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Quality Report on the 2002 Structure of Earnings Survey

(English version, not edited for language)

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1. Preamble

The only statistical source for the structural statistics on earnings in the Czech Republic has been the „ Informacni system o prumernem vydelku “ (ISPV, i.e. Information System on the Average Earnings). The ISPV data was used as a basis to prepare the microdata files that were sent to Eurostat as the results of the 2002 Structure of Earnings Survey (2002 SES). Administrative files were used as auxiliary sources.

The ISPV has been produced by the Ministry of Labour and Social Affairs and the Trexima Ltd., processing firm. The ISPV has been taking place every 1st and 3rd quarter of a year covering a sample of enterprises only in business sphere and every 2nd and 4th quarter covering a sample of enterprises/organizations in both business and non-business spheres. Quarterly results are collected cumulatively, it means that the 4th quarter results refer to the whole year.

The task of the Czech Statistical Office (CZSO) has been a methodical development and authentication and also a communication with international users and authorities (especially Eurostat). Besides, the Czech Statistical Office disseminates the yearly results in its publications.

As a consequence of the orientation on the users satisfaction in relation to the work and development of the system, the emphasis is put on the quality of the final product and on the complex approach in the earnings statistics production. Hence, general models on the quality production (ISO, EFQM) are transformed on the circumstances of the official statistics in lines of the methodical recommendations of Eurostat. Arrangements of the 2002 SES Quality Report respect the Regulation No. 72/2002 of 16 January 2002 [2]. Quality of the statistical data as well as quality of the

survey practice has been evaluated both by users criteria (accuracy, comparability, coherence) and by attributes that are important for the producers of the statistics (completeness, relevance, timeliness and punctuality, accessibility and clarity).

Next chapters pursue the quality elements according to the European Union guidelines. In the PART B, some detailed tables are carried out according to the Regulation mentioned above, to enable a closer view on the 2002 SES as regards quality of the results and its comparison with other surveys.

PART A

Full-time	men+women	men	women
Band of hourly earnings	Frequency (%)		
Under 30	0,67	0,49	0,91
30 – 40	4,54	3,02	6,52
40-50	10,21	7,37	13,92
50-60	12,20	10,58	14,32
60-70	13,44	13,32	13,59
70-80	13,09	13,42	12,68
80-90	11,63	11,69	11,56
90-100	9,11	9,40	8,73
100-110	6,59	7,28	5,69
110-120	4,76	5,66	3,60
120-130	3,14	3,82	2,24
130-140	2,15	2,64	1,50
140-150	1,58	2,01	1,00
150-160	1,24	1,56	0,81
160-170	0,89	1,16	0,54
170-180	0,74	0,96	0,47
180-190	0,58	0,75	0,35
190-200	0,47	0,64	0,25
200-210	0,38	0,50	0,21
210-220	0,30	0,41	0,16
220-230	0,25	0,33	0,15
230-240	0,21	0,30	0,09
240 and over	1,84	2,69	0,72
Overall frequency	100	100	100
Total number of employees	3230163	1829461	1400702
Overall mean (CZK)	88,20	96,52	77,33
Median value (CZK)	76,69	81,42	70,54

Part-time	men+women	men	women
Band of hourly earnings	Frequency (%)		
Under 30	0,93	0,35	1,32
30 - 40	10,04	4,16	13,99
40-50	15,75	10,07	19,56
50-60	13,35	9,82	15,72
60-70	12,87	11,60	13,71
70-80	10,18	10,15	10,21
80-90	8,20	9,14	7,58
90-100	8,04	11,16	5,94
100-110	7,80	11,71	5,17
110-120	4,89	7,96	2,82
120-130	2,51	4,31	1,30
130-140	1,28	2,07	0,76
140-150	0,91	1,53	0,49
150-160	0,70	1,33	0,28
160-170	0,52	0,98	0,21
170-180	0,42	0,75	0,19
180-190	0,32	0,55	0,16
190-200	0,26	0,42	0,15
200-210	0,16	0,28	0,08
210-220	0,09	0,19	0,02
220-230	0,09	0,12	0,07
230-240	0,09	0,09	0,10
240 and over	0,61	1,25	0,18
Overall frequency	100	100	100
Total number of employees	262362	105417	156946
Overall mean (CZK)	75,71	89,89	66,19
Median value (CZK)	67,62	83,89	59,58

Full-time	men+women	men	women
Band of monthly earnings	Frequency (%)		
Under 6000	2,04	1,30	3,01
6000-7000	4,09	2,47	6,19
7000-7500	2,60	1,56	3,96
7500-8000	2,94	2,03	4,13
8000-8500	3,27	2,43	4,35
8500-9000	3,26	2,53	4,21
9000-9500	3,49	2,85	4,32
9500-10000	3,63	3,25	4,13
10000-10500	3,86	3,64	4,15
10500-11000	3,83	3,69	4,00
11000-11500	3,95	4,03	3,85
11500-12000	3,75	3,78	3,72
12000-12500	3,84	3,88	3,80
12500-13000	3,71	3,85	3,52
13000-14000	7,41	7,51	7,29
14000-15000	6,80	6,90	6,66
15000-16000	6,15	6,32	5,93
16000-18000	9,52	10,37	8,42
18000-20000	6,49	7,69	4,93
20000-25000	7,71	9,59	5,26

25000-30000	3,23	4,13	2,05
30000-40000	2,43	3,27	1,33
40000 and over	2,00	2,93	0,80
Overall frequency	100	100	100
Total number of employees	3230163	1829461	1400702
Overall mean (CZK)	15171	16704	13169
Median value (CZK)			

Part-time Band of monthly earnings (recalculated to FTUs)	men+women	men	women
	Frequency [%]		
Under 6000	3,90	1,75	5,34
6000-7000	7,73	3,48	10,58
7000-7500	4,65	2,24	6,27
7500-8000	4,64	2,70	5,95
8000-8500	3,91	2,47	4,87
8500-9000	3,98	2,73	4,82
9000-9500	4,07	2,72	4,97
9500-10000	3,83	2,89	4,46
10000-10500	3,96	2,94	4,65
10500-11000	3,77	3,06	4,24
11000-11500	3,59	2,61	4,25
11500-12000	3,28	2,77	3,61
12000-12500	3,31	3,43	3,22
12500-13000	2,94	3,24	2,74
13000-14000	5,34	5,18	5,45
14000-15000	4,79	5,35	4,42
15000-16000	4,36	5,53	3,58
16000-18000	8,30	11,81	5,94
18000-20000	7,21	11,27	4,49
20000-25000	8,64	15,04	4,33
25000-30000	1,88	3,38	0,88
30000-40000	1,19	2,04	0,62
40000 and over	0,74	1,37	0,31
Overall frequency	100	100	100
Total number of employees	262362	105417	156946
Overall mean (CZK)	13317	16003	11513
Median value (CZK)	11796,86	15082,88	10312,68

Full-time Band of yearly earnings	men+women	men	women
	Frequency [%]		
Under 75000	0,45	0,21	0,76
75000-85000	1,06	0,52	1,78
85000-95000	1,73	0,76	3,01
95000-100000	1,26	0,53	2,24
100000-110000	2,88	1,35	4,92
110000-120000	3,40	2,00	5,28
120000-130000	3,98	2,59	5,83
130000-140000	4,40	3,30	5,87
140000-150000	4,91	4,20	5,86
150000-160000	5,37	4,91	5,97

160000-170000	5,84	5,57	6,20
170000-180000	6,06	5,98	6,16
180000-190000	6,05	6,00	6,13
190000-200000	5,81	5,99	5,57
200000-220000	10,30	10,80	9,64
220000-240000	8,09	8,94	6,96
240000-260000	6,15	7,40	4,48
260000-280000	4,65	5,72	3,21
280000-300000	3,30	4,18	2,13
300000-330000	3,50	4,51	2,15
330000-360000	2,38	2,99	1,56
360000-390000	1,72	2,23	1,04
390000-420000	1,24	1,65	0,69
420000-450000	0,87	1,15	0,50
450000-480000	0,76	1,02	0,42
480000 and over	3,84	5,49	1,65
Overall frequency	100	100	100
Total number of employees	2560790	1464296	1096495
Overall mean (CZK)	226969	254107	190728
Median value (CZK)	194463	210704	173726

Part-time Band of yearly earnings (recalculated to FTUs)	men+women	men	women
	Frequency (%)		
Under 75000	1,39	0,82	1,82
75000-85000	3,65	1,45	5,28
85000-95000	4,82	1,72	7,11
95000-100000	2,38	0,98	3,41
100000-110000	5,31	2,48	7,41
110000-120000	5,30	3,06	6,95
120000-130000	4,73	2,58	6,32
130000-140000	5,02	2,84	6,63
140000-150000	5,05	3,25	6,38
150000-160000	5,22	3,68	6,35
160000-170000	5,20	4,27	5,89
170000-180000	4,69	4,17	5,08
180000-190000	4,26	4,15	4,34
190000-200000	4,35	4,71	4,09
200000-220000	7,34	8,93	6,17
220000-240000	7,35	9,90	5,46
240000-260000	7,05	11,21	3,97
260000-280000	4,99	8,69	2,25
280000-300000	3,63	6,56	1,47
300000-330000	2,92	5,22	1,22
330000-360000	1,64	2,93	0,68
360000-390000	1,05	1,70	0,58
390000-420000	0,68	1,23	0,27
420000-450000	0,38	0,70	0,13
450000-480000	0,27	0,43	0,15
480000 and over	1,34	2,35	0,59
Overall frequency	100	100	100

Total number of employees	193325	82159	111166
Overall mean (CZK)	191356	231626	161595
Median value (CZK)	174292	221957	147950

Full-time	men+women	men	women
Band of annual holidays	Frequency (%)		
Under 10	10,72	11,50	9,70
10-19	19,23	20,35	17,78
20-24	26,67	26,25	27,22
25-29	26,61	25,06	28,64
30-34	9,16	9,66	8,52
35 and over	7,60	7,18	8,14
Overall frequency	100	100	100
Total number of employees	3230163	1829461	1400702
Overall mean (days)	22	22	23
Median value (days)	23	23	24

Part-time	men+women	men	women
Band of annual holidays	Frequency (%)		
Under 10	10,72	11,50	9,70
10-19	19,23	20,35	17,78
20-24	26,67	26,25	27,22
25-29	26,61	25,06	28,64
30-34	9,16	9,66	8,52
35 and over	7,60	7,18	8,14
Overall frequency	100	100	100
Total number of employees	3230163	1829461	1400702
Overall mean (days)	22	22	23
Median value (days)	23	23	24

Full-time	men+women	men	women
Band of monthly hours paid	Frequency (%)		
Under 140	0,57	0,51	0,65
140-149	1,39	1,33	1,47
150-159	6,70	6,36	7,15
160-169	36,76	33,46	41,07
170-179	37,12	35,49	39,26
180 and over	17,45	22,85	10,40
Overall frequency	100	100	100
Total number of employees	3230163	1829461	1400702
Overall mean (hours)	172	174	170
Median value (hours)	172	173	170

Part-time	men+women	men	women
Band of monthly hours paid (recalculated to FTUs)	Frequency (%)		
Under 140	1,04	0,88	1,14
140-149	1,82	1,60	1,97

150-159	5,82	5,39	6,10
160-169	24,55	18,00	28,95
170-179	36,45	34,46	37,79
180 and over	30,32	39,66	24,05
Overall frequency	100	100	100
Total number of employees	262362	105417	156946
Overall mean (hours)	148	156	142
Median value (hours)	158	165	152

Full-time	men+women	men	women
NACE, Rev.1 section	Frequency (%)		
C	1,51	2,28	0,51
D	34,99	37,37	31,88
E	2,55	3,33	1,54
F	6,38	10,02	1,63
G	9,17	8,26	10,36
H	1,33	1,07	1,67
I	10,66	12,87	7,78
J	3,05	1,67	4,85
K	7,36	7,82	6,75
L	8,03	6,26	10,35
M	5,33	2,68	8,78
N	5,41	1,74	10,20
O	4,23	4,63	3,70
Total number of employees	3230163	1829461	1400702

Part-time	men+women	men	women
NACE, Rev.1 section	Frequency (%)		
C	0,19	0,28	0,13
D	20,20	24,55	17,28
E	1,91	3,76	0,67
F	1,58	2,35	1,06
G	10,03	4,26	13,91
H	1,42	0,84	1,81
I	21,64	30,62	15,61
J	1,50	0,85	1,94
K	8,96	8,70	9,14
L	5,61	7,39	4,42
M	9,73	6,36	11,99
N	12,64	5,29	17,57
O	4,59	4,75	4,48
Total number of employees	262362	105417	156946

Full-time	men+women	men	women
ISCO-88 occupation	Frequency (%)		
0	0,93	1,51	0,17
1	6,66	7,88	5,07
2	11,72	9,50	14,62
3	21,71	15,86	29,35
4	6,64	2,55	11,98

5	6,60	4,81	8,93
6	0,25	0,22	0,30
7	20,90	29,79	9,30
8	18,10	22,12	12,85
9	6,49	5,77	7,43
Total number of employees	3230163	1829461	1400702

Part-time ISCO-88 occupation	men+women	men	women
	Frequency (%)		
0	0,00	0,00	0,01
1	2,49	2,16	2,71
2	9,06	8,70	9,31
3	22,95	24,31	22,04
4	13,22	6,20	17,94
5	11,27	6,68	14,35
6	0,14	0,14	0,15
7	11,71	20,62	5,72
8	9,43	15,57	5,31
9	19,72	15,64	22,46
Total number of employees	262362	105417	156946

Full-time Age band	men+women	men	women
	Frequency (%)		
00-19	0,61	0,56	0,67
20-24	7,46	7,24	7,75
25-29	12,59	13,90	10,87
30-34	10,87	11,64	9,86
35-39	12,13	11,78	12,60
40-44	12,01	11,02	13,31
45-49	14,94	13,31	17,08
50-54	16,22	14,32	18,70
55-59	10,37	12,38	7,75
60-64	2,05	2,89	0,95
65 and over	0,74	0,96	0,46
Overall frequency	100	100	100
Total number of employees	3230163	1829461	1400702
Overall mean (years)	41	41	41
Median value (years)	42	42	43

Part-time Age band	men+women	men	women
	Frequency (%)		
00-19	0,77	0,64	0,86
20-24	7,36	6,67	7,82
25-29	11,14	11,21	11,09
30-34	11,46	9,84	12,55
35-39	11,44	10,00	12,41
40-44	10,29	8,63	11,41
45-49	12,85	11,93	13,47
50-54	14,71	14,62	14,77
55-59	10,22	13,60	7,94

60-64	5,22	6,37	4,45
65 and over	4,54	6,49	3,23
Overall frequency	100	100	100
Total number of employees	262362	105417	156946
Overall mean (years)	43	44	42
Median value (years)	43	46	42

Full-time	men+women	men	women
Length of service	Frequency (%)		
00_do_10 years	66,79	66,81	66,77
01_10_20 years	16,37	15,08	18,06
02_20_30 years	9,48	9,26	9,77
03_30_40 years	6,53	7,59	5,15
04_40 and over years	0,83	1,27	0,26
Overall frequency	100	100	100
Total number of employees	3230163	1829461	1400702
Overall mean (years)	10	10	9
Median value (years)	6	6	6

Part-time	men+women	men	women
Length of service	Frequency (%)		
00_do_10 years	70,90	64,33	75,31
01_10_20 years	14,59	14,06	14,95
02_20_30 years	7,52	9,61	6,11
03_30_40 years	6,03	10,07	3,31
04_40 and over years	0,96	1,92	0,32
Overall frequency	100	100	100
Total number of employees	262362	105417	156946
Overall mean (years)	8	11	7
Median value (years)	5	6	4

Both full-time and part-time	men+women	men	Women
Size of enterprise	Frequency (%)		
10-49 employees	19,25	20,17	18,10
50-249 employees	31,34	31,55	31,07
250-499 employees	9,07	8,58	9,68
500-999 employees	11,87	11,23	12,67
1000 and over employees	28,48	28,47	28,48
Overall frequency	100	100	100
Total number of employees	3492525	1934877	1557648
Overall mean	103		
Median value	33		

Full-time	men+women	men	women
Education	Frequency (%)		
iscsd 0,1	0,37	0,33	0,41

iscd 2	9,82	7,40	12,99
iscd 3	71,30	73,70	68,16
iscd 4	3,90	3,17	4,85
iscd 5a	13,93	14,57	13,08
iscd 6	0,69	0,83	0,51
Overall frequency	100	100	100

Part-time	men+women	men	women
Education	Frequency (%)		
iscd 0,1	1,11	0,61	1,45
iscd 2	13,78	8,53	17,30
iscd 3	73,42	78,20	70,21
iscd 4	3,48	3,18	3,68
iscd 5a	7,32	8,15	6,76
iscd 6	0,89	1,33	0,60
Overall frequency	100	100	100

PART B

This part describes characteristics of the statistical data; it is relevance, accuracy, timeliness and punctuality, accessibility and clarity, comparability, coherence and completeness.

1 Relevance

The 2002 Structure of Earnings Survey cannot be evaluated from the point of view of relevance isolated. The 2002 SES quality is strongly related to the quality of the ongoing survey of the ISPV, because the most of the data are taken from this source. Therefore, this chapter describes not only the relevance of 2002 SES, but relevance of the ISPV in particular.

The relevance means principally a satisfaction of user's needs. The ISPV is a regular sample statistical survey on earnings levels of employees; it monitors monthly earnings paid, hourly earnings and hours worked of individual employees. The survey was included into the Program of statistical surveys published by the Czech Statistical Office in Czech in the "Collection of Laws of the Czech Republic" (No. 163 of 19 March 2002 [3]). The survey is carried out by the statistical department of the Ministry of Labour and Social Affairs (MLSA), a part of the State Statistical Service. The development and the practice of the survey is directed by the "Commission for direction and coordination of work on the ISPV" consisting of delegates from CZSO, MLSA, Ministry of Regional Development, CERGE-EI, High School of Economics in Prague, Trade Unions headquarters, Union of Industry and Transport and other central and state bodies.

The ISPV is a statistical survey on the earnings level based on the earnings of individuals. The main objective of this survey is to produce earnings levels by

occupation (according to the KZAM-R classification, i.e. CZ-ISCO-88 at the 5-digit level), secondary objective is a production of estimations on the earnings parameters of the population of employees in the CR. Publication of the ISPV results consists of average hourly earnings in the respective quarter, monthly gross earnings for the cumulative period starting from the beginning of the year to the end of respective quarter as well as data on worked and not-worked hours in the same period and finally data on dynamics of average hourly earnings. The results are broken down according to the law which is used for the remuneration of employees, in the main, it indicates a distinction between business and non-business sphere.

The major user of the ISPV results are:

- central state bodies and universities

Ministry of Labour and Social Affairs, Ministry of Finance, Ministry of Regional Development, Ministry of Industry and Transport, CZSO, CERGE-EI, High School of Economics, Confederation of Trade Unions and Union of Industry and Transport.

Their needs and comments are formulated and evaluated during the sessions of the “Commission for direction and coordination of work on the ISPV”. [4]

- Labour Offices and respondents

These users have the possibility to get the paper publication of the ISPV results. Their needs are studied occasionally during personal contacts and/or meetings.

- public

The ISPV results are available on the web for free.

- Eurostat and other international organizations

Eurostat and other international organizations are provided with the ISPV data for international comparisons.

The ISPV also serves as a supportive or auxiliary source for some estimations (e.g. gender analysis).

2 Accuracy

The accuracy of the statistical survey is determined by resources used together with errors in the estimated parameters and distortions in the entering data. Resources for the ISPV are enterprise’s accounting and personal systems – the most of entering data are sent to the processing company straight in electronic form without human touch.

Economic subjects (ESs) that were sampled are bound to send data on all employees. Data are delivered to the possessor of the State Statistical Service [1].

2.1 Sampling errors

The sample procedure of the ISPV can be characterised as a one-way stratified sampling. The framework population is the CZSO Business Register (BR) and the Automatic state budget information system (RARIS).

The framework population of the non-business sphere consists of ESs taken from the RARIS with 10 or more employees, where covered are institutional sectors of non-financial enterprises, financial institutions and also governmental institutions, which pay

their employees according to the Act No. 143/1992 Coll.¹

The framework population of the business sphere consists of ESs taken from the BR with 10 or more employees, where covered are institutional sectors of non-financial enterprises, financial institutions and also some branches of governmental institutions (NACE 8030 – Higher education; NACE 7530 – Compulsory social security activities; NACE 7512 - Regulation of the activities of agencies that provide health care, education, cultural services and other social services, excluding social security; NACE 7513 - Regulation of and contribution to more efficient operation of business; NACE 6523 - Other financial intermediation n. e. c.), which pay their employees according to the Act No. 1/1992 Coll.²

Together, the framework populations of both non-business and business spheres make up the framework population for the ISPV sampling. This population is stratified by:

- distinction between non-business and business sphere mentioned above
- region (NUTS)
- size class
- industry (NACE)

The regional breakdown is made out by “regions” according to the Constitutional Act No.347/97 Coll.

The size-class breakdown is made out by stratification to four categories according to number of employees in the ES, see the table:

Category	Number of employees	Sample rate
1	10 - 49	4,5%
2	50 - 249	15%
3	250 - 999	70%
4	1000 and over	100%

Industrial stratification consists of ten groups for the business sphere and five groups for the non-business sphere. The formation of the strata was done by similarity in the economic activity characteristics and by similarity in employment structure in a way of cluster analysis, see the table:

¹ Act concerning salary and payments for being on call to work in the budgetary and some other organizations and bodies

² Act concerning wages, payments for being on call to work and average earnings

Industrial category - title	NACE division	Sphere
Agriculture, Hunting And Forestry; Fishing	01,02,05	business
Manufacture of Foods, Beverages and Tobacco, Textile, Dressing and Leather	15-19	business
Manufacture of Rubber and Plastics etc, Recycling	25,26,36,37	business
Mining and Quarrying, Manufacture of Woods, Paper , Publishing, Manufacturing of Coke, Chemicals, Electricity, Gas And Water Supply	10-14,20-24,40,41	business
Manufacturing	27-35	business
Construction	45	business
Wholesale And Retail Trade, Repairs Of Goods; Hotels And Restaurants	50-55	business
Transport, Storage And Communications	60-64	business
Financial Intermediation, Real Estate, Renting And Business Activities	65-67,70-74	business
Public Services – business sphere	75,80,85,90-93	business
NACE 01-74 non-business	01-74	non-business
Public Administration	75	non-business
Education	80	non-business
Health And Social Work	85	non-business
Other commun., social and pers. service	90-93	non-business

The specific number of ESs in the individual cells of the sampling scheme is then selected from the BR. The ESs with 1000 or more employees (so called “mammoths”) are selected with probability equal 1, it means exhaustively. For other strata, the ESs are selected by means of random sampling method, when the sample rate decreases mutually with size class. The sample file of ESs with 10-249 employees is modified by method of “rotating panel” with a period of nine years, i.e. all ESs will be changed after 9 years. It is supposed that the ESs with 250-999 employees should be also covered exhaustively in the near future.

The sampling error can be easily calculated by classic methods in one-way sample survey, e.g. household surveys. The ISPV collect information on the persons but the responding (and sampling) unit is an economic subject (i.e. whole enterprise or organization or a part of ES). In contrary from a household survey, individual employees are not selected independently in the ISPV; classical methods of sampling error calculation are of no use then. Moreover, the ISPV has a longitudinal characteristics (ESs stay in the sample for several periods); ESs have been covered by the ISPV in different years, and until year 2008, ISPV would cover also some ESs that were selected by quota sampling in the elder days. For all these reasons, the calculation of the true sampling error is not a simple mathematic task or even barely possible. It is quite clear that the sampling error is much smaller and less important than other types of errors because of the huge size of the ISPV sample (1031101 employees are covered from the total of 3230163 employees, it means almost one third).

A detailed view on the structure of employees can be found in the Part A; the

following tables show variability of the monthly gross earnings and hours paid:

Full-time	men+women	men	women
NACE section	CV of monthly gross earnings		
C	0,47	0,47	0,41
D	0,69	0,71	0,51
E	0,51	0,52	0,42
F	0,60	0,61	0,48
G	0,87	0,93	0,59
H	2,56	2,79	0,66
I	0,60	0,63	0,47
J	1,00	1,02	0,59
K	0,86	0,88	0,73
L	0,36	0,36	0,32
M	0,40	0,45	0,33
N	0,48	0,58	0,40
O	0,50	0,53	0,41
Total	0,77	0,84	0,53

Part-time	men+women	men	women
NACE section	CV of monthly gross earnings		
C	0,59	0,57	0,41
D	0,66	0,64	0,49
E	0,58	0,52	0,47
F	0,47	0,48	0,41
G	0,47	0,52	0,43
H	0,44	0,54	0,37
I	0,46	0,43	0,40
J	0,46	0,50	0,43
K	0,90	1,00	0,61
L	0,35	0,33	0,35
M	0,40	0,38	0,39
N	0,41	0,52	0,37
O	0,53	0,52	0,49
Total	0,56	0,57	0,47

Full-time	men+women	men	women
ISCO-88	CV of monthly gross earnings		
0	0,35	0,35	0,31
1	1,07	1,07	0,70
2	0,59	0,65	0,45
3	0,48	0,53	0,37
4	0,43	0,47	0,40
5	0,46	0,45	0,42
6	0,28	0,25	0,29
7	0,36	0,34	0,32
8	0,34	0,32	0,32
9	0,31	0,30	0,27
Total	0,77	0,84	0,53

Part-time	men+women	men	women
ISCO-88	CV of monthly gross earnings		
0	0,30	0,00	0,30

1	0,99	1,02	0,59
2	0,53	0,60	0,39
3	0,43	0,45	0,34
4	0,34	0,32	0,34
5	0,42	0,32	0,43
6	0,28	0,39	0,19
7	0,42	0,34	0,33
8	0,43	0,38	0,36
9	0,34	0,37	0,28
Total	0,56	0,57	0,47

Full-time	men+women	men	women
Age	CV of monthly gross earnings		
00-19	0,31	0,30	0,32
20-24	0,39	0,41	0,36
25-29	0,56	0,58	0,51
30-34	0,81	0,83	0,66
35-39	0,99	1,09	0,52
40-44	0,93	1,07	0,49
45-49	0,72	0,78	0,54
50-54	0,64	0,69	0,49
55-59	0,66	0,71	0,49
60-64	0,69	0,69	0,58
65 and over	0,76	0,78	0,54
Total	0,77	0,84	0,53

Part-time	men+women	men	women
Age	CV of monthly gross earnings		
00-19	0,35	0,33	0,36
20-24	0,39	0,36	0,39
25-29	0,45	0,38	0,45
30-34	0,63	0,61	0,52
35-39	0,56	0,56	0,44
40-44	0,58	0,57	0,49
45-49	0,60	0,60	0,50
50-54	0,56	0,56	0,47
55-59	0,49	0,47	0,45
60-64	0,71	0,82	0,48
65 and over	0,55	0,57	0,50
Total	0,56	0,57	0,47

Full-time	men+women	men	women
Education	CV of monthly gross earnings		
iscd 0,1	0,35	0,32	0,33
iscd 2	0,38	0,38	0,33
iscd 3	0,49	0,51	0,42
iscd 4	0,37	0,38	0,30
iscd 5a	0,91	0,97	0,53
iscd 6	0,65	0,67	0,55
Total	0,77	0,84	0,53

Part-time	men+women	men	women
Education	CV of monthly gross earnings		

iscd 0,1	0,26	0,34	0,22
iscd 2	0,35	0,37	0,31
iscd 3	0,49	0,48	0,43
iscd 4	0,31	0,28	0,31
iscd 5a	0,70	0,81	0,49
iscd 6	0,43	0,44	0,39
Total	0,56	0,57	0,47

Full-time NACE section	men+women	men	women
	CV of hours worked		
C	0,07	0,07	0,05
D	0,07	0,07	0,06
E	0,06	0,06	0,05
F	0,08	0,08	0,05
G	0,06	0,06	0,06
H	0,05	0,05	0,05
I	0,08	0,08	0,07
J	0,04	0,04	0,04
K	0,08	0,08	0,06
L	0,08	0,10	0,04
M	0,04	0,05	0,04
N	0,07	0,08	0,06
O	0,07	0,07	0,05
Total	0,07	0,08	0,06

Full-time ISCO-88	men+women	men	women
	CV of hours worked		
0	0,09	0,09	0,08
1	0,05	0,05	0,05
2	0,05	0,06	0,05
3	0,05	0,06	0,05
4	0,06	0,06	0,06
5	0,08	0,10	0,06
6	0,07	0,06	0,08
7	0,08	0,08	0,07
8	0,08	0,09	0,07
9	0,07	0,08	0,06
Total	0,07	0,08	0,06

Full-time Age	men+women	men	women
	CV of hours worked		
00-19	0,09	0,10	0,07
20-24	0,07	0,08	0,06
25-29	0,07	0,08	0,06
30-34	0,07	0,08	0,06
35-39	0,07	0,08	0,06
40-44	0,07	0,08	0,06
45-49	0,07	0,08	0,06
50-54	0,07	0,08	0,06
55-59	0,07	0,07	0,06
60-64	0,07	0,07	0,06
65 and over	0,08	0,09	0,08
Total	0,07	0,08	0,06

Full-time Education	men+women	men	women
	CV of hours worked		
iscd 0,1	0,07	0,07	0,06
iscd 2	0,08	0,09	0,07
iscd 3	0,07	0,08	0,06
iscd 4	0,06	0,06	0,05
iscd 5a	0,06	0,07	0,05
iscd 6	0,07	0,07	0,06
Total	0,07	0,08	0,06

We can see that the variation of earnings is huge (approx.100 % of CV) in some specific groups – for example in the 1st class of ISCO-88 (legislators, senior officials and managers) and for employees with university education - especially for men. It means that estimation is less exact in these groups than in the others; unfortunately, such employees are spread over all strata (regions and industries and size-classes), and sampling design cannot help it.

2.2 Non-sampling errors

2.2.1 Coverage errors

The sample for the 2002 SES consists of the following foundations:

- “DMZ 2000” – state at 31.12.1999 /original random sample/
- “Education” (M according to NACE, Rev.1.1) – state at 28.2.2002

Under-coverage errors correspond to the following subjects:

- ESs outside Education born after 1st January 2000
- ESs inside Education born after 1st March 2002
- ESs outside Education which had had less than 10 employees at 31.12.1999 but had 10 employees or more at 31.12.2002
- ESs inside Education which had had less than 10 employees at 28.2.2002 but had 10 employees or more at 31.12.2002
- ESs which had been given a wrong size-class (stratification category) in the time of sampling procedure or ESs whose rise was not taken down at all

Over-coverage errors correspond to the following subjects:

- ESs from the population DMZ 2000 which have died from 1.1.2000 to 31.12.2002
- ESs from the population of Education which have died from 1.3.2002 to 31.12.2002
- ESs from the population of DMZ 2000 which have decreased in number of employees under 10 from 1.1.2000 to 31.12.2002

- ESs from the population of Education which have decreased in number of employees under 10 from 1.3.2002 to 31.12.2002

It is a matter of fact that a longitudinal surveys – and the ISPV is a kind of longitudinal survey – always have coverage errors bigger than ad-hoc surveys. The reasons are delays between the time of sampling and the time of collecting on the one hand, and the delays between the samplings of the segments of population themselves on the other hand. Similar to the ad-hoc surveys, there are misclassification errors besides. Quantification of the coverage errors is summarized in the following table:

NACE section	under-coverage	coverage	over-coverage	under-coverage [%]	over-coverage [%]
C	32	120	19	21,1	12,5
D	3287	8273	2184	28,4	18,9
E	59	283	44	17,3	12,9
F	1246	3001	1667	29,3	39,3
G	4288	5243	2892	45,0	30,3
H	715	793	371	47,4	24,6
I	626	1007	356	38,3	21,8
J	137	356	90	27,8	18,3
K	2293	3252	1415	41,4	25,5
L	207	1221	353	14,5	24,7
M	610	4239	345	12,6	7,1
N	360	1267	344	22,1	21,1
O	666	1420	417	31,9	20,0

2.2.2 Measurement errors and processing errors

The data from respondents are in a form of database files, they embrace information both on employers and employees. The great majority of data inputs are taken straight from the enterprise's software on earnings accounting and personal files. It means that more than 90% of the ISPV database is a summarisation of respondent's databases. More than 50% of respondents use electronic way of delivery, the others use diskettes. Less than 3% of ESs sent data on paper questionnaires.

For the data checking, the special tailor-made software is embedded into the "Acquisition software ISPV 2002" for the data collection. This software packet is available on the web-pages www.trexima.cz in the section "Statistické srovnávání ceny práce" (Statistical comparison of the price of labour).

During the data entering and processing, files are preserved in the seven data-stores; they are verified every time before the save. In the individual data-stores, there are saved original data from the respondents, data before the data-checks and data after the data-checks (both automatic and manual). Grossing-up to the whole population is made by applying weights for individual records on the final database file.

Triple automatic check is made during the data collecting and processing. In addition, a visual check is made after it. The mistakes found are solved in relation with their importance – either by contacting the respondent or directly by the processing company. Some help is obvious with coding of ISCO-88 professions since this task is the most difficult for the respondent; consultations by telephone are provided. After data entering, additional checks are made on the levels of regions and individual professions,

also some checks are made accordingly on the level of ESs.

It means that checks are made on the three levels: on individual record (i.e. employee), on economic subject and on aggregate level. Aggregates are checked as regards variability in particular; reasons are investigated. An example is a check on earnings in profession on the level of region – in case of change 20% or more of the y-o-y index, reasons are analysed on the level of economic subjects.

Recent list of checks for data entering is enclosed in Annex 3.

2.2.4 Non-response errors

The ISPV is a continual survey. ESs are not collected ad-hoc but they continue to exist in the sample for long time; and no one is made extinct when supplying good data. The ESs were gathered in several ways; no systematic methodical background was used until 2000. It makes the analysis of response/non-response complicated.

For non-response analysis purposes, ESs gathered are divided onto two groups:

A/ ESs inside the “panel” sample of business sphere

B/ Non-business sphere; ESs of business sphere outside the “panel” sample, (i.e. redundant ones)

Concerning the group A, the task is to collect information on all the ESs from the sampling waves “DMZ2000” and “ESs over 1000 employees”, whereas concerning the group B, two additional waves have to be considered: “Education wave 1” and “Education wave 2”. Non-response is generated by all units that should have been collected but they were not. Well-known are the units that were gathered until 2000 in both groups. ESs from group A as regards non-response together with reasons for the non-response are summarized in the following tables. For the group B, the reasons for the non-response are not known.

Group A

Wave	ES number	Non-response	Response	Non-response rate [%]
until 2000	536	145	390	27,05
DMZ2000	1029	407	622	39,55
1000 employees and over	247	51	196	20,65

Group B

Wave	ES number	Non-response	Response	Non-response rate [%]
until 2000	997	250	747	25,08
DMZ2000	286	153	133	53,50
1000 employees and over	67	15	52	22,39
Education wave 1	123	24	99	19,51
Education wave 2	122	54	68	44,26

Reason for non-response of respondents – group A

	until 2000	DMZ2000	1000 employees and over
Bankruptcy	3	23	1
Liquidation	1	15	6
Recruitment	2		17

no information	136	348	24
Denial		4	1
no reaction		3	
technical reasons	1	7	
not found		1	
number of employees under limit	1	3	1
other reason	1	3	1

ESs from non-business sphere should be included into the IS-PLAT, new exhaustive survey directed by Ministry of Finance, starting from 2004; they would be evaluated like exhaustive part of the ISPV from the non-response analysis point of view, then.

ESs from the business sphere, which are off the panel sample now, can be divided to two subgroups: i) ESs with number of employees 250 and over will be included into the exhaustive part of the survey; ii) ESs with number of employees 10-249 can be used as a “substitute” for the imputations (or replacements) and also for calculation of the aggregated results for individual occupations, i.e. 5- and 4-digit level of ISCO-88.

The strongest need is to observe the ESs from the exhaustive part of the survey from the point of view of non-response; it is nowadays formed by all ESs with number of employees 1000 and over. It should be enlarged with all ESs from non-business sphere starting from 2004.

The other part is formed by ESs from business sphere with number of employees 10-249 – this should remain a sample; the problem is here with the ESs that have survived from the times of quota sampling (before year 2000) - these ESs should be replaced and substituted on the method of rotating panel. We can expect that the non-response rate would increase here. In addition, the non-response rate would be calculated correctly at last: we would know all ESs that are chosen, that are contacted and finally that are collected. The present state does not allow it.

ESs from business sphere with number of employees 250-999 should not be altered by the rotating panel, but gradually extended in order to cover all these ESs, i.e. the ISPV should be exhaustive for all ESs from business sphere with number of employees 250-999.

The problem of short-time drop-out in the data delivery (non-delivered data) from one ES is solved by i) method of historical imputation and ii) method of weight change in the stratum.

As regards the method of historical imputation, no precise algorithm is established; its use is customized to the current situation. In a case of total drop-out in data for a whole ES, the data are estimated on the basis of the latest data from the historical database and by index of the whole sphere (business/non-business sphere). When a partly non-response happens, data delivered are used and the remaining part is estimated on the base of indices in the respective ES for all records with the same personal number from the previous period. Total imputations are used for big ESs that highly influence aggregated levels for occupations as well as higher aggregations. The imputations are used max. one ES per quarter in practice [6].

The method of weight change is carried out by algorithm of weight allocation onto ESs [7]. The algorithm determines a weight from the sampling rate of the ES and modifies it in relation with the non-response rate inside the stratification category. However, the weight of ES is limited by a “threshold” in order to shorten redundant variability of the estimator. The threshold values broken down by size-classes are given

in the following table:

Size class	Threshold
10-49 employees	60
50-249 employees	20
250-999 employees	5
1000 and over employees	1

Item non-response

Item non-response has to be divided on two categories: item non-response in the list of variables on ES (table A in the Annex) and item non-response in the list of variables on employee (table B).

There is no use to calculate the item non-response in the following items of the table A:

- items "TABLE", "YEAR", "KEY_L" – identify the table and the respondent
- item "A11" – the region is "CZ" everywhere
- items "A16" - "A19" are optional and were not collected

As regards items "A12" (size class of enterprise) and "A13" (economic activity) item non-response cannot be considered; the items "A12" and "A13" were assigned from administrative sources.

Item "A14" (economic and financial control): In case of non-response, values are imputed derived from the "ISEKTOR" item in the BR (it is item corresponding to the sector of National Accounts). Because of the rapidly developing economy in the CR, the data entry from ES is supposed to be more precise specification. The imputation and conversion output from the ISPV to 2002 SES is summarized in the following table. The overall value of non-response rate is $(111+267)/2341 = 16,15\%$.

FINANCIAL CONTROL		ES number
ISPV	2002 SES	
unknown	public control	111
unknown	private control	267
state owned	public control	459
majority of state/public share	public control	75
private owned	private control	1319
majority of private share	private control	110

Item "A15" (collective pay agreement) – 1143 ESs has not stated its kind of collective pay agreement (CPA) from the total of 2341 ESs in the ISPV; it represents 48,83%. To fulfil the requirement, an additional survey had been carried out and, furthermore, administrative sources and data known from another survey were employed, see the summarization in the following table:

ISPV	administrative source	additional survey	SES2002	ES number
Unknown	higher level		higher level	139
Unknown	enterprise level		enterprise level	77
Unknown		enterprise level	enterprise level	67
Unknown		CPA does not exist	CPA does not exist	495

Unknown		unknown	CPA does not exist	365
CPA exists	higher level		higher level	70
CPA exists	enterprise level		enterprise level	1107
CPA does not exist	higher level		higher level	5
CPA does not exist	enterprise level		enterprise level	1
CPA does not exist			CPA does not exist	15

The value of non-response rate has decreased after use of the administrative (and also legislative) sources and the additional survey to 15,59%. For remaining 365 ESs where neither a level of CPA nor even an existence was found, we stated that collective pay agreement did not exist.

There is no sense to calculate the item non-response for the following variables in the table B:

- items "TABLE", "YEAR", "KEY_L", "KEY_E" – identify the table, the respondent and the employee
- item "B23" profession – non-response not possible, it must always be
- item "B3511" always "T" (actual days of holiday leave taken)
- item "B3521" number of days of sick leave paid by the employer is always 0
- item "B3522" number of days of sick leave not paid by the employer is always equal to item "B352" – number of days of sick leave
- items "B24", "B210", "B211", "B3221", "B3222", "B3223", "B33", "B331", "B332", "B353", "B36" are optional and were not collected
- item "B26" length of service in the enterprise cannot be inspected
- items checked by Eurostat's mechanism, see detailed description below

Item "B25" highest completed level of education – there was no documentation on education for 86058 employees from total of 1031101 employees. It represents a non-response rate 8,35%. The imputations were carried out in these steps:

- 1) minimal level of the education required was set for individual occupation on the base of KZAM-R³;
- 2) education level was estimated on the most probable level using the minimal possible level in the KZAM-R code plus earnings level and sex of the employee;
- 3) where no minimal level of education required was set, imputation was made only by earnings level and sex of the employee.

The following table shows a summarization of the imputation procedure:

(The result on imputed level of education for employees that have no education level collected before, i.e. item non-response)

Education	Number of employees
------------------	----------------------------

³ KZAM-R – national version of the occupational classification ISCO-88 enhanced to more detail, i.e. 5-digit level.

ISCED 0 a 1	1471
ISCED 2	14361
ISCED 3	20427
ISCED 5B	29174
ISCED 5A	20625

As there is not a good convertibility between the KKOV⁴ and the international standard ISCED-97, we utilized a possibility to enter code 03 - Upper secondary education.

Item “B28” Type of employment contract – 28843 employees has no code on the Status in employment classification (a national version of ICSE-93) or the code was on such a level that does not allow to distinguish the type of contract. It represents 2,80% from the total of 1031101 employees. Code D (other type of employment contract) was used for these employees.

Next table shows numbers of employees that were removed in single checks. “0” means that record did not pass the check. “1” means it was successful. The titles of single columns are the following: “k” means check, the numeral is a title of the variable to which the check relates; e.g. “k22” means the check on the variable 2.2 (age). The very last column contains the records that passed all the checks, i.e. 1031101 employees.

k22	K26	k312	k321	k322	k34	k351	k311	k30	k341	Number of employees
0	0	1	1	1	1	1	1	1	1	1
0	1	1	1	1	0	0	1	1	1	1
0	1	1	1	1	0	1	1	1	1	12
0	1	1	1	1	1	0	1	1	1	9
0	1	1	1	1	1	1	1	1	1	60
1	0	1	1	1	0	0	1	1	1	2
1	0	1	1	1	0	1	1	1	1	521
1	0	1	1	1	1	0	1	1	1	2
1	0	1	1	1	1	1	1	1	1	207
1	1	0	1	0	0	1	0	0	0	1
1	1	0	1	0	0	1	0	0	1	5
1	1	0	1	1	0	1	1	1	1	3
1	1	0	1	1	1	1	1	1	1	47
1	1	1	1	1	0	0	1	1	1	1049
1	1	1	1	1	0	1	1	0	1	1
1	1	1	1	1	0	1	1	1	0	68
1	1	1	1	1	0	1	1	1	1	45847
1	1	1	1	1	1	0	1	1	1	3782
1	1	1	1	1	1	1	0	1	1	1
1	1	1	1	1	1	1	1	1	0	44
1	1	1	1	1	1	1	1	1	1	1031101

2.2.5 Model assumption errors

Concerning calculation of the gross earnings for the representative month:

⁴ National Classification of common sections of education (Klasifikace kmenových oborů vzdělání) – Attained level of education, part

Gross earnings for the representative month correspond to the ratio of annual earnings minus bonuses to number of months paid for individual employee. The reasons for it are as follows:

- The earnings in the representative month should not be effected by bonuses according to the Eurostat's requirement.
- We are not able to separate regular and irregular bonuses.
- Generally, October is seen as a standard calendar month to be used as a representative month because of no holidays and identical number of working days are on. The purpose would be an international comparison. (Note: In the Czech Republic, there is public holiday 28 October.) The standardized "representative" month based on annual figures fulfil the principles/criteria of representativity of the month mentioned above more than October in the Czech Republic.
- Gross earnings in the standardized month is not effected by absence unpaid, especially illness; it is guaranteed by the fact that whole annual earnings (without bonuses) is divided by the number of months paid (i.e. the time when the employee obtained either earnings or payments for days not worked).

Doing comparison between levels of EU Member States or CCs, we have to take into consideration that our standardized month has the number of working days equal to the average monthly number of working days in the year whereas October 2002 had precisely 23 working days (if no public holiday occurs).

Another trouble as regards the model of standardized month is a distinction between regular and irregular bonuses. Both these fact slightly diminish the level of gross monthly earnings.

Coverage problem

As a result of the longitudinal character of the ISPV, the whole scope of the survey cannot be covered in any way. The grossing up procedures are made on recent framework population (the Business Register as of end of the year), but some ESs that could not be covered are represented by those that are covered – it can bring a distortion in the estimator.

3 Timeliness and punctuality

The ISPV work plan is as follows: Time schedule of the whole work is prepared before the reference quarter and leading persons responsible for a particular part of the task are recognized. Minutes are created on the course of the processing [5]. Reasons of breaking the deadlines are evaluated in the minutes in particular as well as other problems that happened during the processing. For the 2002 Structure of Earnings Survey, a questionnaire on the timetable was delivered to the EU Member and Candidate States; it is used for evaluation of the timeliness. There were two important deadlines for the 2002 SES: 1) June 2004 for sending the microdata files and December 2004 for sending Quality Report. Both deadlines have been met. Detailed overview on the timeliness is in the following table:

When will you have selected all enterprises/local units to be surveyed ?	09/02	09/02	
When will you conclusively complete the questionnaire design ?	12/01	12/01	
Does the questionnaire incorporate the ESTAT implementation arrangements			Yes All arrangements issued before 2002
What is your target date for the distribution of the questionnaire ?	12/02	12/02	
What is your target date to complete data collection ?	02/03	02/03	
What is your target date to complete data validation ?	03/04	03/04	
When will you have completed the preparation for the transmission with	04/04	04/04	
Data transmitted to ESTAT should match the implementation arrangements.	05/04	05/04	
When do you plan to transfer data to ESTAT ? (last date = June 2004)	06/04	06/04	Due to problems with GESMES format we have to
When do you plan to deliver the quality report to ESTAT ? (last date = December 2004)	10/04	12/04	send data several times

(* Please comment if the answer is No

2. Additional questions

1) Structure of Earnings Survey 2002

- tables on gross monthly earnings, time paid and employment structure by ISCO major group, size of unit, age, education of employee, industry, financial control, collective agreement, length of service and by sex; distribution of earnings; tables by regional breakdown (NUTS2,3); detailed results on number of employees, time paid and gross monthly earnings for the sample (not grossed up results) by 4-digit level of ISCO-88.

Note: Gross monthly earnings figures in this publication are calculated as yearly earnings divided by time paid expressed as a number of months for individual employee.

2) Mzdy zamestnancu za rok 2002

- Czech version of the first one

3) Mzdova diferenciace zamestnancu v roce 2002

- text publication, an analysis of the SES results, available only in Czech

The ISPV results have been published in several publications:

Publications of the MLSA – www.mpsv.cz:

Informacni system o prumernem vydelku *X quarter YY (year)*, only Czech version, published in 70 days after end of the reference period

Regionalni statistika ceny prace *X quarter YY (year)*, only Czech version, published in 75 days after end of the reference period

Publications of the CZSO – www.czso.cz:

Mzdy zamestnancu za rok 2002 (Czech version) ... 25/06/2003

Mzdova diferenciacne zamestnancu v roce 2002 (Czech version) ... 25/09/2003

Structure of Earnings Survey 2002 (English version) ... December 2003

Some results are also included in the publications: “Statistical Yearbook 2003”, “Labour Statistics: Time series of Basic Indicators” and “Focused on Women, on Men”.

4 Accessibility and clarity

Results publication in both the Excel and PDF format is available on the web pages of the Ministry of Labour and Social Affairs (MLSA) under section “Prijmy a zivotni uroven” (Incomes and living conditions). The scope of the available information is defined by the publication criterion – only those occupations are available which are represented by min. 1% inside its Major Group of ISCO-88. The complete list of professions collected are accessible on the web page: www.trexima.cz/vysledky.

There are also available more detailed results on profession levels of earnings by regions, these results named „Regionalni statistika ceny prace RSCP“ (Regional Statistics on the Labour Price) are directed and published by the Employment Service of the MLSA. Results publications of RSCP for singular regions are available on the web pages www.mpsv.cz under section “Sluzby zamestnanosti” (Employment Service).

The respondents of ISPV have the possibility to get the results both by mail or via Internet.

The results are regularly sent to MLSA, Employment Service and Labour Offices as well as to the CZSO, Trade Unions etc.

The development of ISPV methodology is documented by internal papers of the Commission for direction and coordination of work on the ISPV [4].

Moreover, the whole-year figures are published in the more detailed form by CZSO in the publications mentioned above. All the tables and texts are available on the web-site www.czso.cz for free.

5 Comparability

5.2 Geographical comparability

ISPV is a kind of Structural Earnings Survey which enables a comparison

among the EU countries and CCs. Therefore, the structure of variables stems from Regulation No.1916/2000 which defines SES list of variables. However, the ISPV is recently not fully compatible with the 2002 SES. The main reason for it was that the ultimate requirements on the 2002 SES have become available so far as in April 2004.

ISPV has joint history with the survey ISPZ (Informacny system o priemernom zarobku) in the Slovak Republic.

The differences between national 2002 SES concept in the CR and the Eurostat's concept is, in particular, as regards the following:

- There is no representative calendar month in the CR. The representative month should be such a calendar month in which no vacation or public holidays happen and which is unaffected by illness of employees. By the ISPV approach, this can be derived from annual figures. Such "ideal" month is more precise than any other calendar month.
- Hourly earnings is calculated from the monthly earnings because we gather numbers on the hours worked as well as hours paid together with hours of absences.
- All variable on earnings are collected in the national currency Koruna ceska CZK (Czech koruna), respectively in the units derived from it (CZK/hour; CZK/month; CZK/year).

5.3 Comparability over time

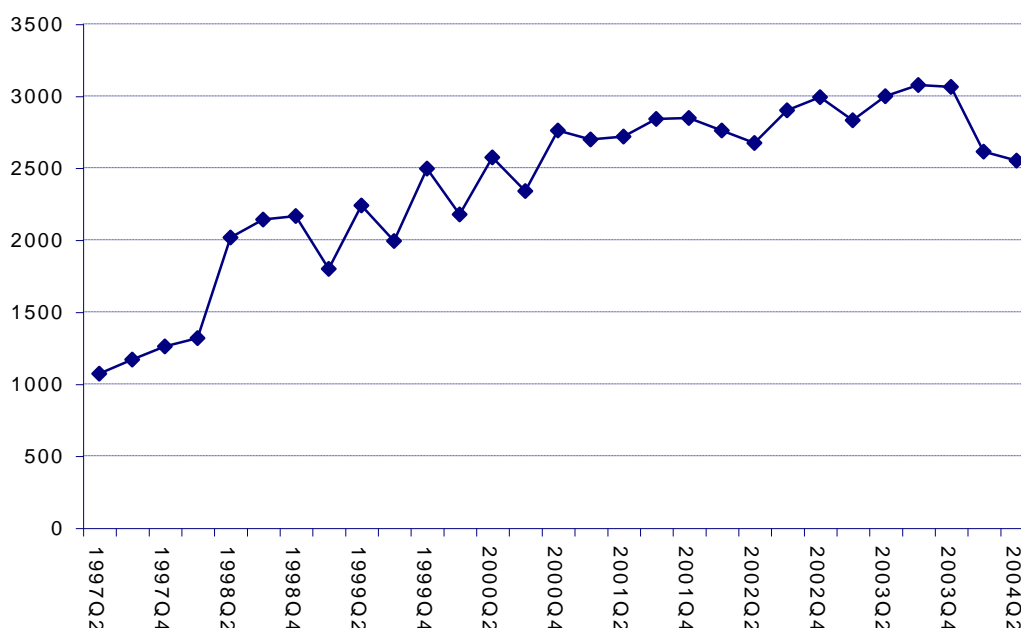
The comparability of ISPV over time (from its beginning) has been mutilated by the following :

- changes of the structure of variables
- increase in the number of respondents and change of sampling method
- changes of calculation methodology
- changes of the definition and of the structure of framework population

The ISPV has been carried out since year 1992, already. The most important change happened in the year 1998, when the list of variables was enlarged to structural variables on the earnings components and on indicators of hours worked, cumulatively from the beginning of the calendar year to the end of respective quarter.

The last change happened at 1.1.2002 as a consequence of implementation of the Eurostat's requirements. Some new variables of the ISPV has been added into the list of enterprise variables: UTVAR (regional department/establishment of the enterprise), FINKONT (financial control of the enterprise) and KOLSML (existence of the collective pay agreement); and into the list of employee's variables: EVIDDNY (number of days in the enterprise files), ABSENCE (days of absence), NEMOC (days of illness) and DOVOLENA (days of holidays). Variables on earnings was also changed due to the Eurostat's requirements, some new variables were added: PRIPPCAS (overtime payment) a POHOTOV (payments for being on call to work).

Development in the number of ESs included in the ISPV calculation



Another change has been related to the definition of the monthly gross earnings. Originally, average gross monthly earnings for a year were calculated as yearly figure on total earnings divided by 12 (number of calendar months), it was made for all employees with number of hours paid more than a threshold - 1700 hours for years 1996-2000 and 1592 for year 2001 (change because of the law). Since 2002, average gross earnings is calculated as the sum divided by sum of hours paid expressed as a number of months. Monthly earnings for a specific group of employees is therefore calculated using weights; earnings of an employee has a weight related to the number of months paid for the reference period. This way of calculation enable a correct comparison on earnings levels as well as comparison over time. The records on employees have to fulfil the following criteria:

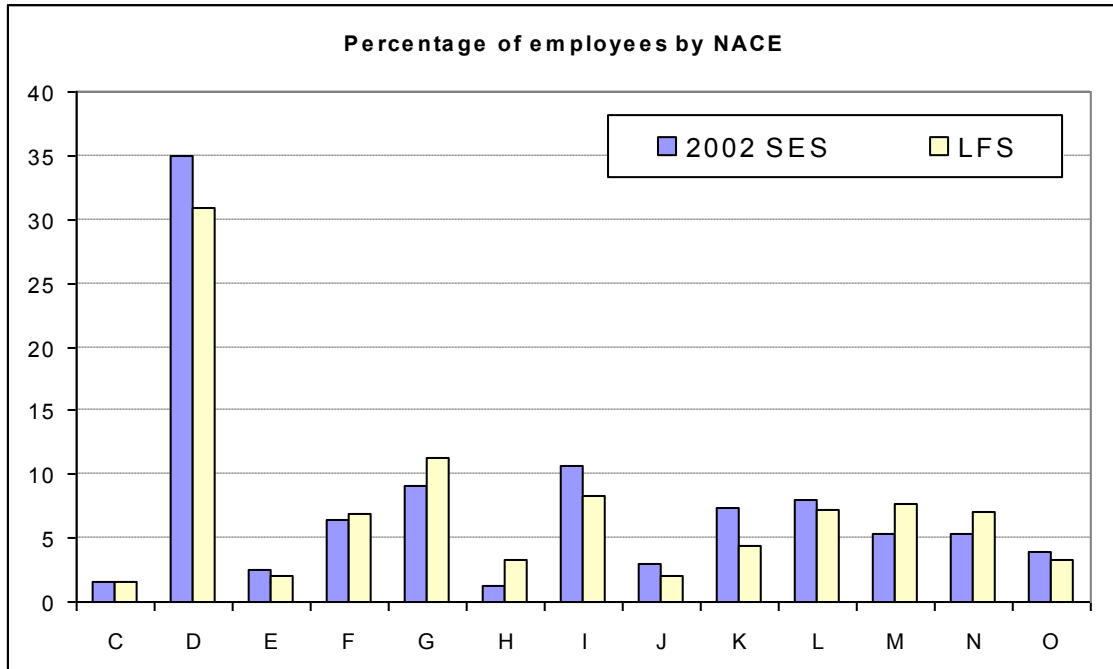
- time paid of employee is at least a month,
- only employees with employment contract are considered,
- mathematic condition is fulfilled: sum of hours worked plus hours not worked expressed in days is approximately equal to number of days in the reference period,
- only full time employees are taken whence the full time concept is defined according to the Eurostat criterion by means of normal working hours per week (30 hours a week at minimum),

Related to the change in the calculation methodology, the framework population and the sample population of ISPV have been redefined in the beginning of the year 2003. Due to this redefinition, some ESs that were originally inside the ISPV, have become outsiders and have not been collected any more (e.g. non-profit organizations).

All these facts have to be taken into consideration during time series analyses of ISPV. The hourly earnings is the most relevant indicator for comparisons over time because it is minimally effected by the methodology development.

6 Coherence

Coherence as an attribute of the quality of a statistical survey should explain similarities and/or differences between two or more earnings surveys. The relevant comparison could be between ISPV on the one hand and Labour Force Survey (LFS) or the Enterprise Employment and Wage Report on the other hand.



A significant difference in these comparisons is a fact that the ISPV is made only on the scope of enterprises/organizations with 10 and over employees as well as the fact that ISPV does not collect information on the sector of households and non-profit organizations (according to the classification of ESA-95). The LFS is a household survey, and data on the persons living in the collective households/lodgings are not collected; in addition; the LFS is not limited in the size class of the enterprise, it covers total national economy from this point of view. Another inconsistency stems from different concepts of industrial link to the person - the LFS asks a respondent about the industry he/she works - the NACE code is linked by interviewer. In the ISPV, the NACE code is gathered from the BR. It can cause a great discrepancy, for example a cook from the school canteen would be coded as NACE 80 - Education, but in the LFS, it would mistakenly be a catering industry according to his/her perception, i.e. NACE 55. The similar problem is with the link to the ISCO-88 classification, it is made by expert from the enterprise HR department in the ISPV; in the LFS it is made using description from the respondent according to his/her perception. Detailed results on the percentage of employees by NACE section, by levels of education of employees and by ISCO-88 major group are enclosed as a MS-Excel file.

The Enterprise Employment and Wage Report collects information on number of employees and sum of wages from ESs with:

- 20 and over employees (non-financial institutions, employees of unincorporated private entrepreneurs)
- irrespective of the number of employees (financial and insurance institutions, all organizations funded from the state or local budget, and all non-profit

institutions)

Qualified estimations are made on the ESs with less than 20 employees (where the collection is not made. The differences between gross earnings both from the Report and ISPV is being analysed. Some causes can be named: different target population, different way of calculation of the monthly earnings (short-term illness does not effect the denominator in the Report) and different grossing up methods.

7 Completeness

Eurostat divides variables to mandatory and optional ones. The following chapter describes the mandatory variables and shows their link between national and European concept.[8]

7.1 Information relating to the ES (table A)

Table Identification of the table (A)

YEAR Identification of the reference period (2002)

A11 Region

The information is required on the level of NUTS1. For the Czech Republic, it represents whole state. Consequently, all records have to be coded as CZ. The indicator is obligatory.

A12 Size of the ES to which the local unit belongs

Classification with the following scale is applied: 10-49 employees, 50-249 employees, 250-499 employees, 500-999 employees, 1000 and over employees. This information is derived from the various sources (the Business Register, the number of records in the database ISPV before checks as well as after them or the number of employees collected in the CZSO Enterprise and Wage Report). Based on these indicators, the size category is decided as well as number of employees in the ES. The indicator is obligatory.

A13 Economic activity

The information is derived from the BR. The indicator is obligatory.

A14 Economic and financial control

The information was collected in the ISPV. Some missing information on 414 ESs (15,4%) was derived from the BR (based on ISEKTOR variable). Because of the rapidly developing economy in the CR, the data entry from ES is supposed to be more precise specification. The required breakdown was: public control or private control or mixed control; as no ES in the CR has mixed control, there are only two possible options in the database. The indicator is obligatory.

A15 Kind of collective pay agreement

During the ISPV, an existence of the collective pay agreement has been gathered. The distinction on the types was made by different ways. In fact, there are two alternatives of collective pay agreement in the CR: on the enterprise level or on higher level, it means industry. The enterprise level is always more relevant (because it could

only improve the conditions not to get worse). The basic source on this distinction has been the “Informacni system o platovych podminkach ISPP” (Information system on the pay conditions). In this source, only ESs with the enterprise level of collective pay agreement are assembled.

Another source is list of collective pay agreements on the higher level; they are collected by the MLSA in a special statistics.

The third source was the ISPV itself. When the ES was not included in the ISPP and no higher level of collective pay agreement was found, indication of the ES get from it was used (i.e. where it was YES it meant the enterprise level, where it was NO then collective pay agreement did not exist at all). The indicator is obligatory.

A16 Total number of employees in the local unit

It was not collected during the ISPV, seeing that the indicator is optional.

A17 Principal market

It was not collected during the ISPV, seeing that the indicator is optional.

A18 Size of the group of enterprises

It was not collected during the ISPV, seeing that the indicator is optional.

A19 Country of residence

It was not collected during the ISPV, seeing that the indicator is optional.

A41 Grossing – up factor (weight) of the local unit

In the ISPV, the sampling scheme is based on the enterprises, therefore, the weight are put to the enterprise. Local unit obtains the weight of the enterprise. The indicator is obligatory.

KEY_L Identification of the local unit.

ESs have an obligation to distinguish among its local units. Local units are defined for the purposes of 2002 SES as a organization unit with different code of NUTS4 or industry. As the NUTS1 breakdown required for the 2002 SES means the whole territory of the CR, local units are not distinguished. The indicator is obligatory.

7.2 Information relating to each employee (table B)

All these variables are taken from the ISPV.

Table Identification of the table (B)

YEAR Identification of the reference period (2002)

KEY_E Identification of the employee

B21 Sex

The indicator is obligatory; it is taken from ISPV.

B22 Age

The indicator is obligatory; it is taken from ISPV.

B23 Occupation (ISCO-88 COM)

The information is required on the 3-digit level of ISCO-88, ISPV collect 4- or 5-digit level. The indicator is obligatory.

B24 Managerial position

It indicates whether the employee is in the managerial position to one or more employees. YES/NO distinction is required. The indicator is optional, however, it has been collected in the ISPV, but the item non-response was very high. For that reason, we decided not to include it to the final result database.

B25 Education (ISCED 97)

Highest completed level of education and training has been collected in the ISPV and coded according to the national classification of “Klasifikace kmenovych oboru vzdelani (KKOV)”. Because of the difficult convertibility from KKOV to ISCED-97 (as the Czech national educational system does not correspond much with the international standards) especially in the area of secondary education, we use the possibility of 03 code, i.e. higher secondary education. The non-response rate (8,2%) has been solved by an estimation procedure based on the ISCO-88 code, education and earnings zone.

B26 Length of service in the enterprise.

The indicator is obligatory; it is taken from ISPV.

B27 Full-time or part-time

The indicator is obligatory; it is not collected straight in the ISPV; it is derived from analysis of the variable “normal working hours per week” by the individual enterprise. It means that modal figures of normal working hours per week were calculated in the enterprise broken down by major group of ISCO-88. Then, four most frequent figures were set in the enterprise, they represented the full-time concept for various groups of employees. An employee with lower normal working hours per week than his/her concept is considered as a part-time employee. Using the same principle, there was calculated the percentage of the part-time (**B271**). Both variables are obligatory.

B28 Type of employment contract

The ISPV has not been collecting information on employees in training. So, there are two possibilities in the database: indefinite duration and fixed-term. The indicator is obligatory.

B29 Citizenship

The indicator is optional; it is taken from ISPV.

B210 Covered by a government scheme designed to promote employment

It was not collected during the ISPV, seeing that the indicator is optional.

B211 Years of career breaks in the current enterprise (in months)

Cumulation of all long-term (more than 1 year) career breaks/absences. The indicator is optional; it is taken from ISPV.

B30 Average gross hourly earnings

Average gross hourly earnings in the representative month is calculated as a

ratio of the gross earnings for a representative month and number of paid hours for a representative month. The reasons for that are explained in the chapter 2.2.5.

B31 Gross earnings for a representative month

Gross earnings for a representative month is a ratio of annual earnings minus bonuses and number of months paid. The reasons for that are explained in the chapter 2.2.5.

B311 Earnings related to overtime

They are not collected directly in the ISPV; overtime additional payments as well as number of overtime hours are collected. Using this information, whole overtime payment can be calculated as follows:

$B311 = \text{overtime additional payment/number of months paid} + \text{number of overtime hours/number of months paid} * B30.$

B312 Special payments for shift work

The indicator is obligatory; it is taken from ISPV.

B32 Total gross annual earnings in the reference year

The indicator is obligatory; it is taken from ISPV.

B321 Number of weeks/months to which the gross annual earnings relate

The indicator is obligatory; it can be calculated from data of ISPV.

B322 Total annual bonuses

The indicator is obligatory; it is taken from ISPV. In contrast to the requirement of 2002 SES, information relate to the all types of bonuses, i.e. distinction on the regularity is not made. for more see 2.2.5.

B3221 Regular bonuses not paid at every pay period

It was not collected during the ISPV, seeing that the indicator is optional.

B3222 Annual bonuses based on productivity

It was not collected during the ISPV, seeing that the indicator is optional.

B3223 Annual premiums related to profit-sharing

It was not collected during the ISPV, seeing that the indicator is optional.

B33 Compulsory social contributions and taxes paid by the employer on behalf of the employee

It was not collected during the ISPV, seeing that the indicator is optional.

B331 Compulsory social security contributions

It was not collected during the ISPV, seeing that the indicator is optional.

B332 Taxes

It was not collected during the ISPV, seeing that the indicator is optional.

B34 Number of hours paid during the representative month

It is calculated from annual data, for more see chapter 2.2.5. This indicator is not optional.

B341 Number of overtime hours paid in the representative month

It is also calculated from annual overtime data (for more see chapter 2.2.5.) This indicator is not optional.

B35 Annual days of absence

The indicator is obligatory; it is taken from ISPV.

B351 Annual days of holiday leave (in days)

The indicator is obligatory; it is taken from ISPV.

B3511 Annual days of holiday leave – entitlement (E) or actually taken (T)

All employees in the database have T, as the ISPV collect information on the days of holidays actually taken.

B3521 Annual days of sick leave

The indicator is optional; it is taken from ISPV.

B3522 Annual days of sick leave not paid by the employer

Sick leave is never paid by employer in the CR. The indicator is optional.

B353 Annual days of vocational training

It was not collected during the ISPV, seeing that the indicator is optional.

B36 Annual estimation for payment in kind

It was not collected during the ISPV, seeing that the indicator is optional.

B42 Grossing up factor (weight) for employee

The weight for employee is calculated as a ratio of the number of employees of the ES and the number of employees in the final database. Due to coherence with the CZSO Enterprise and Wage Report, the same numbers of employees are used.

All obligatory variables relating to the ES are gathered using several sources. The preference is put on the data entering straight from the respondent (ISPV; ISPP), administrative sources are used as auxiliary ones. Statistics of MLSA on the collective pay agreements on the higher level have been used for the variable A15.

As regards the variables relating to each employee, there is a deficiency in variables B31 and the others relating to it, in particular the B322. The ISPV collects information on bonuses, but it does not now distinguish between those paid every month and the irregular ones. It is very hard to separate these two variables; seeing that we use the electronic way of data collection we are tied with the information actually present in the enterprise's databases.

The recent list of ISPV variables was established already before the beginning of year 2002 seeing that the ISPV is a national longitudinal survey and legal circumstances are very rigid. Some requirements had not been known in that days, and in the end of the year where 2002 SES were gathered, there were no possibility to ask for data backwards. It caused some difficulties.

A new structure of ISPV variables would be prepared for year 2006. It should take into account the requirements of the 2006 SES.

Literature

- [1] Informační systém o průměrném výdělku, Čtvrtletní výběrové statistické zjišťování, 2002 IV. čtvrtletí
- [2] Regulation EC No. 72/2002 of 16 January 2002
- [3] Vyhláška č. 470/2002 Sb., kterou se stanoví Program statistických zjišťování na rok 2003
- [4] Sborníky materiálů pro jednání komise pro řízení a koordinaci prací spojených s ISCP
- [5] Protokoly o průběhu čtvrtletního zpracování ISPV – interní materiál zpracovatele šetření.
- [6] Imputace v šetření ISPV – interní materiál zpracovatele šetření.
- [7] Algoritmus přidělování vah ekonomickým subjektům – interní materiál zpracovatele šetření.
- [8] Structure of Earnings Survey 2002 – Eurostat's arrangements for implementing the Council Regulation 530/1999 and the Commission Regulation 1916/2000 of 6 April 2004

Annex 1 – structure of the variables (ISPV)

Order. No.	Format				Variables about the local unit	Unit
	dBase			Scope		
	Acronym	Type	Digits			
1.	ICO	N	8	0	Identification No. of the ES	
2.	UTVAR	N	6	0	Identification of the organization unit (establishment, local unit, etc.)	
3.	NUTS4	C	6	0	Region (NUTS)	
4.	OKEC	N	5	0	Industry (according to the national version of NACE)	
5.	PFORMA	N	3	0	Form of the organization (CZSO classification)	
6.	NAZEV	C	45	0	Title of the ES	
7.	A_ULICE	C	30	0	Street	
8.	A_CP	C	5	0	Street number	
9.	A_MISTO	C	30	0	Place	
10.	A_PSC	N	5	0	Postal code	
11.	MESIC	N	2	0	Reference period	
12.	FINKONT	N	1	0	Financial control (major owner)	
13.	KOLSML	C	1	0	Existence of the collective pay agreement	
14.	ZAKONODM	C	1	0	Act governing the way of earnings distribution in the ES (salary/wage)	
15.	POCP	N	6	0	Number of employees (persons) at the end of the reference period	

Order No.	Format				Variables about employees	Unit
	Acronym	dBase Type	Scope			
			Digits	Decimals		
1.	ICO	N	8	0	Identification No. of the ES	
2.	UTVAR	N	6	0	Workplace - Identification of the organization unit	
3.	OSOBC	N	8	0	Sentence No. - personal number of the employee	
4.	ROKNAR	N	4	0	Calendar year at birth	
5.	POHLAVI	C	1	0	Sex	
6.	STOBC	C	2	0	Citizenship (according to the UN classification)	
7.	VZDELANI	C	1	0	Highest completed level of education (KKOV)	
8.	CZICSE	N	4	0	Status in employment (according to the national version of ICSE)	
9.	ZAMEST	N	5	0	Occupation (KZAM-R)	
10.	TARSTUP	N	2	0	Tariff scale	
11.	VEDOUCI	C	1	0	Managerial position	
12.	TYDFOND	N	5	2	Normal working hours per week	Hour
13.	DOBAZAM	N	5	2	Length of service in the ES	year
14.	PRERUS	N	5	2	Long term absence (career break)a	year
15.	EVIDDNY	N	3	0	Number of calendar days from the beginning of the year for which the employee is included in the total number of employees in the ES	day

Order No.	Format				Variables about employees	Unit
	dBase			Scope		
	Acronym	Type	Digits			
16.	ODPRACD		7	2	Number of hours worked from the beginning of the year	hour
17.	PRESCAS	N	7	2	number of overtime hours for which additional payment was paid (from variable 16)	hour
18.	ABSENCE	N	3	0	Total number of days not worked from the beginning of the year	day
19.	NEMOC	N	3	0	number of days in sick leave (from variable 18)	day
20.	ABSNAHR	N	3	0	total number of days not worked but paid (from variable 18)	day
21.	DOVOLENA	N	3	0	total number of days not worked but paid – holidays (from variable 20)	day
22.	MZDA	N	8	0	Wage (salary) related to work cumulatively from the beginning of the year	CZK
23.	PREMODM	N	8	0	bonuses (from variable 22)	CZK
24.	PRIPPCAS	N	8	0	overtime additional payments (from variable 22)	CZK
25.	PRIPLAT	N	8	0	other additional payments (from variable 22)	CZK
26.	NAHRADY	N	8	0	Payments for days not worked cumulatively from the beginning of the year	CZK
27.	POHOTOV	N	8	0	Payments for being on call to work cumulatively from the beginning of the year	CZK
28.	NEZCAST	N	8	0	Tax bonus cumulatively from the beginning of the year	CZK
29.	PRUMVYD	N	8	2	Average hourly earnings used for payments for days not worked in the reference quarter	CZK/h

Annex 2 – structure of the 2002 SES variables, relation to the ISPV variables

Table B

Acronym	Description	Calculation using the ISPV data
TABLE	identification of the table	always 'B'
YEAR	reference year	always '2002'
KEY_E	identification of the employee	transformation from OSOBC
B21	sex	POHLAVI
B22	age	2002 - ROKNAR
B23	occupation	KZAM-R-ISCO-COM classification
B25	education	KKOV-ISCED97 classification
B26	length of service in the ES	DOBAZAM
B27	full-time/part-time	analysis of TYDFOND inside the ES
B271	percentage of PT	analysis of TYDFOND inside the ES
B28	status in employment	CZICSE
B29	citizenship	STOBC
B30	hourly earnings	$\frac{MZDA+NAHRADY+POHOTOV- PREMODM}{ODPRACD + ABSNAHR*TYDFOND/5}$
B31	earnings for the representative month	$\frac{MZDA+NAHRADY+POHOTOV- PREMODM}{MESPLAC}$
B311	overtime payment	$\frac{B30*PRESCAS + PRIPPCAS}{MESPLAC}$
B312	shift work payment	$\frac{PRIPLAT}{MESPLAC}$
B32	annual earnings	MZDA + NAHRADY + POHOTOV
B321	Number of weeks to which the gross annual earnings relate.	MESPLAC/12*365/7
B322	total annual bonuses	PREMODM
B34	number of hours paid in the representative month	$\frac{ODPRACD + ABSNAHR*TYDFOND/5}{MESPLAC}$
B341	number of overtime hours in the representative month	$\frac{PRESCAS}{MESPLAC}$
B35	annual number of days of absence	ABSENCE
B351	annual number of days of holidays	DOVOLENA
B3511	holidays entitlement (E) or taken (T)	always 'T'
B352	annual number of days of sick leave	NEMOC
B3521	annual number of days of sick leave paid by the employer	always equal 0
B3522	annual number of days of sick leave not paid by the employer	NEMOC
B42	weight for employee	calculation
KEY_L	identification of the ES	ICO-KEY_L classification

Annexes 3 and 4 are in the MS Excel form.