was last revised in 2010 (ESA 2010).⁶

Based on SNA 2008 and ESA 2010, inventory is considered as one out of three main types of produced capital in the NNA. The others are fixed capital formation and valuables. ESA 2010 divides inventory in five different categories:

- AN. 121 Raw materials and supply
- AN. 122 Work-in-progress ⁷
- AN. 123 Finished goods (from own production)
- AN. 124 Military inventories

⁶ When entering the “EØS” –agreement in 1994, Norway is required to follow ESA’s guidelines.

⁷ Standing single-use crops (including timber) cultivated by human activity and livestock being raised for slaughter are also counted as inventories in work-in-progress (13.41). AN.122 therefore consists of work-in-progress on cultivated assets and other work-in-progress.

- AN. 125 Goods for resale (Inventories of goods intended for resale without further processing by wholesalers and retailers)

According to both SNA 2008 and ESA 2010, inventories should be valued at the prices prevailing on the date on which the balance sheet relates.⁸ The prices the products were valued at when they entered inventory is not relevant. The book values in the enterprise's balance sheets are (usually) not market prices,⁹ and have to be adjusted if we want to use them in the NNA.

In the NNA, changes in inventory may be due to both changes in the number of goods ("changes in inventories") as well as price changes ("revaluations"), hence both transactions and revaluations. The "changes in inventories" should be posted to the capital account, whereas "revaluations" go to the revaluation account. The sum should explain the total changes in inventory from one point in time to another.¹⁰

Changes in inventories in the NNA are, calculated for 6 different categories:

- 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
- 6) cultivated assets as forest and fruit trees.

As described in the first section, the changes in inventories on products are calculated as a residual, total supply less total use for each of the 900 products in the NNA. Because the different statistical sources of the NNA contain different errors,¹¹ the residual estimates of changes in inventories will contain errors.

As presented in the next section, Norwegian enterprises' accounting does not match the SNA definitions. We cannot calculate the change in inventories after the SNA and ESA definition directly because the price on the assets will change as time goes and the goods are replaced. Instead, one should make a conversion to constant prices, making it possible to distinguish the revaluations.

2.2. Norwegian accounting rules

Sets of accounting most relevant for Norwegian enterprises are NGAAP (Norwegian Generally Accepted Accounting Principles), which is the Norwegian Law of Accounting and accompanying principles, and IFRS (International

⁸ SNA 2008 and ESA 2010 also give more detailed rules when valuing inventories, depending on the category of inventories. Inventories of materials and supplies are valued at purchasers' price. Inventories of finished goods and work-in-progress are valued at basic prices. Goods for resale are valued at prices paid for them, excluding any transportation costs that have been separately invoiced to the wholesalers or retailers and included in their intermediate consumption. The value of the closing balance sheet of work-in-progress inventories should be consistent with the value of the opening balance sheet, plus any work completed and reclassified as finished goods. An allowance for any necessary revaluation for changes in prices in the period must be included.

⁹ As described in section 2.2 for Norwegian enterprises. Book value is the value used in accounting. The market price is the price the products could be sold for at a given point in time; approximately equal to the price on the date which the balance sheet relates.

¹⁰ Other volume changes, for example destruction of assets due to floods or earthquakes are not included.

¹¹ Examples could be reporting errors or valuation errors, etc.

Financial Reporting Standards).¹² Most enterprises can choose between these, but listed companies must use IFRS. In terms of accounting there are some differences between the two reporting standards.

Norwegian Law of accounting (NGAAP)

Current assets should be valued at the lowest of acquisition cost and fair value.¹³ Being a current asset, this naturally goes for inventory. The inventory cost shall comprise all costs of purchase, cost of conversion and other costs incurred bringing the inventories to their present location and condition.¹⁴ Acquisition cost is purchase price and purchase costs. For work-in-progress, acquisition costs include both fixed and variable manufacturing costs. The precautionary principle is one of the basic accounting principles in the Norwegian Law of Accounting,¹⁵ emphasizing the importance of recording unrealized loss, not unrealized profit. This is an important difference between the NGAAP and the NNA. In the NNA a precautionary principle is not a priority, recording the most reliable value is the important focus.

Given these rules, changes in inventories are the value of inventories in the end of the period minus the value in the beginning of the period.

When corporations report to Tax Norway, the “NO” divides inventory in different categories, quite similar to the categories in the SNA 2008 and ESA 2010, presented in section 2.1:

- 0110 Raw materials and supply
- 0120 Work-in-progress
- 0130 Finished goods (from own production)
- 0140 Goods for resale
- Additionally, there are two categories for agriculture:
 - o 0150 Livestock
 - o 0160 Self- produced goods to be used in own production

These are listed at the first page of the “NO”, in both tax and accounting terms.¹⁶ The sum of these figures is also listed, in 0170. Additionally, the sum is listed in the balance sheet section, page 3 in the form, as 1400 Inventory. The item 0170 in accounting terms should be equal to item 1400. At page 2 the changes in inventory are listed in 4295 changes in inventory of work-in-progress and finished goods. The yearly figure of 4295 should be equal to the sum of the changes between the closing and incoming balance of 0120 and 0130. Additionally, the incoming balance one year should be equal to the closing balance the previous year. This goes for all balance sheet figures, 0110-0160 and 1400.

Determining acquisition cost

When valuing inventory using Norwegian accounting rules, enterprises should use the FIFO (first-in-first-out) method, implying that an asset sold, used or disposed

¹² The Norwegian Law of Accounting (“Regnskapsloven”), chapter 5, §5-2. Others are for example the simplified version of IFRS.

¹³ Fixed assets shall be written down to fair value if impairment, a decrease in the value of the asset, is not expected to be temporary. Fair value is the “real” value of the assets, the price the asset could be sold for if it was to be sold immediately. If the basis of the impairment is no longer present, a reversion of the write down is possible.

¹⁴ The Norwegian Law of Accounting, chapter 5, §5-4.

¹⁵ The Norwegian Law of Accounting, chapter 4, §4-1.

¹⁶ The difference between these two is that at accounting terms the value of goods produced by the enterprise itself is both direct and indirect manufacturing costs, while the tax value is the direct manufacturing costs only (explaining why the tax figures are lower than the accounting figures). Hence, there can be differences between the book value and the tax value of an asset. Both of these figures are reported in the “NO.”

(the asset is “leaving” the inventory) are valued as the asset acquired or produced first. Using this method, the value of the inventory will be approximately equal to the value of the latest assets that were included in the inventory, a method that gives an inventory value approximately equal to the inventory values of the SNA. However, changes in inventories using this method are different from the “SNA method.” Assets entering the inventory are equally valued, but the ones leaving the inventory are valued differently.

When valuing inventory, keeping track of each small asset can be challenging. Thus, the Norwegian Law of Accounting accepts using average acquisition cost as a considerable good approximation to the inventory value.¹⁷

Changes in the Law of Accounting

Changes in the Law of Accounting regarding inventories will affect the enterprises reporting of inventory. Searching for such changes, we have examined changes made in the Law of Accounting in the 21th century.¹⁸ None of these seem to be relevant for inventories and changes in inventories.

IFRS

One main difference between NGAAP and IFRS is that several assets in the balance sheet should be reported at fair value instead of acquisition cost when using IFRS. However, for current assets, such as inventory, this is not the case,¹⁹ inventory should be measured at the lowest of cost and fair value. When measuring the cost of inventories, the FIFO method or weighted average cost is used, also similar as for NGAAP.²⁰ Hence, when evaluating whether or not one could use numbers from the “NO,” the enterprises use of either NGAAP or IFRS is not significant.

2.3. Inventory in other countries' National Accounts

When evaluating statistics, which could be used to calculate changes in inventory, looking at how other similar countries are reporting these figures could be useful. We have looked at how the inventories in the GDP are reported for some similar countries, which also report after the ESA/SNA standards.

This section presents the inventory reporting in the GDP for Denmark. In the appendix, the inventory reporting in Sweden, The Netherlands and Austria are described. Denmark is chosen described in more detail due to the similarity to the Norwegian figures and available sources, like tax reports.

Denmark^{21 22}

The estimate of the changes at industry level should be consistent with the estimate based on special information on the individual products. The calculations in inventories can be divided into calculated changes based on the change in inventories during the year, according to accounts,²³ and changes which are calculated regularly on the basis of special information relating to changes in stocks of individual goods. Other changes are calculated from special information on any given year, or introduced at the time of the actual balancing.

¹⁷ The Norwegian Law of Accounting, chapter 5, §5-5.

¹⁸ Relevant changes examined were found at the webpage “rettsdata.no.”

¹⁹ Any exceptions to this similarity are rare, and is assumed not to have any implications for the NNA.

²⁰ According to IAS 2 Inventory.

²¹ The description of the Danish system is obtained from “Gross National Income Inventory (ESA95) Denmark Original: Version (2006-2007).

²² Based on 2007 rules.

²³ In the national accounts of Denmark, these inventory changes are divided in raw materials, wholesaling, retailing and finished goods and work in progress.

Accounting figures

All industrial firms and workplaces in the industrial account statistics are assigned accounting figures which come from questionnaires, annual reports or tax reports for firms not covered by the sample. For cases where neither of these figures is collected, missing accounting figures are calculated with the help of “standard ratios” compiled regarding to units for which the data are known.²⁴

Changes in inventories in industries based on the SLS-E data²⁵ have generally only comparatively small inventories of materials used for intermediate consumption. Opening stocks should be based on the closing figures for the previous year, and a number of estimated corrections have to be made.²⁶ Corrected inventories are supplied to the intermediate system in the usual form.

Breakdown of inventories by product

Because the calculation of changes in inventories in the intermediate system requires opening and closing stocks at average prices, a complete breakdown of inventories by good is required. The industries' inventory totals are broken down by products or categories based on the product composition in the balanced supply and use tables for the previous year. Total inventories of finished goods are broken down as the output of the industry at basic prices, and the totals of raw materials are broken down as the input of the industry at purchasers' prices excluding VAT. Wholesale inventories are divided based on the composition of inputs at basic prices for the types of industry which may be assumed to buy the goods in question. Inventories of retail goods are divided using the composition of basic prices plus wholesale margins for consumption groups.²⁷ Changes in agriculture and energy products' inventories are covered by special calculation at product level. This calculation is based on information in physical units.

Calculation of national accounts changes in inventories

Changes in inventories in the business accounts are calculated as the value of closing stocks minus the value of opening stocks for each type of inventory. The value of the stocks is estimated according to the enterprises' own accounting principles. In the national accounts, changes in inventories should be estimated at the average prices for the year, and the changes should be split into revaluations and national accounts changes. A reasonable approximation can be produced by converting the value of both opening and closing stocks to the average prices for the year. The ratio of the year's average price to the price on the date of the inventory estimate is used.

The price indices used for the conversion of inventories to the average prices for the year is predominantly based on the producer price index and can be found for all product numbers in the inventory calculations. 2/3 of the December index and 1/3 of the following January index is used as the end-of-year index. Opening and closing stocks are converted to average prices for the year for all possible combinations. The change in inventories in the national accounts is then calculated as closing stocks minus opening stocks for each of these combinations. The difference between the inventory changes in the national accounts and in business accounts is transferred to the intermediate system as a “price correction.”

²⁴ For some firms, inventory data are collected in sub-systems using industry specific accounting statistics. If so, the national accounts changes in inventories are calculated outside the central inventory calculations system. Resulting aggregate changes in inventories are transferred to the intermediate system under the codes for changes in inventories only.

²⁵ Figures from the Central Custom and Tax Administration.

²⁶ For example, if a firm switch from one industry (or sector) to another.

²⁷ The individual groups are weighted using a key corresponding to the key for the conversion from retail trade branch to consumption group used in the consumption and retail trade margin systems.

3. Analysis

We begin our analysis presenting the figures for changes in inventories in the NNA. Further we present changes in inventories calculated using the income statement for corporations from the “NO,” as explained in section 1. We also present some figures from the SBS for 2013, but as we will see, not all inventory variables are possible to produce with the available SBS data.

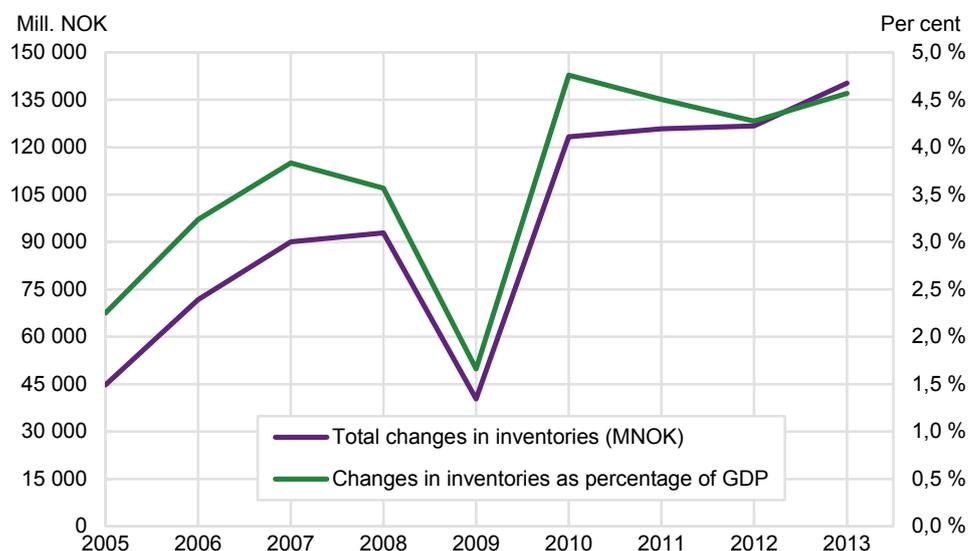
The figures of changes in inventories in the “NO” data are measures of the changes in inventories alone. Hence, they can provide us with an estimate of how much of the changes in inventories and statistical errors in the NNA which are due to real changes in inventories, and thereby also the possible size of the statistical error.

Looking at “NO” as a possible source for measuring changes in inventories, there are several issues that we must account for. One is to split the changes in the value of inventories during the year into revaluations and transactions, as described in section 1. We try to make proxies that accounts for these differences in section 3.3. Other problems we encounter are discussed in section 3.4.

3.1. Changes in inventories in the NNA 2009-2013

First, we present changes in inventories reported in the NNA in 2005-2013. The inventories in the NNA are divided into different categories²⁸, which in sum give us the total changes in inventories and statistical errors.²⁹ This sum is presented in absolute value and as a percentage of the gross domestic product (GDP). In the appendix, the level of changes in inventories for each different category is shown. In theory changes in inventories may be both positive and negative.

Figure 3.1 Changes in inventories in the NNA 2005-2013



Source: Statistics Norway

Figure 3.1 presents the changes in inventories in the NNA in 2005-2013, in absolute values (in MNOK) and as percentage of GDP.³⁰ Changes in inventories

²⁸ These «categories» are: «87000 Residual, barer, lagerendring,» «87300 Residual, tjenester,» «87400 Tjenester som ikke skal ha residual,» «87910 Varer under arbeid, moduler, skip,» «87920 Varer under arbeid, ellers,» «87930 Lagerendring, husdyrbestand, hogstkvantum, fiskeoppdrett o.l.,» «87940 Lagerendring, vekst i dyrket skog,» «87950 Tjenester under arbeid,» «87970 Lagerendring merverdiavgift og investeringsavgift» and «87990 Korreksjon faste priser.»

²⁹ For convenience, we will (mainly) refer to the changes in inventories and the statistical errors in the NNA as “changes in inventories” in most of our analysis.

³⁰ The GDP here is the total GDP, not only the GDP for Mainland Norway.

have increased since 2005, in both absolute terms and as a percentage of the GDP. 2009 was a special year due to the financial crisis and due to problems related to a new industry classification in the NNA, both the GDP and the changes in inventories decreased this year. Hence, we treat this year as an exception and do not dwell on the deviating development in 2009. From 2005 to 2013 the total changes in inventories have increased from approximately 44 000 MNOK to 140 000 MNOK. As a percentage of the GDP this has increased from 2,3 % to approximately 4,5 %. Hence, the changes in inventories represent a relatively large part of the GDP.

3.2. Inventories in the income statement for enterprises

As described in section 2.2, enterprises must provide several different inventory figures in their reporting to Tax Norway.³¹

Ideally, we want figures for all inventory variables on an establishment level, but not all inventory variables are broken down to this level.³² Therefore we mainly use data on enterprise level in our analysis, the figures that are reported to Tax Norway in the “NO.” For 2013 we also look deeper into the inventory variables that are available at an establishment (hence, the figures presented by the SBS) level, in section 3.2.

Figures from the “NO-base”

Before examining and analyzing the inventory figures, it is important to get to know the figures. We start by presenting the inventory figures in “NO”. The figures are retrieved from the “NO-base” at Statistics Norway, a database which contains all delivered “NOs” from enterprises in Norway.³³ We analyze figures from 2009-2013, keeping in mind that 2009 was a special year.

The figures for the sums of inventory from the statements of all enterprises who delivered the statement the respective years are shown in figure 3.2.³⁴ The figures labeled “sum inventory” from page 1 in the statement are the sum of the different inventory categories presented in section 2.2, presented in both tax and accounting terms.³⁵ The levels of inventory at the 1st of January each year and at the 31th of December each year are shown. These inventory levels are not identical in tax and accounting terms, and neither in accounting terms in page 1 and page 3 in the statement. Additionally, the closing balance one year should be equal to the incoming balance the next year. Nor this seems to be true. Once again, these are inconsistencies that we will get back to later.

We see that the level of inventory reported in the “NO” has been increasing the last years, from 2009-2013, with some exceptions from 2009 until 2010 for the incoming balance.³⁶ The levels of the inventories are larger than the changes in inventories in NNA, presented in figure 3.1. This is an expected relationship, a change in inventories larger than the inventories itself would be suspicious.

³¹ See section 2.2 for an overview of the reported values in the “NO.”

³² Issues following this procedure are discussed later.

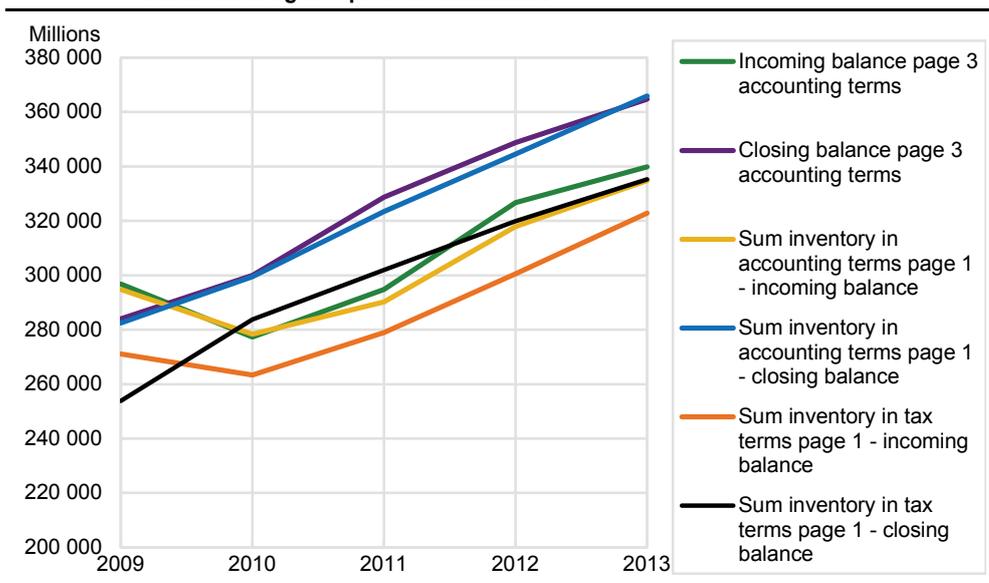
³³ Not all enterprises in Norway are presented in the “NO- base,” exceptions are enterprises in the public sector and small voluntary enterprises.

³⁴ As we will discuss later, not all industries covered by the “NO” use “NO” data as a source in the NNA.

³⁵ The categories 0150 and 0160 (see section 2.2 for more details), are not included because they are not represented in our data from the “NO-base.” These are, however, only relevant for agriculture industries.

³⁶ Due to the special situation in 2009, the somewhat decreasing levels of the incoming balance from 2009 until 2010 will not be given a lot of attention. Per now the data we have used are from 2009, but it would be possible to additionally retrieve data from previous years.

Figure 3.2 Levels of inventory at page 3 (1400 in the «NO»), sum of inventory in accounting and tax terms page 1 (the sums of 0110-0160 in «NO»), incoming and closing balance. All figures presented in MNOK



Source: The "NO"- base

Changes in inventories calculated as the closing balance minus incoming balance

Further we calculate the change in inventories from the inventory levels in the "NO-base." The change in inventory a respective year could be given by the difference between the closing balance and the incoming balance the same year, or the difference between the closing balance and the closing balance the previous year. We start with subtracting the incoming balance from the closing balance, and we call this calculation of changes in inventories method 1. The change in inventories in accounting terms, page 1 and page 3, as well as in tax terms at page 1 is presented in figure 3.3.

Looking at figure 3.3 we see a similar development in the figures for change in inventories from the "NO-base" and the change in inventories figures from the NNA in figure 3.1. This relationship is less visible for the tax figures. Even though the graphic relationship looks similar, the figures of change in inventories from the "NO-base" show a negative change in inventories in 2009.

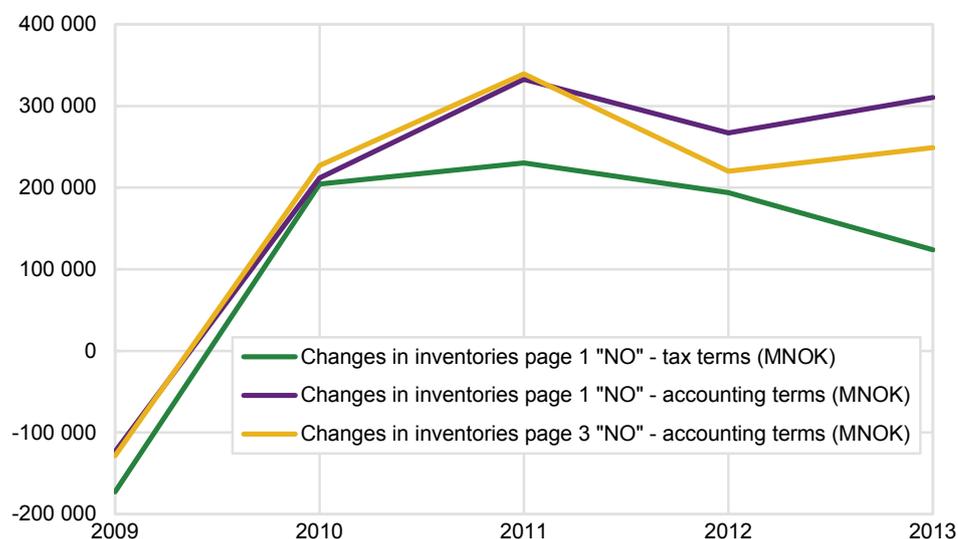
When comparing these figures, it is important to be aware of the fact that not all enterprises in Norway are included in the "NO – base." However, for many of those enterprises, the inventory variables are usually low or even zero in the NNA. Examples are public administration, where products produced do not have inventory in the NNA, and voluntary organizations³⁷ that have low inventory variables. For the purpose of this analysis, we could therefore assume that the "NO-base" contain a lot of the possibly measured inventory.

Looking at the figures for change in inventories retrieved from the "NO" data in figure 3.3, we see that enterprises in Norway report inventory changes ranging from approximately 10 000 MNOK until almost 35 000 MNOK in their "NOs" in the years 2010-2013. Looking back at figure 3.1, the change in inventories (including statistical errors) in the NNA in the same years range from approximately 120 000 MNOK until approximately 155 000 MNOK. Hence, only a fraction of the change in inventories these years could conceivably be explained by accounting data in the "NO." These figures are summarized in table 3.1,

³⁷ All the large voluntary organizations deliver "NO" to Tax Norway.

presenting that using accounting figures from the “NO” as a source for changes in inventory could be able to explain between 20 % and 30 % of the changes in inventories. Because our current situation is that all inventory changes are calculated as a residual, being able to explain almost 30 % of the change would be a progression. However, this requires that we use the sources in a correct manner.

Figure 3.3 Changes in inventories in the income statement for corporations (“NO”) 2009-2013 – closing balance minus incoming balance



Source: The “NO”- base

Table 3.1 NNA figures of changes in inventories and statistical errors and «NO» figures of changes in inventories calculated as closing balance minus incoming balance (Method 1)

	2010	2011	2012	2013
NNA figures:				
Total changes in inventories NNA (MNOK)	123 259	125 798	126 775	140 257
Figures from the NO- base:				
Changes in inventory (UB-IB) in tax terms page 1 (0110-0160) (MNOK)	20 421	23 001	19 381	12 394
- As a percentage of the NNA figures	17 %	18 %	15 %	9 %
Changes in inventory (UB-IB) in accounting terms page 1 (0110-0160) (MNOK)	21 176	33 275	26 695	31 030
- As a percentage of the NNA figures	17 %	26 %	21 %	22 %
Changes in inventory (UB-IB) in accounting terms page 1 (0110-0160) (MNOK)	22 712	33 927	21 987	24 880
- As a percentage of the NNA figures	18 %	27 %	17 %	18 %

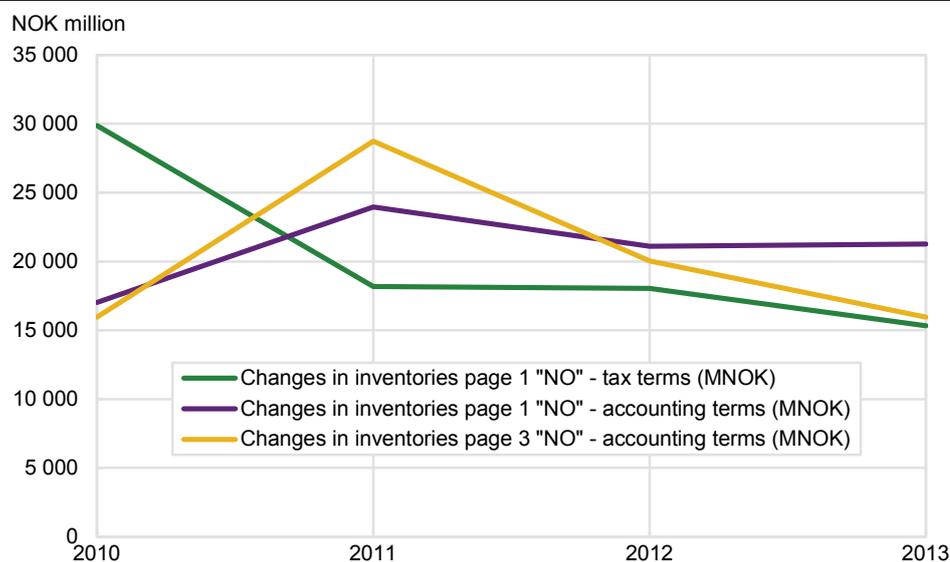
Source: Statistics Norway and the «NO»- base.

Change in inventories calculated as the closing balance one year minus the closing balance the previous year

Another method of calculating the changes in inventories is subtracting the closing balance the previous year from this year closing balance (we call this calculation of changes in inventories method 2). This method should ideally be equal to subtracting the incoming balance. However, looking at figure 3.2, we see that the incoming balance one year is not necessarily identical to the closing balance the previous year. When summarizing thousands of enterprises closing and opening balances, it is natural that some differences exist. This could be due to different numbers of enterprises, changes in the figures of specific enterprises due to discovered errors, etc.

Figure 3.4 presents the changes in inventories from “NO” calculated with method 2 from 2010-2013.³⁸ Looking at figure 4 we see a similar relationship with figure 3.3, but there are also differences. The change in tax terms in 2010 is for example much higher when calculating the changes in inventories as the closing balance one year minus the closing balance the previous year. The figures in accounting terms show a more similar development, but the figures are, for some years, lower.

Figure 3.4 Changes in inventories in the income statement for corporations (“NO”) 2009-2013 – closing balance minus previous years closing balance



Source: The «NO»- base.

Table 3.2 NNA figures of changes in inventories and statistical errors and “NO” figures of changes in inventories calculated as closing balance minus closing balance the previous year (Method 2)

	2010	2011	2012	2013
NNA figures:				
Total changes in inventories NNA (MNOK)	123 259	125 798	126 775	140 257
Figures from the NO- base:				
Changes in inventory (UB-IB) in tax terms page 1 (0110-0160) (MNOK)	29 876	18 187	18 037	15 333
- As a percentage of the NNA figures	24 %	14 %	14 %	11 %
Changes in inventory (UB-IB) in accounting terms page 1 (0110-0160) (MNOK)	17 016	23 951	21 104	21 267
- As a percentage of the NNA figures	14 %	19 %	17 %	15 %
Changes in inventory (UB-IB) in accounting terms page 1 (0110-0160) (MNOK)	15 953	28 743	20 085	15 952
- As a percentage of the NNA figures	13 %	23 %	16 %	11 %

Source: Statistics Norway and the «NO»- base.

We present the relationship with the NNA figures of changes in inventories and the changes in inventories in the “NO” with this alternative calculation. This is presented in table 3.2, equivalent to table 3.1. The enterprises report changes in inventories in a similar range using this method 2 as the first calculation, presented in table 3.1. There are, however some differences, the level of the changes in inventories is for example lower with this alternative calculation. The differences between the two calculations are presented in table 3.3, calculated as figures from method 1 minus figures from method 2. The percentage difference presented in table 3.3 is the absolute difference between the share that the changes in inventories amounted of the changes in inventories in the NNA, calculated by the

³⁸ Because our data contains “NO”- figures from 2009-2013, when calculating the changes in inventories as the closing balance one year minus the closing balance the previous year, changes in inventories figures for 2009 are not retrieved.

two different methods. Which calculation that should be preferred will be discussed in section 3.4.

Table 3.3 The difference between the two methods, calculated as figures calculated by method 1 minus figures calculated by method 2

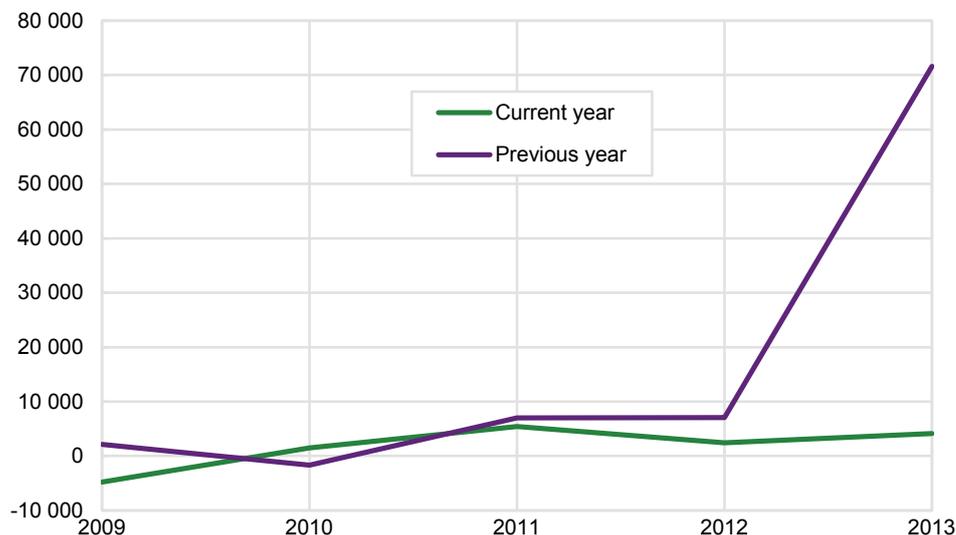
	2010	2011	2012	2013
Differences between the two calculation methods:				
Tax terms page 1 (0110-0160) figures (MNOK)	-9 456	4 814	1 343	-2 938
Tax terms page 1 (0110-0160) figures (%)	-8 %	4 %	1 %	-2 %
Accounting terms page 1 (0110-0160) figures (MNOK)	4 160	9 324	5 591	9 763
Accounting terms page 1 (0110-0160) figures (%)	3 %	7 %	4 %	7 %
Accounting terms page 3 (1400) figures (MNOK)	6 759	5 184	1 952	8 928
Accounting terms page 3 (1400) figures (%)	5 %	4 %	2 %	6 %

Source: The «NO»- base.

Change in inventories in inventory of work-in-progress and finished goods

As mentioned in section 2.2, page 2 in the “NO” also specifies the changes in inventory in 4295 changes in inventory of work-in-progress and finished goods.³⁹ These changes are presented in figure 3.5. All figures here are changes in inventories, not levels. The figures for the current and previous year are presented. The previous year figure should, naturally, be equal to the “current year figure” in the “NO” the previous year. Hence, in figure 3.5 the “current year figure” for 2009 should be equal to the “previous year figure” in 2010, and so on. This relationship is not completely consistent, especially for in 2013, where the “previous year figure” has become very high. Analyzing these figures more thoroughly shows that such discrepancies can be due to one or a few large enterprises where the ‘previous year figure’ in one year is different from the ‘current year figure’ in the financial statements the year before.

Figure 3.5 Changes in inventories of goods in progress and finished goods (MNOK), 4295 in the “NO”



Source: The «NO»- base.

The figures for the change in inventories of work in progress and finished goods at page 3 (4295) should be equal to the changes in inventories in 0120 Work-in-progress and 0130 Finished goods, at page 1 in the “NO.” These categories are also part of the sum of inventories at page 1 presented earlier. In table 3.4 we compare these figures, and we see that they are quite different. Both methods show that the figures at page 1 are much higher than the figures at page 2, in 4295, for all years.

³⁹ Being a cost variable in the “NO,” we changed the sign of the figures in 4295 to make them comparable with the inventory variables at page 1.

Because these figures should hold for each selected enterprise, this leads us to the conclusion that these figures should not be trusted when using the overall figures.⁴⁰ In section 3.4 we explain that neither external accountants nor Statistics Norway edits figures at page 1 thoroughly, hence it is item 4925, which is the most trustworthy one out of these two figures.

Table 3.4 Changes in inventory in 4925 and 0120 plus 0130 in the NO, calculated by the two methods (MNOK)

	2010	2011	2012	2013
Method 1: Changes calculated as closing balance minus incoming balance				
4925 Changes in inventory of work-in-progress and finished goods	1 510	5 447	2 438	4 162
Changes in inventories sum of 0120 and 0130	5 490	18 693	10 759	16 192
Difference	-3 980	-13 246	-8 321	-12 030
Method 2: Changes calculated as closing balance minus previous years closing balance				
4925 Changes in inventory of work-in-progress and finished goods	1 510	5 447	2 438	4 162
Changes in inventories sum of 0120 and 0130	5 299	18 987	9 050	16 003
Difference	-3 788	-13 540	-6 612	-11 841

Source: The «NO»- base.

Figures from the SBS in 2013

How the SBS figures are collected is explained in section 2. Because the SBS breaks down enterprise figures from the “NO” down to an establishment level, they should be more equivalent to the NNA figures looking at these industries alone. But because the SBS is used as a source for the NNA for many, but not all industries, comparing total inventory in the NNA with inventory figures from SBS will not be very comparable. We could try to compare the inventory figures from SBS with the inventory in the industries covered by the SBS⁴¹ in the NNA. There is, however, another complication which makes this difficult. The inventory in the NNA is not presented at industry level, the different inventory categories are treated as recipients of different products in the same way as industries are. Hence, if we want to divide the inventory on different industry, this has to be done by assuming different distributions of products for each industry. This method is a poor substitute for actual data.

Additionally, the SBS data do not contain all the inventory variables that are present in the “NO.” It is therefore not possible to look at all the inventory figures using the SBS. Figures from 1400 Inventory in NO are for example not distributed down to establishments.⁴² The same goes for the tax figures for inventory at page 1, listed in 0110-0160. The accounting figures at page 1, 0110-0160, labeled accounting, are presented, and we will now look at these figures for 2013.

SBS accounting figures for inventory in 2013

The SBS figures for inventory and inventory changes are presented in table 3.5. These figures are only in accounting terms, and are the sum of the figures for the different categories of inventory at page 1 in the “NO.” To be able to calculate the changes in inventory by method 2, the outgoing balance for 2012 is also needed. For comparison with the NNA figures, the level of the changes in inventory in NNA for 2012 is also presented.

Table 5 shows that the changes in inventories are somewhat lower in the SBS than in the total NO base, calculated by both methods. This is as expected due to the

⁴⁰ If one decides to try to use these figures, they would have to be edited, and then large discrepancies, for example caused by large individual enterprises would probably be traced and weeded out. However, the discrepancies are large for all years, so the figures do not look like a good source.

⁴¹ Or choose to look at some of those industries.

⁴² A complete list of the variables in the SBS is found in the appendix.

mentioned different coverage.⁴³ The difference is, however, not as large as one could imagine, and when looking at the NNA figures, we see that SBS figures for changes in inventory could explain more than 10 % of the inventory changes in 2013.

Table 3.5 An overview of the inventory variables in the SBS in 2013, compared with both the total “NO-base” and the NNA

	Closing balance 2013	Incoming balance 2013	Closing balance 2012
Level of inventory – sum of the different inventory groups at NO page 1 (MNOK)	324 468	304 751	307 971
NNA figures of changes in inventory	140 257		
Changes in inventory /MNOK) by SBS and NO in 2013			
	SBS	NO	Difference
Calculated with method 1 – closing balance minus incoming balance	19 717	31 030	-11 313
Calculated with method 2 – closing balance minus closing balance the previous year	16 497	21 167	-4 670
As percentage of the NNA in 2013			
	SBS	NO	Difference
Calculated with method 1 - closing balance minus incoming balance	14 %	22 %	8%
Calculated with method 2 – closing balance minus closing balance the previous year	12 %	15 %	-3%

Source: Statistics Norway and the «NO»- base.

Additionally, we have looked at the SBS figures for 4925 changes in inventory of work-in-progress and finished goods, and compared them with the change in inventories in the same inventory groups, 0120 and 0130, equivalent to the procedure in 3.2. These figures are presented in table 3.6. As for the figures from the “NO-base,” the SBS figures show large discrepancies here.

Table 3.6 Changes in inventory in 4925 and 0120 plus 0130 in the NO, calculated with the two methods. All figures in MNOK

	2013
4925 Changes in inventory of work-in-progress and finished goods	1 620
Calculated with method 1: Changes in inventories as sum of 0120 and 0130	6 959
- Difference from 4295	-5 340
Calculated with method 2: Changes in inventories as sum of 0120 and 0130	11 991
- Difference from 4295	-10 371

Source: Statistics Norway and the «NO»- base.

3.3. Transactions and revaluations

In section 2.1 we explain that the changes in inventory may be due to both changes in the number of goods (“changes in inventories” or transactions) as well as price changes (“revaluations”). Until now we have not split our inventory figures in these two. In this section, we want to see the impact of the inventory when using fixed prices.

When using figures from the “NO-base” to calculate the changes in inventory the figures are estimated according to the enterprises’ own accounting principles. This means that the opening and closing balance (or the closing balance the previous year if method 2 is used) are calculated at different price levels. In the NNA the changes in inventories should be estimated at the average prices for the year. Therefore, changes in inventories should ideally be monitored throughout the year and all changes should be split into revaluations and national accounts changes in inventories.

⁴³ Problems due to these differences are discussed in section 3.4.

We can produce a reasonable approximation of the correct change by converting the value of the opening and closing stock to the average price for the year.⁴⁴ To perform this exercise one must use the ratio of the year's average price to the price on the date of the inventory estimate. Then the national accounts change in inventories (the transactions) is calculated as the difference between the closing and opening balance, at the average prices for the year. See Appendix D for more details. This is the method described in chapter 5.2 of the Eurostat-OECD compilation guide on inventories.

To perform this calculation, we must find the ratios to use, the preferred price indices and at which time of the year we define as the time for the average price.⁴⁵

Because we have not split the changes in inventories from the "NO"- figures in different categories and products in our analysis so far, we choose to use the producer price index (PPI) in our current calculations. For now, we just want a measure that to some degree can present how much of the changes in inventories calculated by "NO"- figures that should be reckoned as revaluations. If we decide to proceed with this procedure later, a more detailed calculation, and perhaps, a breakdown of different products of inventory changes, could be performed. The chosen price indices to use will then depend on the industry the different inventory products belong to.

We also have to choose the time of the year the PPI used to calculate the average prices should be at. This choice should be based on the enterprises' valuation of the inventory, as presented in section 2. If an enterprise uses the explained FIFO-method, where an asset "leaving the inventory" is valued as the asset acquired or produced first, then the level of the inventory is approximately equal to the SNA definition. In Norway, enterprises are also allowed to use the average acquisition cost. We do not have information of how all the enterprises value their inventory. Therefore, we must make an assumption when choosing the time frame of the chosen index. Since most enterprises, at least large enterprises, use the FIFO-method, we believe that the inventory value is more like the SNA value than the average acquisition method would imply. From that, we assume how long the inventory has been stored, for example two months. Therefore, we use price indices for November when deflating the value of the inventory at the year end.

Performing this exercise gives us different results, depending on the two different methods, described in section 3.2, and naturally, which figures from the "NO-base" that are used. We performed the exercise for all methods and "NO" figures, and several PPIs.⁴⁶ Because the first PPI we used, the PPI for oil and gas, manufacturing, mining and electricity for both the domestic and the export market implied extremely large revaluations, we calculated the effect using the same PPI for only the domestic market, in addition to using the PPI for manufacturing, mining and quarrying, both the one with both the domestic and the export market and the one with just the domestic market. Due to the large changes in the prices for oil and electricity, this last one might be the most precise one.

However, all of the chosen PPIs, the different methods of calculating the changes in inventories, and the figures used from the "NO-base" gave us quite significant

⁴⁴ If using the closing balance the previous year, these should be addressed as the incoming balance, using the same price ratio as for the alternative incoming balance.

⁴⁵ We can use the example and approach similar to Denmark's approach, described in section 2.3. Denmark uses 2/3 of the December index and 1/3 of the following January index as the end-of-year index. In Denmark, the chosen price indices is the "NF index," which can be found for all product numbers in the inventory calculations, predominantly based on the producer price indices.

⁴⁶ Though are not presenting all figures and graphs, due to the scope of the analysis. The procedure and method is presented in the appendix.

reevaluations. To illustrate this, table 3.7 presents the “original” changes in inventories, the NNA changes in inventories (the transactions), the sum of changes in inventories and revaluations, the revaluations and the relative size of the revaluations compared to the changes in inventories, using method 1 (the outgoing balance minus the incoming balance) and accounting figures at page 3 in the “NO”. The table presents figures using PPI for oil and gas, manufacturing, mining and electricity for both the home and the domestic market, and the PPI for manufacturing, mining and quarrying for just the domestic market.

As table 3.7 illustrates, the calculated revaluations are quite large compared to the changes in inventories, both the “original” change and the transactions, NNA change. The relative size of the revaluations compared to the transactions is also changing a lot. This shows that the revaluations are a large part of the changes in inventories, and that it is crucial that they are calculated and handled in a good manner if we chose to use figures from “NO” (or the SBS) as a source of the changes in inventories. Because using different price indices gives very different results, the chosen price indices used for the different industries and products are also crucial.

If we look at the relative size of the NNA changes in inventories in 2013, using PPI for manufacturing, mining and quarrying for just the domestic market, we see that these changes represents 64 % of the “original” change. Comparing this with the total changes in inventories and statistical errors in the NNA this year (approximately 140 000 MNOK), these “real” changes represents only 11 %.

Table 3.7 Changes in inventories and revaluations

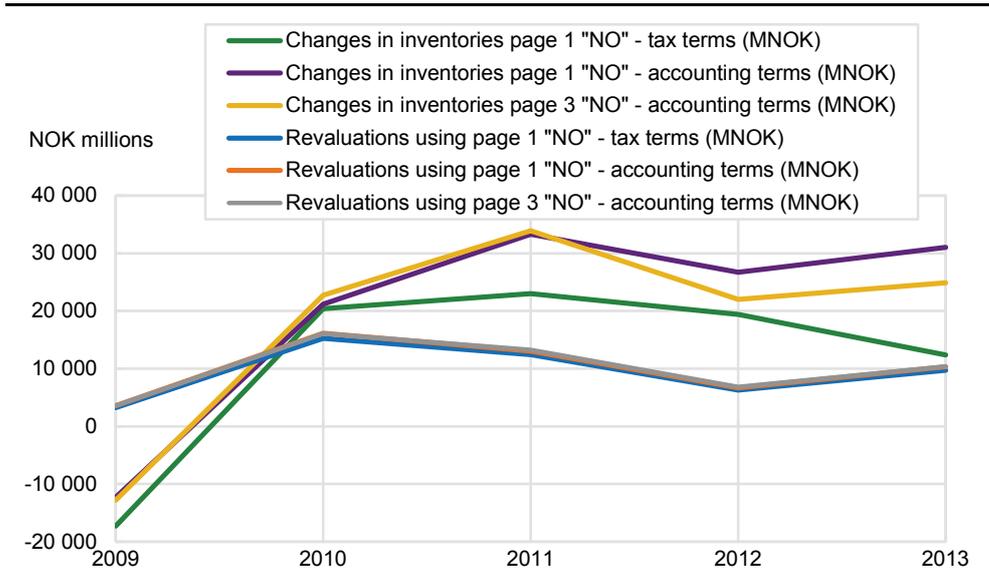
All figures are calculated using method 1: outgoing balance minus incoming balance for all figures (MNOK)	2009	2010	2011	2012	2013
“Original” changes in inventories page 3 in NO – accounting terms	-12 826	22 712	33 927	21 987	24 880
Changes in inventories and revaluations using page 3 NO-accounting terms					
PPI for oil and gas, manufacturing, mining and electricity, domestic and export marked	6 221	36 192	20 752	17 694	31 483
PPI for manufacturing, mining and quarrying, just the domestic marked	-6 461	25 451	30 577	21 190	26 239
NNA Changes in inventories using page 3 NO – accounting terms					
PPI for oil and gas, manufacturing, mining and electricity, domestic and export marked	-25 641	-25 796	-4 134	22 366	13 799
PPI for manufacturing, mining and quarrying, just the domestic marked	-10 055	9 353	17 304	14 327	15 834
Revaluations using page 3 NO – accounting terms					
PPI for oil and gas, manufacturing, mining and electricity, domestic and export marked	31 862	61 989	24 886	-4 672	17 684
PPI for manufacturing, mining and quarrying, just the domestic marked	3 595	16 098	13 273	6 862	10 404
Relative size of revaluations compared to changes in inventories					
PPI for oil and gas, manufacturing, mining and electricity, domestic and export marked	-248 %	273 %	73 %	-21 %	71 %
PPI for manufacturing, mining and quarrying, just the domestic marked	-28 %	71 %	39 %	31 %	42 %
Relative size of NNA changes in inventories compared to changes in inventories					
PPI for oil and gas, manufacturing, mining and electricity, domestic and export marked	200 %	-114 %	-12 %	102 %	55 %
PPI for manufacturing, mining and quarrying, just the domestic marked	78 %	41 %	51 %	65 %	64 %

Source: Statistics Norway and the «NO»- base.

The importance of this is also illustrated in figure 3.6. The “original” changes in inventories and the calculated revaluations using method 1 and PPI for manufacturing, mining and quarrying, for just the domestic market is presented

together with all different possible figures for changes in inventories in the “NO”. The revaluation figures are significant compared to the changes in inventories.⁴⁷

Figure 3.6 Changes in inventories and revaluations



Source: Statistics Norway and the «NO»- base.

3.4. Problems and inconsistencies

Throughout our report so far, we have mentioned several issues that should be addressed before deciding whether the “NO” and the SBS could and should be used as a source for inventory changes. These issues are more thoroughly discussed in this chapter.

The inclusion of statistical errors in the NNA figures for inventory changes

The changes in inventories in the Norwegian National Accounts (NNA) are estimated as a residual and are a mix of actual changes in inventories and statistical errors. This makes the figure hard to interpret. Additionally, it makes it impossible to draw a conclusion to whether an alternative source is a good measure for the inventory changes by just comparing the source with the figure. One could think that if the source figures and the NNA figures developed in a similar way, it would be possible that the statistical errors were relatively stable, and that the rest was a good measure of the inventory changes. However, the statistical errors would not necessarily be stable, so we should probably not count for this supposition.

This makes us conclude that we have to look at the source itself, how reliable and consistent it seems to be, to be able to figure out if we should trust it enough to use it as an estimate for inventory changes in the NNA. This has been our main target looking at “NO” and SBS figures in this analysis.

Other difficulties when comparing NNA and “NO” figures

The use of other sources than “NO” data in the NNA

The SBS, based on “NO” data, is not available for all the industries in the NNA. Examples are the public sector, electricity, oil, agriculture, etc. NNA figures for changes in inventory and statistical errors and figures of inventory changes in the

⁴⁷ This procedure splitting change in inventories in transactions and revaluations was performed as an exercise in this analysis. Using other price indices would possibly give a very different picture of the changes in inventories and the revaluations.

SBS are therefore not very comparable. Using the entire “NO- base,” as we have done in most of this report, is a somewhat better estimate.

Enterprises vs establishments

The NNA presents figures on an establishment level. The SBS breaks down some of the “NO” figures from an enterprise to an establishment level. If we want to compare figures in a better manner, we would want more inventory figures from the “NOs” broken down to an establishment level.

Inventory categories and products

Because the SBS is the preferred source for several industries, we could compare the figures for the inventory changes in these industries with the changes in inventories and statistical errors in the NNA for the same industries. In 3.2.2 we explain the difficulties with this method, that the NNA calculates the inventory figures by products. If wanting to compare them more detailed, we would have to assume different distributions of products for each industry.

Problems with the “NO” data themselves

Analyzing figures from the “NO” have revealed issues with these data itself. We have to be aware of, and preferably, account for these issues if we decide to use inventory data from “NO.”

Missing revisions of figures

Editing and revision of figures received from enterprises are important. Statistics Norway edits several figures before using them in the NNA. In addition, most enterprises in Norway have external accountants revising their figures before they deliver them to Tax Norway.

Different figures are, however, edited and revised with different preciseness. External accountants are mostly concerned about the figures that form the basis for the enterprises’ tax payments. These are the figures on page 2 and 3 in the “NO”, and not the figures on page 1. So, if we want to be sure that figures used have been thoroughly revised by external accountants, we should rely on those figures.

Statistics Norway also edits the figures before they are used in the SBS statistics. However, only those “NO” figures that are important for the statistics are edited in detail. This implies that the figures at page 1 are not edited thoroughly by Statistics Norway either. Additionally, the incoming figures are not edited as well as the closing figures.

This leads us to conclude that we should use the closing figures for inventory changes on page 3 (1400) in our analysis. However, these figures do not give us all the information needed, only the figures at page 1 divides inventory in different products. Additionally, the fact that only the closing balance that are revised in detail by Statistics Norway makes using the mentioned method 1 to calculate the inventory changes less reliable. This is discussed in the next subsection.

How well figures are edited and revised is important. If we want to use figures at page 1 in “NO,” we might require a more thorough revision of the figures by other divisions at Statistics Norway. There are, however, other possibilities to “get around” such difficulties. For example, we could make proxies for the inventory figures of the different categories by using the inventory sum at page 3, and divide the sum into different categories, assuming that the categories have the same share of the total inventory as the category distribution at page 1 would suggest. However, this last alternative does require that the distribution at page 1 is reliable.

Differences between figures that should be similar and between the calculation methods

The editing and revising routines lead us to rely more on some figures than others. As mentioned, some of the figures in the “NO” should be equal or consistent, but as seen in 3.2 this is not necessarily true for all figures. In this subsection, we look deeper into figures that should be similar and differences between the two calculations methods of changes in inventory.

Figures that should be similar

Our analysis has shown that none of the “NO” figures that we expect to be similar (or in a perfect world, identical), are similar, or as similar as we would expect.⁴⁸ Some of the differences have natural causes. One of the reasons is the fact that we do not have figures for 0150 and 0160, which are the figures for agriculture inventory. Hence, agriculture inventory is not included in our calculated sum of inventory at page 1, and it should therefore be somewhat lower than the inventory variable 1400 on page 3. Looking at figure 3.2, section 3.2, this seems to be true for our data, with the inventory level on page 3 is a bit higher than the sum on page 1 all years. This could also explain a small fraction of the gap between the NNA figures for inventory and the NO-figures, and, if assuming that the inventory changes are increasing, this could also explain parts of the lower changes in inventory in our “NO” data than in the NNA.⁴⁹

When we compare the incoming balance one year with the closing balance the previous year using a large data set with thousands of enterprises and establishments, it is natural these differ to some degree. As explained, the selection of enterprises could differ; some enterprises are new to the selection, while others have exited the selection. Some enterprises may be part of mergers and acquisitions or fissions. Others may have discovered errors in their previous figures which they have now corrected for. All these issues lead us to the conclusion that it is difficult to decide how similar one should expect these figures to be. However, when deciding which of the calculations methods, described in the subsection below, for changes in inventory we should use, these difficulties lead us to prefer the calculation were the calculation is done using method 1.⁵⁰

Other figures that should be identical are the sum of the changes between the closing and incoming balance of 0120 and 0130 on page 1 and the current year figure of 4295 on page 3 (when using method 1 to calculate the changes, which gives an identical selection of enterprises). These are not similar, as seen in section 3.2 («NO-data») and section 3.2 (SBS data from 2013). This leads us to believe that these figures, either 4295 or 0120 and/or 0130, are inaccurate.

The two calculation methods

In our analysis, we have calculated the “NO” changes in inventory with two different methods. Method 1 calculates the changes as the sum of the differences between the closing balance and the incoming balance. The second method calculates the changes as the closing balance one year minus the closing balance

⁴⁸ These are the sum of the inventory figures at page 1 (sum of 0110-0160, equal to 0170) in accounting terms and the accounting figures for inventory at page 3 (1400). The sum of the changes between the closing and incoming balance of 0120 and 0130 (the changes in inventory in these accounts) and the closing figure of 4295 should also be similar. Additionally, the incoming balance one year should be equal to the closing balance the previous year. This goes for all figures, 0110-0160, 1400 and for 4295.

⁴⁹ If the change in inventory in agriculture is descending, it would be the other way around, the part of the inventory change that the “NO” data can explain should then be higher when excluding agriculture.

⁵⁰ Because it gives us the same selection of enterprises.

the previous year. There are advantages and disadvantages using both those methods.

One of the advantages of the first one is the fact that it secures that our calculation has the same selection of enterprises, using only statements for one year at the time. The fact that the closing balance figures are edited and/or revised in more detail than the incoming ones, speaks for using method 2. Also, differences that make the sum of the incoming figures deviate from the closing figures the previous year, such as mergers and fissions, are supposed to be included when calculating the NNA.

Accounting figures and tax figures

The fact that page 1 in the «NO» contains both tax and accounting figures is previously explained and analyzed. Because we have better data for the accounting figures, with the sum of inventory also available on page 3, it seems better and more practical to use the accounting figures.

Problems splitting transactions and revaluations

In section 2.1 we describe the need to split the inventory changes in volume and price changes, “real changes in inventory” and revaluations. We try to address this issue in section 3.3, with results that indicate that the revaluations are a large part of the “original” change in inventories.

As our analysis shows, this issue is hard to address, and several choices have to be made between different solutions. In an ideal world, changes in inventories are monitored throughout the year and all changes are split into revaluations and national accounts changes in inventories. Hence, to do these calculations in a perfect manner is impossible.

The approach chosen in 3.3 is only one of several possible approaches, both when it comes to which price indices to use, and to what time frame the chosen index should be based on. The chosen approach has to be justified and explained. And if there are better solutions that could improve our data in the future, those should be evaluated and tested. If we proceed with calculating some of the changes in inventories with figures from the SBS and “NO,” a natural next step is to expand the analysis with different price indices for different inventory product or categories.

Large effects from individual enterprises

Our data contain a large variety of enterprises, some very large and many very small. Such large data sets will contain some errors, for example due to misreporting from the enterprises. If an enterprise is relatively large, such errors could be very important for our data results.⁵¹ ⁵²This shows that the mentioned revising and editing of the data is important.

4. Conclusions and further work

This report examines whether “NO” data could be used as a source to calculating inventory changes. Through our analysis, we have looked at figures for changes in inventory in the NNA and in the “NO” data. Using these data, we have addressed different issues to consider when evaluating whether or not the “NO- figures” could and should be used as a source for changes in inventories. Choices made

⁵¹ Large differences (for example from one year to another) are, however, are not necessarily errors, it might be due to specific events or corrections of previous errors, etc.

⁵² See section 3.2 for an example where large enterprises cause discrepancies.

have to be justified and explained, and if better solutions that could improve our data evolve, those should, as mentioned, be evaluated and tested.

It is important to state that despite the insecurity and problems, the “NO” figures can be an estimate for most of the changes in inventories in the NNA, an estimate that has been missing until now. The enterprises are supposed to report correct figures in the “NO” statement, and when the statement is used as a source for a lot of other figures, it should be possible to use them for our purposes as well. And as we have seen in chapter 2.3 and see in Appendix A, there are other countries that use similar data, and it should be possible to use them for us here in Norway as well.

With this in mind, we plan to start using the “NO” figures as a source for changes in inventories. As a first step, we calculate the total changes in inventories retrieved from “NO” figures and present them together with our yearly NNA figures. The plan is to split the total changes in inventories and statistical errors into “known” changes in inventories and statistical errors and show them in the “Final expenditure and gross domestic product” table.

This implies that we have to decide which figures, method and price index to use. We choose to use the figures from page 3 in the “NO.” As explained in 3.4 these figures are more thoroughly edited by Statistics Norway as well as external auditors.⁵³ Due to the argument that we want the same selection of enterprises in our calculation of changes in inventories, we choose to use method 1, the outgoing balance minus the incoming balance. For the revaluations procedure, we choose the producer price index for manufacturing, mining and quarrying, for just the domestic market. This is because we assume that oil, gas and electricity are not very relevant for the main parts of changes in inventories in most of the enterprises in Norway. Further, we assume that most of the inventory changes are applied by domestic consumers, and use the PPI for the domestic market only.

These choices imply that we will not be able to break the changes down to different categories and products etc. in this first step. With “NO” as a source, we will be able to distribute the changes in inventories by institutional sectors, but not by industries. Because the variables are still not included in the SBS broken down to different establishments, a calculation of the changes in inventories for different industries are not available now. We want to continue working with these issues, and hopefully be able to do all these calculations later.

Nevertheless, these choices enable us to divide the NNA changes in inventories and statistical errors into changes in inventories, including the transactions and the revaluations, and the statistical errors. Table 4.1 presents this split for 2013, with the chosen calculation methods and PPI. As presented in the table, the amount of the total changes in inventories and statistical errors in the NNA that the “NO” figures can explain is only a small fraction of the total figure. As much as 89 % of the NNA changes in inventories and statistical errors in 2013 seem to be statistical errors.

Because our analysis is quite far from explaining the size of the changes in inventories and statistical errors that have been developing in the Norwegian NNA the last years, this means that most of the changes in inventories and statistical errors are left unexplained. Even with a goal of improving the calculated “NO” changes in inventories in the years to come, there are still a lot of issues to address explaining the large and increasing changes in inventories and statistical errors in the Norwegian NNA the last years.

⁵³ And it is also the figures we are advised by others in Statistics Norway to use.

Table 4.1 The «NO» figures for changes in inventories as a percentage of the total changes in inventories and statistical errors in the NNA for 2013, using method 1 and PPI

As a percentage of total changes in inventories and statistical errors in the NNA for 2013

As a percentage of total changes in inventories and statistical errors in the NNA for 2013		
	In MNOK	% of the NNA
NNA – total changes in inventories and statistical errors (MNOK)	140 257	
NNA Changes in inventories – the transactions	15 834	11 %
NNA revaluations	10 404	7 %
Statistical errors	124 423	89 %

Source: Statistics Norway and the «NO»- base.

References

European System of Accounts (ENA) 2010.

Gimming, Jacobsen and Løkkevik, 2005. Changes in inventories in the Norwegian National Accounts.

Gross National Income Inventory (ESA95) Denmark Original: Version (2006-2007)

System of National Accounts (SNA) 2008.

Todsen, 2000. Lagertall i nasjonalregnskapet.

The Norwegian Law of Accounting (“Regnskapsloven”).

NGAAP (Norwegian Generally Accepted Accounting Principles).

IFRS (International Financial Reporting Standards).

Eurostat-OECD compilation guide on inventories. Draft version 3, 2016.

GNI Inventory for Denmark, The Netherlands, Austria and Sweden, retrieved from <https://circabc.europa.eu>.

Appendix A:

The information about other countries calculated changes in inventories is retrieved from the European Commissions “CIRCABC” (Communication and Information Resource Centre for Administrations, Businesses and Citizen).

Sweden

The Swedish NA calculates changes in inventories as the difference between the closing stock at the end of the period and the opening stock at the beginning of the period.⁵⁴ Calculated this way, inventories have to be valued at the same price level, the average purchase or sale price for the period. The Swedish figures are mainly based on quarterly information from special surveys carried out by Statistics Sweden. Inventory in the different industries is deflated with appropriate price indices, and the annual value is the sum of the four quarters. Annual information from balance sheets in business accounting is only used for small parts of inventories.

The inventories in different industries can be divided into four different stock types, inputs, work in progress, finished products of own manufacture and finished products not produced in own manufacturing. Some industries have inventory in all categories (and have other categories more specific to that industry), while others contain some categories only.

To be able to use data for the national accounts, it is desirable that the statistical data collected from enterprises are presented as close to the valuation level as possible. Those returning data may, in some cases, have difficulties with the desired recording principles and can be permitted to explain how the valuation is carried out instead. Using that information, Statistics Sweden undertakes a revaluation to establish the correct values. If administrative data that are not valued at the correct level are used as statistical source material, a revaluation is undertaken to ensure that the data meet the requirements of the national accounts.

The Netherlands

The Dutch national accounts distinguish changes in inventories in four types: finished products, basic and ancillary materials, wholesale and retail inventories, work in progress and work in progress on major investment projects.

Changes in finished industry products are collected from industrial enterprises. These provide the value of primary and finished product inventories, but they do not provide a breakdown by product type. The product composition is assumed to be equivalent to that of turnover.

Changes in inventories in finished products of agriculture and oil products are revaluated. Information on changes in quantities are given from source statistics, and together with price information, current price estimation of changes is given. In the manufacturing industry, changes in inventories for finished goods are derived from source data. Because changes are generally small, no revaluation takes place.

For wholesale and retail inventories, production statistics give data on the inventory changes. The initial and final stocks are revaluated at average year prices.

⁵⁴ Inventories are calculated for forestry, mining and quarrying, agriculture, manufacturing, electricity, gas and water, trade, construction, other service industries and central government contingency inventories.

In industrial enterprises, inventory changes are not broken down by finished products and work in progress. Only finished products are assumed to be involved, except for ship-building and aircraft construction, where all activity is regarded as work in progress.

To provide accurate, time consistent records of projects lasting over several years, the use table incorporates a separate inventory column on work in progress in conjunction with major investment projects. The overall investment figure is broken down over time in the light of project monitoring, and when a project is completed, a deduction is made with the investment shown as a counter entry.

Austria

For most industries, the available data are book values for the final inventory the reporting year and the previous year. Those book values are adjusted for holding gains and losses.

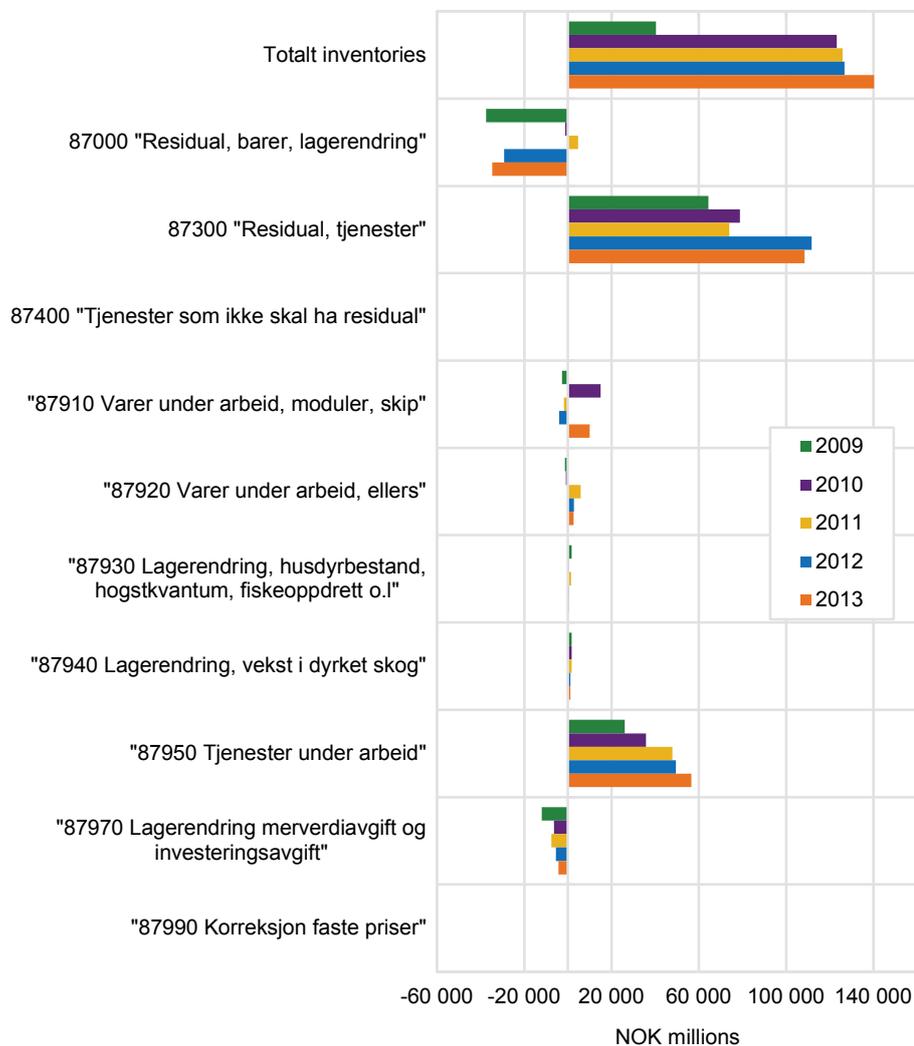
The main source is business inquiries and the structural business statistics. Inventory is distinguished in four different categories; fuels, raw and auxiliary materials, goods for resale, work in progress and finished products for own production. For the industries covered by the structural business statistics, the detailed information on the type of inventories is provided only at enterprise level. The enterprise data forms the basis for the breakdown by types of inventories at an establishment level.

In agriculture and forestry, inventories and changes in inventories are based on technical assumptions of the proportion of production which is in stock at the end of the year or specific information of stored quantities. When it comes to animals, changes in inventories are determined by animal censuses and changes in price. These are entered as changes in inventory or gross fixed capital formation, depending on the category. Unfinished buildings are entered as fixed capital formation.

Using specific price indices, the inventories are converted by type of inventory and branch to real detailed figures at previous year's prices. Actual inventories at the end of the previous year and the end of the reported year are used to determine the actual change by industry and type of inventory. To calculate the nominal change, this change is adjusted for inflation using the annual average price index. The output inventory (outputs recorded) and intermediate consumption (input inventory) is adjusted using the difference between changes in inventories according to the book-keeping accounts and the nominal change in inventory, thus eliminating holding gains and losses.

Appendix B: Levels of changes total inventories and for each inventory product in the NNA 2009-2013

Figure B.1. Inventories 2009-2013



Appendix C: The Income statement for corporations (“NO”)



Næringsoppgave 2 for 2015

For aksjeselskap og andre foretak som utarbeider årsregnskap etter regnskapsloven eller IFRS. Beløpene oppgis i hele kroner. Det vises til egen rettleiding (RF-116B) til hjelp ved utfylling av skjemaet. Skjemaet er vedlegg til selvangivelsen/selskapsoppgaven.

Skatteetaten

Foretaksopplysninger		Regnskapsperiode	Fra	Til
Navn		Organisasjonsnummer	Fødselsnummer	Antall årsverk i regnskapsåret
Forretningsadresse				
Postnummer og poststed				Har foretaket årsregnskapsplikt etter regnskapsloven? <input type="radio"/> Ja <input type="radio"/> Nei
Næring (virksomhetens art)		Hvilke regler er benyttet ved utarbeidelsen av årsregnskapet? IFRS <input type="radio"/>		
Nyetablert virksomhet i 2013 eller senere? <input type="radio"/> Ja <input type="radio"/> Nei		Regnskapslovens regler for små foretak <input type="radio"/> Forenklet IFRS <input type="radio"/>		
Er bokføringsvalutaen en annen enn norske kroner, jf. bokføringsforskriften § 4-2? <input type="radio"/> Ja <input type="radio"/> Nei		Type valuta(er)	God regnskapskikk for ideelle organisasjoner <input type="radio"/> Regnskapslovens alminnelige regler <input type="radio"/>	

Revisor og regnskapsfører				
Er foretaket revisjonspliktig? <input type="radio"/> Ja <input type="radio"/> Valgt bort revisjon <input type="radio"/> Nei				
Revisors org.nr.		Revisorselskapets navn		
Revisors navn		Adresse	Postnr.	I-sted
Er den løpende bokføringen utført av ekstern regnskapsfører? <input type="radio"/> Ja <input type="radio"/> Nei				
Regnskapsførers org.nr.		Regnskapsførers navn		
Forretningsadresse			Postnr.	I-sted
Hvem har fylt ut næringsoppgaven? <input type="radio"/> Valgt revisor/ekstern regnskapsfører som har utført den løpende bokføringen gjennom året <input type="radio"/> Foretaket selv <input type="radio"/> Annen - oppgi hvem				
Org.nr.		Navn	Postnr.	I-sted

Tilleggsopplysninger og spesifikasjoner				
Varelager	Skattemessig verdi 31.12.2015	Regnskapsmessig verdi 31.12.2015 (post 1400)	Skattemessig verdi 31.12.2014	Regnskapsmessig verdi 31.12.2014 (post 1400)
0110 Råvarer og innkjøpte halvfabrikata				
0120 Varer under tilvirkning	+	+	+	+
0130 Ferdige egentilvirkede varer	+	+	+	+
0140 Innkjøpte varer for videresalg	+	+	+	+
Kun for jordbruk	0150 Buskap	+	+	+
	0160 Selvproduserte varer som skal nyttes i egen produksjon	+	+	+
0170 Sum verdi av varelager	-	-	-	-

Bruttofortjeneste på innkjøpte varer for videresalg		
0230 Salgsinntekter	0240 Varekostnad	0250 Bruttofortjeneste
	+	-

For samvirkeforetak	
0310 Skattepliktig næringsinntekt	0320 Skattepliktig næringsinntekt fra omsetning med egne medlemmer

Utrekning av skattemessig verdi på fordringer		2015	2014
0410 Pålydende kundefordringer og ikke fakturerte driftsinntekter			
2014 Konstaterte tap på kundefordringer 2015 0420 <input type="text"/> + <input type="text"/> x 4 x <input type="text"/>			
2014 Kreditsalg 2015 <input type="text"/> + <input type="text"/>			
0430 Skattemessig verdi kundefordringer (post 0410 + post 0420)		-	-
0440 Andre fordringer, herunder fordringer på konsernselskap, ansatte, eiere o.l. til pålydende		+	+
0450 Sum skattemessig verdi på fordringer		-	-

Årets anskaffelser og salg av ikke avskrivbare driftsmidler					
	Anskaffelse	Salg		Anskaffelse	Salg
0510 Forskning, utvikling og andre immat. eiendeler		0540 Boliger inkl. holdninger			
0530 Tomter og andre grunnareal					



RF-1167B

Balanse - regnskapsmessige verdier (i hele NOK)					2015	
Elendeler	2015	2014	Egenkapital og gjeld	2015	2014	
ANLEGGSMIDLER			INNSKUTT EGENKAPITAL			
1000 Forskning og utvikling			2000 Aksjekap./EK andre foretak			
1020 Konesjoner, patenter, lisenser, varemerker o.l. rettigheter			2010 Egne aksjer (negativt beløp)			
1070 Utsatt skattefordel			2020 Overkurs			
1080 Goodwill (saldogruppe b)			2030 Annen innskutt egenkapital			
1105 Forretningsbygg (saldogruppe f)			OPPTJENT EGENKAPITAL			
1115 Bygg og anlegg, hotell o.l. (saldogruppe h)			2043 Fond for vurderingsforskjeller			
1117 Elektroteknisk utrustning i kraftforetak mv. (saldogr. g)			2045 Fond for urealiserte gevinster			
1120 Fast teknisk installasjon i bygninger (saldogruppe j)			2055 Avsatt utbytte (jf. IFRS)			
1130 Anlegg, maskiner under utreise			2059 Annen egenkapital			
1150 Tomter og andre grunnarealer			Felleseld andelskapital			
1160 Bolig inkl. boligtomter, hytter mv.			2080 Udekket tap			
1180 Investeringselendommer			9450 Sum egenkapital			
1205 Personbiler, maskiner, inventar mv. (saldogruppe d)			LANGSIKTIG GJELD			
1221 Skip, rigger mv. (saldogruppe e)			2100 Pensjonsforpliktelser			
1225 Fly, helikopter mv. (saldogruppe f)			2120 Utsatt skatt			
1238 Varebiler, drosjebiler o.l. (saldogruppe c1)			2130 Derivater			
1239 Vognvog, lastebiler og busser (saldogruppe c2)			2160 Uopptjent inntekt			
1280 Kontormaskiner o.l. (saldogruppe a)			2180 Avsetninger for forpliktelser			
1290 Andre driftsmidler			2200 Konvertible lån			
1312 Investeringer i deltakeriknede datter- og konsernselskap			2210 Obligasjonslån			
1313 Investeringer i andre datter- og konsernselskap			2220 Gjeld til kreditinstitusjoner			
1320 Lån til foretak i samme konsern			2250 Gjeld til ansatte og personlige elere			
1331 Investeringer i deltakeriknede tilknyttede selskap			2260 Gjeld til selskap i samme konsern			
1332 Investeringer i andre tilknyttede selskap			2280 Stille interesseninskudd og ansvarlig lånekapital			
1340 Lån til tilknyttet selskap og felles kontrollert virksomhet			2290 Annen langsiktig gjeld			
1350 Investeringer i aksjer, andeler og verdipapirfondsandeler			9500 Sum langsiktig gjeld			
1360 Obligasjoner			KORTSIKTIG GJELD			
1370 Fordringer på personlige elere, styremedl. o.l.			2310 Konvertible lån			
1380 Fordringer på ansatte			2320 Obligasjonslån			
1390 Andre fordringer			2330 Derivater			
1395 Netto pensjonsmidler			2380 Gjeld til kreditinstitusjoner			
9300 Sum anleggsmidler			2400 Leverandørgjeld			
OMLØPSMIDLER			2460 Leverandørgjeld til selskap i samme konsern			
1400 Varelager			2500 Betalbar skatt, ikke utliknet			
1490 Biologiske elendeler			2510 Betalbar skatt, utliknet			
1500 Kundefordringer eksklusive på selskap i samme konsern			2600 Skattetrekk og andre trekk			
1501 Kundefordringer på selskap i samme konsern			2740 Skyldig merverdiavgift			
1530 Opptjent, ikke fakturert driftsinntekt			2770 Skyldig arbeidsgiveravgift			
1560 Andre fordringer på selskap i samme konsern			2790 Andre offentlige avgifter			
1565 Kortsiktige fordringer mot personlig eleristyremedl. o.l.			2800 Avsatt utbytte			
1570 Andre kortsiktige fordringer			2900 Forskudd fra kunder			
1780 Krav på innbetaling av selskapskapital			2910 Gjeld til ansatte og personlige elere			
1800 Ikke-markedsbaserte aksjer og andeler			2920 Gjeld til selskap i samme konsern			
1810 Markedsbaserte aksjer og verdipapirfondsandeler			2949 Lønn, feriepenger o.l.			
1830 Markedsbaserte obligasjoner, sertifikater mv.			2950 Påløpt rente			
1840 Andre obligasjoner og sertifikater			2970 Uopptjent inntekt			
1880 Andre finansielle instrumenter			2980 Avsetninger for forpliktelser			
1900 Kontanter			2990 Annen kortsiktig gjeld			
1920 Bankinnskudd			9550 Sum kortsiktig gjeld			
9350 Sum omløpsmidler			9650 Sum egenkapital og gjeld			
9400 Sum elendeler						

Balanse - regnskapsmessige verdier (i hele NOK)				2015	
Elendeler	2015	2014	Egenkapital og gjeld	2015	2014
ANLEGGSMIDLER			INNSKUTT EGENKAPITAL		
1000 Forskning og utvikling			2000 Aksjekap./EK andre foretak		
1020 Konesjoner, patenter, lisenser, varemerker o.l. rettigheter			2010 Egne aksjer (negativt beløp)		
1070 Utsatt skattefordel			2020 Overkurs		
1080 Goodwill (saldogruppe b)			2030 Annen innskutt egenkapital		
1105 Fornyingsbygg (saldogruppe f)			OPPTJENT EGENKAPITAL		
1115 Bygg og anlegg, hotell o.l. (saldogruppe h)			2043 Fond for vurderingsforskjeller		
1117 Elektroteknisk utrustning i kraftforetak mv. (saldogr. g)			2045 Fond for urealiserte gevinster		
1120 Fast teknisk installasjon i bygninger (saldogruppe j)			2055 Avsatt utbytte (jf. IFRS)		
1130 Anlegg, maskiner under utførelse			2059 Annen egenkapital Felleseld andelskapital		
1150 Tomter og andre grunnarealer			2080 Udekket tap		
1160 Bolig inkl. boligtomter, hytter mv.			9450 Sum egenkapital		
1180 Investeringselendommer			LANGSIKTIG GJELD		
1205 Personbiler, maskiner, inventar mv. (saldogruppe d)			2100 Pensjonsforpliktelser		
1221 Skip, rigger mv. (saldogruppe e)			2120 Utsatt skatt		
1225 Fly, helikopter mv. (saldogruppe f)			2130 Derivater		
1236 Varebiler, drosjebiler o.l. (saldogruppe c1)			2160 Uopptjent inntekt		
1239 Vogntog, lastebiler og busser (saldogruppe c2)			2180 Avsetninger for forpliktelser		
1280 Kontormaskiner o.l. (saldogruppe a)			2200 Konvertible lån		
1290 Andre driftsmidler			2210 Obligasjonslån		
1312 Investeringer i deltakerknede datter- og konsernselskap			2220 Gjeld til kredittinstitusjoner		
1313 Investeringer i andre datter- og konsernselskap			2250 Gjeld til ansatte og personlige eiere		
1320 Lån til foretak i samme konsern			2260 Gjeld til selskap i samme konsern		
1331 Investeringer i deltakerknede tilknyttede selskap			2280 Stille interessentinnskudd og ansvarlig lånekapital		
1332 Investeringer i andre tilknyttede selskap			2290 Annen langsiktig gjeld		
1340 Lån til tilknyttet selskap og felles kontrollert virksomhet			9500 Sum langsiktig gjeld		
1350 Investeringer i aksjer, andeler og verdipapirfondsandeler			KORTSIKTIG GJELD		
1360 Obligasjoner			2310 Konvertible lån		
1370 Fordringer på personlige eiere, styremedl. o.l.			2320 Obligasjonslån		
1380 Fordringer på ansatte			2330 Derivater		
1390 Andre fordringer			2380 Gjeld til kredittinstitusjoner		
1395 Netto pensjonsmidler			2400 Leverandørgjeld		
9300 Sum anleggsmidler			2460 Leverandørgjeld til selskap i samme konsern		
OMLØPSMIDLER			2500 Betalbar skatt, ikke utliknet		
1400 Varelager			2510 Betalbar skatt, utliknet		
1490 Biologiske elendeler			2600 Skatetrekk og andre trekk		
1500 Kundefordringer eksklusive på selskap i samme konsern			2740 Skyldig merverdavgift		
1501 Kundefordringer på selskap i samme konsern			2770 Skyldig arbeidsgiveravgift		
1530 Oppjent, ikke fakturert driftsinntekt			2790 Andre offentlige avgifter		
1560 Andre fordringer på selskap i samme konsern			2800 Avsatt utbytte		
1565 Kortsiktige fordringer mot personlig eier/styremedl. o.l.			2900 Forskudd fra kunder		
1570 Andre kortsiktige fordringer			2910 Gjeld til ansatte og personlige eiere		
1780 Krav på innbetaling av selskapskapital			2920 Gjeld til selskap i samme konsern		
1800 Ikke-markedsbaserte aksjer og andeler			2949 Lønn, feriepenger o.l.		
1810 Markedsbaserte aksjer og verdipapirfondsandeler			2950 Påløpt rente		
1830 Markedsbaserte obligasjoner, sertifikater mv.			2970 Uopptjent inntekt		
1840 Andre obligasjoner og sertifikater			2980 Avsetninger for forpliktelser		
1880 Andre finansielle instrumenter			2990 Annen kortsiktig gjeld		
1900 Kontanter			9550 Sum kortsiktig gjeld		
1920 Bankinnskudd			9650 Sum egenkapital og gjeld		
9350 Sum omløpsmidler					
9400 Sum elendeler					

Resultatregnskap (i hele NOK)		2015			
	2015	2014		2015	2014
3000 Salgsinntekt og uttak, avgiftspliktig			7099 Privat bruk av næringsbil	+	+
3100 Salgsinntekt og uttak, avgiftsfrt			7155 Reise-, diett- og bilgodtgjørelse (opplysningspliktig)		
3200 Salgsinntekt og uttak utenfor merverdiavgiftsloven			7165 Reise- og diettkostnader (ikke opplysningspliktig)		
3300 Spesielle offentlige avgifter vedrørende salg	+	+	7295 Provisjonskostnad		
3400 Offentlig tilskudd/refusjon			7330 Salgs- og reklamekostnader		
3500 Endring uopptjent inntekt			7370 Representasjonskostnader		
3600 Leieinntekt fast eiendom			7490 Kontingenter		
3695 Annen leieinntekt			7500 Forsikringspremie		
3700 Provisjonsinntekt			7565 Garanti- og servicekostnad		
3850 Verdiendringer investerings-eiendommer			7600 Lisens, patentkostnad og royalty		
3870 Verdiendringer biologiske eiendeler			7700 Annen kostnad		
3880 Gevinst ved avgang av immatr. eiendeler og varige driftsmidler			7830 Tap på fordringer		
3885 Gevinst ved avgang av finansielle anleggsmidler			7880 Tap ved avgang av immatr. eiendeler og varige driftsmidler		
3900 Annen driftsrelatert inntekt			7885 Tap ved avgang av finansielle anleggsmidler		
9000 Sum driftsinntekter			9010 Sum driftskostnader		
4005 Varekostnad			9050 Driftsresultat		
4295 Beholdn. endring av varer under tilvirkning og ferdig tilv. varer			8005 Netto positiv resultatandel vedr. invest. i DS, TS og FKV		
4500 Fremmedytelse og underentreprise			8030 Renteinntekt fra foretak i samme konsern		
4995 Beholdn. endring av egen-tilvirkede anleggsmidler	+	+	8050 Annen renteinntekt		
5000 Lønn, feriepenger mv.			8060 Valutagevinst (aglo)		
5300 Annen opplysningspliktig godtgjørelse			8074 Gevinst/virealisasjon av aksjer, egenkap.bevis og fondsandeler		
5400 Arbeidsgiveravgift			8079 Annen finansinntekt		
5420 Opplysningspliktig pensjonskostnad			8080 Verdiøk. av finans. instrumenter vurd. til virkelig verdi		
5600 Arbeidsgodtgjørelse til elere i ANS mv.			8090 Inntekt av andre investeringer/utbytte		
5900 Annen personalkostnad			9060 Sum finansinntekter		
6000 Avskrivning på varige dr.m. og immaterielle eiendeler			8006 Netto neg. resultatandel vedr. investering i DS, TS og FKV		
6050 Nedskrivning på varige dr.m. og immaterielle eiendeler			8100 Verdired. av finans. instrumenter vurd. til virkelig verdi		
6100 Frakt og transportkostnad vedrørende salg			8115 Nedskrivning av finansielle eiendeler		
6200 Energi, brensel mv. vedrørende produksjon			8130 Rentekostnad til foretak i samme konsern		
6300 Leie lokale			8150 Annen rentekostnad		
6340 Lys, varme			8160 Valutatap (disagio)		
6395 Renovasjon, vann, avløp, renhold mv.			8174 Tap ved realisasjon av aksjer, egenkap.bevis og fondsandeler		
6400 Leie maskiner, inventar, transportmidler o.l.			8179 Annen finanskostnad		
6500 Verktøy, inventar mv. som ikke skal aktiveres			9070 Sum finanskostnader		
6600 Reparasjon og vedlikehold bygning			9100 Ordinært resultat før skattekostnad		
6695 Reparasjon og annet vedlikehold			8300 Betalbar skatt		
6700 Fremmed tjeneste (regnskap rev.hon., rådgivning o.l.)			8320 Endring utsatt skatt/ skattefordel		
6995 Elektronisk kommunikasjon, porto mv.			9150 Ordinært resultat		
7000 Drivstoff transportmidler			8400 Ekstraordinær inntekt		
7020 Vedlikehold mv. transportmidler			8500 Ekstraordinær kostnad		
7040 Forsikring og avgifter på transportmidler			8600 Betalbar skatt		
7080 Bilkostnader, bruk av privat bil i næring			8620 Endring utsatt skatt/ skattefordel		
			8910 Andre resultatkomponenter for IFRS-foretak		
			9200 Årsresultat/Totalresultat		

2015									
	Alle tall i denne kolonnen føres opp med positive tall. Fradrag i næringsinntekten føres i kolonnen til høyre.	I. Tillegg i næringsinntekt	Alle tall i denne kolonnen føres opp med positive tall. Tillegg i næringsinntekten føres i kolonnen til venstre.	II. Fradrag i næringsinntekt					
Tilbakeføring av enkelte inntekter og kostnader fra resultatregnskapet	0610 Ikke fradragsberettigede representasjonskostnader		0615 Tilbakeføring av inntektsført utbytte (fylles ut av både selskaper og andre)						
	0611 Ikke fradragsberettigede kontingenter	+	0616 Resultatført konsernbidrag	+					
	0620 Skattekostnad	+	0620 Negativ skattekostnad	+					
	0621 Rentekostnad på utlignet skatt	+	0621 Renteinntekt på tilbakebetalt skatt	+					
	0630 Underskuddsandel av investering i DS, TS og FKV (se post 8006)	+	0630 Overskuddsandel av investering i DS, TS og FKV (se post 8006)	+					
	0631 Verdireduksjon av finansielle instrumenter vurdert til virkelig verdi	+	0631 Verdløkning av finansielle instrumenter vurdert til virkelig verdi	+					
	0632 Nedskrivning på aksjer og andre verdipapir kostnadsført i året	+	0632 Reversering av tidligere nedskrivning på aksjer og andre verdipapir inntektsført i året	+					
	0633 Regnskapsmessig tap ved realisasjon av aksjer og andre verdipapirer	+	0633 Regnskapsmessig gevinst ved realisasjon av aksjer og andre verdipapirer	+					
	0635 Andel av regnskapsmessig underskudd i deltakerliknet selskap	+	0635 Andel av regnskapsmessig overskudd i deltakerliknet selskap	+					
	0636 Regnskapsmessig tap ved realisasjon av andel i deltakerliknet selskap	+	0636 Regnskapsmessig gevinst ved realisasjon av andel i deltakerliknet selskap	+					
0640 Andre ikke fradragsberettigede kostnader inkl. resultatførte gaver	+	0640 Andre skattefrie inntekter	+						
0645 Tilbakeførte gjeldsrenter etter sktl §§ 2-39 (2) og 6-91	+								
Poster som ikke fylles ut av enkelt-personforetak. Slike inntekter og fradrag fylles ut direkte i selvangivelsen for personlige skattytere.	0650 Skattepliktig gevinst fra RF-1059	+	0650 Fradragsberettiget tap fra RF-1059	+					
	0651 Annen skattepliktig gevinst ved realisasjon av mengdegjeldsbrev og andre verdipapirer	+	0651 Annet fradragsberettiget tap ved realisasjon av mengdegjeldsbrev og andre verdipapirer	+					
	0652 Skattepliktig utbytte på aksjer mv. inklusiv tillegg etter skatteloven §16-30 femte ledd	+							
	0653 3 % av netto skattefrie inntekter etter fritaksmetoden	+							
	0655 Skattemessig overskudd på andel i deltakerliknet selskap	+	0655 Skattemessig underskudd på andel i deltakerliknet selskap	+					
	0656 Skattepliktig gevinst ved realisasjon av andel i deltakerliknet selskap	+	0656 Fradragsberettiget tap ved realisasjon av andel i deltakerliknet selskap	+					
Poster som bare fylles ut av enkelt-personforetak (Enkelt AS, se rettleidn.)	0660 Rentekostnader ført i resultatregnskapet	+	0660 Renteinntekter ført i resultatregnskapet	+					
			0661 Avkastning på livsforsikring ført i resultatregnskapet	+					
			0665 Egne sykepenger ført som inntekt i resultatregnskapet	+					
Andre poster	0670 Endring i midlertidige forskjeller fra post 100 i RF-1217	+	0670 Endring i midlertidige forskjeller fra post 100 i RF-1217	+					
	0671 Korreksjon for foreslått utbytte fra DS og TS ved bruk av egenkapitalmetoden. (Kun skattepliktig utbytte)	+							
	0675 Skattepliktig gevinst fra RF-1109	+	0675 Fradragsberettiget tap fra RF-1109	+					
	0678 Inntektstillegg for privat bruk av næringsbil	+	0677 Emisjons- og stiftelseskostnader	+					
	0679 Andre inntekter	+	0679 Andre fradrag	+					
	0900 Sum tillegg i næringsinntekten	-	0910 Sum fradrag i næringsinntekten	-					
Beregning av næringsinntekt									
0920 Årsresultat/totalresultat fra post 9200 (side 2)									
0900 Sum tillegg i næringsinntekten (hentes ovenfor fra summen i venstre kolonne)									
0910 Sum fradrag i næringsinntekten (hentes ovenfor fra summen i høyre kolonne)									
0970 Sum									
0990 For samvirkeforetak	Etterbetaling, bonus ekskl. MVA til andelseiere/medlemmer. Overstiger utdelingene fradragsrammen jf. post 0320, føres differansen til inntekt i selvangivelsen (RF-1028) post 233			-					
0999 Næringsinntekt/underskudd	Aksjeselskaper mv. overfører beløpet til selvangivelsen (unntatt AS mv. med gjennomsnittliknet skog og/eller rein drift som må benytte tabellen under). Deltakerliknede selskap overfører beløpet til selskapsoppgåven			-					
Tabellen under post 0402 skal benyttes av alle enkeltpersonforetak for å fordele resultatet fra post 0999 mellom ulike næringer. I tillegg skal tabellen brukes av aksjeselskaper mv. som har gjennomsnittliknet skog og/eller gjennomsnittliknet rein drift.									
Kolonnene A, B og E skal nyttes av alle. I kolonne ID skal næringene som det beregnes personinntekt for nummereres løpende, men med samme nummer for næringer med felles beregning av personinntekt.									
A		ID	B	C	E	Beløp under E overføres til RF-1224 og RF-1030		For eventuell fordeling	
Type Næring		(For eks. 1, 2, 3 m.v.)	Post 0999 fordelt på næringer	Gjelder gj.snittsl. + overf. til jordbr. fra blom. prod. se rettl.	Skattepliktig inntekt fordelt på næringer	Postnummer i selvangivelse (RF-1030)	F	G	
0402							Innehaver	Ektefelle/ registrert partner	
0403		Kontrollsum							
Underskrift					Dato				
Henvendelse rettes til					E-postadresse				
Revisors underskrift									
<p>Andre offentlige organers bruk av opplysninger i RF-1167: For å samordne og forenkle oppgavelnveieringen fra næringslivet, kan opplysninger som avgis i Næringsoppgave 2, RF-1167, helt eller delvis bli benyttet også av andre offentlige organer som har hjemmel til å innhente de samme opplysningene, jf. lov om Oppgaverregisteret §§ 5 og 6. Opplysninger om evt. samordning kan fås ved henvendelse til Oppgaverregisteret på telefon 75 00 75 00. Fastsatt av Skattedirektoratet med hjemmel i Finansdepartementets delegeringsvedtak av 24. oktober 1991, jf. ligningsloven § 4-4 nr 7</p>									

Appendix D: The method of splitting the real changes in inventories (the transactions) and revaluations

In section 3.3 we try to split the changes in inventories from the “NO” into transactions and revaluations. The procedure performed is explained in this appendix section.

The exercise performed started by deflating the figures for levels of inventory in the “NO-base” down to a specific year and month. As explained we assume that the “original” figures are in November values, hence, we use the November index. For the PPI indices used here, the index for 2000 is 100. For convenience, we therefore deflated the figures down to a 2000-level. Then both inventory figures, both the incoming and the outgoing balance, are in comparable figures.

Deflated levels of inventory in year T (in 2000 prices) =
 Level of inventory in “NO” in year T / PPI for November year T * 100

This is performed for both the closing and the incoming balance (using the PPI index for November the previous year for the incoming balance). The deflated changes in inventories in year T were then calculated as the difference between these:

Deflated changes in inventories (in 2000 prices) in year T =
 Deflated level of inventory in year T (closing balance) - Deflated level of inventory in year T (incoming balance)

These changes in inventories then have to be inflated to retrieve the real changes in inventories (the NNA changes in inventory, the transactions) in the year in question. This is done using the average PPI for that year:

The NNA changes in inventories in year T =
 Deflated changes in inventories (in 2000 prices) in year T * average PPI for year T / 100

To be able to reveal the revaluations, these NNA changes in inventories should be subtracted from the sum of changes in inventories and revaluations in year T in NNA current prices. We first find the level of inventories in current prices:

Level of inventory at the end of the year T in NNA current prices =
 The original level (assumed to be in November values) year T * (the average of the December PPI year T and the January PPI year T+1) / The November PPI year T

When calculating this level for the closing balance and the incoming balance in year T, we find the total changes of inventory and revaluations by subtracting the opening balance level of inventory in year T from the closing balance level:

Total changes of inventory and revaluations in NNA current prices =
 Level of inventory at the end of year T in NNA current prices – Level of inventory at the beginning of year T in NNA current prices

The revaluations are then found by subtracting the inflated changes in inventories (the NNA changes in inventories in year T) from the total of changes in inventories and revaluations:

Revaluations in year T =

Total changes of inventory and revaluations in NNA current prices – the
NNA changes of inventory in year T

How this procedure is performed for figures from 2013, in addition to the equations used can be seen in the tables below.

	A	B	C	D	E	F
1		2013	2013	2013	2013	2013
2	All figures in MNOK for 2013		In NNA current prices – total changes in inventories including revaluations	Deflated NO values in 2000=100	NNA Changes in inventories – the transactions	NNA revaluations
3	Closing balance page 3 accounting terms (NO 1400)	364 705	366 238	245 037		
4	Incoming balance page 3 accounting terms (NO 1400)	339 825	340 059	234 362		
5	Changes in inventories using method 1. Outgoing balance minus incoming balance	24 880	26 239	10 735	15 634	10 404
6						
7	Producer price index for manufacturing, mining and quarrying (2000=100)	2012M11	2012M12			
8	Domestic market	145	144,9			
9		2013M01	2013M11	2013M12	2014M01	2013Y
10		145,3	148,8	149,3	149,6	147,5
11						

	A	B	C	D	E	F
1		2013	2013	2013	2013	2013
2	All figures in MNOK for 2013		In NNA current prices – total changes in inventories including revaluations	Deflated NO values in 2000=100	NNA Changes in inventories – the transactions	NNA revaluations
3	Closing balance page 3 accounting terms (NO 1400)	= 364704688594/1000000	= B3*G1EJNNDMSNITTD10.E10/C10	=E3/C10*100		
4	Incoming balance page 3 accounting terms (NO 1400)	= 33982593272/1000000	= B4*G1EJNNDMSNITTD10.E10/B8	=B4/B8*100		
5	Changes in inventories using method 1. Outgoing balance minus incoming balance	=B3-B4	=C3-C4	=D3-D4	=D5*F10/100	=C5-E5
6						
7	Producer price index for manufacturing, mining and quarrying (2000=100)	2012M11	2012M12			
8	Domestic market	145	144,9			
9		2013M01	2013M11	2013M12	2014M01	2013Y
10		145,3	148,8	149,3	149,6	147,5
11						
12						

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