

LFS-based and registered unemployment rates: Why do they differ and why do we need both?

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TABLE OF CONTENT

1	Do the two unemployment rates measure the same thing?.....	2
	1.1 Definitions	2
	1.2 Differences between the two unemployment concepts	3
2	Comparing LFS-based and registered unemployment data: Evidence from the Baltic countries and Montenegro.....	6
3	Measurement errors.....	9
4	Which age group is ‘the most relevant base’ for unemployment rate?.....	12
5	Two unemployment rates: when to use which?.....	13
	Conclusions.....	14

1 Do the two unemployment rates measure the same thing?

The aim of this section is to show that in fact the two unemployment rates measure different things.

1.1 Definitions

According to ILO (International Labour Organization) definition, unemployment rate is the proportion of unemployed persons among all economically active (employed and unemployed) persons of a certain age group. Here „unemployed according to ILO definition” is a person which satisfies the following three conditions:

- (a) did not have a job during the survey week;
- (b) has been actively seeking a job¹ during the past four weeks;
- (c) is ready to start working within two weeks if a suitable job is offered.

This definition is comparable across countries. Moreover, the ILO unemployment rate is considered as the ‘true’ unemployment rate².

The age group which is now most frequently used for international comparisons of unemployment rates, e.g. for monthly calculations of seasonally-adjusted unemployment rate in EU countries³, is 15 to 74 years (while for employment rates it is 15 to 64 years), but other age groups are considered as well.

Economically active population is also called ‘labour force’. Note that the concept of ‘labour force’, or economically active population, should be the same for the ILO and registered unemployment rate. There is no logical reason why self-employed persons, non-registered workers, or non-registered unemployed should be excluded from labour force when calculating the registered unemployment rate. In practise, the number of economically active persons within the official working age is estimated by the National Statistical Office from the Labour Force Survey data and given to the National Employment Agency (usually it is done once per year). In Montenegro, this number was 257.8 thousand according to LFS 2008/Q1. The National Statistical Office, in its turn, may, if necessary, use data on the number of registered employees, as well as registered unemployed, in the process of calibrating the weights used for generalization of the Labour Force Survey results from the sample to the whole population.

Registered unemployment rate is the proportion of *registered unemployed* in the labour force within the ‘official’ working age (typically, from 15 or 16 to retirement

¹ Contacted public employment office to find work; Contacted private employment agency to find work; Applied to employers directly; Asked friends, relatives, trade unions, etc.; Inserted or answered advertisements in newspapers, journals, Internet; Studied advertisements in newspapers, journals, Internet; Took a test, interview or examination; Looked for land, premises or equipment to start a business; Looked for permits, licences, financial resources to start a business; Other specific methods.

² A ‘relaxed’ definition of unemployment rate is sometimes applied for less developed countries (or for developed industrialised countries with relatively low level of labour force participation of the population). According to this definition, non-employed persons of working age are unemployed if they are ready to start working within two weeks if a suitable job is offered; this definition does not include any conditions about active job search. Note that the relaxed unemployment rate is always higher than the standard ILO unemployment rate. Given that Montenegin Ministry of Health, Labour and Social Welfare is worried about LFS-based unemployment rate being already ‘too high’, I do not discuss the relaxed definition of unemployment further on.

³http://epp.eurostat.ec.europa.eu/pls/portal/docs/PAGE/PGP_PRD_CAT_PREREL/PGE_CAT_PREREL_YEAR_2008/PGE_CAT_PREREL_YEAR_2008_MONTH_10/3-31102008-EN-BP.PDF

age, which can be different for men and women; in Montenegro it is 65 for both genders). This rate is not comparable across countries because of differences in legal regulations related to registration, deregistration, and eligibility for unemployment and other benefits, as well as availability of training and other services for registered unemployed.

A non-employed person can be *registered as unemployed* at the public employment office, if he/she

- (i) is eligible for registration as unemployed according to the legislation of the given country;
- (ii) has applied for registration and submitted all necessary documents⁴ at the public employment office.

Furthermore, this person will *remain registered as unemployed* at the given moment of time if he/she

- (iii) has been regularly since registration attending the public employment office with a frequency prescribed by (country-specific) legislation⁵;
- (iv) has not been deregistered according to (country-specific) deregistration rules⁶.

Condition (iv) of course means that the person has not reached the retirement age. Other deregistration rules aim to exclude those who are either found a job, or are not seeking a job, or are not available for job. However, the reference periods are typically different from the 1 week, 4 weeks and 2 weeks periods used in the ILO definition.

1.2 Differences between the two unemployment concepts

Failure to meet each of the conditions (i)-(iv) could be a reason why a person (within official working age limits) which is unemployed by ILO definition might not be registered as unemployed. We discuss examples in more detail below.

On the other hand, it is possible that a person which is registered unemployed is not actively seeking a job and/or is not available for job within two weeks; such a person will not be unemployed by ILO definition.

As the result, a typical situation is as shown in Figure 1. Total number of ILO unemployed is $U_1 = X + Y$. Total number of registered unemployed is $U_2 = Y + Z$. These numbers (and the two unemployment rates) may differ substantially. Even if these numbers (and the two unemployment rates) are almost equal, the two categories of unemployed might be different (only group Y belongs to both categories).

⁴ In Montenegro, when applying for the entry into the registered unemployment records for the first time, a person must submit: a personal identity card; a work book; a certificate of the education completed; proof of permanent residence.

⁵ In Montenegro, the persons receiving the benefit (financial support) have to report once in 30 days, while other registered unemployed have to report once in 90 days.

⁶ In Montenegro, possible reasons for being removed from the records include (among others): Becoming employed; Not reporting to the Employment Office in due time without an excuse (excuse must be provided within 15 days); Refusing a job offered by the Employment Office; Providing false information; Reaches 65 years of age; Becoming eligible for disability pension; Becoming fully unable to work; Starting to serve a prison sentence exceeding for a period of more than 6 months.

ILO unemployed: $U_1 = X + Y$	X: ILO unemployed, not registered	Registered unemployed: $U_2 = Y + Z$
	Y: ILO unemployed, registered	
	Z: Registered unemployed, but not ILO unemployed	

Figure 1. Different categories of unemployed

To sum up, if one would like to calculate ILO and registered unemployment rates for the ‘official’ working age, the results would be

$$\frac{U_1}{A} \text{ and } \frac{U_2}{A},$$

with the same denominator A in both cases. However, the nominators, U_1 and U_2 , count two different groups of persons which might coincide only incidentally.

A non-employed person should, in theory, be counted for U_1 if he/she *in fact* was actively seeking job during the past four weeks and is available for job within two weeks. Of course there is no practical way of actually ‘counting’ all such persons; this can only be done via survey, leading to measurement errors – an issue we postpone for the next section. But the concept itself has nothing to do with the public employment service; the latter is just one of the many possible instruments which might be used for job search.

By contrast, a non-employed person is counted for U_2 , if he/she is found in the records of the Employment Agency (which means that the above mentioned conditions (i)-(iv) are satisfied). There is no measurement error (in theory; see, however, section 3 below), but the problem is that U_2 itself is different from U_1 .

Condition (i) might exclude some categories of population from registration; this was the case, for instance, for full-time students in Latvia until year 2002.

Since registration is costly in terms of time (and also money, unless a person lives within a walking distance from the public employment office), condition (ii) will exclude those ILO unemployed, who do not have a strong motivation for registering.

Why do unemployed persons register?

- To receive unemployment benefit
- To be entitled to other benefits (e.g. community assistance; health insurance)
- To get help in job search.

Why do not all unemployed register?

- Some of the unemployed by ILO definition have no motivation to register in the first place:
 - a person is not entitled to unemployment or other benefit and does not need help in finding job (believes that he/she can find a job easily in a relatively short time)
 - a person is not entitled to unemployment or other benefit and does not believe that the Employment Office can offer a suitable job.

- Others lose motivation to continue to report themselves to the Employment Office after expiration of the unemployment benefit period, or when they lose hope that the Employment Office will offer them a suitable job.
- Yet others do not have necessary documents:
 - unregistered workers do not have a work book
 - temporary migrants do not have a proof of permanent residence in given municipality.

Note that the situation in Montenegro is rather special in this respect, because almost everyone is motivated to register because of health insurance; hence according to the LFS results of the first half of 2008, 90% of ILO unemployed (42.1 thousand persons in the first quarter and 44 thousand persons in the first quarter) considered themselves as registered unemployed. However, actual average number of registered unemployed was just above 30 thousand in each of the quarters. This means that less than two thirds of the ILO unemployed were in fact registered at the moment of the survey, while about 30% were probably registered in the past but their registration has been terminated⁷. It seems that after obtaining health insurance and until finding an official job, the unemployed people do not in reality lose the insurance even if their registration has been terminated.

The motivation to remain registered for most unemployed in Montenegro is low, because unemployment benefit is low (60% of minimum wage) and in most cases is paid only for a short period⁸. Only unemployed persons having more than 25 years of service/insurance are entitled to the benefit until re-gaining employment (or until inception of one of the reasons for cessation of the right to the benefit under the provisions of the Law on Employment, see Footnote 7). For this category of unemployed there is a strong motivation to remain registered and to have an unregistered job.

In other words, in Montenegro there is a strong motivation to register, but not to sustain the registration (condition (iii) is not met). This is indirectly confirmed by EAM data⁹ which show that almost half of the terminations not related to finding employment, retirement, or disability, are because of “Unjustifiable failure to report to EAM or answer the call from EAM.”

Finally, according to the same EAM data, more than a half of the terminations not related to finding employment, retirement, or disability are due to “Other reasons defined in law” (condition (iv) is not met).

⁷ During the procedure of calibrating LFS weights, total number of persons declaring themselves as registered unemployed was equalised with the Health Fund data on the number of persons whose health insurance is linked to their status as ‘registered unemployed’. This number is almost 3 times larger than the official number of registered unemployed. This note does not pretend to explain or investigate all reasons for this difference. One of the reasons is that according to the legislation, EAM does not have to inform a person when he/she is removed from the list of registered unemployed, so people might still consider themselves registered while in fact they are not.

⁸ 3 months for consecutive 9 months of service, or 12 intermittent months within the last 18 months; 4 months for consecutive 2 years of service, or 4 intermittent years within the last 5 years; 6 months for consecutive 5 to 10 years of service; 8 months for consecutive 10 to 15 years of service; 10 months for consecutive 15 to 25 years of service.

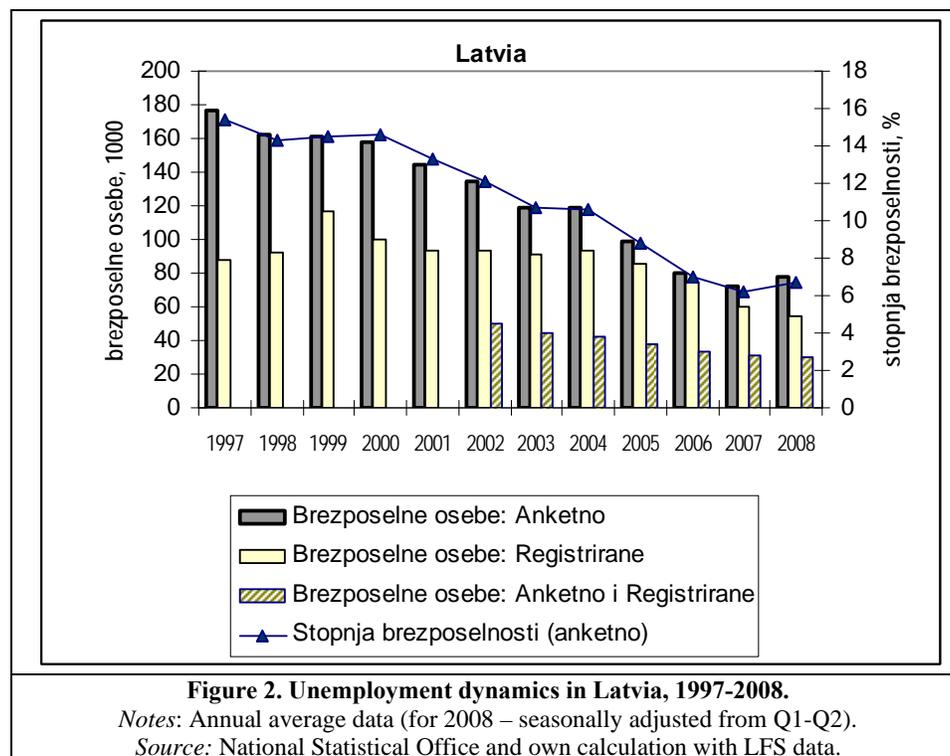
⁹ Biletan 12/2007

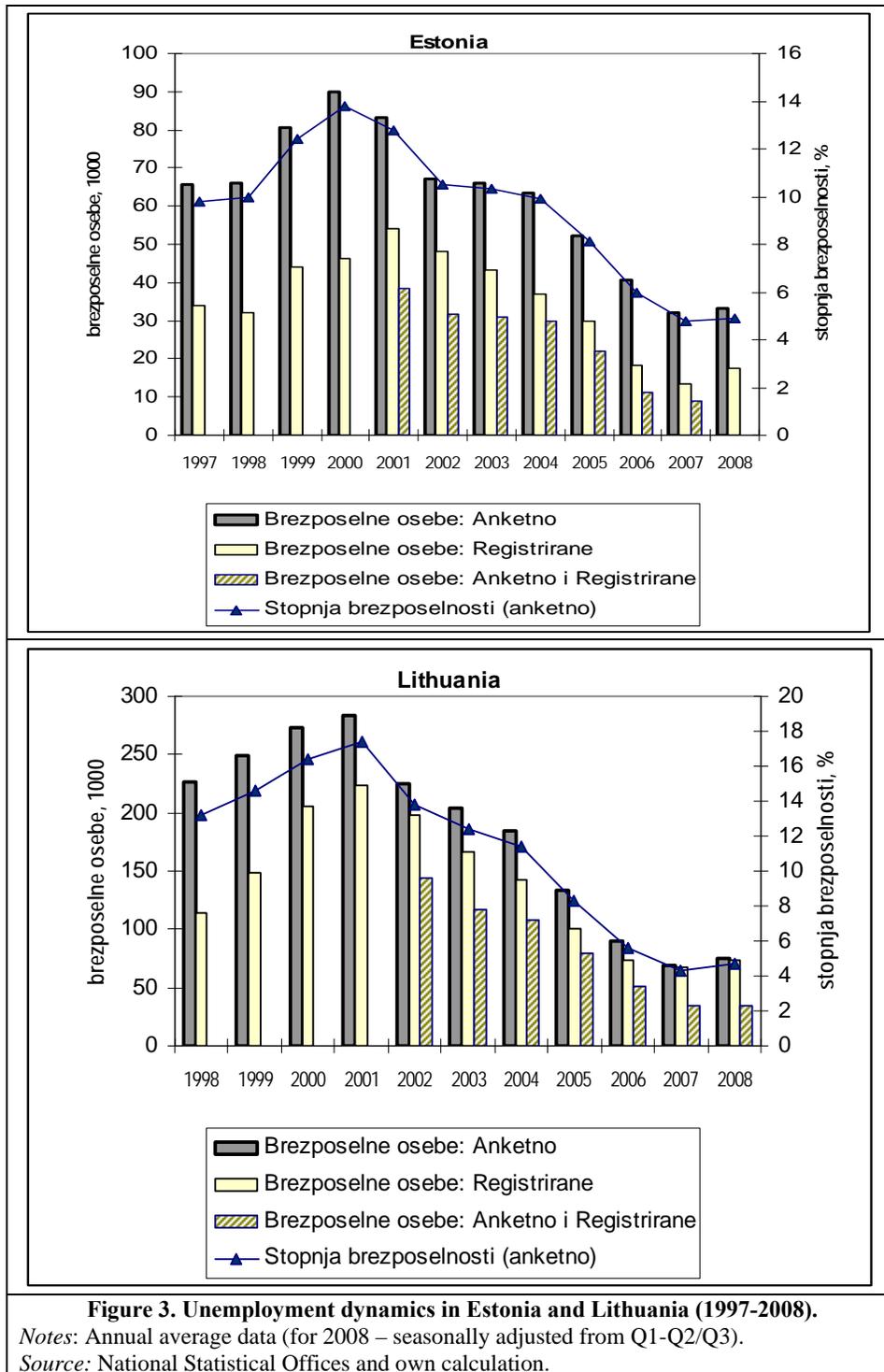
2 Comparing LFS-based and registered unemployment data: Evidence from the Baltic countries and Montenegro

Figures 2 – 3 display the dynamics of unemployment in the Baltic countries in 1997-2008. Annual average values are shown for the following indicators:

- the ILO unemployment rate (estimated from the LFS);
- the total number of ILO-unemployed persons (estimated from the LFS);
- the total number of registered unemployed persons (data of National Employment Agencies);
- the number of ILO-unemployed persons who are also registered unemployed (estimated from the LFS, starting from year 2002).

Example 1. The total number of unemployed was about two times larger than the number of registered unemployed in Latvia (1997-1998), Estonia (1997-2000), and Lithuania (1998-1999); all three countries had two-digit ILO unemployment rates at those times. Later on, in Latvia and Lithuania the difference between the total and registered unemployment became smaller but remained significant before 2006-2007, when the ILO unemployment rate dropped below 7% in Latvia and below 6% in Lithuania. In Estonia, the difference remained significant during the whole period; moreover, in 2006-2008 the total number of unemployed again was twice as large as the number of registered unemployed, although ILO unemployment rate was low (less than 6%).

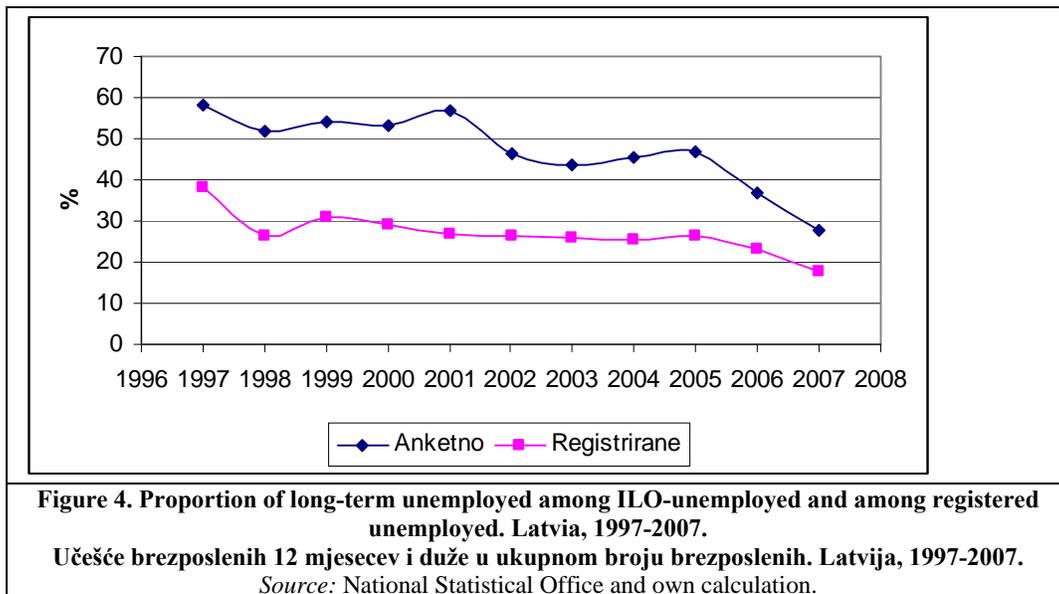




Example 2. Figures 2, 3 confirm that in all three Baltic countries the two concepts of unemployment differ strongly from each other: Large proportions of ILO-unemployed are not registered and significant proportions of registered unemployed are not ILO-unemployed (even in the years when the total numbers are similar).

More specifically, in Latvia (2002-2008) just about 40% of ILO-unemployed were registered, and 45 to 55% of registered unemployed were ILO-unemployed. In Estonia, less than a half of of ILO-unemployed were registered in 2001-2005, and less than 30% - in 2006-2007; proportion of ILO-unemployed among the registered unemployed varied from 65 to 80%. In Lithuania, about 60% of ILO-unemployed were registered and 70 to 80% of registered unemployed were ILO-unemployed in 2002-2006; in 2007-2008 both proportions were about 50%.

Example 3. In Montenegro, a registered unemployed who does not receive unemployment benefit, has to attend the public employment office only once in 90 days; if he/she has not applied other job search methods during the last 4 weeks, conditions (b) is not satisfied. According to LFS 2008/Q2, 49.1% of persons who consider themselves registered unemployed have not actively seeking job during the last 4 weeks. Moreover, 45.2% of those who received unemployment benefit in the last month have not actively seeking job during the last 4 weeks (and hence were not ILO-unemployed). Note that attending the public employment office is considered as a job search method only if the objective of the visit was to find job.



Despite the qualitative and quantitative differences between the two unemployment concepts, the number of ILO-unemployed and the number of registered unemployed (as well as the two unemployment rates) most of the time feature similar trends, see Figures 2-4. However, there might be exceptions.

Example 4. In Latvia, registered unemployment increased substantially in 1999 compared to 1998, while the ILO unemployment stayed almost constant. One reason for this is that in 1999 (a year after Russian financial crisis of 1998) both employment and labour force participation rates in Latvia declined; the ILO unemployment rate increased only slightly (from 14.1 to 14.3 percent on average, although there was a stronger increase among men) because fall in employment was partly compensated by the fall in participation. Inflow into registered unemployment increased, but many of the new unemployed did not look for the job actively, because there was no much

hope (so called ‘discouraged workers’). Such persons were not unemployed by ILO definition. This illustrates that when analysing the labour market, the unemployment rate should not be used as the only indicator, but together with employment and labour force participation rates (disaggregated by gender). An additional, there was a technical reason: before 2002 the Latvian LFS was conducted just two times during a year (in May and November), and it did not fully reflect all seasonal effects; in 1999, the economic situation was particularly bad in the first quarter; this was reflected in the registered unemployment but not fully reflected in the LFS. This illustrates the importance of continuous LFS.

Example 5. In Latvia, there was a significant improvement in the labour market situation in 2001-2003. This improvement is reflected in falling number of ILO-unemployed and ILO unemployment rate, while the number of registered unemployed stayed almost constant. Detailed inspection of data shows that during this period the size of the labour force in the age group 15-64 stayed almost unchanged, number of unemployed was decreasing, and number of employed – increasing, resulting in falling ILO unemployment rate. The unemployed who were finding jobs were mostly non-registered, while inflow to and outflow from registered unemployment were stable.

3 Measurement errors

As mentioned above, the ILO-unemployment rate can be measured only via survey. This might lead to measurement errors.

For instance, LFS-based unemployment rate might be overestimated if employed persons are under-represented, while inactive and unemployed persons are over-represented in the survey. This might happen for the following reasons:

- quality of interviewers’ work is insufficient: they do not reach all employed persons in the sample, because it is more difficult to meet them than inactive and/or unemployed persons;
- those working without registration do not tell the truth during the survey because they do not believe in the confidentiality; such persons should be classified as employed, but in fact they are classified as unemployed or inactive.

Possible impact of such measurement errors in Montenegrin LFS is greatly reduced by adjusting sample weights to data on registered employment and registered unemployment. In order to further reduce such errors, the Statistical Office should:

- use various (direct and indirect) quality control methods;
- regularly train and instruct the interviewers;
- use human resource management methods to motivate the interviewers to comply with the instructions and to reduce quit rate among the interviewers;
- use PR (through mass media, local authorities, and the interviewers) to inform and educate the population about the importance of the Labour Force Survey and to convince respondents that the data are remain confidential.

While in theory there is no measurement error for registered unemployment rate, in reality rules are applied by concrete people (the inspectors of the Employment Agency). In some countries, the inspectors in the offices located in depressed regions with high unemployment might be less strict (the idea is: there are no jobs around for

these people, let them receive at least some benefits). This will result in ‘overestimating’ registered unemployment in depressed regions. In such situation, assuming that (as is usually the case) the LFS-based unemployment rate in the country is higher than the registered unemployment rate, the difference (or the ratio, which is a better measure) will be smaller in depressed regions and larger in regions with low unemployment.

Example 6. Latvia provides an example of such situation (see Figure 5). The used-to-be-depressed region is Latgale, where in 2002 both LFS-based and registered unemployment rates were about 18%, while in the most developed Riga region the LFS-based rate (11%) was more than twice as high as the registered rate (5%). During the period of strong economic growth in 2002-2007, the LFS-based unemployment rates in all regions were falling faster than the registered rates. In 2007, in Latgale the registered unemployment rate (12%) was 1.5 times higher than the LFS-based rate (8%), while in the Riga region LFS-based rate (5.5%) was still almost 1.5 times higher than the registered rate (3.8%).

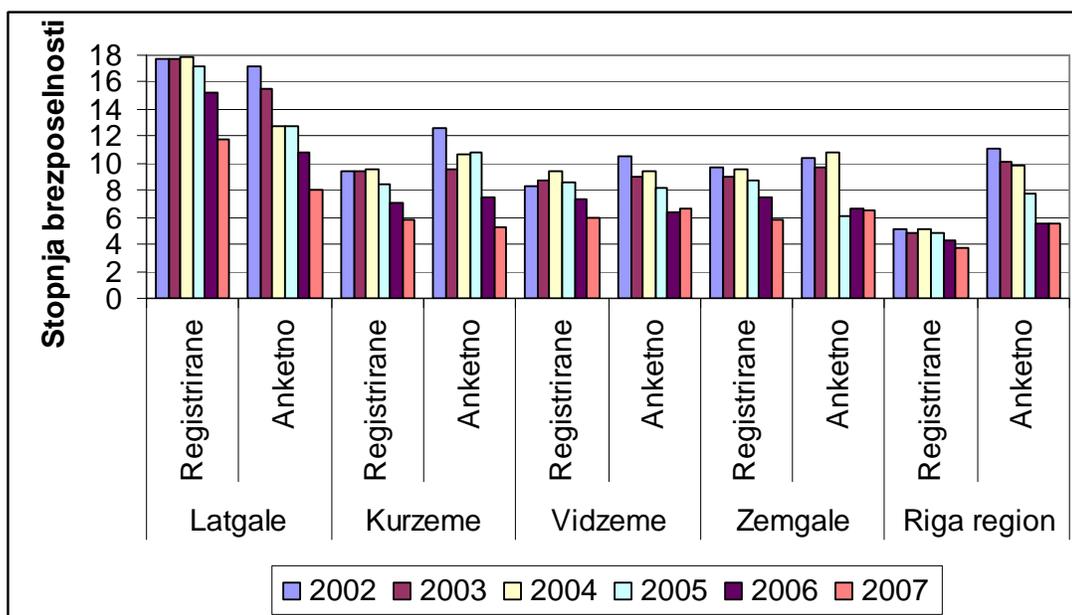


Figure 5 .Anketno i registrirane stopnja brezposelnosti u Latvije prema regionu, 2002-2007.

Example 7. The regional pattern of the ratio of LFS-based to registered unemployment (see Table 1) is different in Montenegro. The lowest ratio (1.05 as opposed to country average of 1.48) is found in the most developed Coastal region, which also has the lowest LFS-based unemployment rate (11.5% compared to national average of 18.0%). The highest ratio (1.85) is found in the Central region (including Podgorica), where LFS-based unemployment rate is almost the same as country average. There might be several explanations:

- (i) ‘too many’ registered unemployed in the Coast (less strict implementation of the rules?)
- (ii) ‘too few’ registered unemployed in the Central region because many of the unemployed here are not eligible for registration (11.5% of employees in the Central region work without written contract, as opposed to 5% in the

- Coast and 9% in the North; moreover, some may not have legal residence permit in this region)
- (iii) in the Central region, employed persons are under-represented in the LFS sample, resulting in 'too high' LFS-based unemployment rate in this region.

Note that the fact that registered unemployment in the Central region is 'too low' for its LFS-based unemployment remains true also when official registered unemployment data are replaced with Health Fund data on number of persons whose health insurance is based on their status as registered unemployed (see the last row in Table 1); these latter data are almost perfectly consistent with the LFS data on self-declared status of registered unemployed.

Table 1: LFS-based and registered unemployment in Montenegro and its regions (at the beginning of year 2008)

	Montenegro	Coastal region	Central region Total	Of which Podgorica	Northern region
LFS-based unemployment rate (2008/Q1 LFS data, %)	18.0	11.5	17.4	15.0	24.7
U ₁ : Unemployed persons (2008/Q1 LFS data, 1000)	46.7	7.1	22.2	12.4	17.4
U ₂ : Registered unemployed (01.01. 2008, EAM data, 1000)	31.5	6.8	12.0	6.7	12.7
U ₃ : Persons whose health insurance is based on their status as registered unemployed (2008/Q1 Health Fund data, 1000)	96.0	16.4	39.8	25.3	39.7
U ₄ : Persons who declared themselves registered unemployed in the LFS (2008/Q1 LFS data, 1000)	92.7	15.9	38.1	23.8	38.7
U ₁ / U ₂	1.48	1.05	1.85	1.85	1.37
U ₁ / U ₃	0.49	0.43	0.56	0.49	0.44

Source: Calculation with LFS, EAM, and Health Fund data.

4 Which age group is ‘the most relevant base’ for unemployment rate?

Both LFS-based and registered unemployed rates can be measured separately for men and women, for persons of different age groups, with different levels of education, as well as for different regions within the country.

The age group which is now most frequently used for international comparisons of LFS-based unemployment rates is 15 to 74 years. This is because of population ageing and increasing level of labour force participation among the elderly. In practise, unemployment rates for age groups 15-64 and 15-74 differ only slightly. Unemployment rate for the age group 15+ is virtually the same as for group 15-74.

On the other hand, employment and labour force participation rates for age groups 15-64 and 15-74 differ substantially.

According to methodology of the European Labour Force Survey, all respondents aged 15 and more are asked about various employment activities, but among the non-employed, only those younger than 75 are asked about job search. This is done to save the interview time, because the proportion of non-employed jobseekers among population aged 75+ is so low in all EU countries, that for all practical purposes this group can be neglected. In the principal results of the European Labour Force Survey *Eurostat* publishes figures for employed, unemployed, and economically inactive population aged 15+ in each country, but one has to keep in mind that only unemployed aged 15-74 are included (moreover, in several countries, including Latvia, the number of employed persons is also available only for population aged 15-74).

When comparing the LFS-based and the registered unemployment rate for the same country, one should use, if possible, the same base – population aged from 15 years to the official retirement age. If LFS-based unemployment is not available for this age group, the age group 15 to 64 should be used.

Note that some countries (for instance, Lithuania since 2004) do not calculate the registered unemployment rate, but use ratio of the number of registered unemployed to the (official) working age population. An advantage of this approach is that it can be easily implemented even for small regional units, while obtaining reliable estimates of the labour force for such units is difficult if the labour force survey sample is not large enough. Furthermore, this ratio is not comparable to the ILO (=LFS) unemployment rate, and there is no controversy of having two different unemployment rates. Disadvantages of such measure are the following: it does not reflect changes of labour force participation rate over time, as well as differences in labour force participation rate across regions. In other words, it is less informative than a standard registered unemployment rate. This is why some countries (for instance, Estonia) which used this approach in the past, have switched to the standard approach.

5 Two unemployment rates: when to use which?

The LFS-based unemployment rate and, more general, the ILO definition of unemployment (together with other LFS results) are used:

- for international comparisons;
- for analysis of long-term and medium-term trends in the labour market;
- for analysis of labour market position of different socio-demographic groups (defined by age, gender, education, region, language or ethnic background, previous work experience, etc.), in particular, for identifying unemployment and long-term unemployment risk factors and monitoring their impact;
- for analysis of labour market flows between employment, unemployment, and inactivity;
- for analysis of job search activities, as well as the reasons for inactivity;
- for estimating the size of the labour force.

The registered unemployment rate and other data related to registered unemployment (number of newly registered unemployed and vacancies; ratio of the total number of registered unemployed to the total number of registered vacancies; number or registered unemployed which have found a job) have the following main applications:

- for analysis of short-term trends and short-term forecasting of labour supply and labour demand;
- in particular, as register data are the only data on labour supply and demand available on monthly basis, they are vital for obtaining early signals of important developments in the labour market;
- for analysis of labour supply and demand in particular occupations, as well as in particular municipalities (reliable LFS data are available only for broad groups of occupations, as well as for statistical regions);
- registered unemployment data together with the most recent available quarterly LFS data are used for monthly calculations of seasonally-adjusted unemployment rate in EU countries (see Footnote 3 above);
- for calibrating, if necessary, the weights used for generalization of the Labour Force Survey results from the sample to the whole population.

Conclusions

The main conclusions from the analysis performed in this note are the following:

- (i) The LFS-based unemployment rate is the proper measure of the level of unemployment in the labour market.
- (ii) As any survey-based indicator, LFS-based unemployment rate is subject to measurement errors, and continuous effort from the National Statistical Office (see Section 3 for details) is necessary to reduce and control these errors.
- (iii) Differences in economic and social situation between regions and municipalities can lead to different levels of motivation to register among unemployed, as well as to differences in approach to implementation of the registration rules by local offices of the Employment Agency; this may result in 'measurement errors' in registered unemployment rates, in the sense that in some regions registered unemployment rate is 'too high' or 'too low' for the actual situation in the labour market.
- (iv) Each of the two unemployment concepts (LFS-based and registered) has its own role and specific range of applications in labour market analysis and forecasting. None of the two concepts can be replaced with the other.
- (v) It is important that policy-makers and media understand the differences between the two unemployment concepts and use each of them properly.
- (vi) Both Statistical Office (MONSTAT) and Employment Agency (EAM) need cooperation with each other in order to successfully implement their missions.