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Tore Halvorsen and Marius Scheele

Improved treatment of insurance in the Norwegian national accounts

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Preface

This report describes the results from a project aiming at high quality estimation of output in the insurance industry within the system of national accounts. The project was part of the main revision of the Norwegian national accounts in 2014 and was financed jointly by Eurostat and Statistics Norway.

Contributors to the project and authors of this report have been Tore Halvorsen and Marius Scheele, both at the Division for national accounts in Statistics Norway.

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Statistics Norway, 12 January 2015

Hans Henrik Scheel

Abstract

Insurance is an industry given special attention in the national accounts due to the very nature of its activities. In particular the method for estimating the value of output of insurance services is a challenging task.

This report documents new methods for estimating output in the insurance industry in the Norwegian national accounts. The background is new international recommendations as given in world-wide System of National Accounts (SNA2008) and the European System of Accounts (ESA2010), but also action points given in the report of the Eurostat GNI[1] visit to Norway in 2009 – 2010 have been addressed. Finally, the life insurance reform in Norway in 2008, changing the system for reports from insurance companies to the authorities, has been taken into account.

For non-life insurance the methods employed for output at both current and constant prices have been changed. Following the new international recommendations adjusted claims due is used in the calculation of the current price figures, while a new volume indicator based on number of insurance contracts is constructed for the constant price estimations of output. The results show a more smooth development in non-life insurance output compared to previous figures in the Norwegian national accounts.

For life insurance the new reporting system that came into force in 2008 has made it possible to extract the value of the insurance service directly from the accounting based reports. Also, the imputed interest accruing to the insurance policy holders is extracted directly from the reports of the life insurance companies.

The new methods for estimating output value of insurance services are introduced in the Norwegian national accounts as part of the 2014 main revision and the results are published initially in November 2014.

[1] GNI=Gross National Income, see chapter 1.1.

Contents

1. Introduction

1.1. Background

Insurance is one of the main activities within section K Financial and insurance activities of the EU industry classification NACE and hence in the national accounts. Due to the nature of its activities the estimation of output and value added in insurance are not so straight forward as for most other activities. As the policy premiums paid by the insurance holder cover different elements, the value of the insurance service is not directly observed from those payments and consequently the output of insurance companies must be estimated.

The models used for estimating insurance companies output are given by the European standard for national accounts, ESA. Here, the output of the insurance industry is determined in a manner intended to reflect the premium setting policies of the insurance companies. With basis in the accounts of the insurance companies a margin left to the companies to cover their administration costs and profits is estimated, representing the value of the output of the insurance industry.

In the revised international recommendations on the national accounts, ESA2010, the method for estimating output in non-life insurance has been changed compared to previous recommendations (ESA1995). Norway are through the EEA agreement with the EU obliged to follow the ESA2010 and the first reporting in accordance with this standard will start in 2014.

ESA2010 introduces the possibility of calculating the production of non-life insurance using adjusted claims. The project looks at ways of adjusting the claims in order to get reasonable time series for production in current as well as constant prices. For the constant price estimates, today the change in hours worked is used as an indicator. Other recommended methods will be studied and tested aiming at better quality constant price figures.

An important part of the reporting obligation to Eurostat is the annual reporting of aggregated national accounts data on Gross National Income and its components. The data are used for the estimation of the countries' contributions to the EU budgets (the 4th resource). This reporting is administrated by the Eurostat Gross National Income Committee (GNIC) and an extensive system of administrative and legal routines has been established to accommodate and supervise the reporting of those important data. One element of the control routines of Eurostat is their GNI visits to member states. On those visits both sources and methods for estimating national accounts figures are studied and assessed in great detail. In Eurostat's report on its GNI mission and direct verification visit to Norway 2009 and 2010 it is stated: "S(tatistics) N(orway) will clarify… if it will be an impact on output calculation of the new reporting system by insurance companies and the possible changes to be included in the estimate…Deadline: for inclusion of definitive national accounts estimations of the 2014 main revision."

The new reporting system referred to above is a change in reporting from life insurance and pension scheme companies in Norway and took place in 2008. In short, the new reporting makes it feasible to calculate output in the life insurance industry directly rather than indirectly by identifying costs and profits directly from the business accounts of the life insurance companies. New methods for estimating output directly for life insurance based on the new reporting will be tested and implemented.

1.2. Objectives

The project study methodological recommendations related to insurance activities that are introduced with the ESA2010 as well as the recommendations laid down in

the report of the Eurostat GNI mission to Norway in 2009 and 2010. Recommended methods will be introduced in the current compilation of the Norwegian national accounts. More specific the following objectives are given:

- analysis of and adaption to a new data reporting system for life insurance companies introduced in Norway
- adaption to new ESA 2010 recommendations on the estimation of output in non-life insurance taking into account adjusted claims
- analysing and improving of the methods for estimating constant price figures in non-life insurance output.

2. The Norwegian National Accounts framework

2.1. General description

To accommodate the evaluation of methods chosen for estimating output of insurance services at both current and constant prices, it is useful to have some background information on the most important characteristics of the Norwegian system for national accounts.

Generally speaking, the national accounts of Norway contain a number of important characteristics, among which in this setting the following can be considered of particular importance:

- Annual updated supply and use tables and commodity flows
- Detailed breakdown
- Double deflation, i.e. output and intermediate consumption deflated separately

Norway is one of few countries that very early (since 1952) has input-output tables (read: supply and use tables) integrated in the annual national accounts. The background for this was both analytical and statistical, and eventually also methodological as the input-output structure became one of the main features of the national accounts as recommended in SNA and ESA.

Supply and use tables and commodity flows are systematically exploited in the compilation of the national accounts figures. That is, total supply and total use of individual types of goods and services have to be balanced with each other, and next providing the basic information and serving the statistical basis for the derivation of input-output tables for purposes of economic analysis and projections. This is a view continued with the ESA2010. It goes without saying that detailed breakdown characterises the Norwegian national accounts along with supply and use and input-output tables.

In Norway, the data situation has been characterised by more abundant statistics on domestic production, exports and imports compared to statistics on incomes and expenditures, thus leading to the appraisal that the production approach is the main approach used to estimate GDP per se. At the industry level, however, value added may not always in the first place be estimated from using the production approach, inter alia because reliable data for intermediate consumption may not exist, and must be replaced by either the expenditure approach or the income approach. After the more elaborated use of accounting based statistics in more recent years, this situation seems to occur however continuously less frequently.

The production approach is used to compute value added for all industries technically speaking. This is done within the framework of detailed SUT on annual basis and by making use of the commodity-flow method.

The expenditure approach is used for computing government final consumption expenditure based on government accounts and for exports (and imports) based on

external trade statistics and other supplementary sources. The expenditure approach is also used as a main method in computing household final consumption expenditure and gross fixed capital formation, but combined with the detailed commodity-flow method.

The income approach is used in general to obtain estimates on components of GDP, inter alia compensation of employees, but not for operating surplus. Operating surplus rather is a balancing item arrived at residually. Recently, however, independent estimation of gross operating surplus from accounting statistics has modified this position somewhat (serving as a control for the estimates by industry). The income approach is used to compute value added of the non-market (government and NPISHs) industries, although the increase in availability of accounting data for NPISHs implies more use of the production approach for this sector than earlier.

2.2. National accounts figures at constant prices

Current price estimates are not sufficient for important parts of the national accounts (i.e. the real accounts). Decomposition of the price and volume value changes is also of interest, particular for use in productivity analysis. The volume changes show the change in current values corrected for price changes.

An integrated set of price and volume measures is compiled within the framework of annual supply and use tables in the Norwegian final annual national accounts. The definition relationships inherent in the current price supply and use tables are maintained in the constant price tables. Value added for the different industries are calculated as a balancing item, i.e. by double deflation.

The supply and use tables (SUT) are compiled in current and previous year's prices. The tables include 175 industries and 900 products.

The supply table contains the following value classes:

- Basic values
- Taxes on products (paid by the producers)
- Subsidies on products (paid to the producers)
- Producers' values

The use table contains the following value classes:

- Basic values
- Taxes on products (paid by the producers)
- Subsidies on products (paid to the producers)
- Trade margins
- Transport margins on crude oil, natural gas and electricity
- Taxes on products (collected by wholesale or retail traders)
- Subsidies on products (paid to wholesale and retail traders)
- Value Added Tax, not refundable
- Purchasers' values

The constant price figures are calculated by deflating current values by price indices at the product level. This results in integrated Laspeyres' volume indices and Paasche price indices for aggregates.

Deflation is from the supply side, except for exports. The balancing of the supply and use tables in constant prices is first carried out at the detailed product level in basic values. Integrated in the deflation process is constant price compilation for each of the value classes, i.e. taxes on products, VAT, trade margins etc, all specified by product.

Each of the 900 products has three price indices where relevant:

- Domestic production (price index, for basic or producers' value)
- Imports (price index, basic value)
  Based on foreign trade statistics (Unit value, for homogenous products) and other sources
- Exports (price index, purchasers' value)
  Based on foreign trade statistics (Unit value for homogenous products) and other sources

For more detailed information, see Statistics Norway (2006).

2.3. Annual chaining

Based on the time series of supply and use tables in current and the previous year's prices, chained Laspeyres' volume indices and Paasche price indices are compiled.

The relevant variables are transferred to a time series database in current and (t-1) prices:

- Production, intermediate consumption and value added by industry
- GFCF by industry and asset type
- Consumption by group
- Exports and imports by product
- Changes in inventories by product

Aggregates are calculated in the time series database. Chaining takes place on detailed and aggregate series separately. The annual growth rates from the original supply and use tables are maintained at all levels of aggregation. No corrections are made to impose additivity between detailed series and aggregates.

3. Insurance activities in the current Norwegian National Accounts

3.1. Current price estimates

In the Norwegian national accounts, the activities of NACE K are distinguished in 7 industries within the three A64 headings, see Table 1:

Table 1. Detailed industries within NACE in the Norwegian national accounts

64	Financial intermediation services, except insurance and pension funding		
	641	Central banking	M
	642	Other monetary intermediation	M
	649	Other financial intermediation	M
65	Insurance and pension funding services, except compulsory social security services		
	651	Life insurance	M
	652	Non-life insurance	M
	653	Pension funding	M
66	Services auxiliary to financial intermediation		
	660	Activities auxiliary to financial intermediation	M

These are all market activities (M). Pension funding adds to life and non-life insurance, while activities auxiliary to financial intermediation is distinguished from other financial intermediation.

With respect to coverage of insurance companies in the statistical sources, these institutions are subject to strict government supervision and hence covered in the

basic statistics through a quite extensive and detailed quarterly and annual reporting. These statistics comprise accounting data from both profit and loss accounts and balance sheets accounts from all units in the relevant industries. The source for this census is administrative registers kept by Statistics Norway. The data collection is the result of a co-operation agreement between Statistics Norway and Finanstilsynet (the Financial Supervisory Authority of Norway) and the reports are stored in the database FORT. The borderline between insurance enterprises and social security funds conforms to ESA and SNA rules.

Insurance and pension fund outputs have until now been measured indirectly as kind of margins (premiums less claims), in accordance with ESA95 principles. Output of life insurance services has been derived the following way:

Table 2. Life insurance output. Former method.

A: Actual premiums earned
B: Claims due
C: Net surplus on reinsurance
D: Premium supplements
E: Increases in technical provisions etc.
Increase in insurance technical reserves
-Revaluations (adjustments for capital gains/losses, both realized and non-realized)
+ Other technical provisions
+ Correction made by ratio of insurance liabilities to total liabilities
Output of life insurance services according to formula (A-B+C+D -E)

The item imputed interest accruing to life insurance policy holders (premium supplements) has been estimated according to the following table:

Table 3. Imputed interest accruing to life insurance policy holders. Former method.

Income from interest etc.
- Payments of interest etc.
+ Dividends
+ Real estate income
- Other financial expenses
= Imputed income accruing to life insurance policy holders before correction
- Correction made by the ratio of insurance liabilities to total liabilities
= Imputed income accruing to life insurance policy holders after correction

As from 2008 however, output and imputed interest accruing to life insurance policy holders are estimated using a direct method, see chapter 7.2.

The estimations of output of non-life insurance services follow the general formula:

Table 4. Non-life insurance output. Former method.

A: Actual premiums earned
B: Claims due
C: Net surplus on reinsurance
D: Premium supplements
E: Increases in technical provisions etc.
Increase in insurance technical reserves
-Revaluations (adjustments for capital gains/losses, both realized and non-realized)
+ Other technical provisions
+ Correction made by ratio of insurance liabilities to total liabilities
Output of pension funding services and output in non-life insurance according to formula (A-B+C+D -E)

Output in insurance and pension funding is specified by 4 characteristic and 3 non-characteristic Norwegian national accounts products. These are illustrated by figures from the final 2011 national accounts:

Table 5. Output in insurance and pension funding. NOK billion in 2011

Characteristic output	*NOK Billion*	*Sources and methods*
651 100 Life insurance services	9.6	Items from the accounts of life insurance companies
651 210 Other non-life insurance services	11.0	Items from the accounts of non-life insurance companies
651 220 Car insurance services	4.7	Items from the accounts of non-life insurance companies
653 000 Pension funding services	1.2	Items from the accounts of the pension schemes
Non-characteristic output		
	2.4	Rental services, other credit granting services, and other services auxiliary to financial intermediation
Total output	28.9	

3.2. Constant price estimations

3.2.1 General aspects

The output of insurance services is determined by convention and is measured at current prices as described above. From this description it can be seen that an indirect measure of the output value is conducted and the price of the service provided is therefore not observable.

The output of the insurance industry can be considered in two different ways: If the output of the insurance industry is considered as the pooling and transfer of risk, then it is a measurement of the risk that constitutes the output of the insurance industry. If however, the activity is instead considered as the acquisition and administration of policies and the administration of claims, then the measurement of these services constitutes the output of the insurance industry.

3.2.2 Deflation performed in the current Norwegian national accounts

A volume indicator method forms the basis for calculating insurance services at constant prices. A volume indicator showing the development in employment (hours worked within the insurance industry, adjusted for changes in productivity) is used to project the constant price value of insurance services.

Estimating the productivity changes within an industry is impossible before its output at constant prices is determined. This productivity adjustment is therefore based on the assumption that the development in the productivity of the insurance industry is similar to the corresponding development in the banking sector.

3.2.3 Categorisation into A, B and C methods

The Eurostat handbook on price and volume measures in the national accounts explains and ranks various methods for constant price estimations in the national accounts, see Eurostat (2013). Here, the different methods are classified into A, B and C methods, the latter being unacceptable to Eurostat. On the other hand the handbook states that an A method is impossible for this kind of services produced. The B methods are two types of volume indicators, reflecting the two different ways of considering output of the insurance industry, see above.

The first type is a volume indicator reflecting provisions made in balance sheets adjusted for total claims. These are deflated with a general price index as a measurement of the volume of risks. The second type is a volume indicator showing the various activities linked to the output of services at a very detailed level.

A volume indicator based on input of manpower would according to the general classification in the handbook be a C method. However, when an adjustment is made for changes in productivity it is considered a B method.

4. New international recommendations

4.1. Measurement of output in non-life insurance – adjusted claims

The estimations of output of non-life insurance services in the Norwegian national accounts follow today the standard ESA1995 recommendations. Here, output in this industry is calculated using the following formula:

	Actual premiums earned
plus	premium supplements
less	claims due
less	increase (*plus* decreases) in technical provisions against outstanding risks and technical provisions for withprofits insurance.

For some periods, when claims due are exceptional large, this formula may lead to unacceptable results for the output figure. In some cases output can even be negative, which make little sense economically, and which leads to the conclusion that the estimation formula does not work under every condition.

Hence, in ESA2010 some adjustment to the calculation formula is introduced aiming at a more stable development in output and thus avoiding the potential volatile and even negative figures for output. Two alternative different methods that both should reach the goals are described. The first is using a model based on the past experiences of a "normal" level of output. The second method is based on using accounting data. Here, instead of using claims due, *adjusted* claims due are to be used in the calculation:

	Actual premiums earned
plus	premium supplements
less	*adjusted* claims due
less	increase (*plus* decreases) in technical provisions against outstanding risks and technical provisions for withprofits insurance.

The accounting data to be used for this adjustment of the claims are change in own funds and in equalisation reserves. The equalisation reserves are amounts that insurers set aside in compliance with legal or administrative requirements to cover irregular or unforeseeable large claims in the future.

4.2. Exceptional claims following catastrophes

Normally, claims due are recorded as a current transfer item on the secondary income account. In cases when following catastrophes the claims are exceptionally large, parts of the claims due are to be recorded as capital transfers on the capital account and not current transfers on the secondary income account.

Probably it can be difficult to decide when the claims are exceptionally high.

5. New estimations in the Norwegian National Accounts

5.1. Non-life insurance

5.1.1 Current price estimates

According to the new recommendations in ESA2010 the estimation of output in non-life insurance should include claims due adjusted for change in equalisation changes in the equalisation reserves and own funds.

In the reports from the non-life insurance companies five items are relevant for adjusting the claims due:

1. Change in provisions of unearned premiums
2. Change in provisions of unearned premiums, reinsurance
3. Change in provisions of claims outstanding
4. Change in provisions of claims outstanding, reinsurance
5. Change in equalization provision

According to ESA2010 and SNA2008, provisions of unearned premiums and provisions of "claims" should secure the insurance companies ability to pay out accruing claims, while the equalization provisions should secure the insurance companies' own equity. Based on ESA/SNAs definition, it seems that the provisions of unearned premiums and claims need to be included in the adjusted claims calculation. Whether the change in equalization provisions should be included is somewhat less apparent.

In the process of testing new calculations of output, four combinations or alternative methods were conducted:

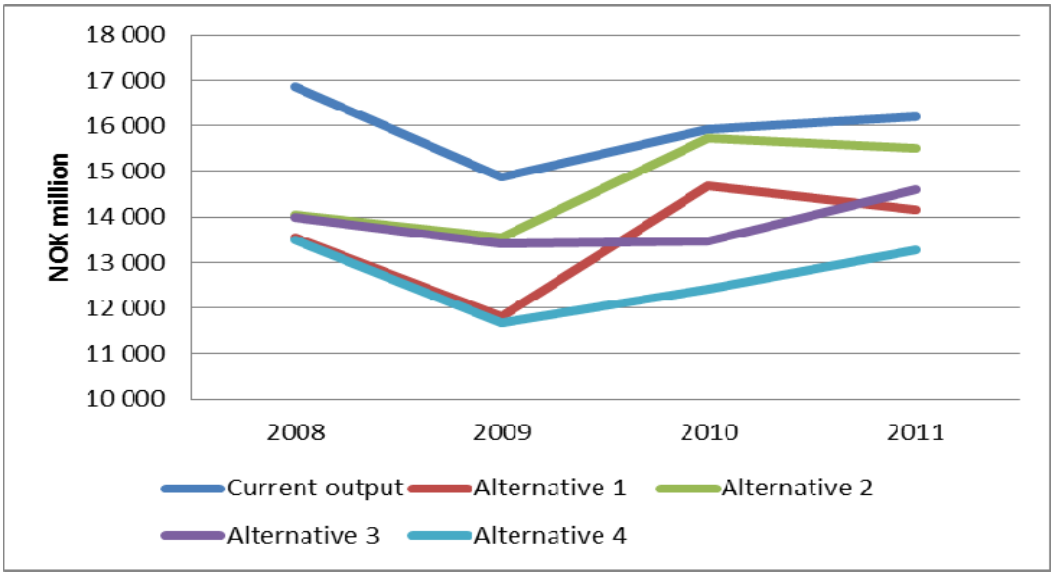
- Alternative 1 adds to the claims due changes in provisions of unearned premiums and claims, without a reinsurance part.
- Alternative 2 adds the equalization provisions.
- Alternative 3 adds the reinsurance part to the first method
- Alternative 4 adds the reinsurance part to the second method

The time series data show that there are no occurrences of negative output and the way production is measured today gives relatively stable values over the sample period. Data also show that the balance items are relatively small. Consequently we did not expect any radical changes in the values of production. The lack of any extreme observations in the data can be a limitation of the analysis since there are no events where production changes significantly due to large and exceptional movements in the claims due. In our data, there is a strong growth in output in the period from 2001 to 2008. In addition, there is small shift from 2007 to 2008, which we believe is due to changes in the Norwegian reporting standards of insurance companies.

Compared to the methods tested, it is only when changes in provisions of unearned premiums, provisions of claims outstanding and their reinsurance part is added that production is more stable than the current calculation method. Following this calculation, production is generally reduced from around NOK 16 000 million to NOK 14 000 million between 2008 and 2011. Figure 1 shows output calculated in different methods as described above. The dark blue line, show output the way it is currently calculated today. Alternative 3, represented by the purple line, gives the most stable value of output.

Given the results from the tested calculation methods, we suggest that output should be calculated by alternative 3: adjusting claims with changes in provisions of unearned premiums and of claims outstanding, and also including their reinsurance part. As can be seen from figure 1, alternative 3 is the formula resulting in the smoothest development.

Figure 1. Output in non-life insurance with alternative definitions. NOK millions



5.1.2 Constant price estimates

Due to the nature of insurance and the way the insurance companies charge their customers for their services supplied to them through premium payments, it is well known that constant price estimations related to insurance is a challenging exercise in national accounting.

Output in non-life insurance is measured indirectly by convention by subtracting total adjusted claims due from total actual premiums earned and adding premium supplements and subtracting increase (*plus* decreases) in technical provisions against outstanding risks and technical provisions for withprofits insurance. It follows that observing directly an output price that can be used for deflating the current value of the non-life insurance services is a near impossible task due to the lack of direct observable volume units in the production of and prices on the services. Insurance is defined an activity in the international guidelines on national accounts, but to establish an operational concept of the service unit itself is much more intricate. Due to these difficulties it is not straight forward how to estimate output of non-life insurance services at constant prices.

One observable element in non-life insurance is gross premiums earned and hence also changes in gross premiums earned. An index based on changes in gross premiums is the method used in the consumer price index, but is regarded unsuitable for deflation purposes in the national accounts because the gross premium charged covers more elements than the insurance service.

According to the Eurostat handbook[2] on price and volume measures in the national accounts an A method in estimating constant price values in insurance is not possible to achieve. The handbook recommends for non-life insurance to use the number of policies a suitable volume indicator that is regarded a B and thus an acceptable method

To use changes in deflated costs as a proxy on the price movements of output is regarded a C method, and hence not acceptable by Eurostat.

Statistics on the number of policies is supplied by the statistical department of Finance Norway (FNO)[3], which is the federation for banks, insurance companies

[2] See Eurostat (2013)

[3] The organization was established January 1st 2010 by the Norwegian Savings Banks Association and the Norwegian Financial Services Association. Became a federation January 1st 2013 when Finance Norway and Norwegian Employers Association for The Financial Sector (FA) merged.

and other financial institutions in Norway. Finance Norway represents some 200 financial institutions operating in the Norwegian market.

The statistics goes back to 1998 on both the number of policies and the total gross premiums earned with a breakdown on thirteen and fifteen detailed business areas respectively. These statistics are used to calculate a volume indicator for output in non-life insurance services in the non-life insurance industry and implicit a corresponding price index.

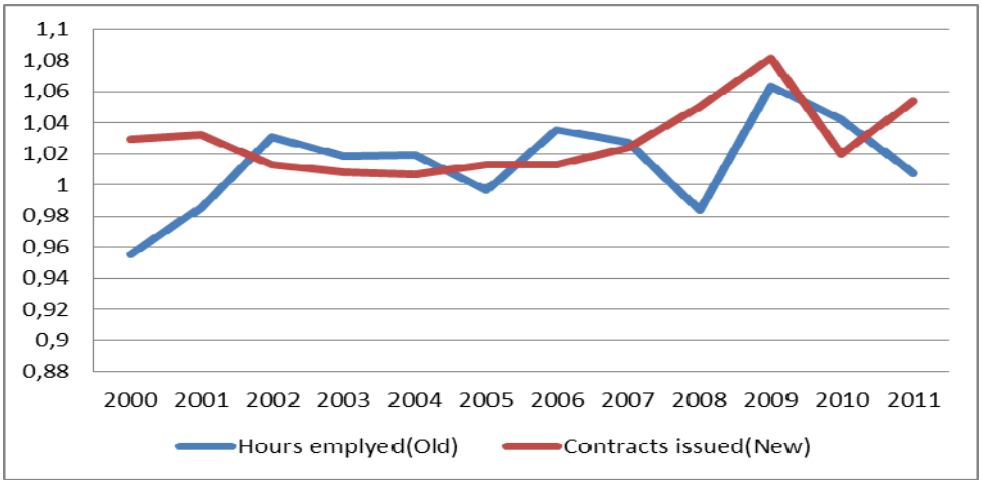
The detailed business areas covered by the statistics of the FNO are the following:

Table 6. Business areas (lines) within non-life insurance

Motor total
Motor liability
Motor hull/fire & theft
Private Fire&Special perils
Commercial Fire&Special perils
Accident
Workmens compensation
Fish farming industry
Leisure boat
Leisure travel
Liability
Safety
Cargo
Other lines

By using the information on the number of contracts issued for all policies, we have estimated an index to be used for measuring volume changes of non-life insurance output. Each line of insurance policy is weighted based on a ratio of the single policy gross premium earned over the total gross premium earned of all policies. By weighting the index by this method, those policies with highest premiums earned contribute relatively more for each increase in number of contracts issued. In the national accounts a volume index of the Laspeyres type is used, that combines volume figures of year t, i.e. number of contracts, with weights, i.e. premiums from year t-1. Also in the Norwegian national accounts it is separated between car insurance and other non-life insurance and this method allow for a separate volume indicator for each of these.

Figure 2. Volume development in non-life insurance with alternative definitions



Comparing the former employment based volume index, with the index based on changes in number of policies issued, it seems that the new index is slightly more stable over the time period considered (see figure 2). An obvious advantage of using number contracts over hours employed, is that it will be unaffected by any large downsizing of employees. In addition, technology allows the insurance companies to provide most of their services online, which requires less employed capital.

5.2. Life insurance

As from 2008 the method of estimating life insurance output in NNA has been changed. The change in estimating output in life insurance in the NNA is a result of the life insurance reform in Norway in 2008, changing also the reporting system for insurance companies to the authorities. The most important aspects of the reform were:

- - to separate more explicitly the resources belonging to the insurance companies from the resources belonging to its customers
- to make the dispersion of risk between the companies and its customers more clear cut, and
- to present a more exact picture of the prices on insurances services products.

The reform introduced a new set of rules for life-insurance activities. According to the former rules the life-insurance companies estimated a price to its customers based on actuary calculations including safety margins. The premium was paid in advance for a whole year or for a term during the year. After the year had ended, the insurance companies estimated a total insurance technical result, by aggregating components comprising of elements of rate of return, risk and a cost element. This aggregation implies that a deficit accruing for one of the components could be offset or covered by a surplus achieved by another component. The total insurance technical profit, adjusted for any supplement provisions, was then shared between the company and its customers. The company was allowed to take maximum 35 per cent of the profit, meaning that minimum 65 per cent was to be credited the customers' premiums fund. The customer's total cost (price) on the pension or life-insurance contract thus was the premium paid for a year less the customer's share of the profit credited the premium fund.

According to the new set of rules the insurance company must establish prices and the customers' payables ex ante. The estimated price is to comprise both the costs of the company and its profits. Profit sharing is no longer permitted, i.e. the company is no longer allowed to ex post be credited a share of the total insurance technical result. The company's investments of the customers capital is to be kept sharply from the company's own investments. The customers are credited with all returns on their capital while the company keeps all returns on their own equity. The reform and the change in reports have made it possible to estimate life insurance output, i.e. insurance services rendered to the customers, more directly compared to earlier method (margin). This is achieved by extracting from the new report the following elements of the premiums payable directly from individual customers. The sum of those two elements will represent the value of the life insurance service in all contracts:

Table 7. Life insurance services. 2009. New method.

Reporting code	Item	NOK million
111111	Compensation for administrative costs, management and interest guarantee	8 090
111112	Profit element to cover risk	1 747
SUM	Output of life insurance services	9 837

As it is only cost elements of direct premiums that are identified, production of reinsurance is not recorded as output.

As the reform and the new reporting system were introduced in 2008, and the items needed to carry out the estimations according to the new method are not available prior to this year, it is not possible to illustrate the effect of the change in methodology by comparing estimates resulting from the two different methods for the same year.

As seen in chapter 3.1, the former method of compiling the item imputed interest accruing to life insurance policy holders (premium supplements) was to estimate total income and then derive the customers' share using the ratios from the balance sheet. In the new reporting system however, the income attributed to the customers can be derived directly from the reports via sub-items in the profit and loss statements. Each income item in the report is given a code that stipulates whether the income is attributed to the company or its customers:

Table 8. Imputed interest accruing to life insurance policy holders. New method

Reporting code	Distribution
100+200	Income attributed to customers
300	Income attributed to the insurance company

6. Implementation and future work

Assessing and modifying the methods for estimating output in the insurance industries is part of the 2014 main revision project. The results of the main revision of the Norwegian national accounts will be published in November 2014, with immediate reporting to Eurostat.

For output in life insurance the results of the new method have however already been published and reported to Eurostat, as the change in reporting from the life insurance companies that took place already in 2008 necessitated a change in the calculation methods in the final national accounts for that year that was carried out in 2010.

For output in non-life insurance the new results will on the other hand be presented for the first time in November 2014. The new methods used in the calculations will be introduced as from 2012, i.e. figures for earlier years will not be changed.

The new methods of estimating output in non-life insurance covers both current price and constant price figures, while for life insurance only the method for calculating current prices figures has been changed. Constant price figures for output of life insurance services will continue to be based on employment data. The search for alternative sources and methods of estimating constant price figures for life insurance output must be left to a future project.

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Eurostat (1995): European System of Accounts
Eurostat (2013): Eurostat Handbook on price and volume measures in national accounts
Statistics Norway (2006): Inventory of Sources and Methods. Price and Volume Measures in the Norwegian National Accounts

Appendix A: Data from FiNance NOrway (FNO)

1000 kr/*NOK 1000*

Bransje / *line*	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Motorvogn totalt / *Motor total*	14 636 909	15 518 579	16 389 132	17 326 481	18 260 838	19 104 985
Herav motorvogn - trafikk (ansvar) / *Motor liability*	5 849 133	6 182 043	6 422 128	6 795 700	7 171 760	7 457 552
Herav motorvogn - kasko / *Motor hull*	6 936 049	7 412 325	7 664 426	8 339 721	8 962 957	9 507 808
Herav motorvogn - delkasko / *Motor fire & theft*	1 851 727	1 924 211	2 302 578	2 191 060	2 126 121	2 139 625
Privat / *Private Fire&Special perils*	6 896 328	7 304 705	7 839 897	8 582 022	9 316 376	9 878 696
Næring / *Commercial Fire&Special perils*	6 061 134	6 242 963	6 455 528	6 882 349	7 168 311	7 469 993
Ulykke / *Accident*	943 827	988 570	1 186 241	1 160 363	1 171 926	1 268 219
Yrkesskade / *Workmens compensation*	2 569 962	2 669 518	2 778 162	2 658 994	2 603 653	2 649 814
Fiskeoppdrett / *Fish farming industry*	258 021	294 612	247 835	202 916	211 421	207 363
Fritidsbåt / *Leisure boat*	625 123	664 530	689 474	726 082	735 986	763 930
Reise / *Leisure travel*	1 652 987	1 877 950	1 888 220	2 003 865	2 236 701	2 536 646
Ansvar / *Liability*	1 151 567	1 238 662	1 127 259	1 177 157	1 261 181	1 525 946
Trygghet / *Safety*	1 259 459	1 380 226	1 467 508	1 423 285	1 585 384	1 533 478
Transport / *Cargo*	292 436	303 300	356 002	316 729	346 756	388 493
Andre bransjer / *Other lines*	325 701	319 114	452 993	495 861	747 480	973 091
Totalt / *Total*	**36 673 454**	**38 802 729**	**40 878 251**	**42 956 104**	**45 646 013**	**48 300 654**

Kilde: FNO - Premiestatistikk for landbasert forsikring, 4. kvartal

Number of contracts

Bransje / *line*	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	
Motorvogn totalt / *Motor total*	3 408 492	3 519 610	3 672 086	3 772 367	3 889 879	3 970 450	
Herav motorvogn - trafikk (ansvar) / *Motor liability*	3 041 768	3 149 401	3 269 018	3 364 041	3 453 735	3 479 251	
Herav motorvogn - kasko/delkasko / *Motor hull/fire & theft*	2 010 902	2 128 325	2 241 158	2 346 909	2 411 077	2 530 663	
Privat / *Private Fire&Special perils*	3 059 295	3 168 783	3 318 294	3 362 503	3 688 240	3 662 247	
Næring / *Commercial Fire&Special perils*	4 504 508	5 299 250	5 948 301	6 627 675	7 344 718	7 744 348	1)
Ulykke / *Accident*	3 359 988	3 422 919	4 366 644	4 080 841	3 965 181	3 510 800	2)
Yrkesskade / *Workmens compensation*	1 370 183	1 534 065	1 667 858	1 639 234	1 640 980	1 647 262	2)
Fiskeoppdrett / *Fish farming industry*	1 669	1 505	1 172	905	896	769	
Fritidsbåt / *Leisure boat*	293 727	304 114	314 091	316 495	315 693	317 425	
Reise / *Leisure travel*	1 488 593	1 548 885	2 079 688	2 137 182	2 209 998	2 473 181	
Ansvar / *Liability*	110 015	107 047	108 543	108 716	115 081	132 681	
Trygghet / *Safety*	830 778	952 320	1 207 482	1 210 678	1 585 234	1 728 101	2)
Transport / *Cargo*	-	-	-	-	-	-	
Andre bransjer / *Other lines*	-	-	-	-	-	-	

1) Forsikringssum i mill. kr. / *Sum insured NOK mill.*
2) Antall forsikrede / *Insured persons*

Kilde: FNO - Premiestatistikk for landbasert forsikring, 4. kvartal
Source: Finance Norway - Premium statistics, non life , 4. quarter

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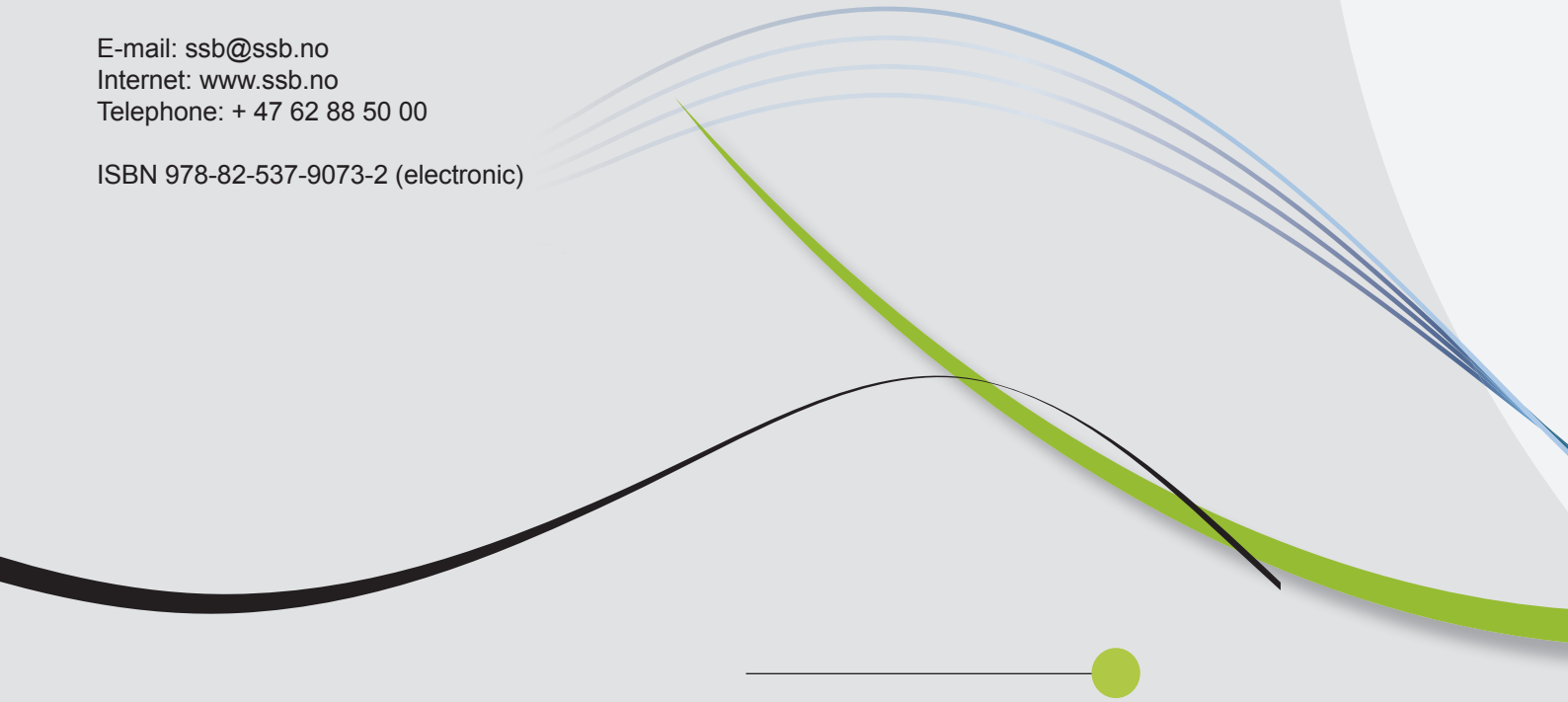

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