

## National Statistics feature

# Impact of the switch from seasonal to calendar quarters in the Labour Force Survey

By **Vassilis Madouros**, Labour Market Division, Office for National Statistics

## Key points

- In 2006 the structure of the Labour Force Survey (LFS) will switch from a seasonal-quarter basis to a calendar-quarter basis.
- The LFS data that are based on a three-month rolling average, and are currently published monthly, will not be affected, but there will be a significant effect on LFS microdata and longitudinal datasets.
- To allow users to make meaningful comparisons over time, ONS is producing a limited series of historical LFS microdata on a calendar-quarter basis.
- Users who want to compare seasonal-quarter estimates with calendar-quarter estimates of an indicator will need to bear in mind that such comparisons may be distorted by seasonal effects.
- Such seasonal distortions appear to be more prevalent in some segments of the labour market than others. They are particularly apparent in estimates of economic activity among young people, unemployment among women aged 25 to 49, and part-time and temporary employment as well as hours of work.

## Introduction

The Labour Force Survey (LFS) is a survey of households in Great Britain and Northern Ireland that provides information about people's employment status and conditions. It asks individuals about their current and previous jobs, as well as enquiring about related topics such as training, qualifications, income and disability. Headline labour market indicators, such as the unemployment rate, the employment rate and the total number of hours worked by individuals in the economy are based on the results of the survey.

The LFS is a continuous quarterly survey with a sample drawn each quarter of approximately 53,000 households, representing around 126,000 respondents. Each sampled household is interviewed for five successive quarters, with some questions varying from quarter to quarter.

Since 1992 the LFS has been conducted on a seasonal-quarter basis. This means that quarterly LFS

results refer to Spring (March–May), Summer (June–August), Autumn (September–November) and Winter (December–February). From 2006 onwards, however, the LFS is being conducted on a calendar-quarter basis and the results refer to Quarter 1 (January–March), Quarter 2 (April–June), Quarter 3 (July–September) and Quarter 4 (October–December).

The first set of LFS results produced on a calendar-quarter basis referred to Quarter 1 of 2006 and was published in May 2006, while the last set of LFS results produced on a seasonal-quarter basis referred to the Winter quarter of 2005 and was published in April 2006.

This article starts by looking at the reason behind the switch to a calendar-quarter basis. It briefly discusses the way in which this will affect various LFS outputs and explains what ONS is doing to mitigate the effects of this change on users. Finally, the article presents some qualitative conclusions on the relationship between seasonal- and

- ▶ calendar-quarter estimates based on information from the alternative series that is available on a three-month rolling average basis in the Labour Market Statistics First Release.

### Why is the LFS switching to calendar quarters?

When the LFS began in 1973 it was a biennial survey conducted in the Spring quarter only. There were two main reasons for this. First, many activities associated with the labour market occur seasonally and follow the pattern of the school year. In Britain at that time, and for many years afterwards, many school leavers used to enter the labour market at the end of the Easter term rather than in the summer. Second, the public holidays around Easter cause particular difficulties as it is a mobile event that varies in timing between March and April. By ensuring that Easter is always covered by the same quarterly survey period, this problem can be avoided. For these reasons, the Spring fieldwork quarter in Britain was set as March–May rather than April–June. In 1992, when the survey became a quarterly continuous survey, the Spring quarter had to remain comparable with the past so it continued to be defined as March–May. These quarters, one month displaced from conventional quarters, came to be referred to as seasonal and were widely accepted among data users.

However, under an EU regulation<sup>1</sup> relating to the conduct of continuous labour force surveys in all member states, the UK has been obliged to change the basis of its LFS questionnaire and microdata outputs from seasonal to calendar quarters. The Eurostat target structure for the LFS is a continuous quarterly survey that requires

calendar-quarter results for comparison with the labour force surveys of other member states.

In addition to conforming to EU regulation, the switch from seasonal to calendar quarters will also enhance the comparability of the survey with other quarterly surveys, which are mostly conducted on a calendar-quarter basis. This is particularly relevant with respect to the National Accounts, as it will allow a more direct comparison of output with inputs. Looking at labour productivity by industry, for example, it has so far been difficult to compare output measures with labour input measures taken from the LFS, because the former are calculated by calendar quarter and the latter by seasonal quarter.

### Potential impact of the switch on main LFS outputs

ONS publishes output from the LFS in a number of different formats. Each of the outputs will be affected in different ways by the switch to calendar quarters.

#### Labour Market Statistics First Release

The headline series published in the Labour Market Statistics First Release every month ([www.statistics.gov.uk/OnlineProducts/LMS\\_FR\\_HS.asp](http://www.statistics.gov.uk/OnlineProducts/LMS_FR_HS.asp)) will remain largely unaffected.

In order to appreciate the reasoning behind this, it is important to understand the distinction between three-month rolling average LFS results and quarterly LFS results. Although the LFS is a quarterly survey, its design allows estimates of labour market indicators, such as the number of people in employment, to be produced for any period of three consecutive months. These estimates

are published as monthly series in the First Release and are referred to as three-month rolling averages. However, there is a large number of labour market statistics that can be constructed from the results of the LFS that are not included in the First Release. These are available only on a quarterly basis.

As the majority of labour market indicators published in the First Release are produced on a three-month rolling average basis and are seasonally adjusted, estimates of these indicators are already produced for both seasonal and calendar quarters. These series will continue to be produced on a three-month rolling average basis so there will be no discontinuity in the historical time series.

#### LFS microdata

LFS microdata will be significantly affected by the change. While the LFS was conducted on a seasonal-quarter basis, microdata from the LFS were published on a seasonal-quarter basis. However, the switch to calendar quarters means that microdata files will now be published on a calendar-quarter basis. This will make comparison over time difficult. For example, if looking at annual changes in employment by occupation (which are available only from the microdata and not on a three-month rolling average basis), an analyst would have to compare the seasonal Summer quarter of 2005 with the calendar Quarter 3 of 2006. As the three-month periods covered by the seasonal and calendar quarters are different, it will be hard to make meaningful inferences about the annual change in employment by occupation. In order to avoid this, ONS will be producing a limited series of historical LFS microdata on

a calendar-quarter basis. This will allow users to make meaningful comparisons of labour market statistics from the LFS microdata over time. More details of the series are given later in this article.

### LFS Historical Quarterly Supplement

The LFS Historical Quarterly Supplement is a series of tables containing comprehensive historical results from the quarterly Labour Force Survey ([www.statistics.gov.uk/statbase/Product.asp?vlnk=11771](http://www.statistics.gov.uk/statbase/Product.asp?vlnk=11771)). While the LFS was conducted on a seasonal-quarter basis, statistics published in the supplement were based on seasonal quarters. Following the switch of the LFS to calendar quarters, statistics in the supplement will be based on calendar quarters. However, to allow users a longer period of comparison, all tables in the supplement will include quarterly LFS data in two formats:

- on a seasonal-quarter basis for the period between the start of each series and the Winter quarter of 2005, and
- on a calendar-quarter basis from 2006 onwards, and from 1997 in a limited series (for more on this, see [How is ONS handling the switch?](#))

### Work and worklessness among households First Release

The Work and worklessness among households First Release ([www.statistics.gov.uk/statbase/Product.asp?vlnk=8552](http://www.statistics.gov.uk/statbase/Product.asp?vlnk=8552)) is published biannually and uses household datasets from the LFS. These have been designed specifically for household and family analysis and are available for Spring and Autumn quarters only. The next release will be published in July 2006 and will

use LFS data from the Spring quarter of 2006 (March–May)<sup>2</sup>. Following that, it is planned that the release will switch to using datasets from the Annual Population Survey (APS) so that information based on larger sample sizes can be produced for sub-national areas. ONS is developing a version of the APS datasets that will be suitable for family and household-level labour market analyses. Provided that the development work is successful, it is envisaged that the first Work and worklessness among households release to be based on the APS will be published in January 2007. The switch of the LFS from seasonal to calendar quarters will not, in itself, have a substantial impact on the household release. Calendar-quarter LFS data may be used in the APS-based releases in order to provide a longer historical series than will be available initially from the APS datasets. If the first APS household dataset is not ready for release in January 2007, ONS's contingency is to produce a release using calendar-quarter LFS data instead.

### Longitudinal LFS data

As mentioned, LFS respondents are interviewed five times at quarterly intervals, the last interview being one year after the first. The longitudinal LFS datasets link together their responses and can be used to look at individuals' movements between different labour market statuses (employment, unemployment and economic inactivity) over time (from one interview to another). There are two types of longitudinal datasets available: the two-quarter datasets – linking together two consecutive interviews; and the five-quarter datasets – linking together all interviews.

Following the switch to calendar

quarters, there will be a discontinuity in the longitudinal datasets. Before a complete series of historical calendar-quarter data is available, it will not be possible to reproduce the two- and five-quarter longitudinal datasets on a calendar-quarter basis for any period prior to 2005. The last seasonal longitudinal dataset to be produced will be the one ending in the Spring quarter of 2006. Production of calendar-quarter longitudinal data will start when Quarter 1 and 2 LFS datasets become available.

### How is ONS handling the switch?

Consistent time series of data from the LFS are invaluable for analysts wanting to make meaningful comparisons of labour market indicators over time. Following the switch to calendar quarters, ONS is planning to produce series of historical LFS microdata on a calendar-quarter basis. This will enable users to examine changes in key labour market indicators over time on a consistent basis and avoid the problem of comparing seasonal quarters with calendar quarters.

It is planned that such historical series will be produced initially for the period between 1997 and 2005. Sets of LFS microdata have been published for calendar Quarters 2 and 4 for the years 1997 and 1999, and the period between 2001 and 2004. For 2005, LFS microdata have been produced for all four quarters. These were published in May 2006, coinciding with the release of the first LFS calendar-quarter dataset.

An important point to note relates to series that are constructed from LFS quarter-specific questions, that is, questions that are not asked every quarter. For these series, the

► historical calendar-quarter estimates going back to 1997 will be based on only two-thirds of respondents. For example, if a question is asked only in the Autumn quarter (September–November) on a seasonal-quarter basis, the same question will be asked in Quarter 4 (October–December) on a calendar-quarter basis. However, the historical series going back to 1997 will be based only on information from people who responded in October and November. Users might consider using percentages rather than levels, as the former will be affected to a lesser degree.

These are short-term arrangements. ONS expects to complete the series of historical LFS microdata on a calendar-quarter basis, to allow users a longer period of comparison. The full historical series will be completed following the introduction of the modernised LFS systems.

### Qualitative conclusions from analysis of Labour Market Statistics First Release data

Analysts who use LFS microdata or statistics from the LFS Historical Quarterly Supplement, and want to examine movements in key labour market indicators over a longer period of time (that is prior to 1997) will face the problem of having to compare a seasonal-quarter estimate with a calendar-quarter estimate. In doing so, it is important to understand the main issues involved.

Seasonal and calendar quarters are overlapping. The calendar quarters that correspond most closely to the seasonal quarters are shown in **Table 1**. For example, an analyst wanting to compare LFS microdata for the Summer quarter over time would

**Table 1**

#### Corresponding calendar and seasonal quarters

Calendar quarters	Seasonal quarters
Quarter 1 – January to March	Winter quarter – December to February
Quarter 2 – April to June	Spring quarter – March to May
Quarter 3 – July to September	Summer quarter – June to August
Quarter 4 – October to December	Autumn quarter – September to November

Source: Labour Force Survey

need to compare pre-2006 Summer quarters with post-2006 calendar Quarter 3 data, as these periods have two overlapping months (July and August).

Using the series that are published in the Labour Market Statistics First Release, it is possible to make some inferences on the potential effects of the switch to calendar quarters. As explained, the series published in the First Release are available on a three-month rolling average basis and estimates are already produced for both seasonal and calendar quarters each year. By comparing the two estimates over time, it is possible to draw some qualitative conclusions on which series are most likely to be affected and in what way.

The difference between estimates of an indicator (for example, employment or unemployment) on a seasonal- and calendar-quarter basis arises mainly as a result of the two non-overlapping months. For example, in comparing the seasonal Autumn quarter (September–November) with the corresponding calendar Quarter 4 (October–December), the difference occurs primarily because of September and December.

This difference can be disaggregated into four distinct

components:

1. Population effect. This arises because the size and structure of the population are different in the two quarters.
2. Seasonal effect. One of the two non-overlapping months may have a strong seasonal effect. This can be seen in the previous example: December includes Christmas, when the activity of people in the labour market is different due to the bank holidays.
3. Underlying socio-economic effects. These are ‘real’ effects such as a change in economic conditions affecting people’s decisions to participate in the labour market.
4. Random effects. These may arise because the LFS is a sample survey. Even if all other factors remained unchanged – that is, if the population, seasonal and underlying socio-economic effects were all zero – it would still be possible to find a difference between seasonal- and calendar-quarter estimates of a labour market indicator. This would be due to the sampling variability of estimates from the LFS.

The population effect is expected to

Table 2

**Differences between seasonal quarter and calendar quarter estimates of headline labour market indicators; United Kingdom; 1992 to 2005**

	Average absolute difference	Maximum absolute difference	Average value of series
Employment rate, people of working age (percentage points)	0.09	0.23	73.1
Employment rate, men of working age (percentage points)	0.12	0.39	77.9
Employment rate, women of working age (percentage points)	0.10	0.32	67.9
Unemployment rate, people aged 16 and over (percentage points)	0.10	0.40	6.9
Unemployment rate, men aged 16 and over (percentage points)	0.09	0.34	7.8
Unemployment rate, women aged 16 and over (percentage points)	0.17	0.54	5.7
Inactivity rate, people of working age (percentage points)	0.11	0.31	21.4
Inactivity rate, men of working age (percentage points)	0.11	0.36	15.4
Inactivity rate, women of working age (percentage points)	0.14	0.36	27.9
Total actual weekly hours of work, people aged 16 and over (million hours)	9.80	35.40	881.8
Average actual weekly hours of work, people aged 16 and over (number of hours)	0.38	1.37	32.8

Source: Labour Force Survey

► be relatively small. This is because changes in the size and structure of the population over three months are small. The population effect will be more evident if analysts compare seasonal- and calendar-quarter estimates of levels rather than rates. If comparisons are made of seasonal- and calendar-quarter estimates of rates, the population effect should be insignificantly small.

Distinguishing the seasonal effect from the underlying socio-economic effects can be difficult. The approach

adopted in the following analysis is to look at the difference between seasonal- and calendar-quarter estimates of an indicator on a non-seasonally adjusted basis and examine whether there are consistent seasonal patterns in this difference. For example, with the rolling monthly series for the unemployment rate, it is possible to subtract the non-seasonally adjusted seasonal-quarter estimate from the non-seasonally adjusted calendar-quarter estimate over time. If this

difference is consistently positive for a particular quarter, it implies that the unemployment rate in that calendar quarter is consistently higher than the unemployment rate in the corresponding seasonal quarter, due to a seasonal effect.

In the discussion and graphs in this article, a positive difference means that the calendar-quarter estimate of that indicator is higher than the corresponding seasonal-quarter estimate. Similarly, a negative difference means that the calendar-quarter estimate of that indicator is lower than the corresponding seasonal-quarter estimate. However, it needs to be noted that there are limitations to this approach, primarily because seasonal influences may change over time, making it much harder to distinguish them from underlying socio-economic effects.

### Headline indicators

Looking at the headline indicators of the three labour market statuses, namely employment, unemployment and inactivity, as well as the headline indicators of hours of work, for the majority of these series the differences between seasonal- and calendar-quarter estimates are relatively small. **Table 2** shows the average and maximum absolute differences between seasonal and calendar estimates of the headline employment, unemployment and inactivity rates as well as headline indicators of hours of work over the period 1992 to 2005.

Although for the headline indicators the differences between the seasonal- and calendar-quarter estimates are relatively small, there are some consistent effects, which may be attributed to seasonal factors. **Figures 1 to 3** show the differences between the seasonal- ►

► and calendar-quarter estimates (subtracting the former from the latter) for the employment, unemployment and inactivity rates.

Looking first at the headline employment rate, the difference appears to be almost always positive in calendar Quarters 3 and 2. This implies that the estimate for calendar Quarter 3 is almost always higher than the seasonal Summer quarter and that the estimate for calendar Quarter 2 is almost always higher than the seasonal Spring quarter. Also, the difference appears to be almost always negative in calendar Quarter 1, implying that the estimate for Quarter 1 is almost always lower than the corresponding seasonal Winter quarter.

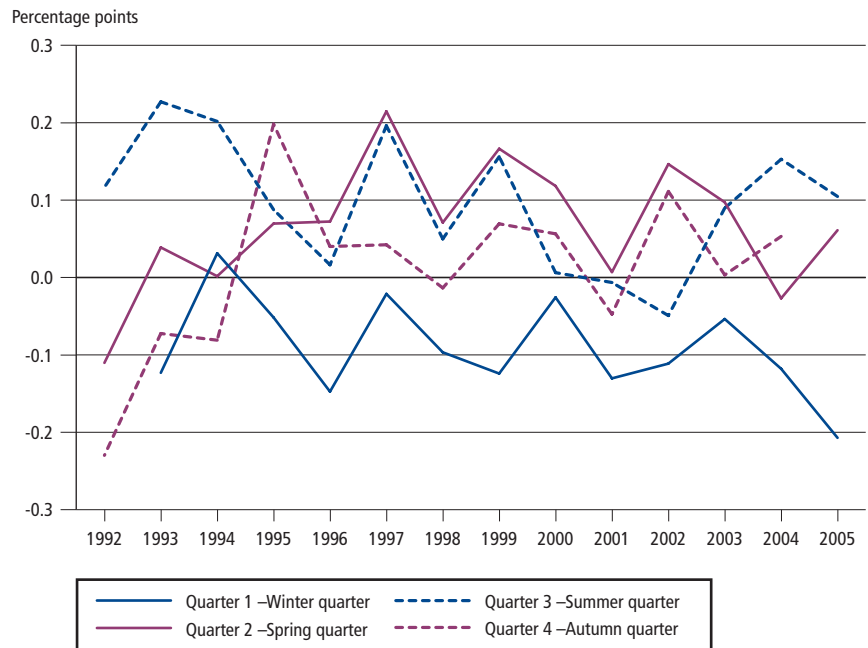
Similarly, looking at the headline unemployment rate, Quarter 4 calendar-quarter estimates are almost always lower than Autumn seasonal-quarter estimates (so the difference is negative in most years). Quarter 1 estimates, on the other hand, almost always exceed Winter calendar-quarter estimates (so the difference is positive in most years).

Finally, looking at the inactivity rate, there appear to be consistent differences in calendar Quarters 2, 3 and 4. Quarters 2 and 3 are almost always lower than the corresponding Spring and Summer seasonal quarters, while the opposite relationship can be seen between calendar Quarter 4 and the seasonal Autumn quarter.

The differences between seasonal- and calendar-quarter estimates of headline indicators of the three major labour market statuses are relatively small. However, there are some persistent differences over time. Further investigation shows that these occur due to seasonal effects in particular segments of the

**Figure 1**

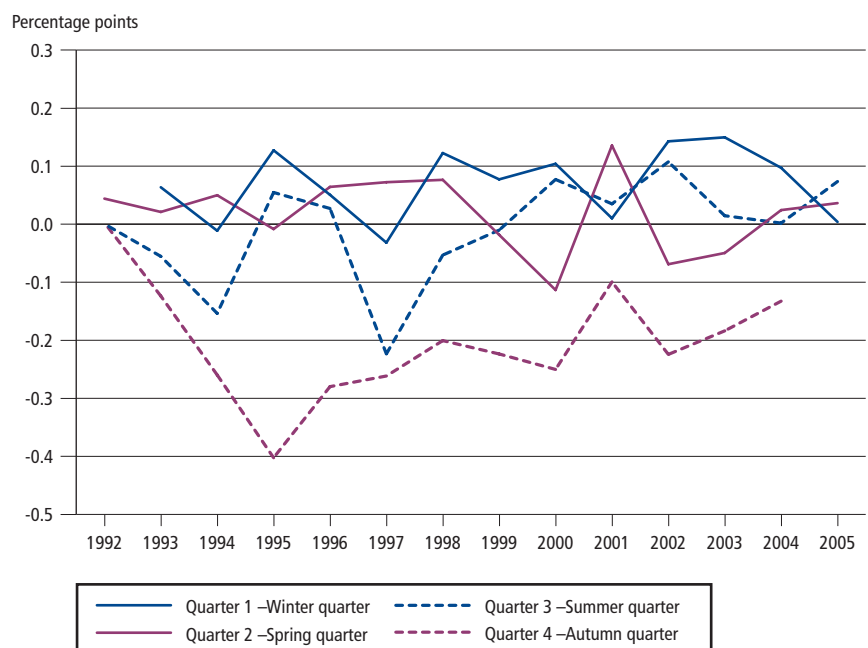
**Difference between calendar and seasonal quarter estimates of the working-age employment rate; United Kingdom; 1992 to 2005, not seasonally adjusted**



Source: Labour Force Survey

**Figure 2**

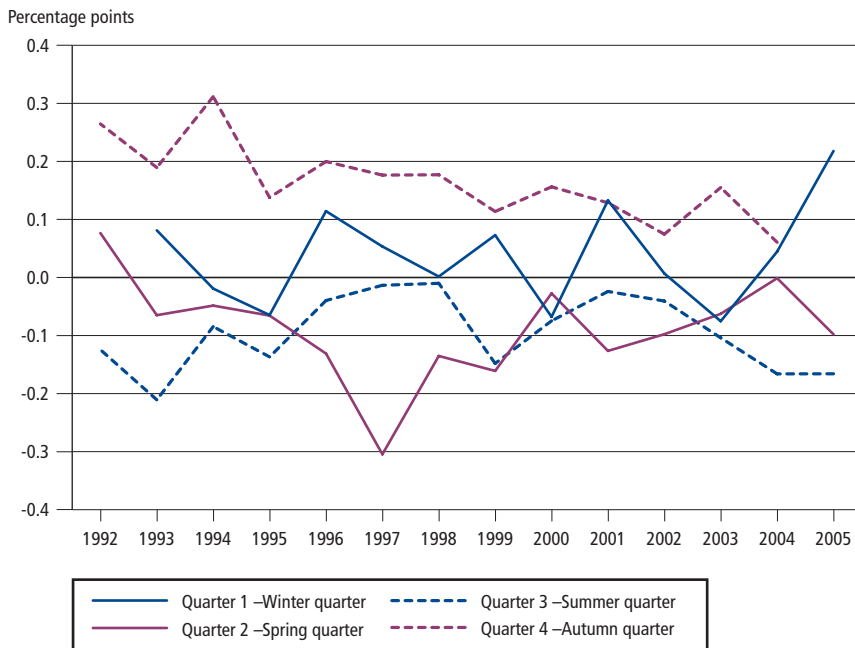
**Difference between calendar and seasonal quarter estimates of the 16 and over unemployment rate; United Kingdom; 1992 to 2005, not seasonally adjusted**



Source: Labour Force Survey

**Figure 3**

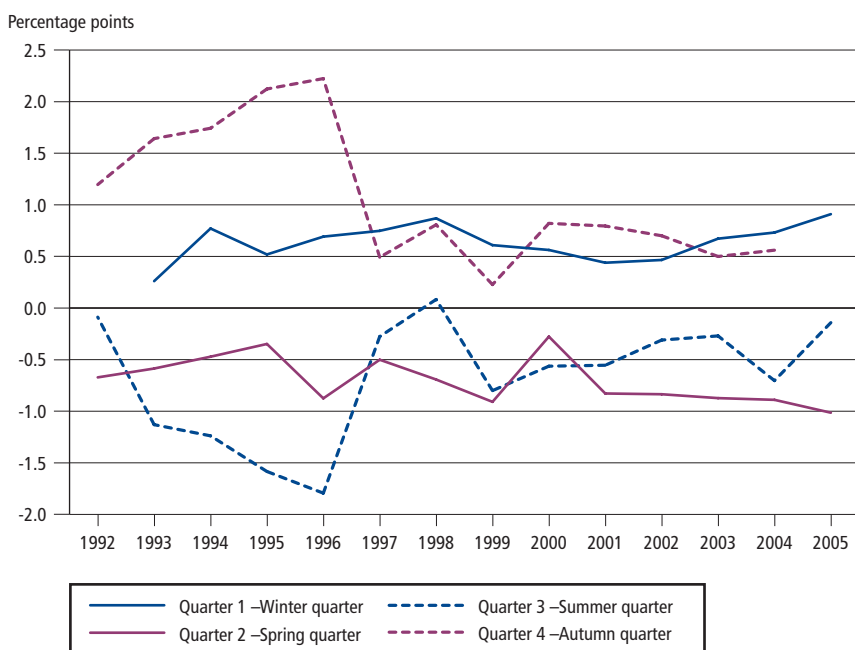
**Difference between calendar and seasonal quarter estimates of the working-age inactivity rate; United Kingdom; 1992 to 2005, not seasonally adjusted**



Source: Labour Force Survey

**Figure 4**

**Difference between calendar and seasonal quarter estimates of the proportion of people aged 16 to 24 in full-time education; United Kingdom; 1992 to 2005, not seasonally adjusted**



Source: Labour Force Survey

► labour market. This is discussed in more detail below.

**Young people**

The consistent differences between seasonal- and calendar-quarter estimates of the headline employment, unemployment and inactivity rates can be largely attributed to the seasonality in the participation of young people in the labour market. This is mainly due to the high proportion of young people in full-time education and the close relationship between their participation in education and in the labour market. Because the participation of young people in full-time education has a strong seasonal pattern which is closely related to the academic year, their participation in the labour market also reflects this pattern. This leads to consistent differences between seasonal- and calendar-quarter estimates.

Figure 4 shows the difference between seasonal- and calendar-quarter estimates of the proportion of young people (aged 16 to 24) in full-time education. Full-time education is defined as being at school, in a sandwich course or full time at university. As shown in the graph, the proportion of young people in full-time education is consistently higher in calendar Quarters 1 and 4 compared with the corresponding Winter and Spring seasonal quarters, and almost always lower in calendar Quarters 2 and 3 compared with the corresponding Summer and Autumn seasonal quarters. When analysts compare the seasonal and calendar quarters for young people, they should take account of this seasonal effect caused by the timing of the academic year.

► The participation of young people in full-time education has a significant impact on their activity in the labour market and the seasonal effect evident in the former is reflected in a seasonal effect in the latter (Figure 5). In particular, the activity rate of young people is consistently higher in calendar Quarters 2 and 3 compared with the corresponding Summer and Autumn seasonal quarters, and consistently lower in calendar Quarters 1 and 4 compared with the corresponding Winter and Autumn seasonal quarters. This is in line with the seasonality in the proportion of young people in full-time education. When this is lower, the economic activity rate of young people is higher and vice versa. It is fair to assume that when young people are not in full-time education (for example throughout the summer holidays) they are more likely to be working or actively seeking work and thus count as economically active.

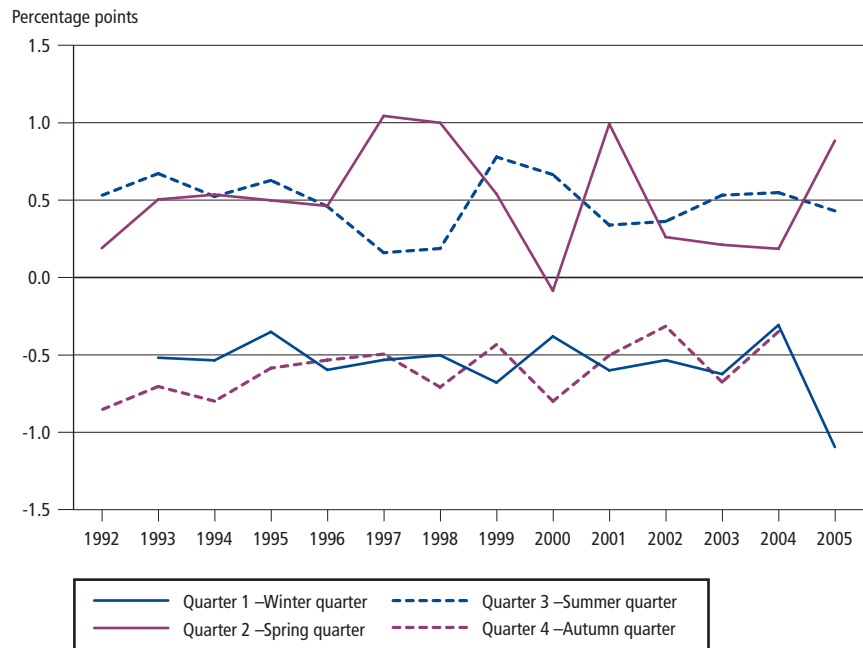
This pattern can also be seen when looking at reasons for economic inactivity. Figure 6 shows the difference between the seasonal- and calendar-quarter estimates of the proportion of economically inactive people (of working age) whose reason for being inactive is 'student'. This difference is consistently positive in calendar Quarters 2 and 3 and consistently negative in Quarters 1 and 4. As before, this suggests that there are more inactive students in calendar Quarters 2 and 3 compared with the corresponding Spring and Summer quarters and fewer in calendar Quarters 1 and 4 compared with the corresponding Winter and Autumn quarters.

Looking at employment and unemployment separately, there are two striking patterns.

First, the employment rate in

Figure 5

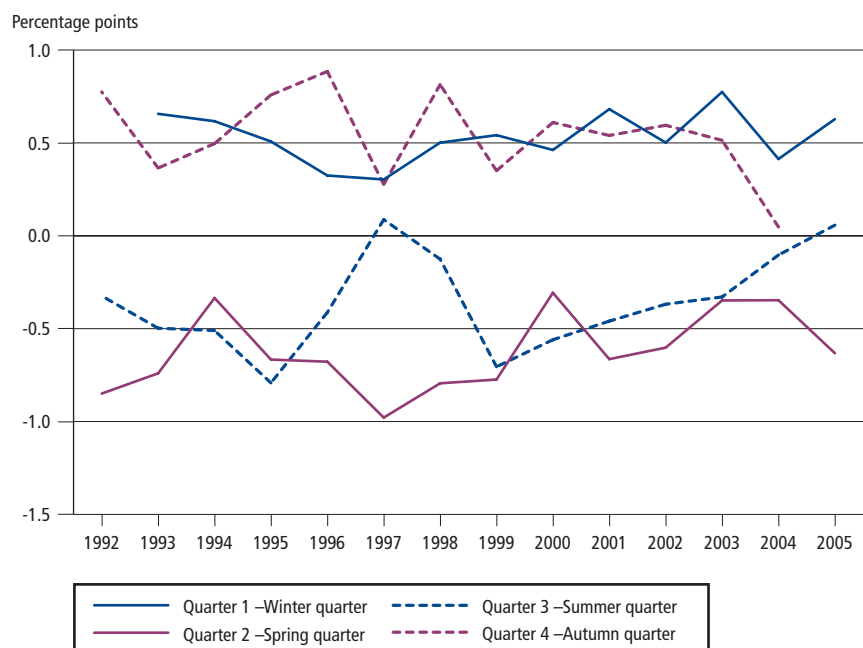
**Difference between calendar and seasonal quarter estimates of the economic activity rate for people aged 16 to 24; United Kingdom; 1992 to 2005, not seasonally adjusted**



Source: Labour Force Survey

Figure 6

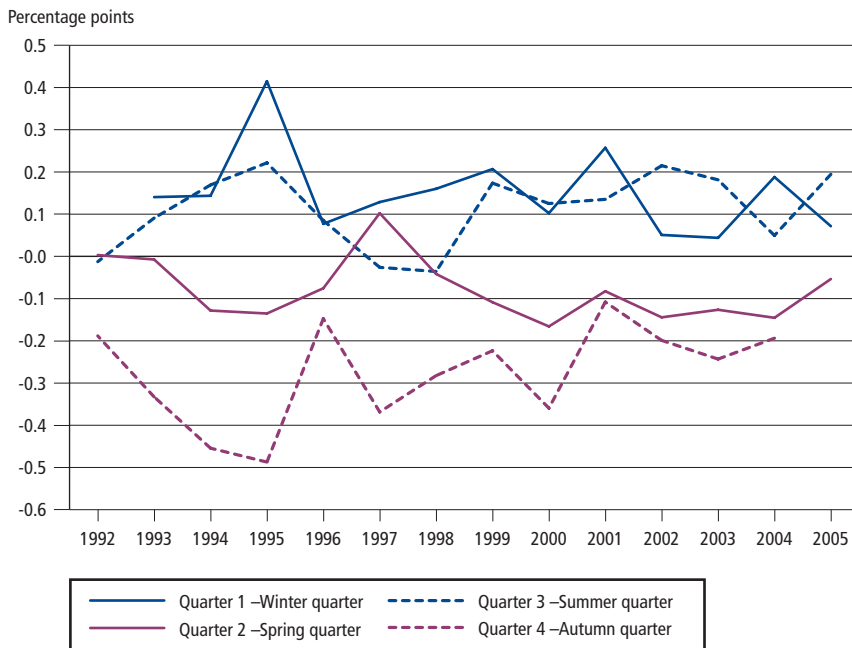
**Difference between calendar and seasonal quarter estimates of the proportion of people giving 'student' as the reason for economic inactivity; United Kingdom; 1992 to 2005, not seasonally adjusted**



Source: Labour Force Survey

**Figure 7**

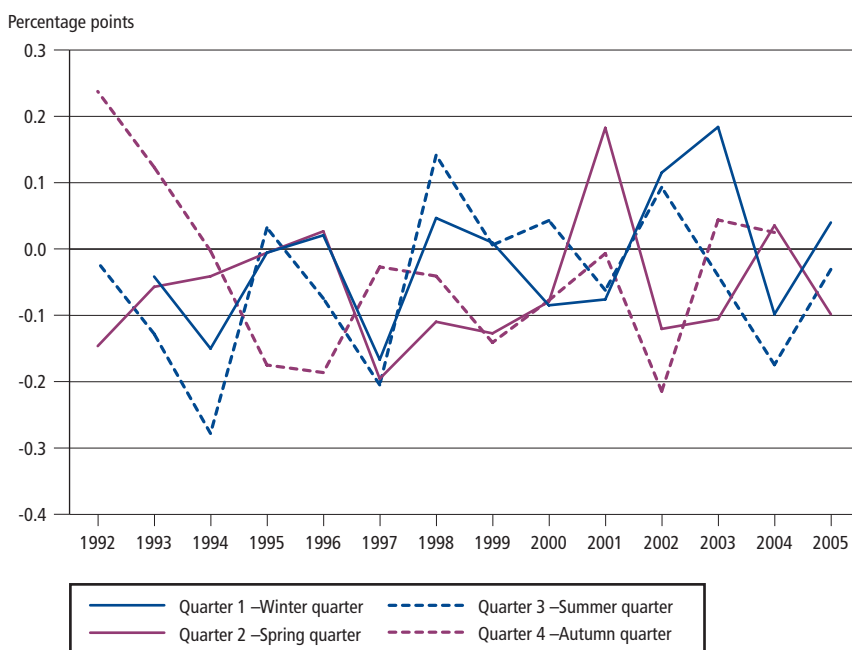
**Difference between calendar and seasonal quarter estimates of the unemployment rate for women aged 25 to 49; United Kingdom; 1992 to 2005, not seasonally adjusted**



Source: Labour Force Survey

**Figure 8**

**Difference between calendar and seasonal quarter estimates of the unemployment rate for men aged 25 to 49; United Kingdom; 1992 to 2005, not seasonally adjusted**



Source: Labour Force Survey

calendar Quarter 1 is almost always lower than the seasonal Winter quarter, and the rate in calendar Quarter 4 is almost always higher than the seasonal Autumn quarter. This is probably due to the patterns of employment in December when students are more likely to be in employment. There are two reasons for this. On the supply side, more young people are available for work due to the Christmas vacations and on the demand side there is a greater availability of seasonal jobs.

Estimates of the unemployment rate are consistently higher in calendar Quarter 2 than the corresponding Spring estimate. This probably reflects the influx of young people into the labour market in June, when a large number of students finish their exams and start looking for a job.

### Women aged 25 to 49

Apart from the seasonal behaviour of young people, which can largely explain the consistent differences in headline labour market indicators between seasonal and calendar quarters, a further source of consistent differences is the behaviour of women aged 25 to 49. In particular, estimates of the unemployment rate of women in this age group (Figure 7) are consistently lower in calendar Quarter 4 than the corresponding seasonal Autumn quarter, while estimates for calendar Quarter 1 almost always exceed those for the corresponding seasonal Winter quarter. This may be due to the effects of the Christmas season, with fewer women actively looking for a job in December, primarily because of the Christmas holidays. It is worth noting that this effect is not evident for men in the same age group (Figure 8). Also, there does not

▶ appear to be a corresponding opposite effect in the employment rate. This suggests that the women flowing out of unemployment in December are moving into inactivity rather than into employment.

### Types of employment

In addition to the headline rates of employment, unemployment and inactivity, it is possible to use data from the Labour Market Statistics First Release to investigate seasonal- and calendar-quarter estimates of various other labour market indicators. Looking at employment categories by type, part-time and temporary employment stand out for showing strong seasonal patterns. Analysts should take these into account when comparing calendar-quarter estimates with the corresponding seasonal-quarter estimates. In particular, temporary employment as a percentage of total employment is almost always higher in calendar Quarter 2 compared with the seasonal Summer quarter, and consistently lower in calendar Quarter 1 compared with the seasonal Winter quarter (**Figure 9**).

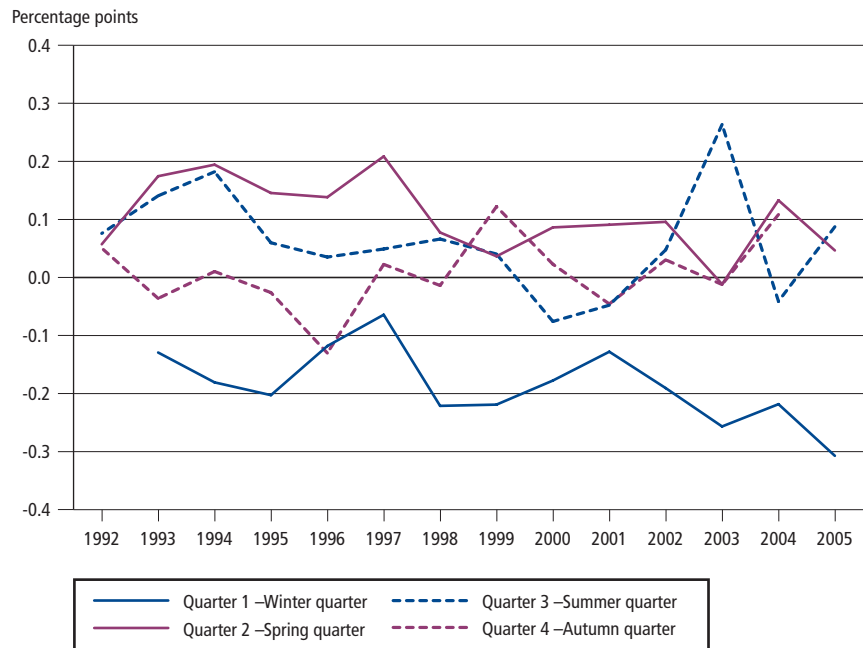
Part-time employment as a percentage of total employment is almost always higher in calendar Quarter 4 compared with the seasonal Autumn quarter. Calendar Quarter 4 includes the Christmas holidays, when more part-time seasonal jobs are likely to be available. On the other hand, the calendar Quarter 3 estimate of part-time employment as a percentage of total employment is consistently lower than the seasonal Summer quarter (**Figure 10**).

### Hours of work

There also appear to be consistent differences between seasonal- and calendar-quarter estimates over time

**Figure 9**

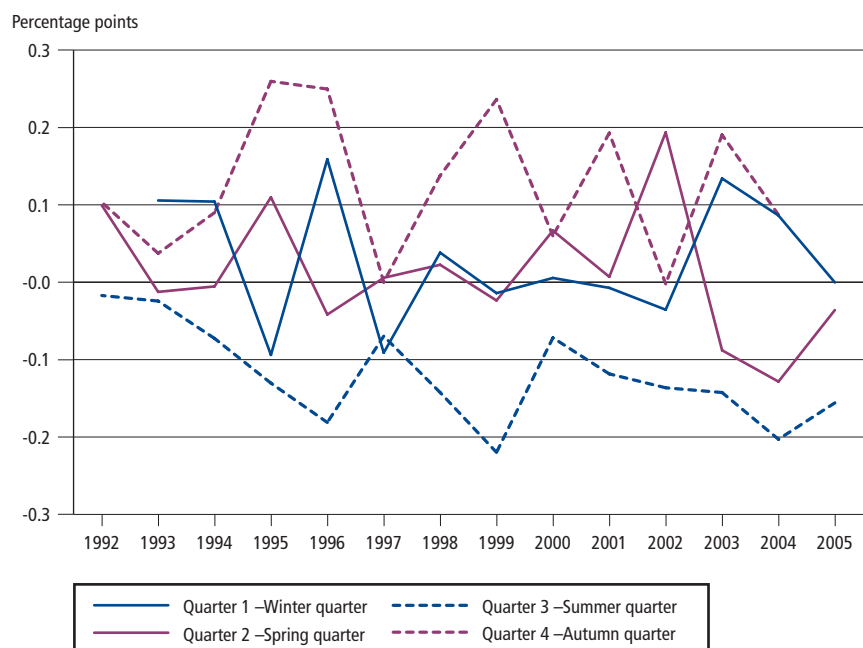
**Difference between calendar and seasonal quarter estimates of temporary employment as a proportion of total employment; United Kingdom; 1992 to 2005, not seasonally adjusted**



Source: Labour Force Survey

**Figure 10**

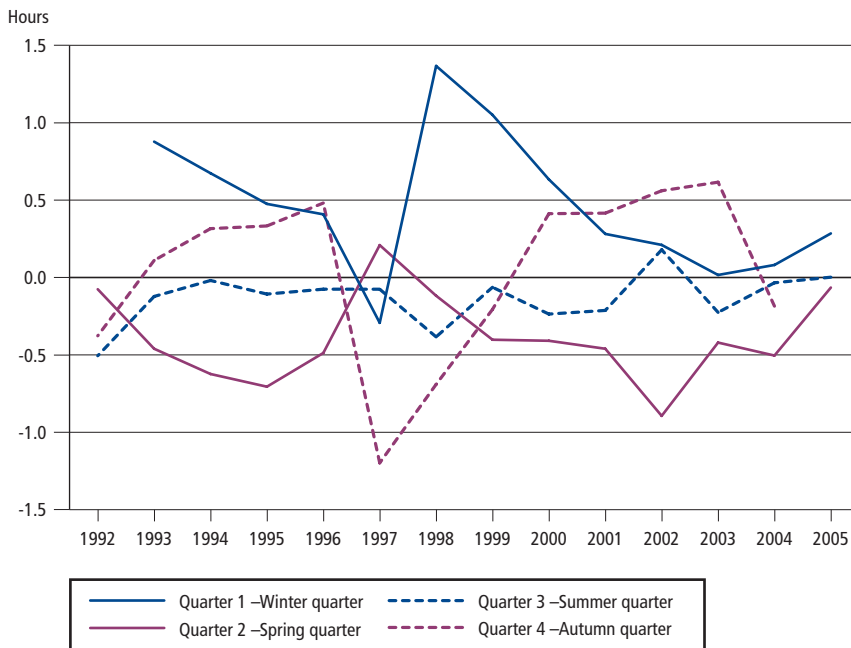
**Difference between calendar and seasonal quarter estimates of part-time employment as a proportion of total employment; United Kingdom; 1992 to 2005, not seasonally adjusted**



Source: Labour Force Survey

Figure 11

**Difference between calendar and seasonal quarter estimates of average actual weekly hours of work; United Kingdom; 1992 to 2005, not seasonally adjusted**



Source: Labour Force Survey

▶ relating to hours of work. Again, this implies a consistent seasonal effect that needs to be taken into account by analysts when comparing calendar-quarter estimates of hours of work with the corresponding seasonal-quarter estimates over time. In particular, for both total actual weekly hours of work and average weekly hours of work, the difference between seasonal- and calendar-quarter estimates is consistently positive for Quarter 1 and consistently negative for Quarter 2. The positive difference in Quarter 1 probably reflects December’s lower average hours of work due to the Christmas holidays. December is included in the seasonal Winter quarter but not in the calendar Quarter 1. Similarly, the negative difference in Quarter 2 probably reflects the start, in June, of the summer vacation period. June is

included in the seasonal Spring quarter but not in the calendar Quarter 2.

This seasonal pattern broke down in 1997, when the calendar Quarter 1 estimate was less than the corresponding Winter quarter estimate, and the calendar Quarter 2 estimate exceeded the corresponding Spring quarter estimate. A possible explanation for this is that, in 1997, the moving Easter holidays fell in March rather than April so were included in calendar Quarter 1 rather than calendar Quarter 2. Note, however, that the Easter bank holidays also fell in March in 2005, when a similar pattern did not emerge.

**Easter**

A final observation relates to the potential effects of Easter. Easter is a moving holiday that varies in timing

between March and April. Although it is always included in the seasonal Spring quarter, it may fall in either calendar Quarter 1 or 2. If Easter falls in April, this should not affect the difference between the seasonal Spring quarter and the corresponding calendar Quarter 2, as both include April. If Easter falls in March, however, this should affect the difference between them because March is not included in the latter quarter.

Looking at the data in the Labour Market Statistics First Release to try to evaluate the potential effects of Easter on labour market indicators is difficult. This is because, during the period between 1992 and 2005, for which First Release data are available on a rolling monthly non-seasonally adjusted basis, there were only two years in which the Easter bank holidays fell in March (1997 and 2005) and one in which the holidays fell in both March and April (2002). It is hard to make any concrete inferences based on only three observations. In addition, looking at the behaviour of various labour market indicators, there do not appear to be consistent striking differences when these three years are compared with others in which Easter falls in calendar Quarter 2.

**Summary of key issues in comparing seasonal and calendar quarter estimates**

In summary, users who want to examine LFS microdata over a longer period of time will face the problem of comparing seasonal-quarter estimates with calendar-quarter estimates. If doing so, users should bear the following in mind:

- Any distortions arising from the comparison of seasonal- with calendar-quarter estimates for

Table 3

## Summary of key conclusions from investigation of Labour Market Statistics First Release data

	Calendar Quarter 1 estimate compared with seasonal Winter quarter estimate	Calendar Quarter 2 estimate compared with seasonal Spring quarter estimate	Calendar Quarter 3 estimate compared with seasonal Summer quarter estimate	Calendar Quarter 4 estimate compared with seasonal Autumn quarter estimate
Headline employment rate	Lower	Higher	Higher	–
Headline unemployment rate	Higher	–	–	Lower
Headline economic inactivity rate	–	Lower	Lower	Higher
Proportion of young people in full-time education	Higher	Lower	Lower	Higher
Economic activity of young people	Lower	Higher	Higher	Lower
Unemployment of women aged 25 to 49	–	–	–	Lower
Part-time employment	–	–	Lower	Higher
Temporary employment	Lower	Higher	–	–
Average hours of work	Higher	Lower	–	–

Source: Labour Force Survey

- ▶ headline rates of employment, unemployment and inactivity are expected to be relatively small.
- The largest distorting effects are observed in the labour market behaviour of younger people, whose activity in the labour market is closely related to the academic cycle. Users should keep in mind that any changes observed in the labour market behaviour of young people may be partly due to the effects of comparing seasonal- with calendar-quarter estimates rather than underlying socio-economic effects.
- In a similar manner, but to a lesser extent, there are consistent

- differences between seasonal- and calendar-quarter estimates of labour market indicators for women aged between 25 and 49, particularly when comparing the Autumn seasonal quarter with the corresponding calendar Quarter 4.
- Some types of employment (for example, temporary and part-time) are affected by key seasonal events such as Christmas and summer holidays. As a result, seasonal- and calendar-quarter estimates of these indicators show consistent differences over time.
- Seasonal- and calendar-quarter estimates of hours of work also show consistent differences over

time, as hours of work follow a strong seasonal pattern affected by bank holidays and patterns in annual leave.

- Key seasonal events that may affect comparison of seasonal with calendar quarters include the Christmas holidays, the moving Easter holidays, the academic cycle and summer holidays.

**Table 3** summarises the main conclusions on the relationship between seasonal- and calendar-quarter estimates of key labour market indicators available on a rolling-monthly basis in the Labour Market Statistics First Release.

## Notes

1. Council Regulation (EC) No 577/98 and associated revisions.
2. Although the last set of LFS results published on a seasonal quarter basis will be the Winter quarter of 2005, a Spring 2006 dataset will also be produced and will be available upon request.

## Further information

**For further information, contact:**

Craig Lindsay,  
Office for National Statistics,  
1 Drummond Gate,  
London, SW1V 2QQ,  
**E-mail:** [craig.lindsay@ons.gov.uk](mailto:craig.lindsay@ons.gov.uk)  
**Tel:** 020 7533 5896.