

The Royal Wedding Bank holiday and Bad Weather, 2010 - The Effects of Two Special Events on UK Economic Time Series

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Abstract

This article explores the effects that two “statistical special events” designated under the new ONS special events policy may have had on time series measuring the UK economy. These events were the cold winter experienced in December 2010 and the additional bank holiday granted to celebrate the Royal Wedding in April 2011. The article provides a provisional analysis ahead of Blue Book 2012 summarising the effects that these events had on key UK macroeconomic series, including output in the production, services, and construction sectors, retail sales, and the labour market. It also describes the evidence on overseas travel and tourism from the international passenger survey.

Introduction

The ONS has recently issued a policy on [special events](#), which sets out what it will do to help users understand the movements in time series around the time of statistical special events, particularly where there is an effect over several series. It is not generally possible to separate the effect of a particular event from other movements in the series, so ONS will not attempt to make estimates for a particular special event. The policy says that some time after a special event, when more data periods are available for the affected outputs, ONS may produce an analytical article interpreting how the relevant series moved in the affected period. This is the first such article, covering the exceptional bad weather in December 2010 and the Royal Wedding period in 2011.

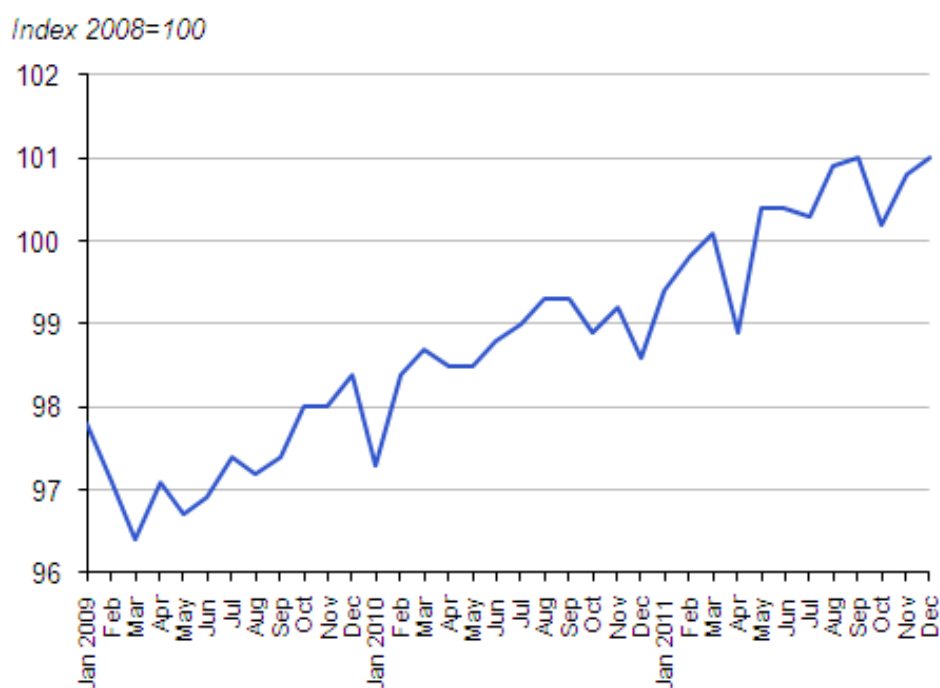
These events have made the interpretation of a number of economic time series more difficult than usual. Because they are not regular events, there is insufficient information to estimate their effect, and therefore it is not possible to account for them as part of the regular seasonal adjustment process. And because they are irregular, it is proper that they appear in the seasonally adjusted data, which is formed of trend and irregular parts of the time series decomposition. The ONS has published a guide to [seasonal adjustment](#).

This article therefore considers the impact of these events on economic time series that are likely to have been affected.

Bad weather of December 2010

The cold weather of 2010 brought heavy snowfall, record low temperatures, travel difficulties and school disruption to the UK. Snow was first seen on the 24th November with the vast majority of the UK affected on the 1st December. The snow thawed on the 9th December but the cold weather returned on the 16th December and persisted until the end of the month.

Index of services, seasonally adjusted



Source: Monthly Business Survey (Production and Services) - Office for National Statistics

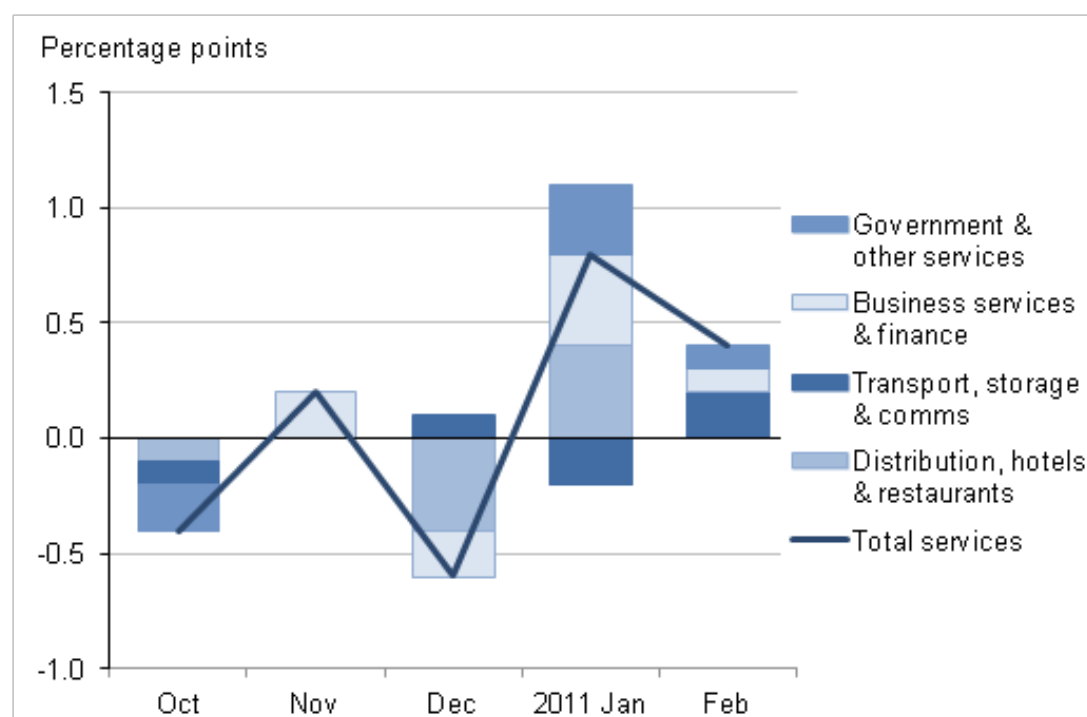
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The index of services on a monthly seasonally adjusted basis shows a downward movement of 0.6 per cent between November and December 2010, followed by a rebound of 0.8 per cent in January 2011. It is worth noting that a slightly larger downward movement was observed in January 2010, corresponding with another spell of cold weather and snow. Between November to January the index increased by 0.2%.

Contributions to service sector growth, seasonally adjusted, month on previous month



Source: Monthly Business Survey (Production and Services) - Office for National Statistics

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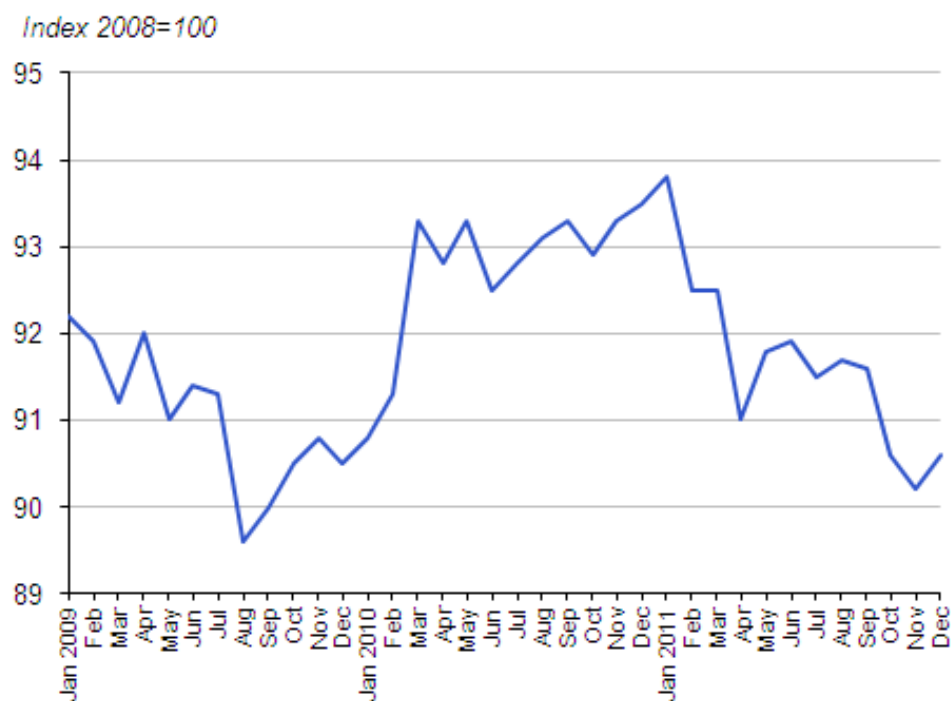
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Not surprisingly, the fall in output in December 2010 was largely explained by the distribution, hotels and restaurants sector, as customers postponed discretionary trips because of the bad weather.

The transport, storage and communication sector saw falls in “land transport”, “air transport” and “warehousing and support activities for transportation” which would align with decreased mobility in the economy due to the snow. However, overall this sector made a positive contribution to growth in December as a result of higher activity in postal and courier activities and computer programming, consultancy and related activities, an area that may be less prone to weather disruption.

Index of Production, seasonally adjusted 2008=100



Source: Monthly Business Survey (Production and Services) - Office for National Statistics

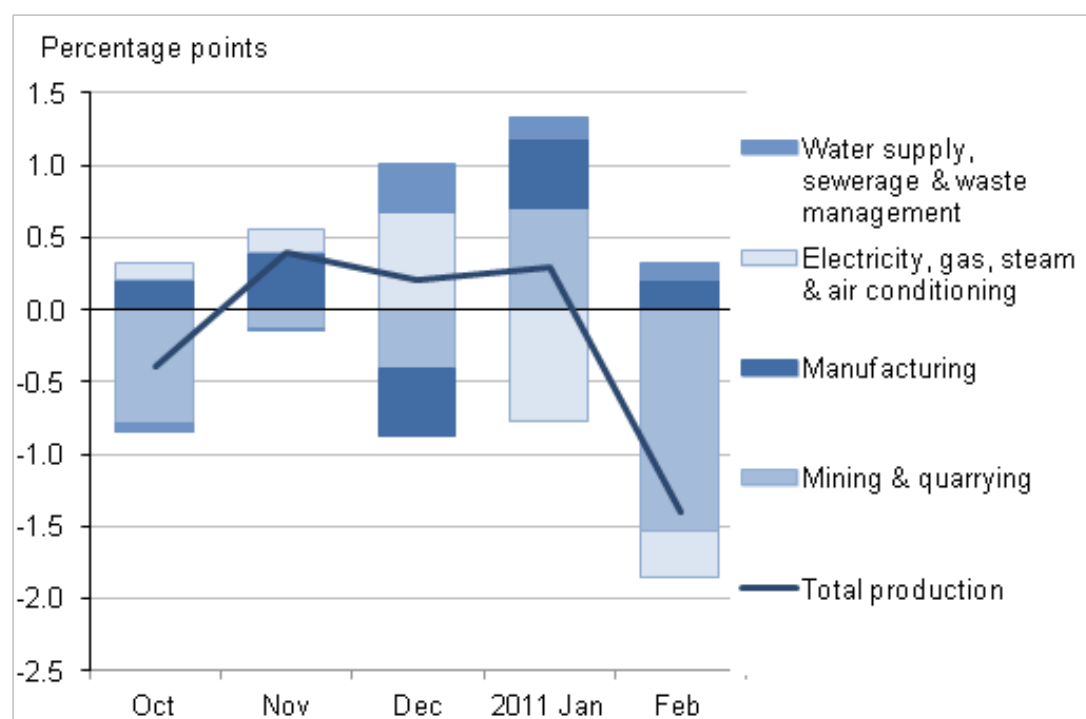
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The index of production shows only a small apparent deviation from its path in December 2010, reflecting substantial but offsetting movements in some of the components.

Contributions to production sector growth, seasonally adjusted, month on previous month



Source: Monthly Business Survey (Production and Services) - Office for National Statistics

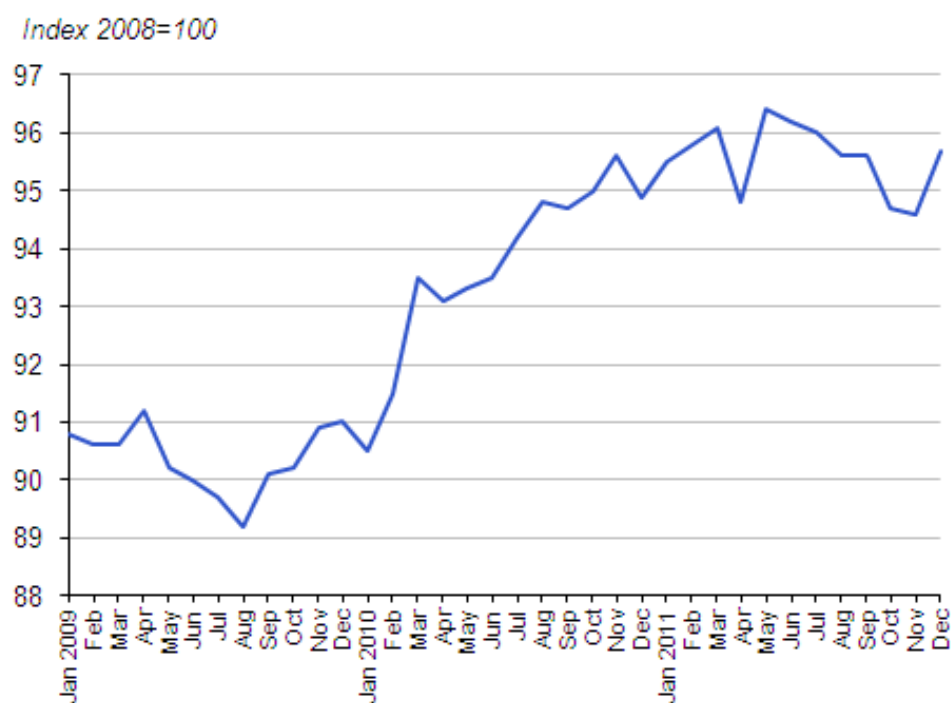
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In particular, output of the electricity, gas, steam and air conditioning sector rose sharply in December, contributing 0.7 percentage points to the monthly growth of total industrial production. It then fell back again cutting 0.8 points of the growth of industrial output in January. This fits with the expectation that energy consumption would have risen sharply in order to combat the cold weather.

In contrast, output in the manufacturing and the mining and quarrying sectors fell in December, reducing total industrial output growth by 0.4 and 0.5 percentage points respectively, but bounced back in January.

Manufacturing output, seasonally adjusted



Source: Monthly Business Survey (Production and Services) - Office for National Statistics

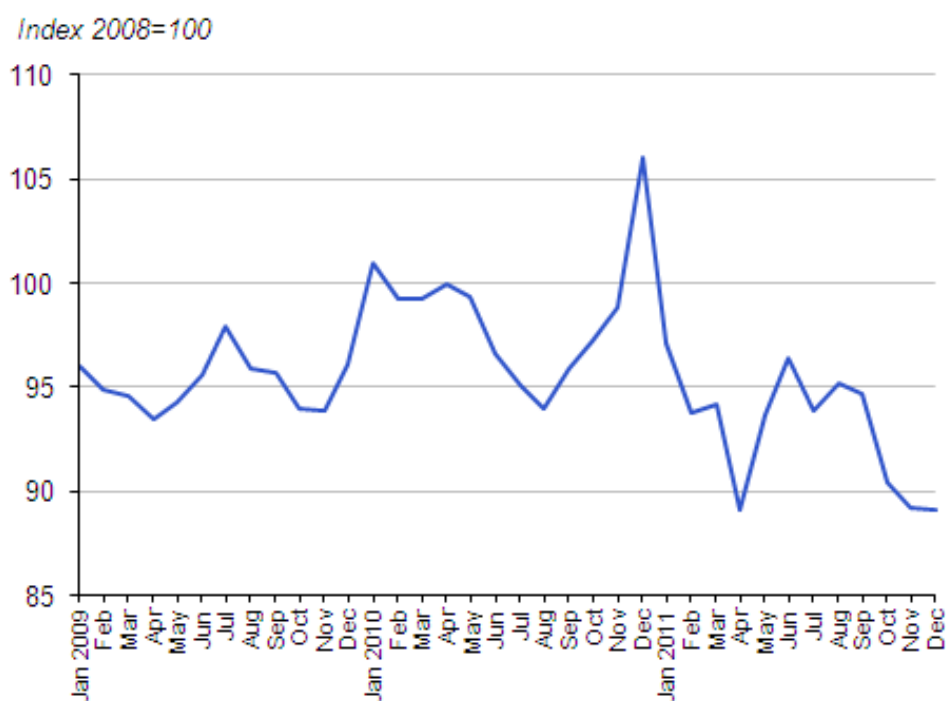
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In the cold winter of December 2010, manufacturing production fell by 0.7 per cent compared with November, with a partial rebound by 0.6 per cent in January.

Electricity, gas, steam and air conditioning, seasonally adjusted



Source: Monthly Business Survey (Production and Services) - Office for National Statistics

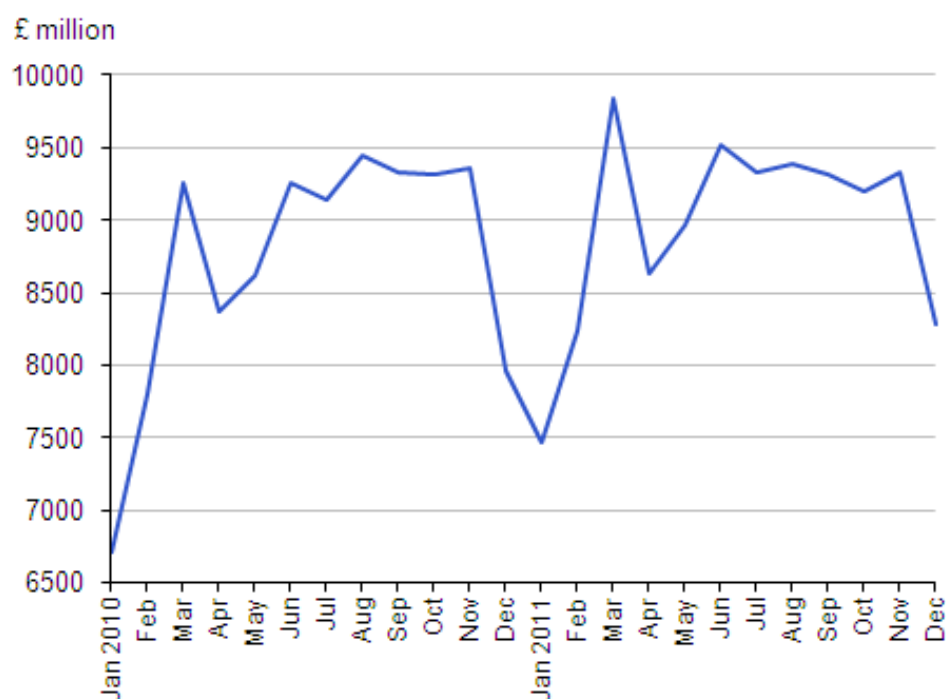
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Electricity, gas, steam and air conditioning saw a dramatic increase of 7.2% in December 2010. This would broadly conform to the idea that energy demand increases as business and residential users maintain interior temperatures and use additional lighting.

Volume of construction output, constant prices 2005, non seasonally adjusted



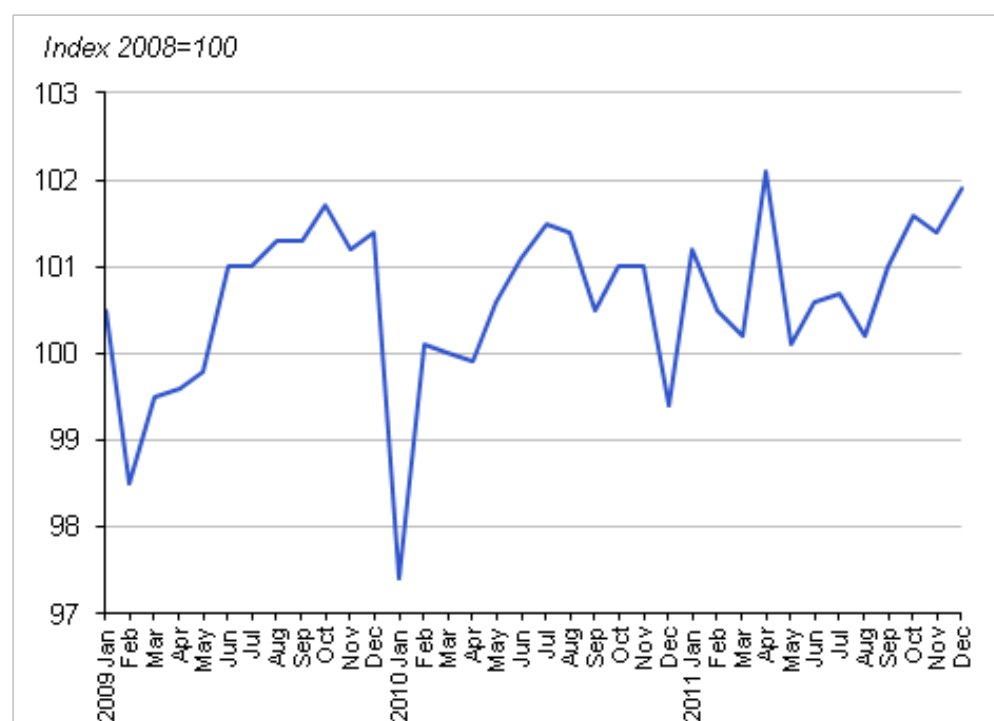
Source: Construction: Output & Employment - Office for National Statistics

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Monthly construction output data are not seasonally adjusted as the data series dates back only to January 2010 – too short a time period to carry out robust seasonal adjustment. It is therefore difficult to identify the impact of the designated special events on this sector. Although output fell sharply in December 2010, a similar fall occurred in December 2011. It is therefore not possible to distinguish between normal seasonal fluctuations and the impact of the bad weather, at least until a seasonally adjusted series is available.

Retail Sales Index (volumes), seasonally adjusted



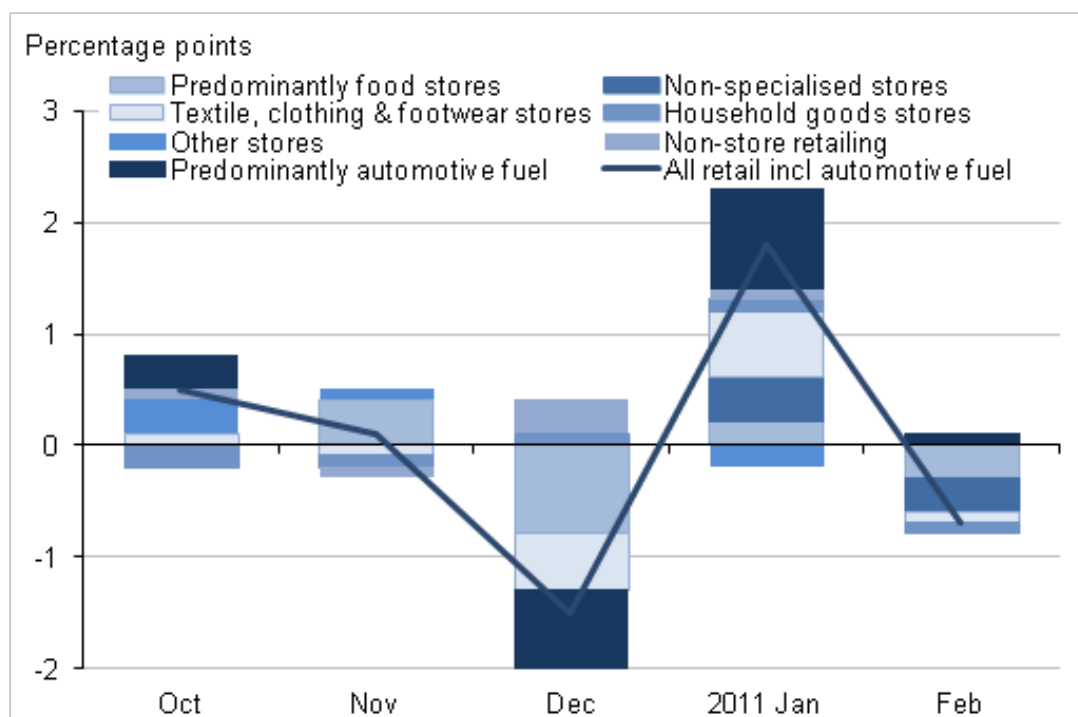
Source: Monthly Business Survey - Retail Sales Inquiry - Office for National Statistics

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Seasonally adjusted retail sales fell somewhat in December 2010. However the series is volatile and therefore it is difficult to identify whether any of the movements could be attributed specifically to the bad weather.

Contributions to retail sales growth, volumes, seasonally adjusted, month on month



Source: Monthly Business Survey - Retail Sales Inquiry - Office for National Statistics

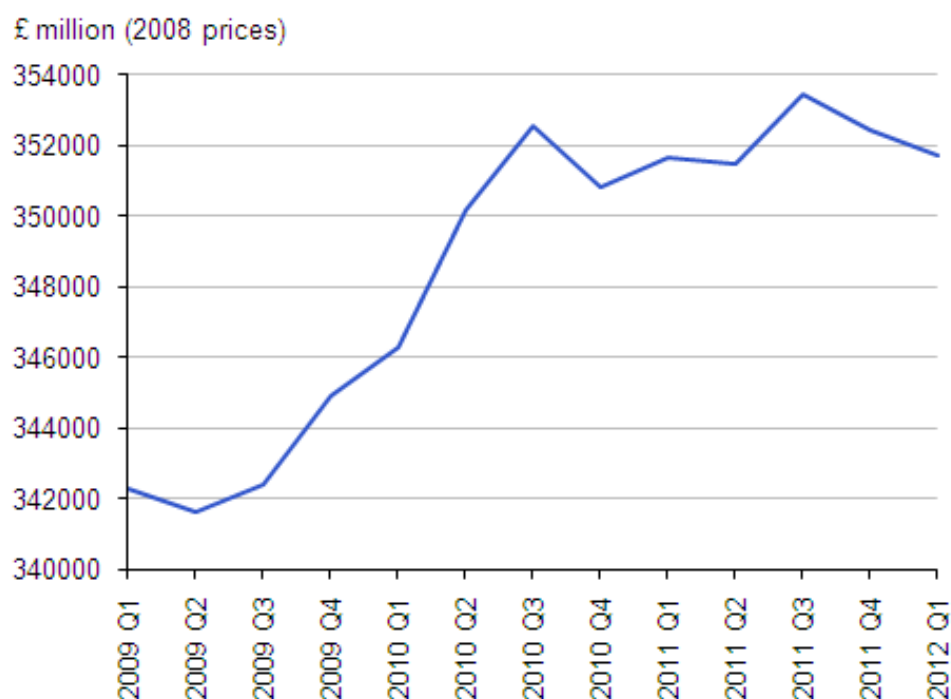
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The fall in December 2010 was mainly due to predominantly food stores, textiles, clothing and footwear stores and predominantly automotive fuel. Growth in excess of the lost output in December was seen in the following month. However any inferences from these data should be made with caution due to the difficulty in handling the large seasonal swings in activity in these months.

Gross Domestic Product, chained volume measures, seasonally adjusted



Source: Office for National Statistics

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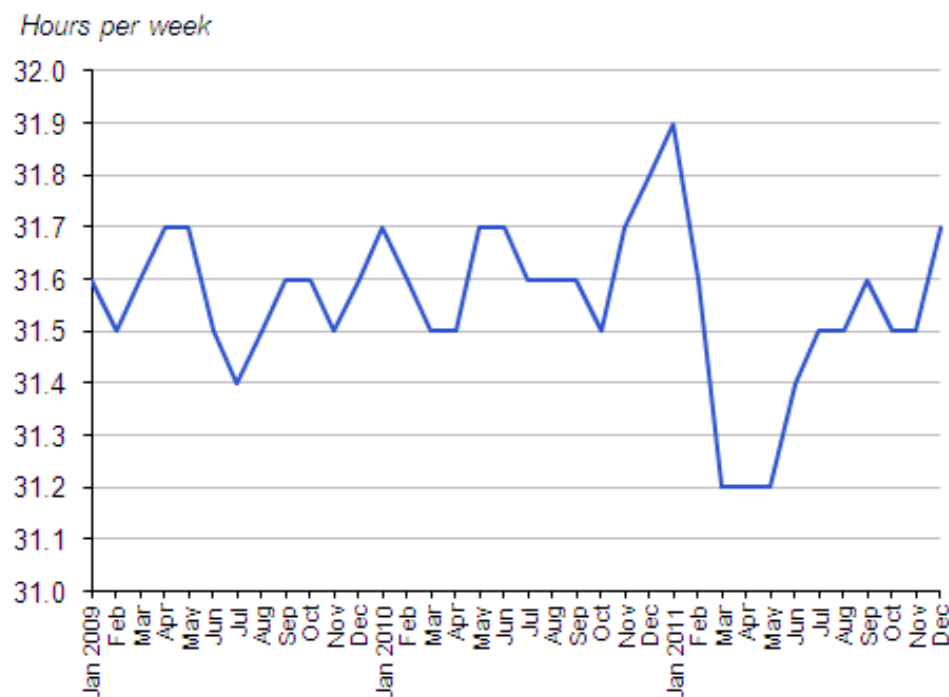
While it is not possible to estimate the effect of a particular event on the various time series, we can examine whether the event is likely to have caused a loss in activity, or just a change in its timing. If there was a fall in activity so that the December value was low relative to the underlying movement in the series, but the activity was transferred to January, then we would expect the January level to be high relative to the underlying movement and February to return to normal. That is, there would be a saw-tooth pattern in the series. If, however, the activity was lost, then January would return to a normal level relative to the underlying movement, with a V pattern for the lost activity. A similar deduction can be made for a rise with the opposite pattern.

In December 2010, the index of services and retail sales both show the V pattern, suggesting that activity was lost, and the index of production rose slightly in both December and January and so is not easily interpretable in this way. The net effect on the output of the economy as measured by GDP was a fall of 0.5% in quarter four of 2010. The first quarter of 2011 only recovered part of the contraction in Q4, with a growth rate of 0.2%, also suggesting that activity was not moved from December to January.

The bad weather in December 2010 had no apparent effect on average weekly hours worked. The effects of the bad weather seemed to have been largest for the 5th week of November and the 1st week of December, but over the quarter the impact was negligible. Less than 300,000 people (1%

of the employed workforce) reported working fewer hours than usual due to bad weather as an average for the quarter.

Average actual weekly hours, 3 month average recorded on middle month, seasonally adjusted



Source: Labour Force Survey - Office for National Statistics

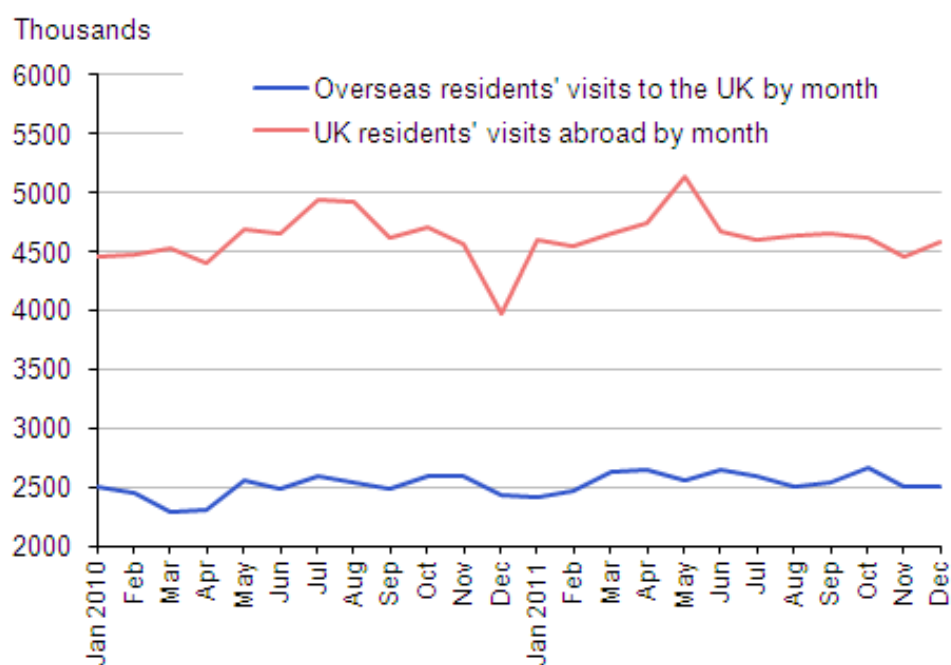
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Overseas travel and tourism was also affected by the cold weather. The graph below shows the overseas residents visits to the UK by month and the UK residents' visits abroad by month.

Visits to and from the UK, seasonally adjusted



Source: International Passenger Survey (IPS) - Office for National Statistics

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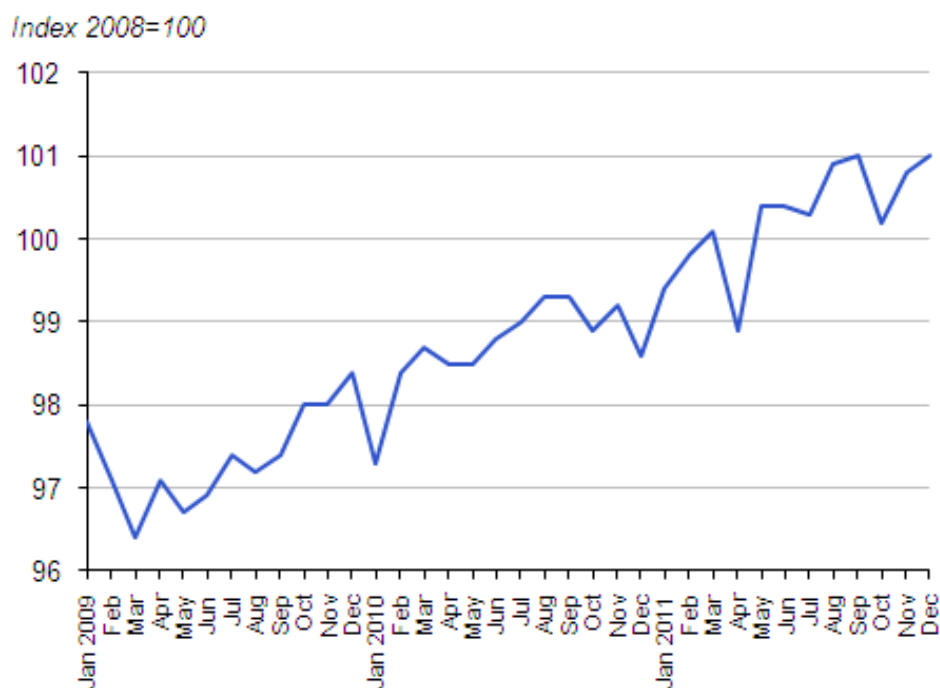
In terms of footfall, the cold weather in December did not seem to have a notable effect on visits to the UK but did have a detrimental effect on visits from the UK. UK residents visiting overseas fell from 4.6 million to 4 million in December in the seasonally adjusted figures.

The Royal Wedding in April 2011

On April 29th 2011, Prince William, second in line to the throne, married Catherine Middleton. The day of the wedding became an additional public holiday in the UK. Coming just a few days after the Easter holiday, and close to the subsequent May Day bank holiday, this may have encouraged many people to take longer breaks from work.

The economy may have been affected by other factors in April 2011 – for instance it was the warmest April for more than 100 years, oil prices rose to a record high and global supply chains continued to be affected by the Japanese earthquake in the previous month.

Index of services, seasonally adjusted



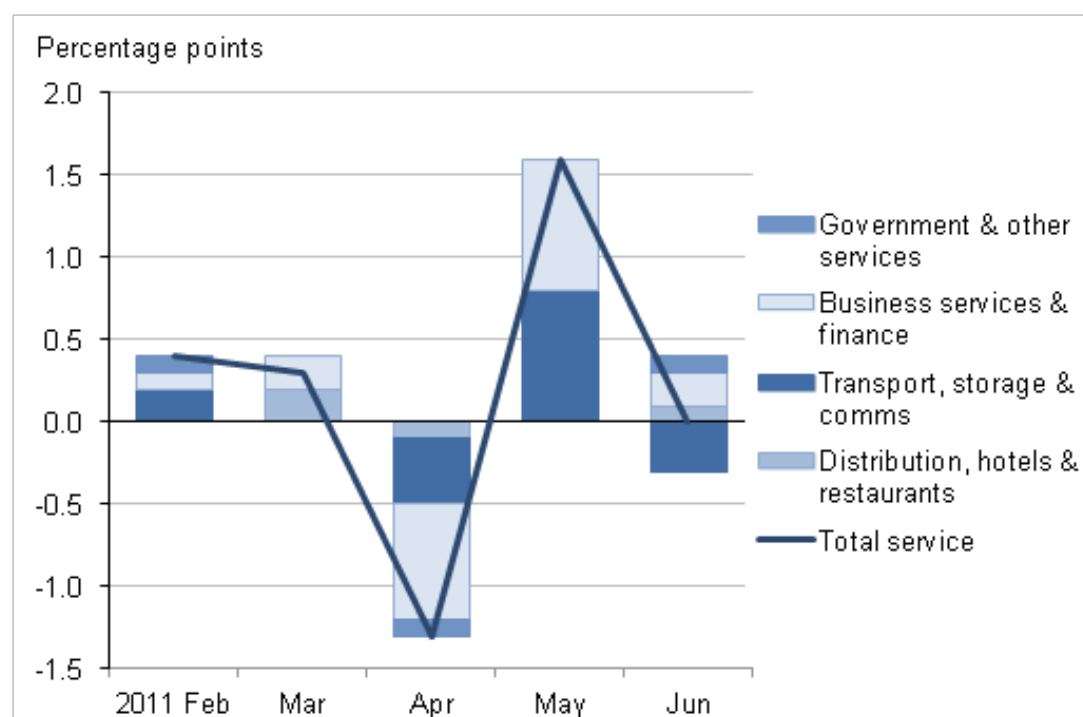
Source: Monthly Business Survey (Production and Services) - Office for National Statistics

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April, the month of the Royal Wedding, saw a fall of 1.2 per cent in output in services industries compared with March. Any output lost in April was regained in May as activity rose by 1.5 per cent. From March to May, output in the service industry rose by 0.3%. April saw falls in all the main components of the services sector, and the largest contributor was business services and finance which contributed 0.7 percentage points to the fall.

Contributions to service sector growth, seasonally adjusted, month on previous month



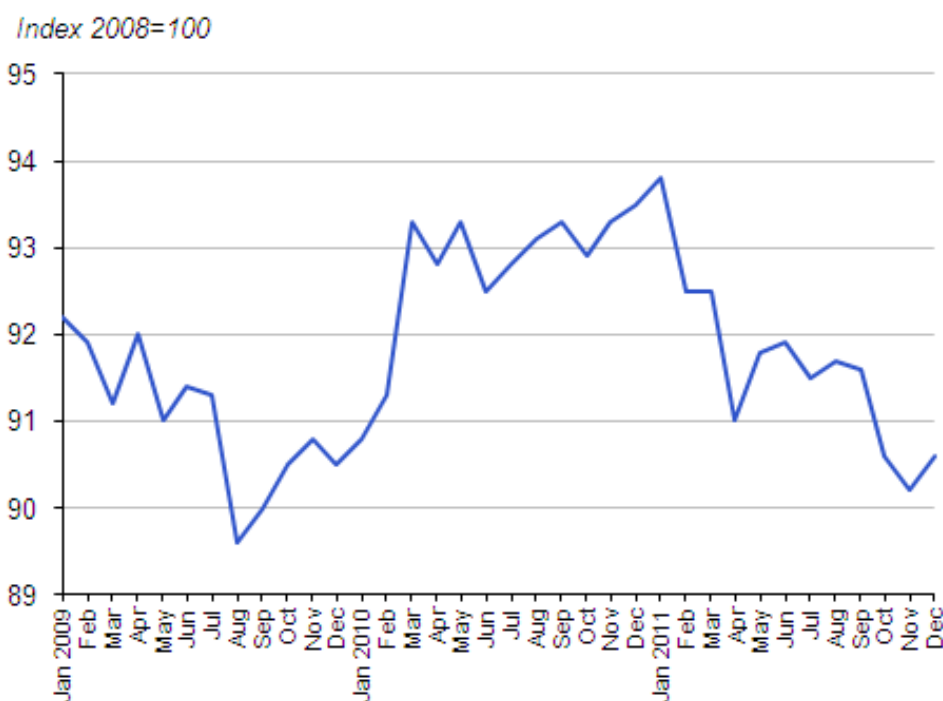
Source: Monthly Business Survey (Production and Services) - Office for National Statistics

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Index of Production, seasonally adjusted 2008=100



Source: Monthly Business Survey (Production and Services) - Office for National Statistics

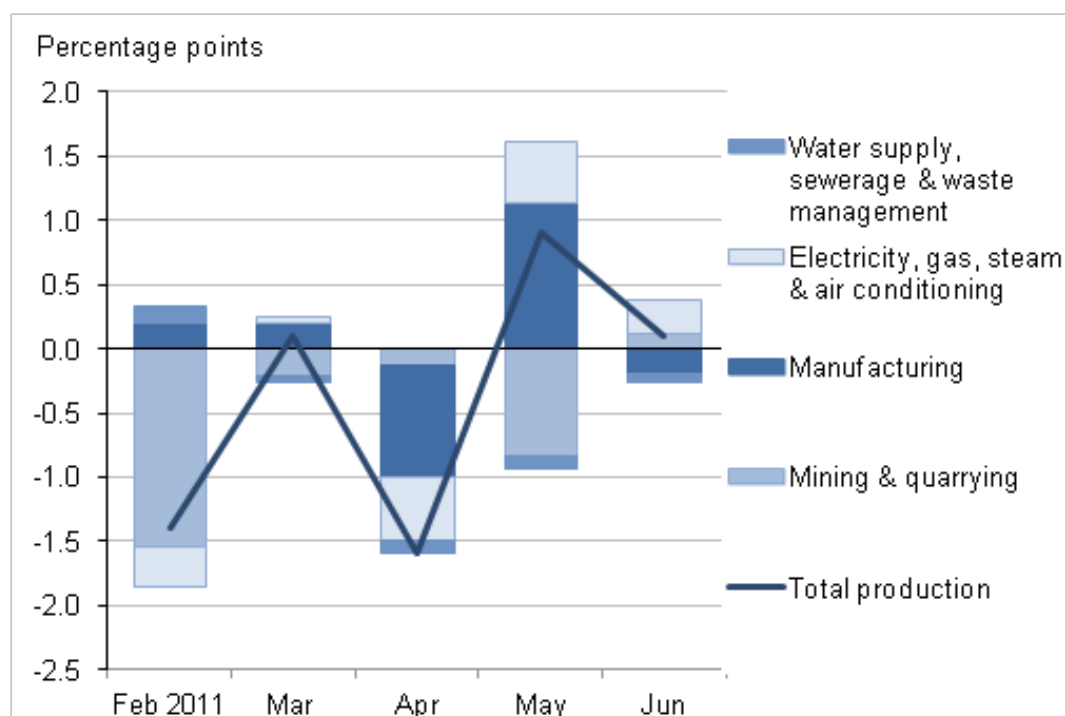
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Between March and April 2011 there was a fall of 1.6 per cent in the index of production, followed by a 0.9 per cent pickup in May. Between March and April output fell by 0.8%. This is likely to be the result of the working day lost compared with a normal April.

Contributions to production sector growth, seasonally adjusted, month on previous month



Source: Monthly Business Survey (Production and Services) - Office for National Statistics

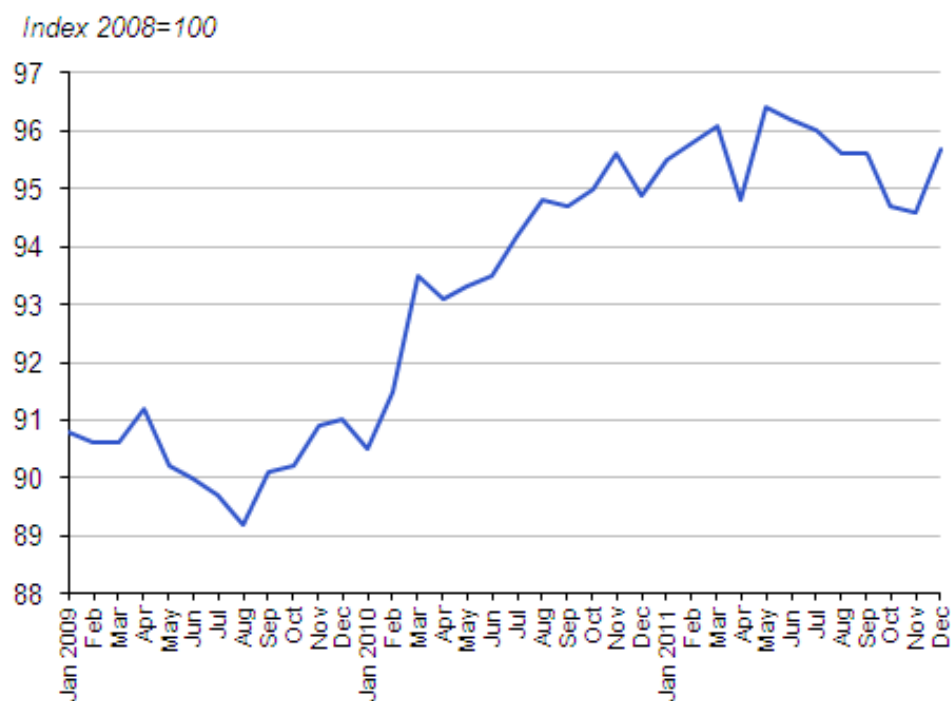
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In April, all parts of the production sector saw falling output. After contributing positively to growth for most of the period since May 2010, manufacturing output reduced total industrial production by 0.9 percentage points in April 2011. Manufacturing rebounded in May with a growth contribution of 1.1 points, but this was not enough to offset the other sectors, so production did not immediately recover the April falls in May.

Manufacturing output, seasonally adjusted



Source: Monthly Business Survey (Production and Services) - Office for National Statistics

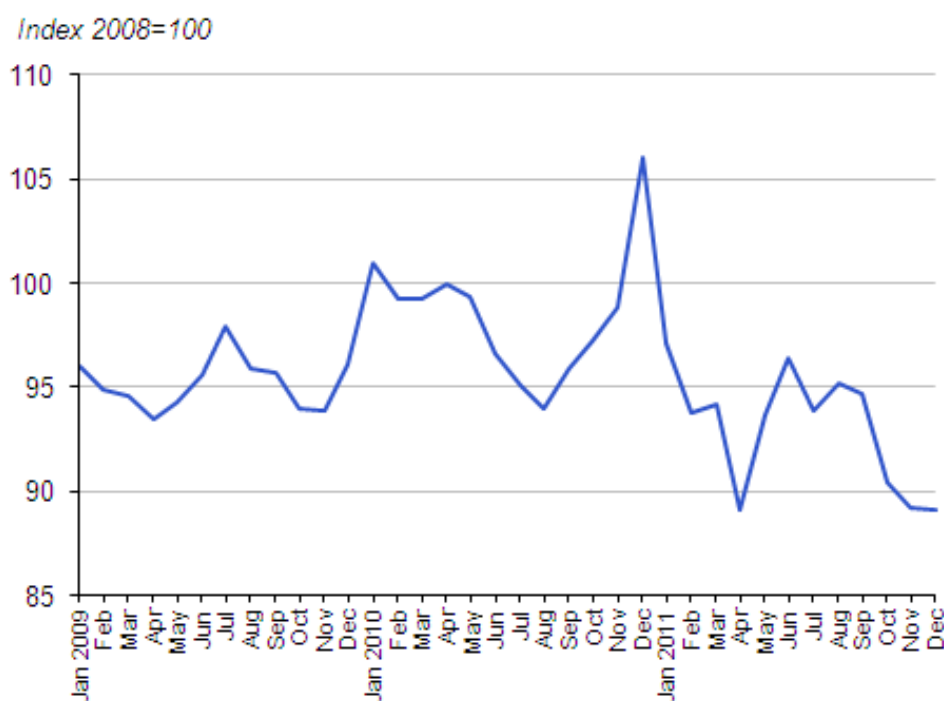
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The Royal Wedding month of April saw manufacturing production fall by 1.4 per cent, which was followed by growth of 1.7 per cent in May. Between March and May manufacturing output increased by 0.3%.

Electricity, gas, steam and air conditioning, seasonally adjusted



Source: Monthly Business Survey (Production and Services) - Office for National Statistics

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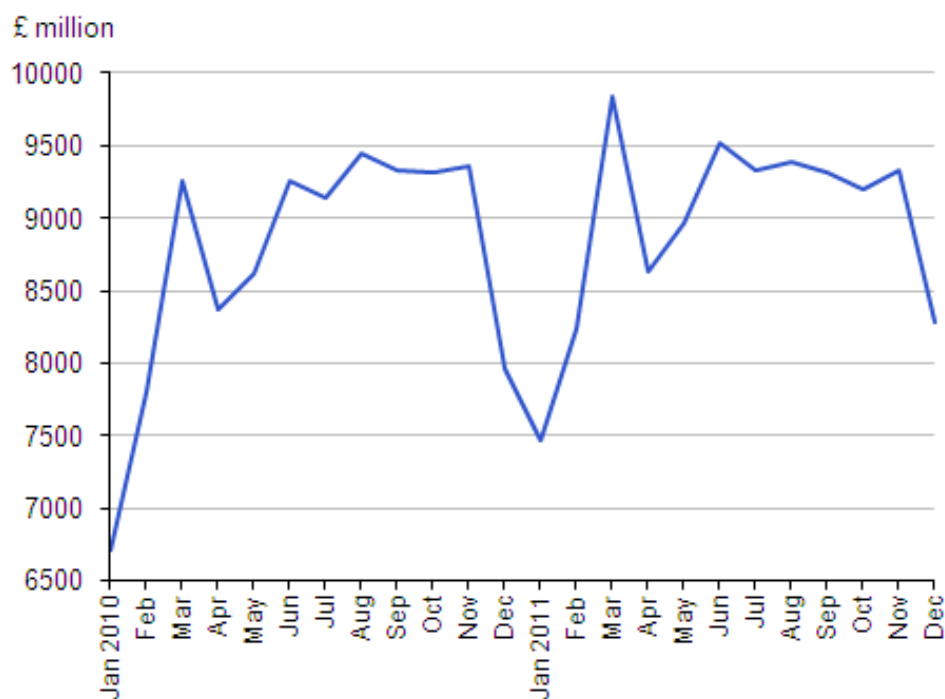
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In April 2011, the UK experienced the warmest April for more than 100 years and this is likely to have been the primary influence on energy demands. It is not possible to distinguish this effect from the impact of the Royal Wedding bank holiday, although it is perhaps reasonable to surmise that the effect of the latter on energy demand may not have been significant.

Monthly construction output data are not seasonally adjusted as the data series dates back only to January 2010 – too short a time period to carry out robust seasonal adjustment. It is therefore difficult to identify the impact of the designated special events on this sector. Although output fell sharply in April 2011, a similar fall occurred in April 2010. It is therefore not possible to distinguish between normal seasonal fluctuations and the impact of the Royal Wedding, at least until a seasonally adjusted series is available.

Volume of construction output, constant prices 2005, non seasonally adjusted

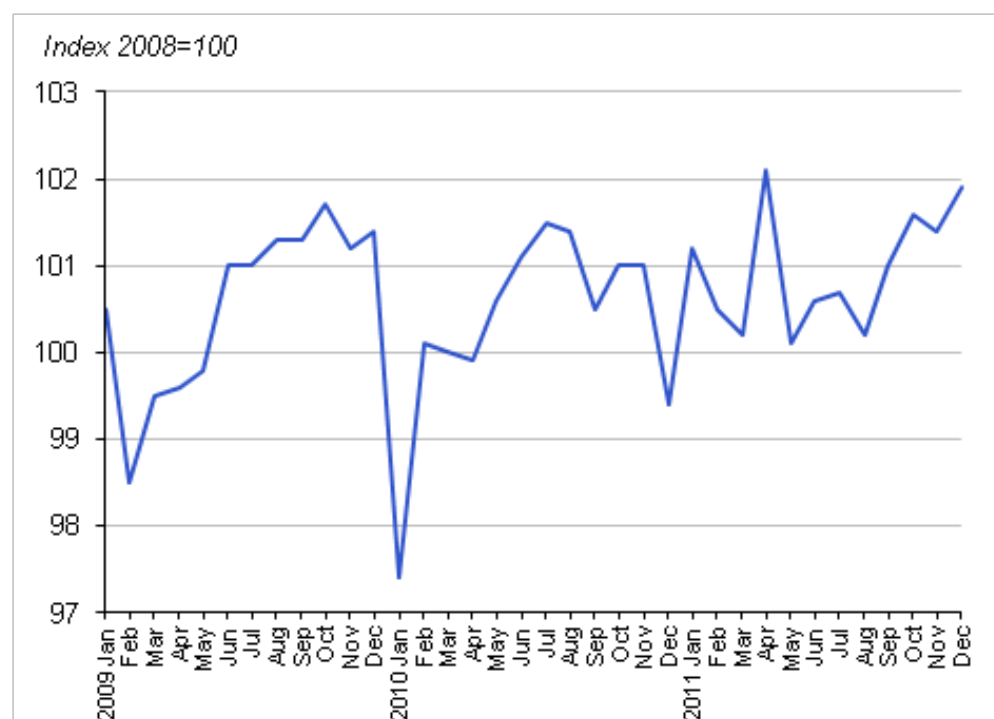


Source: Construction: Output & Employment - Office for National Statistics

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Retail Sales Index (volumes), seasonally adjusted



Source: Monthly Business Survey - Retail Sales Inquiry - Office for National Statistics

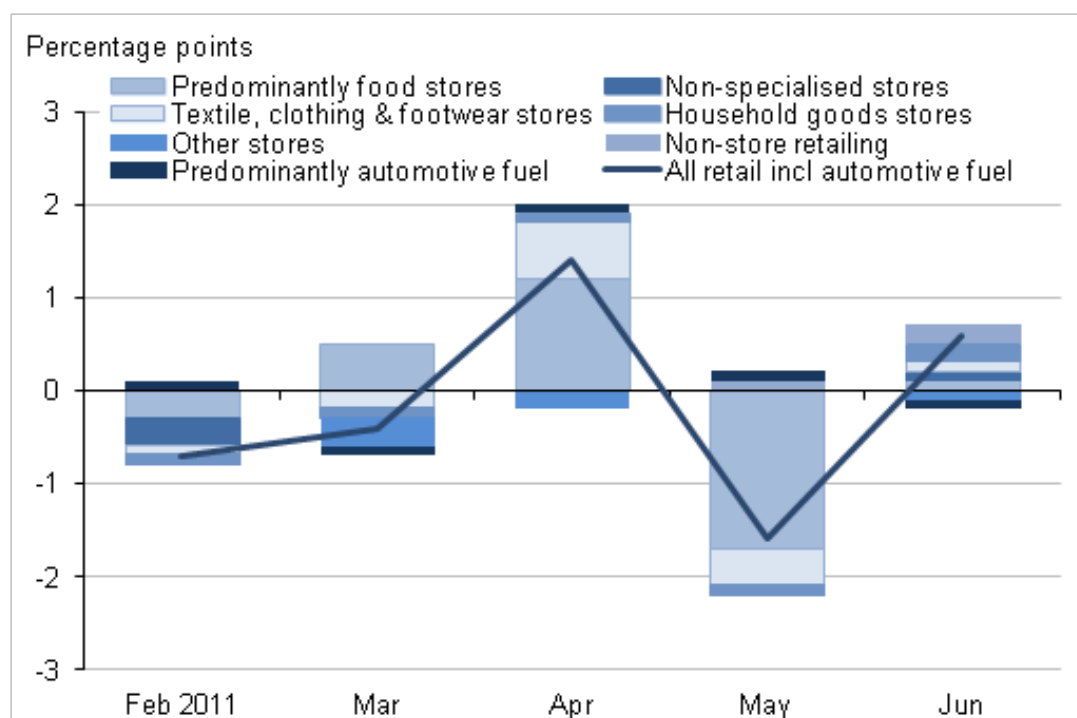
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Retail Sales showed a contrasting pattern with strong month on month growth in April 2011, the main contributor to which was predominately food stores with a 1per cent total sales growth. In the following month it fell 1.6%, again the main contribution to a fall in total retail sales.

Contributions to retail sales growth, volumes, seasonally adjusted, month on month



Source: Monthly Business Survey - Retail Sales Inquiry - Office for National Statistics

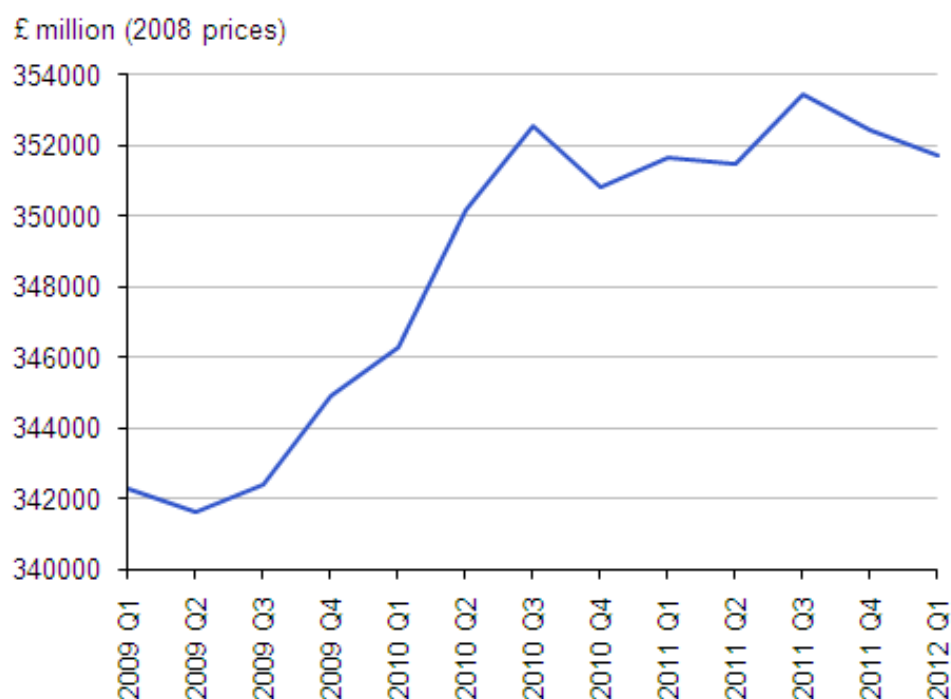
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Hot weather is often associated with a rise in retail sales. The relative impact of the Royal Wedding and the hot weather in April are not distinguishable in these figures.

Gross Domestic Product, chained volume measures, seasonally adjusted



Source: Office for National Statistics

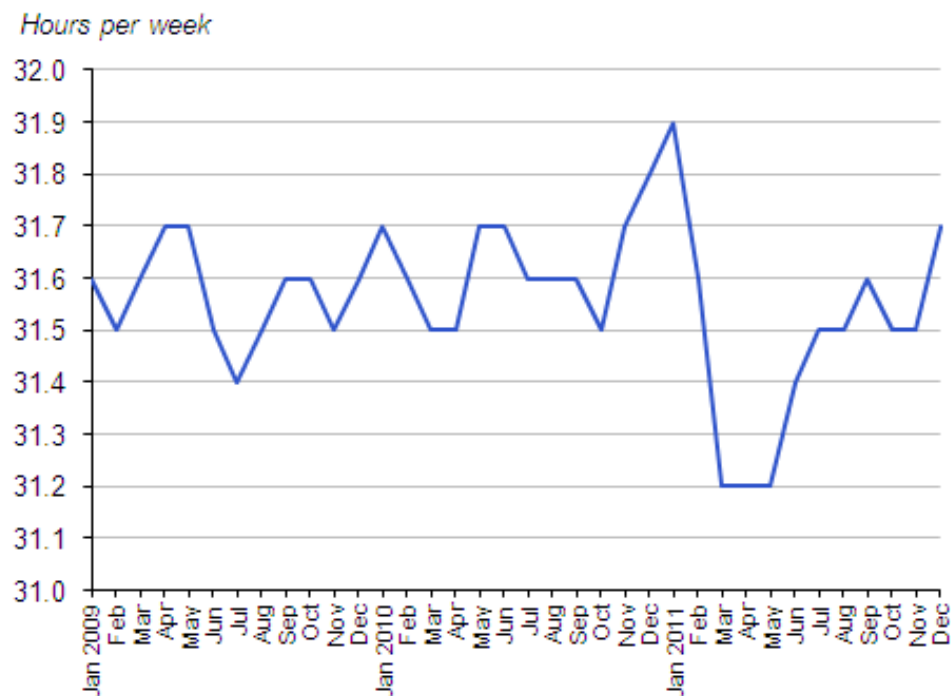
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Services, Production and Construction all showed a pattern of a fall in April 2011 and a rise in May; in services and in the manufacturing component of production, the growth from March to May was positive as April falls were recovered. In overall production and construction, however, the March level was not reached in May, so there was a fall in output across the two months. Using the same reasoning as described for the cold weather above, all of these series show a V pattern, without a clear upward spike in May, so it is likely that April's activity was not transferred to May, and therefore lost, making GDP lower over the quarter. Retail sales showed the opposite pattern, with a rise in April and a fall in May, with the two months from March to May showing an overall fall. There is some evidence that the April spike reflects activity drawn forward from May, as there is a recovery to the March level of retail sales after the May fall; if so, then there would be little effect of the changes in Retail Sales on GDP over the quarter. The net effect was that in the second quarter of 2011, GDP fell by 0.1 per cent.

The additional bank holiday in April 2011 is not likely to have had a significant impact on employment, but the loss of a working day compared with a typical April will have reduced total weekly hours worked. The seasonally adjusted data show a fall of 0.6 hours (1.8 per cent) between successive three month periods (November 2010-January 2011 compared with February-April 2011). Other factors that may have contributed to the overall affect are the proximity of the extra bank holiday to the regular bank holidays (Easter and May Day) and the unusually warm weather.

Average actual weekly hours, 3 month average recorded on middle month, seasonally adjusted



Source: Labour Force Survey - Office for National Statistics

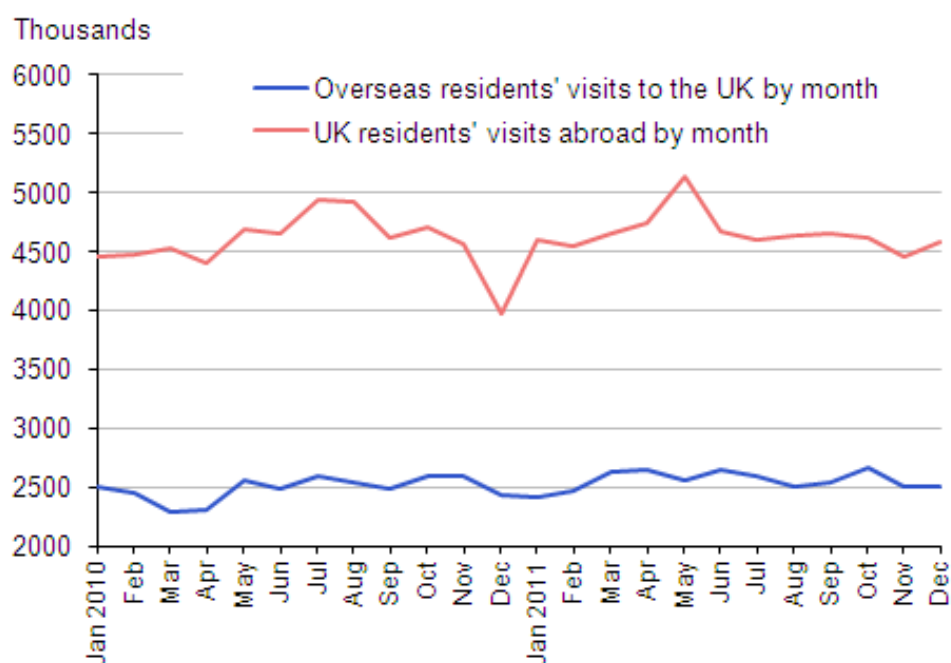
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Overseas travel and tourism was also affected by the change in holidays. The graph below shows the overseas residents' visits to the UK by month and the UK residents' visits abroad by month.

Visits to and from the UK, seasonally adjusted



Source: International Passenger Survey (IPS) - Office for National Statistics

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April 2011 saw a small movement in visits to the UK (but within the normal variation for this series) but with a larger effect on visits from the UK. The number of overseas visitors arriving in the UK showed very little change in the month of the wedding or the months around the wedding and without a specific survey question it is difficult to say how many visits were related to the wedding. In terms of UK residents leaving the UK, there was an increase in April and a larger increase in May. Some of the 0.5 million increase in UK residents going abroad may be attributed to the Royal Wedding due to the placements of the bank holidays. There were bank holidays on the 22nd, 25th, 29th of April and the 2nd May, leading to two four day weekends or a period of 13 consecutive days away from work if the 26th to the 28th April was taken off. The last bank holiday day in this period was the 2nd May, and therefore any trips finishing on the Sunday or Monday would be included in the May figure. May also contained the Spring Bank Holiday which could also have bolstered the number of visits in May.

Background notes

1. Details of the policy governing the release of new data are available by visiting www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html or from the Media Relations Office email: media.relations@ons.gsi.gov.uk

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