



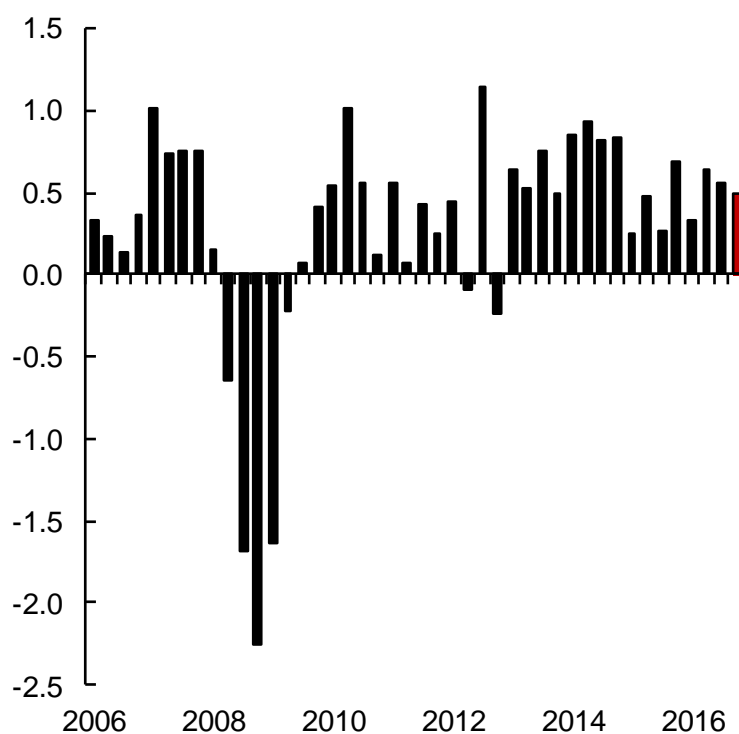
Press Release

GDP growth of 0.5 per cent in 2016Q4

Embargo until 15.00 hours on 11th January 2016

Our monthly estimates of GDP suggest that output grew by 0.5 per cent in the three months ending in December 2016 after growth of 0.5 per cent in the three months ending in November 2016. Our estimates suggest that the economy grew by 2 per cent in 2016, compared with 2.2 per cent in 2015. These figures are close to the UK's long run potential growth rate.

Figure 1. Real GDP growth (per cent per quarter)



Source: ONS, NIESR. Note: red bar indicates NIESR estimate for 2016Q4.

NIESR's latest quarterly forecast (published 2nd November 2016) projects GDP growth of 2 per cent per annum in 2016 and 1.4 per cent in 2017. CPI inflation is expected to reach 3.8 per cent at the end of 2017 (see [here](#) for the associated press release).

Technical notes: Our track record in producing early estimates of GDP suggests that our projection for the most recent three-month period has a root mean squared error (RMSE) of 0.224% point (for the full sample period 1999Q3-2015Q4) when compared to the first estimate produced by the ONS. For the period 2008Q1 to 2015Q4 the RMSE is 0.290% point. The impact of the adverse weather in 2010Q4 is a noticeable outlier. Excluding 2010Q4 from the analysis, the RMSE for the full sample period is 0.188% point, and for 2008Q1 to 2015Q4 the RMSE is 0.231% point. These comparisons can be made only for complete calendar quarters. Outside calendar quarters the figures are less reliable than this.

A paper describing the methodology used to produce the data was published in the February 2005 volume of the *Economic Journal*:

Mitchell, J. Smith, R. J., Weale, M. R., Wright, S. and Salazar, E. L. (2005) 'An Indicator of Monthly GDP and an Early Estimate of Quarterly GDP Growth', *Economic Journal*, No. 551, pp. F108-F129.

- Available from: [http://onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1468-0297](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1468-0297)

A paper describing the methodology used to produce the data for the inter-war period was published in the October 2012 volume of *Explorations in Economic History*:

Mitchell, J., Solomou, S. and Weale, M. (2012) 'Monthly GDP estimates for inter-war Britain', *Explorations in Economic History*, Vol. 49, No. 4, pp. 543-556.

- Available from: <http://www.journals.elsevier.com/explorations-in-economic-history/>

From April until October 2006 our estimates were computed using the Index of Services published by ONS. However this monthly series shows considerable volatility which has caused us some problems in estimating GDP. From our November 2006 press release we have therefore reverted to using a model of private services output based on indicator variables. This means that, while all our figures for calendar quarters are fully coherent with ONS data, our estimates of monthly private service output are not. The series can be thought of as indicating the underlying value of the ONS series.

Notes for editors: For further information please contact the NIESR Press Office or Luca Pieri on 020 7654 1931/ l.pieri@niesr.ac.uk

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Table 1: Summary Table of Quarterly Growth Rates (2013=100)

	Monthly Data		3 months ending in month shown		Quarterly Growth % per quarter	
	Industry	GDP	Industry	GDP	Industry	GDP
Jan-15	101.9	104.4	102.0	104.5	0.3%	0.7%
Feb-15	102.3	104.6	102.1	104.5	0.2%	0.4%
Mar-15	102.7	104.8	102.3	104.6	0.4%	0.3%
Apr-15	102.8	105.0	102.6	104.8	0.6%	0.2%
May-15	103.1	105.1	102.9	104.9	0.8%	0.4%
Jun-15	103.0	105.2	103.0	105.1	0.6%	0.5%
Jul-15	102.4	105.1	102.8	105.1	0.2%	0.4%
Aug-15	103.3	105.3	102.9	105.2	0.0%	0.2%
Sep-15	103.4	105.8	103.0	105.4	0.1%	0.3%
Oct-15	103.6	106.0	103.4	105.7	0.6%	0.5%
Nov-15	102.7	106.2	103.2	106.0	0.3%	0.8%
Dec-15	101.6	106.1	102.6	106.1	-0.4%	0.7%
Jan-16	102.4	106.6	102.2	106.3	-1.2%	0.6%
Feb-16	102.2	106.4	102.1	106.4	-1.1%	0.3%
Mar-16	102.7	106.5	102.4	106.5	-0.2%	0.3%
Apr-16	105.0	107.1	103.3	106.7	1.1%	0.3%
May-16	104.4	107.1	104.0	106.9	1.9%	0.5%
Jun-16	104.3	107.3	104.6	107.2	2.1%	0.6%
Jul-16	104.5	107.8	104.4	107.4	1.0%	0.7%
Aug-16	104.1	107.8	104.3	107.6	0.3%	0.7%
Sep-16	103.8	107.9	104.1	107.8	-0.4%	0.6%
Oct-16	102.6	107.9	103.5	107.8	-0.9%	0.4%
Nov-16	104.7	108.6	103.7	108.1	-0.6%	0.5%
Dec-16	104.5	108.5	103.9	108.3	-0.2%	0.5%

More...

Table 2: Output by Sector (2013=100)

	Industry	Agriculture	Construction	Private Services	Public Services	GDP(B)	GDP
Jan-15	101.9	114.9	112.2	106.4	101.5	104.9	104.4
Feb-15	102.3	113.7	113.3	106.5	101.6	105.1	104.6
Mar-15	102.7	113.6	113.8	106.6	101.7	105.3	104.8
Apr-15	102.8	114.6	114.0	106.9	101.8	105.5	105.0
May-15	103.1	115.3	113.9	107.0	102.0	105.7	105.1
Jun-15	103.0	115.6	113.5	107.2	102.1	105.8	105.2
Jul-15	102.4	115.6	112.9	107.3	102.2	105.7	105.1
Aug-15	103.3	115.7	112.7	107.6	102.1	105.9	105.3
Sep-15	103.4	115.8	112.8	108.3	102.6	106.4	105.8
Oct-15	103.6	116.0	113.3	108.5	102.6	106.6	106.0
Nov-15	102.7	116.1	113.8	109.1	102.9	106.8	106.2
Dec-15	101.6	116.2	114.3	108.9	103.5	106.7	106.1
Jan-16	102.4	116.1	114.7	109.8	103.4	107.2	106.6
Feb-16	102.2	115.9	115.1	109.4	103.5	107.0	106.4
Mar-16	102.7	115.5	115.4	109.6	103.4	107.1	106.5
Apr-16	105.0	114.9	115.7	110.2	103.3	107.7	107.1
May-16	104.4	114.5	115.7	110.3	103.5	107.7	107.1
Jun-16	104.3	114.1	115.4	110.8	103.6	108.0	107.3
Jul-16	104.5	113.8	114.9	111.6	103.8	108.4	107.8
Aug-16	104.1	113.7	114.5	111.7	103.8	108.5	107.8
Sep-16	103.8	113.6	114.4	112.0	104.0	108.6	107.9
Oct-16	102.6	113.6	114.4	112.4	103.9	108.6	107.9
Nov-16	104.7	113.6	114.4	113.1	104.0	109.3	108.6
Dec-16	104.5	113.6	114.4	112.9	104.1	109.2	108.5

More...

Table 3: Output in Quarter Ending in Month Shown (2013=100)

	Industry	Agriculture	Construction	Private Services	Public Services	GDP(B)	GDP
Jan-15	102.0	116.8	110.9	106.4	101.8	105.0	104.5
Feb-15	102.1	115.3	112.1	106.5	101.7	105.0	104.5
Mar-15	102.3	114.1	113.1	106.5	101.6	105.1	104.6
Apr-15	102.6	114.0	113.7	106.7	101.7	105.3	104.8
May-15	102.9	114.5	113.9	106.9	101.9	105.5	104.9
Jun-15	103.0	115.2	113.8	107.1	102.0	105.7	105.1
Jul-15	102.8	115.5	113.4	107.2	102.1	105.7	105.1
Aug-15	102.9	115.6	113.0	107.4	102.2	105.8	105.2
Sep-15	103.0	115.7	112.8	107.7	102.3	106.0	105.4
Oct-15	103.4	115.8	112.9	108.1	102.4	106.3	105.7
Nov-15	103.2	116.0	113.3	108.6	102.7	106.6	106.0
Dec-15	102.6	116.1	113.8	108.8	103.0	106.7	106.1
Jan-16	102.2	116.1	114.3	109.3	103.3	106.9	106.3
Feb-16	102.1	116.0	114.7	109.4	103.4	107.0	106.4
Mar-16	102.4	115.8	115.1	109.6	103.4	107.1	106.5
Apr-16	103.3	115.4	115.4	109.8	103.4	107.3	106.7
May-16	104.0	115.0	115.6	110.1	103.4	107.5	106.9
Jun-16	104.6	114.5	115.6	110.4	103.5	107.8	107.2
Jul-16	104.4	114.1	115.3	110.9	103.7	108.0	107.4
Aug-16	104.3	113.9	115.0	111.4	103.8	108.3	107.6
Sep-16	104.1	113.7	114.6	111.8	103.9	108.5	107.8
Oct-16	103.5	113.6	114.4	112.0	103.9	108.6	107.8
Nov-16	103.7	113.6	114.4	112.5	104.0	108.8	108.1
Dec-16	103.9	113.6	114.4	112.8	104.0	109.0	108.3

More...

Table 4: Growth in Quarter Ending in Month Shown over Previous Quarter (% at Annual Rate)

	Industry	Agriculture	Construction	Private Services	Public Services	GDP(B)	GDP
Jan-15	1.3%	2.1%	3.7%	5.2%	-1.7%	2.7%	2.9%
Feb-15	0.8%	-6.9%	8.1%	3.3%	-1.8%	1.5%	1.7%
Mar-15	1.4%	-12.0%	11.4%	1.6%	-1.9%	0.8%	0.8%
Apr-15	2.4%	-9.3%	10.3%	1.0%	-0.2%	1.2%	1.0%
May-15	3.2%	-2.7%	6.8%	1.4%	0.7%	1.9%	1.5%
Jun-15	2.6%	3.9%	2.5%	2.0%	1.6%	2.3%	1.9%
Jul-15	0.9%	5.4%	-0.9%	2.0%	1.5%	1.7%	1.4%
Aug-15	0.1%	3.9%	-3.0%	2.0%	1.2%	1.1%	1.0%
Sep-15	0.3%	1.7%	-3.5%	2.5%	1.2%	1.1%	1.1%
Oct-15	2.4%	1.1%	-1.8%	3.5%	1.2%	2.1%	2.1%
Nov-15	1.3%	1.2%	1.0%	4.7%	2.1%	3.0%	3.1%
Dec-15	-1.5%	1.4%	3.6%	4.3%	2.8%	2.7%	2.7%
Jan-16	-4.6%	1.0%	4.8%	4.4%	3.4%	2.4%	2.4%
Feb-16	-4.4%	0.2%	5.0%	2.9%	3.0%	1.3%	1.3%
Mar-16	-0.8%	-1.0%	4.6%	3.0%	1.6%	1.5%	1.5%
Apr-16	4.2%	-2.4%	4.1%	1.7%	0.4%	1.3%	1.3%
May-16	7.9%	-3.7%	3.2%	2.4%	-0.1%	2.1%	2.2%
Jun-16	8.6%	-4.4%	1.7%	2.9%	0.4%	2.6%	2.7%
Jul-16	4.3%	-4.3%	-0.3%	4.2%	1.1%	2.9%	2.8%
Aug-16	1.0%	-3.7%	-2.3%	4.9%	1.4%	2.9%	2.6%
Sep-16	-1.6%	-2.8%	-3.4%	4.9%	1.6%	2.6%	2.3%
Oct-16	-3.4%	-1.8%	-3.1%	4.3%	1.0%	1.9%	1.6%
Nov-16	-2.3%	-1.0%	-2.0%	4.2%	0.8%	2.1%	1.9%
Dec-16	-0.8%	-0.4%	-0.8%	3.7%	0.4%	2.0%	2.0%

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