

Inflation expectations and the great recession¹

This article examines whether short-run inflation expectations and indicators of long-term credibility have been affected by the great recession and by the policies to counter it. Measures of short-run expectations dropped in the crisis, particularly in advanced economies, but have since rebounded. Measures of long-run inflation expectations have in general fluctuated around a relatively stable level, suggesting continued central bank credibility. At the same time, dispersion and uncertainty measures of long-term inflation expectations are somewhat higher than before the crisis, raising questions about how firmly expectations are anchored.

JEL classification: E31, E52.

This article examines two questions. The first is whether, in the aftermath of the great recession, short-term inflation expectations have signalled risks for price stability in the near term. A still fragile economic recovery and low realised inflation in some advanced countries could be associated with risks of price level declines. By contrast, rising commodity prices, large capital inflows and pressures on resource utilisation have driven inflation up in many emerging market economies. If such pressures on consumer prices significantly affect expectations, this could have important consequences for the economy more broadly. After all, short-term inflation expectations, together with expectations about the near-term path of central bank policy rates, not only affect ex ante real interest rates and thus households' and firms' spending decisions, but also influence wage negotiations and price setting.

The second question is whether there is any sign that the credibility of central banks' commitment to price stability has suffered as a result of the great recession and associated policy measures. Long-run inflation expectations reflect the credibility of monetary policy and are crucial for anchoring inflation: price shocks, such as oil or food price rises, have limited impact on actual inflation if the public believes that the central bank can meet its price stability objective in the long run. In this regard, measures of dispersion and uncertainty about long-term inflation developments may provide some indication of how firmly expectations are anchored.

¹ The views expressed in this article are those of the authors and do not necessarily reflect those of the BIS. The authors would like to thank Claudio Borio, Stephen Cecchetti and Christian Upper for helpful comments, and Emir Emiray and Gert Schnabel for research assistance. The analysis in this feature is based on data until late January 2011.

We find that short-term survey expectations of inflation have rebounded, although they remain low in most of the major advanced economies. Short-run inflation forecasts in major emerging market economies have returned to, and for some countries surpassed, pre-crisis levels. Moreover, the dispersion of emerging market inflation forecasts has generally been greater than in advanced economies, possibly reflecting uncertainty about the impact of strongly rising food and commodity prices. Measures of long-term inflation expectations far ahead into the future have in most cases remained close to a stable pre-crisis level, suggesting continued high central bank credibility. However, measures of dispersion and uncertainty of long-term inflation expectations are somewhat higher than prior to the crisis. This could raise questions about how firmly expectations are anchored.

The next section examines how indicators of short-run inflation expectations have developed during and after the great recession. It also discusses to what extent disagreement about such expectations has changed. The following section turns to measures of long-term inflation expectations and associated uncertainty indicators, and discusses central bank credibility. The final section concludes.

Rebounding short-run inflation expectations

This section reviews recent developments in short-run inflation expectations. Short-run inflation expectations matter because they affect – for a given path of nominal policy interest rates – short-term real interest rates and thereby influence the path of expected real income. By reducing the level of short-term real interest rates, a rise in short-term inflation expectations can strengthen the impact on real activity of a policy commitment when nominal interest rates are at the zero lower bound. At the same time, higher inflation expectations can signal pressure on wages and a need to tighten policy, as is the case in many emerging economies today.

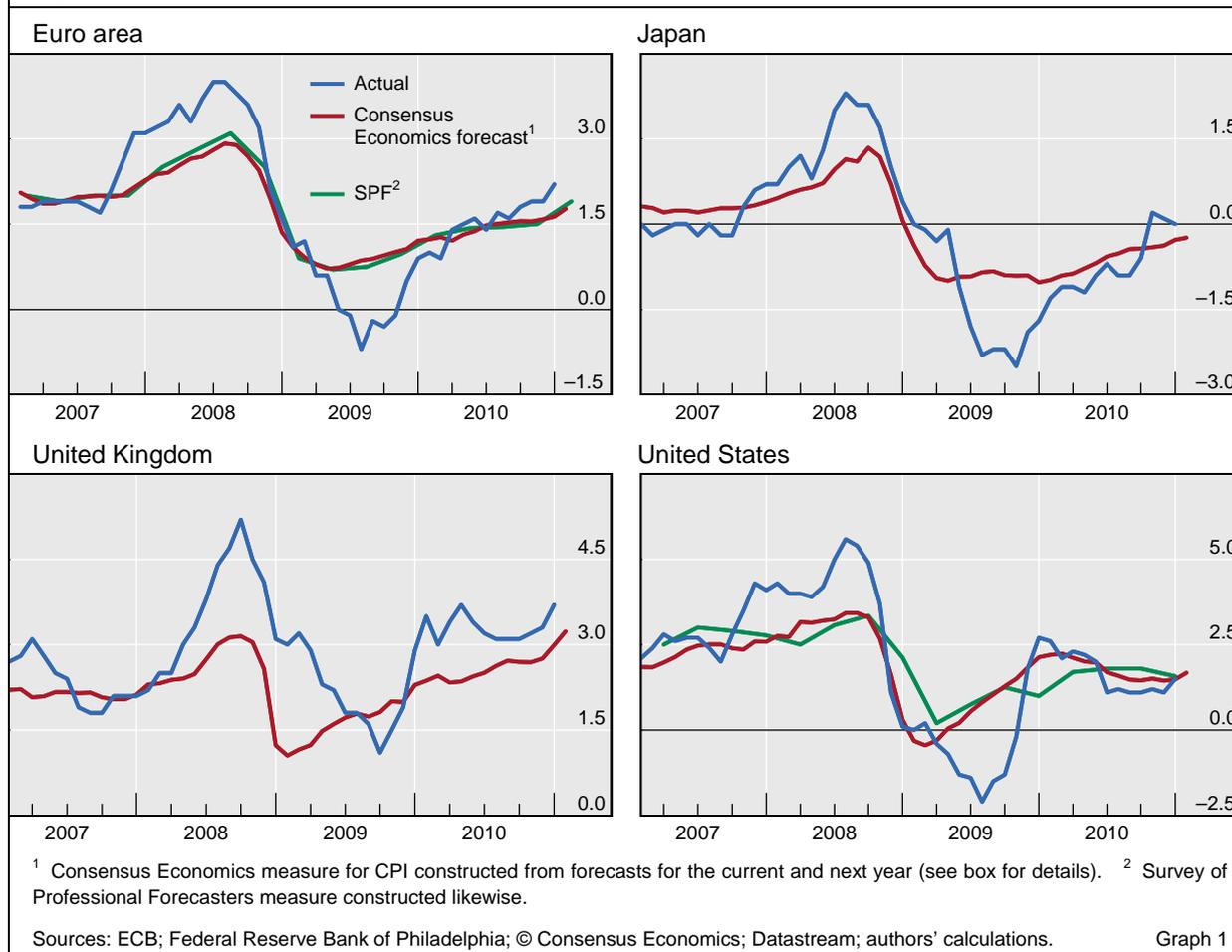
Measures of short-term inflation expectations are available for consumers and professional forecasters. While consumer surveys offer respondents categories of answers that can be rather vague, professional forecasters provide point estimates, summaries of which are published by firms such as Consensus Economics. Some central banks also publish surveys.

In line with the economic recovery, short-term inflation expectations of professional forecasters for the major advanced economies have risen since the worst of the crisis (Graph 1). Consumer price inflation rates decreased sharply over the year 2009 and have since rebounded. Inflation expectations followed the same pattern, albeit with smaller amplitude. That said, expectations have not increased uniformly. In the euro area, Consensus Economics forecasts for the year ahead have recently edged up to 1.8%, although they remain in line with actual inflation, at 2.2%, and the ECB's definition of price stability of consumer price inflation of close to, but below, 2%. The ECB's Survey of Professional Forecasters measure suggests an expected euro area inflation rate of 1.9%. In Japan, professional forecasters' inflation expectations continue to point to deflation, standing at –0.2%. In the

Strength of rebound varies across advanced economies

Measures of actual and expected short-run inflation in advanced economies

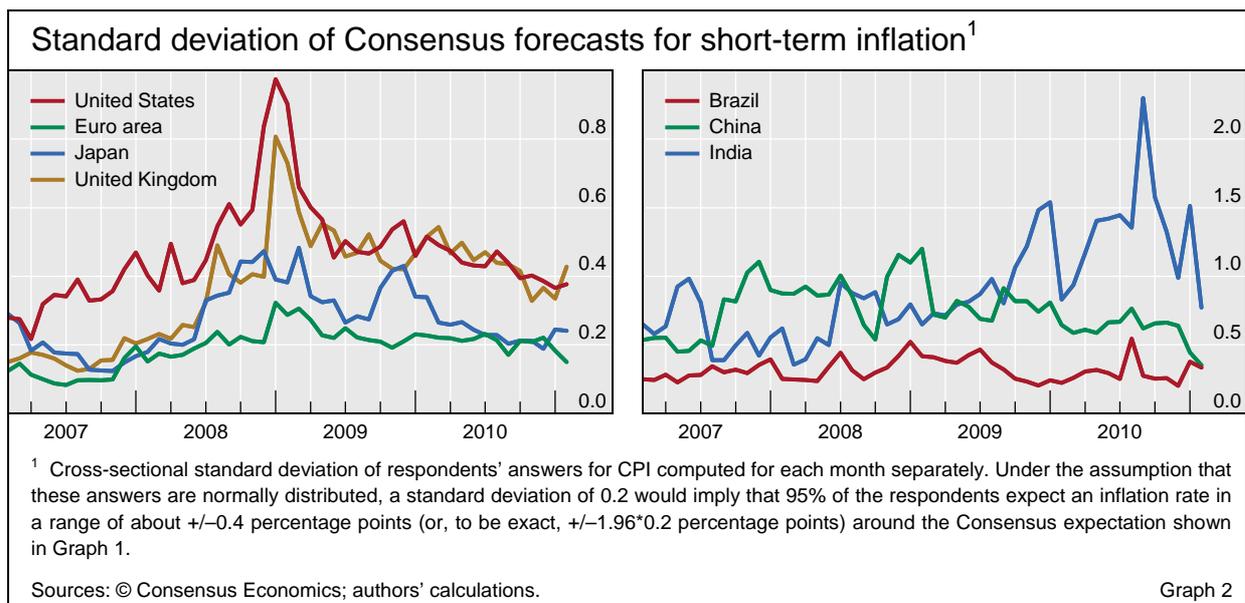
In per cent



United Kingdom, expectations and actual inflation today exceed the Bank of England's inflation target of 2%, with current values at 3.2% and 3.7%, respectively.² And in the United States, inflation expectations have recently been declining slightly, standing at 1.7% for the Consensus measure and 1.6% for the Survey of Professional Forecasters; actual consumer price inflation is 1.5%. US core inflation has decreased to 0.6%, and survey respondents seem to be pushing their expected timing for this measure's recovery further and further into the future. For several quarters now, they have predicted core inflation to be low in the quarter of the survey and to increase to around 1.5% over the subsequent year. There is a risk that low headline inflation expectations may become entrenched in the United States.

The dispersion of economic forecasters' inflation expectations, as measured by the standard deviation of the answers underlying the Consensus

² The VAT rate in the United Kingdom rose in January 2011 by 2.5 percentage points. The Bank of England (2010) expects that this might increase CPI inflation by as much as 1.5 percentage points.



Economics forecast, peaked at the end of 2008 (Graph 2).³ Under the assumption that respondents' answers are normally distributed, the value of almost one for the standard deviation for the United States at the end of 2008 suggests that 95% of the forecasters expected inflation over the year 2009 to lie somewhere in the range of -2% to 2% .⁴ With the exception of the United Kingdom, disagreement about the inflation outlook has declined to pre-crisis levels since late 2008. High dispersion merits monitoring because it implies adjustment costs for a large number of individuals once actual inflation turns out to deviate from their initial expectations.

Actual and expected inflation in major emerging economies also dropped during the crisis, though often less sharply than in advanced economies (Graph 3). In Brazil and China, consumer prices are currently rising again, by 5.9% and 4.6% a year, and Consensus Economics expectations have returned to the peaks of 2008, standing at 5.1% and 4.2%, respectively. In India, the latest values for actual and expected CPI inflation are 8.3% and 9.3%, respectively. Wholesale prices, which may be more representative in India than the consumer price index, are currently rising by 18.4% a year. These rises in actual and expected inflation probably reflect the fast and strong economic recovery in emerging economies. Aggregate demand effects from earlier large-scale capital inflows are also likely to be filtering through, as are increases in international commodity prices, which fell sharply in late 2008 but have risen strongly since mid-2010 (Graph 4). The increase has affected all major classes of commodities, including energy, metals and food, and is likely to largely reflect

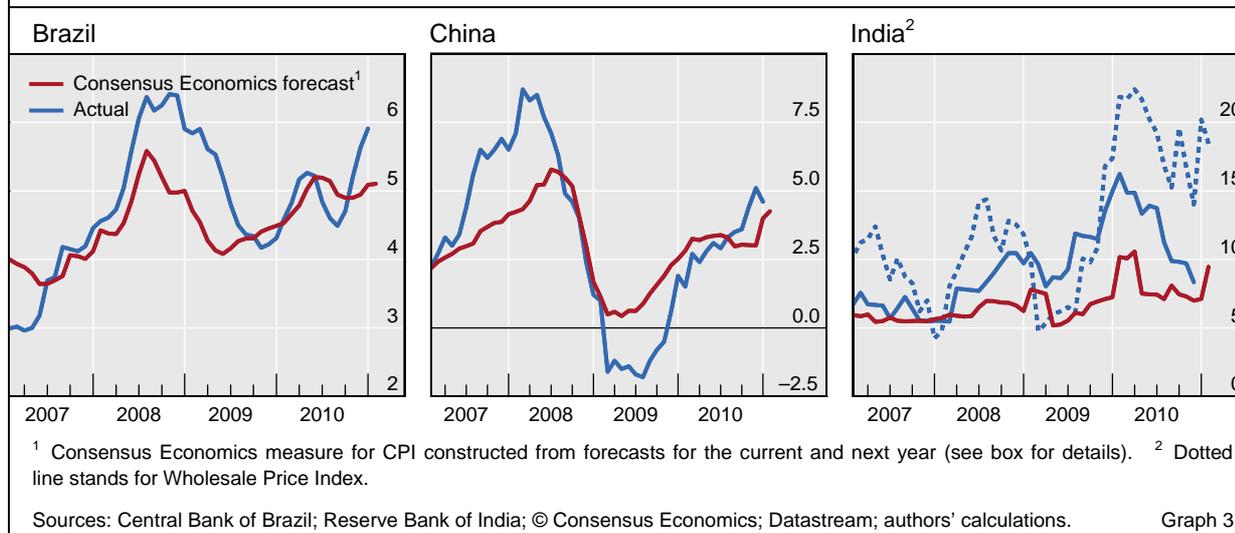
In emerging market economies, food prices reinforce the rebound

³ Bruine de Bruin et al (2009) show that such dispersion in views is correlated with, but not identical to, individuals' uncertainty about the inflation outlook. See also Capistran and Timmermann (2009).

⁴ Graph 1 shows an average expected US inflation rate at the end of 2008 of essentially zero. For a normal distribution, one obtains the upper (lower) edge of the 95% confidence band by multiplying the standard deviation by 1.96 and adding (subtracting) the resulting value to (from) the mean of the distribution.

Measures of actual and expected short-run inflation in emerging market economies

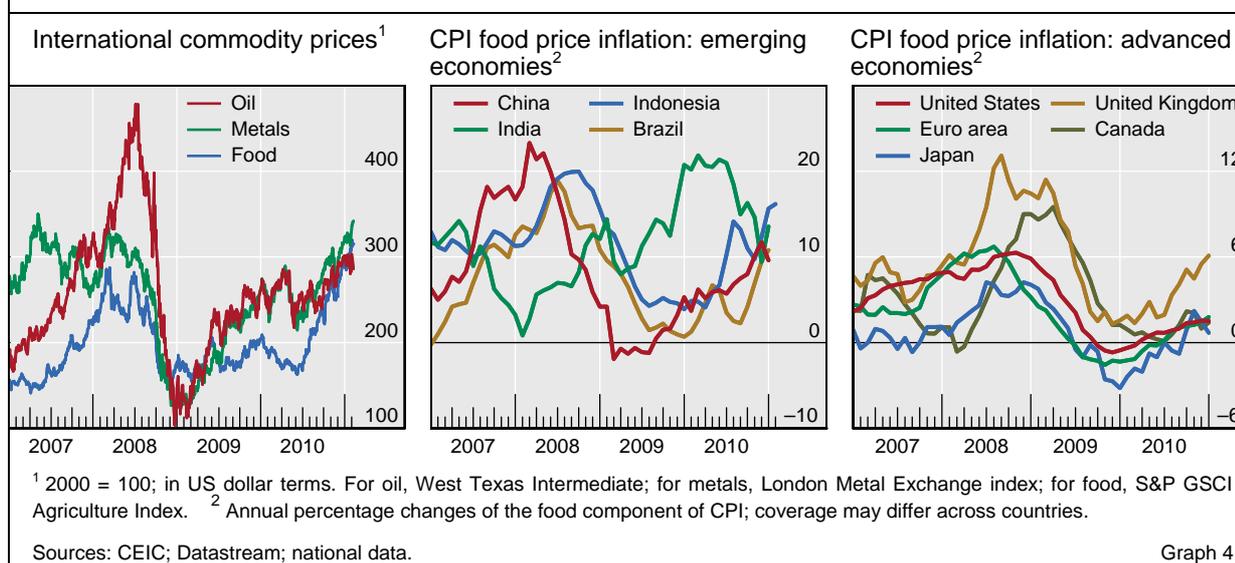
In per cent



strong demand from emerging economies. In addition, supply factors are also likely to have played a role in pushing up food prices, in particular bad weather conditions including floods in Pakistan and droughts in Russia.

Food prices seem to affect inflation expectations in emerging economies more strongly than in advanced economies (see box). One reason is that food prices in the consumer price index have generally risen more strongly in emerging economies than in advanced economies. Moreover, food accounts for a higher proportion of the total household consumption expenditure basket in economies with lower income per capita. The weight of food in the total CPI is correspondingly higher for these economies, at around 30% on average for emerging economies, compared with around 13% for industrial countries (IMF (2007), Cecchetti and Moessner (2008)). It is noteworthy that the latest spikes in the dispersion of short-run inflation expectations in emerging economies, and especially in India, have coincided with recent increases in commodity prices.

Commodity and food prices



Has there been a change in the formation of inflation expectations?

Changes in the expectations formation process can affect the dynamics of inflation itself. For monetary policymakers who seek to stabilise inflation two to three years out, such a change might signal the need to adjust the way in which they react to shocks.

There are a number of ways in which the financial crisis could have affected how inflation expectations are formed. The public may have changed its understanding of how monetary policy works. The deep recession in major advanced economies could have changed assessments of the growth rate of potential output. Or rapid real growth in emerging markets may have altered the dynamics of commodity and food prices, changing the way in which agents form their inflation expectations.

Galati et al (2009) analyse how *long-run* inflation expectations changed during the financial crisis. Using bond- and swap-based expectations measures, they find that expectations in the euro area, the United Kingdom and the United States have started responding more strongly to macroeconomic news. In principle, such news should have no impact if long-run inflation expectations are well anchored.

Formation of short-run inflation expectations as captured by Consensus Economics

	Emerging markets		Advanced economies		Inflation target		No inflation target	
	Pre-Lehman	Post-Lehman	Pre-Lehman	Post-Lehman	Pre-Lehman	Post-Lehman	Pre-Lehman	Post-Lehman
<i>c</i>	0.240***	0.792***	0.150***	0.271***	0.283***	0.557***	0.078***	0.270***
<i>c_{exp,1}</i>	1.108***	1.023***	1.071***	1.144***	1.101***	1.186***	1.114***	0.936***
<i>c_{exp,2}</i>	-0.088*	-0.147*	-0.104**	-0.139	-0.074	-0.317***	-0.147**	0.151
<i>c_{exp,3}</i>	-0.118***	-0.125**	-0.081**	-0.182***	-0.140***	-0.050	-0.054	-0.299***
<i>c_{core,1}</i>	0.036***	0.038**	0.019	0.070**	0.031**	0.009	0.036***	0.053***
<i>c_{core,2}</i>	0.042***	0.006	0.054***	0.021	0.073***	0.052*	0.011	-0.016
<i>c_{core,3}</i>	-0.051***	-0.032*	-0.040***	-0.072***	-0.079***	-0.054***	-0.014	-0.040**
<i>c_{energy,1}</i>	0.005*	0.007***	0.003***	0.004*	0.008***	0.010***	-0.001	0.007***
<i>c_{energy,2}</i>	0.003	-0.004	0.001	-0.003	-0.003	-0.008**	0.007***	-0.006**
<i>c_{energy,3}</i>	-0.004	0.000	-0.004***	-0.003	-0.001	-0.001	-0.004**	-0.000
<i>c_{food,1}</i>	0.052***	0.031***	-0.001	-0.020*	0.035***	0.021**	0.011*	-0.013
<i>c_{food,2}</i>	-0.033***	-0.016	0.010**	0.023	-0.0167**	-0.009	0.002	0.010
<i>c_{food,3}</i>	-0.014*	-0.008	-0.003	-0.021**	-0.013**	-0.012	0.000	0.001
<i>c_{ugap,1}</i>	-0.003	-0.039	-0.001	0.037	-0.002	-0.028	-0.003*	-0.092
<i>c_{ugap,2}</i>	0.002	-0.059	0.000	0.007	0.001	-0.014	0.005***	-0.116
<i>c_{ugap,3}</i>	-0.000	0.026	-0.001	-0.016	0.000	-0.005	-0.003***	0.210***
Average expected inflation								
	4.444	3.768	1.676	0.881	4.070	3.363	1.847	1.378

Panel estimates with country- and time-fixed effects of

$$\pi_{j,t}^{exp} = c + c_j + c_t + c_{exp,k} \pi_{j,t-k}^{exp} + c_{core,k} \pi_{j,t-k}^{core} + c_{energy,k} \pi_{j,t-k}^{energy} + c_{food,k} \pi_{j,t-k}^{food} + c_{ugap,k} ugap_{j,t-k} + \varepsilon_{j,t}$$

with $k = 1, 2, 3$, pre-Lehman April 2000 to September 2008, post-Lehman October 2008 to November 2010. ***/**/* indicate significance at the 10/5/1% level. Average expected inflation is computed as

$$(c + \sum_{k=1}^3 c_{core,k} \mu_{core} + \sum_{k=1}^3 c_{energy,k} \mu_{energy} + \sum_{k=1}^3 c_{food,k} \mu_{food} + \sum_{k=1}^3 c_{ugap,k} \mu_{ugap}) / (1 - \sum_{k=1}^3 c_{exp,k})$$

with μ the mean over the entire sample period. Economies included are Australia, Brazil, Canada, the Czech Republic, Denmark, the euro area, Hong Kong SAR, Hungary, Indonesia, Japan, Korea, Malaysia, Mexico, New Zealand, Norway, the Philippines, Poland, Singapore, South Africa, Sweden, Switzerland, Thailand, Turkey, the United Kingdom and the United States. Emerging market dummies for whole sample for Brazil, the Czech Republic, Hong Kong SAR, Hungary, Indonesia, Korea, Malaysia, Mexico, the Philippines, Poland, Singapore, South Africa, Thailand and Turkey. IT dummy = 1 from first quarter of the year in which inflation target was adopted (true at the end of the sample for Australia, Brazil, Canada, the Czech Republic, Hungary, Indonesia, Korea, Mexico, New Zealand, Norway, the Philippines, Poland, South Africa, Sweden, Thailand, Turkey and the United Kingdom). The CPI food price series is defined as food and non-alcoholic beverages (COICOP 01) or the closest available series; the CPI energy price series is defined as electricity, gas and other fuels (COICOP 04.5) plus fuels and lubricants for personal transport equipment (COICOP 07.2.2), or the closest available series. The Classification of Individual Consumption by Purpose (COICOP) is a reference classification published by the United Nations Statistics Division. CPI data for OECD countries from the OECD; for some emerging market countries, the closest available series are used. Unemployment gaps are constructed using the Hodrick-Prescott filter on deseasonalised data.

Sources: National central bank websites; OECD; CEIC; Datastream; BIS; authors' calculations.

Table A

Table A presents a simple econometric analysis of the formation process of *short-run* inflation expectations. The analysis uses monthly data on expectations for the year ahead from 25 countries from 2000 onwards.[Ⓢ] The table provides a breakdown between emerging and advanced economies, on the one hand, and between inflation targeting nations and other economies, on the other hand, since it seems likely that the average rate of inflation differs between these groups. For all breakdowns, estimates are reported for before and during the great recession.

Before the crisis, inflation expectations evolved in similar ways in the different country groups. Consensus Economics inflation forecasts seemed to be autocorrelated and to depend on lagged core, energy and food price inflation.[Ⓢ] Average inflation expectations appeared lower in advanced economies and countries without an inflation target, and they seemed to follow a hump-shaped pattern in response to shocks. Core, energy and food price inflation tended to increase inflation expectations initially but to reduce them after two to three months. Thus, it appeared that changes in the rate of food and energy price inflation, rather than their rate of inflation itself, affected expectations. The impact of food prices was particularly large in emerging markets. Finally, inflation expectations in non-inflation targeting countries seemed to depend on the unemployment gap: when unemployment increased above its long-term trend, inflation expectations tended to decline.[Ⓢ]

Since the onset of the great recession, average inflation expectations have apparently decreased across the board, a result that seems largely driven by the reduced impact of food price inflation. This weaker response of inflation expectations may in turn be a reaction to the increase in the volatility of food price inflation in recent years. Further, in economies without an inflation target, inflation expectations seem to have stopped following a hump-shaped response to shocks. This may suggest that forecasters have started to view inflation itself as less sluggish than before the crisis. Alternatively, they may today rely more on new economic information when forming inflation expectations and less on their own past forecasts. It remains to be seen if these changes in the formation of inflation expectations have modified the dynamics of inflation itself.

[Ⓢ] Consensus Economics provides forecasts for the current calendar year and the coming one. In January 2011, expectations for the year ahead are simply given by the Consensus 2011 forecast. In February 2011, expectations for the year ahead are computed as a weighted average of the Consensus 2011 and 2012 forecasts, with the former assigned a weight of 11/12 and the latter a weight of 1/12. These weights shift as the year progresses: in December, they are 1/12 and 11/12, respectively. [Ⓢ] The analysis uses three lags. Further lags were generally insignificant. Contemporaneous data for the right-hand side variables have been excluded to account for data collection and reporting lags. A level specification is chosen since it seems implausible to assume non-stationary inflation expectations over the relevant period. [Ⓢ] Output gaps do not appear to affect inflation expectations. Since monetary regimes differ widely across the economies considered, policy rates are not included in the analysis. The effect of quantitative easing measures is not examined due to the small number of observations.

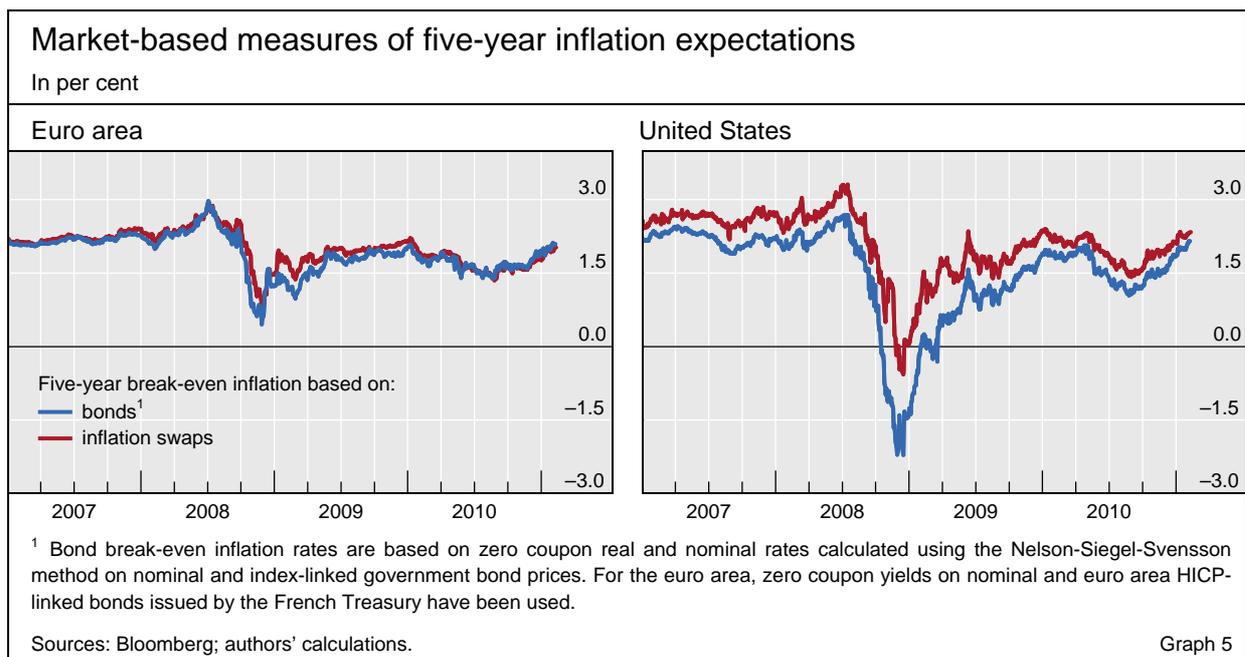
Long-run inflation expectations and central bank credibility

Financial market prices provide timely ...

Long-run inflation expectations reflect the credibility of monetary policy with respect to its inflation objective, and are therefore crucial for anchoring inflation. Information on longer-term inflation expectations can be obtained from surveys and financial market prices. Timeliness and richness of information across a wide range of horizons make market-based measures particularly useful. For instance, break-even inflation rates can be derived from the difference between nominal bond yields and corresponding index-linked real yields, and are available every day.

... although imperfect information on inflation expectations

However, market-based measures do not represent pure measures of inflation expectations. Break-even inflation rates contain premia for inflation risk as well as for differential liquidity risk in nominal and index-linked bonds that muddy the waters. Moreover, the information content of break-even rates may be relatively low in times of market stress. During the height of the financial crisis, for example, they exhibited sharp swings not closely related to



changes in the outlook for inflation. Break-even inflation rates plunged in the aftermath of the Lehman collapse, with the five-year US break-even rate falling below -2% (Graph 5). While this decline may have reflected expectations that average inflation would decrease over the next few years, other factors were arguably more important. Intense flight-to-liquidity flows during the market turmoil resulted in strong demand for nominal government bonds. This pushed down nominal yields to extremely low levels, which in turn placed severe downward pressure on break-even rates. At the same time, the liquidity premium in the less liquid index-linked market segment almost certainly rose, pushing real yields up and depressing break-even rates further. This was reinforced by rapid unwinding of inflation-linked bond positions in response to collapsing break-even rates, which further added to the drop in these rates.

More recently, the question arises whether central bank bond purchase programmes might have distorted break-even inflation rates, especially in the United States. In the recent \$600 billion expansion of the Federal Reserve's Large-Scale Asset Purchase (LSAP) programme, 97% of the purchases were earmarked for the nominal Treasury market, and only 3% for the index-linked Treasury Inflation-Protected Securities (TIPS) market. By comparison, nominal Treasuries make up around 89% of the entire US Treasury market, with the remaining 11% consisting of TIPS. With the Fed making heavier purchases in the nominal sector compared to its share of the total market, it is conceivable that this would generate relatively more downward pressure on nominal bond yields relative to real yields.

There is little evidence for such an effect, though. Following the first LSAP announcement by the Federal Open Market Committee on 18 March 2009, long-term US break-even rates rose by almost 20 basis points within two days (Guidolin and Neely (2010)). The 3 November 2010 announcement of a second round of LSAPs was widely anticipated by markets, and the effects on yields and break-even rates were seen weeks before the actual announcement. In

particular, investors became confident that the LSAPs would be expanded following Federal Reserve Chairman Bernanke's Jackson Hole speech on 27 August. From the day before this speech until the ultimate announcement on 3 November, the five-year US break-even rate rose by around 40 basis points, suggesting growing expectations of easier US monetary policy. Hence, if LSAPs were going to have distorting effects on break-even rates, one might anticipate that this would have resulted in downward pressure on such rates. Instead, break-even rates rose as investors priced in expectations of additional LSAPs.

Prices of inflation swaps also suggest that bond market-specific factors had little to do with the movements of break-even rates around LSAP announcements. Inflation swap prices continued to move in parallel with bond-based break-even inflation rates, even as investors reacted to news about Fed purchases of bonds (Graph 5, right-hand panel). Inflation swaps pay the CPI inflation rate accrued on a notional value over the relevant maturity of the swap against a fixed payment, which reflects the inflation swap price.⁵ While the limited depth of inflation swap markets suggests caution is advisable in interpreting their price movements, they nevertheless provide useful information to complement bond break-even rates. Inflation swaps are not affected by differential liquidity conditions in nominal and index-linked bond markets and, at least in principle, they should not be directly influenced by other bond market-specific factors.

Forward break-even rates can measure credibility ...

Implied forward break-even inflation rates far ahead are often used as measures of central bank credibility: if the central bank's commitment to maintaining price stability is fully credible, expected inflation in the distant future should remain at a level consistent with the central bank's inflation objective. Distant forward rates, such as the five-year forward break-even rate five years ahead, are seen as providing a cleaner indication of long-horizon inflation expectations than spot break-even rates because, at least in principle, they should be unaffected by purely near-term inflation expectations and policy actions.

... and have remained stable ...

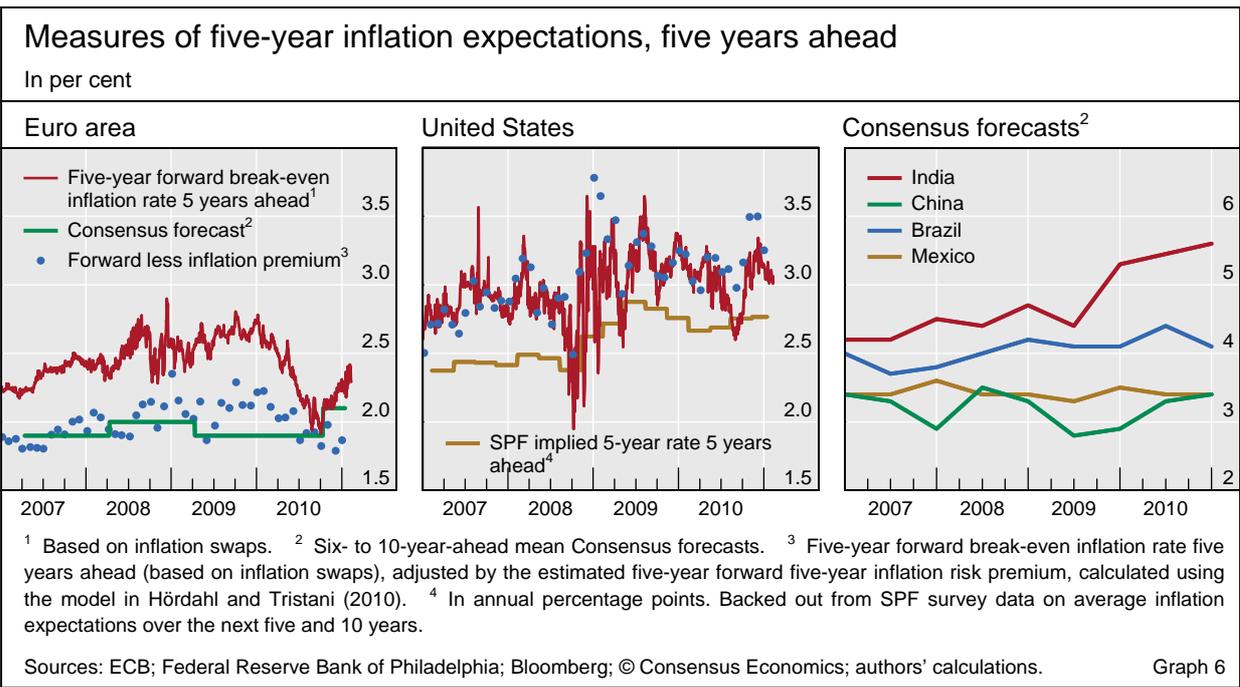
Such forward rates have fluctuated somewhat since the crisis, but they have not exhibited the upward trend that would suggest concerns about central banks' long-term credibility (Graph 6, left-hand and centre panels). Correcting the forward break-even rates for estimated forward inflation risk premia does not change the overall picture (although it suggests that euro forward break-even rates consistently overestimate survey inflation expectations).⁶

... as have long-term survey forecasts

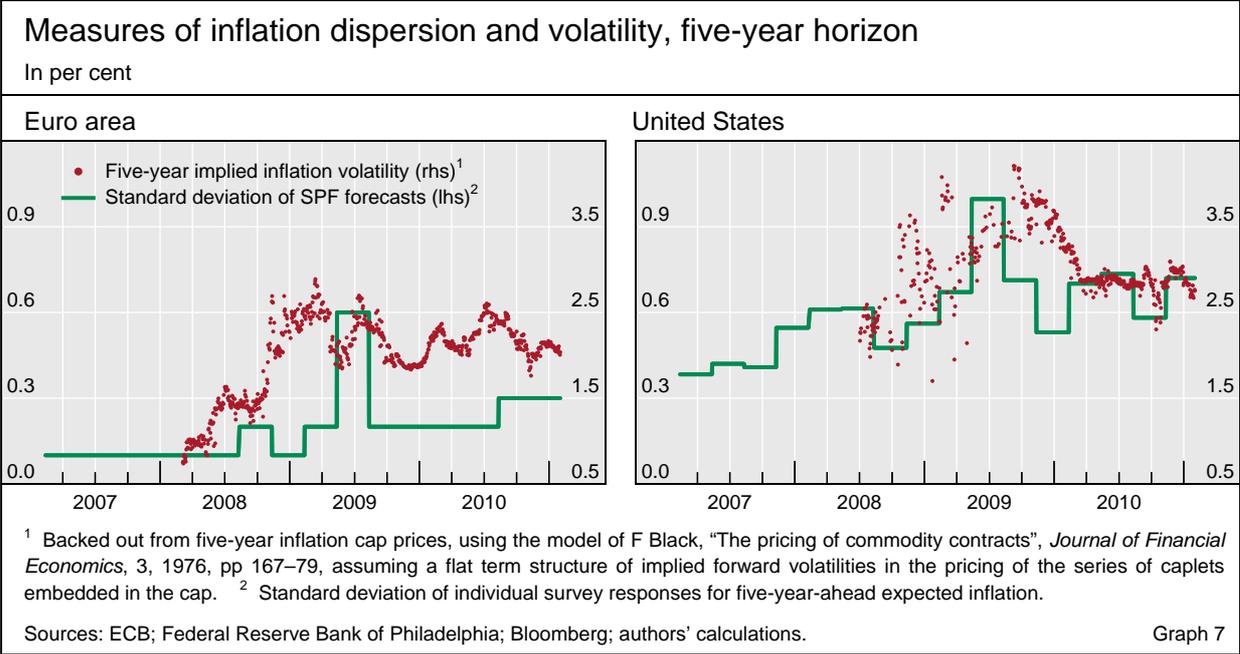
Nor have professional forecasters' expectations of long-run inflation moved significantly in the aftermath of the crisis. Consensus Economics' data show that the forecast for average five-year euro area inflation five years ahead has stayed very close to 2%, consistent with the ECB's objective (Graph 6, left-hand panel). In the United States, forecasts for average five-year

⁵ This refers to zero coupon inflation swaps, which are the most liquid type of inflation swap.

⁶ This correction is based on inflation premia estimated using a macro-finance dynamic term structure model; see Hördaahl and Tristani (2010) for details.



inflation five years ahead, as measured by the Survey of Professional Forecasters, rose by around 45 basis points from Q3 2008 to Q3 2009, as the crisis first intensified and was then met by an array of policy responses (Graph 6, centre panel). Since late 2009, this measure has come down somewhat, but remains above its pre-crisis level. Meanwhile, in major emerging market countries, where the impact of the crisis was much more muted and policy responses less aggressive, expectations of inflation six to 10 years ahead have also remained quite stable both during and after the crisis (Graph 6, right-hand panel). There are exceptions, however. In the case of India, for example, this measure of long-term inflation expectations has been rising in the recent past.

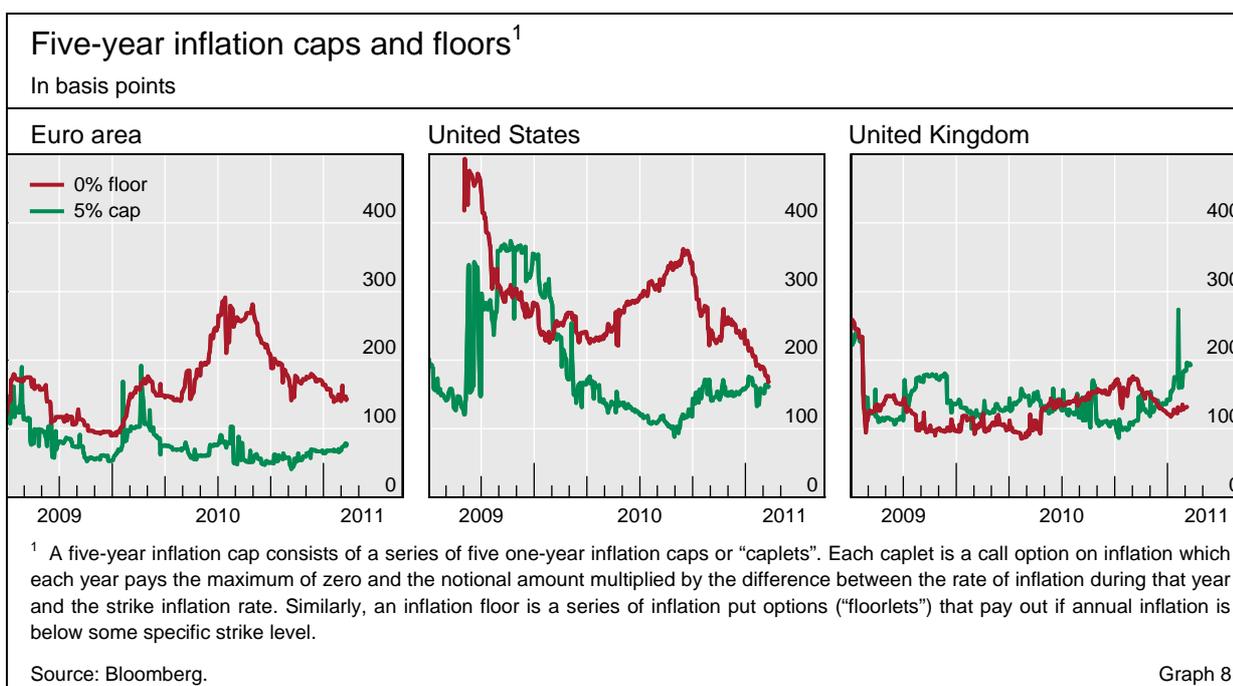


Long-term uncertainty measures are higher than before the crisis ...

Both survey-based and market-based measures of long-term uncertainty about future inflation are currently somewhat higher than prior to the crisis. While this could reflect greater macroeconomic uncertainty in general, it could also suggest that expectations may be less firmly anchored than they used to be (see also the discussion in the box relating to findings by Galati et al (2009)). The dispersion of professionals' forecasts of five-year inflation, measured by the standard deviation of individual survey responses, peaked in early 2009 in the euro area and the United States, shortly after the height of the financial turmoil (Graph 7). Although the degree of disagreement retreated relatively quickly, it did not return to pre-crisis levels. The introduction of various unconventional monetary policy measures may have played a role here. Another measure of long-term uncertainty, implied inflation volatilities backed out from prices on options on inflation, has followed a similar pattern. These volatilities have also retreated from their crisis peaks, but have since remained higher than before the crisis.⁷

... but tail risks do not seem to have increased

Still, developments in prices of traded inflation derivative instruments have provided little cause for concern with respect to how investors perceive "tail risks" to price stability. Inflation derivatives allow investors to hedge against or bet on such tail risks, including deflation or inflation outcomes substantially above the central bank's explicit or implicit price stability objective. A five-year inflation floor with a strike price of 0%, for example, pays the buyer the rate of deflation on a notional amount during any of the next five years in which prices fall on average. In the recent past, when such instruments have become more liquid, inflation floor prices have risen in the United States and the euro area as the economic recovery seemed to be losing steam, as in the first half of 2010 (Graph 8, left-hand and centre panels). In general, however, there is no



⁷ For the United States, data are available only as of mid-2008, as the US inflation derivatives market has been slower to develop than the corresponding euro area market.

indication of an upward trend that would suggest that investors have adjusted upwards the perceived likelihood of such downward tail risks. The same can be said with respect to upward tail risks. Prices of five-year 5% inflation caps, which pay off if inflation exceeds 5% in any of the next five years, have fluctuated but not trended higher. Interestingly, the recent higher than expected UK inflation figures resulted in a spike in UK inflation cap prices, suggesting increased concerns about high inflation outcomes there (Graph 8, right-hand panel).

Concluding remarks

Measures of short- and long-term inflation expectations plunged during the financial crisis, in line with realised inflation. Since then, expectations have rebounded, albeit at an uneven pace. Short-run inflation expectations in major emerging market economies have returned to pre-crisis levels, and in some cases surpassed them. Inflation expectations in the mature economies have been slower to rebound, even as recent headline inflation rates have picked up notably in some cases. This might reflect much more stable core inflation developments, or the fact that the economic recovery in mature economies has tended to be substantially less brisk than in most emerging market economies.

As for long-term inflation expectations, both market-based and survey measures suggest that such expectations have remained quite stable thus far. In this regard, central bank credibility seems to remain high. Nevertheless, this could change if policymakers are seen to be slow in responding to unexpected increases in inflation, which in turn could trigger rapid upward revisions of inflation expectations. At the same time, in many mature economies, any premature tightening could jeopardise the economic recovery and risk sparking expectations of deflation. The fact that measures of dispersion and uncertainty of long-term inflation expectations are somewhat higher than before the crisis could indicate that such expectations are less firmly anchored than at first sight, and therefore vulnerable to policy mistakes.

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