

Dissemination of wage data from the Spanish LFS: anonymised microdata files

Instituto Nacional de Estadística- SPAIN

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1. Background

- No quantitative information about income is asked in the interview in the Spanish LFS
- No doubt, work related income is a very relevant variable to study labour market
- Voluntary variables on income in the LFS (Reg.577/1998)
- Compulsory information on wages of main job (Reg.1372/2007) in form of deciles (Reg.377/2008)



2. Main problems associated to interview on income (CAPI-CATI)

- Conceptual complexities
 - Gross vs. net wages, components to be considered
 - Time period of study (annual, monthly, daily ... pay)
- Validity issues
 - Proxy interviews
 - Capture in household surveys of a complex concept
- Non response
 - ‘Underestimation’ and ‘cognitive framework’ associated to income



3. Accessing to administrative sources to obtain the variable

- The LFS regulation allowed to access the full range of administrative sources on income data
- The access to individual tax information for statistical purposes was excluded from our national law (unless it is allowed by EU regulations).
- The methodology used is determined by the variable requested in the regulation: INCDECIL anual variable



4 Dissemination of wage data from Spanish LFS

Available series 2006-2015



4.1 Employees distribution by deciles

- The initial dissemination of the variable INCDECIL was a straightforward tabulation of the distribution of deciles of the employees by relevant variables:
 - Full-time/Part-time distinction (FTPT) and
 - AGE GROUP / SEX / CITIZENSHIP / REGION / HATLEVEL / HATFIELD / ISCO-1 / NACE-A21 / TEMP / SIZEFIRM etc.
- Plus an additional table on wages (lower limit and average wage by decile)



Table 1A. Employees by full-time/part-time distinction, sex and decile. Number of employees (thousands)

	2015										
	Total	1	2	3	4	5	6	7	8	9	10
Number of employees											
Total											
Total	14.756,7	1.474,8	1.476,1	1.476,0	1.475,5	1.475,9	1.475,5	1.475,5	1.475,8	1.475,8	1.475,8
Males	7.704,2	378,3	519,2	628,9	759,8	867,0	901,0	907,6	873,8	897,1	971,4
Females	7.052,5	1.096,6	956,9	847,1	715,7	608,9	574,5	567,9	602,0	578,7	504,4
Full-time											
Total	12.220,3	94,0	819,7	1.256,7	1.342,0	1.423,7	1.439,9	1.443,3	1.457,2	1.470,5	1.473,4
Males	7.057,7	47,0	351,5	572,9	708,8	855,9	890,1	897,6	867,9	894,6	971,4
Females	5.162,6	47,1	468,2	683,8	633,1	567,8	549,8	545,7	589,3	575,9	502,0
Part-time											
Total	2.536,4	1.380,8	656,4	219,3	133,6	52,2	35,6	32,2	18,6	5,3	2,4
Males	646,5	331,3	167,8	56,0	51,0	11,1	10,9	10,0	5,9	2,5	..
Females	1.889,9	1.049,5	488,7	163,3	82,6	41,1	24,7	22,2	12,7	2,8	2,4



Table 1B. Employees by full-time/part-time distinction, sex and decile. Percentages by sex.

Percentage											
Total											
Total	100,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0
Males	100,0	4,9	6,7	8,2	9,9	11,3	11,7	11,8	11,3	11,6	12,6
Females	100,0	15,5	13,6	12,0	10,1	8,6	8,1	8,1	8,5	8,2	7,2
Full-time											
Total	100,0	0,8	6,7	10,3	11,0	11,7	11,8	11,8	11,9	12,0	12,1
Males	100,0	0,7	5,0	8,1	10,0	12,1	12,6	12,7	12,3	12,7	13,8
Females	100,0	0,9	9,1	13,2	12,3	11,0	10,6	10,6	11,4	11,2	9,7
Part-time											
Total	100,0	54,4	25,9	8,6	5,3	2,1	1,4	1,3	0,7	0,2	0,1
Males	100,0	51,2	25,9	8,7	7,9	1,7	1,7	1,5	0,9	0,4	..
Females	100,0	55,5	25,9	8,6	4,4	2,2	1,3	1,2	0,7	0,1	0,1



Table 2. Average wage and lower limit by decile

Average wages

Gross monthly average wage of main job

Average wage and lower limit by decil

Unit: Euros

	Gross monthly average wage of main job									
	2015									
	1	2	3	4	5	6	7	8	9	10
Lower limit	..	680,00	979,52	1.215,71	1.402,85	1.596,79	1.814,04	2.136,72	2.607,24	3.424,75
Average	420,05	828,96	1.102,14	1.310,96	1.497,67	1.703,73	1.960,42	2.363,55	2.964,23	4.784,50

Source: LFS-Spain

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4.2 Average wages by deciles

- The previous tables were extended to the average wages by decile, using the same disaggregation and tabulation pattern
- The additional table of average wage and lower limit by decile was also included



Table 3. Average wage by full-time/part-time distinction, sex and decile.

Average wages

Gross monthly average wages of the main job

Average wages by full-time/part-time distinction, sex and decile

Unit: Euros

	2015										
	Total	1	2	3	4	5	6	7	8	9	10
Total											
Total	1.893,70	420,05	828,96	1.102,14	1.310,96	1.497,67	1.703,73	1.960,42	2.363,55	2.964,23	4.784,50
Males	2.122,47	454,86	833,73	1.101,65	1.312,87	1.497,04	1.705,75	1.961,57	2.360,62	2.963,63	4.858,79
Females	1.643,79	408,04	826,37	1.102,51	1.308,93	1.498,57	1.700,57	1.958,58	2.367,81	2.965,15	4.641,41
Full-time											
Total	2.142,03	615,79	850,46	1.103,99	1.312,19	1.497,28	1.704,22	1.961,12	2.364,19	2.964,56	4.786,61
Males	2.248,91	616,29	849,69	1.104,03	1.314,08	1.496,88	1.706,01	1.961,70	2.360,87	2.963,46	4.858,79
Females	1.995,93	615,29	851,05	1.103,95	1.310,06	1.497,87	1.701,31	1.960,17	2.369,08	2.966,27	4.646,94
Part-time											
Total	697,24	406,72	802,10	1.091,56	1.298,61	1.508,55	1.684,22	1.928,74	2.313,37	2.871,55	3.487,48
Males	742,16	431,98	800,29	1.077,30	1.295,97	1.509,48	1.684,87	1.949,70	2.323,48	3.022,91	..
Females	681,87	398,74	802,73	1.096,45	1.300,24	1.508,30	1.683,93	1.919,29	2.308,68	2.732,65	3.487,48

Source: LFS-Spain

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4.3 Anonymised microdata files

- Reached agreement with the tax agencies involved, we were authorised to build up an anonymised microdata file including the monthly wage.
- Special attention to higher wages
- Including the concrete monthly wage increases radically the risk of identification
- Need of grouping other variables and the higher wages.



Main features (I)

- The file includes the same registers that the annual LFS file for subsample variables
 - Not only employees, but also other employed, unemployed, inactive and aged less than 16.
- Variables about structure of the household are included
- Dichotomous variable on receiver of income
- It is a national file
 - No NUTS disaggregation is provided
 - Only a characterization of the municipality based on the 'size' (inhabitants) / stratification criteria



Main features (II)

- Variables are grouped
 - Age in five-years intervals
 - NACE, ISCO, ten categories
 - HATLEVEL, seven categories
 - FIELD, first level (10 categories)
 - SIZE (4 specific categories)
 - Usual hours (6 specific categories)
 - Time working in the Enterprise (6 categories)
 - Atypical work is transformed in a dichotomous variable



Coherence issues

- Derived from grouping the wages 5.000+ by sex.
 - Except the whole group of earners 5.000+ is included in just one of the (other variable) categories involved (see example in next slide)
 - Calculated data only approximates the published results
- Caused by the consistency requirements for the subsample variables
 - The employees are not calibrated, only total employment does



Coherence issues

Example of differences

Average wages

Average gross monthly wages from main job

Average wages by duration of the contract

Unit: Euros

	Published data
	2015
Total	
Total	1.893,70
Permanent	2.090,16
Temporal	1.314,51

Results from anonimised microdata

2015

Total

1.893,70
2.089,37
1.316,83



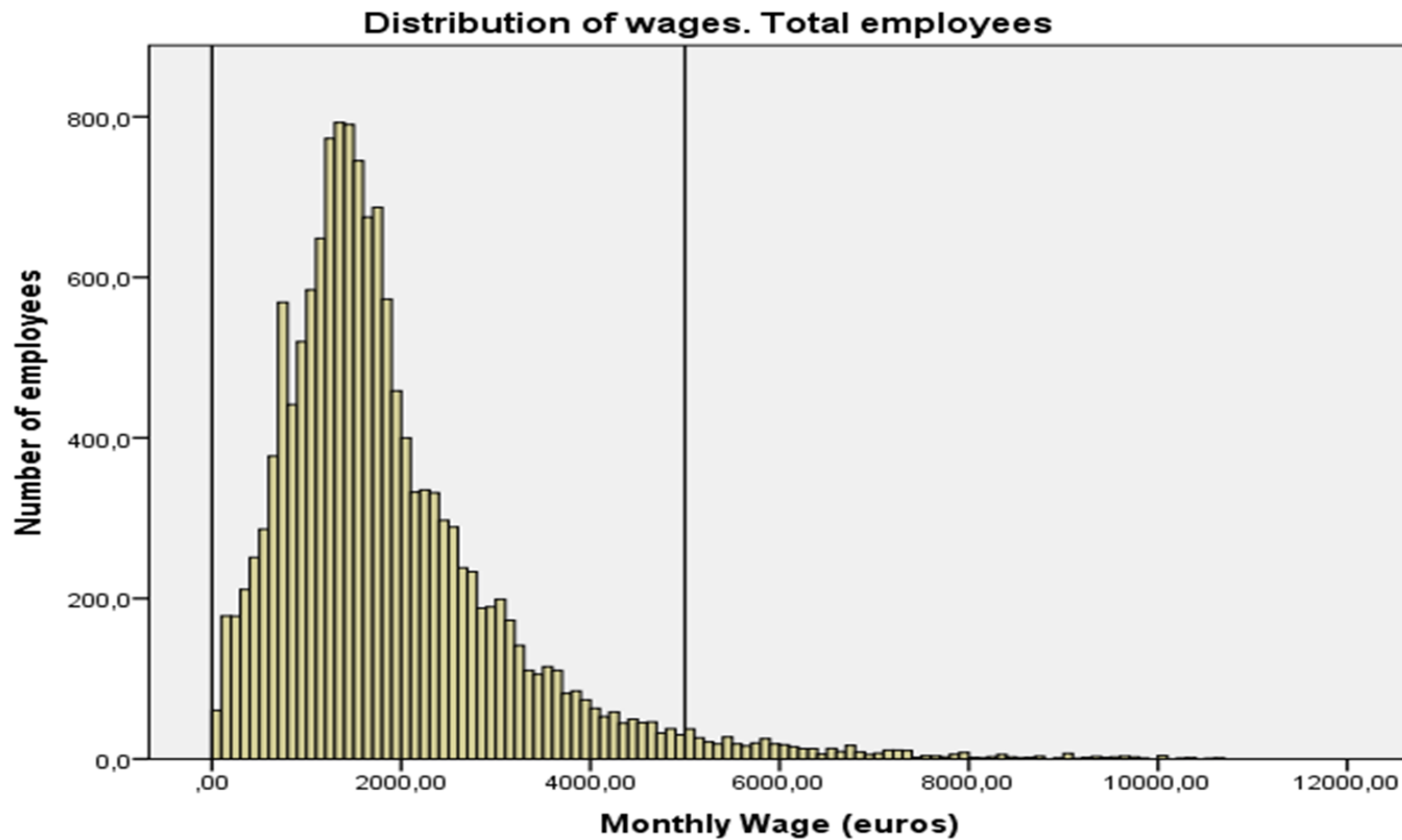
Some illustrative results from the anonymised microdata files 2015

Graphs



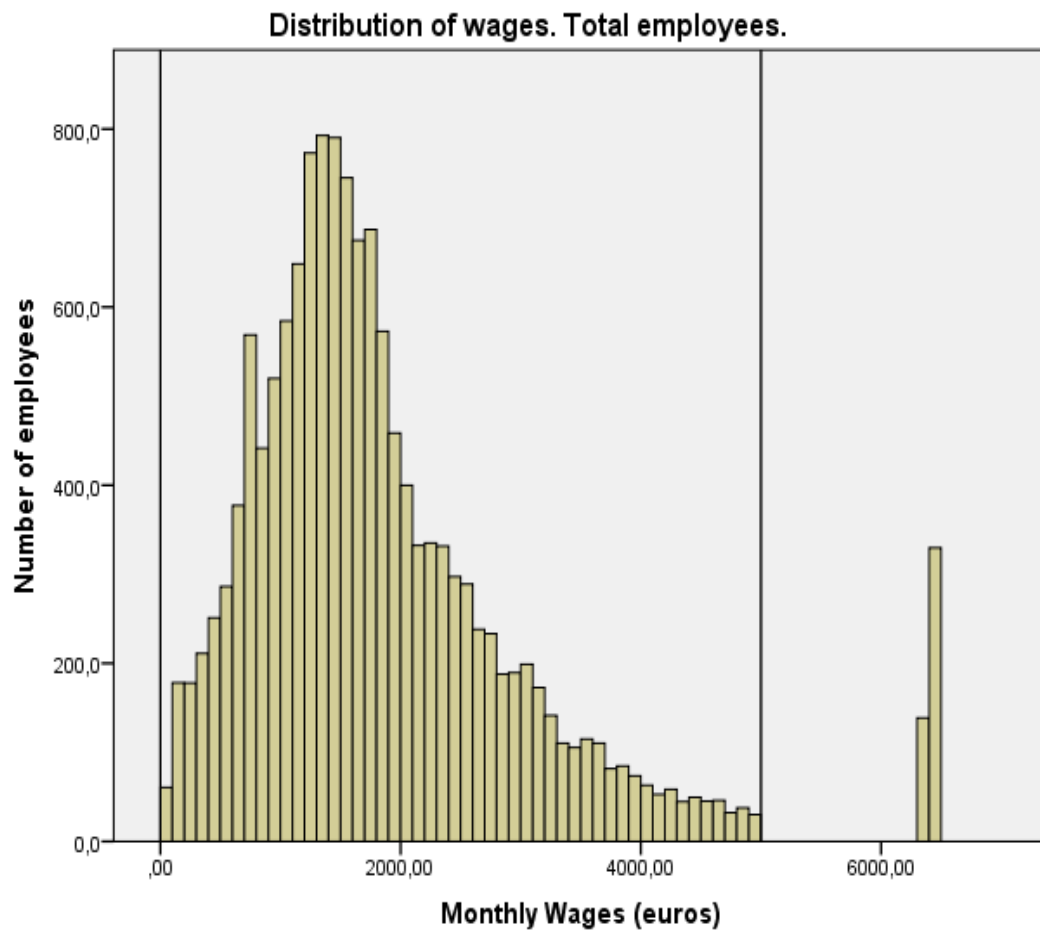
Graph 1. A

Full data



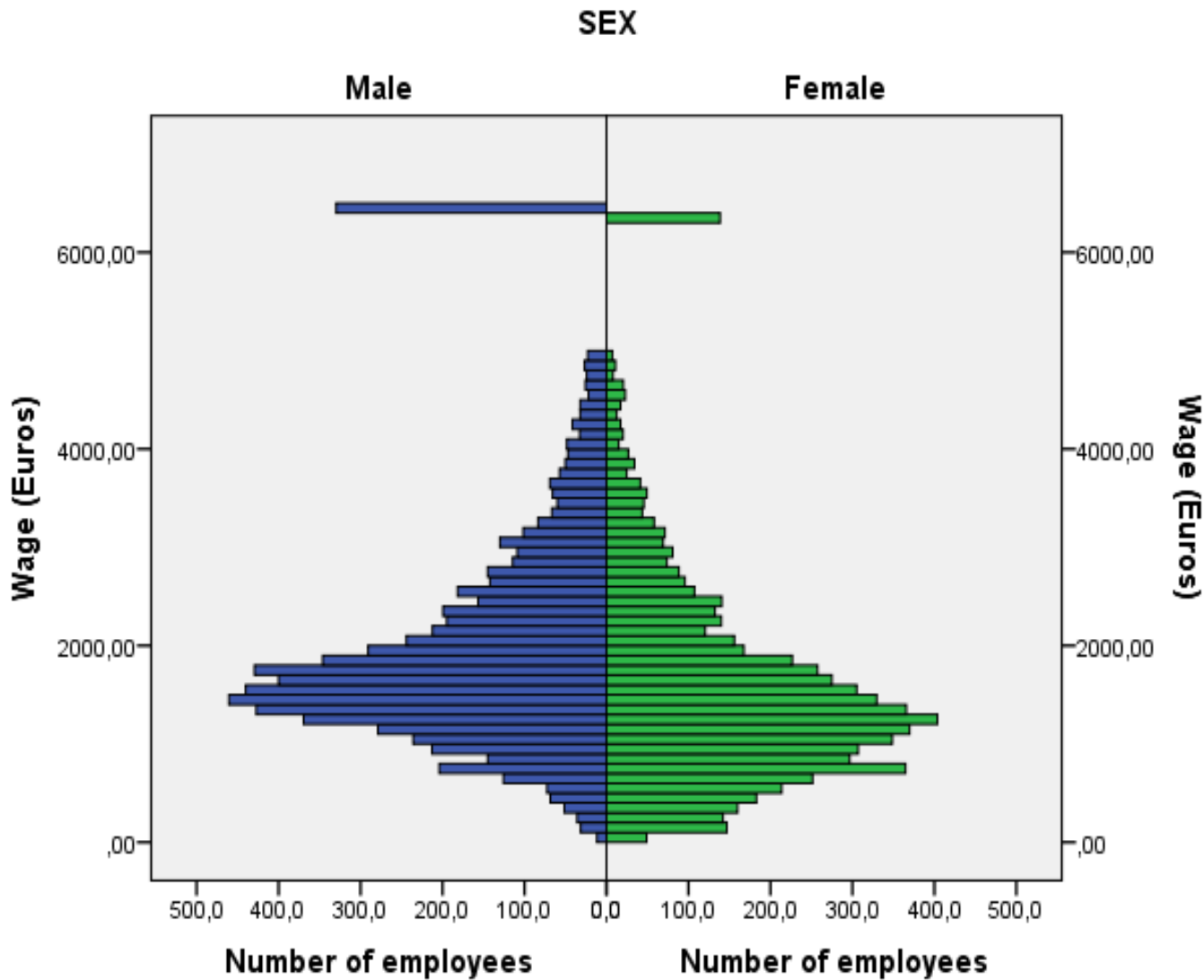
Graph 1. B

Same average wage by sex for 5.000+



Graph 2

Distribution of wages by sex.



Graph 3

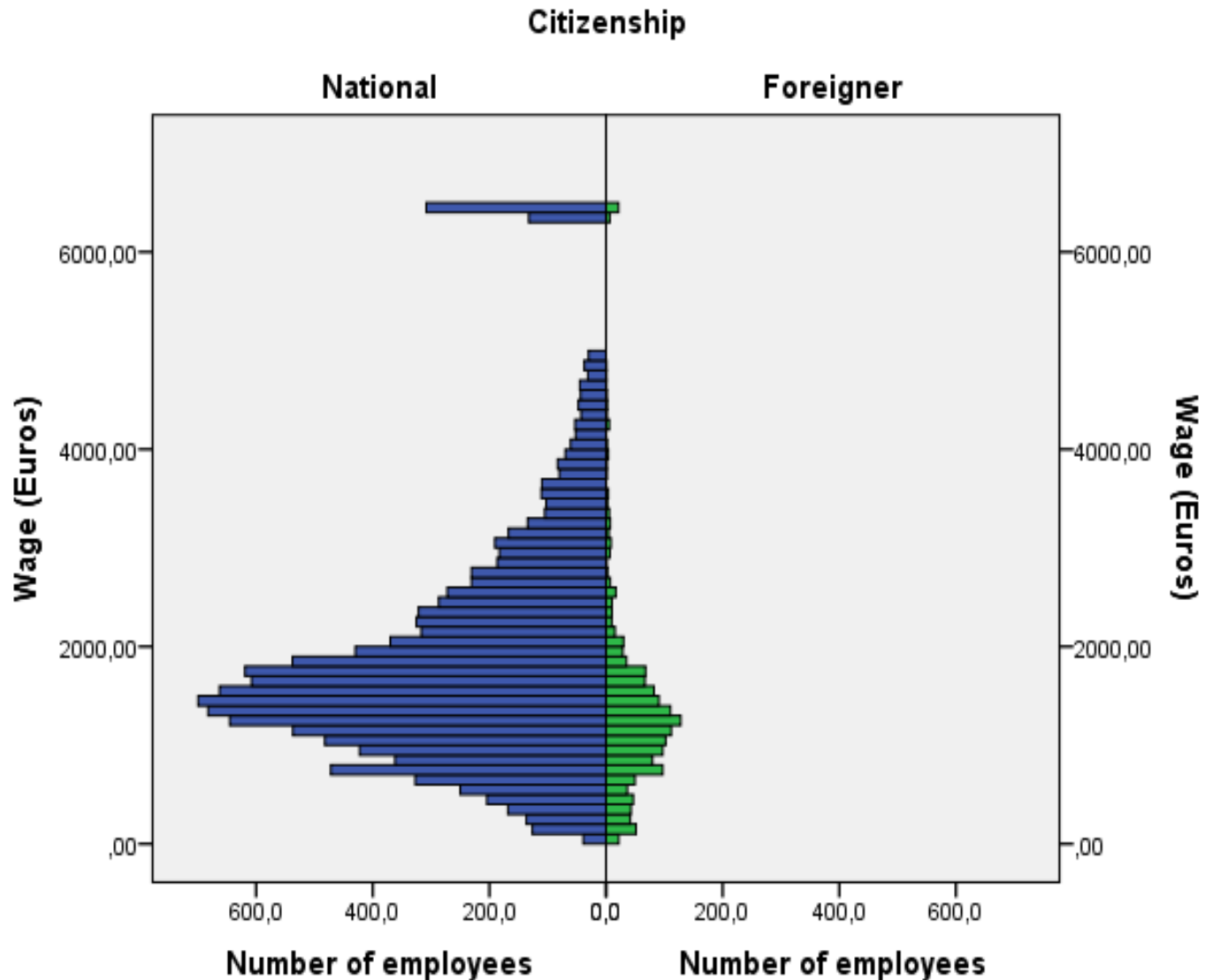
Distribution of wages by full time / part time distinction

Full Time / Part Time distinction



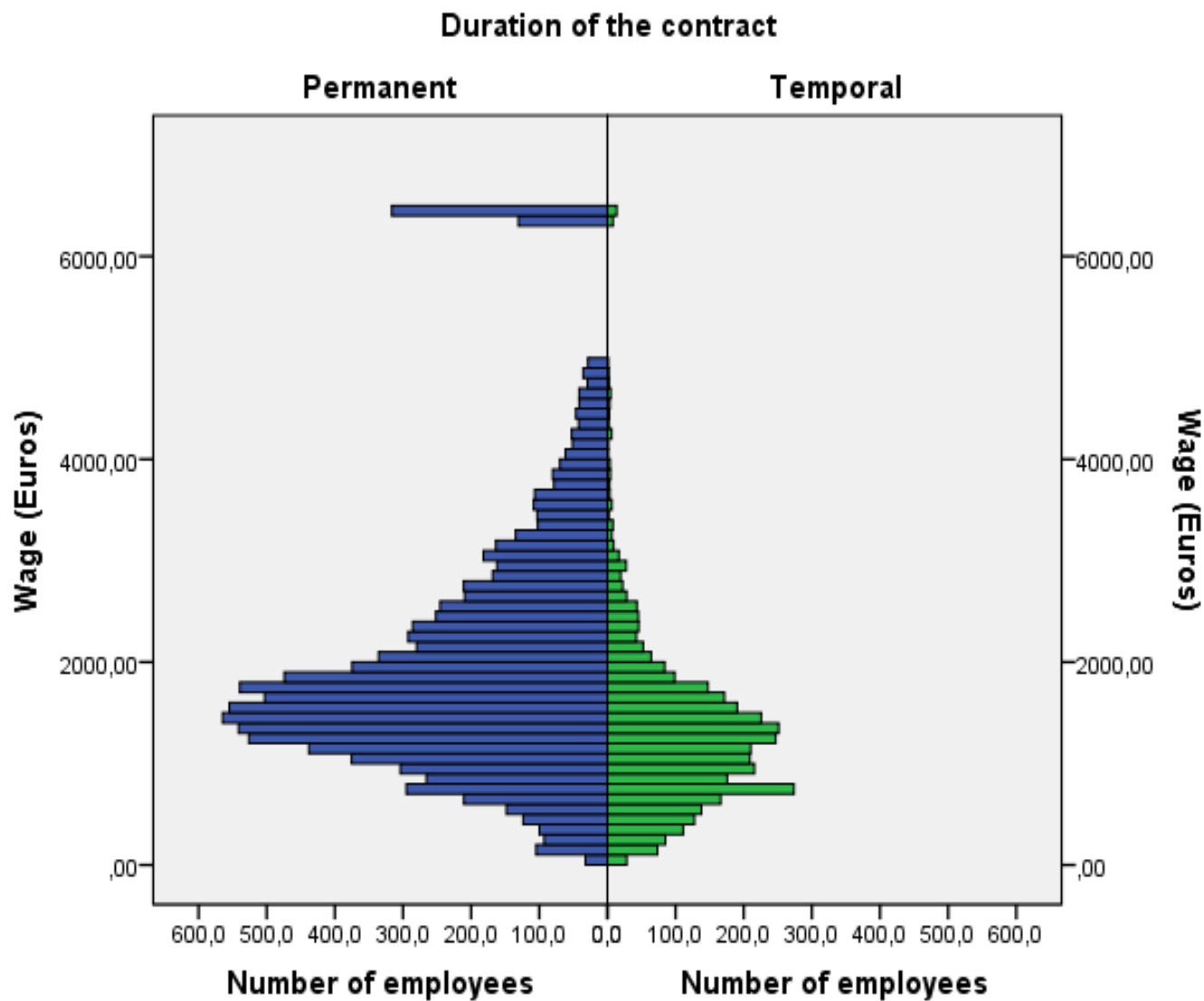
Graph 4

Distribution of wages by citizenship

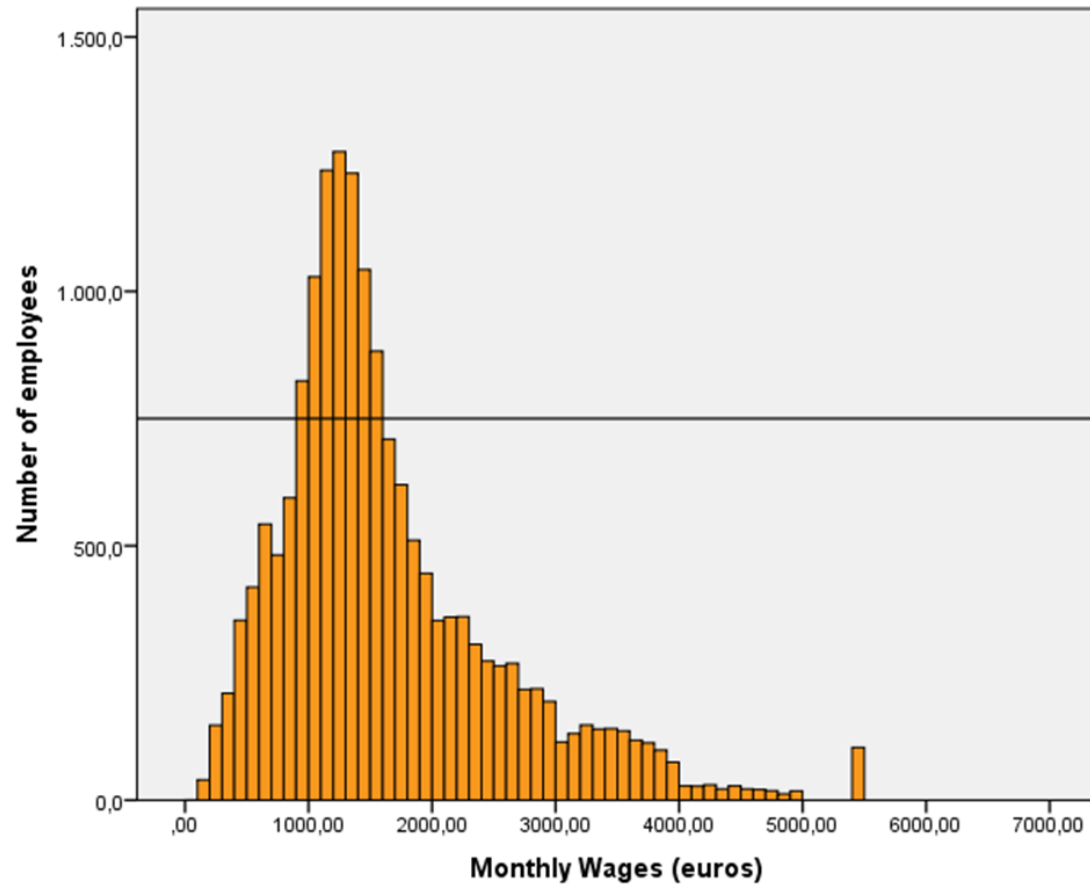


Graph 5

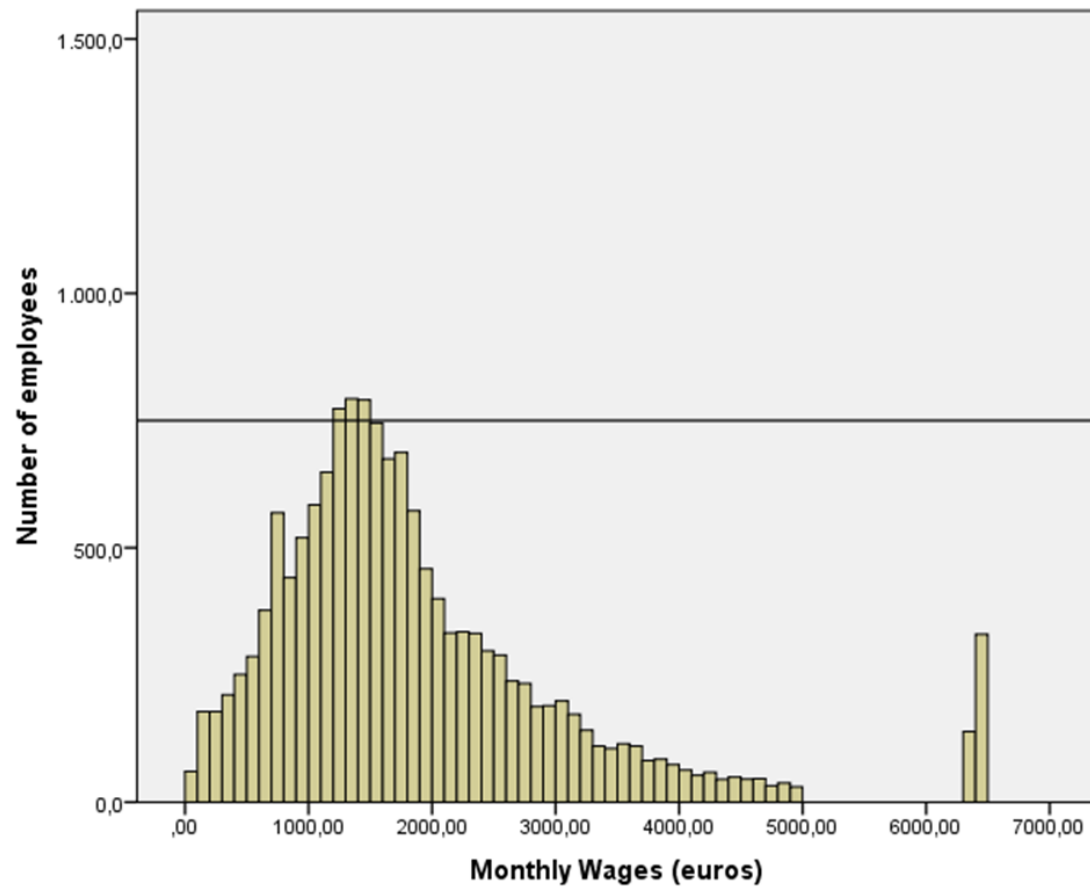
Distribution of wages by duration of the contract



2007



2015



This is the end of this presentation

Thank you for your attention

