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## **Non-resident employees in the Norwegian National Accounts**

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## Introduction

Since the eastward expansion of the European Union (EU) in 2004, workers from the new East-European EU-countries have access to the Norwegian labour market through the European Economic Area (EEA) Agreement. Already at the end of 2004, one could observe a strong increase especially in workers coming from Poland and the Baltic countries. From mid 2003 strong economic growth has taken place in Norway. The production activity has been at a very high level, and the unemployment rate has fallen below 2.5 per cent. The strong demand for labour and the relatively high wage level compared to many other European countries, have certainly motivated workers to come to Norway from both old and new EU-countries. This has also enabled some industries, for instance construction, to increase production more than otherwise would be possible. In general, it seems to be a strong consensus among economists that such a long period of high growth Norway recently has experienced would not have been possible without the inflow of foreign workers. The strong increase in immigrant workers has, however, not been without controversy. Especially labour unionists worry about the possibility of social dumping and a boost in the size of the non-observed economy.

The sharp rise in the inflow of foreign workers has also caused some concern for statisticians, and our users have from time to time questioned the quality of the employment figures from Statistics Norway. Do the employment figures cover immigrant workers sufficiently? Is the Norwegian economy facing a general increase in productivity growth or is this due to statistical errors? In the short run it is generally a challenge to measure non-domestic workers, and especially those working on a short term basis. The latter group is not covered by the Norwegian Labour Force Survey (LFS). With regard to employment figures in the national accounts (NA), however, it is important that they give a complete picture of total employment, otherwise productivity analyses will suffer. The attention from media and the public in general related to immigrant workers, has led to the development of a new statistics 'Employment and unemployment among short term immigrants'.

The object of this paper is to examine the methods and data sources used for compiling employment in the Norwegian national accounts (NNA), with special attention to how non-resident employees are included.

This paper is built up by three main sections. The first section will cover the theoretical framework while the second section will describe the sources and calculation methods used in the Norwegian national accounts with regard to employment. Finally, the third section gives a description of the results.

## Theoretical framework

The definition and notion of *economic units* are fundamental concepts in The System of National Accounts 1993 (1993 SNA), the European System of Accounts (ESA 1995), and the Balance of Payments Manual, fifth edition (BPM5).

The institutional units in the NA and BoP statistics can be characterized by:

- they are capable in legal terms of owning assets and incurring liabilities on behalf of themselves
- they are able to engage themselves in the full range of economic transactions
- they are legally responsible and are decision makers for all aspects of economic life

The total economy is defined by the institutional units that are resident on the economic territory of a country. The critical criterion is whether or not the unit has a centre of economic interest in the economic territory of that country. In order to have a centre of economic interest, a unit has to be – or intend to be – in that country for an extended period of time. As a rule of thumb the SNA93 states that

if a unit is present within the economic territory of a country for at least one year it is a resident unit of that country. However, for practical reasons this is often looked upon as a guideline rather than a strict rule.

The ESA 1995 manual defines employment in the NA as all persons, both resident and non-resident, that contribute in a production process within the defined production boundary. This means that it is important to distinguish between the residential status for both the employer and the employee. In the case of non-resident employees this can be narrowed down to three main cases of cross border workers:

- Resident employer, non-resident employee
- Non-resident employer, non-resident employee
- Non-resident employer, resident employee

In the case of a resident employer and non-resident employee, both the production and the hours worked should be included in the national accounts as domestic production and employment. Since the employee is non-resident, a cross-border flow of compensation of employees is generated.

In the second case where both the employer and the employee are non-resident neither should be included in Norwegian production or employment figures, and all transactions should be treated as imports of services. Hence, in this case no cross-border flow of compensation of employees is generated.

If the employer is non-resident, the production should be treated as imports of services even if the employee is resident. In this case the Norwegian is working “abroad” and is not included in Norwegian employment. A cross-border flow of compensation of employees from abroad to Norway is generated.

The three cases mentioned above show the importance of the link between the production accounts, the Balance of Payment (BoP) and the labour accounts to achieve harmonised and consistent estimates throughout the system. The flows of compensation of employees (wages and salaries) in and out of the country are directly related to the number of employees. Whenever production by a resident production unit is carried out by a non-resident employee, a flow of compensation of employees to abroad is generated. In the cases where the production is carried out by a non-resident unit, the production is classified as trade in services (imports) and will be treated as intermediate consumption within a resident unit. If the non-resident unit engages resident employees, a flow of compensation of employees from abroad is also generated.

## **Sources and methods for estimating employment in the Norwegian national accounts**

Based on the theoretical framework described in the previous section, it is clear that information on the residential status for both employers and employees is needed in order to identify the population in the NA.

Employment has traditionally constituted an integrated part of the NNA. The first comprehensive national accounts were published in 1952, including employment figures back to 1930. In the last part of the 1980s, Statistics Norway introduced new methods for estimating employment figures in NA, inspired by approaches to labour accounting systems in the Netherlands and other countries, and total hours worked were estimated for the first time (Skoglund 2001).

By now consistent employment figures from the national accounts are available for the period 1970 and onwards at a detailed industrial level. We have recently finalised a project taking the time series for employment – including hours worked – back to 1946, but then at a more aggregated industrial level.

Since 1997, also quarterly figures on employed persons, full time equivalents and hours worked by industry have been estimated and integrated in the Norwegian quarterly national accounts (QNA). The quarterly time series for employed persons etc are available for the period 1995 and onwards.

Employment in the Norwegian national accounts is calculated in an integrated sub-system, or satellite system, called the Norwegian labour accounts (NLA). The basic employment concepts are employed persons, full-time equivalent persons, total hours worked, and jobs. Compensation of employees, and the components wages and salaries and employers' social contributions, are also defined according to 1993 SNA and ESA 1995. Wages and salaries are both in kind and in cash (including pay for overtime, and sickness and maternity allowances paid by employers).

Employment figures for non-resident employees should be consistent with the compensation of employees in the Balance of Payments (BoP) and the Rest of the World Account (RoW).

## **Methods for compiling employment in the Norwegian labour accounts**

The procedure used for the estimation of employment figures in the national annual accounts may be outlined as follows:

With regard to the annual accounts, basic statistics of different kinds are compiled by detailed industry. Data referring to a single date are transformed to annual averages. Inconsistencies between the data sources are revealed either directly or indirectly through the use of formal relations between the variables. The estimation of employee figures is closely linked to the estimation of wages and salaries by industry. For the quarterly account, the information sources are fewer and more fragmented. To a large extent extrapolation techniques are used, using the last available final accounts as benchmark year. The main relations in the labour accounts are (Skoglund et al 2007):

- (1) Total wages and salaries equal the number of full-time equivalent employees multiplied by wages and salaries per full-time equivalent employee
- (2) The number of full-time equivalent persons equals the sum of full time and part time jobs multiplied by the ratio of average working hours for part time over full time jobs
- (3) The number of jobs equals the number of main jobs plus the number of second, third etc. jobs minus jobs where the person is temporarily not at work
- (4) The number of employed persons equals the number of main jobs
- (5) Total hours worked equals the number of full time equivalents multiplied by 'normal' annual working hours for full time jobs (hours excluded vacation and public holidays) multiplied by a correction factor for overtime and absence from work due to illness, maternity leave etc.

As can be seen from the definitions, the connection between employment and wages and salaries in the NLA is the wage level. This definition is very useful in calculating the labour account figures, and employed persons (full time equivalents) can either be directly observed or indirectly calculated, depending on the quality and availability of sources. This means that different industries may be calculated using different sources as well as some parts of the industries themselves being calculated using different approaches in order to cover the whole population. In many cases a single source will not cover what is needed in total, and therefore different sources will have to be compared in order to

capture a picture of the complete employment. One example of this is the estimation of non-resident employees on short term stay in Norway. Another problem may be that the system is “over-determined”, meaning that there are data available for all three variables. Indirect estimation of full time equivalents will generally not be equal to direct statistics on the same variable.

In Norway the first release of the quarterly national accounts is approximately 50 days after the end of the quarter. Preliminary annual figures are made up as the sum of the four quarters or the average of the four quarters in the case of employed persons/full time equivalents. The final annual NA at its most detailed level is published 23 months after the end of the year. The various quarters may in theory be revised whenever new information is available and are in the end reconciled with final annual accounts. The sources available for the quarterly compilations are different from the annual. For instance wages and salaries are available only for central and local government on a quarterly basis, while this information is available for all industries when the final accounts are compiled. In other words, for the quarterly accounts it is necessary to rely more on information from the labour force survey than will be the case for the final annual accounts where reconciliation with other sources are important. In the case of non-resident employees only indicators are available at the time of the first release in the QNA. Thus, the challenge of estimating employment figures – including non-resident employees – is largest when the interest for the figures is highest.

## **Availability of sources and how they are used in the NLA**

### ***Resident employers***

Since a critical condition for being part of the production and employment in the NA is whether or not the unit is resident, business registers play a crucial role. The Central Register of Establishments and Enterprises (CEE) is the basis for all statistical business surveys in Norway. The CEE is kept and maintained by Statistics Norway and is continuously updated with information from the Central Coordinating Register of Legal Entities (ENR) and its affiliated registers. The Value Added Tax Register (VATR), the Register of Employers/Employees (REE) and the Central Office – Foreign Taxation Affairs (COFTA) are among these registers. All non-resident enterprises that start trading or carry out industrial activities in Norway are registered in the ENR, also those planning on operating for less than a year.

### ***Compensation of employees***

Compensation of employees is available through the Structural Business Statistics (SBS) and through central and local government accounts. These data are regarded as being of high quality. Since all resident employers are covered by these statistics, all non-resident employees working in resident units are included. In the first release of QNA only wages and salaries for central and local government are available. In later revisions of QNA also indicators for growth in total wages and salaries are available from administrative registers, as the register for employers’ national insurance contribution (payroll tax). The SBS is one of the main sources for the compilation of the final detailed annual accounts.

### ***Wage statistics***

Wage statistics for foreign employees is a challenge. The regular wage statistics will in principle cover everybody employed in Norwegian enterprises. In order to make calculations explicitly for non-resident employees, one should ideally have wage statistics for this group exclusively. Such information does not exist in Norway (at least not at the moment). It is however assumed that the wage level among non-resident employees is lower than the corresponding level in the wage statistics for all industries, without any exact level being defined.

### ***Labour force statistics***

As earlier mentioned, employment in the QNA is heavily dependent on the labour force statistics – the LFS and the register-based labour force statistics – which only cover resident workers. For practical

reasons these statistics define resident workers as persons registered in the Central Population Register. Being registered as resident in this register means living (or rather expecting to live) in Norway for more than 6 months. The definition used by the labour force statistics follow the recommendations of the International Labour Organizations (ILO). This means that persons working (or expected to work) in Norway for less than 6 months will not be part of the population in the traditional labour force statistics. What is also important is that these labour force statistics do not distinguish between the residential statuses of the employer. Hence, also non-resident units that operate in Norway for less than a year are included.

***Statistics on 'Employment and unemployment among short term immigrants'***

In 2005 Statistics Norway were given a project by the Ministry of Labour and Social Inclusion on making statistics on non-resident employees on short term stay. Figures for the 4<sup>th</sup> quarter of 2003-2007 have been published. So far the publishing of 4<sup>th</sup> quarter figures for year  $t$  have been in the middle of June year  $t+1$  (6 months after the end of the quarter). This means that in order to include non-resident employees in the first versions of the QNA, other sources have to be exploited as well.

The purpose of the statistics is to describe the employment situation for persons not registered as residents, i.e. persons who intend to stay in Norway for a short period. Important users of labour market statistics have expressed the need for data on the inflow of persons from new EU member states arriving in Norway for employment. The regular labour market statistics capture this inflow in cases where persons move to Norway for a period of more than six months and are employed by a Norwegian employer. However, persons who move to Norway for shorter periods, as individual employees, self-employed, or are employed by a foreign employer selling their services in Norway, are not included. The statistics on employment and unemployment among short term immigrants is intended to provide better data on inflows not captured in the regular labour market statistics.

Two important indicators in estimating non-resident employees in the QNA are the number of valid work permits. The Norwegian Directorate of Immigration issues work permits to foreigners. The growth in valid work permits has been regarded as a useful indicator for the growth of non-resident employees in the QNA. The Nordic countries have however agreed on a common labour market which means that Nordic workers are not required to have a work permit in Norway. According to the 4<sup>th</sup> quarter statistics for non-resident employees for 2007, the number of non-resident Nordic employees constitutes more than 1/3 of all non-resident employees, and together with immigrant workers from the new East-European EU-countries, there has been a large increase in Swedish workers. Changes in the growth rate for the latter group will not be covered by valid work permits. Everybody staying (or intending to stay) in Norway for more than three months is, however, registered either with a personal identification number or with a so-called D-number. The D-number is a temporary personal identification number used for foreign workers when they arrive in Norway and before they get a permanent personal identification number. The D-number is used by the tax authorities and is also needed in order to receive public services. The growth in D-numbers therefore reflects the growth in foreigners (legally) coming to Norway. By combining information from these two sources (and making a few assumptions) it has been possible to estimate preliminary figures for non-resident employees.

In addition to calculating the number of non-resident employees not covered by the LFS, it is also necessary to have an opinion about how these employees are distributed between industries. In Norway this distribution is mainly assumed equal to the last 4<sup>th</sup> quarter statistics for non-resident employees, but also growth in employment and production in these industries play a role. Since this statistic only covers the 4<sup>th</sup> quarter, assumptions also have to be made for the seasonal pattern over the rest of the quarters. For instance seasonal workers in farming are only present some parts of the year in Norway (for natural reasons). The annual NA figures give the average employment for the whole year and will therefore differ somewhat from the 4<sup>th</sup> quarter level. The main source for the distribution between the quarters is the seasonal pattern from the statistics on valid work permits. Before the expansion of the EU in 2004 there was a very clear tendency that most workers arrived in the third

quarter in time for the harvest. These workers received short time work permits. After 2004 these workers could apply for a so-called EEA-permit which normally lasts for three years. Since fewer and fewer of the seasonal workers are using the short term permits and also an increasingly number of workers are staying in Norway for a longer period of time, the seasonal pattern in the statistics on valid work permits has gradually disappeared.

There are some weaknesses in the abovementioned calculations that may be worth mentioning. Whether or not a person that has a valid work permit in fact works in Norway, is of course uncertain. In order to be included in the population in the 4<sup>th</sup> quarter statistics for non-resident employees it is therefore necessary to be registered as having received wages and salaries as well as being registered with a D-number in the same period of time. This check involves linking information from different registers on an individual level. Hence, in the preliminary QNA figures this check can not be done as only indicators are available. Foreigners coming to work in Norway through the EEA-agreement or from EFTA member countries for a period of less than three months are not required to have a work permit. However, for workers coming from the new East-European EU-countries this has been somewhat regulated by Norwegian authorities by a set of transition rules. Workers coming from these countries still need work permits even if they intend to stay for only a short period of time.<sup>1</sup>

A different problem that can arise is that some of the non-resident workers become residents after staying more than 6 months, and thus is included in the population for the ordinary labour statistics. The statistics on valid work permits does not distinguish between residential status, hence both resident and non-resident workers are included. This could lead to a situation where workers are counted twice and in that way overestimate total employment in the first preliminary QNA employment figures. By comparing the employment figures with total employment growth in the LFS and also the production growth in the related industries, the chance of making large errors because of this should however be quite negligible.

The early estimates for non-resident employees in the QNA have in general been quite close to the final 4<sup>th</sup> quarter statistics. The growth in workers coming from the Nordic countries is however more difficult to estimate since they do not need work permits. It may also be the case that more workers from the Nordic countries already have a Norwegian personal identification number from an earlier period in the country and thus will not be included in the statistics on neither d-numbers nor work permits.

### ***Sailors on Norwegian operated ships in international shipping***

Norway has historically been a large shipping nation, and although the relative size of this industry has declined, still nearly 50 thousand people are employed in ocean transport, and about half of these are non-residents. Until 1995 all sailors on Norwegian owned ships were regarded as residents of Norway. The logic behind this was that they spend most of their time on Norwegian economic territory while on board the vessels. In 1995 this treatment was changed, and the foreign sailors are now regarded as non-resident. Their enumeration is recorded as compensation to abroad.

The crews on the ships in the Norwegian fleet are part of Norwegian employment as long as they are employed directly by Norwegian shipowners. This raises the question about the working contracts of the foreign sailors: Are they directly with a Norwegian enterprise or indirectly through a non-resident enterprise hiring out crewmembers? If the crewmembers are hired out by a non-resident enterprise, their payment should be regarded as imports of services from abroad. After consulting representatives for the Norwegian Shipowners Association it was concluded that this way of organization still occurs more seldom, and it was decided to continue the current practice. This may however be changed in the future.

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<sup>1</sup> Poland, Lithuania, Latvia, Estonia, Czech Republic, Slovakia, Slovenia, Hungary, Romania and Bulgaria

## Results

Table 1. Employment in the Norwegian National Accounts.<sup>2</sup> 1000 persons.

	2004:1	2004:2	2004:3	2004:4	2004
<b>Resident employers</b>					
<i>Resident workers</i>	2 255,4	2 283,0	2 280,8	2 265,8	<b>2 271,3</b>
+ <i>Non-resident sailors on Norwegian operated ships</i>	23,5	23,5	23,5	23,5	<b>23,5</b>
+ <i>Non-resident employees (short term immigrants)</i>	24,0	26,0	33,0	31,2	<b>28,6</b>
<b>= Total employment</b>	<b>2 302,9</b>	<b>2 332,5</b>	<b>2 337,3</b>	<b>2 320,5</b>	<b>2 323,3</b>

  

	2005:1	2005:2	2005:3	2005:4	2005
<b>Resident employers</b>					
<i>Resident workers</i>	2 274,8	2 293,8	2 303,8	2 297,5	<b>2 292,5</b>
+ <i>Non-resident sailors on Norwegian operated ships</i>	24,0	24,0	24,0	24,0	<b>24,0</b>
+ <i>Non-resident employees (short term immigrants)</i>	29,0	35,0	39,0	37,8	<b>35,2</b>
<b>= Total employment</b>	<b>2 327,8</b>	<b>2 352,8</b>	<b>2 366,8</b>	<b>2 359,3</b>	<b>2 351,7</b>

  

	2006:1	2006:2	2006:3	2006:4	2006
<b>Resident employers</b>					
<i>Resident workers</i>	2 328,7	2 359,2	2 375,2	2 372,8	<b>2 359,2</b>
+ <i>Non-resident sailors on Norwegian operated ships</i>	24,5	24,5	24,5	24,5	<b>24,5</b>
+ <i>Non-resident employees (short term immigrants)</i>	40,0	47,0	54,0	55,3	<b>49,1</b>
<b>= Total employment</b>	<b>2 393,2</b>	<b>2 430,7</b>	<b>2 453,7</b>	<b>2 452,6</b>	<b>2 432,8</b>

  

	2007:1	2007:2	2007:3	2007:4	2007
<b>Resident employers</b>					
<i>Resident workers</i>	2 400,3	2 443,8	2 460,8	2 472,6	<b>2 444,7</b>
+ <i>Non-resident sailors on Norwegian operated ships</i>	26,0	26,0	26,0	26,0	<b>26,0</b>
+ <i>Non-resident employees (short term immigrants)</i>	54,0	59,0	64,0	64,3	<b>60,3</b>
<b>= Total employment</b>	<b>2 480,3</b>	<b>2 528,8</b>	<b>2 550,8</b>	<b>2 562,9</b>	<b>2 531,0</b>

Table 1 gives a decomposition of the employment figures in the NNA. Total employment is the sum of resident workers, non-resident sailors on Norwegian operated ships in international shipping and finally other non-resident employees, all with a resident employer.<sup>3</sup> The high growth in the employment figures in Norway, especially the last couple of years, is related to high growth in most industries in Mainland Norway. The preliminary national accounts figures for 2007 show that the number of employed persons has increased by more than 200 000 persons since 2004 – a growth of nearly 9 per cent. In the same period GDP Mainland-Norway increased by more than 16 percent.

The group of non-resident employees – staying in Norway on a short term basis – has doubled in size in the same period with an increase of more than 30 000 persons, which means that 15 percent of total employment growth is related to the increased number of short term immigrants.

At the same time many foreign workers have settled in Norway, and intend to stay at a more or less permanent basis. This means that they are going from a status as non-resident employee to being a resident employee. From the beginning of 2004 to end 2007 we know that the number of foreign citizens in Norway increased by more than 60 000, of these were nearly 50 000 from Europe (Statistics Norway 2008). It is difficult to estimate how many of these foreign citizens that are actually working, but – at least together with the statistics on non-resident employees – these figures give a strong

<sup>2</sup> The figures for 2006 and 2007 are preliminary.

<sup>3</sup> Also including employment in Norwegian embassies



indication that the inflow of foreign workers account for a substantial part of the increase in Norwegian employment the last years.

The strong increase in the number of employed persons (residents) is related both to foreign citizens becoming residents and to the fact that more people will join the work force when it is easy to get a job. This can be illustrated by the number of unemployed persons in Norway, which has been reduced by about 40 000 persons from 2004 to 2007. This is far below the increase in number of employed persons (residents).

## **Concluding remarks**

The high wage level in Norway and the eastward expansion of the European Union are two important reasons for the large increase in foreign workers in Norway. Most of these workers are included in the LFS as they become resident in Norway and thus are included in the NLA. There is however a significant number of non-resident workers with a resident employer who should be included in the NLA but fall outside the population of the LFS. Failing to include these short term workers would influence employment figures like full time equivalents and hours worked and harm the productivity estimates.

The Norwegian labour unions have worried that the large increase in foreign workers would lead to social dumping, and have demanded that foreign workers should be paid at least the minimum wage for skilled Norwegian workers. So far the unions have been able to regulate this by contract for some key industries like construction and parts of manufacturing. However, several cases have been revealed where foreign workers are paid below this minimum wage. There is also reason to believe that some foreign workers are involved in informal activities. All this has led to a growing interest for statistics on immigration and foreign workers both from the government, labour unions and employer associations.

The Norwegian national accounts publish figures for the number of employed persons, full time equivalents and hours worked, all broken down by industries. Separate figures for employed non-resident workers are normally not published. It has however been important to make a decomposition of the employment level to ensure the quality of the national accounts estimates and also to explain to our users the discrepancy between employment figures from the labour force survey and from the national accounts.

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