

# Northern Ireland Index of Services Quarter 4 (Oct-Dec) 2015

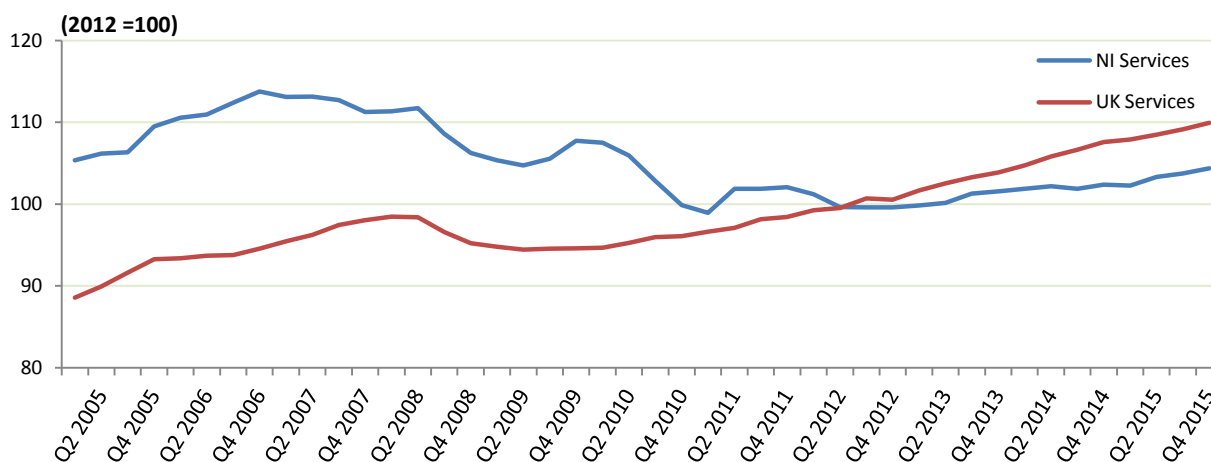


Date: 16 March 2016  
Geographical Area: Northern Ireland  
Theme: Economy Statistics  
Frequency: Quarterly

## Key points

- Provisional results from the seasonally adjusted Index of Services for the fourth quarter (Oct-Dec) of 2015 show that output in NI increased over the quarter by 0.6%, in real terms, compared with a similar rise of 0.7% reported in the UK as a whole.
- Compared to the same period one year earlier, the NI index rose by 2.0% in quarter 4 (Oct-Dec) 2015, with the UK reporting an increase of 2.2% over this period. This is the eleventh consecutive quarter of growth in NI output on this basis.
- The index has recovered by 5.5% since the recent minimum value recorded in quarter 1 (Jan-Mar) 2011, with the UK index reporting a faster recovery of 13.8% over the same time period.
- When the most recent four quarters are compared to the previous four quarters, the NI service sector reported annualised growth of 1.3% in 2015 compared to 2014. This was about half that of the UK service sector (2.5%) when compared on the same basis.

**Figure 1: Index of Services, Northern Ireland and UK**



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## **National Statistics**

The United Kingdom Statistics Authority has designated these statistics as National Statistics, in accordance with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Official Statistics.

Designation can be broadly interpreted to mean that the statistics:

- meet identified user needs;
- are well explained and readily accessible;
- are produced according to sound methods, and
- are managed impartially and objectively in the public interest.

Once statistics have been designated as National Statistics it is a statutory requirement that the Code of Practice shall continue to be observed.

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# 1

## Introduction and context

This bulletin provides provisional data from the Index of Services (IOS) survey for Northern Ireland (NI). The IOS is an important short-term measure of change in the output of the private services sector of the economy. The contents of this report will be of interest to government policy makers, Members of the Legislative Assembly, the business community, economic commentators, academics and member of the general public with an interest in the state of the NI economy. A summary of recent uses is available on the website at <https://www.detini.gov.uk/publications/further-information-ios>

The latest Department of Enterprise, Trade and Investment (DETI) Economic Commentary (October 2015) provides an overview of the state of the Northern Ireland economy, setting it in context with the UK and Republic of Ireland. This can be found at <https://www.detini.gov.uk/publications/deti-economic-commentary>

The most up-to-date official statistics on the economy and labour market, including those published on the same day as the Northern Ireland Index of Services and Index of Production, are available on the Economic Overview page of the NISRA Economic and Labour Market Statistics website at <https://www.detini.gov.uk/articles/economic-overview>

The separate Northern Ireland Index of Production (IOP) provides a general measure of changes in the output of the production industries. It is based on up-to-date information about the output and sales of the production industry. Provisional figures for quarter 4 (Oct-Dec) 2015 showed that output in Northern Ireland increased by 1.3% both quarterly and annually. The index is now 15.3% above the recent low seen in Q3 (Jul-Sep) 2009 (91.3). Further information and results from the NI IOP can be accessed at <https://www.detini.gov.uk/topics/statistics-and-economic-research/index-production>

The Index of Services is published on a Standard Industrial Classification 2007 (SIC07) basis. IOS data prior to quarter 2 (Apr-Jun) 2011 were collected on a SIC03 basis and have been converted to approximate the SIC07 coverage.

The background notes (section 5) provide detailed information on the methodology used to produce the statistics as well as information on the quality and accuracy of the data. This bulletin contains results for the service sector as a whole, for wholesale and retail trade; repair of motor vehicles and motorcycles, accommodation and food service activities, for transport, storage, information and communication, for business services and finance and for other services sub sectors. All services sector series are seasonally adjusted on a 2012=100 basis, using X13 Arima, giving data up to the most recent available quarter (Oct-Dec 2015).

The private service sector is dominated by the business services and finance and the wholesale and retail trade; repair of motor vehicles and motorcycles, accommodation and food service activities sub-sectors. Together these account for approximately 69% of the sector's total private services Gross Value Added (GVA) at 2012.

Comparative UK data (produced by the Office for National Statistics (ONS)) are presented where these are available. The latest ONS IOS results are available at: <http://www.ons.gov.uk/economy/economicoutputandproductivity/output>

This publication provides three measures of growth for the index. The quarter-on-quarter change provides the most recent measure of how the sector is changing. It is appropriate to compare consecutive quarters as the indices are seasonally adjusted to remove the effects of changes in output as a result of the time of the year. We also provide comparisons with the same quarter one year ago and a comparison of the most recent twelve months with the twelve months before. The quarterly comparison over the year provides an additional control on the seasonal effects. The comparison of the rolling annual average is useful for identifying changes in output over a longer time period than the other two approaches.

## **Northern Ireland services**

### **Revisions**

Results are provisional and subject to revision as more up-to-date data become available (e.g. through late returns). Figures can also change as a result of the seasonal adjustment factors, methodological changes or changes to classifications.

### **Date of next publication**

The next Northern Ireland Index of Services publication is planned for 15<sup>th</sup> June 2016.

# 2

## Executive summary

### Provisional results for quarter 4 (Oct-Dec) 2015

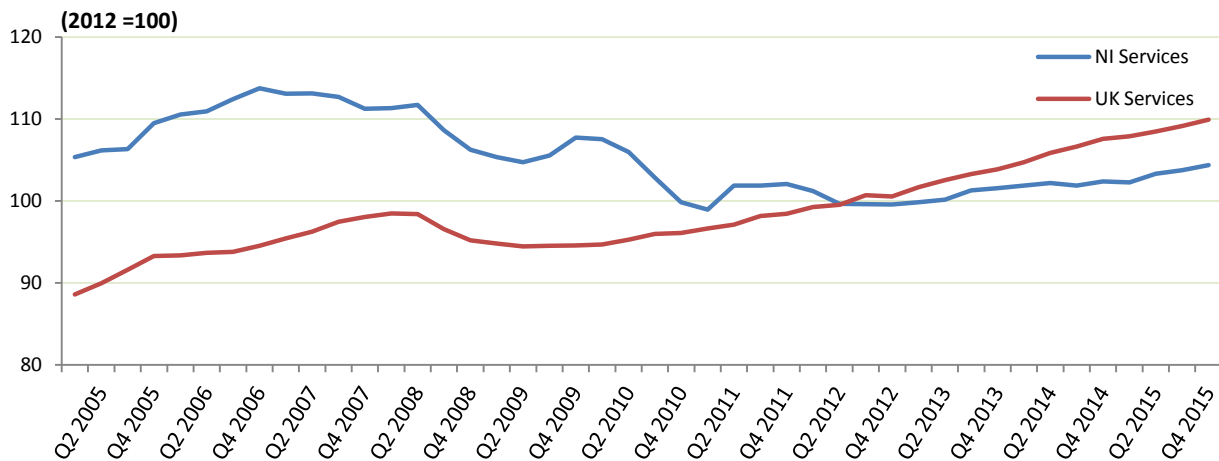
Provisional results from the Index of Services for the fourth quarter of 2015 (Oct-Dec) show that output in NI increased over the quarter by 0.6%, in real terms, whilst an increase of 0.7% was reported in the UK as a whole. In the past eight quarters, the NI index reported a total of six periods of growth (not consecutive), whilst the UK index has grown every quarter in the same time period.

Output increased in real terms compared to the same quarter one year earlier (2.0%), with the UK reporting a similar rise (2.2%) over the same period. When the most recent four quarters are compared to the previous four quarters the rate of growth is 1.3%, in real terms, which was about half that of the UK service sector (2.5%).

**Table 1: Index of Services percentage change, Northern Ireland and UK**

	NI	UK
<b>Percentage change compared to:</b>		
Previous quarter	0.6%	0.7%
Same quarter one year ago	2.0%	2.2%
Most recent four quarters compared to previous four quarters	1.3%	2.5%

**Figure 2: Index of Services, Northern Ireland and UK**



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NI private service sector output has declined by 8.2% from the peak recorded in the fourth quarter (Oct-Dec) of 2006, whilst the UK reported an increase of 16.3% over the same period.

However, there has been a 5.5% increase in the NI index from the recent low point in quarter 1 (Jan-Mar) 2011, with the UK index reporting a faster recovery of 13.8% over the same time period.

## Services subsections

The sub-sectors in Northern Ireland make different contributions to the changes in the overall index.

**Table 2: Index of Services percentage change by broad industry group, Northern Ireland**

	G&I	H&J	KLMN	PQRS
Relative weight	35.5%	13%	33.5%	18%
<b>Percentage change compared to:</b>				
Previous quarter	0.8%	-1.2%	0.9%	2.5%
Same quarter one year ago	3.5%	3.2%	-2.5%	-2.6%
Most recent four quarters compared to previous four quarters	2.6%	1.7%	-1.5%	-2.7%

Over the quarter, three broad industry group indices increased: the 'other' services (PQRS) sector (2.5%); the business services and finance (KLMN) sector (0.9%) and the wholesale and retail trade; repair of motor vehicles and motorcycles; accommodation and food service activities (G&I) sector (0.8%). The only broad industry group to report a fall in output over the quarter was the transport, storage, information & communication (H&J) sector (-1.2%).

Over the year, two broad industry group indices increased: the wholesale and retail trade; repair of motor vehicles and motorcycles; accommodation and food service activities (G&I) sector (3.5%) and the transport, storage, information & communication (H&J) sector (3.2%). There were decreases over the year in the business services and finance (KLMN) sector (-2.5%) and 'other' services (PQRS) sector (-2.6%).

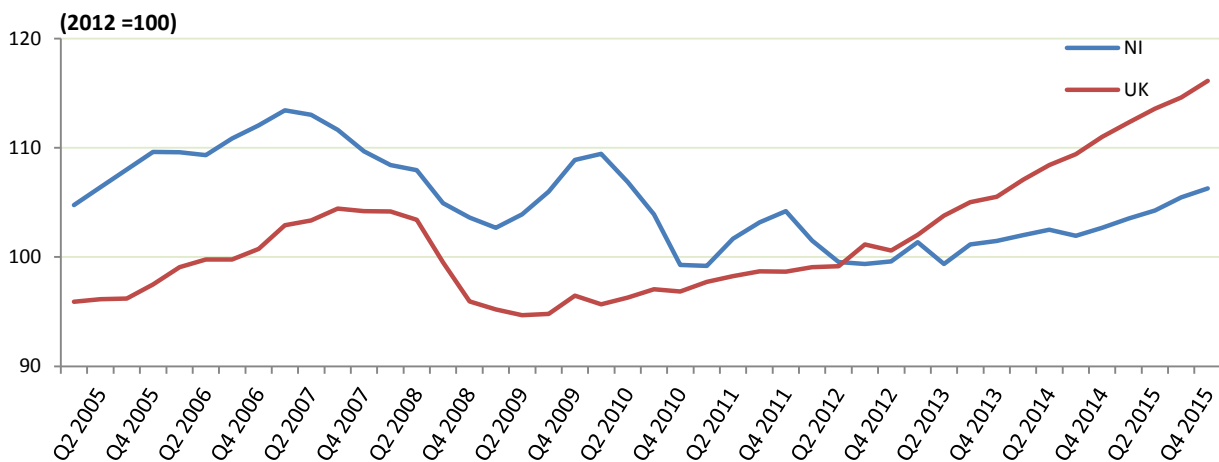
Over the latest four quarters, two broad industry group indices increased: the wholesale and retail trade; repair of motor vehicles and motorcycles; accommodation and food service activities (G&I) sector (2.6%) and the transport, storage, information & communication (H&J) sector (1.7%). There were decreases over the latest four quarters in the business services and finance (KLMN) sector (-1.5%) and the 'other' services (PQRS) sector (-2.7%).

# 3

## Services by broad industry groups

This section focuses on performance of the overall service sector and the main industry categories of which it is comprised. The private service sector is dominated by the (i) business services and finance and (ii) wholesale and retail trade; repair of motor vehicles and accommodation and food service activities sub-sectors. Together these account for approximately 69% of the sector’s total private services Gross Value Added at 2013. The sub-sectors are listed in order of importance of the contribution made to the quarterly change in the overall Index of Services.

**Figure 3: Wholesale and retail trade; repair of motor vehicles and motorcycles; accommodation and food service activities – SIC07 Sections G & I (weight = 35.5%) (seasonally adjusted series), Northern Ireland and UK**



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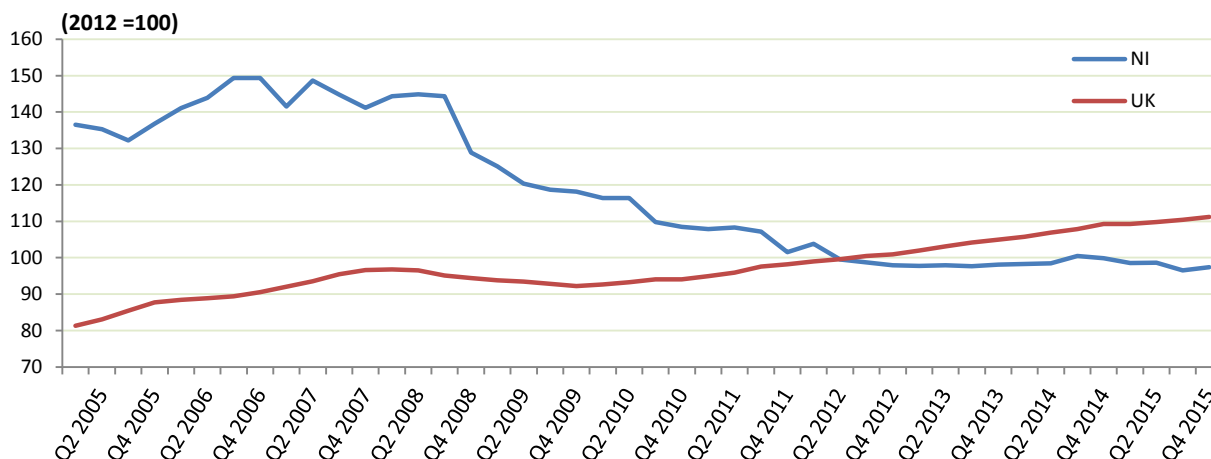
**Table 3: Wholesale and retail trade; repair of motor vehicles and motorcycles; Accommodation and food service activities percentage change, Northern Ireland and UK**

	NI	UK
<b>Percentage change compared to:</b>		
Previous quarter	0.8%	1.3%
Same quarter one year ago	3.5%	4.6%
Most recent four quarters compared to previous four quarters	2.6%	4.7%

The latest quarterly increase in this sector of 0.8% compares to an increase of 1.3% for the UK as a whole. Quarterly growth in NI was reported in the wholesale and retail trade and repair of motor vehicles and motorcycles and accommodation and food service activities. In NI, output has risen by 3.5% over the year compared to a 4.6% increase in the UK.



**Figure 4: Business services and finance – SIC07 Sections K-N (weight = 33.5%) (seasonally adjusted series), Northern Ireland and UK**



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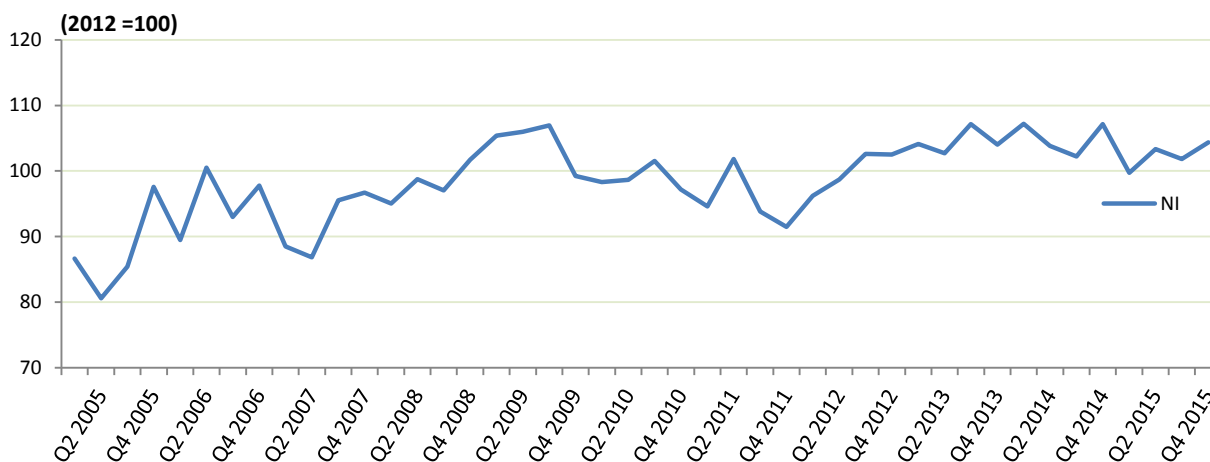
**Table 4: Business services and finance percentage change, Northern Ireland and UK**

	NI	UK
<b>Percentage change compared to:</b>		
Previous quarter	0.9%	0.7%
Same quarter one year ago	-2.5%	1.8%
Most recent four quarters compared to previous four quarters	-1.5%	2.5%

The seasonally adjusted index for business services and finance, which includes financial services and real estate activities shows that output in NI increased over the quarter (0.9%) and decreased over the year (-2.5%). This compares with a 0.7% quarterly rise and a 1.8% annual rise for the UK.

On a rolling annual average basis, the NI index is reporting a second consecutive quarter of decline in quarter 4 (Oct-Dec) 2015 following 5 quarterly increases.

**Figure 5: Other services – SIC07 Sections P-S (weight = 18%) (seasonally adjusted series), Northern Ireland**



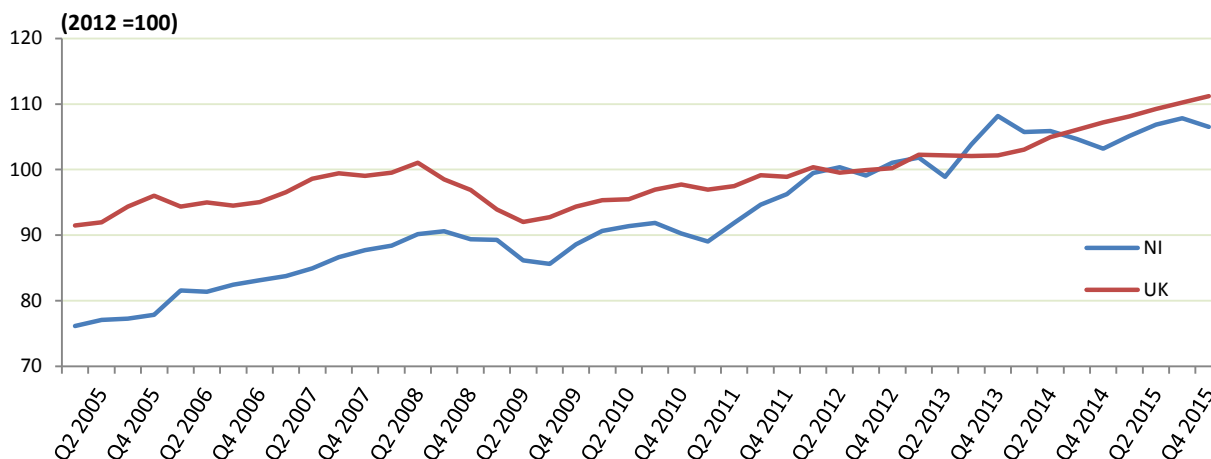
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**Table 5: Other services percentage change, Northern Ireland**

	NI
<b>Percentage change compared to:</b>	
Previous quarter	2.5%
Same quarter one year ago	-2.6%
Most recent four quarters compared to previous four quarters	-2.7%

The seasonally adjusted 'other' services index has reported an increase over the quarter (2.5%) and a decrease over the year (-2.6%). On a rolling annual average basis, this is the fourth quarterly decline following consecutive growth from quarter 3 (Jul-Sep) 2012 to quarter 4 (Oct-Dec) 2014.

**Figure 6: Transport, storage, information & communication – SIC07 Sections H & J (Weight = 13%) (seasonally adjusted series), Northern Ireland and UK**



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**Table 6: Transport, storage, information & communication percentage change, Northern Ireland and UK**

	NI	UK
<b>Percentage change compared to:</b>		
Previous quarter	-1.2%	0.9%
Same quarter one year ago	3.2%	3.7%
Most recent four quarters compared to previous four quarters	1.7%	4.2%

The index for this sector reported a decrease over the quarter of 1.2% compared with an increase of 0.9% for the UK. The NI index rose by 3.2% over the year whereas the UK index rose by 3.7% over the same time period.

On a rolling annual average basis the index for this sector in Northern Ireland increased by 1.7% over the last four quarters when compared with the previous four quarters; the UK increased by 4.2% as a whole.

## 4

## Quarterly/annual/rolling annual average changes

Table 7: Index of Services – Quarterly, annual and rolling annual average<sup>1</sup> changes by sector (seasonally adjusted), Northern Ireland

		All Services, Sections G-S				Wholesale, retail, repair, Accommodation & food services – Sections G & I (weight <sup>2</sup> = 35.5%)			Transport, storage, information & communication – Sections H & J (weight <sup>2</sup> = 13%)			Business services and finance – Sections K-N (weight <sup>2</sup> = 33.5%)			Other services – Sections P-S (weight <sup>2</sup> = 18%)						
		Index	% Change			Index	% Change			Index	% Change			Index	% Change						
			Quarter	Annual	Rolling		Quarter	Annual	Rolling		Quarter	Annual	Rolling		Quarter	Annual	Rolling	Quarter	Annual	Rolling	
2005	Q1	105.4	-	-	-	104.8	-	-	-	76.2	-	-	-	136.5	-	-	-	86.7	-	-	-
	Q2	106.2	0.8	-	-	106.4	1.6	-	-	77.0	1.2	-	-	135.3	-0.9	-	-	80.6	-7.0	-	-
	Q3	106.3	0.1	-	-	108.0	1.5	-	-	77.3	0.3	-	-	132.2	-2.2	-	-	85.4	6.0	-	-
	Q4	109.5	3.0	-	-	109.6	1.5	-	-	77.9	0.8	-	-	136.8	3.4	-	-	97.6	14.3	-	-
2006	Q1	110.5	1.0	4.9	-	109.6	0.0	4.6	-	81.5	4.7	7.1	-	141.1	3.1	3.3	-	89.4	-8.3	3.2	-
	Q2	110.9	0.4	4.5	-	109.3	-0.2	2.8	-	81.3	-0.2	5.6	-	143.9	2.0	6.4	-	100.5	12.4	24.7	-
	Q3	112.4	1.3	5.7	-	110.9	1.4	2.6	-	82.4	1.3	6.7	-	149.4	3.8	13.0	-	93.0	-7.5	8.9	-
	Q4	113.8	1.2	3.9	4.8	112.1	1.1	2.2	3.0	83.1	0.8	6.7	6.5	149.4	0.0	9.2	7.9	97.8	5.1	0.2	8.7
2007	Q1	113.1	-0.6	2.3	4.1	113.4	1.2	3.5	2.8	83.8	0.8	2.7	5.4	141.5	-5.3	0.3	7.1	88.5	-9.5	-1.1	7.6
	Q2	113.1	0.0	2.0	3.5	113.0	-0.4	3.4	2.9	84.9	1.4	4.4	5.1	148.6	5.0	3.3	6.3	86.8	-1.9	-13.6	-1.8
	Q3	112.7	-0.4	0.3	2.1	111.7	-1.2	0.7	2.4	86.6	2.0	5.1	4.7	144.8	-2.6	-3.1	2.3	95.5	10.0	2.7	-3.1
	Q4	111.3	-1.3	-2.2	0.6	109.7	-1.8	-2.1	1.4	87.7	1.2	5.5	4.4	141.2	-2.5	-5.5	-1.3	96.7	1.3	-1.1	-3.5
2008	Q1	111.3	0.1	-1.6	-0.4	108.4	-1.2	-4.4	-0.7	88.4	0.8	5.5	5.1	144.4	2.3	2.0	-0.9	95.0	-1.7	7.4	-1.5
	Q2	111.7	0.3	-1.2	-1.2	107.9	-0.4	-4.5	-2.6	90.2	2.0	6.2	5.6	144.9	0.4	-2.5	-2.3	98.8	3.9	13.7	5.4
	Q3	108.6	-2.8	-3.6	-2.2	104.9	-2.8	-6.0	-4.3	90.6	0.5	4.6	5.5	144.3	-0.4	-0.3	-1.6	97.1	-1.7	1.6	5.1
	Q4	106.3	-2.2	-4.5	-2.7	103.6	-1.3	-5.5	-5.1	89.4	-1.4	1.9	4.5	128.9	-10.7	-8.7	-2.4	101.7	4.8	5.2	6.8

<sup>1</sup> The change in the rolling annual average measures the change in the average of the latest four quarters against the same four quarters one year previous.

<sup>2</sup> The regional GVA weights relate to 2013.

**Table 7 (cont): Index of Services – Quarterly, annual and rolling annual average<sup>1</sup> changes by sector (seasonally adjusted), Northern Ireland**

		All Services, Sections G-S				Wholesale, retail, repair, Accommodation & food services – Sections G & I (weight <sup>2</sup> = 35.5%)				Transport, storage, information & communication – Sections H & J (weight <sup>2</sup> = 13%)				Business services and finance – Sections K-N (weight <sup>2</sup> = 33.5%)				Other services – Sections P-S (weight <sup>2</sup> = 18%)			
		Index	% Change			Index	% Change			Index	% Change			Index	% Change			Index	% Change		
			Quarter	Annual	Rolling		Quarter	Annual	Rolling		Quarter	Annual	Rolling		Quarter	Annual	Rolling		Quarter	Annual	Rolling
2009	Q1	105.3	-0.9	-5.4	-3.7	102.7	-0.9	-5.3	-5.3	89.3	-0.1	1.0	3.4	125.0	-3.0	-13.4	-6.2	105.4	3.6	10.9	7.7
	Q2	104.7	-0.6	-6.2	-4.9	103.9	1.2	-3.8	-5.2	86.2	-3.5	-4.4	0.7	120.3	-3.8	-17.0	-9.8	106.0	0.6	7.3	6.3
	Q3	105.5	0.8	-2.8	-4.8	106.0	2.0	1.0	-3.4	85.6	-0.7	-5.5	-1.8	118.7	-1.3	-17.7	-14.2	107.0	0.9	10.2	8.4
	Q4	107.7	2.1	1.4	-3.3	108.9	2.7	5.1	-0.8	88.6	3.5	-0.8	-2.5	118.2	-0.5	-8.3	-14.3	99.2	-7.2	-2.4	6.4
2010	Q1	107.5	-0.2	2.1	-1.5	109.5	0.5	6.6	2.2	90.6	2.3	1.6	-2.3	116.4	-1.5	-6.9	-12.8	98.3	-0.9	-6.7	1.9
	Q2	106.0	-1.5	1.2	0.4	106.9	-2.4	2.9	3.9	91.4	0.8	6.1	0.2	116.4	0.0	-3.3	-9.4	98.6	0.3	-6.9	-1.7
	Q3	102.8	-2.9	-2.6	0.5	103.9	-2.8	-2.0	3.1	91.9	0.5	7.4	3.5	109.8	-5.7	-7.5	-6.5	101.5	2.9	-5.1	-5.3
	Q4	99.9	-2.9	-7.3	-1.7	99.3	-4.5	-8.8	-0.5	90.3	-1.8	1.9	4.2	108.5	-1.2	-8.2	-6.4	97.2	-4.2	-2.1	-5.2
2011	Q1	98.9	-0.9	-8.0	-4.2	99.2	-0.1	-9.4	-4.4	89.0	-1.4	-1.8	3.3	107.9	-0.6	-7.3	-6.5	94.6	-2.7	-3.8	-4.5
	Q2	101.9	3.0	-3.8	-5.4	101.7	2.5	-4.9	-6.3	91.9	3.2	0.5	1.9	108.3	0.4	-7.0	-7.5	101.8	7.6	3.2	-2.0
	Q3	101.8	0.0	-1.0	-5.1	103.2	1.5	-0.7	-6.0	94.7	3.0	3.0	0.9	107.2	-1.0	-2.4	-6.3	93.8	-7.8	-7.6	-2.6
	Q4	102.0	0.2	2.2	-2.8	104.2	1.0	5.0	-2.7	96.3	1.7	6.6	2.1	101.6	-5.3	-6.4	-5.8	91.5	-2.5	-5.9	-3.5
2012	Q1	101.2	-0.8	2.3	-0.2	101.5	-2.6	2.3	0.3	99.5	3.4	11.8	5.4	103.8	2.2	-3.7	-4.9	96.2	5.2	1.7	-2.2
	Q2	99.6	-1.5	-2.2	0.3	99.5	-1.9	-2.1	1.1	100.4	0.9	9.2	7.6	99.5	-4.2	-8.1	-5.1	98.7	2.6	-3.1	-3.8
	Q3	99.6	0.0	-2.2	0.0	99.4	-0.2	-3.7	0.3	99.1	-1.3	4.7	8.0	98.7	-0.8	-7.9	-6.5	102.6	4.0	9.4	0.4
	Q4	99.6	0.0	-2.4	-1.2	99.6	0.2	-4.4	-2.0	101.1	2.0	5.0	7.6	97.9	-0.8	-3.6	-5.9	102.5	-0.1	12.1	4.8
2013	Q1	99.8	0.3	-1.3	-2.0	101.4	1.8	-0.1	-2.6	101.8	0.8	2.3	5.2	97.8	-0.2	-5.8	-6.4	104.1	1.6	8.2	6.4
	Q2	100.2	0.3	0.5	-1.4	99.4	-2.0	-0.2	-2.1	98.9	-2.9	-1.5	2.6	97.9	0.1	-1.6	-4.8	102.7	-1.3	4.1	8.4
	Q3	101.3	1.1	1.7	-0.4	101.1	1.8	1.8	-0.8	103.8	5.0	4.8	2.6	97.6	-0.3	-1.1	-3.1	107.2	4.3	4.4	7.1
	Q4	101.5	0.3	2.0	0.7	101.5	0.3	1.9	0.8	108.2	4.2	7.1	3.2	98.1	0.4	0.1	-2.2	104.0	-2.9	1.5	4.5

<sup>1</sup> The change in the rolling annual average measures the change in the average of the latest four quarters against the same four quarters one year previous.

<sup>2</sup> The regional GVA weights relate to 2013.

**Table 7 (cont): Index of Services – Quarterly, annual and rolling annual average<sup>1</sup> changes by sector (seasonally adjusted), Northern Ireland**

		All Services, Sections G-S				Wholesale, retail, repair, Accommodation & food services – Sections G & I (weight <sup>2</sup> = 35.5%)				Transport, storage, information & communication – Sections H & J (weight <sup>2</sup> = 13%)				Business services and finance – Sections K-N (weight <sup>2</sup> = 33.5%)				Other services – Sections P-S (weight <sup>2</sup> = 18%)			
		Index	% Change			Index	% Change			Index	% Change			Index	% Change			Index	% Change		
			Quarter	Annual	Rolling		Quarter	Annual	Rolling		Quarter	Annual	Rolling		Quarter	Annual	Rolling		Quarter	Annual	Rolling
2014	Q1	101.9	0.3	2.0	1.6	102.0	0.5	0.6	1.0	105.7	-2.3	3.8	3.5	98.2	0.2	0.5	-0.5	107.2	3.0	3.0	3.2
	Q2	102.2	0.3	2.0	1.9	102.5	0.5	3.2	1.9	105.9	0.1	7.1	5.7	98.5	0.2	0.6	0.0	103.8	-3.1	1.1	2.5
	Q3	101.9	-0.3	0.6	1.6	101.9	-0.5	0.8	1.6	104.7	-1.1	0.8	4.6	100.5	2.1	2.9	1.0	102.2	-1.6	-4.6	0.2
	Q4	102.4	0.5	0.8	1.4	102.7	0.7	1.2	1.4	103.2	-1.4	-4.6	1.6	99.9	-0.6	1.8	1.4	107.1	4.8	3.0	0.6
2015	Q1	102.3	-0.1	0.4	0.9	103.5	0.8	1.5	1.7	105.2	1.9	-0.5	0.5	98.5	-1.3	0.3	1.4	99.7	-6.9	-7.0	-2.0
	Q2	103.3	1.0	1.1	0.7	104.3	0.7	1.7	1.3	106.9	1.6	0.9	-0.9	98.6	0.1	0.2	1.3	103.3	3.6	-0.5	-2.3
	Q3	103.7	0.4	1.8	1.0	105.5	1.2	3.5	2.0	107.8	0.9	3.0	-0.3	96.5	-2.1	-3.9	-0.4	101.8	-1.5	-0.4	-1.3
	Q4	104.4	0.6	2.0	1.3	106.3	0.8	3.5	2.6	106.5	-1.2	3.2	1.7	97.4	0.9	-2.5	-1.5	104.4	2.5	-2.6	-2.7

[Download in excel](#)

<sup>1</sup> The change in the rolling annual average measures the change in the average of the latest four quarters against the same four quarters one year previous.

<sup>2</sup> The regional GVA weights relate to 2013.

# 5

## Background notes

### Background

The experimental Index of Services (IOS) was first published in Northern Ireland on 18 May 2005. Following assessment by the UK Statistics Authority the Index of Services was designated as a National Statistic on 5 August 2011. It is published quarterly and is designed to provide a general measure of changes in the output of the private sector service industries in Northern Ireland (this is defined as Standard Industrial Classification 2007 (SIC07) sections G to S). Based on employee jobs, in 2013 these private sector service industries accounted for 60% of all service sector Regional Gross Value Added (GVA). See link to Regional GVA information

<http://www.ons.gov.uk/economy/grossvalueaddedgva/bulletins/regionalgrossvalueaddedincomeapproach/december2015>

### Index numbers

An index number is a convenient form of expressing a series in a way that makes it easier to see changes in that series. The numbers in the series are expressed relatively, with one number in that series chosen to be the 'base' (usually expressed as 100) and other numbers being measured relative to that base. Index numbers have the advantage that they allow different types of data to be combined on a consistent basis, e.g. deflated current price data with volume data. The aim of the Index of Services is to provide a reliable indicator of short-term changes in the output of the service sector. Index numbers are a very good way of communicating this message. For example, the Index of Services quarter 4 (Oct-Dec) 2015 value of 104.4 means that the level of output then was 4.4% higher than in 2012 which had a base year value of 100. The NI IOS is a Laspeyres volume index. The UK economic accounts are based on the European System of Accounts (ESA), which in turn is based on the UN System of Accounts (SNA). The ESA-preferred type of output indicator is one that measures deflated gross output (or turnover) for an industry. These use an approximate price change estimator to remove the effects of inflation. For this reason we, and the ONS, use a Laspeyres volume index (as opposed to Paasche, Lowe or Fisher indices). The ONS paper, link following, on the Methodology of the Monthly Index of Services (Annex A: Mathematical Formulation of the Index of Services) gives a good explanation of Index numbers theory.

<http://www.ons.gov.uk/ons/guide-method/user-guidance/index-of-services-methodology/index-construction/index.html>

### Index sample

The IOS sample was refreshed for quarter 1 (Jan-Mar) 2014 and was drawn on a SIC07 basis. The sample was boosted from around 1,600 businesses and it is now approximately 3,300 companies. As a statutory survey the response rate is more than 80%. The sample of service industries is selected directly from the Inter Departmental Business Register (IDBR), by stratifying companies by industry and company size. The sample consists of a census of dominant companies and a Neyman stratified random sample of the remaining companies. The census element consists of all companies employing 100 or more employees and those employing 0 to 99 employees and having a turnover of £10 million or more. It is desirable to include these low employment high turnover companies in the sample in order to provide a more comprehensive picture of the overall economy. This

sample has been designed to give sufficiently accurate results, yet keep the total costs to businesses to a minimum.

Questionnaires were issued to both the new and existing businesses on each sample, for three quarters, as a means to calculate a link factor between the old sample (up to and including quarter 4 (Oct-Dec) 2013) and the new sample (from quarter 1 (Jan-Feb) 2014 onwards). With advice from Office for National Statistics Methodologists, as the result of a successful Quality Improvement Fund, a methodology has been developed in order to integrate the new samples without making significant changes to the back series data, thus giving a meaningful index.

## **Data collection, validation and Index calculation**

The survey forms are issued quarterly, immediately after the period to which they relate. For example, forms are issued in October asking for information relating to July to September. Companies are asked to provide their turnover for the previous quarter. Data validation is carried out ensuring that data fall within the expected limits, contacting the company where appropriate for clarification.

From quarter 1 2016, a Quarterly Business Survey form will be issued to all businesses who previously received an Index of Services form and a Quarterly Employment Survey form and companies will be asked to provide employment and turnover information at the same time. This combined survey form, coupled with the roll-out of an 'eForm' (designed to collect data electronically) is intended to reduce burden to businesses currently receiving two separate forms at different times.

The overall Index of Services is calculated by weighting together industry level indices that describe the activity of an industry sector using the Standard Industrial Classification. This is done using relative shares of regional GVA on an annual basis. The annual weights from regional GVA are more up to date and their use is in line with recommendations from the Office for National Statistics (ONS).

The Northern Ireland Index of Services is annually chain-linked (Chain-linking involves the linking of growth estimates between different time periods in order to produce a continuous time series) using private sector GVA estimates derived from regional accounts using the fourth quarter of the preceding year as the link period. Inaccuracies caused by the assumption of a stable relationship between GVA and turnover are reduced using this methodology. When annual weights are used the assumption only has to be maintained from one year to the next year. A paper on annual chain-linking from ONS is available at <http://www.ons.gov.uk/ons/rel/elmr/economic-trends--discontinued-/no--630--may-2006/methodological-note--annual-chain-linking.pdf>

The standard method for linking two series (for example one based on a SIC03 sample and one based on SIC07 sample) is to calculate the index under the old and new circumstances over some link period, and then apply the growth of the subsequent new series to the old series. As the relationship of both samples to the IDBR was known, the IDBR was used to provide the link period. Thus, the ratio of the IDBR turnover for quarter 1 (Jan-Mar) 2011 and quarter 2 (Apr-Jun) 2011 is known. We have the quarter 2 (Apr-Jun) 2011 value (SIC07) and the quarter 1 (Jan-Mar) 2011 value (converted from SIC03 to SIC07). We can therefore create the following link factor:

$$\text{link factor} = \frac{(\text{Q2 2011 sample estimate} * \text{IDBR Q1 2011 value})}{(\text{Q1 2011 sample estimate} * \text{IDBR Q2 2011 value})}$$



This can then be applied to the converted back series, thus retaining the previous growth rates.

For quarter 1 (Jan-Mar) 2014 and quarter 2 (Apr-Jun) 2014, questionnaires were issued to companies on both the existing sample and the new sample, thus allowing a link factor to be calculated based on the average percentage change between the two. This link factor was then applied to each of the quarterly turnover back series (grossed & deflated), in order to give a series of the same magnitude as the new sample series (from quarter 1 (Jan-Mar) 2014 onwards).

## **Deflation**

All series, unless otherwise quoted, are measured at constant market price (2012 = 100). Deflators adjust the value series to take out the effect of price change to give the volume series. Details on the changes to the ONS deflators methodology can be found at the following link <http://www.ons.gov.uk/ons/guide-method/method-quality/specific/economy/national-accounts/articles/deflation-improvements-in-the-uk-national-accounts.pdf>

## **Seasonal adjustment**

The index numbers in this statistical bulletin are all seasonally adjusted. This aids interpretation by removing annually recurring fluctuations, for example due to holidays or other regular seasonal patterns. All IOS time series are checked on an annual basis (December in each year) using X-13 ARIMA SEATS for evidence of seasonality, and those series where seasonality is detected are adjusted using X-13 ARIMA SEATS in order to obtain a clear picture of the general trend. Unadjusted data are also available.

The figures presented in this publication are calculated using the X-13 ARIMA SEATS method of seasonal adjustment. The following is a link to an ONS Guide to seasonal adjustment with X-12 ARIMA (an updated guide for X-13 ARIMA SEATS is currently being finalised by ONS):

<http://www.ons.gov.uk/ons/guide-method/method-quality/general-methodology/time-series-analysis/guide-to-seasonal-adjustment.pdf>

## **Quality reporting**

One indicator of the reliability of the figures in this bulletin can be obtained by monitoring the size of revisions. The IOS revisions policy can be found at <https://www.detini.gov.uk/articles/quality-and-revisions>

## **Summary quality report**

A summary quality report for this publication can be found on the IOS Quality and Revisions page of the website at <https://www.detini.gov.uk/articles/quality-and-revisions>

## **Publication of results on a SIC07 basis**

A Standard Industrial Classification (SIC) was first introduced into the UK in 1948 for use in classifying business establishments by the type of economic activity in which they are engaged. The UK is required by European legislation to revise the SIC in parallel with NACE (the statistical classification of economic activities in the European Communities) so that both systems are identical down to and including the four digit class level. More information on SIC07 can be found at the following links:

<http://www.ons.gov.uk/ons/guide-method/classifications/current-standard-classifications/standard-industrial-classification/index.html>

<http://www.ons.gov.uk/ons/rel/naa2/second-estimate-of-gdp/q2-2011/art---bb11-improvements-to-gdp--ios--iop.html>

## **Status of figures in current bulletin**

Figures in this publication of IOS reflect the move to using 2013 GVA which became available on 9 December 2015.

Results are published on a SIC07 basis and in line with ONS; the base year of the Northern Ireland Index of Services (IOS) is 2012=100.

All figures are published to one decimal place. Figures for annual averages and percentage changes over the previous quarter and year are based on unrounded figures and may not agree with the published constituent parts.

Results, particularly for the latest quarter, are provisional and are subject to revision as more up to date information becomes available.

Comparisons between the Index of Services and the Annual Business Inquiry (ABI) may not necessarily match because of definitional and coverage differences.

## **Planned future revisions**

The IOS revisions policy can be found at

<https://www.detini.gov.uk/publications/quality-and-revisions-documents-ios>

The SIC07 code of 47 (retail) is scheduled to be constructed as a separate series and it is planned to publish this series in the near future.

## **Publications policy**

All Economic and Labour Market statistics publications are available to download free of charge from the website

<https://www.detini.gov.uk/topics/deti-statistics-and-economic-research>

The IOS bulletin and tables from the current publication, which includes all the data from the start of the series in 2005, are available in Excel format to download free of charge from the IOS website at <https://www.detini.gov.uk/topics/statistics-and-economic-research/index-services>

Future IOS publications are due to be published on the same day as the Index of Production and the Quarterly Employment Survey in March, June, September and December of each year.

The Economic and Labour Market statistics publication schedule is available at <https://www.detini.gov.uk/publications/elms-publication-schedule>

The list of people given pre-release access to this publication is available at <https://www.detini.gov.uk/publications/statistical-protocols-and-compliance-pre-release-information>

## **SIC 2007 definitions**

### **Wholesale and retail trade; repair of motor vehicles and motorcycles; Accommodation and food service activities – SIC07 Sections G&I (Weight = 35.5%)**

This sector includes wholesale and retail sale and the supply of services incidental to the sale of merchandise as well as the repair of motor vehicles and motorcycles. This sector also includes the provision of short-stay accommodation for visitors and the provision of complete meals and drinks fit for immediate consumption.

### **Transport, storage, information & communication – SIC07 Sections H & J (Weight = 13%)**

This sector includes the provision of passenger or freight transport and associated activities, postal and courier activities, the production and distribution of information and cultural products, as well as data or communications, information technology activities and the processing of data and other information service activities.

### **Business services and finance – SIC07 Sections K-N (Weight = 33.5%)**

This sector includes financial service activities, real estate activities, specialised professional, scientific and technical activities and a variety of activities that support general business operations.

### **Other services – SIC07 Sections P-S (Weight = 18%)**

This sector includes other activities not covered elsewhere - education, health & social work, arts, entertainment and recreation and other services. There are no comparable UK figures for other services.

## **Next publication**

The next bulletin will be published on 15<sup>th</sup> June 2016.

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