

# Comparison of unemployment from the LFS with other data sources in Ireland

## Abstract

The Labour Force Survey (LFS) is conducted in Ireland by the Central Statistics Office (CSO) and provides the official measures of employment and unemployment. Occasionally alternative data sources are reported by the media and other National commentators as labour market indicators including measures of employment and/or unemployment for Ireland.

In this paper I will introduce and explain the data sources which supply alternative measures of unemployment in Ireland. I will then present results from these alternative data sources alongside the official measures of unemployment as reported by the LFS and discuss the differences and similarities between them and the LFS in Ireland. I will then give an overview of the way that the CSO engages with users to ensure that the LFS is recognised as the official measure of unemployment in Ireland.

I will illustrate how the CSO presents and manages communication around these alternative data sources and the steps that the CSO take to protect the LFS as the source of the official measures of employment and unemployment in Ireland.

## Labour Force Survey

The Labour Force Survey (LFS) is conducted by the Central Statistics Office (CSO) and provides the official measures of employment and unemployment for Ireland. The primary classification used for the LFS results is the ILO (International Labour Office) labour force classification. Labour Force Survey data on this basis have been published quarterly since 1998. The ILO classification distinguishes the following main subgroups of the population aged 15 or over:

**In Employment:** Persons who worked in the week before the survey for one hour or more for payment or profit, including work on the family farm or business and all persons who had a job but were not at work because of illness, holidays etc. in the week.

**Unemployed:** Persons who, in the week before the survey, were without work and available for work within the next two weeks, and had taken specific steps, in the preceding four weeks, to find work. It should be noted that as per Eurostat's operational implementation, the upper age limit for classifying a person as unemployed is 74 years.

**Inactive Population (not in labour force):** All other persons.

**Labour Force:** The labour force comprises persons employed plus unemployed.

The rates published by the LFS are also based on the ILO classification. The Participation Rate is the number of persons in the labour force expressed as a percentage of the total population aged 15 or over. The Employment Rate is the number of employed aged 15 to 64 expressed as a percentage of the total population aged 15 to 64. The Unemployment Rate is the number of unemployed expressed as a percentage of the total labour force aged 15-74 years.

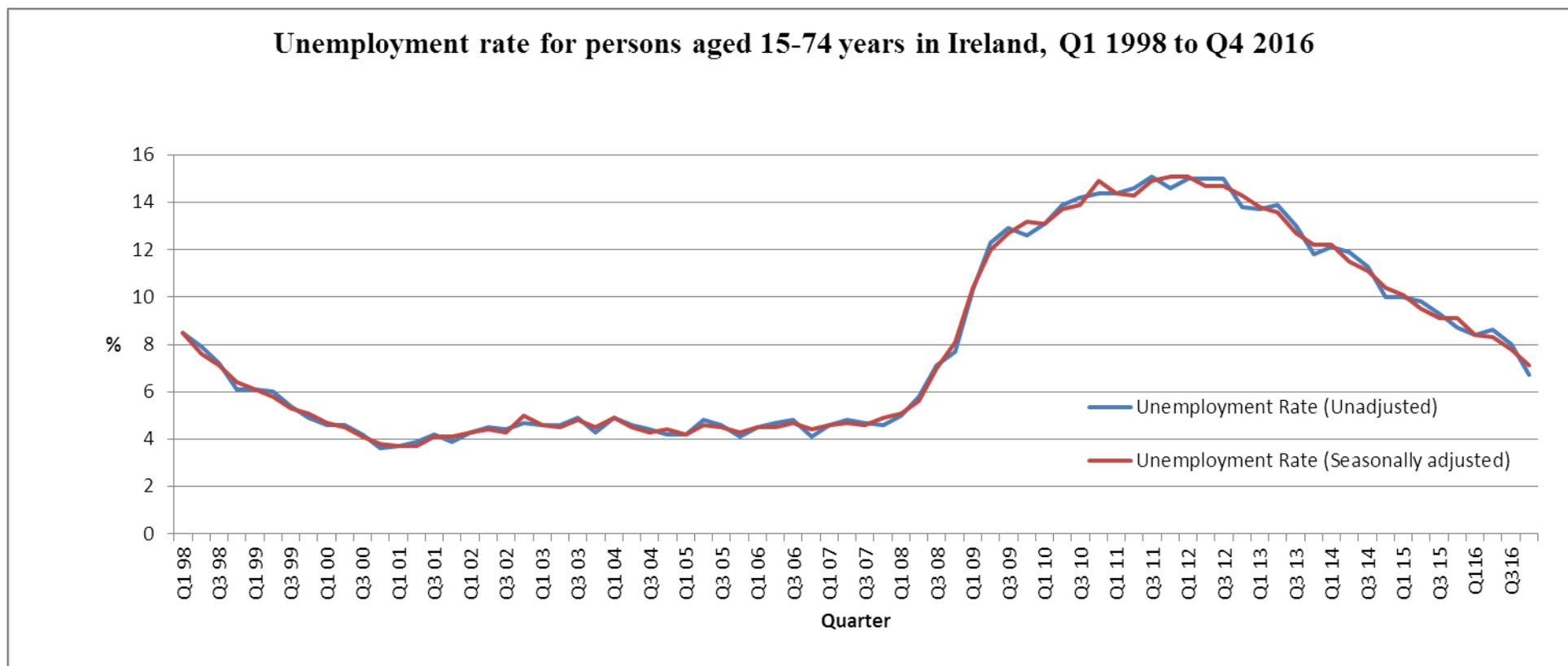
The graphs below present the numbers of persons aged 15-74 who were unemployed in Ireland (Figure 1) and the unemployment rate in Ireland (Figure 2) for each quarter since the quarterly LFS began in 1998. Both graphs present the unadjusted series of data as well as the seasonally adjusted series of data.

Figure 1: Number of persons aged 15-74 years unemployed in Ireland (unadjusted and seasonally adjusted), Q1 1998 to Q4 2016



Source: Labour Force Survey (CSO, Ireland)

Figure 2: Unemployment rate for persons aged 15-74 years in Ireland (unadjusted and seasonally adjusted), Q1 1998 to Q4 2016



Source: Labour Force Survey (CSO, Ireland)

## Other Sources of Unemployment Data

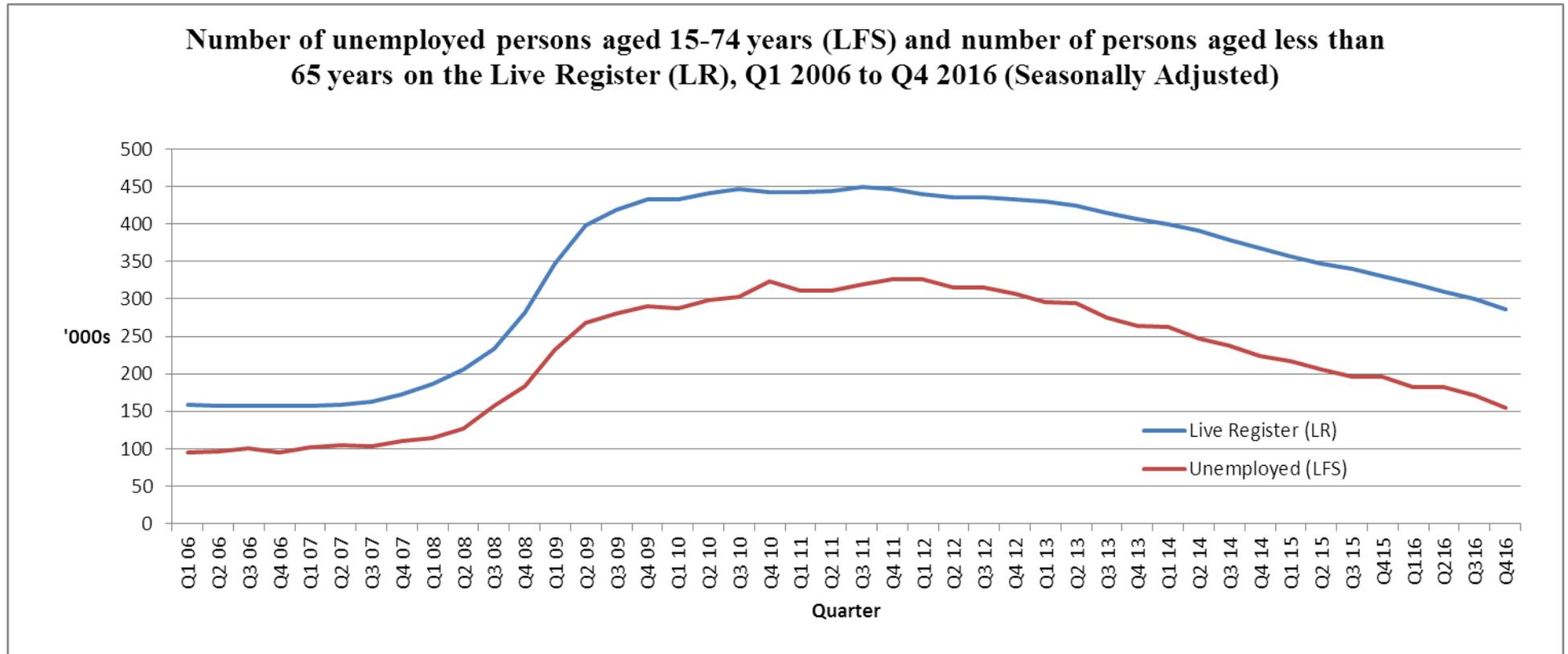
The Labour Force Survey (LFS) in Ireland provides a wealth of data relating to the labour market but users of official statistics are becoming increasingly demanding. The LFS is a quarterly survey and, as such, is published in Ireland on a quarterly basis. Historically the LFS was published approximately T+80 days after the end of the final reference week of the quarter. In order to try and meet user demands for more timely data, the collection and output areas of the LFS in the CSO made a concerted effort to publish the data sooner and currently the LFS is published consistently at T+51 days after the end of the final reference week of the quarter. There is a strong demand from users to get labour market data more regularly than this. Due to sampling, grossing and reliability constraints, LFS data in Ireland is not published below NUTS (Nomenclature of Territorial Units for Statistics) level 3 (NUTS 3 – regional level). There are other data sources available in Ireland which are produced more often and/or to a more detailed regional level than the LFS and which are often reported by the media and other National commentators as measures of unemployment in Ireland. The following are some other data sources:

- **Live Register (LR)**

The Live Register (LR), which is also published by the CSO, is compiled from returns made for each local office to the CSO by the Department of Social Protection (DSP). The LR is an administrative count of the numbers of persons aged less than 65 years who are registered for Jobseekers Benefit (JB) or Jobseekers Allowance (JA) or for various other statutory entitlements at local offices of the Department of Social Protection (DSP) in Ireland on the week containing the last Thursday of the reference month. The LR is not designed to measure unemployment as it includes part-time workers (those who work up to three days a week) as well as seasonal and casual workers who are entitled to JB and JA. Data from LFS is not published below regional (NUTS 3) level while the LR offers data to users at a more detailed geographic level, including county and individual Local Office level.

Figure 3 below presents the number of persons aged 15-74 years who were unemployed as per the LFS (ILO basis) and the number of persons aged less than 65 years on the LR for each quarter from Q1 2006 through to Q4 2016. The middle month of each quarter (February, May, August and November) have been included on the graph for the LR for each quarter. Figure 3 demonstrates that, although the age range for the number of persons on the LR (aged less than 65 years) is more restricted than for the number of unemployed persons according to the LFS (aged 15-74 years), the number of persons on the LR is significantly higher. Although the trend line for the number of persons aged less than 65 years on the LR is much higher than the trend line of the number of persons aged 15-74 who were classified as unemployed from the LFS, they do seem to follow a similar trend.

*Figure 3: Number of unemployed persons aged 15-74 years (LFS) and the number of persons aged less than 65 years on the Live Register (LR), Q1 2006 to Q4 2016 (Seasonally Adjusted)*



Source: Labour Force Survey and Live Register (CSO, Ireland)

Figure 4 below presents the annual percentage change in the number of persons aged 15-74 years who were classified as unemployed as per the LFS (ILO basis) and the annual percentage change in the number of persons aged less than 65 years on the LR for each quarter from Q1 2007 through to Q4 2016. Again, the middle month of each quarter (February, May, August and November) have been included on the graph for the LR for each quarter. Figure 4 demonstrates that, although the number of persons aged less than 65 years on the LR was much higher than the number of persons aged 15-74 years who were classified as unemployed from the LFS, the annual percentage change of both have followed a very similar trend over the last 11 years.

Historically commentators have referred to the number of persons on the LR as the number of persons unemployed in a particular month. There are two main reasons for this:

1. Lack of understanding of the difference between the official measure of unemployment from the LFS and the number of persons on the LR
2. Demand for more regular and/or more timely data on unemployment

The CSO address the first reason above by education of users on the differences between both series and the reasons why the LR does not provide a measure of unemployment. The second reason above provided an opportunity to create a new monthly series of unemployment using temporal disaggregation which forecasts or trends forward the LFS data using the fact that the trend of the LFS and the LR are broadly similar.

*Figure 4: Annual percentage change in the number of unemployed persons aged 15-74 years (LFS) and the number of persons aged less than 65 years on the Live Register (LR), Q1 2007 to Q4 2016 (Seasonally Adjusted)*



Source: Labour Force Survey and Live Register (CSO, Ireland)

- **Monthly Unemployment (MU) Release**

Because the Live Register (LR) data is published on a monthly basis and the LFS is only published on a quarterly basis, historically many commentators tended to report the most recent LR totals as the numbers of persons who are unemployed for a particular month. In an effort to make data on the numbers of persons who are unemployed available to users on a more regular basis, the CSO developed a monthly unemployment release which was first published in June 2015 for reference month May 2015. The purpose of the Monthly Unemployment (MU) release is to provide a detailed series of monthly unemployment estimates. The MU release contains both monthly unemployment rates and monthly unemployment volumes.

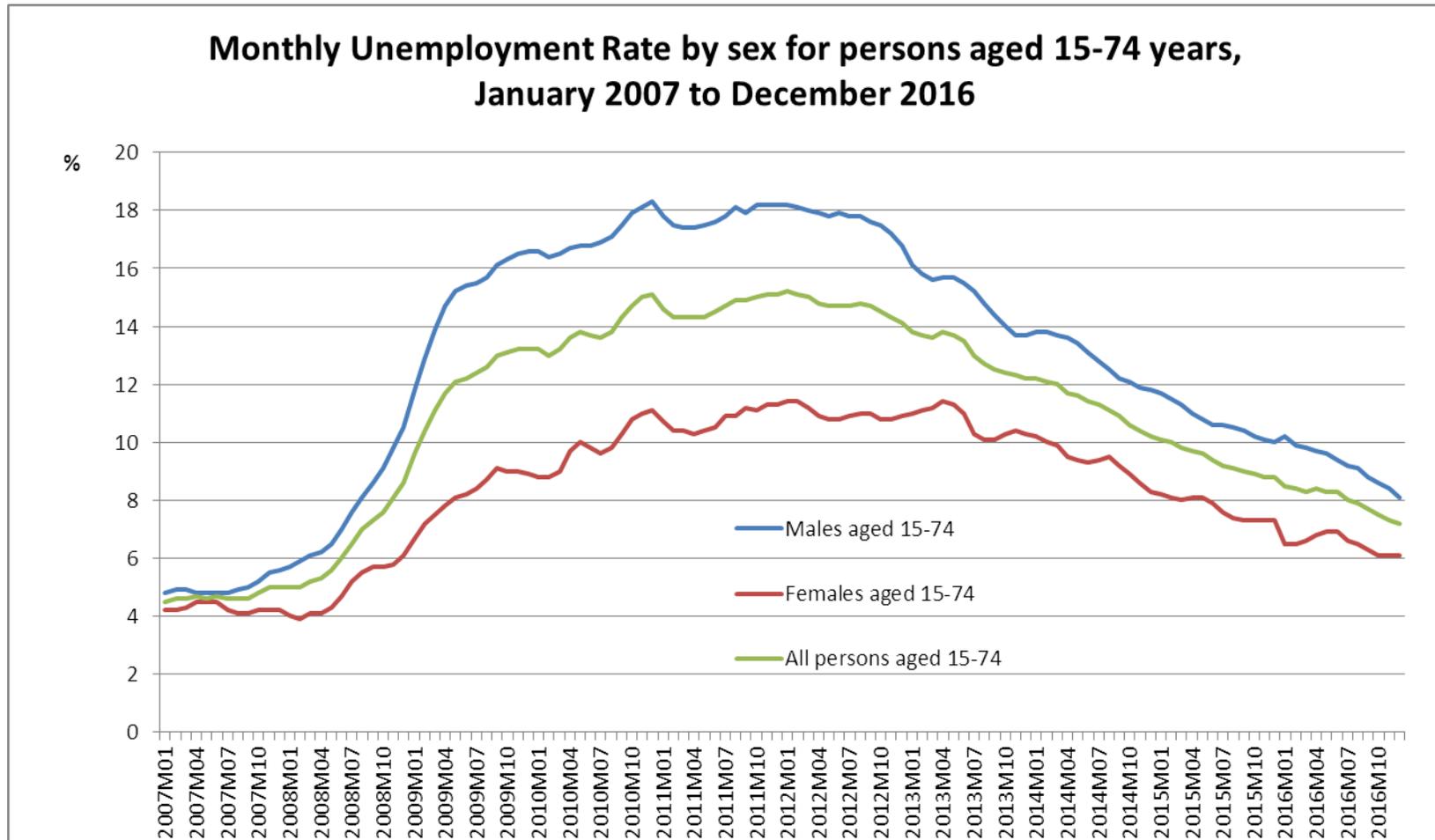
The LFS provides benchmark estimates of employment and unemployment for each quarter since the beginning of 1998. These quarterly benchmark estimates are used to compile monthly data using the Proportional Denton method. The main characteristic of this method is that the monthly LR series is used as an indicator to disaggregate the quarterly LFS unemployment series into a monthly series in such a way as to minimise the differences between two consecutive months. It also ensures that the average of three months in a particular calendar quarter is equal to the corresponding LFS estimate.

For months where the quarterly unemployment data is not yet available from the LFS, the ratio of the LFS monthly estimate to the LR monthly estimate (i.e. the benchmark to indicator ratio) is forecast forward in order to extrapolate a monthly LFS estimate. The monthly series is revised each quarter when the latest quarterly LFS data becomes available.

To correct for typical seasonal patterns, the data series included have been concurrently seasonally adjusted. This seasonal adjustment is completed by applying the X-12-ARIMA model, developed by the U.S. Census Bureau. In the case of these monthly unemployment estimates, seasonal adjustment is conducted using the indirect approach, where each individual series is independently adjusted. To preserve consistency between the individual and aggregate series, the series for gender, age group and total monthly unemployed are then created from these component series. The series for monthly unemployment rates are likewise created from these component series.

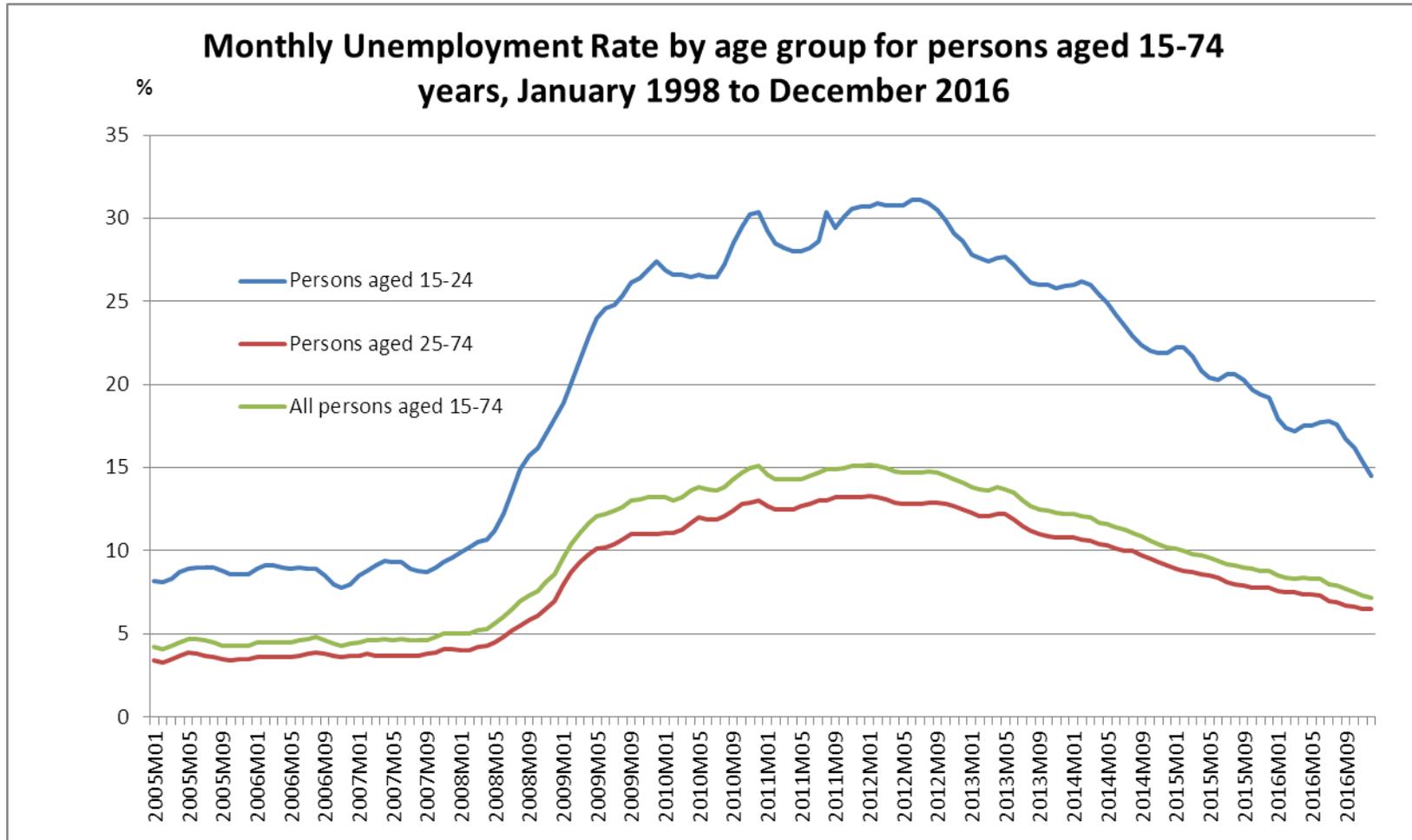
Figures 5 and 6 below present the monthly unemployment rate for persons aged 15 to 74 years by sex (Figure 5) and age group (Figure 6) from January 2007 through to December 2016.

Figure 5: Monthly Unemployment Rate by sex for persons aged 15-74 years, January 2007 to December 2016



Source: Monthly Unemployment (CSO, Ireland)

Figure 6: Monthly Unemployment Rate by age group for persons aged 15-74 years, January 2007 to December 2016



Source: Monthly Unemployment (CSO, Ireland)

The MU release is published in the first week following the week containing the last Thursday of the reference month and so, it addresses the timeliness of availability of data on unemployment as it continues to provide estimates of the volume and rate of unemployment for recent months until the LFS benchmark data becomes available. There is an issue though in that these estimates are essentially forecasts and so they are subject to revision on occasions where the LR has been falling at a slightly faster or slower pace than the number of unemployed persons on the LFS or in cases where the rate of change of the numbers of persons in employment is increasing or decreasing. Again this is something that is flagged by CSO to users and is a cost that users seem to be willing to bear in order to have this more timely data available to them.

The CSO are also in the process of a major Household Survey Development (HSD) project which is due to go live in Quarter 3 2017 and will involve the use for the first time of mixed modes (CAPI and CATI) for the LFS in Ireland. As part of the major overhaul of the LFS, the CSO have changed the wave design of the new survey which will allow the CSO to use the actual monthly LFS data in the future to produce the estimates of monthly unemployment.

### **Current and Future Work**

The CSO will continue to work towards addressing all issues that users have with the LFS while protecting the LFS as the official measure of labour market statistics in Ireland. The following are some of the initiatives that the CSO is working on to prevent users from using and reporting on alternative sources of labour market data:

- The CSO has developed and published a range of thematic releases to give users more insight into the data that is collected as part of the LFS. The CSO has already published thematic releases on Employment and Household and Family Units and is currently developing a third thematic release on Unemployment.
- In all responses to ad hoc queries the CSO refer to the LFS as being the official source of labour market indicators including employment and unemployment in the state
- At the quarterly LFS press conference the CSO highlight that the LFS is the official source of labour market indicators including employment and unemployment in the state.
- There is a quarterly briefing for government officials when the results of the LFS are being published and the CSO also use this forum to highlight to these key users that the LFS is the official source of labour market indicators including employment and unemployment in the state.

- On the Monthly Unemployment (MU) release the CSO highlight that the published volumes and rates of unemployment are estimates that will be revised once the quarterly benchmark data becomes available from the LFS.
- As part of the HSD project which involves major changes to the LFS, the CSO have changed the wave design of the new survey which will all the CSO to use the actual monthly LFS data in the future to produce the estimates of monthly unemployment.
- On other CSO releases which give estimates of employment the CSO state that the LFS is the official measure of employment.
- The CSO conduct analysis between different areas to identify what differences exist and to explain why those differences occur, e.g. differences between employment measures on the LFS and Business Demography, Earnings Hours and Employment Costs Survey (EHECS), National Accounts can be explained by the fact that the LFS is number of persons in employment in a reference quarter while the other sources might be the number of employments or there could be time period differences (annual employment versus quarterly) or sampling differences (only sampling enterprises with a certain number of employees), etc.
- The CSO have recently done some restructuring of the Social and Demographic Statistics Directorate and now there is a Division within it with responsibility for Labour Market and Earnings which will allow more focus on these themes.

## Conclusions

While the Labour Force Survey (LFS) provides users with a wealth of labour market data and indicators on a quarterly basis, users have some issues with the LFS:

- **Timeliness:** The LFS is published quarterly with the data available to users 51 days after the end of the reference period and there is a strong appetite from users to get data on a more timely basis.
- **Geographical Level:** Due to sampling, grossing and precision restraints, LFS data is not available below NUTS 3 (regional) level while users often request data at a more detailed regional level.

The CSO has developed a monthly unemployment (MU) release to address the timeliness issue of the LFS unemployment data. Monthly estimates of the volume and rate of unemployment for the State by age and sex are now available in the first week following the week containing the last Thursday of the reference month. This has helped in preventing users from using and reporting on alternative sources of labour market data.

The Central Statistics Office (CSO) in Ireland is currently investigating ways that we can address the issues of being able to publish labour market statistics at a more detailed regional level. There are a number of projects underway looking into alternative sampling methods, imputation methods, small area estimation and use of administrative data that will allow the CSO to release data on unemployment at a more detailed regional level than currently (NUTS 3 currently).

Despite all the care we as National Statistical Institutes (NSIs) take about ILO definitions, sampling methodology, seasonal adjustments, methodology, etc., users and especially the media are really only interested in the unemployment rate. A challenge can be to get space to educate users on the subtle differences between the various sources of data. All of this makes it difficult to protect the LFS but by working with colleagues and users it is possible to highlight that the LFS is the official measure of labour market indicators and by engaging with users it is possible to meet their needs by providing alternative analysis and/or improving the LFS as a source of the data that users need.