

Changeover to Calendar Quarters and adoption of NACE Rev. 2

Supplementary Information Note

Changes in the QNHS from Q1 2009

As of the first quarter of 2009 the Quarterly National Household survey (QNHS) is now undertaken on a calendar quarter basis. Up to and including the fourth quarter of 2008 the QNHS operated on a seasonal quarter basis since its establishment in Q4 1997.

This release outlines the significance of this change. All main labour market time series have been recreated on a calendar quarter basis back to Q1 1998. A comparison of the seasonal and calendar quarter series is presented showing effects on time series are minimal.

Also from Q1 2009 NACE Rev. 2 has been introduced as the classification of industrial sectors. The significance of this change is also outlined within this release.

Changeover to calendar quarters

Since its introduction in Q4 1997 the QNHS has been conducted on a seasonal quarter basis. This means that quarterly QNHS results referred to winter (December-February, previously Q1), spring (March-May, previously Q2), summer (June-August, previously Q3) and autumn (September-November, previously Q4). There were a number of reasons for the QNHS to operate in this manner:

- The Annual Labour Force survey, which was the predecessor of the QNHS, had a reference point of April in each year. To maintain consistency with the existing annual results it was decided to keep April as the middle of a quarter. As such the spring quarter became March-May.
- There are a number of reasons why seasonal quarters also reflect realities within the labour market well. For example, by having March and April within the same quarter it is ensured that Easter (which has a significant impact on labour market estimates) is always within the same quarter. Also the summer quarter (June-August) closely reflects the timing of changes in the labour market each summer as students enter the labour market.

From Q1 2009 onwards the QNHS is being conducted on a calendar quarter basis and results refer to Quarter 1 (January-March), Quarter 2 (April-June), Quarter 3 (July-September) and Quarter 4 (October-December).

As such a trailing month is being introduced to the calendar quarter versus the corresponding seasonal quarter. For example June is now within quarter 2 whereas it was previously in quarter 3 of the year. The effect this trailing month has on time series is discussed further below. Table 1 on the next page shows the relevant reference periods on a seasonal and calendar basis.

Table 1 Corresponding Seasonal and Calendar Quarters

CALENDAR QUARTER	MONTH (Trailing month highlighted)	SEASONAL QUARTER
	December	QUARTER 1
QUARTER 1	January	
	February	
	March	QUARTER 2
QUARTER 2	April	
	May	
	June	QUARTER 3
QUARTER 3	July	
	August	
	September	QUARTER 4
QUARTER 4	October	
	November	
	December	

Why is the QNHS switching to Calendar Quarters?

The main reason for the changeover to calendar quarters is that it is required under an EU regulation relating to the conduct of the Labour Force Survey (in Ireland the QNHS). In order to ensure comparability between member states regulation specifies that Labour Force Surveys in all member states must be conducted on a calendar quarter basis.

In addition to complying with the EU regulation the switch to calendar quarters will enhance comparability with other quarterly surveys which are conducted on a calendar quarter basis (e.g. Earnings, Hours and Employment Costs Survey). This enhanced comparability with other quarterly surveys will be significant in the preparation of the National Accounts, where, typically, adjustments were necessary to bring QNHS estimates into line with other estimates available on a calendar quarter basis.

Impact on outputs

The main quarterly QNHS labour market release will be published from Q1 2009 on a calendar quarter basis. Current publication targets are to publish main labour market results within 10 weeks of the end of the reference quarter. While the quarters themselves have changed by one month the timeliness target is not immediately changed. However, the CSO is reviewing its practices to attempt to achieve timeliness improvements.

Historical data

In order to provide consistent time series all main QNHS time series have been produced on a calendar quarters basis from Q1 1998 to date. In some cases, where input data changed (e.g. education time series where education related questions changed in 2003/4), it has not been possible to backdate results to Q1 1998, but for all series the longest time series possible has been produced on a calendar quarter basis. All series are available on www.cso.ie.

Outputs from the QNHS modules have not been effected as in those cases data was only collected for one quarter and as such would only be available for two thirds of respondents in a given calendar quarter basis. Going forward modules will be undertaken on a calendar quarter basis, in line with the main QNHS survey. In the case of modules which are repeated over time this could have an impact on comparability of results and where relevant this will be highlighted at the time of publication of results.

Comparison of calendar quarter and seasonal quarter series

In general the impact of the changeover on time series is minimal. This note focuses on the main ILO based time series (QNHS release Table 1) but the conclusions are applicable to almost all QNHS time series.

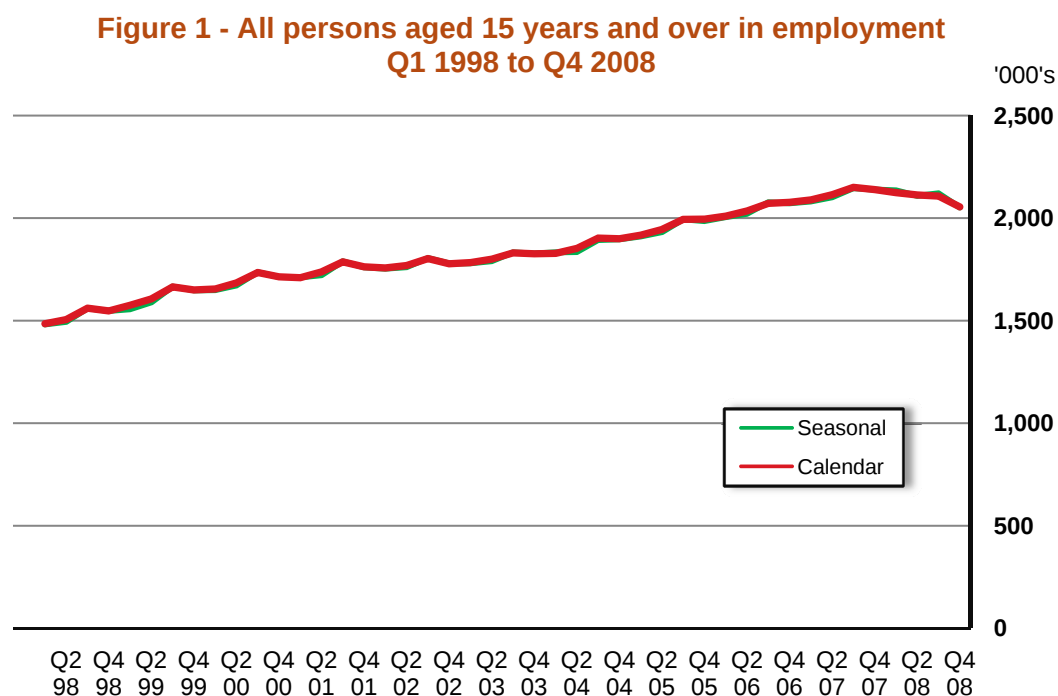


Figure 1 above shows a comparison of the time series of all persons in employment over the full period Q1 1998 to Q4 2008 on a seasonal versus calendar quarter basis. What is immediately obvious is that on a headline estimate of this nature the effect of the change over a long time period is

minimal on the graph. The effect becomes clearer when looking specifically at the level of difference as displayed on figure 2 below.

Figure 2 - Difference between calendar and seasonal quarter estimates of persons aged 15 and over in employment, 2004 to 2008

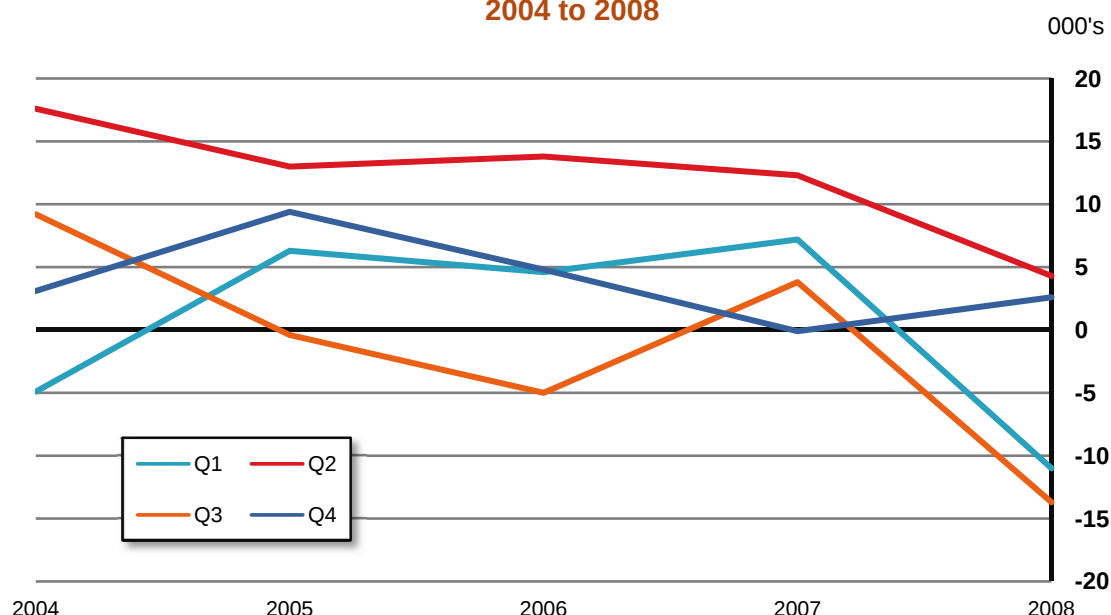


Figure 2 shows the absolute difference between estimates of the stock of persons in employment on a calendar versus seasonal basis over the most recent 5 years. The difference in question is the calendar quarter estimate minus the seasonal quarter estimate (i.e. the difference between the two lines on figure 1). A few things are of note:

- The largest difference is generally seen in the second quarter of each year. The reason for this is that the second quarter on a calendar basis includes June – a month where the numbers in the labour force and in employment typically increases due to the end of the school year. As such average employment over April to June was higher than average employment over March to May. This difference was nearly 18,000 in 2004, between 12,000 and 14,000 in 2005, 2006 and 2007 and was still over 4,000 by 2008.
- In general between 2004 and 2007 employment in Q1 and Q4 of each year was higher on a calendar quarter than on a seasonal quarter basis.
- The difference was less consistent for the third quarter of each year with the calendar quarter estimate of employment being lower than the corresponding seasonal quarter estimate in 2005 and 2006. This is due to seasonal factors whereby the number of persons in the labour force falls in September as students leave the labour force and return to full time education. As such the average level of employment in July to September could be lower than the average in June to August.

Some of these issues are seasonal in nature, particularly the consistent differences seen in the second quarter of each year. However there are a number of other possible reasons for differences in the calendar and seasonal series:

- **Population effects**

If population is changing significantly over short periods of time this could cause a systematic difference in the level of calendar and seasonal estimates. In the Irish case population was consistently rising, particularly over the 2005 to 2008 period. As such the population on a calendar quarter basis was higher than the population on a seasonal quarter basis in the majority of quarters.

- **Socio economic effects**

These are effects such as the change in economic conditions and participation in the labour market. In the Irish case employment rates and participation rates were increasing up to 2008.

- **Random effects**

These effects arise because the QNHS is a sample survey. Even if all other effects were zero it is still possible that sampling variability would cause calendar and seasonal estimates to differ.

In the Irish case both the population and socio economic effects have been positive in recent years, in particular over the 2005 to 2008 period. The result of this is that the differences were in general positive – i.e. calendar quarter estimates were in general higher than seasonal quarter estimates. However, this can be seen to have changed in 2008 where, with population growth slowing and participation rates remaining flat or falling, seasonal quarter estimates were higher than calendar quarter estimates for 2 of the 4 quarters and across the year as a whole the average difference was negative (i.e. calendar quarter estimates of employment were on average lower than seasonal quarter estimates in 2008). See table 2.

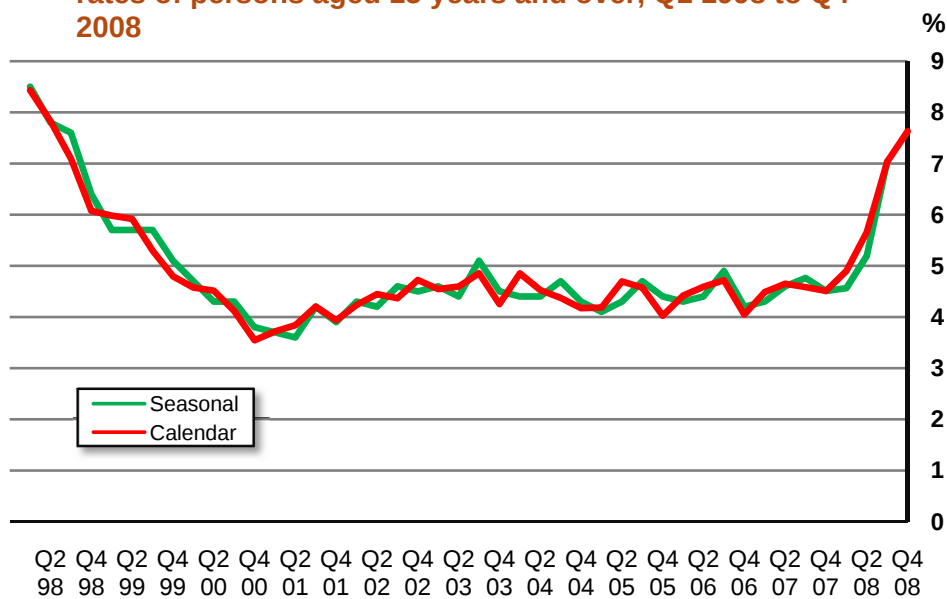
Table 2 Difference between calendar and seasonal quarter estimates of persons aged 15 years and over in employment, 2004-2008

	'000				
	2004	2005	2006	2007	2008
Q1	- 4.9	+ 6.3	+ 4.6	+ 7.2	- 11.0
Q2	+ 17.6	+ 13.0	+ 13.8	+ 12.3	+ 4.3
Q3	+ 9.2	- 0.4	- 5.0	- 3.8	- 13.7
Q4	+ 3.1	+ 9.4	+ 4.8	- 0.1	+ 2.6
Annual average difference	+ 6.3	+ 7.1	+ 4.6	+ 5.8	- 4.5

Comparison of estimates of unemployment

Figure 3 below shows the calendar and seasonal estimates of the unemployment rate between Q1 1998 and Q4 2008. Differences in this series are greater than those which could be seen in the employment series but they are still relatively low. Furthermore the calendar and seasonal series clearly follow the same overall trend over time.

Figure 3 - Calendar and Seasonal Quarters unemployment rates of persons aged 15 years and over, Q1 1998 to Q4 2008



Looking more specifically at the differences it can be seen that calendar quarter estimates of unemployment rates are generally higher than the corresponding seasonal quarter in Q1 and Q2 of each year, but lower in Q3 and Q4 of each year. In part this can be put down to the seasonal factors already referred to whereby in summer the labour force grows and typically unemployment rates increase. As with employment this causes Q2 calendar estimates of unemployment to be higher than the corresponding seasonal quarter and Q3 calendar estimates to be lower.

Figure 4 - Difference between Calendar and Seasonal Quarter estimates of the unemployment rate for persons aged 15 years and over, 2004 to 2008

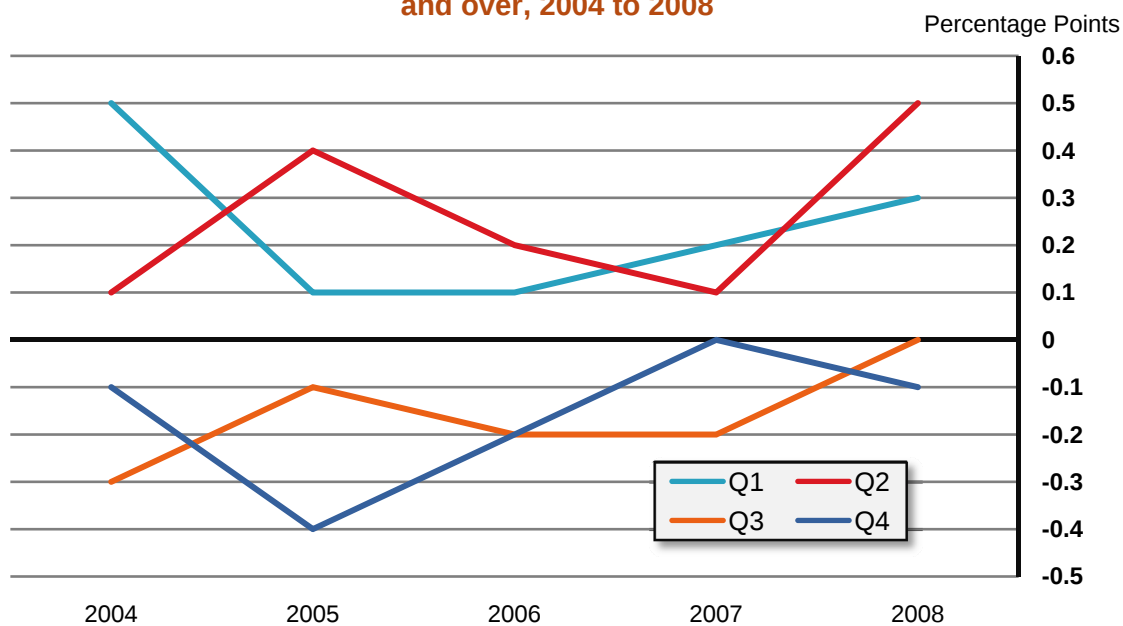


Table 3 below shows the difference in each quarter and on average for each year between 2004 and 2008. The overall average annual difference ranges from 0 to 0.2 percentage points indicating that while individual quarters did show differences the longer term trends were very similar.

Table 3 Difference between calendar and seasonal quarter estimates of the unemployment rate for persons aged 15 years and over, 2004-2008

	%				
	2004	2005	2006	2007	2008
Q1	+ 0.5	+ 0.1	+ 0.1	+ 0.2	+ 0.3
Q2	+ 0.1	+ 0.4	+ 0.2	+ 0.1	+ 0.5
Q3	- 0.3	- 0.1	- 0.2	- 0.2	0.0
Q4	- 0.1	- 0.4	- 0.2	0.0	0.0
Annual average difference	+ 0.1	0.0	0.0	0.0	+ 0.2

Other issues of note

In general the comparisons above are reflective of the main difference between the majority of calendar and seasonal quarter time series for labour market estimates. However, different specific issues arise which are worthy of note.

One issue relates to the timing of Easter and the effects of Easter on the labour market. Under seasonal quarters Easter always fell within Q2 (March-May). Under calendar quarters when Easter is in March it will be in Q1 and when it's in April it will be in Q2. During the 1998 to 2008 period Easter Sunday fell in March on three occasions, 2002, 2005 and 2008. However an analysis of main time series does not show any significant impact of the timing of Easter over the period. The seasonal summer effect can be seen to have a consistently greater effect on the level of difference between calendar and seasonal quarter estimates. One explanation for this is that the effect of Easter on the labour market is over a relatively short period (bearing in mind estimates are the average of a 3 month period). Nonetheless the timing of Easter should be borne in mind in undertaking detailed comparisons of calendar and seasonal time series.

With regard to different seasonal effects on different groups within the population one clear example can be seen in the employment rates of persons in different age groups. The employment rates of persons aged 25-54 are generally quite stable across quarters, and therefore show little differences between calendar and seasonal quarter series. However employment rates of people aged 15-24 change more significantly on a seasonal basis due to the seasonal nature of labour force participation of students. As such greater differences will be seen between calendar and seasonal series for employment rates for younger people than for persons aged 25-54. Issues of this nature should also be borne in mind when undertaking comparisons of calendar and seasonal quarter time series.

Introduction of NACE Rev. 2 industrial classification:

From Q1 2009 NACE Rev. 2 has been adopted as the primary classification of industrial sectors for use in QNHS outputs. From Q4 1997 to Q4 2008 the NACE Rev. 1.1 classification had been in use.

NACE Rev. 2 Classification

NACE is an acronym (Nomenclature generale des Activites economiques dans les Communautés Europeennes) used to designate the various statistical classifications of economic activities developed since 1970 in the European Union. NACE provides the framework for collecting and presenting a large range of statistical data according to economic activity in the fields of economic statistics (e.g. production, employment, national accounts) and in other statistical domains.

Statistics produced on the basis of NACE are comparable at European and, in general, at world level. The use of NACE is mandatory within the European Statistical System.

NACE Rev. 2 is the outcome of a five year long consultation process, which involved EU national statistical institutes, European Trade and business associations, the European Central Bank and United Nations Statistical Division. The work has been coordinated by EU Statistical Agency (Eurostat). Under the new NACE Rev. 2 regulation all labour force surveys must implement the new classification for the reference period Q1 2009.

Why is there a NACE revision?

Changes in economic structures and organisations, as well as technological developments, give rise to new activities and products, which may supersede existing activities and products. Such changes imply a constant challenge for the compilation of statistical classifications. The intervals between revisions must not be too long, since the relevance of the classification diminishes with time, nor must they be too short, since otherwise the comparability of the data over time is adversely affected. Any revision of a classification, particularly if it includes structural changes, leads to breaks in the time series.

The main criteria driving the revision were:

- Relevance to the actual world
- Better comparability with other national and international classifications
- Continuity with previous versions of the classification.

Changes in structure

At the highest level of NACE, some sections can be easily compared with the previous version of the classification. However, the introduction of some new concepts at the section level, e.g. the Information section or the grouping of activities linked to environment, makes easy overall comparison between NACE Rev. 2 and NACE Rev. 1.1.

Table 4 below presents the broad correspondence between the sections of NACE Rev. 1.1 and NACE Rev. 2.

Table 4 NACE Rev. 1.1 and NACE Rev. 2 classifications of economic activity

NACE Rev. 1.1		NACE Rev. 2	
Section	Description	Section	Description
A B	Agriculture, hunting and forestry Fishing	A	Agriculture, forestry and fishing
C	Mining and quarrying	B	Mining and quarrying
D	Manufacturing	C	Manufacturing
E	Electricity, gas and water supply	D	Electricity, gas, steam and air conditioning supply
		E	Water supply, sewerage, waste management and remediation activities
F	Construction	F	Construction
G	Wholesale and retail trade: repair of motor vehicles, motorcycles and personal and household goods	G	Wholesale and retail trade: repair of motor vehicles and motorcycles
H	Hotels and restaurants	I	Accommodation and food service activities
I	Transport, storage and communications	H	Transport and storage
		J	Information and communication
J	Financial intermediation	K	Financial and insurance activities
K	Real estate, renting and business activities	L	Real estate activities
		M	Professional, scientific and technical activities
		N	Administrative and support service activities
L	Public administration and defence; compulsory social security	O	Public administration and defence; compulsory social security
M	Education	P	Education
N	Health and social work	Q	Human health and social work activities
O	Other community, social and personal services activities	R	Arts, entertainment and recreation
		S	Other service activities
P	Activities of private households as employers and undifferentiated production activities of private households	T	Activities of households as employers: undifferentiated goods and services- producing activities of households for own use
Q	Extraterritorial organisations and bodies	U	Activities or extraterritorial organisations and bodies

Table 5 presents the changes, in numerical terms, between NACE Rev. 1.1 and NACE Rev. 2.

Table 5 Changes in number of sections etc. between NACE Rev. 1.1 and NACE Rev. 2

	NACE Rev. 1.1	NACE Rev. 2	Difference
Sections	17	21	+4
Divisions	62	88	+26
Groups	224	272	+48
Classes	514	615	+101
Manufacturing section			
Sections	1	1	0
Divisions	23	24	+1
Groups	103	95	-8
Classes	242	230	-12
Other sections			
Sections	16	20	+4
Divisions	39	64	+25
Groups	121	177	+56
Classes	272	385	+113

As can be quickly seen the NACE Rev. 2 classification is more detailed than the NACE Rev. 1.1 classification. In particular more sections are now identified for services activities with the aim of better capturing economic activity within services. In cases where there is a direct one to one correspondence (e.g. section H 'Hotels and Restaurants' in NACE Rev. 1.1 directly corresponds to section I 'Accommodation and food service activities' in NACE Rev. 2) then the two different series can be expected to be broadly comparable.

However, series will nonetheless not be exactly the same as the process of applying NACE Rev. 2 involved a very detailed recoding process whereby the new NACE classification was applied to each record in each quarter. The detailed nature of this process means it should be expected that even in the case of a one to one correspondence between a NACE Rev. 2 and NACE Rev. 1.1 section minor differences in the level of the estimates may be seen.

Significance of change to NACE Rev. 2 for QNHS outputs

Given the low number of persons employed in certain NACE Sectors in the Irish labour market the 21 NACE Rev. 2 sections will be grouped into 14 groups for publication purposes. The old and new publication groupings are shown in table 6 on the next page:

Table 6 Publication Groupings, NACE Rev. 2 (new) and NACE Rev. 1.1 (old)

New NACE Rev. 2 publication groupings	Old NACE Rev. 1.1 publication groupings
A Agriculture, forestry and fishing	A-B Agriculture, forestry and fishing
B-E Industry	C-E Other production industries
F Construction	F Construction
G Wholesale and retail trade; repair of motor vehicles and motorcycles	G Wholesale and retail trade
H Transportation and storage	H Hotels and restaurants
I Accommodation and food service activities	I Transport, storage and communication
J Information and communication	J-K Financial and other business services
K-L Financial, insurance and real estate activities	L Public administration and defence
M Professional, scientific and technical activities	M Education
N Administrative and support service activities Public administration and defence; compulsory social security	N Health
O Education	O-Q Other services
P Human health and social work activities	
R-U Other NACE activities	

To facilitate analysis and the running of seasonal adjustment on the time series NACE Rev. 2 estimates have been produced from Q1 2004 onwards. It is not proposed to backdate the NACE Rev. 2 series further than Q1 2004. For the purposes of the Q1 2009 release the NACE Rev. 2 classification will now be the classification used for tables 2a and 2b. However, a table of estimates using NACE Rev. 1.1 will be included in tables in the annex of the release. As of Q2 2009 only NACE Rev. 2 estimates will be published.

In general, caution should be applied in comparing NACE Rev. 1.1 and NACE Rev. 2 series and it is advised to use either one classification or the other for analytical purposes to ensure consistency and comparability.

In addition to the information published in the Q1 2009 QNHS Labour Market Release, full time series for all main estimates on a calendar quarter basis will be available on the CSO website (www.cso.ie) from Q1 1998 to date. In addition the full NACE Rev. 2 time series from Q1 2004 to date will be available on the website.

For further information contact:

Tara Davis on 021 453 5093 or Martina O'Callaghan on 021 453 5491.