

Challenges for the National account, using the SBS/STS data

1. Introduction

The paper will briefly mention some areas where the national accounts have challenges, using the data, based on the SBS or STS regulation. Part of the paper has a Norwegian perspective and it might be that other countries have additional or fewer challenges.

The Norwegian National account estimates GDP (gross domestic product) using the production approach as the most important methodology

Gross output at basic prices – intermediate consumption at purchasers price = gross value added at basic prices.

Gross value added at basic prices + taxes on products – subsidies on products = GDP.

Focus on this approach requires good data at industry level (NACE). Some of the challenges are equal for the quarterly and the annual national account – but main focus will be the annual national accounts, where the Structural Business Statistics is the important source within services (plus other industries like construction, commodity trade, industry and production). The paper focuses first on the two main variables: gross output at basic prices and intermediate consumption at purchasers price. The paper will finish by pointing out other challenges using the SBS/STS data, giving SPPIs an own description.

2. Gross output at basic prices

The section will briefly describe the use of gross output at basic prices within the quarterly and the annual national account

2.1 Quarterly national account

Statistical unit is formally a challenge, as the STS-regulation defines enterprise as the statistical unit and the NA requires data based on establishments. Statistics Norway collects mainly quarterly turnover through administrative registers where statistical unit is enterprise. These data are transformed to establishment level, using keys from the latest SBS to divide turnover to establishment level in Multi Establishment Enterprises (MEE). These data are used for the quarterly national account.

2.2 Annual national account

The SBS regulation requires data concerning turnover at establishment level and at aggregated level there are differences. In Norway it is usually not a problem for the MEEs to provide data concerning turnover at establishment level. In addition detailed account information for 90 per cent of enterprises is available. At the income side, this includes information about subsidiaries and special product taxes.

One should pay attention to the industries where turnover and output is not equal (within service industries, travel agencies is an example). The difference is described in the paper written by Matt Berger for the Voorburg group meeting in Mexico, 2008, – *national accounts general methodology – addressing cross cutting issues arising when measuring the constant price output of Service Industries* – chapter 4.

Within certain industries, the SBS survey does not capture the entire turnover. This e.g. can be due to the presence of black markets or industries with other kind's unofficial turnover (e.g. tip at restaurants, bars etc.)

The national account in Norway adjusts for the differences in both cases, based on turnover data received from the SBS and within certain industries.

3. Intermediate consumption

Intermediate consumption consists of the value of goods and services consumed in the production process. Cost components wages/salaries, depreciation of fixed assets and costs for goods sold without any changes (goods for resale) *are not a part of the intermediate consumption*

3.1 Quarterly national accounts.

The STS regulation does not require data concerning intermediate consumption, but the national account needs this. A possible way of doing this to estimate it using keys based on the latest SBS (intermediate consumption/turnover).

3.2 Annual national accounts

Intermediate consumption is not required by the SBS regulation. Detailed account information, where especially all kinds of wages, depreciation of tangible assets and costs of sold goods for resale can be isolated from other cost components is necessary for estimating this variable. The main challenge is that some of the cost components are quite industry dependent. At establishment level it is especially important to divide costs of goods sold for resale correctly within MEEs, which have a mix of establishments holding nice 45-47 and other NACE groups, since this variable should be eliminated from the calculation of intermediate consumption. In Norway this variable were earlier divided proportional with the total operational costs among all establishments in heterogeneous MEEs. From 2009 cost of goods sold for resale were primarily directed towards establishments with NACE code 45-47 in heterogeneous MEEs. The paper will not discuss the method in details, but just add that this demands certain logical rules in order to function – and that the system can not be implemented effectively, without creating one “master file” for all industries covered by the SBS. By effectively is meant that the total dataset is consistent for the national account

Intermediate consumption, based on the SBS has to be adjusted within industries where services or goods purchased are not treated as a part of this. The National account in Norway is responsible for these adjustments, based on the input from SBS.

4. SPPI's

The largest trade-off is the lack of SPPIs in the STS-regulation, forcing national account to use “second-hand-sources” to estimate development in volume, like SPPI from “nearest neighbour”, CPI, or input data. In some cases “natural” volume indicators (e.g. number of passengers) are available. In cases where CPI is used as a proxy, one should be attention to the fact that CPI measures the purchasers price, where as SPPIs is measured as the providers price.

The STS regulation requires SPPI data at enterprise level. This is a trade-off compared to the needs of the national account, which ideally would prefer SPPIs at product level, but as a minimum must be able to estimate the development in volume based on the same statistical units (establishment). The problem is in practice different in scope from industry to industry, depending on the degree of secondary activities in the enterprise.

The STS regulation only requires BtoB output prices, which means that there will be a lack of information within some industries concerning the total output prices, where demand from households are significant (legal advices and air transport are examples). Another aspect which is not covered is output prices in the export sector, where the volume within services most likely will be of increased significance in the future.

In general , adjusting for changes in quality within services has caused unsolved challenges so far. One example is use of time based methods (approved B-method by Eurostat), which cause challenges in the long run, not taking into account the change of productivity. Especially in a time where software is developing rapidly, it can be considered as possible bias within service industries. Does e.g. an architect use the same software to design a house as 10 years ago? Development in software in this case might have increased productivity=increased volume for the same output=a decrease in prices. This is not reflected in the time-based SPPIs, at least in Norway, where we rarely observe a decrease in prices within industries using this method.

5. Other challenges for NA, using the SBS/STS.

a) Consistency, coherence and integration

Matt Berger mentions in his presentation in 2008 that integration, coherence and consistency between volumes, turnover and prices are crucial to the national account and that solutions should not be developed in isolation. This point does not only account for these variables, but also for the total delivery of input to the national account. It includes the following:

- A common deadline for finishing the file for all SBS's at national level. A main challenge for the national account if this is not done, is lack of consistency in the population, as units within one industry population can switch to another industry population which are “locked”= not able to receive this unit in same reference year, due to different deadlines.
- A common framework of estimation procedures, especially securing that data at establishment level are produced the same way, independent of the NACE-code at enterprise level. One

practical example here, taken from Norway, is that establishments with NACE-code 45-47, have primary “access” to the variable “costs of goods sold for resale” in MEEs, independent of the NACE-code of the MEE to which they belong.

- In connection with the former point, it is therefore important to localize components at the supply and use side, which are industry specific – and if possible, direct them towards the establishments in MEEs (based on NACE-code), to which they belong, based on industry-code. It should be added that to many industry specific variables in the estimation procedure, complicates this. One should be very selective.
- Consistency requires some “logic” macro controls of the data at establishment level. In Norway, certain variables are checked for the combination 5-digit at regional level, establishment being the statistical unit. Some examples of errors which should be examined at micro level are:
 - production value < 0
 - total cost of goods sold - cost of goods sold for resale > Intermediate consumption
 - total turnover - turnover of goods for resale < 0
 - gross value added < 0

These and other “logic” checks at establishment level secure the quality/consistency of the data delivered to the National account

- As a bottom-line – one master file, with SBS data from as many industries as possible combined with common estimation procedures, is a good way to secure consistency among different industry groups at national level. It takes resources to establish such a framework, both technically and practically, but the experience is that the national account now receives data with improved quality compared to the reference years 2008 and earlier

b) Gross fixed capital formation.

The SBS-regulation does not require distinction between transactions with new and existing tangible goods. This is a challenge for the national account for different reasons. The first category should be divided into domestic production and import, but can not be isolated from the second category in the SBS data. Second, transactions with existing assets should be equalized in the economy, but the experience is that this is difficult to obtain. One reason can be that transactions take place between units within and outside the scope of the SBS and is not captured through other surveys.

c) Distribution of intermediate consumption on products. The calculation of intermediate consumption in Norway is based on detailed information from the annual account from approximately 90 per cent of all enterprises. We have information concerning 35 cost components. Some of them are homogenous (e.g. cost of renting a building, repair/maintenance of building, costs of licenses) but others are large end

heterogeneous in nature (e.g. Cost of sold goods, other costs i.e.). The national account would benefit from some details concerning these components, being able to categorize them better at the use-side.

d) Distribution of activities towards sectors and industry groups.

The ideal case would be that SBS could provide National account with direct information concerning transactions from NACE to NACE and from sector to sector. A challenge is that this would raise the respondent burden significantly in the SBS survey. Another question is whether respondents have this kind of information available in their accounting systems. And if not In connection with the development of annex 8 in the SBS-regulation in the period 2004-2007, the respondents were in one of the pilots asked to divide turnover among the following customer groups:

- Industry and production
- Real estate activities and business services
- Other business activities
- Public sector
- Households/NPISHs

Even with these broad definitions (or because of?), it was difficult for the respondents to answer and the questions were not implemented in the annex. In contrast, a question, asking the respondent to divide turnover between domestic use and export turned out successfully and were implemented in the annex, giving the national account yearly information concerning this part of the demand within selected NACEgroups. This question is of increasing relevance due the higher degree of globalization, but is only required for a few NACE-groups in annex 8 in the SBS-regulation

References

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Berger, Matt (2008) *National accounts general methodology – addressing cross cutting issues arising when measuring the constant price output of Service industries*. Office for National Statistics, UK. 23rd Voorburg group meeting