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Central bank asset purchases and inflation expectations[1]

This article analyses the effect of the asset purchase programmes implemented by the Federal Reserve and the Bank of England in the wake of the global financial crisis on market- and survey-based measures of inflation expectations. The analysis suggests that central bank asset purchases did have significant effects, but that their quantitative importance is uncertain. While short- and longer-term inflation expectation measures displayed sizeable upward movements towards pre-crisis levels during the implementation of asset purchase programmes, the reaction of inflation swap rates on the days of programme announcements suggests that central bank asset purchases were probably not the main driver of these shifts.

JEL classification: E31, E52, E58.

The global financial crisis and the ensuing Great Recession have led to fundamental changes in the design and implementation of monetary policy. Many central banks had reduced policy rates to near zero levels by early 2009 and adopted less conventional policy tools in order to directly address financial sector strains or to provide additional monetary stimulus. In a number of major advanced economies, central bank purchases of longer-maturity assets, including both government bonds and private debt, have become the predominant unconventional monetary policy instrument.

The public debate and the research on the effects of central bank asset purchase programmes have focused on their impact on interest rate spreads and the level of longer-term interest rates and asset prices as well as their short-run effects on aggregate economic activity and inflation.[2] More recently, however, the potential implications of these programmes for long-run inflation and inflation expectations have received increasing attention. For instance, a number of

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[2] See eg Meaning and Zhu (2011, 2012) on the impact on Treasury yields and other financial prices of Federal Reserve and Bank of England asset purchase programmes, and Chen et al (2012) and Gambacorta et al (2012) for analyses of the macroeconomic impact of central bank balance sheet policies.

observers have argued that the programmes entail significant upside risks to price stability and hence of a major slippage of inflation expectations through their potential to trigger a massive increase in money supply (eg Thornton (2012), Reynard (2012)). On the other hand, it has been argued that large-scale asset purchases have been insufficiently effective in stimulating economies, as they did not lift inflation expectations and thereby failed to lower real interest rates enough to bring economies back to their pre-crisis trajectories (eg Woodford (2010)).

Yet few studies have analysed the impact on inflation expectations of large-scale asset purchases by central banks. Guidolin and Neely (2010) perform an event study of the effect of the Federal Reserve's first asset purchase programme on 10-year bond market break-even inflation rates and find a modest, albeit statistically significant positive effect. In contrast, Wright (2012), also covering the announcements of the asset purchases, does not find a significant effect of monetary policy shocks at the zero lower bound on US break-even rates over a period spanning three asset purchase programmes.

In this article, we extend this literature by analysing the impact on inflation expectations of US and UK asset purchase programmes, taking different analytical perspectives and allowing the effects to vary across programmes. Specifically, we analyse both the developments of inflation expectation measures in the course of the implementation of the programmes and the impact of the programme announcements based on an event study and regression analysis. The findings of our analysis suggest that the effects of asset purchase programmes on inflation expectations are surrounded by a high degree of uncertainty. The implementation of the various asset purchase programmes has been associated with sometimes sizeable upward movements in inflation expectation measures towards levels that are broadly consistent with central banks' inflation target levels. The announcements of the programmes led to economically and statistically significant daily increases in medium- and long-term inflation swap rates in the United States, while the effects on UK inflation swap rates have been negligible. This suggests that asset purchase programmes have probably not been the main driver of inflation expectations. A caveat to this conclusion is that announcement impacts may not capture the full effects of the programmes.

Central bank asset purchase programmes

Since late 2008, the Federal Reserve and the Bank of England have carried out a number of large-scale asset purchase programmes in order to improve financial conditions, revive credit flows and stimulate economic activity. The Federal Reserve launched the first Large-Scale Asset Purchase Programme (LSAP1) in November 2008 and March 2009, with announced purchases of $1.75 trillion ($1.45 trillion in agency mortgage-backed securities (MBS) and agency debt, $300 billion in long-term Treasury securities). The second round of the Federal Reserve's large-scale asset purchases (LSAP2) started in August 2010 with the reinvestment of the principal payments on agency security holdings into long-term Treasuries. In November 2010, purchases of a further $600 billion of long-term Treasuries were announced. Under the Maturity Extension Program (MEP) initiated in September 2011 and extended in June 2012, the Federal Reserve sold $667 billion of shorter-term Treasury securities and used the proceeds to buy

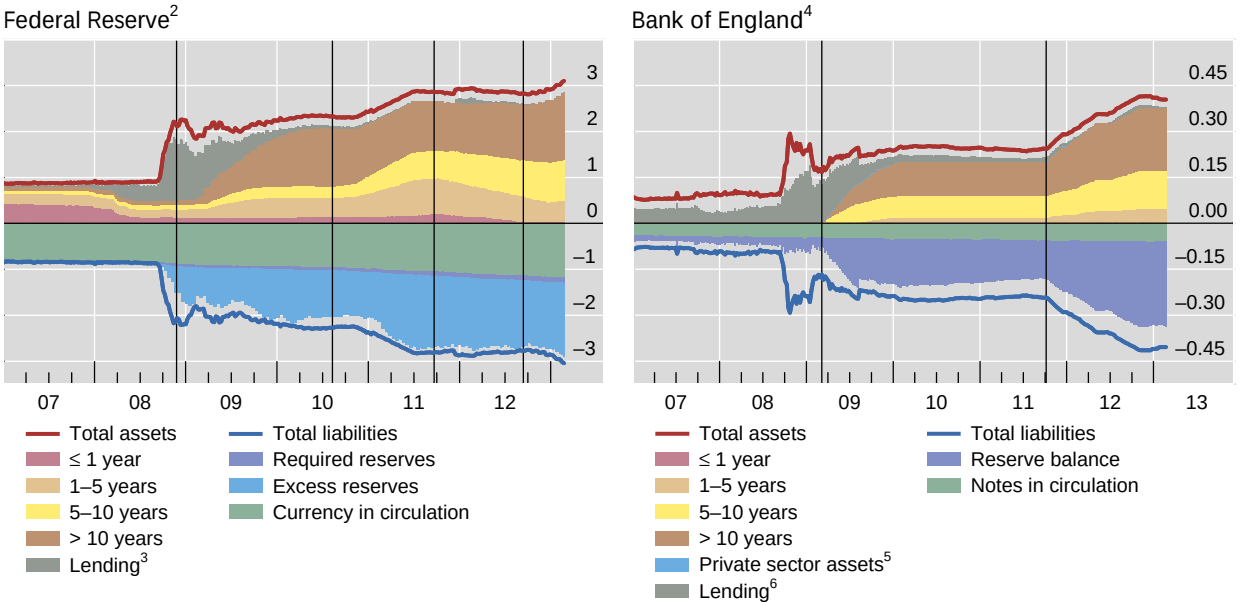
longer-term Treasury securities. In September 2012, the Federal Reserve announced LSAP3, which involves open-ended purchases of agency MBS at the pace of $40 billion per month. In December 2012, this programme was expanded by purchases of $45 billion in Treasury bonds per month after the completion of the MEP.

The Bank of England established its Asset Purchase Facility (APF) Fund in January 2009, initiating a first round of large-scale asset purchases (APF1). On 5 March 2009, the Bank of England's Monetary Policy Committee announced that it would buy £75 billion in high-quality assets, focusing on government bonds. The total amount of asset purchases under APF1 was successively raised to £200 billion by November 2009. On 6 October 2011, the Bank of England decided to resume gilt purchases, expanding the APF to £275 billion (APF2). The APF was subsequently further expanded, to £325 billion in February 2012 and to £375 billion in July 2012.

Reflecting these asset purchase programmes, the Federal Reserve and Bank of England balance sheets have expanded considerably since the third quarter of 2008, more than tripling and quadrupling in size, respectively, by January 2013 (Graph 1). The programmes have also had a significant effect on the composition of the balance sheets. This has tilted increasingly towards longer-dated assets, with debt instruments of maturity beyond five years dominating the two institutions'

Central bank balance sheets[1]

In trillions of national currency units — Graph 1



[1] Breakdown of securities held outright refers to remaining maturity. The vertical lines represent the launch date of each asset purchase programme. For the United States: 25 November 2008 (LSAP 1), 10 August 2010 (LSAP 2), 21 September 2011 (MEP) and 13 September 2012 (LSAP 3). For the United Kingdom: 5 March 2009 (APF 1) and 6 October 2011 (APF 2). [2] The breakdown of securities held outright by the Federal Reserve includes agency debt and MBS and US Treasuries; face value. [3] Includes repurchase agreements, term auction credit, other loans, Commercial Paper Funding Facility and central bank liquidity swaps. [4] The breakdown of the Bank of England assets includes gilt holdings of the Asset Purchase Facility (APF). APF transactions are undertaken by the Bank of England Asset Purchase Facility Fund Limited. The accounts of the Fund are not consolidated with those of the Bank. The Fund is financed by loans from the Bank which appear on the Bank's balance sheet as an asset. [5] Includes holdings of sterling commercial paper, secured commercial paper and corporate bonds financed by the issue of Treasury bills and the Debt Management Office's cash management operations and by the creation of central bank reserves. [6] Includes sterling reverse repo operations and currency swaps.

Sources: Bank of England; Federal Reserve; Datastream.

asset holdings. The liabilities side of the balance sheets grew through the expansion of bank reserves.

Asset purchase programmes and inflation expectation dynamics

How have large-scale asset purchase programmes influenced inflation expectations? As a first step to addressing this question, we explore in this section the fluctuations of US and UK market- and survey-based inflation expectation measures in the course of the different programmes. To that end, we consider one-, five- and 10-year inflation swap rates as well as implied five-year, five-year forward inflation swap rates, computed based on the five- and 10-year rates, as market-based measures of inflation expectations (Graph 2, left-hand panels). An inflation swap is a derivative instrument that exchanges a fixed payment for a variable payment linked to a measure of inflation, typically the accrued CPI inflation over the life of the swap. The fixed leg of the inflation swap, the inflation swap rate, therefore provides a daily measure of investors' inflation expectations. Bond market break-even rates display dynamics similar to those of inflation swap rates, but may have been significantly distorted by changes in differential liquidity premia in nominal and inflation-linked bond markets over parts of the sample period.[3] That said, inflation swap rates are also an imperfect measure of inflation expectations, as, like bond market break-even rates, they contain an inflation risk premium compensating for the uncertainty of inflation outcomes and other market-specific risk premia.[4]

We further consider survey-based short- and long-term CPI inflation forecasts from Consensus Economics (Graph 2, right-hand panels).[5] Forecasts of inflation for the current and the next year are available on a monthly basis and can be used to construct a monthly measure of one-year-ahead inflation expectations as a weighted average (Gerlach et al (2011)). Long-horizon consensus forecasts of CPI inflation, referring to the average rate of CPI inflation expected to prevail six to 10 years in the future, are available only twice a year.

The graph panels suggest that the massive expansion of central bank asset holdings was not associated with major concerns over rising inflation, but may have helped to dispel imminent deflation fears after the collapse of Lehman Brothers in September 2008. Three main observations stand out. First, the initial announcement of large-scale asset purchase programmes was followed by a rapid rebound of

[3] A particularly complicating factor in the interpretation of break-even rates in recent years has been the significant flight-to-liquidity flows during the market turmoil and the concentration of central bank asset purchases in nominal bond markets which pushed down nominal yields and placed downward pressure on break-even rates, but also affected liquidity conditions in inflation-linked bond markets. For a more detailed discussion, see Hördahl (2009).

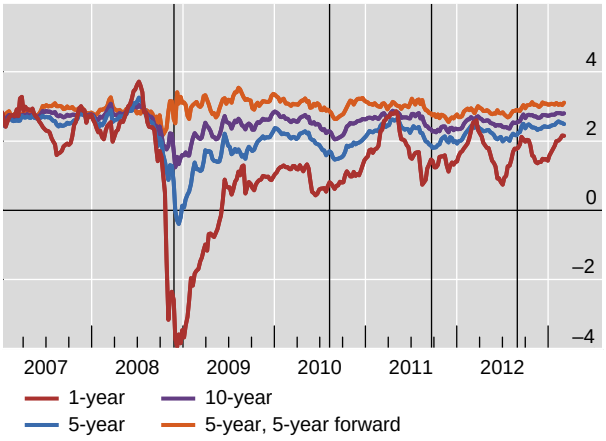
[4] These may comprise a liquidity premium compensating for the limited depth of inflation swap markets, a counterparty risk premium, and a premium compensating for the sellers' opportunity cost of hedging in cash markets.

[5] Consensus forecasts provide consistent measures of survey-based inflation expectations for the two countries under investigation, while national survey-based measures for the two countries are not fully comparable with respect to survey coverage and forecast horizon.

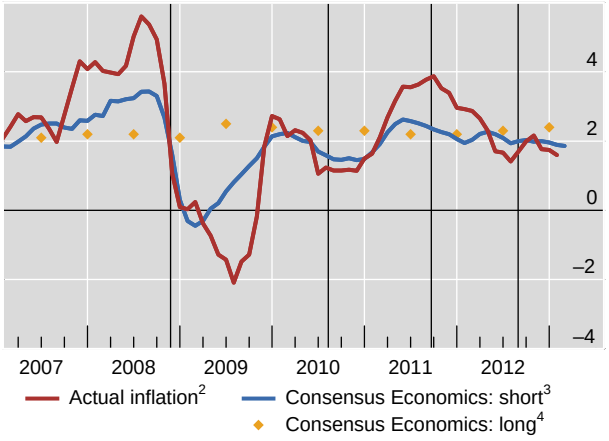
Market- and survey-based inflation expectation measures[1]

In per cent — Graph 2

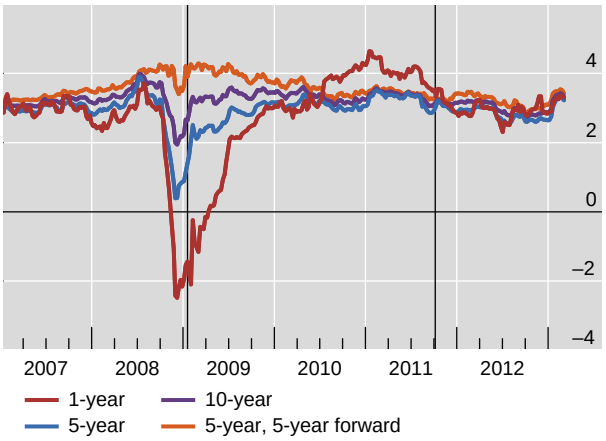
United States: inflation swap rates



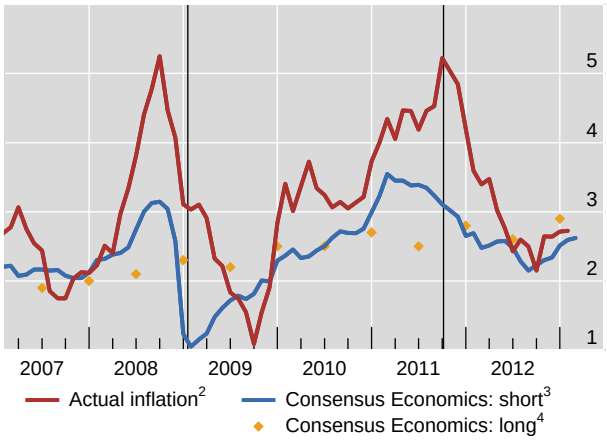
United States: consensus forecasts



United Kingdom: inflation swap rates



United Kingdom: consensus forecasts



[1] The vertical lines represent the dates of the first important announcement of each asset purchase programme. For the United States: 25 November 2008 (LSAP1), 10 August 2010 (LSAP2), 21 September 2011 (MEP) and 31 August 2012 (LSAP3). For the United Kingdom: 19 January 2009 (APF1) and 6 October 2011 (APF2). [2] Actual inflation is calculated as the year-on-year change in the CPI. [3] One-year-ahead CPI inflation forecast based on consensus forecasts for the current and the next year. [4] Consensus forecasts for six- to 10-year-ahead CPI inflation.

Sources: Bloomberg; © Consensus Economics; Datastream; national data; authors' calculations.

inflation expectation measures from their late 2008/early 2009 troughs. After the Lehman collapse, inflation expectation measures plunged sharply, indicating expectations of significant short-term disinflation or even deflation, which indeed temporarily materialised with actual CPI inflation dropping to –2% in the United States and 1% in the United Kingdom in mid-2009. The announcement of asset purchase programmes in late 2008 and early 2009, indicated by the first vertical line in each graph panel, preceded a rapid reversal of inflation swap rates towards pre-crisis levels in the course of 2009. Specifically, during LSAP1, US short-, medium- and long-term inflation swap rates increased by roughly 450, 210 and 140 basis points, while the equivalent UK rates increased by about 470, 170 and 70 basis points during APF1, respectively. There was a similar, though quantitatively less pronounced reversal in short-term consensus forecasts over these periods. This suggests that these first asset purchase programmes may have contributed to dispelling the most imminent concerns about deflation at that time, although the

influence of other factors such as fiscal stimulus packages, low policy rates or any other factors relevant for market sentiment is of course not controlled for.[6]

Second, subsequent asset purchase programmes were followed by more muted and mixed movements in inflation expectations. In the United States, one-, five- and 10-year inflation swap rates rose, respectively, by about 70, 70 and 60 basis points during LSAP2 and by about 20, 60 and 40 basis points during MEP and LSAP3 (until mid-January 2013). These increases, however, just kept inflation swap rates at levels near the Federal Reserve's long-run inflation goal rate of 2% announced in January 2012. UK inflation swap rates even declined by almost 40 basis points at all horizons during APF2, from levels that were nonetheless somewhat above the Bank of England's 2% inflation target. Overall, this suggests that the asset purchase programmes that were launched after the acute phase of the crisis were not associated with expectations of major future upward shifts in inflation.

Third, distant forward inflation expectations remained relatively stable during the global crisis and also after the launch of asset purchase programmes. Implied five-year, five-year forward inflation swap rates fluctuated around levels that prevailed before the crisis and that are broadly consistent with central banks' current inflation target or goal levels when taking into account the presence of inflation risk and other market premia in the inflation swap rates. Consensus forecasts of inflation six to 10 years ahead send essentially the same message, albeit displaying some greater volatility at levels above the central bank's inflation target level in the case of the United Kingdom. Overall, long-term forward inflation expectation measures remained remarkably stable in the face of significant risks of deflation in the acute phase of the crisis and the subsequent unprecedented monetary easing.

Impact of asset purchase programme announcements on inflation expectations

The apparent link identified in the previous section between the announcement of asset purchase programmes and the subsequent rebound in inflation expectation measures is, admittedly, merely suggestive. As mentioned above, such visual associations cannot disentangle the effect of asset purchases from other factors, such as fiscal and other monetary policy measures, changing economic conditions or market sentiment. In order to better isolate the impact of asset purchases on inflation expectations, we study the responses of US and UK inflation swap rates to the main announcements of the Federal Reserve and the Bank of England large-scale asset purchase programmes based on an event study approach and regression analysis.[7]

[6] Panel evidence presented by Carvalho et al (2011) suggests that the expansion of central banks' balance sheets had a significant positive effect on short-term consensus forecasts in 2009 also when fiscal stimulus measures are controlled for.

[7] We also carried out the analysis using bond market break-even rates. The results turned out to be qualitatively similar.

Event study

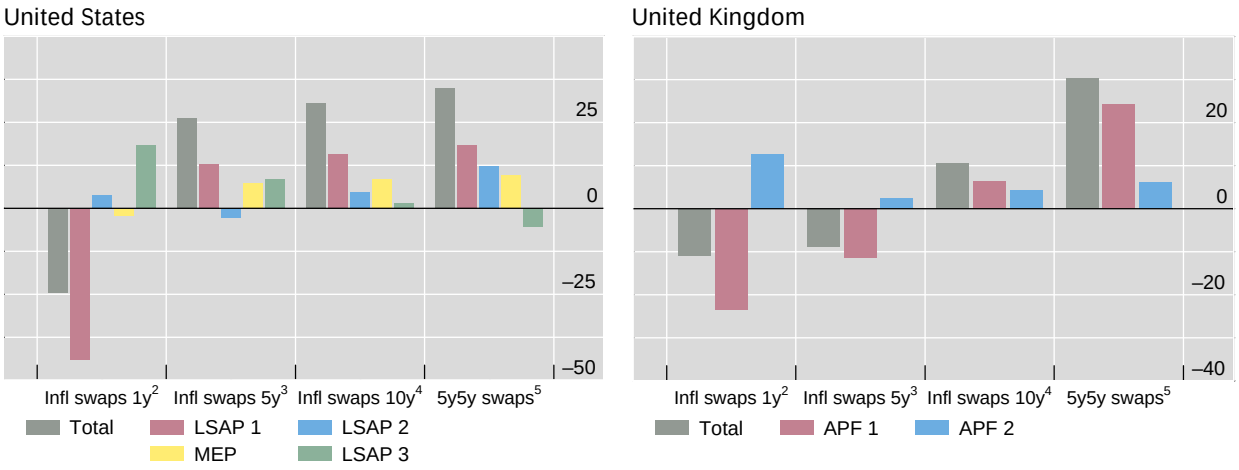
Starting with a standard event study, eg Meaning and Zhu (2011), we look at the change in inflation swap rates on the day of the main announcements of the Federal Reserve's and Bank of England's asset purchase programmes. This approach entails the assumption that financial markets would register and reflect the implications of these policy measures immediately upon their announcement.[8] The announcement dates are listed in the footnotes to Graph 3. We include official announcements with regard to the duration or size of the programmes as well as other relevant official communications, such as the Jackson Hole speech by Ben Bernanke on 31 August 2012 or the announcement by the UK Treasury on 19 January 2009 that the Bank of England would set up an Asset Purchase Facility.

We report, in basis points, the cumulative change (ie the sum of the daily changes) of inflation swap rates upon the main announcements of the individual programmes and of all programme announcements together (Graph 3). The results suggest that US and UK large-scale asset purchases had an impact on inflation swap rates, but the effects were far from uniform across maturities and programmes.

The first asset purchase programmes, LSAP1 and APF1, had a sizeable negative effect on one-year inflation swap rates, of more than 40 basis points in the United States and more than 20 basis points in the United Kingdom. This was primarily

Asset purchase announcement effects[1]

One-day event window, in basis points — Graph 3



[1] Calculated as the end-of-day value on the announcement date minus the end-of-day value on the day before the announcement. The announcement dates for the United States are those of LSAP1: 25 November 2008, 1 December 2008, 16 December 2008, 28 January 2009 and 18 March 2009; LSAP2: 10 August 2010, 27 August 2010, 21 September 2010, 15 October 2010 and 3 November 2010; MEP: 21 September 2011 and 20 June 2012; and LSAP3: 31 August 2012, 13 September 2012 and 12 December 2012. The announcement dates for the United Kingdom are those of APF1: 19 January 2009, 11 February 2009, 5 March 2009, 7 May 2009, 6 August 2009 and 5 November 2009; and APF2: 6 October 2011, 9 February 2012 and 5 July 2012. [2] One-year inflation swap rate. [3] Five-year inflation swap rate. [4] Ten-year inflation swap rate. [5] Implied five-year, five-year forward inflation swap rate.

Sources: Bloomberg; authors' calculations.

[8] The results of our analysis are qualitatively not affected when we consider a two-day instead of a one-day event window, ie when we look at the change in inflation swap rates on the day of and the day following an announcement rather than only on the announcement day.

driven by the large negative response to the very first announcements of the programmes, which were associated with a drop of 79 and 22 basis points, respectively. In the UK, medium-term inflation swap rates also fell, by 11 basis points, while a small increase of about the same magnitude was registered in that segment in the US. The impact on long-term inflation swap rates was mildly positive, with increases of roughly 16 basis points in the US and 6 basis points in the UK.[9] Overall, these findings, in particular the negative impact on short-term inflation swap rates, seem to contradict the impression given by Graph 2, which suggests that the first announcements of the purchase programmes heralded a significant recovery in inflation expectations. However, the event study merely reveals that inflation swap rates initially fell after the first announcements of LSAP1 and APF1 before starting to rise, as can also be seen from Graph 2. This suggests that market participants, to begin with, interpreted these announcements as negative news on the near-term inflation outlook before registering their stimulating effects on the economy. Alternatively, it may just reflect peculiar movements in inflation swap markets at times of acute financial and economic stress and in response to announcements of entirely novel policy measures. Or it could reflect the effect of other news on the same day the announcements were made, an aspect explored in the next section.

Subsequent asset purchase programmes generally had positive, albeit small effects on inflation swap rates. On days when there was APF2 news, UK inflation swap rates increased by 13 basis points at short horizons and less than 5 basis points at medium- and long-term horizons. In the United States, LSAP2, MEP and LSAP3 announcements taken together were associated with increases in short-term inflation swap rates of about 20 basis points and in medium- and long-term swap rates of around 15 basis points. However, the impact varied across programmes. LSAP2 and MEP announcements primarily affected long-term inflation swap rates, though by a very small amount (less than 10 basis points in the 10-year inflation swap segment). LSAP3 announcements, in contrast, were associated with a sizeable increase in short-term inflation swap rates, of about 18 basis points. This may reflect the fact that the LSAP3 announcements also captured the Federal Reserve's forward guidance on the future path of interest rates on the same days, which may have primarily impacted short-term inflation expectations.

Regression analysis

Event study-based analyses of the effects of asset purchases suffer from a number of significant drawbacks. First, over time, as markets' anticipation of announcements of asset purchase programmes improves, the estimated announcement effects may not correctly measure the true effect of the programme. Second, the effects on inflation expectations of other factors, specifically of other relevant news released on the same day as asset purchase announcements, are not controlled for. While there is little that can be done to address the first issue, we attempt to tackle the second using a high-frequency regression setup.

[9] Guidolin and Neely (2010) find somewhat larger announcement effects for LSAP1 on 10-year bond market break-even rates. When replicating the analysis with break-even rates, we arrive at a similar finding, with 10-year break-even rates increasing in total by about 30 basis points on LSAP1 announcement days.

The analytical framework follows existing high-frequency studies of the dynamics of inflation expectations (eg Gürkaynak et al (2010), Beechey et al (2011), Galati et al (2011)). We estimate regressions of the form:

$$\Delta \inf_t^E = \alpha + \beta A_t + \gamma Z_t + \varepsilon_t \quad (1)$$

where $\Delta \inf^E$ is the daily change in the inflation swap rate and A is a set of dummy variables comprising a dummy for each asset purchase announcement date. We therefore have for each individual announcement date a dummy variable that takes on the value one on the day of the announcement and zero in all other periods. Thus, we allow different announcements to have different impacts, as in the event study. Z is a set of control variables containing the surprise component of major macroeconomic data releases. Surprises are constructed by taking the difference between the released value and the value expected by market participants according to Bloomberg and JPMorgan surveys. We consider the same set of domestic macroeconomic releases as Galati et al (2011), augmented with economic releases that came out on the same day as at least one asset purchase announcement.[10] The list of releases included in *Z* is provided in the Appendix table. Finally, ε is an error term.

The regression equation is estimated on daily US and UK data over a sample period extending from the month after the Lehman collapse (ie October 2008) to mid-January 2013. The dependent variables are the one-, five- and 10-year as well as the implied five-year, five-year forward inflation swap rates. Tables 1 and 2 report the main results of the estimation of equation (1). For each regression, the table shows the impact of purchase announcements for all programmes together and for the individual programmes separately in basis points. In other words, it reports the sum of the coefficients of the announcement dummies for all

Impact of asset purchase announcements on US inflation swap rates[1] Table 1

	1-year swaps	5-year swaps	10-year swaps	5y-5y swaps
All announcements	26.75	51.95***	38.96***	25.72**
	(0.91)	(3.75)	(4.34)	(2.23)
LSAP1	15.31	36.47***	20.50***	4.23
	(0.68)	(2.65)	(2.74)	(0.52)
LSAP2	11.05	–0.06	8.46***	17.08***
	(1.13)	(–0.02)	(3.28)	(4.57)
MEP	–6.50	5.74***	7.45***	9.17***
	(–1.61)	(6.05)	(8.76)	(6.81)
LSAP3	6.89	9.80***	2.56	–4.76
	(1.05)	(3.79)	(1.01)	(–1.10)

***/**/* indicates significance at the 1/5/10% level. The announcement dates are those of LSAP1: 25 November 2008, 1 December 2008, 16 December 2008, 28 January 2009 and 18 March 2009; LSAP2: 10 August 2010, 27 August 2010, 21 September 2010, 15 October 2010 and 3 November 2010; MEP: 21 September 2011 and 20 June 2012; and LSAP3: 31 August 2012, 13 September 2012 and 12 December 2012.

[1] In basis points, with autocorrelation- and heteroskedasticity-robust *t*-statistics in parentheses.

[10] We also consider the inclusion of the US releases in the UK regressions, but find this not to affect the results qualitatively.

Impact of asset purchase announcements on UK inflation swap rates[1] Table 2

	1-year swaps	5-year swaps	10-year swaps	5y-5y swaps
All announcements	–8.81	–6.81***	11.87***	30.78***
	(–1.99)	(–3.71)	(7.05)	(11.93)
APF1	–25.02***	–10.00***	7.52***	25.26***
	(–9.10)	(–7.87)	(6.22)	(14.20)
APF2	16.21***	3.19***	4.35***	5.52***
	(6.49)	(3.98)	(5.93)	(4.11)

***/**/* indicates significance at the 1/5/10% level. The announcement dates are those of APF1: 19 January 2009, 11 February 2009, 5 March 2009, 7 May 2009, 6 August 2009 and 5 November 2009; and APF2: 6 October 2011, 9 February 2012 and 5 July 2012.

[1] In basis points, with autocorrelation- and heteroskedasticity-robust *t*-statistics in parentheses.

programmes together and for the individual programmes. In parentheses, we report autocorrelation- and heteroskedasticity-robust *t*-statistics of the coefficients.

The main findings of the regression analysis are twofold. First, the estimated impacts of asset purchase announcements are in general consistent with those of the event study. An important exception is the impact of LSAP1 announcements in the United States, which is estimated to have raised one-, five- and 10-year inflation swap rates by roughly 15, 35 and 20 basis points, respectively. This suggests that the smaller impacts found for LSAP1 announcements in the event study, which in the case of short-term inflation swap rates were even sizeably negative, partly reflect the effects of other macroeconomic news included in the set of control variables *Z*.

Second, the *t*-statistics reveal that the impacts of purchase announcements have mostly been statistically significant. Only the estimated impact on short-term inflation swap rates in the United States is statistically insignificant for all programmes. In addition, LSAP2 did not have a significant impact on five-year inflation swap rates, while LSAP3 did not significantly affect the 10-year rates.

Overall, the analysis suggests that asset purchase announcements had economically and statistically significant positive effects only on medium- and long-term inflation swap rates in the United States. The estimated cumulative impact of all asset purchase announcements on US five- and 10-year inflation swap rates is roughly 50 and 40 basis points, respectively. In the United Kingdom, there is a relatively large cumulative increase in five-year, five-year forward inflation swap rates, but this reflects the oppositely signed impact of the announcements on the five- and 10-year swap rates.

Conclusions

The analysis in this article indicates that the effects of the large-scale asset purchases by the Federal Reserve and Bank of England on inflation expectations have been statistically significant, but that their quantitative importance is uncertain. In the course of the various asset purchase programmes, in particular after the initial programmes launched in late 2008 and early 2009, inflation

expectation measures displayed sizeable rebounds towards levels broadly consistent with central banks' inflation target levels. This suggests that asset purchase programmes have made an important contribution to fending off deflation risks. However, an assessment of the impact of the major programme announcements indicates economically and statistically significant effects only for medium- and long-term inflation swap rates in the United States. This may imply that factors other than asset purchase programmes were the main driving factor behind the shifts in inflation expectation measures over the course of the crisis and post-crisis period. Alternatively, the effects of asset purchase programmes may not be appropriately captured by announcement effect analysis, eg because the programmes were anticipated or affected expectations with longer lags, possibly in interaction with other factors such as changing economic sentiment.

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Appendix

Economic releases included in the regressions

Appendix Table

US economic releases	Release on announcement dates (Y/N)	UK economic releases	Release on announcement dates (Y/N)
Chicago Business Barometer	Y	Manufacturing PMI Markit Survey	N
Census Bureau US Construction Spending MoM	Y	Avg Earnings Whole Economy Headline Rate 3 Month Average	Y
Conference Board Consumer Confidence	Y	Bank of England Official Bank Rate	Y
University of Michigan Survey of Consumer Confidence Sentiment	Y	Chained GDP at Market Prices QoQ	N
Unit Labor Costs Nonfarm Business Sector QoQ	Y	Halifax House Prices All UK MoM	Y
CPI Urban Consumers MoM	Y	Industrial Production MoM	Y
Capacity Utilization Per cent of Total Capacity	N	IOS Index Total Service Industries MoM	Y
Empire State Manufacturing Survey General Business Conditions	Y	Manufacturing Production MoM	Y
Existing Homes Sales	Y	Nationwide Consumer Confidence Index	N
Treasury Federal Budget Debt Summary Deficit Or Surplus	Y	PPI Manufactured Products MoM	N
Federal Funds Target Rate	Y	CPI EU Harmonized MoM	N
GDP Chained 2005 Dollars QoQ	Y	UK RPI MoM	N
GDP Personal Consumption Core Price Index QoQ Per cent	Y	Unemployment Claimant Count Monthly Change	Y
Import Price Index by End Use All MoM	Y	Claimant Count Rate	Y
Initial Jobless Claims	Y		
Industrial Production MoM 2007 = 100	N		
Conference Board US Leading Index MoM	N		
ISM Non-Manufacturing NMI	Y		
ISM Manufacturing PMI	Y		
New One Family Houses Sold Annual Total	Y		
New Privately Owned Housing Units Started by Structure Total	Y		
Personal Consumption Expenditure Core Price Index MoM	N		
PPI By Processing Stage Finished Goods Total MoM	Y		
Richmond Federal Reserve Manufacturing Survey Monthly Per cent Change Overall Index	Y		
Adjusted Retail & Food Services Sales Total Monthly Per cent Change	Y		
Adjusted Retail Sales Less Autos Monthly Per cent Change	Y		
NFIB Small Business Optimism	Y		
S&P/Case-Shiller Composite-20 City Home Price Index YoY	Y		
Manufacturers' New Orders Total MoM	Y		
Employees on Nonfarm Payrolls Total MoM Net Change	N		
Unemployment Rate Total in Labor Force	N		