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Statistics Norway
Statistisk sentralbyrå

Thomas Hagen

Labour cost index

Quality report 2012

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Quality report 2012

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Symbols in tables	**Symbol**
Category not applicable	.
Data not available	..
Data not yet available	…
Not for publication	:
Nil	-
Less than 0.5 of unit employed	0
Less than 0.05 of unit employed	0.0
Provisional or preliminary figure	*
Break in the homogeneity of a vertical series	—
Break in the homogeneity of a horizontal series	|
Decimal punctuation mark	.

Preface

The quality reports on Labour Cost Index is regulated legally through the Commission Regulation (EC) No 1216/2003 of 7 July 2003 implementing Council Regulation (EC) No 450/2003. A report must be delivered to Eurostat yearly. This document accompanied the data on the Norwegian Labour Cost Index that was forwarded to Eurostat for the year 2012.

The report only covers the aspects regulated by the regulations and does not discuss any documentation or analysis of the results from the statistics.

Statistics Norway, 30 September 2012

Torstein Bye

Abstract

This quality report accompanied the data on the Norwegian Labour Cost Index 2012 that was forwarded to Eurostat. The quality reporting is regulated legally through council and commission regulations. The following report is built up and formulated to adhere to the Commission. Regulation (EC) No 1216/2003 of 7 July 2003 implementing Council Regulation (EC) No 450/2003 concerning the quality evaluation of the Labour Cost Index.

Contents

1. Introduction

This report covers all the main points related to quality that are covered and commented on in connection with the publication of statistics, and in this case statistics on labour cost index. The aim is to supply information on the quality of the data and statistics from Norway that are reported to and distributed by Eurostat in connection with the Labour Cost Index 2012.

The report only covers the aspects regulated by the aforementioned regulations and does not discuss any documentation or analysis of the results from the statistics.

2. Relevance

The quarterly Labour Cost Index (LCI) is primarily used by the Technical Reporting Committee on Income Settlement, research institutes, employees and employer organizations, Eurostat, the media, business and industry.

There are no feedback from our users indicating that the LCI does not meet their needs.

3. Accuracy

We do not collect data specifically for the LCI. The main sources of data are the quarterly wage index, the Structural Earnings Survey (SES), the Register of End of the Year Certificate and the Labour Cost Survey. Some of the variables are estimated from the raw data for the quarterly wage index. There is some uncertainty in these calculations, especially for overtime hours, because these variables are not subject to the same quality checks as the variables that are directly taken from the published wage index.

3.1. Revision history

The most significant revision of the LCI was made after the publication of the Labour Cost Survey (LCS) for 2008. This survey gives an overview over the costs of having an employee. The LCI is supposed to measure the quarterly growth in the same costs. If the four year growth in the LCI does not match the growth between the former and the current LCS, it has to be revised. By adjusting the growth for each quarter in the LCI by the same factor we can keep the quarterly variations and at the same time have the LCI reflect the development between the Labour Cost Surveys.

In addition to the adjustment caused by the LCS, there have been some revisions in connection with the new standard of industrial classification and some minor corrections caused by delayed updating of our regular source data. Reports on overtime and overtime hours have been of fluctuating quality, and data for part-time workers have also shown variation that often seems unreasonable.

There was no revision in the LCI in 2012.

3.2. Coverage and frequency

The sources for the LCI are updated and revised with different frequencies. Data on benefits in kind and employers tax are updated annually. Data on other indirect costs is updated every four years when the LCS is published. These data are normally not revised later. Data on wages and hours worked are updated before every publication. There is usually one revision of the quarterly wage data each year, when the SES is published. The following will give a short introduction to the four main sources of the LCI:

The Labour Cost Survey (LCS)
The Labour Cost Surveys are conducted every fourth year, with the first in 1996 (Regulation (EC) no 530/1999). The term 'labour cost' used in these surveys and the term 'labour cost' used in the LCI are identical. The Labour Cost Surveys from 1996, 2000 and 2004 were published according to NACE 2002 and covered economic activities C-O with the exception of L. The LCS of 2008 was published according to both classifications and covered the same sections as the LCI. The Labour Cost Surveys are the foundation upon which the LCI is developed, being the basic data source used to establish the level and structure of labour costs.

The quarterly wage index (QWI)
The quarterly wage index covers economic activities B-S, with the exceptions of O, and measures changes in total monthly earnings, which include basic paid salaries, irregular payments and bonuses. The survey also covers variables such as contractual working hours, paid overtime hours and overtime pay. The quarterly wage index is used to measure the development of direct labour costs and is a key source with regard to the estimation of employers' tax, which is a significant proportion of indirect labour costs.

Structural Earnings Survey (SES)
The annual structural survey on wages covers all economic activities and provides information on the level, structure and changes in wages once a year. Like the quarterly wage index, it has no information on indirect labour costs. It is used to gain insight into the composition of the different types of wages and, at the same time, used to establish the level of wages.

The Register of End of the Year Certificate (REYC)
The Register of End of the Year Certificate is the main source of data on indirect labour costs. This includes salaries in kind and taxes. It is a central source of data used in the Labour Cost Surveys.

The following table gives an overview over the frequency of updates of the sources:

Source	Frequency	Data provided
Quarterly wage index	Quarterly	Change in direct labour cost and hours worked.
Structural Earnings Survey	Annual	Level of direct labour cost and hours worked in the 3rd quarter
Labour Cost Survey	Every fourth year	Level and structure of labour costs, some indirect costs
Register of End of the Year Certificate	Annual	Most indirect labour costs
SES	Annual	Weights for full-time/part-time workers
REYC	Annual	Weights based on aggregate costs

The quarterly changes are mainly determined by the Quarterly Wage Index since it provides a quarterly source for changes in wages and hours worked. This data also forms the basis of employer social security contributions. The estimates for changes in other costs are preliminary until the final figures for the whole year are available, which is usually for the publication in the second quarter of each year. This period however was extended last year in connection with the transition to NACE 2007.

All enterprises in the industry concerned, with employees during the quarter of interest, constitute the universe. All enterprises that according to the Central Register of Establishments and Enterprises have employees within the quarter and

industry in question comprise the available population to be used to describe this universe.

The quarterly wage index is compiled on the basis of reports from a representative sample of enterprises grouped according to employment and industry. The sample of the quarterly statistics is drawn among enterprises that are included in the annual wage statistics. Enterprises with less than 3 to 10 employees, dependent of the industry, are not included in the sample. Each year around 25 per cent of the small and medium-sized enterprises are replaced with new ones.

The sampling unit is enterprises grouped by industry, i.e. the enterprises are split up if it has establishments in several industries. A statement is filled out for each establishment in the enterprise.

Some of the samples are specially drawn. In construction, sampling is made according to specific divisions by industry to ensure information for the building cost index. For example, a greater number of units are sampled in the transport and communications sector to ensure their use in the lorry cost index. In this section, we also draw additional units for use in statistics concerning domestic sea transport and passenger land transport.

The following table gives an overview of the population and samples within each industry in 2012:

2012 Industry	Population ≥5 employees, 2012	Sample for annual structural survey on wages, 2012	Sample for quarterly wage index, base for LCI, 2012	Sample percentage	
				Of population	Sample of sample
B					
Enterprises	312	157	73	50,3 %	46,5 %
Establishments .	538	366	250	68,0 %	68,3 %
Employment	57 254	52 830	46971	92,3 %	88,9 %
C					
Enterprises	4811	1681	421	34,9 %	25,0 %
Establishments .	6278	2759	1215	43,9 %	44,0 %
Employment	211090	149834	106203	71,0 %	70,9%
D					
Enterprises	282	86	68	30,5 %	79,1 %
Establishments .	614	273	242	44,5 %	88,6 %
Employment	14584	8519	7693	58,4 %	90,3 %
E					
Enterprises	322	111	72	34,5 %	64,9 %
Establishments .	521	277	219	53,2 %	79,1 %
Employment	10194	5879	4933	57,7 %	83,9 %
F					
Enterprises	6310	1832	302	29,0 %	16,5 %
Establishments .	7044	2426	784	34,4 %	32,3 %
Employment	145509	78767	42905	54,1 %	54,5 %
G					
Enterprises	13912	4242	237	30,5 %	5,6 %
Establishments .	27015	14698	5203	54,4 %	35,4 %
Employment	313203	188179	81341	60,1 %	43,2 %
H					
Enterprises	2836	875	191	30,9 %	21,8 %
Establishments .	3981	1945	1153	48,9 %	59,3 %
Employment	115086	89042	69932	77,4 %	78,5 %
I					
Enterprises	4673	1491	124	31,9 %	8,3 %
Establishments .	6427	3099	1162	48,2 %	37,5 %
Employment	79972	52881	18897	66,1 %	35,7 %
J					
Enterprises	1793	661	118	36,9 %	17,9 %
Establishments .	2472	1194	506	48,3 %	42,4 %
Employment	71948	52 623	37 707	73,1 %	71,7 %
K					
Enterprises	654	500	105	76,5 %	21,0 %
Establishments .	1921	1759	1154	91,6 %	65,6 %
Employment	45195	43966	33347	97,3 %	75,8 %
L					
Enterprises	1198	446	47	37,2 %	10,5 %
Establishments .	1678	893	388	53,2 %	43,4 %
Employment	13467	8887	3668	66,0 %	41,3 %
M					
Enterprises	3756	1428	126	38,0 %	8,8 %
Establishments .	4788	2361	681	49,3 %	28,8 %
Employment	85563	63775	32169	74,5 %	50,4 %
N					
Enterprises	2549	791	104	31,0 %	13,1 %
Establishments .	3936	2019	994	51,3 %	49,2 %
Employment	110280	75723	48861	68,7 %	64,5 %
.....					
P					
Enterprises	799	338	56	42,3 %	16,6 %
Establishments .	997	500	137	50,2 %	27,4 %
Employment	17415	12138	4327	69,7 %	35,6 %
Q					
Enterprises	3984	1616	181	40,6 %	11,2 %
Establishments .	6545	3901	1844	59,6 %	47,3 %
Employment	205045	177080	140115	86,4 %	79,1 %
R					
Enterprises	802	436	95	54,4 %	21,8 %
Establishments .	1103	717	325	65,0 %	45,3 %
Employment	21238	17555	9921	82,7 %	56,5 %
S					
Enterprises	1883	893	124	47,4 %	13,9 %
Establishments .	2932	1866	728	63,6 %	39,0 %
Employment	26881	20185	10505	75,1 %	52,0 %

The following table shows the percentage of respondents at the level of enterprises:

	2nd Quarter 2013		
Industry	Sample	Answers	Percentage
B	73	72	98,6
C	421	419	99,5
D	68	68	100,0
E	72	72	100,0
F	302	299	99,0
G	237	237	100,0
H	191	191	100,0
I	124	123	99,2
J	131	129	98,5
K	105	105	100,0
L	47	47	100,0
M	126	123	97,6
N	104	103	99
P	56	56	100
Q	153	153	100
R	95	94	98,9
S	124	124	100
Total	2 429	2 415	99,4

The sample size increased with about 20% from 2011 til 2012 to secure data in all divisions through the sections B to S.

3.3. Estimation

The LCI is a Laspeyres index based on the sources described in chapter 2.1. There is no data collection for the LCI, but some variables are computed from the raw data for other statistics.

The LCI is computed from several sub indexes of different labour cost components as in the LCS. Preliminary figures are estimated from the quarterly wage index. These figures are adjusted according to information from the yearly wage statistics and administrative registers, mainly the Register of End of the Year Certificate.

Notation in brief

Y_{ci}^{tj}	cost c pr. hour in industry i for quarter t in year j
h^{tj}	number of hours worked in quarter t year j
$I_{ci}^{tj,k}$	index of cost pr. hour for cost c in industry i in quarter t in year j related to the base year k
e_{ci}^{tj}	error term that may be estimated
v_{ci}^{k}	fixed weight for cost c in industry i related to the base year k

Total labour costs is broken down into the following components:

Direct labour costs:
1 Wages and salaries
2 Payments for days not worked

Indirect labour costs:
3 Salaries in kind
4 Costs of health and safety
5 Social contributions
6 Training costs
7 Taxes

In each industry sub indexes give indications of labour costs per hour for each of these components.

Laspeyres price index
A general Laspeyres price index for change in price from period k to t is given as

$$P^{t,k} = \frac{\sum_i \frac{P_i^t}{P_i^k}(P_i^k Q_i^k)}{\sum_i P_i^k Q_i^k} = \frac{\sum_i P_i^t Q_i^k}{\sum_i P_i^k Q_i^k}$$

where P_i^k and P_i^t represent the price of goods i for period k and t, and where Q_i^k is the quantity of goods i in period k.

Sub indexes of labour costs components
Indexes for direct, indirect and total labour costs in a specific industry may be stated as:

$$I_{dir} = \frac{v_1 I_1 + v_2 I_2}{v_1 + v_2},$$

$$I_{ind} = \frac{v_3 I_3 + v_4 I_4 + v_5 I_5 + v_6 I_6 + v_7 I_7}{v_3 + v_4 + v_5 + v_6 + v_7},$$

and

$$I_{tot} = (v_1 + v_2) I_{dir} + (v_3 + v_4 + v_5 + v_6 + v_7) I_{ind},$$

where the sum of the weights is 100

$$\sum_c v_c = 100$$

and where each weight represents each cost component's share of the total labour cost.

The weights are calculated on the basis of figures from the LCS.

3.3.1. Estimation of sub indexes

This section describes how index series can be calculated at the end of each quarter. All calculations are shown within one industry to simplify notation. The 'i's referring to industries in the formulas are skipped.

The sources for labour costs data
Data will be collected from the quarterly wage index, annual wage surveys and administrative registers, and from the Labour Cost Survey which gives level of labour costs every 4th year. Estimation of the index for labour cost c for the quarter t in year j from these sources can thus be described as

$$I_c^{tj,k} = \frac{Y_c^{tj}}{Y_c^k} = \frac{\sum_c \alpha_c^{tj} X_c^{tj} + \sum_c \beta_c^j X_c^j + \sum_c \gamma_c^r X_c^r}{\sum_c X_c^k}$$

where

α_c^j relates to information of quarter t from the quarterly wage index ,

β_c^j relates to the utilization of data about a whole year j,

γ_c^r relates to information available each 4th year r of the LCS, and
X_c^k represents the known costs of year k.

Direct labour costs
Data concerning direct labour costs is collected from the quarterly wage index. This index measures total monthly earnings and includes all irregular payments, bonuses, commissions and the like. Overtime payment is not included, therefore this cost component must be added. The estimation treats payment for overtime in the same way that irregular payments and bonuses are treated in the quarterly wage index.

It is assumed that other costs which are included in the concept direct labour costs, but are not covered by the wage statistics, have the same pattern of change as the observed known costs.

A preliminary index for direct labour costs therefore may be stated as the ratio of the level of monthly earnings pr hour Y_{dir}^t in quarter t and the respective monthly earnings at the quarter of reference k:

$$I_{dir}^* = \frac{Y_{dir}^t}{Y_{dir}^k}$$

Taxes
The employers' tax alone covers about half of this labour cost component, and this tax can be derived from direct labour costs. Another component is the additional employers' tax for high wages, which is available from the Register of End of Year Certificates but cannot be calculated from the quarterly wage index.

The principle for estimating an index based on numbers from the register of End of Year Certificates is first to establish a (yearly) relationship between direct labour costs and costs observed in the register

$$p_{tax}^j = \frac{Y_{tax,LTO}^{j-1}}{Y_{dir}^{j-1}}$$

where $Y_{tax,LTO}^j$ represent employers' tax year j according to the register.

The relationship in a specific quarter becomes

$$Y_{tax}^{*tj} = p_{tax}^j Y_{dir}^{*tj}$$

The index for such taxes/labour costs can thus be stated as

$$I_{tax}^{*tj} = \frac{Y_{tax}^{*t}}{Y_{tax}^k}$$

This means that the labour cost 'taxes' will perform the same relative change in index as direct labour costs. And the relationship between the level of taxes and the level of direct labour cost will be updated from the Register of End of Year Certificates in year t+1.

Salaries in kind
No quarterly up to date information is available regarding salaries in kind. It is therefore assumed that salaries in kind evolve in the same magnitude as the quarterly wage index. This component of indirect labour costs will be treated as changing with the index for direct labour costs like

$$\frac{I_{sal}^{t}}{I_{sal}^{t-1}} = \frac{I_{dir}^{t}}{I_{dir}^{t-1}}$$

so that an index for quarter t can be written as

$$I_{sal}^{*t} = I_{sal}^{t-1} \frac{I_{dir}^{t}}{I_{dir}^{t-1}}$$

Salaries in kind is a cost component that may be controlled against information that is available only at the end of each following year. For a general cost c the change observed in the Register of End of Year Certificates can be written

$$I_{c}^{*j} = I_{c}^{j-1} = \frac{Y_{c,LTO}^{j-1}}{Y_{c}^{k}}$$

Other indirect labour costs
For the remaining indirect labour costs, that is costs of safety and health, costs of training and other social contributions, a very simple model is used. The model takes the information about the development in costs between the two last labour costs surveys, in year r and r-1, and assumes that the costs change evenly across the quarters in terms of absolute numbers.

$$I_{oth}^{*t} = \frac{Y_{oth}^{*t}}{Y_{oth}^{*t-1}} = \frac{Y_{oth}^{*t-1} + \frac{Y_{oth}^{r} - Y_{oth}^{r-1}}{16}}{Y_{oth}^{*t-1}}$$

The fraction part of the nominator is held constant between two consecutive Labour Cost Surveys, a time period consisting of 16 quarters.

Indirect labour costs
The index of total indirect labour costs may be written as a weighted sum of the sub indexes (c=3,...7):

$$I_{ind}^{*tj} = \frac{v_3 I_3^{*tj} + v_4 I_4^{*tj} + v_5 I_5^{*tj} + v_6 I_6^{*tj} + v_7 I_7^{*tj}}{v_3 + v_4 + v_5 + v_6 + v_7}$$

3.3.2. Weighting across industries

To calculate the index for a specific cost r across all industries, each index I_i^r from industry i is weighted according to the aggregate of this cost component in the respective industry.

$$I^r = \sum_i \frac{C_i^r}{C^r} I_i^r = \sum_i v_i^r I_i^r$$

where C_i^r represents the aggregate costs in industry i and where

$$C^r = \sum_i C_i^r$$

is the sum of aggregate costs in all the industries of interest.

This way of weighting across industries complies with the methods of weighting across industries which are established in Statistics Norway's wage statistics for full-time employees.

To measure change in cost per hour from period k to t for a specific cost c, the above general Laspeyres formula can be written as

$$L_c^{tj,k} = \sum_i v_i^k I_{ci}^{tj,k}$$

Here the index $I_{ci}^{tj,k}$ is change in cost (P_i^t / P_i^k) and the weight v_i^k represents industry i 's share of the total for base period k.

This expression is comparable with the formula $LCI_{tj(k)}$ established in the annex of the commission draft regulation (Eurostat/E1/Sal/10/01 Annex 2), where the weight of industry i is given as

$$v_i^k = \frac{w_i^k h_i^k}{\sum_i \omega_i^k h_i^k} = \frac{W_i^k}{\sum_i W_i^k}$$

3.3.3. Controlling and adjusting the index series using administrative registers

The index for indirect costs is adjusted using data from the Register of End of the Year Certificates. Salaries in kind, social contributions and taxes are estimated each year and these variables are included in the raw data for the LCI. Other indirect costs are not available in the yearly registers. Estimation of these costs has to be made using data from the Labour Cost Survey.

3.4. Hours worked

There are three sources of data, with respect to hours worked. The first is the Labour Cost Survey, which covers the number of hours paid in a year. The second is structural statistics on wages, which covers contractual working hours per week and overtime hours paid so far this year. The third is the quarterly wage index where overtime hours paid so far this year and contractual working hours per week are collected.

Contractual hours including paid overtime hours should in this case be viewed as gross hours or rather just hours paid. For all practical purposes we then still need to include, or subtract in this case, hours that are paid and not worked. The result of this exercise will then be hours worked. The costs are of course unaffected since we exclusively are concerned with working time in this chapter. The last factor to address is hours worked and not paid, but it seems that it will be too much of a stretch to cover this concept in this stage.

Paid hours in general cover all contractual hours that are paid, such as paid overtime hours, paid holidays and paid leave of absence for sickness, education and maternity leave. For a Labour Cost Survey it would be of relevance to be able to identify all facets of working hours. However the Norwegian LCI will initially be restricted to estimate actually worked hours as a function of paid hours and overtime hours, and thereafter subtracting hours paid but not worked.

An unadjusted series of the Norwegian LCI would therefore only cover hours actually worked, except for hours that are worked but not paid. A series adjusted for actual working days would take into account effects such as:

- Differences in amount of possible working days between quarters (all days in a quarter excluding weekends. Actual amount of agreed hours covers problems in differentiating between ordinary working-hours and shift-work.)
- Differences in paid holidays between the quarters
- Differences in other paid public holidays between the quarters

This working day adjusted series would exclude the effect of differences between quarters due to calendar-effects, and only cover seasonal effects that are directly explained through the differences in the number of working days that regularly occur between years.

3.5. Backcasting and the transition to NACE rev. 2.

When transitioning the Norwegian LCI to NACE Rev. 2 and backcasting it back to 2000, the methodology was chosen on the basis of the Backcasting Handbook published by Eurostat.

Direct Costs

Three distinct methods were used when backcasting the direct costs. For 2008 all enterprises were dual-coded according to both NACE rev.1 and 2. The 2008 index is thus based on the dual coding in the register.

This dual-coding was then used to individually recode each enterprise in the 2007 data. In other words, a micro method was used in order to reclassify the enterprises according to the new data and then recalculate the index. This approach assumes that enterprises should have the same classification in 2007 and 2008, which is true in almost all cases.

For all years prior to 2007 a macro method was instead chosen, since the micro method became infeasible. A conversion matrix between the two revisions was established based on 2008 data, which was subsequently used to redistribute the aggregated data according to the new revision. These data were then used to provide an estimate for the new index.

Indirect Costs

For the indirect costs from the Labour Cost Survey and the Register of End of Year Certificates micro methods were either unavailable, or would be so time-consuming so as to be impractical, in particular considering the inevitable revisions when the next Labour Cost Survey was released. Thus, a simple macro method was adopted for all years similar to the one used for direct costs prior to 2007. When the Labour Cost Survey for 2008 was released, data on indirect costs was revised.

4. Timeliness and punctuality

For 2012 Statistics Norway delivered the LCI to Eurostat on schedule, at the same date as national release of the statistics, and within 70 days past the end of the reference period.

5. Accessibility and clarity

The statistics are published electronically at Statistics Norway's website at http://www.ssb.no/en/aki, and in StatBank (http://www.ssb.no/en/statistikkbanken - “Labour market and earnings” – “Labour costs” – “Index of labour costs”).

Metadata is found at “About the statistics” at http://www.ssb.no/en/aki. The Statistics on Labour Cost Index are released at 10.00am on the day given in the statistics calendar: http://www.ssb.no/en/kalender.

The indices are sent to Eurostat at the same time as the LCI is published nationally.

6. Comparability and coherence

6.1. Comparability

The LCI has been estimated according to the same methodology as before, and the index should be comparable. The LCS and SES have been published with industries classified according to NACE 2007 and there have been some revisions of data for the years 2004-2008. This has resolved some of the uncertainty in connection with the transition from NACE 2002.

6.2. Coherence

Other statistics that could be used to measure direct labour costs include the wage index and the wage-cost statistics from the National Accounts. There are some significant differences between the direct LCI and these statistics. The wage index does not include part-time employees, hours and overtime pay and it measures the development of wages per month. The LCI measures cost per hour, and it includes payments for overtime. The statistics from the National Accounts covers aggregate wage costs and annual changes in average yearly salaries.

7. Completeness

Statistics Norway has delivered the LCI for all relevant NACE sections, except for O, for the years 2000-2012.

7.1. Further developments

7.1.1. Estimation of growth in labour costs between 1996 and 2000

In addition to the indices for 2000-2012, Statistics Norway now delivers indexes for the years 1996-1999. These numbers are calculated on basis of surveys and statistics that have already been published.

The data used in these calculations are mainly taken from the following sources:

- The Register of End of the Year Certificate
- The Labour Cost Surveys of 1996 and 2000
- The Structural Earnings Surveys (SES)
- Calculations on growth in wages from the National Accounts
- The quarterly wage indexes for the NACE sections B, C, D, F, G and H

For all sources the data is classified according to the former standard for industrial classification. For some sections the changes in the classification have been insignificant and the variables have been calculated directly according to NACE 2002. For the other sections we have used data for selected subsections in our calculations.

For the final indexes we have estimated values for the same variables that are used in the regular production of the LCI and the indexes have been calculated by the same method. We have calculated numbers from the first quarter of 1996 to the fourth quarter of 2000.

Variables and possible sources of error:

- Wage, bonuses and non-regular payments are estimated from wage indexes, SES and growth numbers from national accounts.
- Overtime pay is estimated from the same sources. This should give correct numbers for yearly growth. Development from one quarter to the next is more difficult to estimate.
- Hours worked and overtime. Hours worked is set to a constant because the numbers for wages are calculated by a method that differs from that of the regular LCI. For part-time workers these numbers are adjusted by using estimates of per hour wage from the data for the SES.
- Indirect costs are estimated from the same sources and by the same method as for the regular LCI. The sources are classified according to NACE 2002 and this is a possible source of errors.
- Weights for full-time and part-time employees are calculated from the data for the SES. The weights are constant through each year.

7.1.2. The Labour Cost Index excluding bonuses

In addition to the regular LCI, we have developed an index that does not include bonuses. In the raw data for the LCI, bonuses used to be estimated as half of the difference between the monthly earnings and the basic salaries per month. For more accuracy, the bonuses are now estimated from the data used to calculate the wage index. Excluding bonuses, we expect less seasonal variation in our index series. Estimation of the indexes has given results as expected. The LCI without bonuses is estimated for all NACE sections from the first quarter of 2000. The indexes for earlier years are based on the development of the LCI for total cost.

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