

#### **HELLENIC REPUBLIC**



## HELLENIC STATISTICAL AUTHORITY

DIVISION OF ORGANIZATION, METHODOLOGY AND INTERNATIONAL RELATIONS
DIVISION OF POPULATION AND LABOUR MARKET STATISTICS

## **Production of Job Vacancy Statistics**

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**Final Technical Report** 

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#### 1. Introduction

Under the framework of the Grant Agreement N<sup>o.</sup> 10201.2010.002-2010.413, that was signed between the European Community and the Hellenic Statistical Authority, we carried out a survey on job vacancies in Greece, for the years 2010 and 2011. Specifically, the survey refers to the third and fourth quarter of 2010 as well as the first and second quarter of 2011. However, for more accurate conclusions we have included all quarters of 2010 and the first three quarters of 2011. It covers sections B-S (except O) of NACE Rev.2 and the enterprises with average annual employment equal to or greater than one employee.

The specific study, using the basic quality indices and the results of an expanded survey, was able to conclude all the necessary actions that have to be done, in order to improve the results and the processes, which are implemented or used for the production of the results.

As the quality of the results has to do with the survey processes, the correlation between the accuracy of the results and the design of the survey, the sampling and non-sampling errors, the timeliness and the coherence with other statistics, was explained.

Specifically, this program:

- has examined the relationship of the enterprise variables (wage earners and job vacancies), to assess if wage earner is a suitable variable used as a stratifier.
- has analysed the feasibility to produce annual job vacancy statistics by ISCO-08 occupations and/or NUTS2 regions
- has reached proposals and conclusions for a redesign of the survey to be conducted in the future on quarterly basis, so that the results at NUTS 2 and ISCO-08 level with the trend of the employment of Labour Force Survey data.
- has examined the number of job vacancies in relation to the seasonal pattern of employment.

The aim of this action was the expansion of the Job Vacancies Survey, in order to draw conclusions for the initiatives that could take place for the improvement of the survey results and the procedures applied for their compilation.

The survey is conducted every trimester using 2 types of questionnaires. Apart from job vacancies, the questionnaire form of 'type I' collects labor cost as well, in order to compile the STS and LCI indices. The questionnaire form of type II refers to information on job vacancies exclusively. In the third trimester of each year the sample of enterprises that fill the questionnaire form of type II rise to 977.

In order to extrapolate the outcomes of the yearly results for job vacancies, the first trimester of 2011 was conducted according to the increased sample of the third trimester. In other words, the 2011 sample was increased by 977 extra enterprises compared to the 2010 sample and the samples of the former years.

## 2. Relevance

The relevance is the degree to which statistics meet current and potential users' needs. As the relevance is not an inherent characteristic of the statistical data, it can be measured only with the help of user satisfaction survey. ELSTAT conducts a user satisfaction survey twice a year to collect information on the relevance of the produced statistics. This survey is limited to the customers visiting the library of the ELSTAT.

The Library and the Statistical Information Dissemination Section of ELSTAT conduct systematically a user satisfaction survey in order to monitor and evaluate both the customer needs and the users' satisfaction of the data quality. The survey collects information on the number of users together with other indicators, such as the responsiveness level to the user's requests, the categories of requested data, as well as the dissemination mode of the statistical information. The data collection is carried out via a continuous anonymous feedback channel by applying the "self – completion" method. Specifically, any user who visits the library to request data fill in a "paper-pencil-questionnaire" and any user who request data via electronic mail send to ELSTAT, fills in a "web-based questionnaire". For the year 2010 the size of respondents reached up to 3,883 persons, respectively.

The Library through the processing of the aforementioned data aims at:

- Building up a mechanism which will enhance the Library's planning and ameliorate the services provided to the public
- Taking full advantage of data, such as the categories of requested data, in order to carry out an investigation on the characteristics of the statistical information "market".

According to the survey, the users satisfaction of the statistical information on labour market was:

- Completely satisfied by 84.0%
- Partially satisfied by 12.5%
- Not at all satisfied by 3.5%

The reasons that prevented the users of being completely satisfied by the available labour market data are presented in the following table with their distribution.

Table 1: Distribution (%) of the reasons for which users were not fully satisfied by the labour market data

Reasons	%
Not available detailed branches' analysis	10.9
Not available geographical analysis	54.6
Confidentiality	1.8
Data are not collected	23.6

Total	100.0
Other	3.6
Timeliness	5.5

As the questionnaire is the indispensable tool for the data collection, the survey questionnaire of the job vacancy survey was designed in accordance with the European Union requirements as well as the national ones.

According to the user satisfaction survey, the various categories of users that requested statistical information on labour market data, had the following distribution.

**Table 2:** Distribution (%) of the categories of users that searched for statistical information on labour market data

User categories	%
Students	6.74
Academic community	10.28
Business (enterprises)	5.78
Private users	5.18
Government agencies	10.63
Press & media	11.76
International organizations	4.99
Other users	7.19

The main purposes for which the users need the labour market statistics are:

- Analysis of current developments for short-term decision making
- Analysis of trends for longer-term decision making
- Forecasting
- Research purposes

## 3. Accuracy

## 3.1 Sampling errors

#### 3.1.1 Sampling design

The one-stage stratified sampling method was applied, using the enterprise as a surveyed unit. For every statistical unit all the local units are surveyed for the data

collection. The sampling frame used for the sample design was based on the Business Register (BR) of ELSTAT. This BR is based on the VAT Register of the Ministry of Finance and it is updated through the statistical surveys of ELSTAT and the register of the Social Insurance Foundation.

The statistical data for section O (Public Administration and Defence, Compulsory Social Security) were collected from administrative sources.

#### 3.1.2 Stratification

The enterprises included in the survey were stratified as following:

- 4. By Region NUTS 1 (for quarters 1, 2 and 4) & NUTS 2 (for the 3<sup>rd</sup> quarter)
- 5. By Division of economic activity 2-digit code NACE Rev.2 economic activity (Sections of Economic Activity), within each geographical region
- 6. By size class of the enterprise. For quarters 1, 2 and 4, the enterprises were stratified into L=8 size classes, according to their size, determined by their average annual number of employees (wage earners) in the business register. For quarter 3, the enterprises were stratified into L=5 size classes. Analytical description of the classes is presented in the following tables.

**Table 3:** Classification of number of employees (specifically wage earners) for the quarters 1, 2 and 4.

Size class	Number of employees
1	0-4
2	5-9
3	10-19
4	20-49
5	50-99
6	100-249
7	250-499
8	500 +

**Table 4:** Classification of number of employees (specifically wage earners) for the quarter 3.

Size class	Number of employees	
1	0-9	
2	10-49	
3	50-249	
4	250-499	
5	500+	

Let *h* be one of the final strata (Crossing of Region by Economic Activity by Size Class). The enterprises that belonged to the largest size classes were surveyed on a census basis.

#### 3.1.3 Sample size

The sampling size is 4,437 enterprises (2,441 type I & 2,196 type II), that is, sampling fraction equal to 0.5% for quarters 1, 2, and 4. The sampling size is 5,414 enterprises for the 3<sup>rd</sup> quarter, that is sampling fraction equal to 0.6%. This decision of the sample size was based on financial criteria and on the existing experience as far as the accuracy of the resulting statistics is concerned.

The sampling units (enterprises) of every section were distributed to the final strata by applying the method of optimum (Neyman) allocation. The sample size was calculated separately for each economic Section.

The response rate is equal to 55.5%, 56.1%, 59.2% and 54.8% for the 1st, 2nd, 3rd and 4th quarter of the year 2010, respectively. For the year 2011, the response rate is equal to 61.7%, 41.3%, 47.2% for the 1st, 2nd and 3rd quarter respectively.

#### 3.1.4 Selection of sample units

In each of the final strata (let h), a sample of  $\mathcal{N}_h$  enterprises was selected. The enterprises to be surveyed were selected from the total of the  $\mathcal{N}_h$  enterprises with equal probabilities and by applying systematic sampling.

Before the sample selection in the final strata, the frame units were sorted by Department and be size of enterprise.

## 3.1.5 Estimation of the survey characteristics

#### a. Symbols

Defining with index i the selection order of an enterprise from the sampling frame in stratum h and by symbolizing with y one of the survey characteristics, we can define the following:

 $y_{hi}$ : the value of the survey characteristic y of the enterprise of order i in stratum h

 $Y_h$ : the sum of the values of the characteristic y of all enterprises falling into the survey and belonging to stratum h

Y: the sum of the values of the characteristic y of all enterprises under the survey.

That is: 
$$Y = \sum_{h} Y_{hi}$$

 $\mathcal{N}_{\scriptscriptstyle h}$  : the number of all enterprises falling into the survey and belonging to stratum h

 $n_h$ : the sample size in stratum h

 $m_h$ : the number of respondent units in stratum h

 $\gamma_h$ : the response rate in stratum  $h(\gamma_h = \frac{m_h}{n_h})$ 

 $\mathcal{W}_{hi}$ : the extrapolation factor of the enterprise of order i belonging to stratum h. That

is: 
$$W_{hi} = \frac{N_h}{n_h} \cdot \frac{n_h}{m_h} = \frac{N_h}{m_h}$$

#### b. Estimation process

The estimations of the quantities  $Y_h$  and Y result from the following equations:

$$\widehat{Y}_h = \sum_{i=1}^{m_h} \mathcal{W}_{hi} \cdot \mathcal{Y}_{hi} \tag{1}$$

$$\widehat{Y} = \sum_{h} \widehat{Y}_{h} = \sum_{h} \sum_{i} W_{hi} \cdot \mathcal{Y}_{hi}$$
(2)

#### c. Variance estimation

The variance estimation of  $\hat{Y}_h$  and  $\hat{Y}$  is given by:

$$V(\widehat{Y}_h) = \frac{N_h \cdot (N_h - m_h)}{m_h} S_h^2, \tag{3}$$

where:

$$S_{h}^{2} = \frac{1}{m_{h} - 1} \left[ \sum_{i=1}^{m_{h}} y_{hi}^{2} - \frac{\left(\sum_{i=1}^{m_{h}} y_{hi}\right)^{2}}{m_{h}} \right],$$

$$V(\widehat{Y}) = \sum_{h} V(\widehat{Y}_{h})$$
(4)

The coefficient of variation (%) of total estimation  $\widehat{Y}$  is given by:

$$CV(\widehat{Y}) = \frac{\sqrt{V(\widehat{Y})}}{\widehat{Y}} *100 \tag{5}$$

#### d. Study Results

As already mentioned, the enterprises were selected by applying the one-stage stratified sampling, since the sampling frame includes enterprises. However, for each enterprise the number of job vacancies for every local unit was recorded. Therefore,

each enterprise is considered as a cluster in which all the units were surveyed. For this reason we have to estimate the effect of clustering on the results through the design effect.

In tables 7 to 12 (see Annex) we present the results of the survey, separately for the years 2010 and 2011, which involve:

- The correlation coefficients of mean employment (mean number of employees per year) by job Vacancy (number of job vacancies), by Quarter and Section of economic activity
- The coefficients of variation (CVs) and the design effects for each quarter of the main survey characteristic 'number of job vacancies', by economic activity (both 'sections' and 'divisions' 1-digit and 2-digit NACE Rev.2 respectively)

#### 3.1.6 Remarks

- The small gain in accuracy from stratification is due to the fact that the correlation between the stratification variable (employment) and the job vacancies is not high. This is also the reason of existence of high coefficients of variation. (see Annex, Tables 7-12)
- Due to the fact that the present study is conducted on quarterly basis, the sample sizes should be small enough to ensure the timeliness of the survey. As a result, the divisions (NACE Rev.2, 2-digits) could not be sufficiently (or not at all) represented by the existing sample sizes (see tables 11 & 12)
- If the sample size is increased, it could probably give more accurate results by sections of economic activity (1-digit NACE) and by Region (NUTS 2) (see Annex Table 13 &14)
- The results according to the 8-classes of ISCO are accurate enough both at Country and Region level, since the sample size is homogeneously distributed throughout the classes (even though it is small). (see Annex Tables 15 & 16)
- The need for seasonality leads us to collect data quarterly. However, we need to have increased sample size for one quarter in order to be able to calculate the number of job vacancies by region. We make the assumption that the same pattern of seasonality for each Region follows the pattern of seasonality of the whole country. The same assumption applies for the 8-classes of ISCO.

## 3.2 Non-Sampling errors

## 3.2.1 Coverage errors

The *over-coverage* of the sampling frame mainly has to do with enterprises that were included in the business register, they were selected in the sample, but they were not actually existed at the time of the survey (closed enterprises). These enterprises actually reduced the initial sample size,  $n_h$ . The decrease of sampling units from

 $n_h$  to  $m_h$  in each stratum inflates the variance of the estimated statistics. In this case the estimator is unbiased under the condition that the death rate of enterprises is equal to their birth rate.

The *under-coverage* refers to units missing from the sampling frame. The probability of selection of each missing unit of order i is equal to zero ( $P_i = 0$ ) and thus, the extrapolation factor  $W_i$  of the missing unit cannot be defined ( $P_i = 1/0$ ). As a result, the under-coverage of the frame underestimates the produced statistics. Corrections and weighting for *non-coverage* is difficult, because the under-coverage rates cannot be obtained from the sample itself, but only from external sources.

Due to *misclassification* problems of the frame, some sampling units changed design strata after data collection. These units were allocated to the new strata, *retaining* their initial probabilities of selection. This event changes the initial element variance, destroys the initial allocation of the enterprises of the sample and as a result inflates the variance of the estimations. Consequently, the co-efficient of variation of the produced statistics is *higher* than the co-efficient of variation based on the initial sample design.

## 3.2.2 Measurement and processing errors

The data collection method used was face-to-face interview completing paper questionnaires, as well as e-questionnaires (only of type II). The collection method applied ensured the high quality of the information gathered, since the interviewers assisted the respondents, and carefully checked the filled in questionnaires, before leaving the enterprise.

The interviewers participated in the survey were private collaborators as well as experienced permanent staff of ELSTAT, for special cases. Before the initiation of the survey, the interviewers attended a one-day training seminar. The scope of the seminar was to enable the interviewers to: a) fully understand the definitions of the survey characteristics in order to avoid the respondent bias, (b) correctly fill in the questionnaire, and (c) efficiently check for errors by applying logical checks.

The structure and the size of the questionnaire were designed to be user-friendly for the interviewers and the questions were formulated in a clear and simple language, using appropriate vocabulary. Additionally, documents containing useful instructions were compiled, analyzing all the questions of the questionnaire. This activity aimed at collecting fully filled in questionnaires, with no missing variables.

The support and supervision of the data collection and the data processing were decentralized in the regional offices of our Service. In regional offices the staff was involved in coding, checking for the detection of measurement errors, logical checks and comparisons of the survey data with other sources of statistical information.

After performing all final checks for identifying non-sampling errors, the database was ready for the extrapolation weighting process and the plausibility checks after

tabulation. These checks included comparisons of data with relevant data of previous years and of other surveys.

## **Editing**

The software used for editing was re-evaluated in order to accomplish the minimization of the non - sampling errors. The checks decided to perform were:

- ✓ Check of the identity of the enterprise.
- ✓ Checks on the geographical code of the enterprise (on the overall and local branches as well).
- ✓ Checks on the sector of economic activity, such as non-existing, false, non filled in either for the enterprise or its local branches. Comparison of the sector of the economic activity stated with the one of the register. In addition, comparison of the economic activity stated with the one stated at the former trimester, in order to re-examine if needed whether a change of sector has in fact occurred, by making a phone contact.
- ✓ Checks on the local branches of the enterprise (total number, track of the local branches that hold job vacancies that are not sufficiently analyzed and comparison of the job vacancies of the short-term and long-term future.
- ✓ Checks on the profession code (non-existing, false, different between short-term and long-term future).
- ✓ Checks on the structure of employment by sex, full or part time and profession.

In addition, minor improvements were implemented in the software used for data entry in order to minimize the data entry and editing errors, such as instant comparison of the figures typed with the respective ones in the database of the former trimester.

## 3.2.3 Non-response errors

The following tables show the unit response rates (%), total and broken down by section of economic activity and quarters, for the years 2010 and 2011.

**Table 5**: Response Rates (%), by sections of economic activity and for the 4 quarters of year 2010

	QUARTERS (2010)			
Sections of Economic Activity (NACE Rev.2)	1	2	3	4
В	59.5	58.6	59.0	54.1
С	59.9	58.7	63.7	58.5
D	52.7	50.9	50.9	50.9
Е	64.4	69.0	65.0	62.1
F	46.4	47.8	50.6	49.1
G	59.9	59.4	65.0	58.9
Н	50.0	53.6	54.8	52.9
1	46.7	52.4	53.7	46.4

J	52.1	53.6	55.8	53.6
K	66.3	69.6	62.2	63.0
L	48.9	46.7	49.5	45.6
М	54.8	58.5	61.1	57.7
N	51.6	55.3	57.6	49.8
P	62.4	59.8	66.7	67.5
Q	65.2	52.8	60.2	56.2
R	52.1	48.6	49.0	43.1
S	54.1	55.5	56.0	54.6
Total	55.5	56.1	59.2	54.8

**Table 6**: Response Rates (%), by sections of economic activity and for the 3 quarters of year for year 2011.

	QUARTERS (2011)			
Sections of Economic Activity (NACE Rev.2)	1	2	3	
В	60.4	40.5	47.0	
С	74.9	48.3	54.8	
D	45.5	32.7	31.6	
E	73.6	52.9	50.4	
F	48.8	32.2	40.0	
G	58.4	46.8	54.5	
Н	56.2	40.9	43.7	
I	44.0	34.9	42.6	
J	60.4	34.4	38.2	
K	75.0	56.5	50.4	
L	41.1	28.9	36.8	
М	71.4	40.3	48.2	
N	59.3	36.3	40.7	
Р	58.1	40.2	48.8	
Q	79.8	46.1	44.7	
R	56.3	29.2	29.1	
S	57.3	36.2	44.4	
Total	61.7	41.3	47.2	

In the census (take-all strata), in which all population units are included in the sample, the unit response rate is equal to 100%. In the sampling strata, in which unit non response exists, reweighting method was applied for statistical adjustments.

The reweighting method amends suitably the extrapolation factors, by taking into account the response rates in all final strata. This method compensates for non-responses, and reduces the absolute bias in the estimation of  $\widehat{Y}$ . If  $\overline{Y}_{rh} = \overline{Y}_{mh}$  (where  $\overline{Y}_{rh}$  and  $\overline{Y}_{mh}$  are the means for respondents and non-respondents in stratum h for the variable y), as it occurs in expectation when the non-respondents are missing at random, then in stratum h the bias of non-response is approximately equal to zero.

Generally, the total bias due to the non-response is approximately equal to zero, if either the response rates or the respondent means do not vary between strata.

Any imputation method was not applied for the item non-response, as the item non-response was not appeared in the enterprises included in the sample.

## 4. Timeliness and punctuality

*Timeliness* and *punctuality* refer to the reflection degree of statistics with regard to their dissemination on schedule. For short-term statistics such as the statistics from job vacancies survey, the issue of timeliness and punctuality is of great importance, because users demand updated statistics published frequently and on time at predefined dates.

Timeliness, unlike other quality components, is relatively easy and straightforward to measure. A common measure is the production time providing the expected timeliness. Punctuality and timeliness are connected with the frequency of released statistics: quarterly data should not be available too many quarters after the reference month, otherwise users will obviously loose their interest on this data. Therefore, it is significant to benchmark production time with the periodicity of statistics by computing the ratio of production time to periodicity. This allows for some comparisons between surveys with different periodicity, as well. In the European Statistics Code of Practice, the principle 13 "Timeliness and Punctuality" defines that "European statistics are released in a timely and punctual manner". Timeliness satisfies European and other international release standards and a standard daily time for the release of statistics should be made public. Furthermore, the periodicity of statistics takes into account user requirements as much as possible and any divergence from the dissemination time schedule should be published in advance, explained and a new release date set.

Measures that ensure timeliness of job vacancy survey are as follows:

- Statistical publication calendar
- Reducing the returning time of the completed questionnaires to the statistical authorities
- Reducing the time of data entry
- Assigning competent staff in conducting the processes of the statistics production cycle
- use of a web-application for both types of questionnaires and appropriate promotion towards the respondents.

## 5. Accessibility and clarity

Accessibility of information refers to the ease with which users can learn of its existence, locate it, and import it into their own working environment. To achieve the accessibility of information three principal aspects should be followed:

- Creation of "catalogue" systems, which allow the users to find out what information is available and assist them to locate it.
- Creation of "delivery" systems, which provide access to information through distribution channels, and in formats, that suit users.
- Improvements of the catalogue and delivery systems by obtaining information through both user satisfaction surveys and voluntary user feedbacks in the form of comments, suggestions, complaints, or plaudits.

The traditional printed catalogue that was almost always out of date has given way to on-line catalogues of statistical products, linked to metadata bases in which the characteristics of the information can be found. Access to the catalogue system can be obtained through the Internet, and users who find what they want can immediately place an order to request the desired information. However, the traditional delivery system of printed publications is still valued by some users, while electronic products on diskette or CD-ROM satisfy some needs as well. On the other hand, on-line databases, accessible either via internet or directly tend to be one of the most important components of delivery systems. So, the job-vacancies' results are published on the website of ELSTAT.

The *clarity* of statistical information is primarily achieved by providing users with metadata, which help them to properly interpret the produced statistical information. The information needed to understand statistical data has to do with:

- The concepts and classifications that underlie the data (what has been measured)
- The methodology used to collect and compile the data (how it was measured)
- The accuracy measures of the data (how well it was measured)

## 6. Comparability

Comparability aims at measuring the impact of differences in applied statistical concepts and definitions of statistics between geographical areas, non-geographical domains or over time. The types of comparisons are as follows:

- Geographical comparability
- Comparability over time
- Comparability between domains
- Comparability between countries

#### It should be noted that:

- Definitions of concepts, variables and populations, survey design and methods of measurements should be as similar as possible across all comparisons.
- The non-respondents in two samples should be missing at random within the weighting classes and the frame errors in two samples should be appearing at random within the selection strata. This happens by using good probability samples, as the bias of non-response and over / under-coverage from good probability samples tends to show much similarity across countries and domains. On the other hand, there are no similarities of biases from bad or non-probability samples in comparisons across countries.

The above mentioned comparability problems did not emerge in the present survey since definitions of concepts, variables and populations, survey design and methods of measurements were as similar as possible across all comparisons.

## 7. Coherence

a. Coherence with statistics from the labour force survey

The comparison of employment of the survey of job vacancies with the employment of the labour force survey of the same reference year may evaluate the effect of frame errors on the produced statistics and generally shade light on non-sampling error.

The number of employees of the job vacancies' survey (JVS) and the labour force survey (LFS), as well as, the percentage change between them, for the years 2010 and 2011 are presented in the following tables.

**Table 7:** Comparison of mean year (mean value of four quarters) employment between Job vacancy survey (JVS) and labour force survey (LFS), for the year 2010 (in percentage change).

NACE Rev.2	JVS	LFS	Change (%)
A		53.58	
A B C D F G	8.99	12.33	-27.09
С	487.55	345.05	41.30
D	25.11	25.65	-2.10
E	12.57	31.83	-60.51
F	522.11	210.23	148.36
G	1011.12	442.55	128.48
Н	164.77	146.58	12.41
l	348.57	176.03	98.02
J	91.13	77.08	18.24
K	91.16	103.65	-12.05
K L	15.60	0.95	1542.11
M	217.71	89.13	144.28
Ν	102.52	58.03	76.69
0		371.90	
Р	33.45	294.58	-88.64
Q	56.97	206.33	-72.39
R	61.61	32.93	87.12
S	112.38	44.65	151.69
N O P Q R S T		85.95	_
U		1.63	

**Table 8:** Comparison of mean (mean value of the first **three** quarters) employment between Job vacancy survey (JVS) and labour force survey (LFS), for the year *2011* (in percentage change).

NACE Rev.2	JVS	LFS	Change (%)
Α		49.10	
A B C D E G H	8.94	9.63	-7.18
С	475.33	311.37	52.66
D	23.77	23.57	0.87
E	11.79	26.23	-55.07
F	450.15	162.57	176.90
G	997.37	430.23	131.82
Н	146.72	138.57	5.89
	351.89	171.90	104.70
J	91.09	69.17	31.70
K	81.59	101.70	-19.77
L	11.30	0.93	1110.59
М	234.68	80.60	191.16
N	105.38	61.90	70.25
0		366.03	
Р	25.98	281.63	-90.78
Q	35.91	199.97	-82.04
R	55.77	32.57	71.26
J K L M N O P Q R S	109.81	45.73	140.11
Т		73.53	
U		2.23	

**Table 9:** Comparison of employment between Job vacancy survey (JVS) and labour force survey (LFS), for each quarter of *2010* (in percentage change).

NACE Rev.2	Q1	Q2	Q3	Q4
Α				
	-32.9	-26.7	-28.0	-21.1
B C D E F	36.1	40.4	46.8	42.0
D	-6.0	-6.0	1.2	3.2
E	-54.9	-58.3	-64.5	-63.8
F	10.3	42.5	450.9	104.2
G	111.7	112.2	192.8	95.8
Н	2.4	17.8	12.7	17.1
I	99.9	109.1	98.4	83.6
J	14.2	14.4	35.7	9.1
K	-16.5	-18.1	10.7	-24.5
L	1909.9	1171.9	1689.2	1463.0
М	116.6	142.2	157.9	164.2
N	60.5	71.8	113.1	59.8
0				
Р	-90.0	-92.3	-81.4	-90.6
Q	-87.4	-56.7	-79.4	-66.2
R	20.5	1.9	27.3	307.2
S	126.8	176.1	145.0	158.2
O P Q R S T				
U				

**Table 10:** Comparison of employment between Job vacancy survey (JVS) and labour force survey (LFS), for each quarter of 2011 (in percentage change).

NACE Rev.2	Q1	Q2	Q3
Α			
B C D E G	4.3	-0.6	-22.4
С	48.0	64.8	45.4
D	-4.7	4.0	3.4
E	-50.9	-56.2	-58.2
F	200.8	222.8	98.9
G	92.7	108.3	197.4
Н	2.8	15.3	-0.5
	102.7	105.1	105.9
J	24.8	34.5	36.7
K	-23.4	-20.0	-15.9
L	981.4	1669.6	942.0

М	122.3	177.1	280.9
Ν	59.1	52.9	100.0
0			
Р	-90.8	-91.4	-90.0
Q	-77.5	-81.1	-87.6
R	5.8	222.1	-5.3
S	157.0	136.5	127.5
Т			
U			

## b. Coherence with Labour Market Index (employment)

**Table 11:** Percentage change between 2010 & 2011 (mean value of first 3 quarters) of employment, by the Labour Market Survey (<u>Index</u>) and the Job Vacancy Survey (estimation)

NACE Rev.2	Percentage change of employment index 2011/2010	Percentage change of employment (JVS)
Α		
В	-6.79	3.49
С	-7.70	-3.91
A B C D E G H	-6.57	-5.52
Ε	24.45	-9.10
F	-17.06	-20.12
G		-5.72
Н	-7.73	-9.70
	-15.09	-3.59
J	-3.56	-3.23
K		-14.46
L		-32.07
М	-9.20	9.16
N	-1.57	0.27
0		
Р		-27.10
Q		-32.24
R		43.59
S		-1.70
Т		
J K L M N O P Q R S T		

The differences occurring in wage earners between the Job Vacancy Survey (JVS) and the Labour Force Survey (LFS) are mainly due to the following reasons:

- 1. At JVS the statistical unit is the enterprise, while at LFS is the household
- 2. The business Register is not updated on a quarterly basis, as this is the case of the results of JVS, while in LFS we have an update of the number of self-employed with or without personnel.
- 3. At the extrapolation factors (grossing up) of JVS for every quarter the number of the enterprises is fixed.
- 4. At the JVS the number of employees has as reference period the first day of the third month of each quarter, while at the LFS the number of the employees results from the average employment of the whole quarter.

# 8. Decomposition of job vacancies and wage earners into seasonal, long term trend and business cycle components

In order to examine the seasonal patterns, the long term trend as well as the business cycle components of job vacancies and wage earners, we used the time series data from the 1<sup>st</sup> quarter of 2005 until the 4<sup>th</sup> quarter of 2010.

## 8.1 Seasonal pattern of job vacancies and wage earners

We observe that the seasonal pattern is constant. Specifically, we notice that due to seasonality the high values of seasonal component appear on the 1<sup>st</sup> and the 3<sup>rd</sup> quarter, while the low values on the 4<sup>th</sup> quarter (see Annex II for the relevant diagrams).

From the examination of the seasonal patterns of the wage earners the lowest values are observed at the 1<sup>st</sup> quarter, while the highest values are observed at the 3<sup>rd</sup> quarter.

The seasonal patterns of the job vacancies and wage earners, although they are constant, they are different as the quarters with the lowest values are concerned, but they are almost the same with regard to the 3rd quarter (high value). Specifically, with regard to job vacancies, at the first quarter we observe the highest values, while for the wage earners the first quarter has the lowest value.

#### 8.2 Long term trend of job vacancies and wage earners

According to the long term trend review, we observed a descending trend with highest value at the 1st quarter of 2005, and lowest value at the 4th quarter of 2010. Concerning the wage earners, we observe an ascending trend up to the 3rd quarter of 2007, while after the 4th quarter of 2007 the trend starts to descend.

In conclusion, the patterns between the two statistics do not coincide.

## 8.3 Business cycle components of job vacancies and wage earners

By studying the periodicity and frequency of the business cycle of job vacancies the maximum latitude appears at the 3rd quarter of 2007, while for the business cycle of the wage earners the maximum latitude appears at the 2nd quarter of 2008. Generally, the business cycles of job vacancies and of wage earners present different phases.

#### 9. Conclusions

From the analysis of the job vacancies survey, the following conclusions are drawn:

- a. The estimation of the number of job vacancies is not possible to be of high accuracy due to the fact that the stratification variable (average number of wage-earners of enterprises) is not highly correlated with the number of job vacancies.
- b. For quick estimation of the number of job vacancies, the results for quarters 1, 2 and 4 should be produced by a relatively small sample size of enterprises and the results can be published at Country Level or Regional Level (NUTS 1) separately, and distributed by Section & by 1-digit ISCO code. On the other hand, for quarter 3, the size of the sample should be larger so that the results can be published at Country Level or Regional Level (NUTS 2) and distributed by Division and by 1-digit ISCO code. This analytical breakdown does not have to be applied in all quarters, since this distribution is approximately the same for the rest of the quarters.
- c. The comparison between the number of job vacancies for every Section or 1-digit ISCO code (reference period the first of the third month of the quarter) and the number of wage-earners (usually coming from LFS, and results from the quarterly average number of wage earners) is not accurate because of their difference in the reference period. In order to confront the above-mentioned problem, we propose that the quarterly sample of the enterprises should be allocated within each month and therefore the number of job vacancies should be recorded monthly.
- d. The patterns of seasonality, long-term trend and business cycle present differences between number of job vacancies and wage earners.
- e. The web application should be developed for the questionnaires type II, so as to ensure more timely and qualitative data for JVS.
- f. The existing application for the questionnaires type I, should be improved, so as to reduce the data collection time for JVS.
- g. By the use of the new applications (see e. and f. above), the quality of the data will be improved due to the existing checks during the filling in of the questionnaires by the enterprises.

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## 11. Annex I - Tables

 $\textbf{Table 12:} \ \ \text{Initial sample size (n) by economic activity Sections (NACE \ Rev \ 2) and employment class, for Q1, Q2 \ \text{and Q4}$ 

	Employme	ent class							
Sections of Economic Activity (NACE					_		_	_	
Rev.2)	1	2	3	4	5	6	7	8	Total
В	44	12	16	21	8	6	3	1	111
С	155	46	162	249	115	163	90	72	1052
D	31	8	5	4	4	2		1	55
E	28	8	10	15	7	15	2	2	87
F	221	28	20	24	21	32	21	12	379
G	258	80	46	51	36	50	35	45	601
Н	105	17	32	38	25	25	14	18	274
I	173	41	20	24	15	20	21	18	332
J	75	19	17	20	14	15	16	16	192
K	28	11	7	8	6	11	3	18	92
L	51	15	8	6	4	6			90
М	110	30	21	25	18	26	11	7	248
N	116	30	27	28	20	18	23	11	273
Р	48	15	12	17	10	6	5	4	117
Q	25	9	11	13	11	7	4	9	89
R	67	14	13	23	8	10	5	4	144
S	135	18	14	20	11	9	7	4	218
Total	1670	401	441	586	333	421	260	242	4354

**Table 13:** Sampling fraction (%) by economic activity Sections (NACE Rev 2) and employment class, for Q1, Q2 and Q4

	Employment c	lass							
Sections of Economic Activity (NACE Rev.2)	1	2	3	4	5	6	7	8	Total
В	4.8	12.4	21.1	41.2	61.5	100.0	100.0	100.0	9.6
С	0.2	0.9	5.2	12.7	20.8	50.0	77.6	100.0	1.1
D	4.5	24.2	29.4	50.0	100.0	100.0		100.0	7.2
E	2.1	11.4	20.0	28.3	53.8	78.9	100.0	100.0	5.5
F	0.2	1.8	2.5	4.4	11.4	28.8	100.0	100.0	0.3
G	0.1	1.0	1.3	3.0	7.8	19.5	60.3	100.0	0.2
Н	0.3	1.5	5.4	11.8	27.8	54.3	100.0	100.0	0.6
I	0.2	0.9	1.0	2.6	7.5	16.3	100.0	100.0	0.3
J	0.6	3.2	4.9	7.8	14.3	23.8	100.0	100.0	1.3
К	0.8	15.5	13.7	14.0	21.4	47.8	100.0	100.0	2.3
L	1.0	19.7	23.5	46.2	80.0	100.0			1.8
M	0.1	2.8	4.3	8.7	19.4	45.6	100.0	100.0	0.3
N	0.6	3.7	7.2	10.9	27.4	40.0	100.0	100.0	1.2
P	0.8	5.2	6.9	15.5	35.7	66.7	100.0	100.0	1.8
Q	1.1	8.5	11.7	23.2	47.8	53.8	100.0	100.0	3.4
R	0.5	4.6	7.4	15.6	36.4	62.5	100.0	100.0	1.1
s	0.4	2.3	3.8	8.0	22.0	60.0	100.0	100.0	0.6
Total	0.2	1.6	3.6	8.4	17.2	37.1	84.1	100.0	0.5

**Table 14:** Initial sample size (n) by economic activity Sections (NACE Rev 2) and employment class, for Q3

	Employment				
Sections of Economic Activity (NACE Rev.2)	1	2	3	4	Total
В	77	38	15	4	134
С	417	515	331	164	1427
D	41	9	6	1	57
E	53	36	24	4	117
F	256	66	60	33	415
G	342	114	101	80	637
Н	154	91	57	32	334
I	216	54	43	39	352
J	140	62	33	32	267
K	62	18	18	21	119
L	69	16	10		95
М	186	86	52	18	342
N	181	87	42	34	344
Р	65	32	17	9	123
Q	56	34	20	13	123
R	110	56	21	9	196
S	160	48	29	11	248
Total	2585	1362	879	504	5330

 $\textbf{Table 15:} \ \, \text{Sampling fraction (\%) by economic activity Sections (NACE Rev 2) and employment class, for Q3$ 

	Employmen	t class			
Sections of					
Economic Activity	_	•			T-4-1
(NACE Rev.2)	1	2	3	4	Total
В	7.6	29.9	78.9	100.0	11.6
С	0.5	10.2	37.6	87.2	1.5
D	5.6	36.0	100.0	100.0	7.5
E	3.7	35.0	75.0	100.0	7.5
F	0.2	4.9	20.3	100.0	0.4
G	0.1	2.2	14.1	77.7	0.2
Н	0.4	9.9	41.9	100.0	0.8
1	0.2	1.8	13.3	100.0	0.3
J	1.0	10.2	20.5	100.0	1.8
K	1.6	16.7	35.3	100.0	3.0
L	1.4	34.0	90.9		1.9
M	0.2	11.1	34.7	100.0	0.4
N	0.8	13.7	35.6	100.0	1.5
P	1.0	11.3	45.9	100.0	1.9
Q	2.3	22.7	55.6	100.0	4.6
R	0.8	17.3	55.3	100.0	1.5
S	0.5	7.8	44.6	100.0	0.7
Total	0.3	7.1	28.6	91.5	0.6

Table 16: Response Rates (%), for year 2010

	QUARTERS (2	010)		
Sections of Economic Activity (NACE Rev.2)	1	2	3	4
В	59.5	58.6	59.0	54.1
С	59.9	58.7	63.7	58.5
D	52.7	50.9	50.9	50.9
E	64.4	69.0	65.0	62.1
F	46.4	47.8	50.6	49.1
G	59.9	59.4	65.0	58.9
Н	50.0	53.6	54.8	52.9
1	46.7	52.4	53.7	46.4
J	52.1	53.6	55.8	53.6
K	66.3	69.6	62.2	63.0
L	48.9	46.7	49.5	45.6
М	54.8	58.5	61.1	57.7
N	51.6	55.3	57.6	49.8
P	62.4	59.8	66.7	67.5
Q	65.2	52.8	60.2	56.2
R	52.1	48.6	49.0	43.1
S	54.1	55.5	56.0	54.6
Total	55.5	56.1	59.2	54.8

Table 17: Response Rates (%), for year 2011

	QUARTERS (2011)						
Sections of Economic Activity (NACE Rev.2)	1	2	3	4			
В	60.4	40.5	47.0				
С	74.9	48.3	54.8				
D	45.5	32.7	31.6				
E	73.6	52.9	50.4				
F	48.8	32.2	40.0				
G	58.4	46.8	54.5				
Н	56.2	40.9	43.7				
1	44.0	34.9	42.6				
J	60.4	34.4	38.2				
K	75.0	56.5	50.4				
L	41.1	28.9	36.8				
М	71.4	40.3	48.2				
N	59.3	36.3	40.7				
Р	58.1	40.2	48.8				
Q	79.8	46.1	44.7				
R	56.3	29.2	29.1				
S	57.3	36.2	44.4				
Total	61.7	41.3	47.2				

**Table 18:** Correlation Coefficients between annual average employment and job vacancies estimation, by economic activity Sections (NACE Rev 2), year 2010

	QUARTERS (20	10)		
Sections of Economic Activity (NACE Rev.2)	1	2	3	4
В	-0.011	-0.004	-0.024	0.026
С	0.138	0.215	0.163	0.203
D	-0.034	-0.050	1.000	-0.041
E	-0.021	-0.016	-0.029	-0.025
F	0.257	-0.019	0.317	0.144
G	0.447	0.514	0.449	0.504
Н	0.746	0.744	0.740	0.710
I	0.180	0.197	-0.012	0.136
J	0.185	0.177	0.169	0.183
K	0.127	0.316	0.180	0.684
L	0.649	0.145	0.228 . 3	*
M	0.230	0.319	0.134	0.272
N	-0.022	0.133	0.015	-0.008
P	-0.061	0.658	-0.058	0.461
Q	0.173	0.160	0.183	0.177
R	-0.008	0.158	0.157	0.218
S * sould not be colour	0.815	0.810	0.884	0.771

<sup>\*</sup> could not be calculated because the number of job vacancies was zero in the whole branch

**Table 19:** Correlation Coefficients between annual average employment and job vacancies estimation, by economic activity Sections (NACE Rev 2), year 2011

	QUARTERS (20	11)	
Sections of Economic Activity (NACE Rev.2)	1	2	3
В	0.090	-0.048	-0.043
С	0.244	0.296	0.244
D	-0.056	-0.056	-0.057
E	0.028	0.000	-0.045
F	0.016	-0.023	-0.018
G	0.382	0.303	0.262
Н	0.854	0.714	0.826
I	-0.016	0.157	-0.028
J	0.152	0.118	0.024
K	0.624	0.012	-0.009
L	-0.062	-0.067	. *
M	0.134	0.080	0.043
N	0.143	0.013	-0.019
Р	-0.040	0.423	-0.018
Q	-0.059	-0.024	-0.081
R	0.023	0.269	0.112
S	0.787	0.774	0.764

<sup>\*</sup> could not be calculated because the number of job vacancies was zero in the whole branch

**Table 20:** Coefficients of Variation (CV) and design effects of job vacancies estimation, by economic activity Sections (NACE Rev 2), year 2010

Economi	Q	1	Q	2	Q3		Q4	
c Activity Sections	CV (%)	Design Effect						
В	0.0%	0.00	0.0%	0.00	89.4%	0.02	0.0%	0.00
С	51.2%	0.33	37.0%	0.08	5.7%	0.00	22.5%	0.01
D	0.0%	0.00	0.0%	0.00	1.0%	0.00	0.0%	0.00
E	70.1%	0.02	10.1%	0.00	0.0%	0.00	0.0%	0.00
F	18.2%	0.01	99.9%	2.71	73.1%	1.38	75.2%	0.00
G	36.9%	0.50	53.8%	1.32	67.2%	0.78	56.0%	1.58
Н	25.1%	0.00	0.4%	0.00	0.0%	0.00	0.9%	0.00
1	10.7%	0.02	59.3%	1.23	29.2%	0.00	26.7%	0.12
J	31.7%	0.35	71.7%	0.90	15.9%	0.00	3.6%	0.00
K	0.0%	0.00	0.0%	0.00	42.9%	0.01	6.7%	0.00
L	0.0%	0.00	27.8%	0.00	16.5%	0.00		
M	18.7%	0.00	18.8%	0.00	29.9%	0.00	36.3%	0.00
N	48.9%	0.03	31.0%	0.00	41.6%	0.06	12.8%	0.00
Р	53.7%	0.07	13.2%	0.00	64.6%	0.41	1.2%	0.00
Q	8.5%	0.00	0.2%	0.00	30.6%	0.00	3.8%	0.00
R	44.2%	0.03	41.3%	0.01	54.3%	0.02	0.0%	0.00
S	11.1%	0.00	26.6%	0.00	18.3%	0.00	34.5%	0.00

**Table 21:** Coefficients of Variation (CV) and design effects of job vacancies estimation, by economic activity Sections (NACE Rev 2), year 2011

Sections of Economic	Q1		Q2		Q3	
Activity (NACE Rev.2)	CV (%)	Design Effect	CV (%)	Design Effect	CV (%)	Design Effect
В	0.0%	0.00	0.0%	0.00	1.3%	0.00
С	48.3%	0.31	79.4%	1.10	39.4%	0.04
D	0.0%	0.00	0.0%	0.00	0.0%	0.00
E	28.5%	0.00	3.5%	0.00	28.1%	0.00
F	49.9%	0.03	100.0%	3.45	94.9%	0.03
G	61.1%	2.11	72.9%	3.09	57.2%	7.42
Н	2.5%	0.00	1.0%	0.00	0.0%	0.00
1	50.0%	0.03	80.3%	4.64	0.0%	0.00
J	33.2%	0.01	16.3%	0.01	84.9%	0.94
K	0.0%	0.00	0.0%	0.00	0.0%	0.00
L	92.0%	0.02	99.8%	0.65		
М	37.7%	0.00	80.3%	0.01	72.6%	0.01
N	64.2%	0.20	14.3%	0.00	98.5%	0.60
Р	94.1%	0.02	46.5%	0.01	92.0%	0.15
Q	6.2%	0.00	0.0%	0.00	0.0%	0.00
R	0.6%	0.00	67.1%	0.01	0.0%	0.00
S	14.7%	0.00	14.7%	0.00	23.7%	0.00

**Table 22:** Coefficients of Variation (CV) and design effects of job vacancies estimation, by economic activity Divisions (NACE Rev 2), year 2010

	Q1		Q2	2	Q3		Q4	ŀ
Economic Activity Divisions	CV (%)	Design Effect						
05							0.0%	0.00
06								
07	0.0%	0.00	0.0%	0.00			0.0%	0.00
08			-		89.4%	0.02		
09								
10	96.5%	2.89	41.5%	0.01	12.3%	0.00	39.4%	0.00
11	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00
12								
13								
14	69.6%	0.01			0.0%	0.00		
15	0.0%	0.00						
16					1.9%	0.00	96.5%	0.04
17	85.3%	0.01	87.8%	0.01	38.1%	0.00	45.9%	0.01
18	0.0%	0.00	0.0%	0.00	23.5%	0.00		
19	78.4%	0.01	0.0%	0.00	0.0%	0.00	2.2%	0.00
20	5.3%	0.00	0.0%	0.00	36.4%	0.00	55.4%	0.01
21	42.8%	0.00	57.5%	0.01	85.1%	0.01	55.3%	0.01
22					89.0%	0.07	96.5%	0.04
23	56.7%	0.00	0.0%	0.00	84.8%	0.02		

24			0.0%	0.00	0.0%	0.00	0.0%	0.00
25	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00
26								
27	0.0%	0.00	0.0%	0.00 .			89.2%	0.03
28	74.1%	0.02	0.0%	0.00	0.0%	0.00	0.0%	0.00
29			0.0%	0.00 .				
30								
31	92.0%	3.07	74.0%	0.11	67.6%	0.04 .		
32	98.7%	0.12	99.9%	1.10 .				
33			97.6%	2.16	4.4%	0.00	96.5%	0.04
35	0.0%	0.00	0.0%	0.00	1.0%	0.00	0.0%	0.00
36	80.1%	0.02	13.4%	0.00	0.0%	0.00	0.0%	0.00
37	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00
38	0.0%	0.00	0.0%	0.00	0.0%	0.00 .		
41	75.0%	0.03			93.3%	3.51 .		
42	1				0.0%	0.00 .		
43	9.2%	0.00	99.9%	2.71	0.0%	0.00	75.2%	0.00
45	71.4%	7.86	95.2%	1.00	95.8%	1.75	93.4%	0.40
46	46.9%	0.01	37.9%	0.01	88.6%	0.33	35.3%	0.00
47	45.4%	0.79	65.4%	2.13	78.7%	0.77	58.6%	1.61
49	54.8%	0.03	0.0%	0.00	0.0%	0.00	0.0%	0.00
50	1							
51	99.1%	0.18						
52	0.0%	0.00	4.1%	0.00	0.0%	0.00	90.5%	0.01
53	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00
55	6.8%	0.01	85.7%	0.21	0.0%	0.00	0.0%	0.00
56	60.1%	0.15	69.5%	1.84	96.1%	0.57	79.7%	0.23
58	0.0%	0.00	97.6%	1.28	55.2%	0.01	0.0%	0.00
59	99.9%	1.34			0.0%	0.00 .		
60	39.4%	0.01	0.0%	0.00	0.0%	0.00	0.0%	0.00
61	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00
62	99.9%	1.34	99.9%	1.41 .			98.8%	0.13
63								
64	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00
65	0.0%	0.00			0.0%	0.00	0.0%	0.00
66					93.0%	0.93	97.2%	0.05
68	0.0%	0.00	27.8%	0.00	16.5%	0.00 .		
69			97.4%	0.06 .			97.4%	0.06
70					38.1%	0.01	98.7%	0.11
71	98.4%	0.09						
72	36.4%	0.00	34.9%	0.00	32.1%	0.00	40.2%	0.00
73					93.9%	0.03	85.4%	0.01
74	0.0%	0.00	0.0%	0.00 .			0.0%	0.00
75								
77			89.4%	0.01	98.9%	0.81 .		
78	1				99.8%	0.76	99.0%	0.15
79	67.9%	0.04 .			0.0%	0.00 .		
80	0.0%	0.00	0.0%	0.00	0.0%	0.00 .		
81	47.1%	0.02			37.4%	0.01	57.8%	0.01
82	0.0%	0.00			0.0%	0.00	0.0%	0.00
85	53.7%	0.07	13.2%	0.00	64.6%	0.41	1.2%	0.00
86	41.6%	0.00	0.0%	0.00	72.9%	0.10	0.0%	0.00

87	0.0%	0.00	1.8%	0.00	0.0%	0.00	7.2%	0.00
88	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00
90	0.8%	0.00	0.0%	0.00	0.4%	0.00	0.0%	0.00
91	77.5%	0.00			0.0%	0.00		
92	0.0%	0.00						
93	93.3%	0.05	79.4%	0.01	83.0%	0.02	0.0%	0.00
94	14.1%	0.00	9.0%	0.00	0.0%	0.00	13.6%	0.00
95			99.9%	1.53	0.0%	0.00		
96	0.0%	0.00	59.7%	0.01	80.9%	0.01	99.5%	0.32

**Table 23:** Coefficients of Variation (CV) and design effects of job vacancies estimation, by economic activity Divisions (NACE Rev 2), year 2011

Economic Activity		Q1		Q2		Q3
Divisions	CV (%)	Design Effect	CV (%)	Design Effect	CV (%)	Design Effect
05	0.0%	0.00	0.0%	0.00		
06						
07			0.0%	0.00	0.0%	0.00
08	0.0%	0.00			70.7%	0.00
09						
10	5.6%	0.00	13.7%	0.00	82.9%	0.19
11	32.7%	0.00	0.0%	0.00	0.0%	0.00
12						
13					0.0%	0.00
14						
15			0.0%	0.00		
16			0.0%	0.00	0.0%	0.00
17	56.7%	0.01	53.5%	0.01	44.2%	0.00
18						
19	37.5%	0.00	0.0%	0.00	0.0%	0.00
20	17.0%	0.00	56.9%	0.01	31.7%	0.00
21	11.2%	0.01			0.0%	0.00
22	88.6%	0.01	0.0%	0.00	97.6%	0.08
23	59.7%	0.00	95.7%	2.92		
24	0.0%	0.00	0.0%	0.00	0.0%	0.00
25	0.0%	0.00	0.0%	0.00	0.0%	0.00
26					89.4%	0.02
27	96.7%	0.12	98.9%	0.14		
28					0.0%	0.00
29			0.0%	0.00		
30						
31	92.6%	0.02	93.6%	0.02	98.2%	0.10
32			93.6%	0.02	0.0%	0.00
33	81.5%	1.54				
35	0.0%	0.00	0.0%	0.00	0.0%	0.00
36	30.4%	0.00	3.8%	0.00	29.7%	0.00
37	0.0%	0.00	0.0%	0.00	0.0%	0.00
38						
41	49.9%	0.03	100.0%	3.45		
42						

	T	1				
43		-			94.9%	0.03
45	73.9%	0.10	79.2%	0.01	93.9%	4.58
46	65.3%	0.42	99.3%	11.82	69.5%	11.28
47	81.9%	3.15	87.4%	0.60	20.4%	0.00
49	70.7%	0.00	79.1%	0.01	0.0%	0.00
50						
51	0.0%	0.00 .				
52	67.6%	0.03	14.1%	0.00	0.0%	0.00
53	0.0%	0.00	0.0%	0.00	0.0%	0.00
55	42.4%	0.01	99.3%	6.58	0.0%	0.00
56	89.3%	3.15	95.6%	0.93 .		
58	72.5%	0.00	95.7%	0.03	0.0%	0.00
59		-				
60			0.0%	0.00 .		
61	0.0%	0.00	0.0%	0.00	0.0%	0.00
62	42.2%	0.01	0.0%	0.00	95.3%	0.97
63		-				
64	0.0%	0.00	0.0%	0.00	0.0%	0.00
65	0.0%	0.00	0.0%	0.00	0.0%	0.00
66		-				
68	92.0%	0.02	99.8%	0.65 .		
69	98.1%	0.08 .			83.2%	0.01
70	0.0%	0.00 .			0.0%	0.00
71		-				
72	38.6%	0.00	85.4%	0.01	87.4%	0.01
73	87.8%	0.01	85.4%	0.01	72.7%	0.02
74			0.0%	0.00 .		
75						
77	97.1%	1.05	8.2%	0.00	70.7%	0.00
78	99.1%	0.17 .				
79	36.0%	0.01	99.2%	0.20	99.7%	0.61
80						
81	76.5%	0.01 .				
82	0.0%	0.00	0.0%	0.00 .		
85	94.1%	0.02	46.5%	0.01	92.0%	0.15
86	0.0%	0.00	0.0%	0.00 .		
87	89.4%	0.01	0.0%	0.00	0.0%	0.00
88	0.0%	0.00 .			0.0%	0.00
90	0.8%	0.00	0.0%	0.00	0.0%	0.00
91	0.9%	0.00 .	•		0.0%	0.00
92			0.0%	0.00 .		
93			81.6%	0.01	0.0%	0.00
94	14.7%	0.00	14.9%	0.00	23.7%	0.00
95						
96			97.0%	0.05 .	·	

**Table 24:** Coefficients of Variation (CV) of job vacancies estimation, by Economic Activity Sections (NACE Rev 2) and Geographical Division (NUTS2), year 2010

		QUARTERS (	2010)		
Economic Activity					_
Sections	NUTS2	1	2	3	4
В	11 12	0.0%	0.0%		0.0%
	13	•	•		0.0%
	14	•	-	•	
	21	•	•		
	22	•	•	•	
	23	•	•	•	
	24				
	25				
	31			89.4%	
	41				
	42				
	43				
С	11	0.0%	0.0%		0.0%
	12	61.0%	12.3%	18.7%	21.5%
	13			0.0%	
	14	99.7%			
	21			89.0%	
	22				
	23	0.0%	0.0%	0.0%	
	24	18.2%	33.8%		0.0%
	25	0.0%	99.6%	0.0%	0.0%
	31	24.9%	51.1%	23.1%	33.0%
	41	0.0%		0.0%	
	42				
	43				
D	12	0.0%		0.0%	0.0%
	13		0.0%		0.0%
	14	0.0%	0.0%	57.7%	0.0%
	21		-		
	23				
	25				
	31			0.0%	
	41				
	42				
	43			0.0%	
E	11	94.3%		0.0%	0.0%
	12	81.6%	81.6%		0.0%
	13				
	14				
	21	0.0%	40.5%		0.0%
	22				
	23	91.8%	-		
	24				

	25			0.0%	
	31	0.0%	0.0%	0.0%	
	41	0.0%	0.0%		0.0%
	42	3.1%	0.0%	0.0%	
	43	<u> </u>	0.0%		0.0%
F	11	<u> </u>		78.3%	
	12	0.0%			
	13	0.0%			
	14				75.2%
	21				
	22				
	23				
	24			0.0%	
	25		99.9%	52.4%	
	31	46.0%	•	•	
	41				
	42				
	43			62.3%	
G	11	82.3%	82.1%	96.5%	0.0%
	12	47.0%	56.4%	0.0%	92.6%
	13	0.0%	0.0%	0.0%	0.0%
	14	98.9%	33.5%	0.0%	0.0%
	21	98.9%	0.0%	0.0%	0.0%
	22	0.0%	0.0%	0.0%	0.0%
	23	0.0%	0.0%	90.3%	0.0%
	24	78.4%	73.5%	0.0%	84.9%
	25	0.0%	0.0%	24.9%	0.0%
	31	84.7%	67.7%	0.0%	89.2%
	41	96.8%	0.0%	0.0%	0.0%
	42	99.5%	0.0%	0.0%	0.0%
	43	65.4%	99.2%	0.0%	98.3%
Н	11	0.0%	0.0%	0.0%	0.0%
	12	0.0%	0.0%	0.0%	0.0%
	13	0.0%	0.0%	0.0%	0.0%
	14	0.0%	0.0%	0.0%	0.0%
	21	0.0%	0.0%	0.0%	0.0%
	22	0.0%	0.0%	0.0%	0.0%
	23	0.0%	0.0%	0.0%	0.0%
	24	0.0%	0.0%	0.0%	0.0%
	25	0.0%	0.0%	0.0%	0.0%
	31	39.9%	0.8%	0.0%	1.4%
	41	0.0%	0.0%	0.0%	0.0%
	42	0.0%	0.0%	0.0%	0.0%
	43	0.0%	0.0%		0.0%
I	11				
	12	99.1%	100.0%		
	13				
	14				
	21				
	22	78.2%	95.8%	0.0%	

	23	0.0%			0.0%
	24	0.078	•		0.078
	25	80.2%	•	96.1%	0.0%
	31	48.7%	59.7%	90.176	96.5%
	41	40.770			90.5%
	42	•	99.9%	•	•
	43	7.2%	48.9%		70.00/
J	11	1.270	78.2%	80.7%	72.8%
J	12	3.1%	•	00.7 /6	3.7%
	13	3.170	•		3.176
	14	•	•		•
	21	•	•		•
	22	•	•	0.0%	•
		0.00/	0.00/	0.0%	0.00/
	23	0.0%	0.0%		0.0%
				. 0.00/	
	25	40.407	99.9%	0.0%	0.0%
	31	48.1%	95.0%	•	0.0%
	41	•	•		•
	42				
	43			0.0%	
K	11	0.0%	0.0%	0.0%	0.0%
	12	0.0%	0.0%		0.0%
	13		0.0%	0.0%	0.0%
	14	0.0%	0.0%	0.0%	0.0%
	21	0.0%	0.0%	0.0%	0.0%
	22	0.0%	0.0%		0.0%
	23	0.0%		0.0%	0.0%
	24	0.0%	0.0%	0.0%	0.0%
	25		0.0%	46.6%	0.0%
	31	0.0%	0.0%		13.8%
	41	0.0%		0.0%	0.0%
	42				0.0%
_	43	0.0%	0.0%		0.0%
L	12			0.0%	
	14			0.0%	
	24		0.0%	61.2%	
	25		0.0%		
	31	0.0%	0.0%		
	42		92.0%	0.0%	
	43			0.0%	
M	11			0.0%	•
	12	0.0%	0.0%		
	13				•
	14				
	21				
	22	<u> </u>			
	23		81.6%		
	24			31.8%	
	25	81.6%	81.6%	0.0%	
	31	34.7%	32.6%		36.9%

	44							
	41	•		07.40/		0.00/	07	40/
			,	97.4%		0.0%	97.	.4%
N	43 11	0.0%	O	0.0%		99.8% .		
N	12		,		•	0.00/		
		0.0%	0 .			0.0% .		
	13	· ·						
	14	•			•	0.00/		
	21	. 07.00/	,			0.0% .		
	23	97.0%	0 .		•	0.0% .		
	24	•				53.3% .		
	25		•			33.376 .		
	31	39.6%	, ·	31.0%	•		12	.8%
	41	94.1%		31.070	•		12.	0 /0
	42	94.17	0		•			
	43		•		•	94.4% .		
Р	11	•	-	0.0%		34.4/0 .		
•	12	68.6%	<u> </u>	0.0 /0	•	0.0%	Q/I	.1%
	13	00.07				0.070	J <del>1</del> .	1 /0
	14	<u> </u>			•			
	21	96.5%	· ·		•	93.1% .		
	22	30.370		88.2%		33.170 .		
	23	-		88.2%	•		0	.0%
	24	•		88.2%	•	99.7% .	0.	0 70
	25			88.2%				
	31	98.8%	6	98.8%		99.4% .		
	41							
	42			96.6%		0.0% .		
	43			0.0%		0.0%	0.	.0%
Q	11					0.0%		
	12	0.0%	6	0.0%			20.	.5%
	13							
	14			0.0%				
	21							
	22					0.0%		
	23					0.0% .		
	24	0.0%	6	0.0%		40.5% .		
	25			0.0%				
	31	12.3%	6	0.0%			0.	.0%
	41			81.6%		0.0% .		
	42			0.0%				
	43			0.0%		57.7% .		
R	11					0.0%		
	12	66.0%	6	96.1%			0.	.0%
	13							
	14							
	21					0.0% .		
	22	0.0%		0.0%				
	23	92.9%	6 .					
	24					92.6% .		

	25			0.0%	
	31	60.6%	51.8%		0.0%
	42	0.0%	0.0%		
	43				
S	11		99.9%	0.0%	
	12	99.1%	99.1%	0.0%	
	13			0.0%	
	14	0.0%			
	21			0.0%	
	22				
	23		0.0%		
	24			0.0%	
	25			0.0%	
	31	5.7%	27.0%		34.5%
	41			81.6%	
	42			70.7%	
	43	0.0%	0.0%		

**Table 25:** Coefficients of Variation (CV) of job vacancies estimation, by Economic Activity Sections (NACE Rev 2) and Geographical division (NUTS2), year 2011

		QUARTERS (201	1)	
Economic		,	,	
Activity Sections	NUTS2	1	2	3
В	11	0.0%		
	12	0.0%		
	13		0.0%	
	14			
	21			
	22			
	23			
	24			0.0%
	25		•	0.0%
	31	0.0%	0.0%	0.070
	41	0.070	0.070	•
	42		•	0.0%
	43	-	•	77.6%
С	11	0.0%	0.0%	0.0%
	12	28.6%	34.6%	0.076
	13	20.070	0.0%	
	14	95.7%	0.070	•
	21	88.6%	•	0.0%
	22	00.070	•	0.0%
	23		•	0.078
	24	42.1%	75.1%	65.3%
	25	97.7%	95.3%	0.0%
	31	54.5%	21.0%	0.0%
	41	34.376	21.070	0.078
	42	0.0%	0.0%	
	43	0.0%	0.076	0.0%
D	12	0.078	•	0.0 %
U	13	0.0%	•	•
	14	0.0%	0.0%	•
	21	0.078	0.076	•
	23		•	
	25			•
	31	•	•	
	41		•	0.0%
	42		•	
		•		0.0%
E	43 11	•	0.0%	0.0%
	11	04.60/	0.0% 81.6%	
		81.6%		
	13	63.2%	•	
	14		. 40.00/	•
	21	57.7%	40.8%	•
	22			•
	23			

	24			0.00/
				0.0%
	25		•	89.4%
	31			•
	41	0.0%	0.0%	•
	42	34.0%	0.0%	
	43			•
F	11			•
	12			
	13			•
	14			
	21			
	22		100.0%	
	23	96.5%		94.9%
	24			
	25	0.0%		
	31	94.9%		
	41			83.4%
	42			95.4%
	43			0.0%
G	11	0.0%	0.0%	0.0%
	12	72.6%	99.9%	0.0%
	13	0.0%	0.0%	0.0%
	14	57.2%	0.0%	0.0%
	21	94.6%	0.0%	0.0%
	22	0.0%	0.0%	0.0%
	23	93.9%	0.0%	73.5%
	24	0.0%	0.0%	0.0%
	25	0.0%	0.0%	0.0%
	31	93.4%	6.9%	43.3%
	41	0.0%	0.0%	0.0%
	42	93.7%	99.8%	0.0%
	43	0.0%	0.0%	0.0%
Н	11	0.0%	0.0%	0.0%
	12	0.0%	0.0%	0.0%
	13	0.0%	0.0%	0.0%
	14	0.0%	0.0%	0.0%
	21	0.0%	0.0%	0.0%
	22	0.0%	0.0%	0.0%
	23	0.0%	0.0%	0.0%
	24	0.0%	17.7%	0.0%
	25	0.0%	0.0%	0.0%
	31	4.7%	1.4%	0.0%
	41	0.0%	0.0%	•
	42	0.0%	0.0%	
	43	8.8%	0.0%	
I	11			
	12	70.7%	50.0%	0.0%
	13			
	14			
	21			

	00	70.00/		
	22	78.2%		
	23	51.2%		•
	24			
	25	•	0.0%	
	31	78.2%	100.0%	
	41	•	99.8%	0.0%
	42	78.2%		
	43	53.3%		
J	11			
	12	98.8%		
	13			
	14			
	21	•	95.7%	
	22			
	23		0.0%	88.3%
	24			
	25			
	31	3.8%	0.0%	
	41			
	42			
	43			
К	11			
	12	0.0%		
	13	0.0%		
	14	0.0%		0.0%
	21	0.0%		0.070
	22	0.0%		
	23	0.070	0.0%	0.0%
	24	•	0.0%	
	25	0.0%	0.070	•
	31	0.0%	0.0%	•
	41	0.0%	0.0 /0	•
	42	0.0%	0.0%	•
	43			•
1		•		
L	12	•		•
	14	•	. 00.00/	•
	25	•	99.8%	•
	31			
	42	92.0%		93.9%
•	43			•
M	11			
	12			•
	13			
	14			
	21			
	22			
	23	0.0%		73.9%
	24			
	25			0.0%
	31	39.8%	80.3%	

	44	04.501		
	41	64.5%		•
	42	86.8%		•
M	43			
N	11	. 04.00/	. 0.00/	•
	12	91.9%	0.0%	•
	13	•	. 0.00/	•
	21	•	0.0%	•
	22	•	. 0.00/	•
	23	•	0.0%	. 00 50/
	24	•	0.0% 99.2%	98.5%
	25	•	99.270	•
	31	34.0%	21.1%	•
	41	0.0%	21.170	•
	42	98.3%	0.0%	•
	43	90.376	0.0%	•
P	11	•		•
•	12	94.1%		•
	13	34.170		•
	14	•		•
	21			•
	22	•	88.2%	•
	23		88.2%	99.0%
	24	•	88.2%	00.070
	25	•	88.2%	0.0%
	31	<u> </u>	00.270	0.070
	41			0.0%
	42			
	43		0.0%	
Q	11	89.4%		
	12	0.0%	0.0%	
	13			
	14			
	21			0.0%
	22			0.0%
	23			
	24	0.0%		
	25	0.0%	0.0%	
	31	0.0%		
	41			
	42			0.0%
	43			0.0%
R	11			
	12	1.0%	0.0%	
	13	92.1%		
	14			
	21			
	22			
	23	0.0%		0.0%
	24			

		,		
	25			
	31		68.0%	
	42	0.0%		
	43			
S	11			0.0%
	12		0.0%	
	13			
	14			
	21			
	22			
	23			24.0%
	24			
	25			0.0%
	31	14.8%	16.8%	•
	41		97.0%	
	42	79.1%		-
	43			

**Table 26:** Coefficients of Variation (CV) and design effects (DE) of job vacancies estimation according to eight major groups of the International Standard Classification of Occupation (ISCO- sum of full time + part time positions), and by Economic Activity Sections (NACE Rev.2), for year 2010

		QUARTERS								
			1	2		3	3	4		
Economic Activity Sections	ISCO Major Groups (sum)	CV (%)	DE	CV (%)	DE	CV (%)	DE	CV (%)	DE	
В	01	0.0	0.0		DL		DL	0.0	0.0	
	02	0.0	0.0		•	•	•		0.0	
	03			.	·			-		
	04	<u>.</u>		0.0	0.0	89.4%	0.0	0.0	0.0	
	05									
	07						•			
	08	0.0	0.0				•	0.0	0.0	
	09	0.0	0.0	0.0	0.0					
С	01	0.0	0.0	0.8	0.0	81.9%	0.0	0.0	0.0	
	02	0.2	0.0	0.2	0.0	26.0%	0.0	0.6	0.0	
	03	0.5	0.0	0.6	0.0	66.7%	0.0	0.5	0.0	
	04	0.1	0.0	0.0	0.0	35.7%	0.0	0.3	0.0	
	05	0.4	0.0	0.4	0.0	34.2%	0.0	0.4	0.0	
	07	0.7	1.7	0.3	0.0	4.4%	0.0	0.3	0.0	
	08	0.0	0.0	0.0	0.0	5.1%	0.0	0.0	0.0	
_	09	0.7	0.2	0.6	0.9	7.1%	0.0	0.2	0.0	
D	01					. 0.00/				
	02 03	0.0	0.0 0.0	0.0	0.0 0.0	0.0% 2.1%	0.0 0.0	0.0	0.0 0.0	
	03 04	0.0	0.0	0.0	0.0	4.4%	0.0	0.0	0.0	
	0 <del>4</del> 05		0.0	•	•	4.4 /0	0.0			
	03 07			•	•	0.0%	0.0	0.0	0.0	
	08		•		•	0.0%	0.0			
	09	<u>.</u>		.		0.0%	0.0		·	
E	01	0.0	0.0	0.0	0.0			0.0	0.0	
	02	0.9	0.0	0.4	0.0	0.0%	0.0	0.0	0.0	
	03	0.9	0.0	0.2	0.0	0.0%	0.0	0.0	0.0	
	04	0.7	0.0	0.3	0.0	0.0%	0.0	0.0	0.0	
	05					0.0%	0.0			
	07	0.9	0.0	0.1	0.0	0.0%	0.0	0.0	0.0	
	80	0.0	0.0	0.4	0.0	0.0%	0.0	0.0	0.0	
	09	0.7	0.0	0.1	0.0	0.0%	0.0	0.0	0.0	
F	01									
	02	-	•		•		•			
	03				•				•	
	04	0.1	0.0		•	96.3%	3.8		•	
	05				•	14.00/				
	07 08	1.0	0.0	•	•	14.6%	0.0		•	
	08			1.0		98.7%	3.8			
	09	0.1	0.0	1.0	2.7	13.2%	0.0	0.8	0.0	

G	01							0.0	0.0
١٩	02	1.0	7.5	0.5	0.0	0.0%	0.0	0.0	0.0
	03	0.7	0.0	1.0	7.5	0.0%	0.0	-	•
	03 04	0.7		0.6		73.6%		0.7	0.2
			0.2		0.1		1.1	0.7	
	05	0.4	0.6	0.5	0.6	81.5%	0.9	0.6	0.5
	07	1.0	9.4	1.0	1.0	0.0%	0.0	0.0	0.0
	08	0.5	0.0	0.7	0.0	0.0%	0.0	0.0	0.0
1	09	0.5	0.0	0.1	0.0	0.0%	0.0	1.0	6.8
H	01	0.7	0.0					•	•
	02	0.7	0.0	0.0	0.0				
	03	0.7	0.0	0.0	0.0			0.0	0.0
	04	0.1	0.0	0.0	0.0	0.0%	0.0	0.0	0.0
	05	0.0	0.0	0.2	0.0			0.9	0.0
	07	0.2	0.0	0.0	0.0	0.0%	0.0		•
	80	0.8	0.3						
	09	0.0	0.0	0.0	0.0	0.0%	0.0		•
1	01			0.8	0.0				•
	02	0.7	0.0	0.8	0.0	0.0%	0.0		•
	03	0.7	0.0		•	0.0%	0.0		•
	04	0.0	0.0	0.8	0.0	0.0%	0.0		•
	05	0.1	0.0	0.7	0.7	30.6%	0.0	0.3	0.1
	07	0.2	0.0	0.6	0.0	0.0%	0.0	-	•
	80	0.7	0.0			0.0%	0.0	-	•
	09	0.5	0.9	1.0	4.1	0.0%	0.0	-	•
J	01		•						·
	02	1.0	1.0	1.0	1.2	0.0%	0.0	0.0	0.0
	03	0.0	0.0	0.0	0.0			0.0	0.0
	04	0.3	0.6	0.7	1.4	0.0%	0.0	0.1	0.0
	05	0.0	0.0	0.1	0.0	0.0%	0.0	0.6	0.0
	07	0.0	0.0	0.0	0.0	0.0%	0.0	0.0	0.0
	80	0.0	0.0			0.0%	0.0	0.0	0.0
	09	0.8	0.1	0.3	0.0	69.9%	0.0	0.0	0.0
K	01	0.0	0.0	0.0	0.0	0.0%	0.0	0.0	0.0
	02	0.0	0.0	0.0	0.0	96.7%	0.9	0.0	0.0
	03	0.0	0.0			0.0%	0.0	0.0	0.0
	04	0.0	0.0	0.0	0.0	5.6%	0.0	0.1	0.0
	05		•		•				•
	07								•
	80				•				
	09	0.0	0.0					-	•
L	01							-	•
	02			0.0	0.0			-	•
	03			0.0	0.0	0.0%	0.0		•
	04	0.0	0.0	0.0	0.0	61.2%	0.0		ē
	05							-	•
	07					0.0%	0.0		•
	80							-	•
	09		•	0.4	0.0	16.1%	0.0	-	·
M	01	0.1	0.0	0.2	0.0	48.4%	0.0	0.9	0.0
	02	0.4	0.0	0.4	0.0	43.2%	0.0	0.2	0.0
	03	0.3	0.0	0.3	0.0	41.3%	0.0	0.5	0.0
	04	0.2	0.0	0.2	0.0	27.8%	0.0	0.3	0.0

Ì	05	1				73.0%	0.0		
	03 07	0.2	0.0	0.2	0.0	73.0%	0.0	0.9	0.0
	08	0.1	0.0	0.2	0.0	49.8%	0.0		0.0
	09	0.1		0.1	0.0	55.6%	0.0	0.5	
N		0.3	0.0	0.3	0.0	55.6%	0.0	0.5	0.0
N	01	•	•	•	•		•	•	•
	02			•	•				
	03	0.0	0.0	•	-	0.0%	0.0	0.0	0.0
	04	0.5	0.0	1:		63.5%	0.0	0.1	0.0
	05	0.0	0.0	0.5	0.0	0.0%	0.0		·
	07								·
	08	0.5	0.0	0.0	0.0	0.0%	0.0	-	
	09	0.3	0.0		•	79.0%	0.4	0.6	0.0
Р	01								
	02	0.6	0.0	0.4	0.0	73.3%	0.2	0.0	0.0
	03			0.0	0.0			0.0	0.0
	04	1.0	0.1	0.1	0.0	94.1%	0.7	0.0	0.0
	05						•		
	07						•		
	08	ě							
	09					0.0%	0.0		
Q	01			0.0	0.0	l			
	02	0.2	0.0	0.0	0.0	0.0%	0.0	0.0	0.0
	03	0.0	0.0	0.0	0.0	0.0%	0.0	0.0	0.0
	04	0.2	0.0	0.3	0.0	55.1%	0.0	0.1	0.0
	05	0.9	0.0	0.9	0.0	l	i		
	07			0.0	0.0	0.0%	0.0		
	08					l		0.0	0.0
	09	0.0	0.0	0.0	0.0	l		0.0	0.0
R	01	0.8	0.0		•	0.0%	0.0		
	02	0.5	0.0	0.2	0.0	22.5%	0.0	0.0	0.0
	03	0.3	0.0	0.1	0.0	72.0%	0.0	0.0	0.0
	04	0.3	0.0	0.3	0.0	30.3%	0.0	0.0	0.0
	05	0.1	0.0	0.0	0.0	0.0%	0.0		
	07	0.9	0.1	0.8	0.0	90.3%	0.0	0.0	0.0
	08	0.3	0.0	0.0	0.0	28.9%	0.0	0.0	0.0
	09	0.6	0.0	0.6	0.0	51.4%	0.0	0.0	0.0
S	01	0.0	0.0	0.0	0.0	0.0%	0.0		
	02	0.1	0.0	0.0	0.0	30.6%	0.0	0.3	0.0
	03	0.0	0.0	0.0	0.0	27.3%	0.0	0.3	0.0
	04	0.0	0.0	0.2	0.0	34.5%	0.0	0.2	0.0
	05	1.0	0.2	1.0	0.3	0.0%	0.0	1.0	0.3
	07	0.2	0.0	0.8	0.1	0.0%	0.0	0.1	0.0
	08	0.0	0.0	0.0	0.0	0.0%	0.0	0.0	0.0
							0.0		
	09	0.1	0.0	0.0	0.0	2.2%	0.0	0.1	0.0

**Table 27:** Coefficients of Variation (CV) and design effects (DE) of job vacancies estimation according to eight major groups of the International Standard Classification of Occupation (ISCO- sum of full time + part time positions), and by Economic Activity Sections (NACE Rev.2), for year 2011

		Quarte							
			1	2		3	3	4	
Economic Activity Sections	ISCO Major Groups (sum)	CV (%)	DE	CV (%)	DE	CV (%)	DE	CV (%)	DE
В	01					. (70)		01 (70)	
	02			0.0	0.0	0.0%	0.0		
	03	1.		0.0	0.0	0.0%	0.0		
	04	0.0	0.0	0.0	0.0	0.0%	0.0		
	05	1.							
	07			0.0	0.0	0.0%	0.0		
	08	0.0	0.0	0.0	0.0	0.0%	0.0		
	09	0.0	0.0	0.0	0.0	6.3%	0.0		
С	01	0.6	0.0	1.0	3.2	0.0%	0.0		
	02	0.3	0.0	0.3	0.0	0.0%	0.0		
	03	0.1	0.0	0.4	0.0	0.0%	0.0		
	04	0.4	0.0	0.5	0.0	30.9%	0.0		
	05	0.1	0.0	0.4	0.0	51.8%	0.1		
	07	0.7	1.3	0.0	0.0	66.0%	0.1		
	80	0.5	0.0	0.0	0.0	0.0%	0.0		
	09	0.6	0.2	0.3	0.0	41.4%	0.0		
D	01								
	02	0.0	0.0			0.0%	0.0		
	03			0.0	0.0				
	04	0.0	0.0						
	05								
	07								
	80			-	•		•		
	09					•			
E	01	0.0	0.0	0.0	0.0		•		
	02	0.6	0.0	0.0	0.0	15.4%	0.0		
	03	0.7	0.0	0.0	0.0	18.6%	0.0		
	04	0.3	0.0	0.0	0.0	29.8%	0.0		
	05	0.0	0.0						
	07	0.3	0.0	0.0	0.0	31.4%			
	08	0.4	0.0	0.3	0.0	68.8%	0.0		
_	09	0.4	0.0	0.0	0.0	25.4%	0.0		
F	01					•	•		
	02	0.0	0.0			•	•		
	03	0.0	0.0		•	•	•		
	04 05	0.9	0.0	1.0		•	•		
	05 07		•	1.0	3.4	•	•		
	07	1.0			•	•	•		
	08 09	1.0	0.0	•	•	94.9%	0.0		
G	09 01	0.0	0.0	0.0	0.0	34.370	0.0		
ا	UI	0.0	0.0	J 0.0	0.0	1 .	•	I	

i		i		1		ı	
	02	0.5	0.0	0.0	0.0	0.0%	0.0
	03	0.8	0.0			0.0%	0.0
	04	0.9	3.0	0.0	0.0	83.4%	0.0
	05	0.7	2.1	0.0	0.0	34.5%	0.0
						34.376	0.0
	07	0.8	0.1	0.2	0.0	•	•
	80	1.0	3.2	•	•	•	•
	09	0.6	0.6	0.8	9.1	60.6%	11.6
Н	01						
	02	0.0	0.0	0.5	0.0	0.0%	0.0
	03			0.0	0.0	0.0%	0.0
	04	0.0	0.0	0.0	0.0	0.0%	0.0
	05	0.0	0.0	0.3	0.0	0.0%	0.0
		•	•	0.3	0.0	0.076	0.0
	07		•	•	•		
	80	-				0.0%	0.0
	09					0.0%	0.0
I	01				•		
	02	0.5	0.0				
	03	0.6	0.0				
	04	0.5	0.0		_		_
	05	0.5	0.0	0.9	0.9		-
	07	0.8	0.0		0.5	•	•
				•	•	•	•
	08	0.8	0.0				
_	09	0.7	2.1	1.0	7.0	0.0%	0.0
J	01	-		0.0	0.0	0.0%	0.0
	02	0.3	0.0	0.0	0.0	0.0%	0.0
	03			0.0	0.0	0.0%	0.0
	04	0.0	0.0	0.6	0.1	88.9%	1.3
	05	0.7	0.0	1.0	0.3		_
	07	• • • • • • • • • • • • • • • • • • •	0.0		0.0	-	-
	08	•	•		•	•	•
		•	•	•	•	•	•
1.0	09		•				
K	01			0.0	0.0	0.0%	0.0
	02	0.0	0.0	0.0	0.0	0.0%	0.0
	03	0.0	0.0	0.0	0.0	0.0%	0.0
	04	0.0	0.0	0.0	0.0	0.0%	0.0
	05	0.0	0.0			0.0%	0.0
	07	.					
	08		_		_		
	09	-	-		•		
L		-	•	'	•		•
_	01	•	•	'	•	•	•
	02	-	•	•	•	•	•
	03	•					•
	04	0.9	0.0	1.0	0.7		
	05						
	07						
	80	.					
	09	0.9	0.0	1.0	0.7		
М	01	0.9	0.0				
	02	0.6	0.0	0.9	0.0	73.6%	0.0
	03	0.5	0.0	0.9	0.0	87.4%	0.0
	04	0.3	0.0	0.6	0.0	59.0%	0.0
	05		•				

	07	100	0.0	١٠٥	0.0	07 40/	0.0	
	07	0.9	0.0	0.9	0.0	87.4%	0.0	
	08						0.0	
N	09	0.5	0.0	0.9	0.0	87.4%	0.0	
N	01							
	02	0.0	0.0	0.0	0.0			
	03	0.0	0.0	0.0	0.0			
	04	0.5	0.1	0.0	0.0	99.7%	0.6	
	05	0.6	0.0	0.8	0.0	70.7%	0.0	
	07	1.0	1.1		•			
	08	1.0	0.1		•			
	09	0.8	0.0	1.0	0.2			
Р	01							
	02	0.9	0.0	0.5	0.0	99.0%	0.2	
	03			0.0	0.0			
	04			0.5	0.0	0.0%	0.0	
	05							
	07							
	80				•	0.0%	0.0	
	09	•	•		•			
Q	01	•	•		•			
	02	0.4	0.0	0.0	0.0	0.0%	0.0	
	03	0.0	0.0	0.0	0.0	0.0%	0.0	
	04							
	05	•	•		•			
	07	•	•		•			
	08	0.0	0.0					
	09	0.0	0.0			0.0%	0.0	
R	01	0.0	0.0					
	02	0.0	0.0	0.2	0.0	0.0%	0.0	
	03	0.3	0.0	0.5	0.0	0.0%	0.0	
	04	0.0	0.0	0.6	0.0	0.0%	0.0	
	05							
	07	0.0	0.0	0.8	0.0	0.0%	0.0	
	08	0.3	0.0	0.0	0.0	0.0%	0.0	
	09	0.0	0.0	0.8	0.0	0.0%	0.0	
S	01					0.0%	0.0	
	02	0.4	0.0	0.4	0.0	80.2%	0.0	
	03	0.3	0.0	0.3	0.0	44.2%	0.0	
	04	0.2	0.0	0.2	0.0	81.6%	0.0	
	05					0.0%	0.0	
	07	0.1	0.0	0.0	0.0	0.0%	0.0	
	08	0.0	0.0	0.2	0.0	0.0%	0.0	
	09	0.1	0.0	0.0	0.0	6.4%	0.0	

**Table 28:** Coefficients of Variation (CV) of job vacancies estimation, by the eight major groups of the International Standard Classification of Occupation (ISCO), year 2010

	Quarters (2010)								
ISCO	1	2	3	4					
Major Groups (full + part time)	CV's (%)	CV's (%)	CV's (%)	CV's (%)					
01	12.6%	10.3%	17.6%	32.9%					
02	53.8%	23.9%	25.0%	5.5%					
03	16.2%	55.0%	16.8%	14.9%					
04	9.7%	12.4%	20.0%	4.3%					
05	18.1%	41.4%	51.2%	38.8%					
07	32.3%	60.4%	25.4%	2.1%					
08	51.8%	3.6%	56.9%	0.0%					
09	25.0%	46.9%	15.8%	46.8%					

**Table 29:** Coefficients of Variation (CV) of job vacancies estimation, by the eight major groups of the International Standard Classification of Occupation (ISCO), year 2011

	Quarters (2011)			
ISCO	1	2	3	4
Major Groups (full + part time)	CV's (%)	CV's (%)	CV's (%)	CV's (%)
01	14.3%	99.2%	0.0%	
02	18.0%	30.3%	41.2%	
03	29.0%	7.8%	15.7%	
04	53.7%	7.7%	35.0%	
05	48.7%	61.3%	23.1%	
07	44.1%	28.5%	3.8%	
08	92.7%	8.2%	2.7%	
09	40.3%	50.4%	48.8%	

**Table 30:** Coefficients of Variation (CV) of job vacancies estimation, by the eight major groups of the International Standard Classification of Occupation (ISCO), separately for full time and part time job vacancies, year 2010

ISCO Major	Quarters (2010)				
ISCO – Major Groups	Q1	Q2	Q3	Q4	
FULL TIME	CV (%)	CV (%)	CV (%)	CV (%)	
01	0.6%	1.5%	1.2%	0.0%	
02	6.3%	13.1%	8.8%	1.5%	
03	8.7%	2.3%	7.8%	11.4%	
04	0.6%	1.1%	0.3%	0.8%	
05	9.7%	0.3%	0.3%	0.0%	
07	0.1%	0.7%	0.0%	0.0%	
08	0.0%	0.0%	0.0%	0.0%	
09	1.4%	1.5%	1.8%	2.0%	
PART TIME	Q1	Q2	Q3	Q4	
01					
02	0.0%		0.0%	0.0%	
03	0.0%	0.0%	0.0%	0.0%	
04	0.0%	2.0%	0.0%	0.0%	
05	38.6%	0.0%	0.0%	0.0%	
07	0.0%	0.0%		0.0%	
08					
09	0.0%	0.0%	17.9%	0.0%	

**Table 31:** Coefficients of Variation (CV) of job vacancies estimation, by the eight major groups of the International Standard Classification of Occupation (ISCO), separately for full time and part time job vacancies, year 2011

	Quarters	(2011)		
ISCO – Major Groups	Q1	Q2	Q3	Q4
FULL TIME	CV (%)	CV (%)	CV (%)	CV (%)
01	0.0%	0.0%	0.0%	
02	17.2%	0.0%	0.0%	
03	22.9%	0.0%	0.0%	
04	0.7%	0.0%	0.8%	
05	0.0%	0.5%	0.7%	
07	0.0%	0.0%	0.0%	
08	0.0%	0.0%	0.0%	
09	0.0%	0.0%	0.0%	
PART TIME	Q1	Q2	Q3	Q4
01		0.0%		
02	0.0%	0.0%	0.0%	
03				
04	0.0%	0.0%	0.0%	
05	0.0%	0.0%	2.7%	
07	0.0%	0.0%	0.0%	
08				
09	19.1%	0.0%	0.0%	

**Table 32:** Coefficients of Variation (CV) of job vacancies estimation, by the eight major groups of the International Standard Classification of Occupation (ISCO) and Geographical division (NUTS2), year 2010

		Quarters (2010)			
		1	2	3	4
	ISCO – Major Groups (full + part				
NUTS2	time)	CV's (%)	CV's (%)	CV's (%)	CV's (%)
11	01	0.0%			
	02	94.3%	0.0%	0.0%	0.0%
	03	94.3%		0.0%	0.0%
	04	45.1%	0.0%	22.1%	0.0%
	05	85.3%	91.8%	34.7%	0.0%
	07	68.9%	99.9%	0.0%	0.0%
	08	0.0%	0.0%		
	09	53.1%	0.0%	0.0%	0.0%
12	01	0.0%	0.0%		0.0%
	02	30.8%	13.8%	78.7%	34.0%
	03	31.2%	47.8%	0.0%	0.0%
	04	1.5%	15.5%	69.4%	3.8%
	05	63.4%	72.6%	96.1%	90.5%
	07	65.1%	23.1%	2.4%	1.7%
	08	5.0%	6.6%	98.6%	0.0%
	09	44.7%	85.1%	4.4%	1.9%
13	01			0.0%	0.0%
	02		0.0%	0.0%	0.0%
	03			0.0%	0.0%
	04	0.0%	0.0%	0.0%	0.0%
	05	0.0%	0.0%	0.0%	0.0%
	07			0.0%	
	08			0.0%	
	09	0.0%	0.0%	0.0%	0.0%
14	01				
	02	90.9%	2.2%	0.0%	0.0%
	03		0.0%	8.2%	0.0%
	04	8.0%	8.8%	0.8%	0.0%
	05	0.0%	0.0%	0.0%	0.0%
	07	100.0%		0.0%	
	08			0.0%	
	09	93.1%	0.0%	0.0%	61.8%
21	01				
	02	80.1%	44.7%	0.0%	0.0%
	03	0.0%	44.7%	0.0%	
	04	0.0%	4.1%	0.8%	0.0%
	05	98.9%	0.0%	0.0%	0.0%
	07			0.0%	
	08	0.0%	44.7%	34.2%	0.0%
	09	0.0%	39.3%	28.1%	0.0%
22	01				
	02		88.2%		0.0%

	03				0.0%
	04	90.6%	0.0%	0.0%	0.0%
	05	4.4%	91.9%	0.0%	0.0%
	07				0.070
	08	97.0% .			
	09	41.2%	0.0%	0.0%	0.0%
23	01	0.0% .			212,5
	02	0.0%	43.5%	45.0%	0.0%
	03	0.0%	0.0%	0.0% .	0.070
	04	21.3%	0.0%	5.9%	0.0%
	05	0.0%	0.0%	0.0%	0.0%
	07	0.0%	0.0%	0.0%	0.0%
	08	0.0% .		0.0%	0.0%
	09	0.0%	0.0%	0.0%	0.0%
24	01	0.0% .			0.0%
	02	39.8%	88.2%	0.0%	0.0%
	03	0.0%	0.0% .	2.2.70	0.0%
	04	58.5%	60.1%	85.2%	64.0%
	05	0.0%	0.0%	0.0%	0.0%
	07		0.070	0.070	0.070
	08	0.0%	0.0%	0.0%	0.0%
	09	0.0%	14.9%	0.0% .	0.070
25	01	0.070	1 1.0 70	0.070	0.0%
	02		56.7%	0.0%	0.0%
	03	70.0%	40.8%	0.0%	0.0%
	04	3.2%	82.6%	0.0%	0.0%
	05	31.2%	0.0%	0.0%	0.0%
	07		0.0%	0.0% .	212,5
	08	0.0% .			0.0%
	09	0.0%	70.9%	0.0%	0.0%
31	01	28.1%	9.7%	17.8%	72.3%
	02	64.4%	41.0%	44.0%	15.0%
	03	24.4%	79.5%	23.7%	27.7%
	04	19.0%	18.0%	23.6%	4.6%
	05	21.9%	52.8%	54.3%	56.0%
	07	38.3%	80.8%	51.6%	4.2%
	08	84.9%	1.6%	0.6%	0.0%
	09	31.4%	37.7%	40.2%	61.0%
41	01	0.0%	0.0% .		0.0%
	02			0.0%	0.0%
	03	0.0%	61.2%	0.0%	0.0%
	04	66.4%	0.0%	0.0%	0.0%
	05	95.1%	99.5%	0.0%	0.0%
	07	0.0%	0.0%	0.0%	0.0%
	08	84.5%	0.0%	0.0%	0.0%
	09	0.0%	0.0%	0.0%	0.0%
42	01		73.3% .		0.0%
	02	0.9%	62.5%	71.9%	0.0%
	03	9.6%	0.0%	0.0%	0.0%
	04	0.0%	66.8%	0.0%	23.5%
	05	99.6%	54.6%	0.0%	0.0%
	07	0.0%	39.2%	0.0% .	

	08	0.0%	0.0%	0.0%	
	09	0.0%	2.5%	0.0%	
43	01				0.0%
	02	4.0%	0.0%	69.5%	0.0%
	03	13.8%	0.0%	79.2%	0.0%
	04	0.9%	0.0%	67.0%	0.0%
	05	15.4%	96.4%	0.0%	98.1%
	07	16.9%	0.0%		
	08	4.5%	0.0%	0.0%	
	09	2.2%	0.0%	68.0%	0.0%

**Table 33:** Coefficients of Variation (CV) of job vacancies estimation, by the eight major groups of the International Standard Classification of Occupation (ISCO) and Geographical division (NUTS2), year 2011

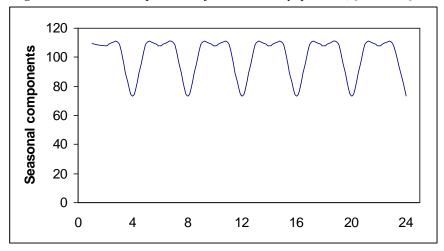
		Quarters (2011)		
		1	2	3
NUTS2	ISCO – Major Groups (full + part time)	CV's (%)	CV's (%)	CV's (%)
11	01	0.0%	0.0%	0.0%
	02	81.3%	0.0%	0.0%
	03	0.0%	0.0%	0.0%
	04	0.0%	0.0%	43.7%
	05	0.0%	0.0%	0.0%
	07	0.0%	0.0%	0.0%
	08	0.0%	0.0%	0.0%
	09	0.0%	0.0%	4.4%
12	01	0.0%		
	02	2.2%	0.0%	0.0%
	03	17.0%	0.0%	0.0%
	04	48.4%	0.6%	6.4%
	05	89.9%	35.1%	40.5%
	07	80.8%		0.0%
	08	36.1%	0.0%	0.0%
	09	86.6%	98.4%	95.9%
13	01	0.0%	0.0%	
	02	63.2%		0.0%
	03			
	04	0.0%	0.0%	0.0%
	05	0.0%		0.0%
	07			0.0%
	08		0.0%	0.0%
	09	55.0%	0.0%	
14	01	0.0%	0.0%	
	02	79.9%		0.0%
	03	0.0%	0.0%	0.0%
	04	14.7%	0.0%	0.0%
	05	63.2%		0.0%
	07	99.5%		
	08			0.0%
	09	94.8%		0.0%
21	01			

	02	34.6%	40.8% .	
	03		40.8% .	
	04	18.4%	64.7%	0.0%
	05	0.0%	0.0%	0.0%
	07			
	08	57.7%	40.8% .	
	09	92.4%	38.3%	0.0%
22	01			
	02		88.2% .	
	03	0.0% .		
	04	0.0%	21.6%	0.0%
	05	51.5%	100.0%	0.0%
	07			
	08			
	09	0.0%	0.0% .	
23	01		0.0% .	
	02	38.1%	68.0%	0.0%
	03	80.2%	0.0%	0.0%
	04	34.3%	9.0%	0.0%
	05	46.3%	0.0%	0.0%
	07	80.2% .		
	08	86.1% .		0.0%
	09	66.3%	0.0%	0.0%
24	01			
	02	0.0%	82.1%	0.0%
	03	48.6%	0.0%	0.0%
	04	0.6%	8.7%	0.0%
	05	0.0%	66.6%	0.0%
	07	0.0% .		
	08	17.3%	0.0% .	
	09	55.6%	82.7%	0.0%
25	01	0.0%	99.9% .	
	02	0.0%	76.8%	0.0%
	03	0.0%	0.0%	0.0%
	04	0.0%	77.8%	0.0%
	05	0.0%	0.0%	0.0%
	07	99.8%	0.0% .	0.07
	08	0.0%	0.0% .	
	09	0.0%	77.7%	0.0%
31	01	61.6%	61.2%	0.0%
	02	41.3%	38.8%	44.7%
	03	39.1%	13.0%	18.9%
	04	8.0%	9.4%	44.7%
	05	12.6%	39.8%	32.6%
	07	22.2%	40.1%	3.7%
	08	0.0%	0.0%	0.0%
	09	71.9%	73.0%	58.0%
41	01	0.0%	0.0% .	50.07
7'	02	0.0%	0.070 .	0.0%
	03	0.0%	0.0%	0.0%
	04	31.8%	0.0%	0.0%
	U-T	J1.070	0.070	0.0%

1		1		1
	07	0.0%	0.0%	0.0%
	08	0.0%	91.6%	0.0%
	09	0.0%	0.0%	0.0%
42	01		0.0% .	
	02	0.0%	0.0%	31.9%
	03	39.0% .		31.9%
	04	94.0%	0.0%	39.8%
	05	87.0% .		0.0%
	07	96.4%	0.0%	89.4%
	08	99.3%	0.0%	68.8%
	09	36.5%	98.5%	52.0%
43	01			
	02	65.5%	0.0% .	
	03	65.5%	0.0% .	
	04	23.2%	0.0%	0.0%
	05	34.5%	0.0%	0.0%
	07		0.0% .	
	08			
	09	0.0%	0.0%	86.6%

## 12. Annex II - Diagrams

**Diagram 1:** Seasonal components of job vacancies by quarters (Q1 2005- Q4 2010)



**Diagram 2:** Seasonal components of LFS by quarters (Q1 2005- Q4 2010)

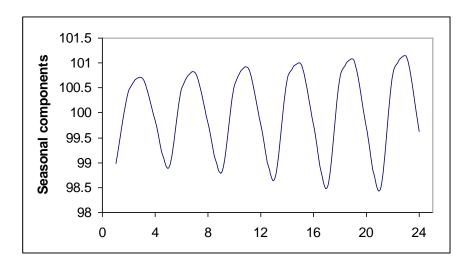


Diagram 3: Long term trend component of job vacancies by quarters (Q1 2005- Q4 2010)

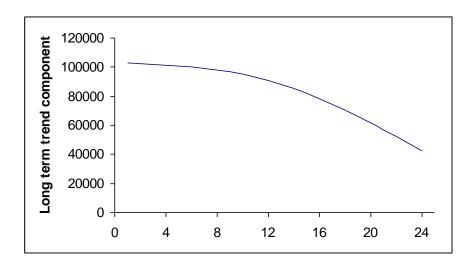
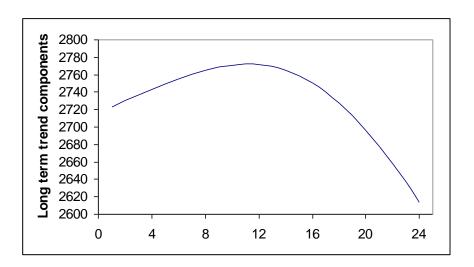
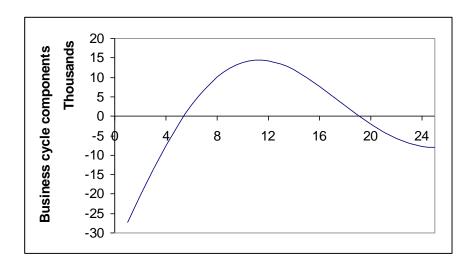


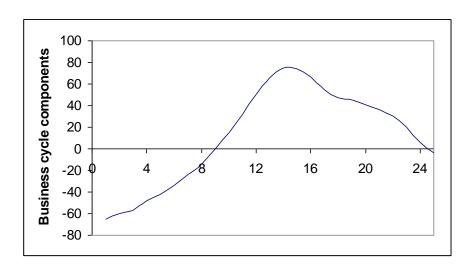
Diagram 4: Long term trend component of LFS by quarters (Q1 2005- Q4 2010)



**Diagram 5:** Business cycle components of job vacancies by quarters (Q1 2005- Q4 2010)



**Diagram 6:** Business cycle components of LFS by quarters (Q1 2005- Q4 2010)



The project manager

Ioannis Nikolaidis

Head of Methodology, Analysis and Research Section