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## **Quality Report for the Labour Cost Index 2009 in Luxembourg**

This report has been prepared according to the provisions of the Commission Regulation (EC) No 1216/2003 implementing Regulation (EC) No 450/2003 of the European Parliament and of the Council concerning the labour cost index.

## **A Evidence of Relevance to User Needs**

The Labour Cost Index (LCI) has a lot of features making it unique and relevant in Luxembourg:

- It is available at  $t+70$  days after the end of each quarter, i.e. faster than any other labour cost or wage indicator in Luxembourg;
- There is comparable data for other European countries;
- Availability of breakdowns by activity (NACE rev2 sections):
- Distinction between wages and labour costs
- Long and overlapping series: 1995 to 2008 for NACE rev1 and 2000 to date for NACE rev2

The main user of the LCI is EUROSTAT. The most important national user is STATEC. Indeed, the LCI is used in various publications and analyses. Other more occasional users are professional Chambers, Ministries as well as the press.

There is no systematic and formal assessment of the users' satisfaction. Nevertheless, the small size of the national user community enables STATEC to have a direct contact with the users. As a result, STATEC can be very responsive to the users' needs. The informal feedback suggests that the users' needs are generally satisfied.

## **B Evidence of Accuracy**

### **B.1 Revision History**

In principle, there is a revision of the LCI taking place each quarter. The LCI mainly relies on social security records, provided by the "Inspection générale de la sécurité sociale" (IGSS). These records are available three months after the end of the reference month ( $t+3$ ). So as to satisfy the LCI deadlines, an estimate can be obtained after two months ( $t+2$ ). These files are updated later on. The  $t+2$  files are first updated, three months after the end of the reference month. The  $t+3$  files are updated, twelve months after the end of the reference month ( $t+12$ ). Usually the changes from one version to another are rather small.

In 2009, a major revision had to be done. On the 1st of January 2009, there has been a major reform in Luxembourg's social security system. Before that date, the social security system made a distinction between two types of salaried workers: the blue-collar workers ("ouvriers") and the white-collar workers ("employés"). There were differences between these two, i.a. with respect to sick-pay, overtime pay and severance payments. In 2009, the distinction between the blue and white collar workers has been abolished. This

change has had some implications on the way the social security authorities collect and record data. Especially, the wages and hours paid by the employers are recorded differently as of January 2009. Unfortunately this has an impact on the LCI. The problems became apparent bit by bit, as the data arrived. This change has led to two more important revisions of the 2009q1 data to be transmitted in June 2009.

Table 1 summarizes the impact the different revisions had on the year to year growth rates of the LCI over the period 2007q1 to 2009q4. The table displays the mean as well as the maximal impact the revisions. The table also indicates how many times the revisions have changed the sign of the year to year growth rates. For instance in section B, the revisions have on average decreased the growth rates by 0.1 percentage points. The largest impact of the revisions (in absolute value) was 1.6 percentage points for that section. None of the revisions have changed the sign of the growth rates for the section B.

Table 1: Impact of the Revisions on the year to year growth rates of the labour cost index over the period from 2007q1 to 2009q4

	<u>Mean change</u>	<u>Maximum change</u>	<u>Change of sign</u>
B	-0.1	1.6	0
C	0.3	4.7	2
D	0.1	2.2	0
E	0.0	1.4	0
F	0.0	1.8	0
G	0.1	2.6	0
H	0.1	2.5	1
I	0.0	1.0	0
J	0.1	2.6	0
K	0.0	0.4	0
L	0.4	2.3	1
M	0.1	0.7	0
N	0.0	5.3	0
O	0.0	0.4	0
P	0.0	0.5	0
Q	0.1	2.1	0
R	0.0	0.9	0
S	0.0	1.4	0

## B.2 Coverage

This section documents the coverage of the LCI with respect to the national accounts. The LCI uses the NACE rev2 classification whereas the national accounts are still relying on the NACE rev1. Thus, a correspondence between the two has to be established. This correspondence can be found in table 2 below.

Table 2: Correspondence between the NACE rev1 and NACE rev2

<u>Nace rev1</u>	<u>Nace rev2</u>
C,D,E	B,C,D,E
F	F
G,H,I	G,H,I,J
J,K	K,L,M,N
L,M,N,O,P	O,P,Q,R,S

Table 3 shows the percentage of employees that are covered by the social security records, with respect to the number of employees according to ESA 95, as well as the share of employees covered by the LCS of 2004.

The coverage rates shown in table 3 are defined as the number of employees covered by the social security records or by the LCS, divided by the number of employees in the same activity according to the national accounts. For the social security data, the figures in table 3 correspond to the year 2009 and are averages over the four quarters. For the LCS data, the figures are the yearly figures from 2004.

Table 3: Coverage rates of the social security and the LCS data, with respect to the number of employees according to ESA 95 (%)

<u>NACE rev1 section</u>	<u>Social Security</u>	<u>LCS 2004</u>
C, D, E	97	112
F	102	89
G, H, I	114	71
J, K	93	110
L, M, N, O, P	95	56

### B.3 Frequency

Table 4 shows the frequency of updating the different cost items. The item D1 and its sub-components stem from the social security registers. These registers are updated every month. The items D2 to D5 are estimated using the Labour Cost Surveys (LCS). The levels of these items come from the LCS, and are thus updated every four years.

Table 4: Update Frequencies

<u>Item</u>	<u>Update Frequency</u>
D1	monthly
D2 - D5	every 4 years

## **B.4 Estimation**

The monthly social security records constitute the main data source for the LCI. However, these records do not provide information on the items D2 to D5. These items are estimated using the LCS.

According to the LCS from 2008, the items D2-D5 only account for 1.4% of the total labour costs. Therefore, the impact of these estimations on the labour cost index and its growth rates is quite small.

## **B.5 Hours Worked**

The social security records only indicate the hours paid. The hours worked are estimated using the LCS. More precisely, the hours worked are obtained by multiplying the hours paid from the social security records by the ratio hours worked/hours paid obtained from the LCS.

## **B.6 Administrative Data**

The social security records provide data that corresponds to the items D11, D12 and D1111. The concepts used by the social security records match those defined by the Regulation (EC) No 1726/1999. However, it should be noted that the data from the social security records are top-coded at 5 times the legal minimum wage. Thus, if the concepts are the same, the total amount of the three items is under-estimated. The structure of earnings survey (SES) from 2006 allows evaluating the magnitude of this under-estimation. It turns out that for October 2006, within the population represented in the SES, 3% of the employees had top-coded wages. These top-coded wages make up more or less 11% of the total of the wages for that month.

The hours provided by this data source correspond to the hours paid. They are transformed into hours worked, as described above in section B.5.

## C Timeliness and Punctuality

Table 5 shows the deadlines for the years 2007 to 2009. For 11 out of these 12 quarters, the LCI has always delivered on time or even before the deadline. In September 2009, the delivery of the LCI had to be temporarily suspended. As a result, the LCI for 2009q2 had not been delivered. The reason for this default were the breaks in the administrative data sources, described in this report.

Table 5: Deadlines and Dates of Actual Transmissions

<u>Year</u>	<u>Quarter</u>	<u>Deadline</u>	<u>Transmission</u>	<u>Delay (days)</u>
2007	1	09-06-2007	06-06-2007	-3
	2	08-09-2007	07-09-2007	-1
	3	09-12-2007	07-12-2007	-2
	4	10-03-2008	10-03-2008	0
2008	1	09-06-2008	09-06-2008	0
	2	08-09-2008	08-09-2008	0
	3	09-12-2008	09-12-2008	0
	4	11-03-2008	11-03-2008	0
2009	1	09-06-2009	09-06-2009	0
	2	08-09-2009	.	.
	3	09-12-2009	09-12-2009	0
	4	11-03-2010	09-03-2010	-2

## D Accessibility and Clarity

The LCI series are published and commented in the bi-annual “Note de conjuncture”:  
<http://www.statistiques.public.lu/fr/publications/series/noteConjoncture/index.html>

The LCI is also published on Luxembourg’s “Portail des Statistiques” according to the Special Data Dissemination Standard (SDDS) of the FMI:  
<http://www.statistiques.public.lu/fr/calendrier/sdds/index.html>

## E Comparability

Section B.1 of this report documents a change that has occurred in the social security records. This change hampers the comparability of the indices between 2009 and the previous years. So as ensure comparability, the series from the social security records had to be adjusted.

The comparability issue was caused by the way the hours are recorded in the social security files. In the pre-2009 data the total hours corresponded in many cases to yearly averages. Thus, a full-time worker, with no overtime and no sick-leave was supposed to have worked 173 hours per month, independently from the number of potential working of each month. In the new system, the months have a variable length that takes into account the number of working days. Thus, the “benchmark” workers (full-time - no overtime - no sickness) are attributed the real number of working hours of that month. Consider the following example. Using the old rules, a benchmark worker would have been attributed 173 hours in January 2009. However, in January 2009, there have been 21 working days (Monday – Friday, excluding bank holidays). Thus, in the new system, the benchmark workers are attributed  $21 * 8 = 168$  hours.

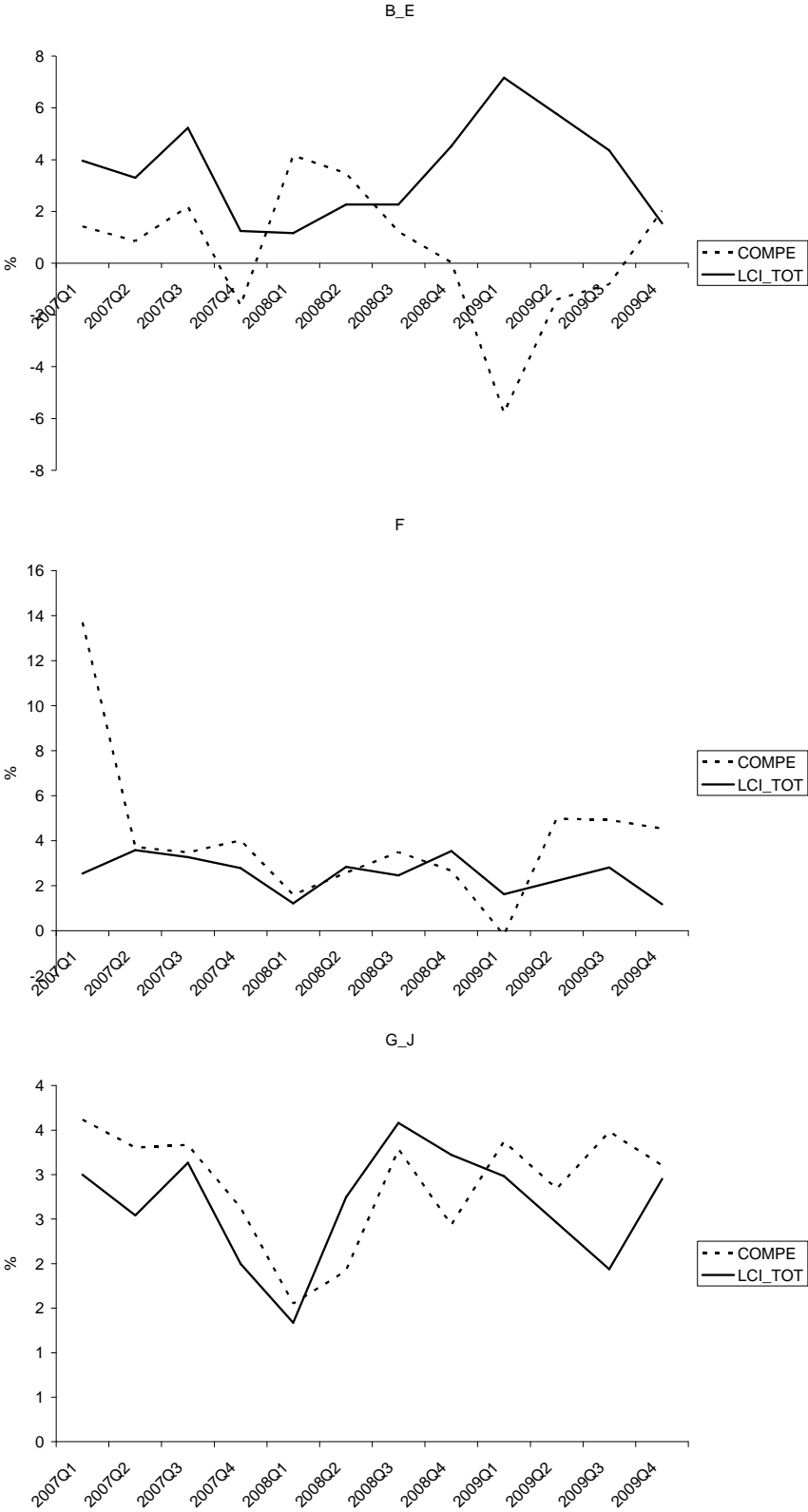
It was possible to estimate a correction factor to be applied to the 2009 data. This factor makes the hours recorded in 2009 comparable to those recorded before 2009.

## **F Coherence**

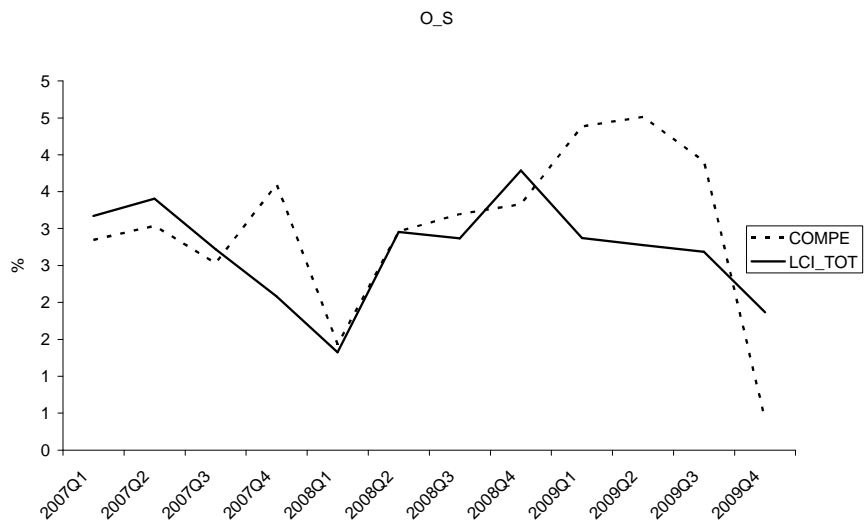
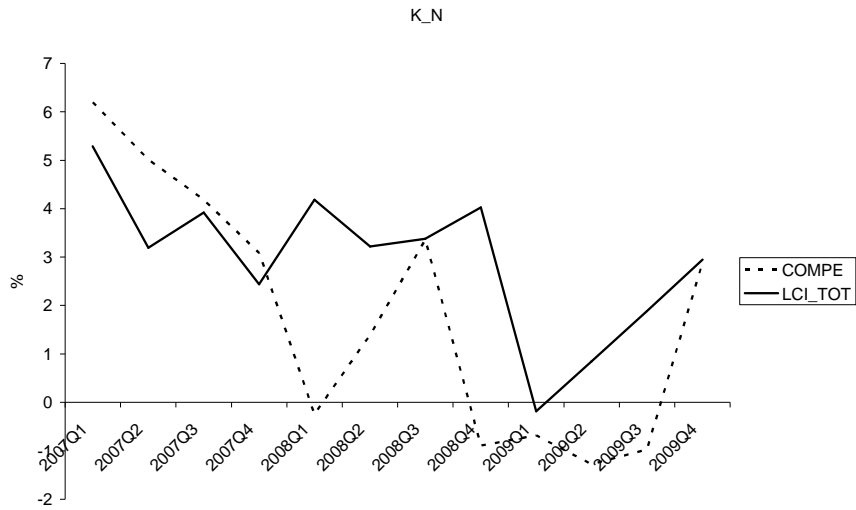
Hours worked according to ESA95 are not yet available for Luxembourg. Hence, this section compares the year to year growth rates of compensation per employee from the quarterly national accounts to the to the total labour cost index. As the LCI uses the NACE rev2 classification whereas the national accounts are still relying on the NACE rev1, a correspondence between the two had to be established. This correspondence has already been shown in table 0 above.

Figure 1 compares the year-to-year growth rates of the total LCI and those of the compensation per employee from the quarterly national accounts. The figure provides is broken down into 5 aggregates of NACE rev2 sections.

Figure 1: Year to Year Growth Rates of the Total Labour Cost Index (LCI\_TOT) and of the Compensation per Employee (COMPE). Breakdown by NACE rev2 aggregates.







## G Completeness

Luxembourg fulfills the requirements of Regulation (EC) No 450/2003.