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Documents

**Collecting data on wages for the
Labour Force Survey**
- a pilot

Abstract

Based on the EU decree 577/98 Eurostat has suggested a number of recommendations concerning the Labour Force Survey (LFS), which include the introduction of a wage variable. Eurostat has encouraged all member states to conduct a preliminary survey in 2003, in which the information on wages is collected with the help of interviews or administrative registers. This report presents a proposal on how to utilize wage information from Norwegian administrative registers in order to calculate monthly earnings for people who take part in the Labour Force Survey. The calculations are made by breaking down information about annual compensation in cash into monthly figures, by using start and stop dates for the different employment spells. A comparison with the Structural statistics for wages (SES) shows that the estimated monthly earnings are closest to the official wage statistics for men working full-time.

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1. Introduction

1.1 Background

As a result of a new EU decree (decree 577/98) regarding the Labour Force Survey (LFS), Eurostat has suggested a number of recommendations to improve the quality of the LFS. These recommendations include the introduction of a wage variable that can give a proper estimate of cash payments by an employer to an employee for the work performed by the employee (including *leave payments*) at the main job. Eurostat is encouraging all member nations to conduct a preliminary survey in 2003, in which the information on wages is collected with the help of interviews or administrative registers. In order to meet Eurostat's requirements Statistics Norway's division for labour market statistics has analysed the possibility of estimating monthly earnings in the LFS by using wage data from administrative registers.

There are advantages of collecting wage or income data from administrative registers instead of adding questions to the LFS questionnaire, for instance when it comes to preventing non-response in the LFS. The more questions the survey contains, the more time it takes to reply, and greater is the risk of reducing the incentive to respond. Many people are also likely to consider any question about their income as sensitive and private, which can make them reluctant to answer. Therefore, including questions on wages in the LFS may lead to a lower response rate.

Furthermore, even if interviewees answer questions regarding income there is no guarantee that the answers are correct. Previous comparisons between income data reported in a survey by interviewees and income registered on the same individuals in administrative registers show a disparity. People have a tendency to either over-state or under-report their exact income for different motives. In a survey, psychological and subjective factors rather than factual reporting may influence answers to questions on earnings.

1.2 The project's main objective

The project is divided into three main stages:

- *Evaluation of data sources*: Information from different administrative sources can be used to estimate monthly wages. An evaluation based on the content of each register will be made in order to find which sources of information are most suitable given the specifications from Eurostat.
- *Estimation of the monthly earnings*: The main source of information will be based on a register from the tax authorities containing annual wages. These annual figures are broken down into monthly figures.
- *Quality control*: In order to ensure that the estimated monthly earnings are satisfactory (in accordance with data collected by the interview), analyses have been made by comparing the wage data on individual level with similar data collected through Statistics Norway's wages statistics. Furthermore, the estimated monthly earnings in the LFS have been compared with published figures in the wages statistics for full-time employees.

The report offers a description of the administrative sources. It provides an overview of the different administrative registers and statistical data as well as the relevant variables in the estimation of monthly earnings in the LFS. We discuss the wage concepts that are included in the LFS. Description of the linking process of different registers and data sources is given. A calculation of monthly earnings is made by use of the linked data. Finally, the results from the estimation of the monthly earnings are presented.

2. Main sources of wage data

There are a number of different administrative sources that include information about wages, but only the ones administered by the tax authorities contain annual wage data for the whole population of Norwegian taxpayers. In this project, the main register used is the End of the Year Certificate Register (EYC register). Additional wage information for employees in public administration is also used. To review the quality of the estimates on monthly earnings, comparisons are made with Statistics Norway's Structural Statistics for Wages.

In Norway, the administrative registers assign official and unique ID numbers for each individual (PID). This is also the case for the establishment or local kind of activity unit (ESTID) and the enterprise or legal unit (ENTID). The different ID numbers ensure that the registers can be linked at unit level.

2.1 The End of the Year Certificate Register (EYC- register)

The Norwegian Tax Directorate administers the End of the Year Certificate Register (EYC).

- *Reporting unit:* All enterprises, whether public or private, are obliged to submit a correctly completed EYC to the Tax Directorate each year. A 9-digit id number identifies the enterprise (ENTID).
- *Observation unit:* All employees and taxpayers receiving wages and other remunerations. The 11-digit personal identification number (PID) identifies the employee/taxpayer whereas a 9-digit organisation number links the employee to his/her employer (PID x ENTID).
- *Deadline:* Enterprises have to submit EYCs to the Tax Directorate by 20 January of the year after the reference year. The register is available for Statistics Norway at the end of April.
- *Relevant variables:* Information about annual data on wages, unemployment allowances, sickness and maternity benefits, pensions etc. is available in the EYC register. These are the variables from the End of the Year Certificate Register (EYC) that are relevant in the estimation of a wage figure, which approximately corresponds to the monthly wage concept defined by Eurostat.
 - *Code 111-A Wages, salaries, fees and other remunerations (fixed space) on EYC:* This variable includes wages and other allowances such as payments while on leave, sickness and maternity benefits paid by an employer as well as taxable compensation for employment termination which is not reported under self-employment business activity.
 - *Compensation in cash:* The variable compensation in cash is a National Accounting concept. It includes a number of variables from the End of the Year Certificate. A complete list is given in Annex 1. Among the wage variables are:
 - Wages, salaries, fees and other remunerations (fixed space)
 - Pay and other remunerations for work carried out abroad
 - Board fees – foreigners etc.

Other variables are:

- *Start/Stop date for period of employment in Norway / on the Norwegian Continental Shelf:* The EYC register of a given year contains job duration for that particular year. The enterprise reports whether or not an individual employee is employed at the same enterprise during the entire year. If this is not the case, the period or total number of days in onshore Norway must be stated. If employment on the Norwegian Continental Shelf entitles the employee to off-duty periods, the remuneration period(s) including off-duty periods must be stated. If an employee has only worked for a number of days during different months of the year, the total number of days is reported. Due to lack of uniformity in the way the employment duration is recorded, the quality of this variable is not reliable.
- *Industry code:* For each observation the Standard Industrial Classification code referred as NACE in Norwegian is recorded. This code indicates each enterprise's area of business.

Industrial classification codes provide grouping of homogenous activities as much as possible, i.e. on the basis production unit, the kind of activity each enterprise is engaged in etc.

- *Sector Code*: The institutional sector classification is a classification of the main sectors of the economy, i.e. non-financial corporations, financial corporations, general government, households, non-profit organisations serving households and the rest of the world, with corresponding sub-sectors.

2.2 The Central Register on Employers- and Employees (EE-register)

This register is run by the national insurance administration. The EE register covers all sectors and most jobs (as employees).

- *Reporting unit*: All establishments in private and public sector (9-digit ESTID). The establishments must report every person who start or leave the employer. Only conscripts, jobs with average weekly working hours less than 4 hours and jobs that are expected to last for less than a week are exempted. The register provides a link between persons and establishment.
- *Observation unit*: An employment spell (job) is identified by the PID, ESTID, and start dates. Employees ((11-digit PID) * establishment (9-digit ESTID)* Employment start date *Date of termination)
- *Deadline*: All establishments should register as soon as they hire employees (the employer part of the register), and they must report every person who start or leave the employer (the employee part of the register).
- *Relevant variables*: Start/Stop date for the employment spells, industrial code and sector.

2.3 Structural Statistics for Wages (SES)

In 1997, Statistics Norway established a set of uniform and comprehensive wage statistics. The statistics are based on uniform definitions and terms and cover all main sections of industry except the primary industries. Public administration, which includes employees in central government, county municipalities and municipalities, is not fully comparable with the Standard Industrial Classification, since public enterprises are included.

Statistics for employees in private enterprises are based on a survey. The data are collected via forms or electronic media from the enterprises included in the annual sampling. In public administration the statistics are based on information obtained from various registers containing all employees. This also applies to Education, where information on employees in public schools is collected from the Central Register of Government Employees in the School System. For employees in central government, data is obtained from the State Central Register of Government Employees, while data on employees in county municipalities and municipalities are obtained from the Staff Administration Information System. Information is collected on basic paid salaries, fixed and variable additional allowances, bonuses and commissions, overtime, occupation and contractual working hours.

2.3.1 Central Register of Government Employees (CRGE)

The Central Register of Government Employees (CRGE) is administered by the Ministry of Labour and Administration. CRGE creates the foundation for wage and employee data which is the basis for wages and tariff negotiations for state employees, wage and cost analyses, planning and budgeting, wages distribution on local level, and the Finance Ministry's compensation for wages settlement.

- *Reporting Unit:* All state institutions where wages to employees are paid out of state funds. The institutional ESTID identifies each enterprise.
Observation unit: All employees in state employment who receive wages per 1 October in the reference year. It includes all employees with permanent or temporary contracts. The personal identification number (11 digits) identifies the individual employees whereas the organisation number identifies the institution they are employed in.
- *Deadline:* Deadline for submitting data to CRGE is 1 November in the reference year.
- Relevant variables
Monthly earnings: As far as the estimation of monthly wages for the LFS is concerned, monthly earnings in the CRGE register is a relevant wage variable. Monthly earnings is derived as follows:
Monthly earnings = Basic paid salary + Variable additional allowances + Payment for overtime work.
Job number: In case an employee holds more than one position with different position codes or scale of pay at the same institution, each position is registered with a corresponding job, i.e. the first position is allocated as job number 1, the second as job number 2 etc.

2.3.2 The Central Register of Government Employees in the School System (CRGESS)

Like CRGE, the Central Register of Government Employees in the School System (CRGESS) is administered by the Ministry of Labour and Administration. From 2002, the Ministry of Labour and Administration has delegated the data collection and quality control of CRGESS to Statistics Norway, but it is still the administrative authority. The purpose of CRGESS is the same as that of CRGE, but its content is limited to data on employees in the school system.

- *Reporting Unit:* Municipalities, county municipalities, private folk high schools, state-owned primary and secondary schools as well as wage payment offices.
- *Observation Unit:* All permanent and temporary employees in the school system covered by the main wages agreement in the state are reported. Employees on sickness leave who receive wage payment per 1 October are also reported as if they are working. The personal 11-digit ID number identifies each employee.
- *Deadline:* Deadline for submitting data to CRGESS is 15 October in the reference year.
- Relevant variables:
Organisation number: The 9-digit organisation number allocated by the Central Coordinating Register for Legal Entities identifies the institution. However, the quality of this variable on CRGESS is far from satisfactory and thus it is difficult to use in the linking process.
Job number: In case an employee holds more than one position with different position codes or scale of pay at the same institution, each position is registered with a corresponding job. I.e. the first position is allocated as job number 1, the second as job number 2 etc.
Monthly earnings: As in CRGE, monthly earnings is defined as:
Monthly earnings = Basic paid salary + Variable additional allowances + Payment for overtime work. Fixed additional payments are included in the basic paid salary.

2.3.3 The Staff Administration Information System (SAIS)

The Norwegian Association of Local and Regional Authorities collects wage data on employees in municipal and county municipal institutions on 1 October in connection with the wages agreement. The collected data is kept in a database called Staff Administration and Information System (SAIS).

- *Reporting unit:* Municipalities and county municipalities.
- *Observation unit:*

- Employees with permanent job contracts including those employed on apprenticeship contracts in municipal and county municipal institutions.
- Employees who carry out work paid per hour and who are entitled to pensionable income at least 14 hours a week.
- All employees with job contract that lasts six months or longer.

The 11-digit personal ID number is the identification variable for an individual employee.

- *Deadline:* Deadline for submitting data to SAIS is 1 November in the reference year.
- Relevant variables:
 - *Monthly earnings:* In the estimation of wages in LFS monthly earnings on SAIS is important. It is defined by the following equation:

$$\text{Monthly earnings} = \text{Basic paid salary} + \text{Variable additional allowances} + \text{Bonuses}$$
 Payment for overtime work is not included in the concept of monthly earnings on SAIS.

2.3.4 Wage statistics for employees in the private sector (WSEPS)

- *Reporting unit:* For employees in private enterprises, data is collected via forms or electronic media from the enterprises included in the annual sampling. The population is all active private enterprises in the Central Register of Establishments and Enterprises. Small enterprises with less than a specified number of employees (usually less than five) are not included in the frame population. The final sample in each industrial section is drawn from the population and comprises a census part and a sample part. In the census part all enterprises with more than a certain number of employees are included, while the sample part comprises a stratified sampling of small and medium sized enterprises. Data refers to 1 September or 1 October 2001. Data on employees in wholesale and retail trade, financial sector and business activities are reported on 1 September, while data for other sectors are reported on 1 October 2001.
- *Observation unit:* Employees in private enterprises on either 1 September or 1 October each year. Each job is identified by the PID and the ESTID (PID*ESTID).
- *Deadline:* Data must be submitted two to three weeks after the census date. All data refers to 1 September or 1 October 2001. Data on employees in wholesale and retail trade, financial sector and business activities are reported on 1 September, while data for other sectors are reported on 1 October 2001.
- Relevant variables:
 - *Basic paid salaries:* Basic paid salaries are the actual payment at the time of the census and are often described as salary by scale or regular basic wage. Qualification/skill allowance and other regular personal allowances are included in this type of wage. The wage or salary may be payment by the hour, week, fortnight or month. The current monthly payment that an employee receives at the reference date is reported.
 - *Variable additional allowances:* As a rule, variable additional allowances are associated with special duties or working hours and the figures given are based on a calculated average per month for the period 1 January to the time of the census. Variable additional allowances cover allowances for working evenings and nights, call-out allowance, shift allowance, dirt money, offshore allowance and other allowances that occur irregularly.
 - *Payment for overtime work:* Payment for overtime work covers the sum of cash compensation for work outside contractual working hours and which is then compensated with a supplement to the basic salary. Overtime compensation is a calculated average per month over the period 1 January to the time of the census. This type of payment is not included in the total monthly earnings, but figures are given for overtime compensation when the statistics are released.

3. The wage concept in the Labour Force Survey

According to document E1/EMP/28/2002 the information collected on monthly wages is to include the regular payment in cash by an employer to an employee, including time off with pay, or work done at the main job. It shall refer to the last monthly salary received in or before the reference week.

As shown in the overview of wage registers in chapter 2, different sources can be used to estimate the monthly wage. The EYC register is, however, the only one that covers the whole year as opposed to the other wage registers, which only contain information that refers to one specific month. Also the variable *compensation in cash* is the one closest to what we interpret as the concept of wage set by EUROSTAT. The payments reported are before tax. None of the relevant registers report net payment. The EYC register covers all employees, enabling us to ensure that the wage concept used is the same for all the individuals that take part in the LFS.

To give an estimate on monthly earnings, the compensation in cash has to be broken down into monthly figures. In other words, the wage concept in this study will be defined as annual gross payment in cash (part of D11 in NA) distributed over the months the job was active.

To be able to calculate monthly earnings we need information about start and stop dates for the employment spells. This can be obtained by linking the jobs in EYCR with the Register of Employees.

4. Linking jobs from the Labour Force Survey with jobs in the Administrative registers and the wage survey

When linking information from the wage registers to the LFS population, a lot of effort is made to identify which employment spell in the registers refers to the main job given in the LFS. The obvious reason is of course that if a person has several jobs, we want to combine the right wage information to the right job.

In the LFS a job can be identified by an individual's unique ID number (PID), and either the ID number of the establishment (ESTID) or the establishment's name. As shown in chapter 2, the reporting unit for the administrative registers that contain wage information differs, and so does the extent to which information about the local unit is included. For example the wage information given to the Norwegian Tax Directorate is reported by the enterprise, which means that the End of the Year Certificate register (EYC) only contains wage information at enterprise level. If a person has several jobs in different establishments within the enterprise, the EYC register only has information about the total wage earned in the enterprise. This can, however, be solved by linking information from other administrative registers to the EYC.

This chapter describes the procedure for linking information from the different registers to the LFS. In order to get a better overview of the whole process, a flow chart is given in Annex 2. First a description of who constitutes the LFS population is given.

4.1 Defining a relevant population from the Labour Force Survey

A monthly earnings is defined as payment in cash made by the employer to the employee. Income from self-employment is not included. The population from the LFS will therefore consist of the following two groups:

- Employees over 16 years of age who performed work for pay for at least one hour in the survey week.
- Employees over 16 years of age who were temporarily absent from work because of illness, holidays etc.

All employees are identified by their personal number (PID).

4.2 Linking the End of the Year Certificate Register with the Central Register on Employers and Employees

There are two reasons why the wage information from the EYC register is linked to the employment spells registered in the EE register. As mentioned in the introduction to this chapter, the wage information is given at enterprise level. Linking the EYC to the EE enables us to identify in which establishment the person was employed, which again makes it easier to link the annual wage information to the LFS.

The second reason for linking the registers concerns the quality of the information that dates the employment spells. In order to calculate a monthly wage figure, the reported annual compensation in cash from the EYC register must be broken down. We therefore depend on information about the employment spells' length. The EE register contains start and stop dates for the employment spell of much better quality than the corresponding variables from the EYC register, in which the employment duration often is set to the whole year. By using the information from the EE register we avoid under-estimating the monthly earnings for the jobs with short duration.

4.3. Linking the Labour Force Survey with the End of the Year Certificate register

When linking information from the annual wages registers to the LFS, a set of criteria are used to help identifying the employment spell from the register which refers to the main job given in the LFS. The main criterion is that the establishment the person has stated as the main employer is the same as the one registered in the EE. This is done when the End of the Year Certificate is linked to an employment spell registered in the EE. For individuals where we only have information from EYC register, the ID number of enterprises is used as identification. If the link between the jobs cannot be found by using the ID number of the establishment, information about industry will be compared. Below an overview of the different steps in the linking process is given.

For individuals with linked EYC register and EE register information, the records are chosen in the following order:

- The ID number of the establishment where the person is registered as an employee is the same as the one given in the LFS.
- The name of the establishment where the person is registered as an employee is the same as the one given in the LFS.
- Part of the name of the establishment where the person is registered as an employee is the same as the one given in the LFS.¹
- The 5-digit NACE code of the establishment where the person is registered as an employee is the same as the one given in the LFS.
- The 5-digit NACE code of the enterprise where the person is registered as an employee is the same as the one given in the LFS.
- The 2-digit NACE code of the establishment where the person is registered as an employee is the same as the one given in the LFS.
- The same personal ID

Table 4.1. Employed persons in the LFS by method of linking wage information from the EYC register. Per cent. Q1–Q4 2001.

Method of linking	Q 1		Q 2		Q 3		Q 4	
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	
LFS total employees (Not weighted)	13 915	100,00	13 376	100,00	13 786	100,00	14 026	100,00
Linked AA and EYC jobs								
1. PID * ESTID	7 525	54,08	7 549	56,44	7 962	57,75	8 218	58,59
2. PID * Establishment's name	922	6,63	820	6,13	792	5,74	817	5,82
3. PID * Part of establishment's name ¹	1 869	13,43	1 655	12,37	1 615	11,71	1 603	11,43
4. PID * Establishment's 5-digit industry code	1 173	8,43	1 056	7,89	1 015	7,36	981	6,99
5. PID * Enterprise's 5-digit industry code	43	0,31	41	0,31	44	0,32	34	0,24
6. PID * Establishment's 2-digit industry group	689	4,49	626	4,68	619	4,49	611	4,36
7. PID	380	2,73	344	2,57	389	2,82	396	2,82
EYC not linked to AA								
1. PID * ENTID	229	1,65	201	1,50	183	1,33	148	1,06
2. PID * Enterprise's 5-digit industry code	428	3,08	468	3,50	530	3,84	580	4,14
3. PID * Enterprise's 5-digit industry code	158	1,14	167	1,25	185	1,34	202	1,44
4. PID	331	2,38	297	2,22	304	2,21	287	2,05
LFS employees with no link to register	168	1,21	152	1,14	148	1,07	149	1,06

¹ 1) The first word of the establishment's name given in the LFS = The first word of the establishment's name identified in the

EE register, given that the length of the word is three characters or more.

2) The first word of the establishment's name given in the LFS = The second word of the establishment's name identified in

the EE register, given that the length of the word is three characters or more.

3) The second word of the establishment's name given in the LFS = The first word of the establishment's name identified in the EE register, given that the length of the word is three characters or more.

4) The second word of the establishment's name given in the LFS = The second word of the establishment's name identified in the EE register, given that the length of the word is three characters or more.

For approx. 91 per cent of the LFS population, we find information about annual compensation in cash linked with information from the EE register. Since the establishment is identified either by its ID number or its name, the wage information is correctly linked to the main job in the LFS for approx. 80 per cent of these linked LFS/register spells (method of linking 1 - 3). In the cases where a person has more than one job and the establishment in the register has not been identified as the same as in the LFS, there can be some uncertainty to whether the right wage information is being linked to the main job. People for whom we cannot find information about cash compensation in the LFS constitute about 1 per cent of the total LFS population.

4.4 Linking the Labour Force Survey with the wage registers from the public sector and the wage survey

In addition to the EYC register, information about monthly wages is also collected from the wage registers of the public sector, Central Register of Government Employees in the School System (CRGSS), the State Central Register of Government Employees (SCRGE) and from the Staff Administration Information System (SAIS), which contains data on employees in municipalities. The monthly wages from these registers will in some cases be used directly to replace extreme values. It will also be used for analysing the quality on the estimated figures.

In order to ensure that we are linking the main job in the LFS to the right wage information from the wage registers, a set of criteria is defined in the same manner as described in the previous chapter. The file used is LFS linked with EYC register/ Employment

Table 4.2. Employees in the LFS by method of linking wage information from the wage registers for the state and municipalities. Per cent. Q1–Q4 2001.

Method of linking	Q 1		Q 2		Q 3		Q 4	
	Per cent		Per cent		Per cent		Per cent	
Staff Administration Information System								
LFS total employees (Not weighted)	13 915	100,0	13 376	100,0	13 786	100,0	14 026	100,0
1. PID * ESTID	1 846	13,3	1 784	13,3	1 880	13,6	2 027	14,5
2. PID * Establishment's name	185	1,3	195	1,5	204	1,5	198	1,4
3. PID * Part of establishment's name	245	1,8	244	1,8	253	1,8	264	1,9
4. PID * sector	350	2,5	336	2,5	353	2,6	384	2,7
5. PID	83	0,6	79	0,6	62	0,5	55	0,4
LFS employees with no link to the register	11 206	80,5	10 738	80,3	11 034	80,0	11 098	79,1
State Central Register of Government Employees								
LFS total employees (Not weighted)	13 915	100,0	13 376	100,0	13 786	100,0	14 026	100,0
1. PID * sector	790	5,7	760	5,7	785	5,7	816	4,9
2. PID	77	0,6	62	0,5	63	0,5	46	0,1
LFS employees with no link to the register	13 048	93,8	12 554	93,9	12 938	93,8	13 164	95,0
Central Register of Government Employees in the School System								
LFS total employees (Not weighted)	13 915	100,0	13 376	100,0	13 786	100,0	14 026	100,0
1. PIN * Sector	714	5,1	661	4,9	666	4,8	690	5,8
2. PIN	17	0,1	18	0,1	15	0,1	15	0,3
LFS employees with no link to the register	13 184	94,7	12 697	94,9	13 105	95,1	13 321	93,9
The wage survey								
LFS total employees (Not weighted)	13 915	100,0	13 376	100,0	13 786	100,0	14 026	100,0
1. PID * ESTID	3 247	23,3	3 180	23,8	3 304	24,0	3 372	24,0
2. PID * Establishment's name	245	1,8	215	1,7	253	1,9	258	1,9
3. PID * Part of establishment's name	405	3,1	425	3,2	427	3,1	408	3,0
4. PID * sector	152	1,1	150	1,1	153	1,1	144	1,0
5. PID	206	1,5	178	1,3	166	1,2	176	1,3
LFS employees with no link to the register	9 624	69,2	9 228	69,0	9 483	68,8	9 668	68,9

5. Calculating monthly earnings

5.1 The breakdown of annual wages

As described in chapter four, information about annual wages from the EYC register are linked to about 99 per cent of the LFS population. For about 90 per cent of this group the information from the EYC are again linked to jobs registered in the EE. Information from the additional wage registers from public sector, and the wage survey, we find information for about 55 per cent of the population. The reference date for this information is 01. October 2001 (September). There is however a varying degree of certainty to whether the wage information is correctly linked the right job or not.

The basis for the calculation of monthly earnings below is mainly information about the annual compensation in cash from EYC register, broken down into monthly figures with the help of start and stops dates from the EE. In those cases where the employment spell are divided into several periods, the start and stop dates are adjusted so that the employment spell refers to one coherent period. For individuals not registered in the EE, only information from the EYC register is used.

The calculation of monthly wage is as follows:

- DE = number of days employed in the current year
 - MD = monthly weight
 - MW = monthly wages
 - CC = annual compensation in cash
-
- 1. $MD = (DE / 365) * 12$
 - 2. $MW = CC / MD$

The number of days employed in the current year is calculated for each registered employment spell. For the linked EYC/EE records start and stop dates from the EE are used. If the wage information is based only on EYC, the start and stop dates from this register, though flawed, are used.

The estimated length of the employment spell in the current year is used to calculate a monthly weight (1). If the fraction is less than 1, the result is set to 1. This means that if a person has worked less than a month, the total compensation in cash will constitute the monthly wage.

The estimated monthly wage is given by dividing the annual compensation in cash with the monthly weight (2).

5.2 Replacing extreme values

To check the quality of the calculations, comparisons are made with the monthly wage figures reported to the structural statistics for wages. 55 percent of the LFS population has information from both sources. An effort is then made to correct obvious miscalculations, which may occur due to wrong start and stop dates on the employment spell. For each person who now has information about their monthly earnings calculated by the EYC register, and monthly earnings reported through the structural earnings statistics, the difference between the two figures is calculated. For employees with the ten per cent highest differences, calculated earnings is replaced by the wage reported in the registers of public employees and the wage survey for employees in the private sector. This is only done in cases where all the register information is certain to refer to the main job in the LFS.

6. Results

Using information from the different wage registers described in this report, Statistics Norway has calculated monthly earnings for the LFS population for 2000 and 2001. In this chapter the results for the third quarter of 2001 are presented. The results for the third quarter of 2000 are given in Annex 3.

Firstly, some main figures describing the sample size and the calculated wage distribution are presented. In order to ensure that the estimated monthly earnings are satisfactory, section 6.2 shows an analysis made by comparing the wage data on an individual level with similar data collected through Statistics Norway's wages statistics. In section 6.3, the estimated average monthly earnings in the LFS are compared with published figures from Statistics Norway's Structural statistics for wages for full-time employees.

6.1 Results of the estimation of monthly earnings, Q3 2001.

Number of employees LFS 3. quarter 2001.....:	13 786
persons	
Number of employees LFS 3. quarter 2001, weighted.....:	2 101 983
persons	
Number of employees LFS 3. quarter 2001, with no wage info.:	148
persons	
Average wage.....:	2 588 euro
Minimum wage.....:	0 euro
Maximum	51 326 euro

Table 6.1 Employees in the LFS by wage group. Per cent. 3. quarter 2001.

Wage Groups	LFS	LFS	Per cent
	Not weighted	Weighted	
Total	13 786	2 101 983	100
0 euro	24	3 909	0,17
1 - 349 euro	767	116 205	5,56
350 - 699 euro	658	102 331	4,77
700 - 1 049 euro	650	98 151	4,71
1 050 - 1 399 euro	822	120 962	5,96
1 400 - 1 749 euro	847	125 324	6,14
1 750 - 2 099 euro	1 123	168 964	8,15
2 100 - 3 049 euro	1 582	236 064	11,48
2 450 - 2 699 euro	1 330	200 508	9,65
2 700 - 3 049 euro	1 638	246 425	11,88
3 050 - 3 399 euro	1 303	200 131	9,45
3 400 - 3 749 euro	824	126 406	5,98
3 750 - 4 099 euro	556	84 159	4,03
4 100 - 4 449 euro	364	58 237	2,64
Above 4 450 euro	1 150	189 069	8,34
Unknown	148	25 139	1,07

6.2 Comparing monthly earnings in the LFS with wage registers for the public sector and the wage survey on micro level

In this section a correlation analysis is made between the monthly earnings from the structural earnings statistics, reported in September or October, and the estimated monthly earnings from the LFS. The results show that the estimated mean wage is higher compared to the mean earnings reported in the different wage registers and the survey that constitutes the Structural statistics for wages. The difference varies from approximately 2 to 6 per cent.

The lowest correlation coefficient is found between the monthly earnings in the SAIS and the LFS. SAIS is the data source that contains most part time jobs compared to the other three data sources used by the structural wage statistics. Since the duration of part time jobs are more difficult to identify, it increases the possibility for miscalculating the wage figures.

Box 6.1 The correlation between monthly earnings in SAIS and the LFS

Variable	MEAN	Std Dev	Minimum	Maximum
Monthly earnings SAIS	2 148	1 053	13,1	9 079
Monthly earnings LFS	2 269	1 129	0	11 926
Pearson Correlation Coefficients, N = 2004				
			Monthly earnings LFS	
Monthly earnings SAIS	0,86771			

Box 6.2 The correlation between monthly earnings in CRGE and the LFS

Variable	MEAN	Std Dev	Minimum	Maximum
Monthly earnings CRGE	2 988	872	289	6 390
Monthly earnings LFS	3 083	924	289	7 860
Pearson Correlation Coefficients, N = 671				
			Monthly earnings LFS	
Monthly earnings CRGE	0,94278			

Box 6.3 The correlation between monthly earnings in CRGESS and the LFS

Variable	MEAN	Std Dev	Minimum	Maximum
Monthly earnings CRGESS	2 909	685	137	5 249
Monthly earnings LFS	2 979	719	137	5 067
Pearson Correlation Coefficients, N =				
			Monthly earnings LFS	
Monthly earnings CRGESS	0,96820			

Box 6.4 The correlation between monthly earnings in WS and the LFS

Variable	MEAN	Std Dev	Minimum	Maximum
Monthly earnings WS	2 938	1 327	78,7	11 436
Monthly earnings LFS	3 131	1 433	0	11 634
Pearson Correlation Coefficients, N = 2 883				
			Monthly earnings LFS	
Monthly earnings WS	0,95701			

6.3 Comparing mean monthly earnings with the Structural statistics for wages, Q3 2001

By selecting a group from the LFS population that refers to the same population that constitutes the Structural statistics for wages, comparisons between estimated average monthly earnings divided by age groups, industry and education are made. However, there are problems connected to using the third quarter as reference period. The LFS population will at this point in time contain a higher degree of people who are temporarily employed during the summer months. The estimation of a monthly wage for this group can be problematic due to the quality of start and stop dates of the employment spells in the EE register. In addition, it is also difficult to determine whether this group has a full or part time job during the quarter. In some cases a person will work full-time during the summer months, but go back to part time when schools start up again.

There is also a problem with comparability in the figures distributed by industry. Since public enterprises are included in public administration, which consists of employees in central government, municipalities and county municipalities the standard industrial classification (NACE) is not comparable with that of the Structural statistics for wages.

The comparisons show that the average monthly earnings differ most for the age group 16-24 years. This group consists of a high number of part time employees. As mentioned earlier, the quality of the register information for part time employees is flawed, especially when it comes to the dating of the employment spells. Since the method used to calculate monthly earnings is based on a breakdown of information about annual compensation in cash, the quality of start and stop dates of the different spells are of course important. The problem with identifying part time jobs and determining the duration of a spell is to some degree also present for the oldest age group, above 60. For the other wage groups the differences between the two wage figures only vary between 0 and 4 per cent.

The same line of arguments can be used when describing the differences in the results between men and women. Women more often work part time, and the figures show that the LFS figures on average monthly earnings differ more for women than men.

When it comes to average monthly earnings by section, the results show the highest differences for employees in oil and gas extraction. This is a section which uses overtime to a great extent. And it is often difficult to pinpoint exactly when the overtime is earned, which might explain why the results deviate as much as they do.

The figures for earnings by educational level strengthen the pattern described above, namely that for groups with a high degree of part time jobs, in this case people with primary and lower secondary education, the monthly wage earnings differ more than for other groups.

The figures for third quarter 2000, given in Annex 3, show that the results are stable from one year to another.

Table 6.1 Average earnings in LFS and SES for full-time employees by age group at Q3 2001. EURO.

Age group	Wages LFS	Wages SES	Difference LFS-SES	Difference LFS-SES (PCT)	Employees LFS	Employees SES
Males and females	3 134	3 232	-97	-3,10 %	1 247 801	794 724
-24 years	1 918	2 354	-436	-22,75 %	77 612	51 283
25 - 29 years	2 796	2 910	-115	-4,10 %	137 891	89 984
30 - 34 years	3 112	3 192	-80	-2,56 %	172 982	107 640
35 - 39 years	3 358	3 368	-10	-0,29 %	171 592	104 925
40 - 44 years	3 376	3 445	-69	-2,05 %	167 797	104 817
45 - 49 years	3 298	3 436	-138	-4,18 %	166 331	109 177
50 - 54 years	3 291	3 406	-115	-3,48 %	163 737	104 436
55 - 59 years	3 284	3 382	-98	-2,97 %	128 536	85 480
60 years and above	3 037	3 261	-224	-7,37 %	61 324	36 982

Table 6.2 Average monthly earnings LFS and SES for full time male employees by age group at Q3 2001. EURO.

Age group	Wages LFS	Wages SES	Difference LFS-SES	Difference LFS-SES (PCT)	Employees LFS	Employees SES
Males	3 444	3 420	24	0,70 %	777 282	483 974
-24 years	2 178	2 412	-235	-10,77 %	48 422	32 470
25 - 29 years	3 000	3 020	-20	-0,67 %	82 686	51 642
30 - 34 years	3 352	3 320	31	0,93 %	108 033	66 403
35 - 39 years	3 664	3 537	127	3,47 %	108 923	65 910
40 - 44 years	3 758	3 681	77	2,06 %	104 771	63 733
45 - 49 years	3 722	3 705	16	0,44 %	101 265	63 990
50 - 54 years	3 653	3 664	-11	-0,29 %	99 415	63 204
55 - 59 years	3 579	3 633	-54	-1,51 %	81 564	53 110
60 years and above	3 239	3 474	-235	-7,26 %	42 203	23 512

Table 6.3 Average monthly earnings LFS and SES for full time female employees by age group at Q3 2001. EURO.

Age group	Wages LFS	Wages SES	Difference LFS-SES	Difference LFS-SES (PCT)	Employees LFS	Employees SES
Males and females	2 623	2 870	-247	-9,43 %	470 519	310 750
-24 years	1 487	2 228	-741	-49,85 %	29 190	18 813
25 - 29 years	2 490	2 723	-233	-9,35 %	55 206	38 342
30 - 34 years	2 715	2 939	-225	-8,27 %	64 948	41 237
35 - 39 years	2 825	3 021	-196	-6,94 %	62 669	39 015
40 - 44 years	2 740	2 990	-250	-9,14 %	63 026	41 084
45 - 49 years	2 639	2 960	-321	-12,16 %	65 066	45 187
50 - 54 years	2 732	2 924	-192	-7,03 %	64 322	41 232
55 - 59 years	2 772	2 890	-117	-4,23 %	46 972	32 370
60 years and above	2 592	2 814	-8,56	116	19 121	13 470

Table 6.4 Average monthly earnings LFS and SES for full time employees by section at Q3, 2001. EURO.

Section	Wages	Wages	Difference	Difference	Employees	Employees
	LFS	SES	LFS-SES	LFS-SES (PCT)	LFS	SES
Males and females	3 134	3 232	-3,10	-3,10 %	1 247 801	794724
		0				
Oil and gas extraction, mining	5 635	5 032	10,70	10,70 %	29 801	20766
Manufacturing	3 107	3 156	-1,60	-1,60 %	212 505	134201
Electricity, gas and water supply	3 354	3 182	5,11	5,11 %	14 557	10673
Construction	3 056	3 057	-0,04	-0,04 %	104 657	40109
Employees in wholesale and retail trade	2 897	3 125	-7,89	-7,89 %	165 664	87857
Transport, storage and communication	3 236	3 250	-0,43	-0,43 %	104 881	44044
Financing	3 922	3 708	5,47	5,47 %	36 083	31049
Real estate, renting and business activities	3 708	3 822	-3,08	-3,08 %	130 802	48088
Central government	(3 077)	3 187	.	.	99 305	112690
Teaching staff, publicly maintained schools	(2982)	3 174	.	.	117 491	66751
Municipals and county municipals	.	2 877	.	.	.	161324
Private education	.	3 125	.	.	.	3977
Health and social work	2 564	2 679	-4,47	-4,47 %	188 376	15494
Social and personal service activities	2 968	3 279	-10,47	-10,47 %	43 526	17701
Unknown LFS	4 005	.	.	.	154	.

Table 6.5 Average monthly earnings LFS and SES for full-time male employees by section Q3 2001. EURO.

Section	Wages	Wages	Difference	Difference	Employees	Employees
	LFS	SES	LFS - SES	LFS-SES (PCT)	LFS	SES
Males	3 444	3 420	24	0,70 %	777 282	483 974
Oil and gas extraction, mining	5 801	5 227	574	9,90 %	25 378	17 022
Manufacturing	3 223	3 251	-28	-0,87 %	169 845	106 528
Electricity, gas and water supply	3 440	3 237	203	5,91 %	13 052	9 297
Construction	3 096	3 068	27	0,88 %	98 237	38 048
Employees in wholesale and retail trade	3 150	3 308	-158	-5,01 %	110 752	58 179
Transport, storage and communication	3 352	3 377	-25	-0,75 %	77 316	32 829
Financing	4 559	4 187	372	8,16 %	21 345	16 395
Real estate, renting and business activities	4 066	4 165	-99	-2,44 %	88 826	32 290
Central government	(3 398)	3 355	.	.	56 381	70 694
Teaching staff, publicly maintained schools	(3 270)	3 283	.	.	49 612	29 290
Municipals and county municipals	.	3 170	.	.	.	56 455
Private education	.	3 364	.	.	.	2 075
Health and social work	3 133	2 944	189	6,04 %	40 804	5 062
Social and personal service activities	3 312	3 493	-181	-5,46 %	25 580	9 810
Unknown LFS	4 005	.	.	.	154	.

Table 6.6 Average monthly earnings LFS and SES for full time female employees by section Q3 2001. EURO.

Section	Wages	Wages	Difference	Difference	Employees	Employees
	LFS	SES	LFS - SES	LFS-SES (PCT)	LFS	SES
Females	2 623	2 870	-247	-9,43 %	470 519	310 750
Oil and gas extraction, mining	4 682	4 151	531	11,34 %	4 423	3 744
Manufacturing	2 644	2 770	-126	-4,76 %	42 660	27 673
Electricity, gas and water supply	2 605	2 816	-211	-8,11 %	1 505	1 376
Construction	2 444	2 830	-386	-15,80 %	6 420	2 061
Employees in wholesale and retail trade	2 385	2 701	-315	-13,22 %	54 911	29 678
Transport, storage and communication	2 913	2 892	21	0,71 %	27 565	11 215
Financing	2 999	3 172	-173	-5,77 %	14 739	14 654
Real estate, renting and business activities	2 952	3 195	-243	-8,25 %	41 976	15 798
Central government	(2 654)	2 906	.	.	42 924	41 996
Teaching staff, publicly maintained schools	(2 771)	3 088	.	.	67 879	37 461
Municipals and county municipals	.	2 719	.	.	.	104 869
Private education	.	2 836	.	.	.	1 902
Health and social work	2 407	2 553	-146	-6,08 %	147 572	10 432
Social and personal service activities	2 478	2 999	-522	-21,05 %	17 946	7 891

Table 6.7 Average monthly earnings LFS and SES for full time employees by educational level at Q3 2001. EURO.

Educational Level	Wages	Wages	Difference	Difference	Employees	Employees
	LFS	SES	LFS-SES	LFS-SES (PCT)	LFS	SES
Males and Females	3 134	3 232	-97	-3,10 %	1 247 801	794 724
Primary and lower secondary education	2 550	2 811	-262	-10,26 %	113 921	87 184
Upper secondary education	2 855	3 003	-148	-5,20 %	671 432	389 073
Tertial education, 4 years or less	3 475	3 572	-97	-2,80 %	353 055	223 372
Tertial education, more than 4 years	4 379	4 432	-53	-1,21 %	108 502	76 494
Unknown or no completed education	2 354	3 060	-706	-29,97 %	891	18 601

Table 6.8 Average monthly earnings LFS and SES for full-time male employees by educational level at Q3 2001. EURO.

Educational Level	Wages	Wages	Difference	Difference	Employees	Employees
	LFS	SES	LFS-SES	LFS-SES (PCT)	LFS	SES
Males	3 444	3 420	24	0,70 %	777 282	483 974
Primary and lower secondary education	2 803	2 955	-152	-5,41 %	74 532	55 897
Upper secondary education	3 130	3 159	-29	-0,94 %	435 619	252 906
Tertial education, 4 years or less	3 936	3 953	-17	-0,43 %	187 601	109 635
Tertial education, more than 4 years	4 616	4 668	-51	-1,11 %	79 085	53 407
Unknown or no completed education	2 588	3 183	-595	-23,00 %	445	12 129

Table 6.9 Average monthly earnings LFS and SES for full time female employees by educational level at Q3 2001. EURO.

Educational Level	Wages	Wages	Difference	Difference	Employees	Employees
	LFS	SES	LFS-SES	LFS-SES (PCT)	LFS	SES
Females +-	2 623	2 870	-247	-9,43 %	470 519	310 750
Primary and lower secondary education	2 070	2 492	-421	-20,35 %	39 389	31 287
Upper secondary education	2 346	2 650	-305	-12,99 %	235 813	136 167
Tertial education, 4 years or less	2 952	3 132	-180	-6,10 %	165 454	113 737
Tertial education, more than 4 years	3 743	3 842	-99	-2,65 %	29 417	23 087
Unknown or no completed education	2 122	2 784	-662	-31,21 %	446	6 472

7. Conclusion

7.1 Main results

The object of this pilot was to examine the possibilities of collecting information about monthly earnings from administrative registers rather than adding questions to the Labour Force Survey's questionnaire. This report presents one way to utilize information from various Norwegian registers. Information about annual compensation in cash from the tax authorities is broken down into monthly figures by using start and stop dates for the different employment spells. The results from the third quarter 2001 show that the estimated earning figures are closest to the official structural statistics for wages for men working full-time. Evaluating the figures for third quarter 2000, we find that the method of calculation used provides stable results for the LFS compared to the structural statistics of wages from one year to the other.

Since the calculations are based on information from several administrative registers, the timeliness of these registers will affect when the monthly wage figures can be reported for the LFS population. An estimate of production time for the registers shows that the figures on monthly earnings for 2003 can be transmitted to Eurostat at the end of August the following year.

7.2 Improvements

There are improvements to be made. Calculations of the standard errors for the wage estimates indicate that the differences between the LFS estimates and the official the structural statistics of wages are greater than what can be explained by sample uncertainty. This means that more work has to be put into mapping the disparities between the two sources.

The comparisons also show that the differences in calculated earnings are larger for some age groups, industrial sections and educational levels. Since the quality of the register information varies for different groups, this has to be taken into account when the monthly earnings are being calculated. One approach is to identify problem groups, and then try to correct obvious errors in the data by utilizing more information from the linked administrative registers.

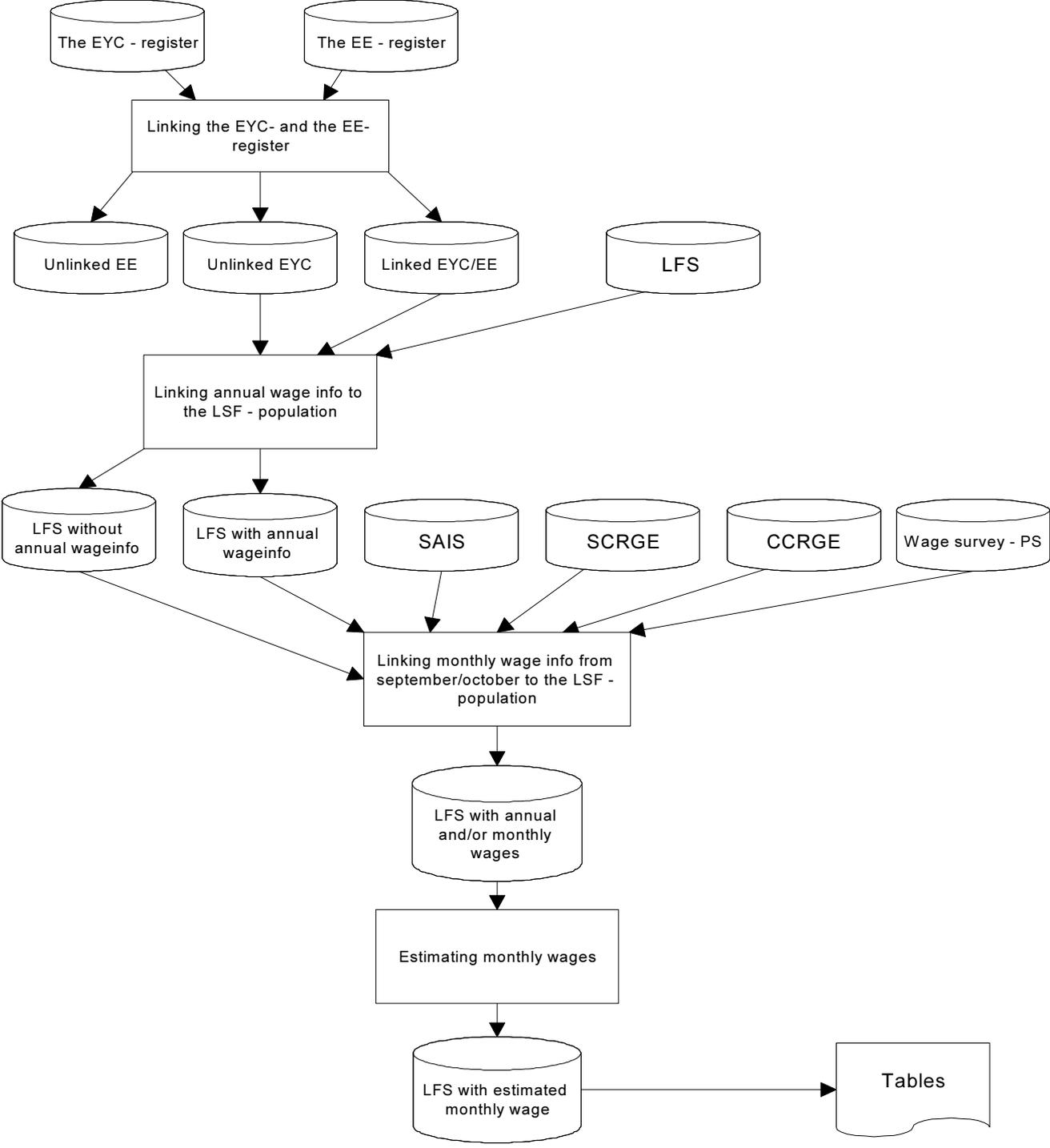
Annex 1

Compensation in cash

- 111-A Wages, salaries, fees and other remunerations (fixed space)
- 113-A Pay and other remunerations for work carried out abroad
- 114-A Board fees etc - foreigners
- 123 Wages in the event of bankruptcy - state guarantees etc
- 124-A Wages and other remunerations for work performed on the Norwegian Continental Shelf -foreigners
- 126-A Foreign seamen who do not pay tax in Norway but who are covered by the Norwegian National Insurance Scheme
- 127-A Wages paid by the Norwegian state but earned abroad **
- 128-A Bonuses paid by the military **
- 129 Wages and other remunerations which are not chargeable
- 134 Allowance paid to an au pair or assistant who looks after child(ren) at the child(ren)'s home **
- 139 Allowance paid by a charity or welfare institution or organisation **
- 140 Allowance paid to private individuals for a work at the employer's home **
- 141-A Wages paid through Labour Market Program **
- 142-A Waiting wages **
- 144 Payment to hired manpower on fishing, small whaling and sealing boats **
- 151-A Allowances for carrying out dirty job **
- 161-A Deductible scholarship **
- 912-A Payment to the fund for sportsmen **
- 913-A Income earned in Svalbard **
- 914-A Income earned in Jan Mayen **
- 949 Other various payment **
- 961-A Pay etc for employees employed on the net salary basis for work carried out in Norway
- 971-A Pay etc for employees employed on the net salary basis for work carried out abroad

Annex 2

Calculating monthly Wages



Annex 3

Comparing mean monthly earnings with the Structural statistics for wages, Q3 2000

Table A3.1 Full-time employees. Average monthly earnings LFS and SES by age group per Q3 2000. EURO.

Age group	Wages LFS	Wages SES	Difference LFS-SES	Difference LFS-SES (PCT)	Employees LFS	Employees SES
Males and females	2 970	3 070	-99	-3,34	1 225 702	783 535
			0			
-24 years	1 679	2 272	-592	-35,29	60 633	48 172
25 - 29 years	2 580	2 764	-184	-7,12	119 644	92 074
30 - 34 years	2 994	3 023	-30	-1,00	177 016	107 300
35 - 39 years	3 058	3 199	-141	-4,62	167 810	102 470
40 - 44 years	3 180	3 253	-73	-2,31	163 674	105 832
45 - 49 years	3 122	3 261	-138	-4,43	166 190	108 522
50 - 54 years	3 140	3 242	-103	-3,27	164 595	106 728
55 - 59 years	3 141	3 219	-78	-2,47	131 423	77 002
60 years and above	2 923	3 126	-204	-6,96	74 717	35 435

Table A3.2. Full-time employees, males. Average monthly earnings LFS and SES by age group per Q3 2000. EURO.

Age group	Wages LFS	Wages SES	Difference LFS-SES	Difference LFS-SES (PCT)	Employees LFS	Employees SES
Males	3 255	3 252	3	0,10	759 212	476 587
			0			
-24 years	1 837	2 330	-493	-26,81	37 550	30 169
25 - 29 years	2 790	2 869	-79	-2,82	69 664	52 591
30 - 34 years	3 160	3 148	12	0,37	108 714	66 439
35 - 39 years	3 344	3 363	-19	-0,57	107 834	64 211
40 - 44 years	3 525	3 486	39	1,10	100 858	64 298
45 - 49 years	3 464	3 517	-53	-1,52	101 374	63 802
50 - 54 years	3 509	3 492	16	0,47	100 192	64 700
55 - 59 years	3 484	3 455	28	0,81	81 351	47 850
60 years and above	3 141	3 338	-197	-6,28	51 674	22 527

Table A3.3. Full-time employees, females. Average monthly earnings LFS and SES by age group per 3rd quarter 2000. EURO.

Age group	Wages LFS	Wages SES	Difference LFS-SES	Difference LFS-SES (PCT)	Employees LFS	Employees SES
Males and females	2 507	2 718	-211	-8,43	466 490	306 948
-24 years	1 422	2 148	-726	-51,07	23 083	18 003
25 - 29 years	2 288	2 584	-297	-12,97	49 980	39 483
30 - 34 years	2 729	2 773	-44	-1,63	68 302	40 861
35 - 39 years	2 544	2 861	-317	-12,46	59 976	38 259
40 - 44 years	2 626	2 806	-181	-6,88	62 815	41 534
45 - 49 years	2 588	2 807	-219	-8,48	64 816	44 720
50 - 54 years	2 566	2 774	-208	-8,12	64 403	42 028
55 - 59 years	2 584	2 748	-164	-6,35	50 071	29 152
60 years and above	2 433	2 672	-238	-9,80	23 044	12 908

Table A3.4 Full-time employees. Average monthly earnings LFS and SES, by section per Q3 2000. EURO.

Section	Wages	Wages	Difference	Difference	Employees	Employees
	LFS	SES	LFS-SES	LFS-SES (PCT)	LFS	SES
Males and females	2 970	3 070	-99	-3,34	1 225 702	783 535
			0			
Oil and gas extraction, mining	5 028	4 655	373	7,42	25 049	21 750
Manufacturing	2 990	3 006	-16	-0,54	206 306	126 567
Electricity, gas and water supply	3 138	3 005	132	4,22	16 824	11 001
Construction	2 874	2 918	-44	-1,54	96 142	37 037
Employees in wholesale and retail trade	2 819	2 976	-157	-5,56	177 260	83 140
Transport, storage and communication	3 042	3 100	-58	-1,92	109 258	45 122
Financing	3 687	3 548	139	3,76	35 726	30 161
Real estate, renting and business activities	3 589	3 643	-54	-1,52	113 937	50 919
Central government	2 996	3 072	-75	-2,52	102 033	112 754
Teaching staff, publicly maintained schools	2 714	3 050	-336	-12,39	114 965	66 469
Municipals and county municipals		2 722				162 217
Private education		2 950				3 728
Health and social work	2 498	2 562	-64	-2,58	185 173	16 221
Social and personal service activities	2 734	3 148	-413	-15,11	41 608	16 449
Unknown LFS	1 785				1 422	

Table A3.5 Full-time employees, males. Average monthly earnings LFS and SES, by section per Q3 2000. EURO.

Section	Wages	Wages	Difference	Difference	Employees	Employees
	LFS	SES	LFS - SES	LFS-SES (PCT)	LFS	SES
Males	3 255	3 252	3	0,10	759 212	476 587
Oil and gas extraction, mining	5 350	4 834	516	9,64	20 858	17 968
Manufacturing	3 099	3 098	1	0,04	165 303	99 883
Electricity, gas and water supply	3 186	3 052	133	4,19	14 209	9 623
Construction	2 904	2 930	-25	-0,88	90 238	35 016
Employees in wholesale and retail trade	3 108	3 161	-53	-1,71	119 259	55 247
Transport, storage and communication	3 191	3 231	-39	-1,23	79 839	33 212
Financing	4 255	4 012	242	5,69	18 798	16 030
Real estate, renting and business activities	4 028	3 972	55	1,38	75 793	34 828
Central government	3 175	3 233	-57	-1,80	59 164	71 632
Teaching staff, publicly maintained schools	2 957	3 166	-209	-7,07	49 799	29 290
Municipals and county municipals		2 981	-2 981			57 515
Private education		3 161	-3 161			1 919
Health and social work	2 945	2 867	78	2,64	41 214	5 301
Social and personal service activities	3 013	3 380	-367	-12,18	23 549	9 123
Unknown LFS	1 710		1 710		1 186	

Table A3.6 Full-time employees, females. Average monthly earnings LFS and SES, by section per Q3 2000. EURO.

Section	Wages	Wages	Difference	Difference	Employees	Employees
	LFS	SES	LFS - SES	LFS-SES (PCT)	LFS	SES
Females	2 507	2 718	-211	-8,43	466 490	306 948
Oil and gas extraction, mining	3 425	3 784	-359	-10,49	4 191	3 782
Manufacturing	2 548	2 639	-92	-3,60	41 002	26 684
Electricity, gas and water supply	2 876	2 679	198	6,87	2 614	1 378
Construction	2 408	2 691	-283	-11,76	5 904	2 021
Employees in wholesale and retail trade	2 224	2 551	-327	-14,68	58 001	27 893
Transport, storage and communication	2 636	2 736	-100	-3,80	29 419	11 910
Financing	3 057	3 026	32	1,03	16 928	14 131
Real estate, renting and business activities	2 716	3 023	-306	-11,28	38 144	16 091
Central government	2 749	2 791	-42	-1,54	42 868	41 122
Teaching staff, publicly maintained schools	2 527	2 958	-431	-17,04	65 166	37 179
Municipals and county municipals		2 580	-2 580			104 702
Private education		2 706	-2 706			1 809
Health and social work	2 369	2 420	-51	-2,15	143 959	10 920
Social and personal service activities	2 371	2 840	-469	-19,80	18 058	7 326

Table A3.7. Full-time employees. Average monthly earnings LFS and SES by educational level per Q3 2000. EURO.

Educational Level	Wages	Wages	Difference	Difference	Employees	Employees
	LFS	SES	LFS-SES	LFS-SES (PCT)	LFS	SES
Males and Females	2 970	3 070	-99	-3,34	1 225 702	783 535
Primary and lower secondary education	2 430	2 662	-232	-9,53	117 566	69 838
Upper secondary education	2 861	2 862	-1	-0,03	808 635	396 440
Tertial education, 4 years or less	3 192	3 378	-185	-5,81	200 607	222 794
Tertial education, more than 4 years	4 066	4 181	-115	-2,83	98 335	78 366
Unknown or no completed education	2 448	2 982	-534	-21,81	558	16 097

Table A3.8 Full-time employees, males. Average monthly earnings LFS and SES by educational level per Q3 2000. EURO.

Educational Level	Wages	Wages	Difference	Difference	Employees	Employees
	LFS	SES	LFS-SES	LFS-SES (PCT)	LFS	SES
Males	3 255	3 252	3	0,10	759 212	476 587
Primary and lower secondary education	2 626	2 792	-166	-6,31	80 431	45 580
Upper secondary education	3 149	3 017	131	4,17	514 588	255 650
Tertial education, 4 years or less	3 654	3 736	-82	-2,26	95 839	109 415
Tertial education, more than 4 years	4 254	4 401	-147	-3,45	67 795	55 394
Unknown or no completed education	2 448	3 103	-655	-26,75	558	10 548

Table A3.9 Full-time employees, females. Average monthly earnings LFS and SES by educational level per Q3 2000. EURO.

Educational Level	Wages	Wages	Difference	Difference	Employees	Employees
	LFS	SES	LFS-SES	LFS-SES (PCT)	LFS	SES
Females	2 507	2 718	-211	-8,43	466 490	306 948
Primary and lower secondary education	2 006	2 352	-346	-17,25	37 135	24 258
Upper secondary education	2 358	2 518	-160	-6,80	294 047	140 790
Tertial education, 4 years or less	2 770	2 963	-193	-6,98	104 768	113 379
Tertial education, more than 4 years	3 648	3 608	41	1,11	30 540	22 972
Unknown or no completed education		2 691				5 549

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