27th VOORBURG GROUP Meeting

Warzaw, Poland

1- 5 October 2012

TURNOVER AND OUTPUT MEASUREMENT FOR
REPAIR OF COMPUTERS AND PERSONAL HOUSEHOLD GOODS
IN NORWAY

Jakob Kalko
Jakob.Kalko@ssb.no
+47 62 88 54 95

Introduction

The aim of this paper is to give a description of the industry of repair of computers and personal household goods in Norway. In the first chapter we will describe the classification of this industry and the definition of the services included. In chapter 2 we will have a closer look on the unit of measure to be collected. Chapter 3 focuses on the market conditions and the constraints in the industry. Chapter 4 describes shortly the classification structure). In chapter 5, an evaluation of the standard classification structure compared to the actual industry and market conditions is done. Chapter 6 takes a closer look at National accounts concepts and measurements issues for this industry. In chapter 7 turnover methods used within SBS and STS is described. In chapter 8 comparability with price measures is very shortly treated. . The paper is finished with a brief summary in chapter 9.

1.   Definition of the Service being measured

1.1 History

Before giving a description of the service being measured through SN2007 it can be useful with a short view on how this service was structured in SN2002. In SN 2002 repair services were localized at different areas in the standard, mainly within industry, wholesale and retail trade and computer related activities. A large part of these activities was merged into a new two digit group in SN2007, NACE 95, repair services of computers and personal household goods. The main exceptions are repair services of industrial machinery which now belongs to NACE 33.1 and repair services of motor vehicles, NACE 45.2.

Table 1.1 shows how the degree of turnover being distributed to NACE 95 (5. digit level) from different SN2002 NACE groups.

Table 1.1 Matrix SN2007/SN2002

SN2007	SN2002	Turnover, per cent
95.110. Repair of computers and peripheral euipment	72.500 Maintenance of office and computer machinery	98,0
95.110. Repair of computers and peripheral euipment	30.020 Manufactere of computers and information processing equipment	2,0
95.120 Repair of communication equipment	52.740 Repair n.e.c	94,9
95.120 Repair of communication equipment	32.200 Manufature of television and radio transmitters etc.	5,1
95.220 Repair of household appliances and home garden equipment	52.720 Repair of electrical household goods	100,0
95.230 Repair of footwear and leather shoes	52.710 Repair of boots, shoes and other articles of leather	97,2
95.230 Repair of footwear and leather shoes	52.740 Repair n.e.c	2,8
95.240 Repair of furniture and home furnishings	36.110 Manufacture of chairs and seats	61,6
95.240 Repair of furniture and home furnishings	36.130 Manufacture of other kitchen furniture	36,6
95.240 Repair of furniture and home furnishings	36.140 Manufacture of other furniture	1,8
95.250 Repair of watches, clocks and jewellery	52.730 Repair of watches, clocks and jewellery	100,0
95.290 Repair of other personal and household goods	52.740 Repair n.e.c	99,3
95.290 Repair of other personal and household goods	17.409 Manufacture of other made-up textile articles, except apparel	0,4
95.290 Repair of other personal and household goods	36.300 Manufacture of musikal instruments	0,1
95.290 Repair of other personal and household goods	36.400 Manufacture of sports goods	0,2

Source: Statistics Norway

The table shows eg. 98 percent of the turnover in NACE 95.11 was from units with SN 2002 NACE 72.5. The last 2 percent was from units within NACE 30.020.

It can be seen from the figure that despite from SN2007 NACE 95.240,   all the new nace groups consist of units, belonging to one dominating SN2002 group, measured by turnover.

1.2 Definition of the service being measured

The service to be described is in NACE Rev.2 is classified in industry 95, Repair services of computers and personal household goods. The international classification operates with two 3. digit levels:

95.1 Repair services of computers and communication equipment
95.2 Repair services of personal and household goods.

95.1 Repair services of computers and communication equipment
NACE 95.1 contains of two 4. digit groups, each with one product level.

➤ 95.11.10 – Repair services of computers and peripheral equipment.
This subcategory includes:
   o Repair services of computers and computing machinery and peripheral equipment (desk top and lap computers, magnetic disk drives, flash drives, optical disk drives, printers, monitors, keyboards, mice, joysticks, computer modems, dedicated computer terminals, computer servers, scanners etc.
   o Repair and maintenance services of computer terminals and handhold computers

➤ 95.12.10 – Repair services of communication equipment.
This subcategory includes:
   o Repair and maintenance services of television transmitters and radio transmitters
   o Repair and maintenance services of telephones, cellular phones, pagers and fax machines
   o Repair and maintenance services ices of commercial TV and video cameras

95.2 Repair services of personal and household goods
NACE 95.2 contains of six 4. digit groups, with 1-5 product groups each :

➤ 95.21.10 – Repair services of consumer electronics
This subcategory includes:

- o Repair and maintenance services of televisions, radios, VCRs, CD players and household-type video cameras

- ➢ 95.22.10 – Repair services of household appliances and home and garden equipment
  This subcategory includes:
    - o Repair services for electrical household appliances, e.g. refrigerators and freezers, dish washing machines, washing and drying machines of the household type etc.
    - o Repair services of home and garden equipment, e.g. lawnmovers, edgers, snow- and leaf-blowers, trimmers etc

- ➢ 95.23.10 – Repair services of footwear and leather goods
  This subcategory includes:
    - o Specialised repair services of footwear, luggage and handbags.

- ➢ 95.24.10 – Repair services of furniture and home furnishings
  This subcategory includes:
    - o Reupholstering, refinishing, repairing and restoring of furniture and home furnishings

- ➢ 95. 25.11 – Repair services of watches and clocks

- ➢ 95.25.12 - Repair services of jewellery

- ➢ 95.29.11 - Repair and alteration services of garment and household textile articles
  This subcategory includes:
    - o Invisible mending, repair or renovation of used textile garments

- ➢ 95.29.12 - Repair services of bicycles

- ➢ 95.29.13 - Repair and maintenance services of musical instruments
  This subcategory includes:
    - o Repair and maintenance services of musical instruments
    - o Piano-tuning services and tuning services for other instruments

- ➢ 95.29.14 - Repair and maintenance services of sports equipments
  This subcategory includes:

- o Repair and maintenance services for snow-skis, snowboards, water skis, suffboards, ice skates, roller skates
- o Repair and maintenance services for other articles and equipment for sports or outdoor games.

➢ 95.29.19 - Repair services of other personal and household goods n.e.c

This subcategory includes:

- o Repair services for household articles and equipment n.e.c, e.g articles for lighting, toys, books and other personal and household goods
- o Services such as cutting of keys, plastic coating of identity cards.

2. Unit of measure to be collected

Statistics Norway is obliged to provide Eurostat with yearly data concerning turnover within the SBS.

Turnover is defined as the sum of remuneration for rendering of services to customers and sales of merchandise, and gross income from other activities. Rental income, commissions and special taxes are included, while subsidies and profits from sales of business assets are not. VAT is not included in the statistics.

Statistics Norway also collect and publish bimonthly turnover data on a voluntary basis. These data are collected through the VAT-register and the survey does therefore not influence the level of response burden.

3. Market Conditions and Constraints

3.1 Size of industry

The last updated statistics concerning turnover is the short term statistics, where total data for 2011 and January/February 2012 are the latest one published. In 2011, the total turnover in NACE 95 was 2, 2 billion NOK, approximately 295 million EUR. Number of establishments and total employment was 1 288 and 2 545 respectively. In comparison the total production in Norway in 2011 (preliminary

figures from NA) was NOK 4 579 billion and total employment 2.5 million persons. Size of the industry is therefore to be considered as very small.

Looking at the development in the industry back to 2007, a small decrease with regard to number of establishments and total employment has occurred.
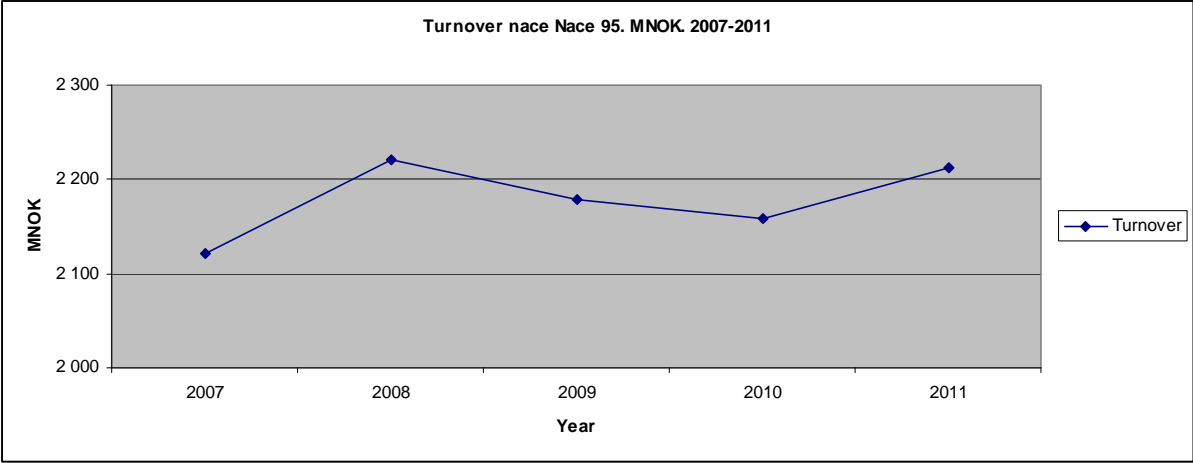
Figure 3.1. Number of establishments and total employment. NACE 95. 2007-2010.
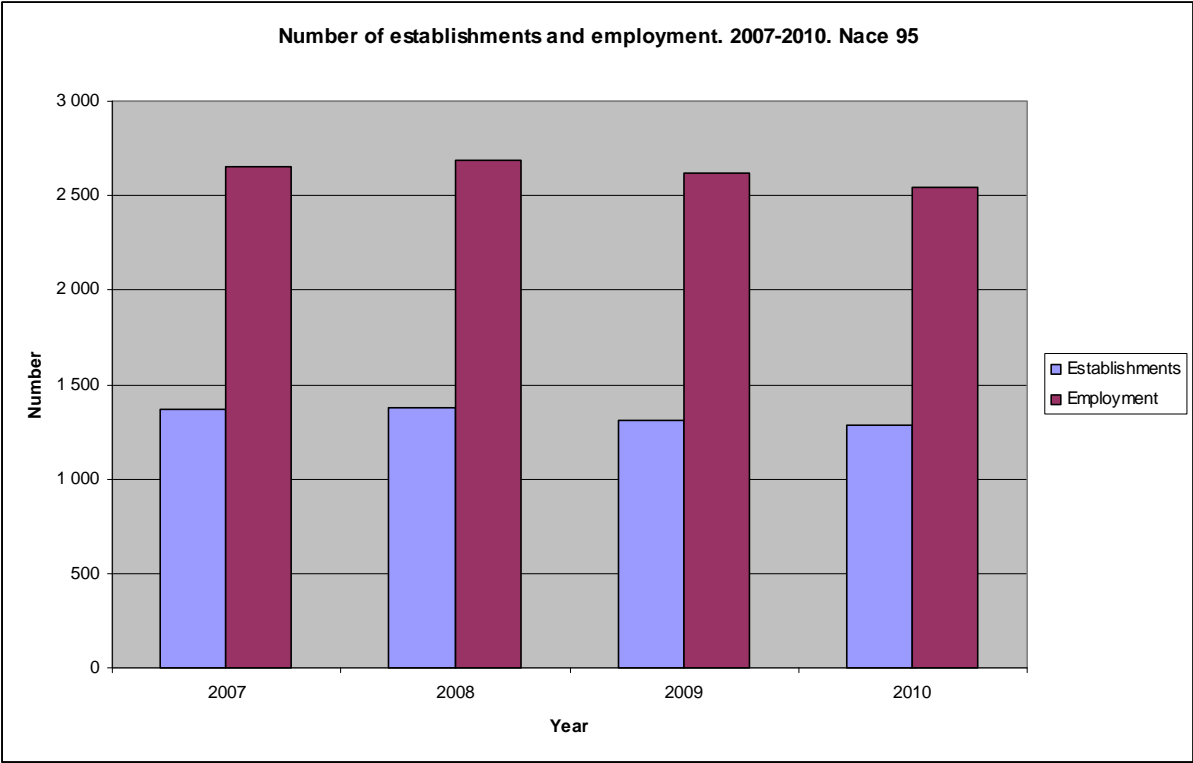
Source. SBS 2007-2010. Statistics Norway

In 2007, 1 373 establishments were operating within NACE 95, employing 2 652 persons. In 2010 the same numbers were 1 288 and 2 545. Measured by per cent the decrease was 6.1 and 4.0 per cent respectively.

Figure 3.2. Turnover. NACE 95. MNOK. 2007-2011.

Turnover nace Nace 95. MNOK. 2007-2011

[Chart showing turnover in MNOK from 2007 to 2011. Y-axis labeled "MNOK" ranging from 2 000 to 2 300. X-axis labeled "Year". Values: 2007 ≈ 2 120, 2008 ≈ 2 220, 2009 ≈ 2 178, 2010 ≈ 2 158, 2011 ≈ 2 210. Legend: Turnover]
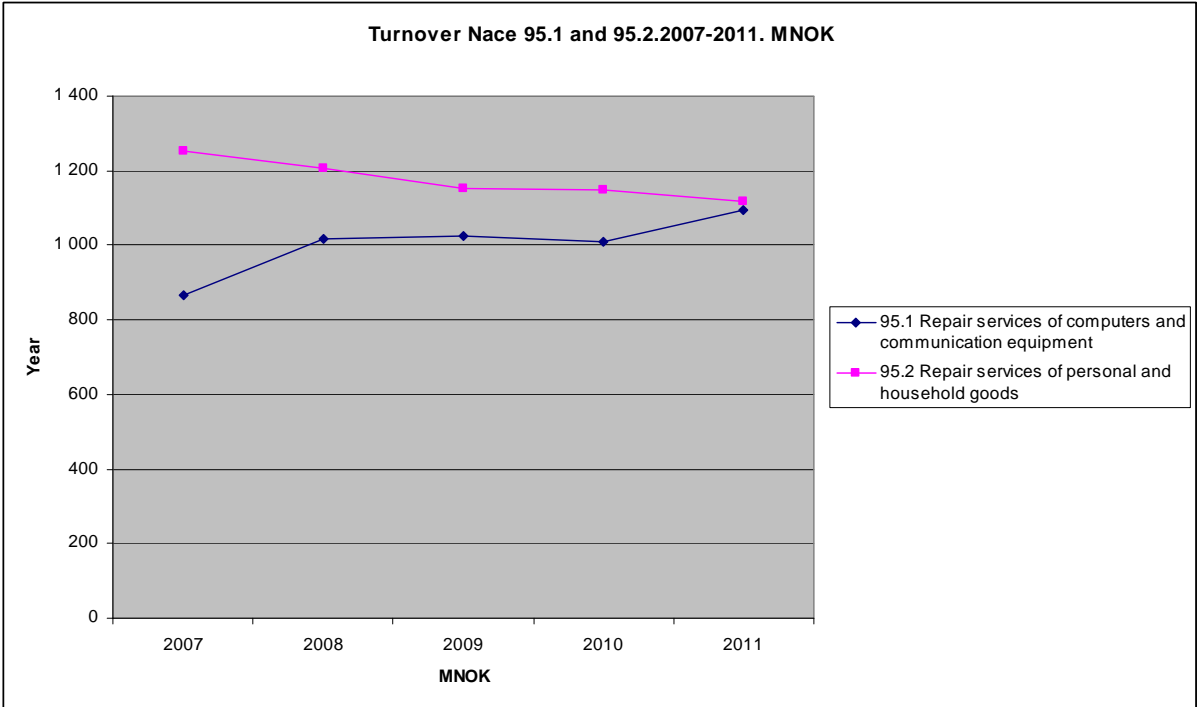
Source. SBS 2007-2010. STS 2011. Statistics Norway

Turnover has increased from 2007-2011 by 4 per cent, to 2.2 billion NOK. It has not been a stable growth, and includes periods with decrease
It could be assumed that development in turnover might be influenced by the business cycle, making consumers switching from buying new products to repair services when the economic climate is uncertain. This might be one explanation for the (small) top in 2008, followed by small declines in 2009 and 2010. Anyway, it must be remembered that Norway has not been influenced in the same way as the rest of Europe by the financial crisis and therefore the figure above should not be over-interpretated in this direction.

The small increase in turnover within NACE 95, is a result of a different development between the two 3. digit groups, repair services of computers and communication equipment (95.1) and repair services of personal and household goods (95.2). This illustrated in figure 3.3.

Figure 3.3. Turnover. NACE 95.1 and 95.2. MNOK. 2007-2011.

Source. SBS 2007-2010. STS 2011. Statistics Norway

In 2011 the turnover is almost equally divided between NACE 95.1 and 95.2. But the share of repair services of computers has increased during the last years. In 2007, NACE 95.1 covered 40 per cent of the total turnover in NACE 95. In 2011 this rate has increased to almost 50 per cent. One important explanation for this is probably the increasing number of Norwegian households holding computers and communication equipment. This development can be viewed in figure 3.4.

Figure 3.4 Percentage of households having access different ICT. 2007-2011

Percentage av households, having access to different ICT
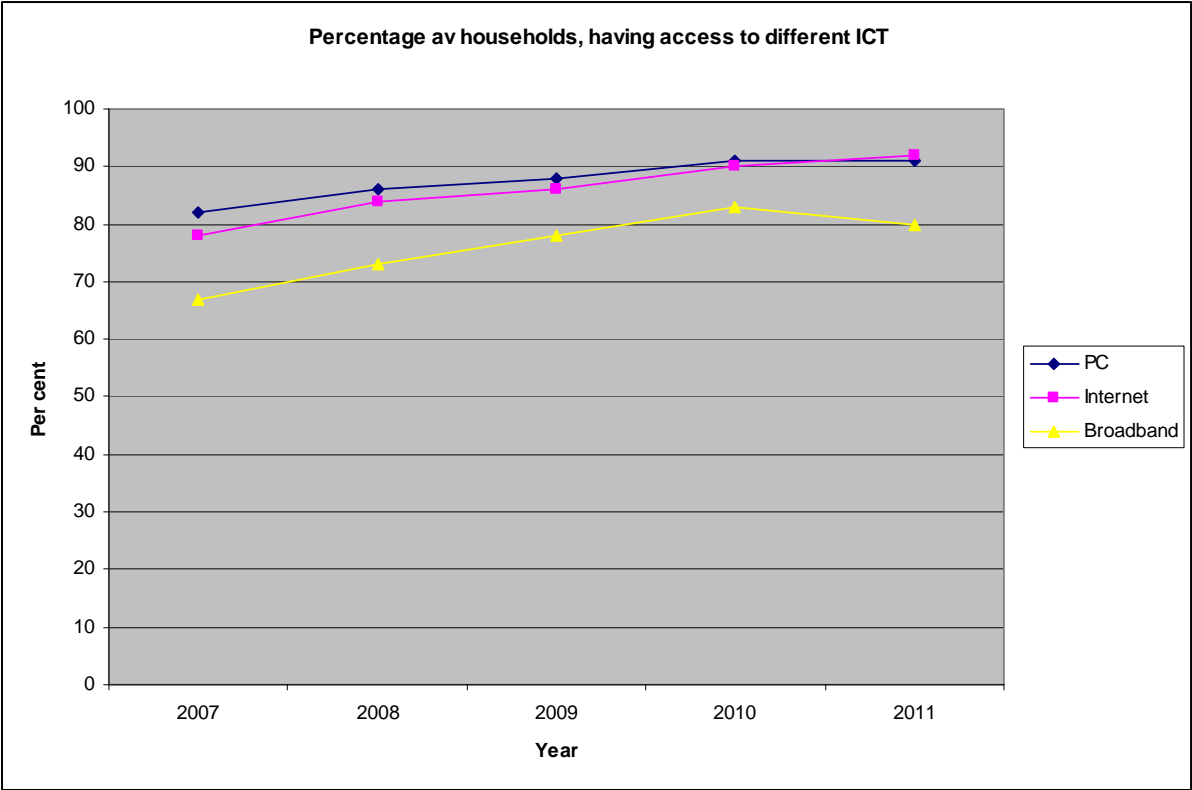
Source. ICT usage in households, 2ⁿᵈ quarter 2011. Statistics Norway

The percentage of Norwegian households holding a PC have risen in the period 2007-2011 by approximately 10 per cent points. It can also bee seen that share of households holding other ICT equipment has increased significantly. In addition, an assumption that number of PC's per household have increased in the same period is not unreasonable, al though we do not have information about this from this survey. Both factors contribute to a larger market for repair services of computers, measured by volume.

3.2   Business structure NACE 95.1 and 95.2

Table 3.1 shows how activity is structured in NACE 95.1, by size-groups

Table 3.1. Business structure within NACE 95.1 – repair services of computers and communication equipment. 2010.
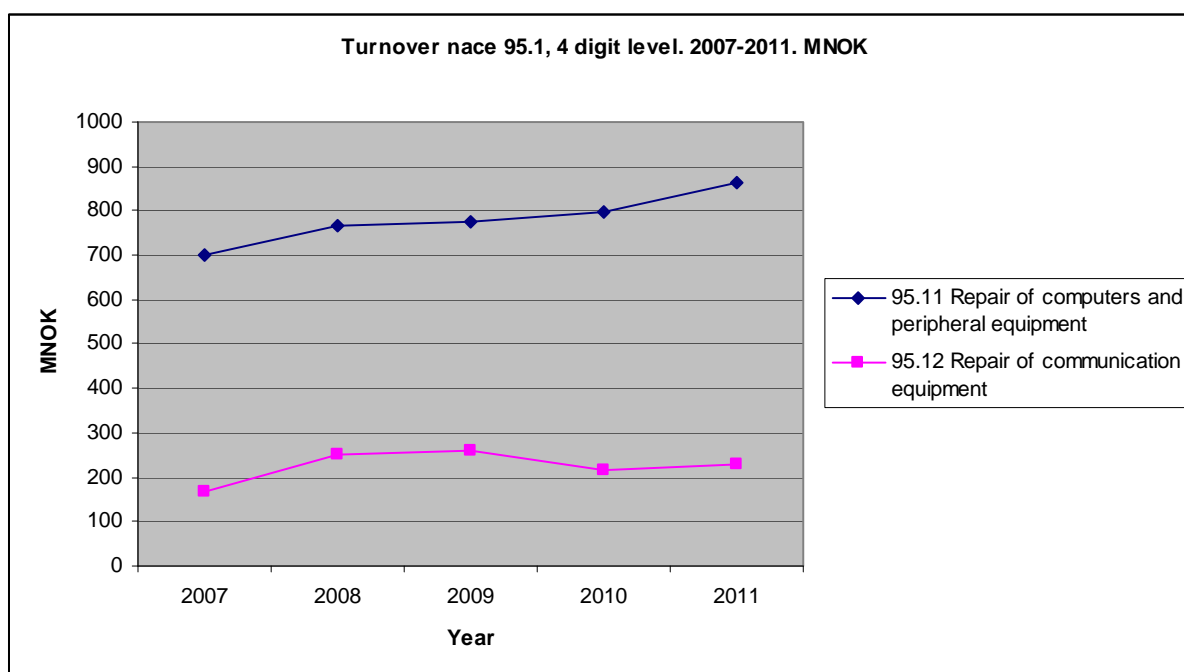
Employment groups	2010		
	No. of enterprises	Employment	Turnover
0-1	83 %	6 %	5 %
2-4	9 %	4 %	6 %
5-9	1 %	2 %	2 %
10+	6 %	88 %	87 %
Total	**100 %**	**100 %**	**100 %**

Source.SBS 2010 . Statistics Norway

The industry consists of many small players. 83 per cent of the enterprises have 0-1 people employed, but cover only 6 per cent of the total employment and 5 per cent of the total turnover. A few large players cover nearly 90 per cent of the turnover in NACE 95.1. It should be added that one player covers nearly 50 per cent of the total turnover.

NACE 95.1 consists of two 4-digit groups. Turnover is divided between these two groups as shown in figure 3.5.

Figure 3.5. Turnover NACE 95.1, 4 digit level. 2007-2011. MNOK

Source. SBS 2007-2010. STS 2011. Statistics Norway

In 2011, NACE 95.11 covered around 75 per cent of the total turnover. During the 2010 and 2011 the gap between the 4-digit groups has increased, due to a combination of decrease in turnover within 95.12) and an increase within 95.11.

Within NACE 95.2, activity is structured differently from NACE 95.1

Table 3.2 Business structure within NACE 95.2 – repair services of personal and household goods equipment. 2010.

Employment groups	2010		
	No. of enterprises	Employment	Turnover
0-1	79 %	37 %	33 %
2-4	15 %	28 %	26 %
5-9	5 %	23 %	25 %
10+	1 %	12 %	15 %
Total	**100 %**	**100 %**	**100 %**

Source.SBS 2010. Statistics Norwway

Also within NACE 95.2 approximately 80 per cent of the enterprises have 0-1 people employed, but they cover much more of the total employment (37 %) and total turnover (15 %). In contrary the large players (10+) only account for 1 percent of the total population and have quite smaller share of the total employment (12 %) and turnover (15 %).

Figure 3.6. Turnover. NACE 95.2 is divided into six 4 digit groups. 2007-2011.
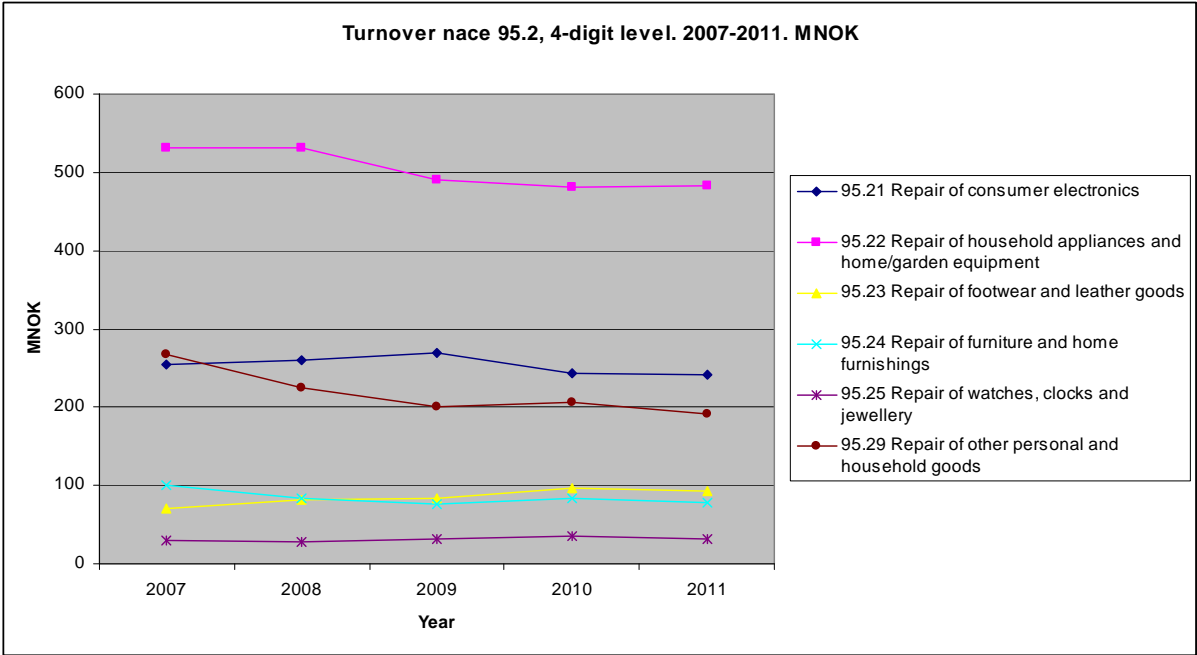
Source. SBS 2007-2010. STS 2011. Statistics Norway

Repair of household appliances and home and garden equipment is far the largest area, covering more than 40 per cent of the total turnover. Looking at the whole period, all of the three largest areas have experienced a decline in turnover.

3.3   Special conditions or restrictions

A few of the largest players within 95.1 have some export, but in total, the degree of export is low. Annual reports form the largest units within NACE 95 indicates that degree of export in 2010 was below 10 percent of the total sale.

4.   Standard Classification Structure

The Norwegian Standard Industrial Classification (SIC2007) is identical to NACE Rev.2 at the 4-digit level. ISIC Rev.4 does not include a separate service of jewellery (95.25), but is similar to NACE Rev.2 besides from this.

5. Evaluation of Standard vs. Definition and Market Conditions

Total turnover within NACE 95 was in 2010 2,2 NOK billion, according to the SBS and STS survey. Statistical unit within these surveys is enterprise and establishment respectively.

Statistics Norway do not have a survey, covering the total activity at product level, but carried out in 2007 a CPA survey within retail trade, which provided useful information concerning repair services in this industry. The survey included units within NACE 52 (SN2002). NACE 52.1-52.6 covered units with retail trade as their primary activity, whereas units with NACE 52.7 had repair services as the most important activity. NACE 52.7 corresponds with SN2002 codes 95.2 and 95.12 (table 1.1, page 3). The survey concluded that the total turnover of repair services within retail trade, was insignificant.

Table 5.1 Retail trade, breakdown by product (repair services only).

SN 2002	2007	
	Turnover MNOK	Repair of personal and household goods (per cent)
52 Retail trade, except of motor vehicles and motorcycles, Repair of personal and household goods	**329 367**	**0,1**
52.1 Retail sale in non-specialized stores	146 529	0,0
52.2 Retail sale of food, beverages and tobacco in specialized stores	16 307	0,0
52.3 Retail sale of pharmaceutical and medical goods, cosmetic and toilet articles	20 244	0,0
52.4 Other retail sale of new goods in specialized stores	138 237	0,1
52.5 Retail sale of second-hand goods in stores	327	2,2
52.6 Retail sale not in stores	7 720	0,0

 The figures are exclusive of 52.7 repair of household goods
Source: Wholesale and retail trade, breakdown of turnover by products, 2007. Statistics Norway.

It should be added that units within SN2007 code 95.11 were not included in this survey, since these units belonged to other areas than retail trade, due to the SN2002 definitions (NACE 30.020 and 72.500, SN2002, table 1.1, page 3).

The PRODCOM survey 2007 was also examined, but level of activity within repair services towards households was insignificant. To sum up, these surveys do not indicate a great lack of information

concerning the total level of repair services (within 95.12 and 95.2), using the SBS and STS as the estimate.

The SBS/STS survey probably gives information concerning the activity within repair services, which is a little bit to high. The largest players do not have all their activity within repair services of computers. They also have support services/ hot lines in their service portfolio, which belongs to another product group (NACE 62). To get the true picture of their activity within repair services, support services should be excluded from the turnover.

It is not possible to conclude exactly of the activity level of repair services from the SBS and STS surveys, but we do have some indications that both surveys are good proxies and that the classification suits the Norwegian market structure well. The SBS/STS probably overestimate level of activity on product level bit, but on the other hand we have lack of information of repair services of units with a NACE code different from 95, although (probably) to a limited degree.

6. National Accounts Concepts and Measurement Issues for the Area

Table 6.1 NACE Rev.2, NA classification

	951000	Repair services for computers and communication equipment for personal use
	952000	Repair services of personal and household goods

No further breakdown is necessary, due to low level of production in the industry.

NA uses the structural business statistics as a main source in their calculations for the final yearly national account. Furthermore they use the turnover index to estimate the quarterly development in production.

The comparison between Short-term statistics (STS) and structural business statistics (SBS) gives an indication of how the well STS predict the final result (SBS). Due to the new NACE SN2007, STS data has not been collected for the year 2007. Preliminary SBS results for 2011 will be published by the end of October 2012.

Table 6.2 Turnover development. Structural business statistics and short-term statistics. 2008-2011.

Year	SBS	STS
2008	4,7 %	NA
2009	-1,9 %	0,9 %
2010	-0,9 %	-1,2 %
2011	NA	2,2 %

Source. SBS 2007-2010. STS 2011. Statistics Norway

Since we only have two corresponding reference years for the surveys, it is to early conclude how well STS predict the final growth rates, estimated from the SBS. In 2009 the difference was 2.8 per cent point, whereas this number in 2010 was only 0.3.

7. Turnover methods and criteria for choosing various output methods

1.The SBS produces absolute, yearly data concerning turnover, gross value added and economical variables. A sample is drafted (probability proportional to size), statistical unit is enterprise. From these units the yearly accounts are collected as well a questionnaire, where enterprises are asked to breakdown turnover to establishment level (if they have more than one establishment). All enterprises, including more than one establishment are included in the sample. In addition a few numbers of enterprises with only one establishment are included the sample.

From the tax authorities we receive annual accounts for units not included the sample. If the annual account is not available, turnover data are collected from the VAT-register or the register for joint-stock companies. In practice, when it comes to turnover, the SBS is a census survey.

Table 7.1 Coverage rates, SBS, 2010. NACE 95

	Coverage rate, turnover	Coverage rate, number of units
Annual accounts, sample	66 %	16 %
Annual accounts, not in the sample	28 %	65 %
VAT-register	5 %	19 %
Joint-stock-company register	1 %	< 1 %

Source. SBS 2010, Statistics Norway

2. The STS produces also absolute values. The survey is a census survey. All data from the VAT-register are collected at enterprise level. This information is broken down to establishment level, based on keys from the latest SBS.

8.   Evaluation and Comparability with Price measures

Statistics Norway has no SPPI developed at present and there are no plans for this. The industry is very small and priority is therefore not put to this topic, as long as it is outside the scope of the Eurostat regulations. The CPI includes e.g. a small part of NACE 95 (e.g. repair of footwear), but it has not been considered so far to use this is a proxy.

9. Summary

- Statistics Norway collects information concerning turnover both on a yearly and bi-monthly basis.
- The Norwegian market for NACE 95 seems to fit the international classification very well.
- The industry Repair services of computers and communication equipment has increased its share of the total market within NACE 95 in the period 2007-2011, from 40 per cent to almost 50 per cent.
- It is too early to conclude wether the STS is a good proxy for the final growth rates within NACE 95, estimated through SBS. Differences so far seems to be small between the two statistics.