Statistics Iceland

Use of administrative data to calculate Labour Costs

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Background

To calculate labour costs in Iceland two sources are used and combined, a detailed business survey and comprehensive administrative data. The business survey, the Icelandic Survey on Wages, Earnings and Labour Cost (ISWEL), is the basis for the structure of labour cost components. The administrative data, the Pay as You Earn (PAYE) register, gives a complete coverage of employees and wages on the Icelandic labour market.

The act on Statistics Iceland from 2007 stipulates that data collection should be made in such a way that the response burden on the data suppliers should be moderate. It also stipulates that when possible; data from administrative registers or other public registers should be used.

Data sources for Labour Cost statistics

Pay as You Earn register - PAYE
The monthly data from the PAYE register reflects the sum of the taxable income of individuals and contains information on ID of the payers, ID of individuals who receive the payment, sum of payment and income tax of the payment (*see further information on available items in Appendix I*).

The PAYE register includes the entire labour market, irrespective of economic sector or business unit size. The use of the register reduces response burden on business units, data are consistent over time and easily accessible for statistical use. However, the register does not contain information on other labour costs than wages nor structure of labour cost items such as bonuses that are not settled in each payment period. Furthermore, there is no information in the PAYE register on working hours, neither on hours paid nor hours worked.

The Icelandic Survey on Wages, Earnings and Labour Cost - ISWEL

The ISWEL is conducted by Statistics Iceland and data are collected directly from the pay-roll system of each business unit. Every month, a business unit in the survey sends data containing detailed information on wages, earnings and labour cost for all their employees, along with background data on the employees and the business unit. The ISWEL data collection method aims at minimizing response burden, collecting high quality data and the use of a standardized collection.

The survey is a stratified cluster sample, where the sample unit is the local activity unit and the observation unit is the employee. The target population contains all local activity units with no fewer than 10 employees and the population frame is based on monthly PAYE data. Data from ISWEL has two restrictions in respect to labour cost statistics. Some economic sectors are not fully covered and the survey includes only business units with 10 employees or more. However, the data has a major advantage, i.e. it is detailed and belongs to a well-defined processing cycle, aside from the considerable knowledge Statistics Iceland already has of the data. Finally, this database contains information about the number of hours paid and the structure of labour cost (*see further information on available items in Appendix II*).

The use of administrative data combined with survey data

The two sources, ISWEL and PAYE, countervail each other's pros and cons and better results are gained by combining the two when calculating labour cost. The information from the PAYE register is used to weigh groups of economic sectors in regard to the total labour cost per sector and number of employees. Information from the ISWEL is used to get detailed information on the structure of labour cost and hours worked.

Labour Cost Survey 2012

In conducting the 2012 Labour Cost Survey (LCS) administrative data was used in resolving problems regarding the detailed breakdown of the two digits NACE which are required for the LCS. The problems were due to the small size of the Icelandic labour market and missing divisions in the ISWEL. As previously mentioned the PAYE register is used as the basis for the ISWEL where sectors and the size of business units are the stratification layers and thus data from the ISWEL is not adequate for the LCS. To solve this problem the sum of earnings is taken from the PAYE register and the structure of labour cost from the ISWEL. In a similar way the number of employees in the PAYE register is scaled to the number of full-time employees, part-time employees and apprentices based on the proportion in the ISWEL.

Some of the background variables on employees in the ISWEL can be incomplete, for example length of service within the business unit and employees' entitled vacation days. The PAYE register is used to trace individuals length of service at a given business unit and with this information it is possible to assess every employee's hours not worked due to vacation based on administrative data.

Since the ISWEL does not cover all economic sectors the Icelandic LCS is missing those sectors. The missing sectors have not been examined and thus it was considered misguided to impute for the labour cost structure, hours and proportions of employees in full-time and part-time work without further investigation. The missing economic sectors in the LCS constituted less than ten percent of the scope.

Prospects

In the future that the processing of labour costs will inevitably rely more on administrative data. Current work on improvements of the methodology and development of new aspects relies mainly on administrative data. Statistics Iceland is a small institution; hence this work calls for cooperation between several departments. The main participants are the divisions of Earnings and Labour Costs and the National Accounts (NA) since both parties measure labour cost based on the same guidelines. Current development of the methodology of imputation for sectors not covered by ISWEL includes the development of regression models. Model parameterization for datasets based mainly on the PAYE register will largely rely on information from the ISWEL for the prediction.

Among other projects in the ongoing development are improvements on the assessment of absence due to sick leave. Because of the diversity of information from various sources —different types of measurement, in different units and various levels of aggregation— a hierarchical model is considered the best solution.

Appendix I

Available data in the Pay as You Earn (PAYE) register. A business unit is indicated with the letter F and information on employees with the letter S. Income items are signified by L and time aspects are labelled with a T.

Table 1 Data in the Pay as You Earn (PAYE) register

No.	Item designation	Label
1.	ID of the business unit	F
2.	Economic sector	F
3.	ID of the employee	S
4.	Occupation code	S
5.	Proportion to full-time employment	S
6.	Taxable income	L
7.	Transportation allowance	L
8.	Per diem	L
9.	Employee's contribution to pension funds	L
10.	Reference year	T
11.	Reference month	T

Appendix II

Available data collected in the Icelandic Survey on Wages, Earnings and Labour Cost (ISWEL). A business unit is indicated with the letter F and information on employees with the letter S. Wage items are signified by L, details on working hours by V and labour cost by K. Time aspects are labelled with a T.

Table 2 Data collected in the Icelandic Survey on Wages, Earnings and Labour Cost (ISWEL)

No.	Item designation	Label
1.	Company ID No.	F
2.	Municipality	F
3.	Economic sector	F
4.	Employee's ID No.	S
5.	Month and year of birth	S
6.	Sex	S
7.	Union	S
8.	Pension fund	S
9.	Education code	S
10.	Occupation code	S
11.	Length of service (date of employment)	S
12.	Proportion to full-time employment	S
13.	Pay period	S
14.	Contractual working hours	S
15.	Annual leave entitlement percentage	S
16.	Annual leave arrangement	S
17.	Agreement	S
18.	Wage group	S
19.	Wage level	S
20.	Basic wages and salaries	L
21.	Normal hours	V
22.	Additional allowances	L
23.	Expenses payments	L
24.	Bonus payments	L
25.	Piecework payments and output work	L
26.	Shift premium	L
27.	Hours with shift premium	V
28.	Overtime pay	L
29.	Overtime hours	V
30.	Sickness pay	L
31.	Sickness hours	V
32.	Lump sums and special payments	L
33.	Committee or management payments	L
34.	Transportation allowance	L
35.	Fringe benefits	L
36.	Other payments	L
37.	Remuneration paid for leave	L
38.	Pension fund contribution	K
39.	Social security tax	K
40.	Sickness fund payment	K
41.	Vacation (union) housing fund fee	K
42.	Science fund / continued education	K
43.	Other labour costs	K
44.	First day of payment period	T
45.	Final day of payment period	T