Cyprus Economic Policy Review, Vol. 3, No. 2, pp. 23-39 (2009) 1450-4561

Unemployment in Cyprus: Comparison between Two Alternative Measurement Methods †

George Kyriacou, Marios Louca and Michalis Ktoris*

Central Bank of Cyprus

Abstract

Unemployment in Cyprus is measured by the Statistical Service of Cyprus using two alternative methodologies: Registered Unemployment (RU), as calculated by the number of unemployed registered with the district labour offices on a monthly basis, and unemployment as calculated by the Labour Force Survey (ULFS), which is conducted on a quarterly basis. The RU series dates back to 1960 whereas the ULFS series began in 1999. The two methodologies lead to different results, mainly because of measurement differences in three unemployment categories: long-term unemployed, unemployed newcomers, and recently-retired unemployed. The differences in the first category appear to be associated with the fact that changes caused by the business cycle in this category are better captured by the ULFS than by the RU. In the other two categories, the differences reflect demographic and structural factors. This paper reconciles the data from the two methodologies, thus providing an indispensable tool for further work on: (a) the construction of a longer historical series for ULFS, which will be useful for economic analysis; and (b) the creation of a flash estimate of ULFS based on RU, given the time lag of the published ULFS, which is the internationally accepted unemployment measure.

Keywords: unemployment measurement, labour force survey, registered unemployment

JEL Classification: C82, E24

† We would like to thank Zenon Kontolemis, an anonymous referee and the workshop participants at the Central Bank of Cyprus for helpful comments and suggestions as well as Caterina Aristodemou at the Department of Labour and Alekos Agathaggelou, Eleni Christodoulidou and Christoforos Michaelides at the Statistical Service of Cyprus for useful information, data and comments. We also thank George Georgiou at the Central Bank of Cyprus for editing. The opinions expressed in this paper are those of the authors and do not necessarily reflect the views of the Central Bank of Cyprus or the Eurosystem.

* Correspondence: George Kyriacou and Michalis Ktoris, Economic Research Department, Central Bank of Cyprus, 80 Kennedy Avenue, P.O.Box 25529, CY-1395 Nicosia, Cyprus. E-mail: GeorgeKyriacou@centralbank.gov.cy and MichalisKtoris@centralbank.gov.cy.

1. Introduction

Unemployment in Cyprus is measured by the Statistical Service of Cyprus (Cystat) using two alternative methodologies, the Registered Unemployment (RU) method and the Labour Force Survey (LFS) method[1]. The RU method measures, on a monthly basis, those individuals who are registered as unemployed at the district labour offices. Although the RU measure, which has been used since 1960, is useful for historical and statistical analysis as well as timely systematic monitoring of current developments, it is not consistent with the accepted international definition of unemployment used by the International Labour Organization. The LFS method, which was introduced in 1999, measures unemployment on a quarterly basis through the Labour Force Survey (LFS) in Cyprus. During the period 1999 - 2003, the survey covered the second quarter of each year while since the second quarter of 2004 it has been conducted on an ongoing quarterly basis.

Unlike registered unemployed, who voluntarily register with their district labour office, unemployment based on the LFS is calculated in accordance with the relevant definition of the International Labour Organization. Specifically, the unemployed are those individuals who declare in a survey that they do not have a job, have been actively seeking employment for at least the last four weeks prior to their declaration, and that if a job becomes available they are willing to accept it within 15 days[2].

The results of the two alternative methodologies for calculating unemployment in Cyprus vary systematically and this often creates confusion, especially in public debates and economic commentaries.

The differences between the two methodologies (and harmonised unemployment) in Cyprus were first studied by Christofides et al (2007a) who found that registered unemployment is considerably lower than LFS unemployment. In their analysis, they found that fewer female and young

---

[1] Eurostat uses its own methodology for the construction of the harmonised unemployment rate in Cyprus on a monthly basis. This methodology is a combination of the RU and ULFS methodologies and is not analysed in this paper (specifically it combines moving averages of LFS data with linear extrapolations of registered unemployment data) . The reader is referred to http://epp.eurostat.ec.europa.eu/cache/ITY_SDDS/EN/une_esms.htm

[2] The unemployment measure according to the ILO definition is considered to be a more appropriate measure than registered unemployment, as it is based on a widely accepted definition which makes it comparable across countries. On the other hand, the level of registered unemployment depends on particular aspects of each country, e.g. the duration of unemployment benefit eligibility.

registered unemployed compared to the LFS measures; similar patterns were also found in unemployment lasting for more than six months. The authors mainly attribute the difference between the two measures on the female and young unemployed as stated in their concluding remarks that "The difference between the new measures and registered unemployment is concentrated among women and the young". They suggest that the difference in these two groups may relate to unemployment benefit entitlement and the authors called for further study on this. Christofides at al (2007b) went on with the comparison between the two unemployment measures (and harmonised unemployment) and tested them in various economic relationships to conclude that the LFS measure is the best measure, in that it was the only one that behaved as expected. The difference in the two methodologies is not unique to Cyprus. A survey by the European Commission (Africa and Lüdeke, 2006) shows that such differences occur in other countries, such as Austria, Finland, Germany and Sweden and depend on the particular characteristics of the respective countries. Chernyshev (2001) has shown that a similar phenomenon also exists in Ukraine.

The purpose of this paper is to investigate in more detail the differences between the two methodologies in Cyprus and to offer a theoretical background to the main discrepancies between the two methodologies, as mentioned by Christofides et al (2007a) and also as found in this work. Based on the theoretical background, an attempt will be made to reconcile the data, which will assist researchers in preparing a longer historical series for unemployment based on the LFS, and thus a series more compatible with international practice. Reconciliation of the data will also help to create a preliminary assessment (flash estimate) of the LFS measure, based on information from the RU, given the long time lag in publishing the LFS measurement. It should be noted that there may be small variations between the reconciled figures due to the sampling error that the LFS inevitably contains.

The following section presents and compares the two different methodologies for measuring unemployment in Cyprus, while Section 3 identifies and explains the actual differences between the two methodologies. Based on these differences, the reconciliation of the data is presented in Section 4. The conclusions are presented in Section 5.

2. The two alternative methodologies for measuring unemployment in Cyprus

Figure 1 shows unemployment rates in Cyprus as calculated on the basis of these two alternative methodologies. For purposes of comparability of the series, the monthly figures for registered unemployment are aggregated into quarterly data (Figure A.1 in Annex 2 shows this data on a monthly and quarterly basis since 2000). As seen from these figures, the unemployment rate as measured by the LFS (ULFS) systematically exceeds that measured by the RU. In absolute numbers, the average number of unemployed based on quarterly LFS data for the period under review reached 16.039 while the RU measure was 11.816.

It should also be noted that the magnitude of the differences between the two measures does not remain constant from quarter to quarter. As a result, fluctuations recorded by the two methodologies are not always the same, as evidenced by the correlation coefficient between the two measures of the *level* of unemployment, which at 0,78 is high but less than 1,00. Also, the correlation coefficient for the *percentage change* in unemployment as measured by the two different methodologies is only 0,40. In certain periods the differences are significant. For example, in the second quarter of 2001 the rate of RU was 2,5% whereas in the second quarter of 2002 it was 2,7%, i.e. an increase of 0,2 percentage points, while the percentage of ULFS decreased by 0,7 percentage points, from 4% to 3,3% in the same period. Also, between the first quarter of 2005 and second quarter of that year the percentage of ULFS decreased marginally from 5,5% to 5,4% while the percentage of RU fell significantly during the same period, from 4,4% to 3%.

Figure 1 also shows that the difference between the results of the two methodologies is greater in the period 2002Q2-2006Q1 and smaller in the period 2006Q2 - 2008Q4. The average difference in absolute numbers in these two periods was 5.236 and 3.190 unemployed persons, respectively.

FIGURE 1

Unemployment rate in Cyprus based on the available methodologies

Source: Cystat.

The above observations highlight the need for exploring the differences in the results between the two methodologies. They also highlight the need to understand the reasons why the recorded variations from quarter to quarter differ, sometimes considerably, beyond those that can be attributed to the sampling error associated with the LFS. This will contribute to a better understanding of developments in unemployment in Cyprus and perhaps remove some of the confusion that is sometimes evident in public discussions on this sensitive issue.

3. Reasons for different results

The effort to reconcile the results of the two unemployment measures in Section 4 is based primarily on investigating the differences in three specific categories of the unemployed: newcomers to the labour market, the long-term unemployed (in this work they are defined as persons who are unemployed for a period of more than six months) and people who have retired recently. The differences between the two methodologies are described below.

Unemployed newcomers: The unemployed in this category do not have a financial incentive to register at their district labour office because, under the law, they are not eligible for unemployment benefit.[3] However, they have a non-financial incentive to register as the district labour offices provide assistance in finding available jobs. Thus, it is expected that only a small proportion of unemployed in this category, as recorded by the LFS, will be enrolled with their district labour office.

Long term unemployed / unemployed for more than six months (excluding new entrants):[4] As with unemployed newcomers, the unemployed in this category do not have a financial incentive to register at their district labour office, since under the law they are not eligible for unemployment benefit beyond a period of six months. Thus, it is expected that only a certain percentage of unemployed in this category as recorded by the LFS will be registered at their district labour office.[5]

Recently retired from the labour market: This category refers to the percentage of registered unemployed people, mainly public sector workers, who although recently retired and not actively seeking work (and thus not recorded in the LFS), are registered as unemployed because they have the option of declaring themselves unemployed and hence receiving unemployment benefit for up to six months after their retirement. Unlike the two previous categories, the unemployed in this category as recorded by the RU will exceed those recorded by the LFS. It should be noted that this category is not counted by either of the two methodologies and, therefore, is approximated by the unemployed in the 60-64 age group.

Unlike Christofides et al (2007a) who suggest that one reason for the differences between the two methodologies might be due to female unemployment[6], a preliminary examination of the total number of male and female unemployed found no significant differences between the two.

---

[3] It should be noted, however, that one needs to be registered as unemployed in a district labour office in order to be eligible for various welfare benefits.

[4] Newcomers who remain unemployed for more than six months are excluded from this category to avoid double counting as they are included in the overlapping category of newcomers.

[5] See footnote 4 which applies regardless of the duration of unemployment.

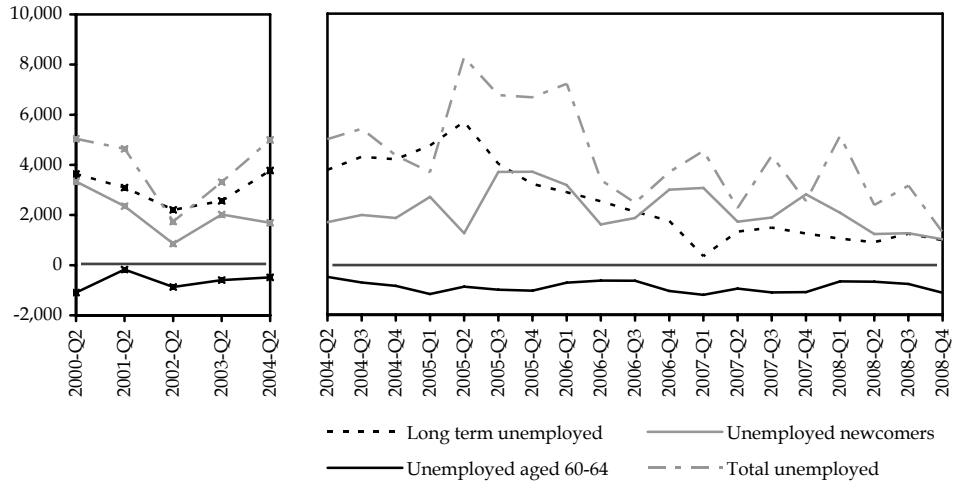
[6] In p.1 of 2007b, the authors mention that "The difference between the Registered unemployment rate and the other two measures is attributed to the fact that the former fails to report a growing number of female and young workers who are willing to enter the labour market."

The differences in the above categories are empirically examined based on the unemployment figures published by Cystat that are available for both methodologies.

The differences in results between the two methodologies for each of the above three categories are shown in Figure 2. As expected, long-term unemployment (excluding newcomers) as measured by ULFS is significantly higher than the corresponding RU measure. Note that the difference between the two methodologies during the period under review averaged 2.573 persons in this category. The same applies to newcomers where the difference averaged 2.176. In contrast, and in accordance with what we would expect, the number of unemployed aged 60 to 64 years is greater in the RU measure than in the ULFS measure. The difference averaged 848 persons. Note that the difference in the latter category will eventually be eliminated because of the recent amendment of the Law on Social Insurance. Under the amendment, people retiring from the public sector will no longer be entitled to six months unemployment benefit, with effect from January 2010.

FIGURE 2

Differences between registered unemployed and unemployed based on the LFS: total number and categories under examination



Sources: Cystat and CBC calculations.

An additional observation from Figure 2 is that differences in the categories of unemployed newcomers and the unemployed aged 60-64 appear to be relatively stable over time, i.e. an average of 2.176

unemployed in the first category and an average of 848 unemployed in the second. This appears to be due to the fact that the differences in the results between the two alternatives in these two categories are related to demographic factors rather than factors associated with business cycles. On the other hand, the difference in long-term unemployment increased between 2002 and 2005, while it decreased after 2005, something that appears to be linked with the business cycle. The movement of long term unemployment seems to offer an explanation as to why the gap between the RU and ULFS was greater up to 2005 and smaller afterwards, as noted in the previous section (Figure 1). Figure 2 also shows that the RU measure in Cyprus does not adequately capture the changes in the category "long-term unemployed" that are caused by the business cycle, mainly due to the lack of monetary incentives to register after six months. It also highlights the importance of the ULFS data, which reveal information that is consistent with broader economic developments. For example, ULFS data seem consistent, albeit with a lag, with the state of economic activity in Cyprus, which recorded a significant weakness in the period 2002-2003, while in the period 2004-2008 it recorded strong growth, thus reducing unemployment.[7]

Figure 2 illustrates the explanation of systematic differences between the unemployment categories under the two methodologies for measuring unemployment in Cyprus, as outlined above. It also highlights that an important reason why the RU series is not correctly measured and therefore cannot be reliably used for economic and econometric analysis, is that the cyclicality of unemployment is not adequately captured by the RU series and one reason that seems to cause this is the unsatisfactory measurement of the long-term unemployed by the RU.

[7] The fact that changes in the category "long-term unemployment" seem to be linked with the business cycle appears in Figure A.2, Annex 2, which compares the total number of long-term unemployed, as measured by both methodologies, and the deviation of GDP from potential GDP as a percentage of GDP. The deviation of GDP from potential GDP in Chart A.2 is calculated by CBC staff using a simple Cobb-Douglas production function and is a first preliminary assessment. Further investigation of this relationship is the subject of another ongoing study.

4. Reconciliation of the data[8]

Given the differences analysed in the previous section, we attempt in this section to reconcile the RU data with the corresponding ULFS figures. As mentioned at the outset, ULFS is theoretically more correct and is based on internationally accepted practice. Therefore, the attempt to reconcile the data considers the differences between the two methodologies as arising from the weaknesses in the RU measures and corrects these flows by using information from the ULFS data. The result of this process is to calculate a rate for 'Revised Registered Unemployment' (RRU), namely a rate that incorporates information from the ULFS for specific categories of unemployed, where differences were detected. In other words, the RRU can be viewed as an alternative estimator of unemployment as this is calculated by the LFS. Any remaining differences between the two values can be attributed to other factors that were not taken into account and the possibility of sampling error. The calculation of the RRU in Cyprus as an estimator of ULFS is shown below, taking into account the differences between the two existing methodologies as presented in the previous section:

$$RRU = RU + (ULFS_{0+} - RU_{0+})_{UN} + (ULFS_{6+} - RU_{6+})_{-UN} + (ULFS_{0-6} - RU_{0-6})_{60-64} \quad (1)$$

where

RRU: revised registered unemployment

RU: registered unemployment

ULFS: unemployment based on labour force survey

0 +: unemployed of any duration

6 +: unemployed for a period of more than 6 months

0-6: unemployed for a period of less than 6 months

UN: unemployed newcomers

-UN: excluding unemployed newcomers

60-64: age group

---

[8] The percentage of ULFS in this section is slightly different to that presented in Figure 1. This is because the denominator, the labour force, in Figure 1 was taken from the LFS, while in this section it is based on a combination of various labour force surveys by Cystat. The latter denominator is also used to calculate the RU and the RRU rate.

The first parenthesis in equation (1) measures the newcomers and, in accordance with the analysis in the previous section, is expected to be positive. The second parenthesis measures the long-term unemployed (excluding newcomers, since they are already included in the first parenthesis) and is also expected to be positive. Finally, the third parenthesis measures the unemployed aged 60-64 and is expected to be negative. For the calculation of RRU based on equation (1), we used 23 observations covering the period 2000-2008. For the years 2000-2003 the observations refer to Q2 whereas from 2004Q2 onwards the observations refer to all the quarters. The data collection was based on the periods for which data was available for ULFS. It does not include data for 1999Q2, as there is no detailed data for all categories of unemployed. All the above figures were published by Cystat in the annual Labour Force Survey.

Note that for the calculation of the RRU there are some limitations concerning data collection. The first limitation concerns the category of unemployed aged 60-64. The actual category we should use is the recently retired unemployed, but because this is not measured by the two methodologies we make the assumption that it can be proxied by the category of unemployed aged 60-64. Furthermore, this category in equation (1) should refer only to those with duration of unemployment below six months. Due to the unavailability of such data, this category is taken into account as a whole irrespective of employment duration. However, this should not pose a real problem as the number of people aged 60-64 with unemployment duration over six months is expected to be very small. Therefore, the equation is expressed as follows:

$$RRU = RU + (ULFS_{0+} - RU_{0+})_{UN} + (ULFS_{6+} - RU_{6+})_{UN} + (ULFS_{0+} - RU_{0+})_{60-64} \quad (2)$$

Another limitation concerns the data for long-term unemployed who are also newcomers in both methodologies. Quarterly data for this category of ULFS has low statistical significance due to the small number of observations. Therefore, this category is calculated using annual data and changes in the overall number of unemployed newcomers. Also, a limitation was evident in the corresponding figures for registered unemployed. Data for long-term unemployed newcomers is only available in the case of unskilled persons, which average about 30 people per month. Unskilled newcomers account for about 10% of total unemployment. Given the above limitation, the total number of long-term unemployed newcomers is calculated as a function of low-skilled long-term unemployed newcomers and the total number of unemployed newcomers. Because this number is very small, any difference in the estimation of the actual number is not expected to seriously affect the result.

Equation (2) is examined in Table 1 below (Table 1 shows the annual results, while quarterly results are shown in the table of Annex 2). Apart from the total unemployment figures, the difference between the two methods for long-term unemployed, unemployed new entrants and the unemployed aged 60-64 can also be seen.

The analysis of the results presented in Table 1 shows that the difference in the level and the trend between the two methodologies for measuring unemployment in Cyprus is largely due to the differences under investigation. In particular, if we add to the existing RU the difference between the two methodologies in long-term unemployed, newcomers and the unemployed aged 60 to 64, then we arrive at a percentage of RRU, which is close to the ULFS rate. The correlation coefficient between the rate of the RU and ULFS is found to be 0,78, while the correlation coefficient between the RRU and ULFS rates increased to 0,93, indicating broadly that reconciliation of the results of both methodologies is achieved largely with these three changes and, despite the fact that the three categories make up only 42% and 56%, on average, of the total number of RU and ULFS, respectively.

TABLE 1

Comparison between registered unemployment (RU), unemployment based on the Labour Force Survey (ULFS) and revised registered unemployment (RRU)

	2000	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
(1) Employment	314.747	321.509	328.178	340.335	354.890	366.300	372.726	384.831	395.786
(2) RU	10.315	8.204	9.018	10.799	11.766	13.153	12.824	12.018	11.541
(3) ULFS	15.354	12.842	10.756	14.109	16.685	19.493	17.004	15.429	14.523
Difference between the ULFS and RU									
(4) Unemployed newcomers	3.336	2.352	859	2.022	1.844	2.835	2.405	2.361	1.388
(5) Long-term unemployed	3.639	3.091	2.209	2.561	3.990	4.416	2.314	1.092	857
(6) Unemployed aged 60-64	-1.095	-176	-869	-596	-683	-1.021	-762	-1.090	-810
(7) RRU (2)+(4)+(5)-(6)	16.195	13.471	11.217	14.786	16.918	19.383	16.780	14.380	12.977
Unemployment rate									
RU	3,2%	2,5%	2,7%	3,1%	3,2%	3,5%	3,3%	3,0%	2,8%
ULFS	4,7%	3,8%	3,2%	4,0%	4,5%	5,1%	4,4%	3,9%	3,5%
RRU	5,1%	4,2%	3,4%	4,3%	4,8%	5,3%	4,5%	3,7%	3,3%

Sources: Cystat and CBC calculations.

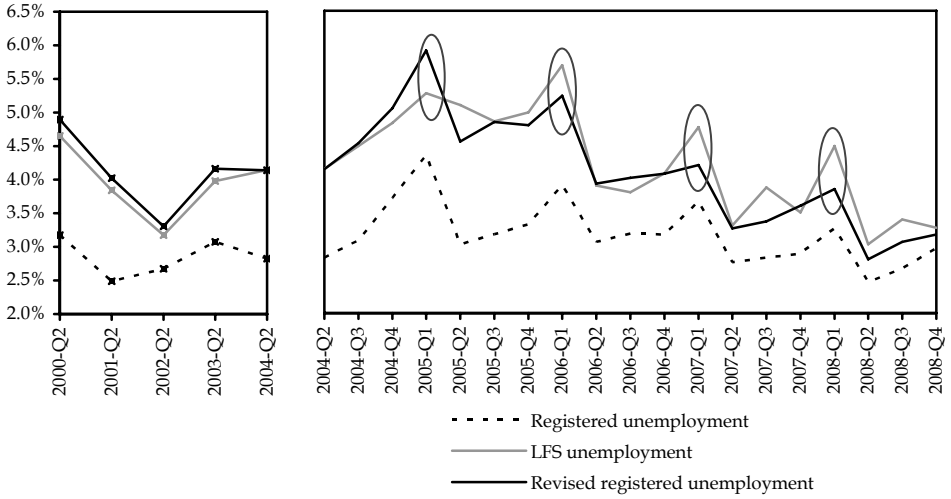
Furthermore, due to the reconciliation of the data, a significant improvement in the correlation between the percentage change in RRU

and the percentage change in ULFS is observed. Specifically, the correlation coefficient between the percentage changes in the RRU and ULFS is 0,89 compared to the 0,40 correlation coefficient between the percentage changes in the RU and ULFS.

The largely reconciled data is shown in Figure 3, which shows the percentages of RU, the ULFS and RRU obtained from the above procedure. Nevertheless, there remain some small systematic differences which are, at least in part, due to structural and procedural changes regarding the provision of unemployment benefit. More specifically, as shown in this figure, while the RRU is comparatively higher than the ULFS in the first quarter of 2005, the opposite happens with the other first quarters in the sample, i.e., 2006Q1, 2007Q1 and 2008Q1. This seems to be due to the seasonal unemployed in the tourism and restaurant sectors who, apart from the periods 2003-2004 and 2004-2005, are not obliged to register at the labour district offices in order to receive their unemployment benefit. Thus, in 2005Q1 the above seasonally unemployed had an incentive to register as unemployed, irrespective of whether or not they were seeking work during the winter months when they were temporarily suspended from their job. In contrast, in the other quarters both those who were not interested in working and those seeking work did not have the financial incentive to register as unemployed. As a result of the above, the RRU overestimates ULFS in 2005Q1, while it underestimates it in 2006Q1, 2007Q1 and 2008Q1. Bearing in mind the above arguments, the reconciliation of the data should be regarded as very satisfactory.

FIGURE 3

Comparison between RU, ULFS and RRU



Sources: Cystat and CBC calculations.

5. Conclusions, policy implications and future work

The above analysis shows that ULFS and RU data can be reconciled. The differences are mainly concentrated on the measurement of three categories of unemployed people: the long-term unemployed (as measured by the number of unemployed for more than six months), newcomers, and the recently retired from the labour market. The differences in the first two categories are due to the fact that the unemployed have no financial incentive to register with their district labour offices, even if they are actually seeking work. However, the third category has a financial incentive (unemployment benefit for six months) to register with their district labour offices, even if not necessarily seeking work, which is something that falls outside the international definition of unemployment. The difference between the RU and ULFS measures for the first category appears to be related to the fact that changes in this category caused by the business cycle are better captured by the ULFS than the RU, while the difference in the other two categories seem to be related to demographic and structural factors. Taking the above into account, the two methodologies can to a large extent be reconciled.

This work also answers the puzzle cited by Christofides at al (2007a) regarding the increasing gap between the RU and ULFS during 2002 – 2005 which was found to be due to the long-term unemployed (excluding newcomers).

Although the ULFS measure is the most theoretically correct and reliable unemployment measure, studies concerning Cyprus have necessarily made use of the RU data, as this series is much longer (since 1960), unlike the ULFS data which has been available only from 1999 onwards (quarterly data from the second quarter of 2004 only). However, because the RU figures differ from those of ULFS there is a need to create a reliable set of historical data on unemployment for Cyprus. This can be done based on the statistical relations identified in this study.[9] The differences in methodology identified in this paper will be used together with some assumptions in relation to the structure and level of unemployment in Cyprus, to create a reasonably reliable historical series for unemployment that can be used in econometric studies. Christofides et al (2007b) show that the ULFS series performs better in testing economic theories than the RU series, thus justifying the usefulness of an extended ULFS series.

---

[9] This work is currently in progress.

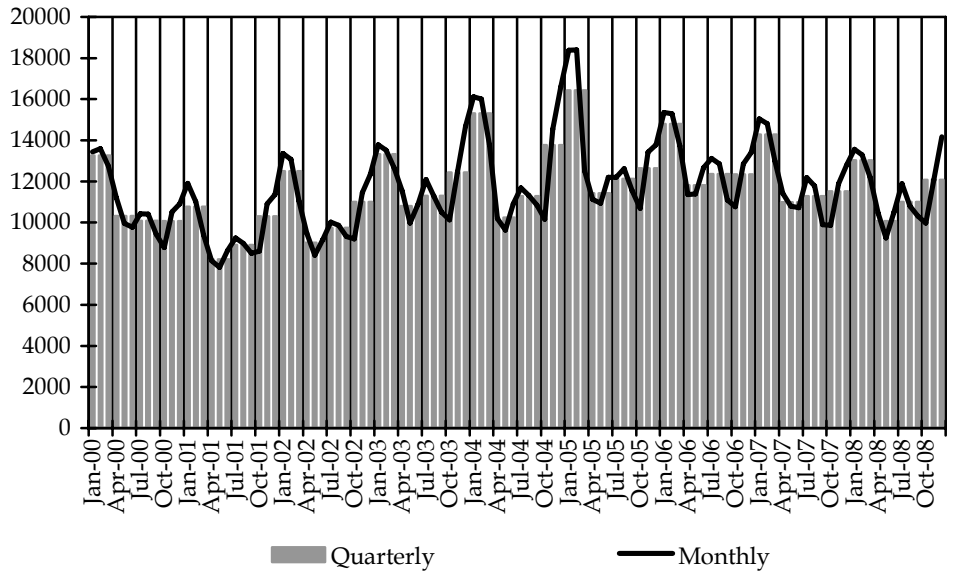
Apart from the usefulness of such a historical series, it would also be useful to create a timely series using the RRU. This is essential because of the time lag that exists in the publication of the ULFS. For example, the LFS covering the first quarter of a year is not published until the end of June, by which time there is data on registered unemployment for the first five months. With the creation of this series, which is essentially a preliminary (i.e. flash) estimate of ULFS, reliable economic analysis on issues related to unemployment will become more frequent, monthly and not just quarterly.

Overall, the work from this paper enables us to have a better knowledge of data regarding unemployment in Cyprus. The more the relation of the labour market to the rest of the economy is clarified, the better the conclusions from the unemployment data will be at any given time. Also, better information will enable the government and other authorities to take better decisions regarding policy making in response to economic developments. For example, in early 2010 we expect a reduction in registered unemployment by almost 1000 persons due to the change in the legislation regarding people retiring from the public sector. According to the legislation amendment, public sector retirees will no longer be entitled to six months unemployment benefit, with effect from January 2010. Therefore, the sharp fall in registered unemployment should not be taken at face value in decision making as it is clear that the proper measurement of unemployment, as represented by the LFS measurement, will not be affected by this change.

Furthermore, the better knowledge acquired on the unemployment data will lead to better and more accurate economic forecasting. For example, Eurostat currently uses the RU trend to estimate a flash estimate of unemployment, assuming that the growth rate of RU is the same as that of the ULFS, which as indicated in this work is not the case. The work of this paper will enable the estimation of a flash estimate based on the proper use of the differences between the two methodologies which have been identified in this work.

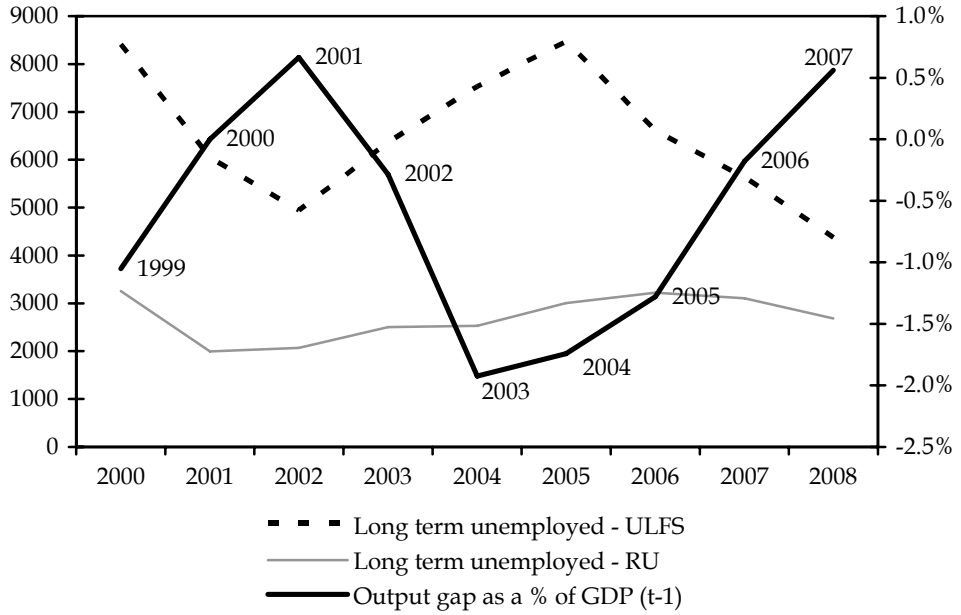
Appendix

Figure A.1: Registered unemployed: monthly and quarterly frequency



Sources: Cystat and CBC calculations.

Figure A.2: Comparison between long term unemployed and output gap as a percentage of the last period GDP



Sources: Cystat and CBC calculations.

Table A1: Comparison between registered unemployment (RU), unemployment based on the Labour Force Survey (ULFS) and revised registered unemployment (RRU)

				Difference between the ULFS and the RU				Unemployment rate		
	(1) Employment	(2) RU	(3) ULFS	(4) Unemployed newcomers	(5) Unemployed for more than six months	(6) Unemployed aged 60-64	(7) RRU (2)+(4)+(5)-(6)	RU	ULFS	RRU
2000-Q2	314,747	10,315	15,354	3,336	3,639	-1,095	16,195	3.2%	4.7%	4.9%
2001-Q2	321,509	8,204	12,842	2,352	3,091	-176	13,471	2.5%	3.8%	4.0%
2002-Q2	328,178	9,018	10,756	859	2,209	-869	11,217	2.7%	3.2%	3.3%
2003-Q2	340,335	10,799	14,109	2,022	2,561	-596	14,786	3.1%	4.0%	4.2%
2004-Q2	352,577	10,245	15,240	1,692	3,779	-490	15,226	2.8%	4.1%	4.1%
2004-Q3	355,146	11,285	16,696	1,981	4,294	-709	16,851	3.1%	4.5%	4.5%
2004-Q4	356,947	13,769	18,119	1,858	4,194	-849	18,972	3.7%	4.8%	5.0%
2005-Q1	361,222	16,429	20,110	2,698	4,740	-1,171	22,696	4.4%	5.3%	5.9%
2005-Q2	366,397	11,424	19,678	1,251	5,687	-879	17,483	3.0%	5.1%	4.6%
2005-Q3	369,937	12,125	18,882	3,692	4,018	-998	18,837	3.2%	4.9%	4.8%
2005-Q4	367,643	12,634	19,300	3,698	3,218	-1,035	18,515	3.3%	5.0%	4.8%
2006-Q1	364,287	14,791	21,993	3,170	2,885	-719	20,128	3.9%	5.7%	5.2%
2006-Q2	374,063	11,805	15,176	1,604	2,521	-634	15,296	3.1%	3.9%	3.9%
2006-Q3	375,302	12,354	14,811	1,857	2,109	-643	15,678	3.2%	3.8%	4.0%
2006-Q4	377,250	12,345	16,034	2,987	1,741	-1,052	16,021	3.2%	4.1%	4.1%
2007-Q1	375,722	14,281	18,808	3,058	336	-1,202	16,473	3.7%	4.8%	4.2%
2007-Q2	387,519	10,983	13,233	1,708	1,317	-956	13,052	2.8%	3.3%	3.3%
2007-Q3	388,339	11,289	15,622	1,878	1,474	-1,109	13,532	2.8%	3.9%	3.4%
2007-Q4	387,744	11,517	14,051	2,801	1,240	-1,094	14,464	2.9%	3.5%	3.6%
2008-Q1	386,066	13,015	18,146	2,070	1,033	-668	15,449	3.3%	4.5%	3.8%
2008-Q2	399,277	10,075	12,448	1,219	897	-683	11,507	2.5%	3.0%	2.8%
2008-Q3	402,644	11,001	14,146	1,255	1,230	-768	12,717	2.7%	3.4%	3.1%
2008-Q4	395,158	12,075	13,351	1,008	973	-1,119	12,938	3.0%	3.3%	3.2%

Sources: Cystat and CBC calculations.

References

Africa, M. and B. Lüdeke (2006) 'Registered unemployment (RU) compared with harmonised unemployed (LFS)', European Commission Working Papers and Studies.

Chernyshev, I. (2001) 'Improving labour statistics in Ukraine though the integration of employment and unemployment data from different sources', International Labour Organization Bulletin of Labour Statistics, 2001-4.

Christofides, L., A. Kourtellos and K. Vrachimis (2007a) 'Unemployment indices for Cyprus: a comparative study', Economic Policy Papers, No. 01-07.

Christofides, L., A. Kourtellos and K. Vrachimis (2007b) 'New unemployment indices for Cyprus and their performance in established economic relationships', Economic Analysis Papers, No. 05-07.

Eurostat (2009) 'Unemployment - LFS adjusted series, Reference Metadata in Euro SDMX Metadata Structure (ESMS)', 24 April.

International Labour Organization (2000) 'Resolution concerning statistics of the economically active population, employment, unemployment and underemployment, adopted by the Thirteenth International Conference of Labour Statisticians (October 1982)', *Current International Recommendations on Labour Statistics*, Geneva.