Cross-checking – speech by Huw Pill

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Speech

Good morning. Thanks to the organisers of the ICAEW annual conference for the opportunity to speak here today.

In giving a talk to such a distinguished group of accountants, I am reminded of a famous joke about economists: *'An economist is someone who wanted to be an accountant, but didn't have the personality'.* At least, that is what passes for humour among economists. Perhaps it proves the point – although, on reflection, I am not sure which profession should take greater offence. Anyway, via this introduction, I hope I have managed to establish a low bar for the entertainment value of my remarks on an autumnal Friday morning in London.

Building an economy fit for the future – The role of monetary policy

But this is not to say that we don't have important issues to discuss. On the contrary, the topic of today's conference – *'Building an Economy Fit for the Future'* – is one in which we all have a big stake. In the aftermath of pandemic and invasion, the past three years (during which I have served on the Bank of England's Monetary Policy Committee (MPC)) have proved challenging ones for the UK economy. As the impact of those significant external disturbances fades, now is a good time for us all to take stock – and look forward.

In building that 'economy-fit-for-the-future', the MPC has an important role to play. It is by achieving its mandate to secure price stability that monetary policy provides a sound basis for the longer-term investment and spending decisions by firms and households, on which innovation, dynamism and productivity growth in the UK rely. *Should I buy that house? Should I build that factory? Should I establish that start-up or secure that patent? Should I enrol in that college course or start that apprenticeship?*

Answering any of these questions requires taking a longer view. And if that view is clouded by fears of inflation or deflation, by uncertainty over future interest rate levels and their potential volatility, by the threat of wider macroeconomic instability, and ultimately by concerns over employment and business prospects, then the danger exists that we will collectively do less investment, too little R&D, and skimp on the skill-building and training that we need to support a healthy economy. (After all, we are all risk averse to an extent.)

Productivity in the UK – and the living standards of all of us that, in the final analysis, depend upon that productivity – will suffer as a result. The recent cost-of-living crisis was a salutary reminder of the dislocation and pain inflation imposes, especially on the less well-off and small and medium-sized enterprises – already vulnerable segments of the economy that may struggle to protect themselves from higher prices.

On this basis, price stability should not be seen as the obsession of remote technocrats in Threadneedle Street. Rather price stability is a foundation – you could even argue, *the* foundation – of a thriving, modern, vigorous and growing UK market economy, which provides opportunities for all: precisely what I would envisage as an 'economy-fit-for-the-future'.

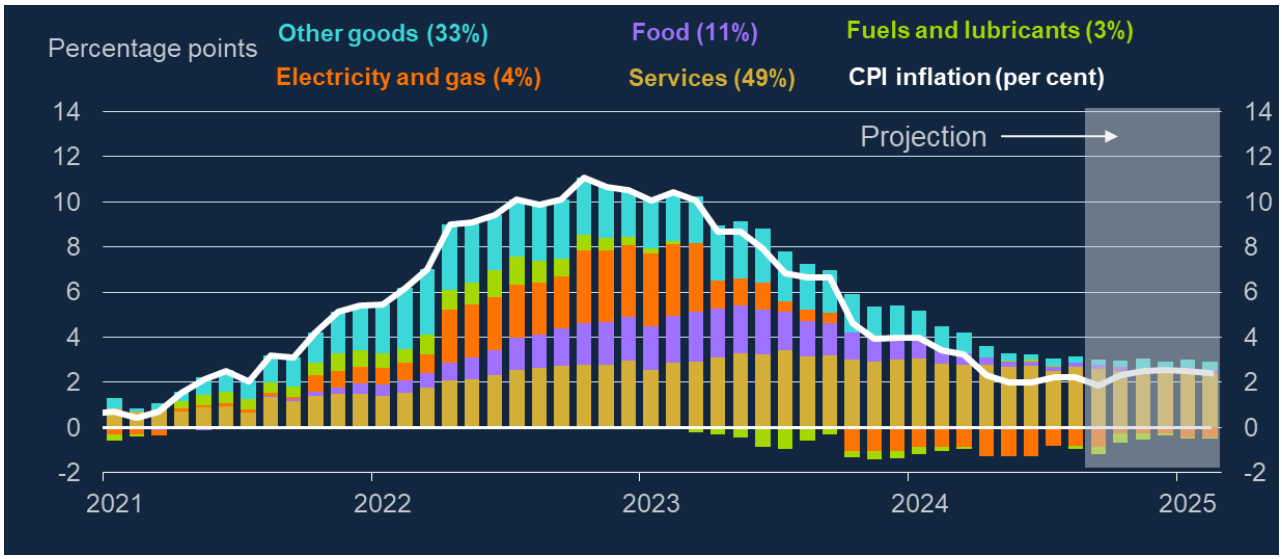
Focusing monetary policy on the achievement of price stability is therefore not just a legal and institutional obligation for members of the MPC. *It is the right thing to do.* That is certainly my view; and I know that I am joined in this by my colleagues. We are in the price stability business.

Recent developments in UK inflation

And I bring good news on that front. I doubt it will come as a surprise to anyone in this room, but – having touched rates above 11% two years ago – inflation has fallen substantially and rapidly over the past few quarters. Annual UK headline consumer price inflation was at its 2% target in both May and June of this year. It has since risen slightly and is likely to be close to 2½% around Christmas. But this upward blip reflects temporary factors and base effects, with inflation expected to fall back next year (**Chart 1**).

Chart 1: Recent developments in and prospects for UK CPI inflation

Consumer price index; annual percentage change, contributions in percentage points



Source: Monetary Policy Report August 2024, Bank of England Monetary Policy Committee.

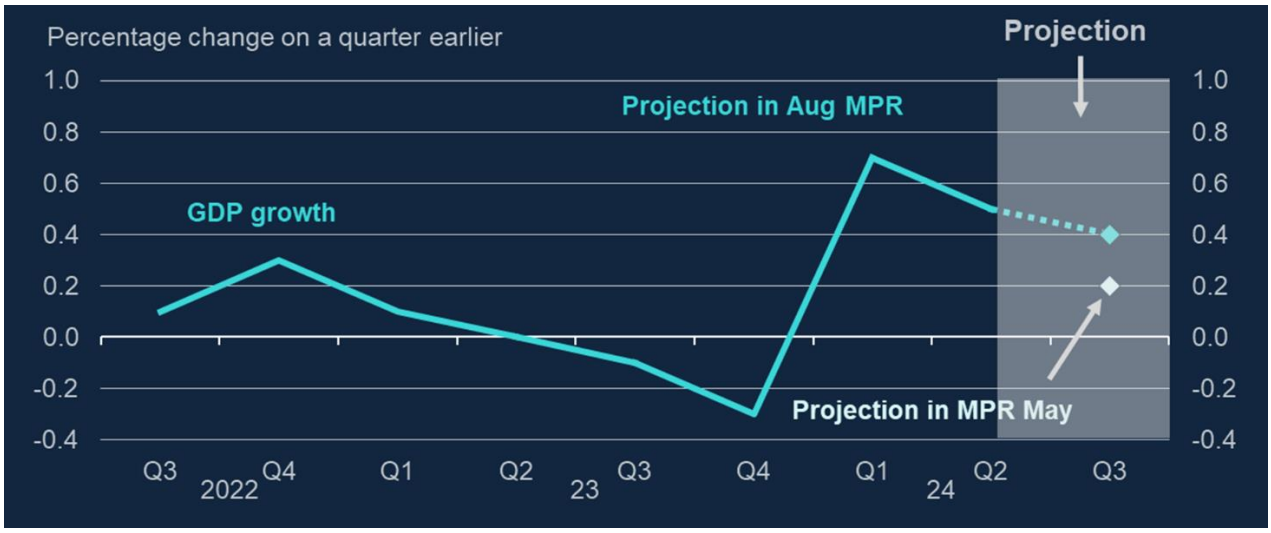
As a representative of the 'dismal science' at this conference, I think it is worth emphasising the point: *this really is good news!* What's more, the fall of inflation to target has been achieved without significant volatility in economic activity or employment.

Admittedly the UK endured a 'technical recession' (with two successive quarters of contraction in real GDP, on the latest vintage of data) in the second half of 2023, but the

setback was unusually shallow, and growth resumed at the turn of the year (**Chart 2**). For those of us old enough to remember the economic costs associated with disinflation in the early 1980s and early 1990s, the low 'sacrifice ratio' this time around might seem remarkable.[1] Even if there are question marks over the quality of the official labour market data, UK unemployment has remained below 5% – a stark and welcome contrast with unemployment rates that peaked at close to 12% in 1984 and around 10½% in 1993.

Chart 2: Recent developments in and prospects for UK real GDP growth

Gross domestic product; change on previous quarter in percent



Source: Monetary Policy Report August 2024, Bank of England Monetary Policy Committee.

And this has not happened by accident, but largely *by design* – specifically by the design of the UK's monetary policy framework. For sure, external factors have played an important role in the recent disinflation. As a small open economy trading in a volatile world, the UK is exposed to global shocks. Just as higher prices for energy, food and internationally traded goods made a significant contribution to the sharp rise of UK inflation in 2021-22, their subsequent stabilisation and reversion have played a large part in the fall of UK inflation since mid-2023.

But this account underplays the crucial role the monetary policy framework has played in anchoring longer-term inflation expectations at low, stable levels, in contrast with the experience of the 1970s and early '80s. Elements of the monetary policy framework have been central to this achievement: a clear symmetric 2% target for UK CPI inflation; an independent and accountable MPC empowered to pursue that target; a policy toolkit and analytical machinery to support Bank Rate decisions. These elements have proved their worth.

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[1] The 'sacrifice ratio' the ratio of lost economic activity (typically measured in percentage points of real gross domestic product) to the percentage change in inflation. A high sacrifice ratio therefore implies that disinflation has been costly in terms of output and employment foregone.

But that is not to say we have nothing to learn from recent experience. On the contrary, in the aftermath of the pandemic- and invasion-driven inflationary episode, the Bank of England commissioned a review of the MPC's forecasts and communication by former Federal Reserve Chair (and Nobel Prize winning economist) Ben Bernanke. Prof. Bernanke has made twelve recommendations for action.[2] The Bank has accepted those recommendations and is assessing how to implement them. I have offered some high-level observations on my thinking on this topic in the past,[3] and the Bank will present an update on proposed changes by the end of this year. I won't dwell further on these issues now.

The need for robustness in analysis and policy making

What I prefer to emphasise is the following: the MPC cannot (and will not) be satisfied with a fleeting achievement of the 2% inflation target for just a couple of months. Given the long horizons for all those crucial questions I listed earlier – on investment, on innovation, on training, and on education – the MPC needs to ensure that UK CPI inflation is kept at its 2% target on a *credible, lasting and sustained basis.* This is reflected in its remit, which establishes that '*the inflation target … applies at all times'.*[4]

Just to avoid any misunderstanding, this statement is *symmetric*. A persistent undershoot of the inflation target is just as undesirable as a persistent overshoot. In formulating the stance of monetary policy, the MPC is continually balancing the risk of an excessively tight stance pushing inflation below target and the risk of an overly loose stance sustaining inflation above target. Mimicking Goldilocks, we are seeking a policy stance that is neither too restrictive nor too accommodative, but 'just right'.

Given unavoidable short-term volatility, the MPC has stressed its focus on the *persistent* underlying component of inflation in the assessment of the outlook for monetary policy. This persistent component will still be there once the famous long and variable lags in monetary policy transmission unwind. Focusing on inflation persistence therefore imparts the necessary forward-looking and medium-term orientation to the conduct of monetary policy.

While headline CPI inflation has fallen back to target in recent months, this largely reflects developments in energy, food and international goods prices. Although also falling, inflation in services prices has proved stickier, stubbornly remaining at elevated rates – higher than those consistent with the achievement of price stability in the past

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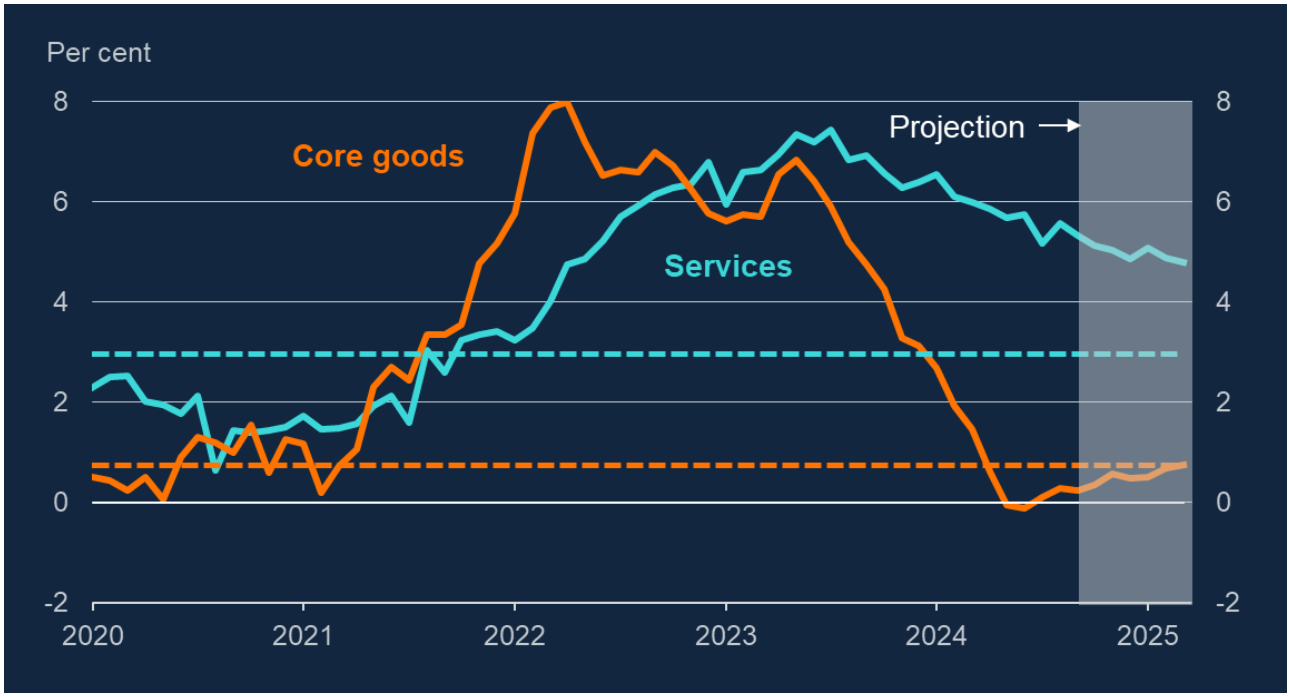
2 Bernanke (2024).
3 Pill (2024a).
4 This is quoted from the remit for the Monetary Policy Committee contained in a 22 November 2023 letter from the (then) Chancellor of the Exchequer to the Governor of the Bank of England (Hunt, 2023).

(**Chart 3**). Since the MPC views services inflation (and pay growth) as more indicative of underlying inflation persistence, this represents a continued source of concern.

Chart 3: Recent developments in and prospects for UK consumer services and core goods inflation

Components of the consumer price index; annual percentage change



Note: The dashed horizontal lines show the average annual inflation rate of the two CPI components over the sample 2010Q1 – 2019Q4.

Source: Monetary Policy Report August 2024, Bank of England Monetary Policy Committee.

In recent communication, the MPC has set out three different views of the economic outlook.[5] I'll come back to the specifics of these in my concluding remarks. But, for now, I simply want to set out my understanding that these three 'cases' are representations of how incoming data can be filtered and interpreted so as to inform policy decisions.

In formulating monetary policy, the MPC will need to update its views on the character, likelihood and relevance of these different cases. And, in the face of inevitable uncertainty as to which case or cases better represent reality, the MPC will also need to design policies that are *robust* across the various cases: policies that are not necessarily optimal in any of them, but which serve the pursuit and achievement of price stability in all of them.

How can we operationalise this ambition to achieve robustness in practice? In the remainder of my remarks, I will outline one simple approach that has informed my recent policy votes at the MPC – an approach I will label ***cross-checking***. Rather than rely solely on a single baseline inflation forecast in coming to Bank Rate decisions – an approach which, admittedly in stylised form, has been central to the inflation targeting regime

[5] Monetary Policy Committee (2024), Bailey (2024).

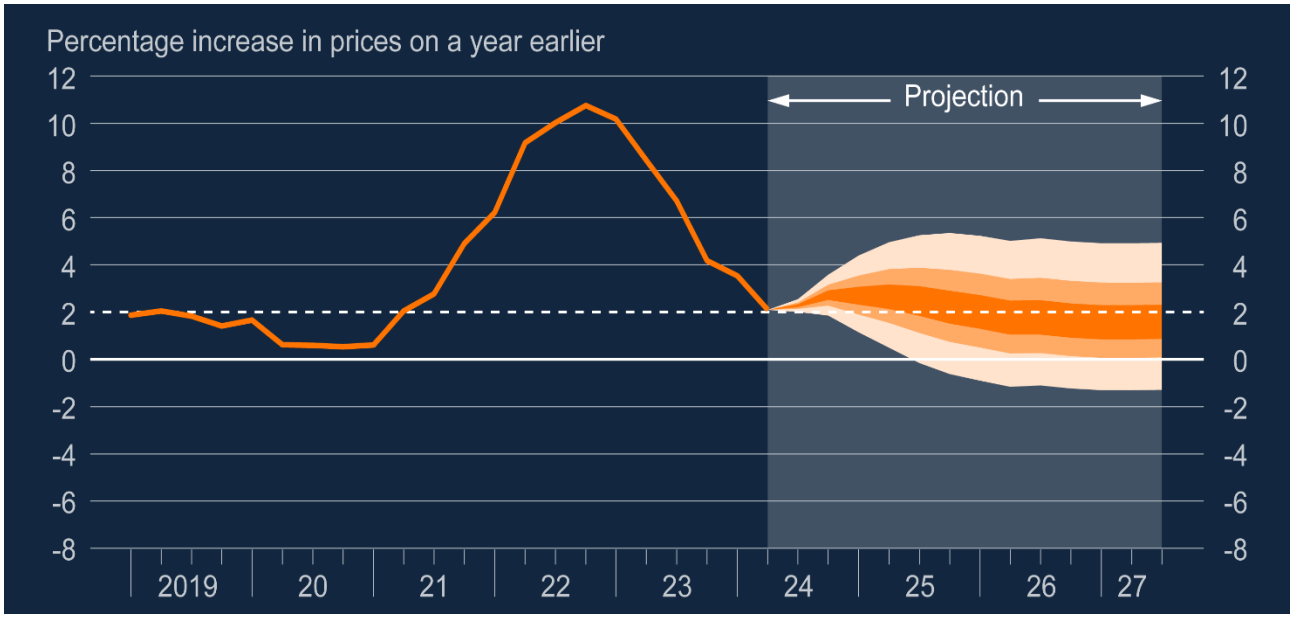
implemented by the MPC since the mid-1990s – I have found it helpful to employ other models to cross-check the assessment and implications of the baseline forecast so as to improve the *robustness* of my final policy decision.

Cross-checking (and the August Bank Rate decision)

Again, I imagine that it will not be news to many in this room that the MPC voted by 5 to 4 to cut Bank Rate by a quarter percentage point to 5% at its August policy meeting. An important basis for that decision was the baseline inflation forecast published in the MPC's *Monetary Policy Report.* Even when embodying the series of cuts in Bank Rate then captured in market pricing of forward rates, this forecast foresaw headline CPI inflation falling below target at the 2- to 3-year horizon that is usually seen as most relevant for monetary policy (**Chart 4**). *Prima facie,* such a forecast would support an immediate cut in Bank Rate.

Chart 4: August 2024 MPC baseline inflation forecast and fan chart

Consumer price index; annual percentage change



Note: The fan chart depicts the probability of various future outcomes for CPI inflation and begins in 2024 Q3. It has been conditioned on Bank Rate following a path implied by market yields, but allows the Committee's judgement on the risks around the other conditioning assumptions underlying the forecast to affect the calibration of the fan chart skew.

Source: Monetary Policy Report August 2024, Bank of England Monetary Policy Committee.

What might be less well-known is that I was one of the four dissenters from the decision to cut Bank Rate. If you didn't know that, I don't hold it against you. It is not all about me! And, more generally, the focus on individuals' votes and specific utterances at Parliamentary appearances tends to create an environment which over-weights the importance of individual personalities in the setting of UK monetary policy.

That said, to explain my stance and offer insight into my current thinking, it is useful to describe the tools and judgements that informed my decision. Let me start with analysis performed using a ***Bayesian Vector Auto-regression*** (BVAR) model.

(Like accountants, economists love jargon and introducing acronyms. And if they can employ both simultaneously, all the better!)[6]

Any economic forecast is made on the basis of a set of assumptions and judgements. As I already mentioned (and have discussed in greater detail on previous occasions), the MPC's baseline forecast is constructed assuming Bank Rate follows the path dictated by market pricing, as well as assumptions on the sterling exchange rate and fiscal policy.[7] That baseline forecast also relies on judgments made by the MPC, as well as the underlying modelling infrastructure employed by Bank of England staff.

In parallel with that infrastructure, staff have also developed a simple BVAR model that can impose the technical assumptions underlying the MPC forecast while relaxing the constraints imposed by the models and judgemental adjustments coming from the forecast framework or the MPC itself.[8] In so doing, the BVAR can produce a view on the inflation outlook that is meaningfully comparable with the baseline forecast, but *allows the 'data to speak'* rather than be constrained by judgement or model restrictions. Specifically, the BVAR model in question allows the data 'to speak' based on the correlations and trends revealed in an analysis over its estimation period – here the inflation targeting era since the mid-1990s.

Upside risks This BVAR inflation forecast is higher than the baseline MPC inflation forecast at the two- to three- year horizon on which monetary policy makers typically focus (**Chart 5**). Of course, the BVAR forecast is surrounded by considerable uncertainty, as reflected in the wide confidence bands surrounding the central view. But the cross-check offered by the BVAR does weigh against the signal from the baseline MPC forecast that the risks to price stability at the policy-relevant horizon are heavily skewed to the downside beyond the short term. And it belies the view that the judgements introduced by the MPC to amplify the persistence of inflation in the baseline forecast (on the grounds that underlying inflation has repeatedly come in stronger than expected) have been too large. Rather, a cross-check with the BVAR forecast would suggest those discretionary add-ons

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6 For those accountants sceptical of BVAR (or other economic jargon acronyms that will appear later, such as SVAR (structural vector autoregression) and NAIRU (non-accelerating inflation rate of unemployment), as an economist I would point to EBITDA (earnings before interest, taxes, depreciation, and amortisation).

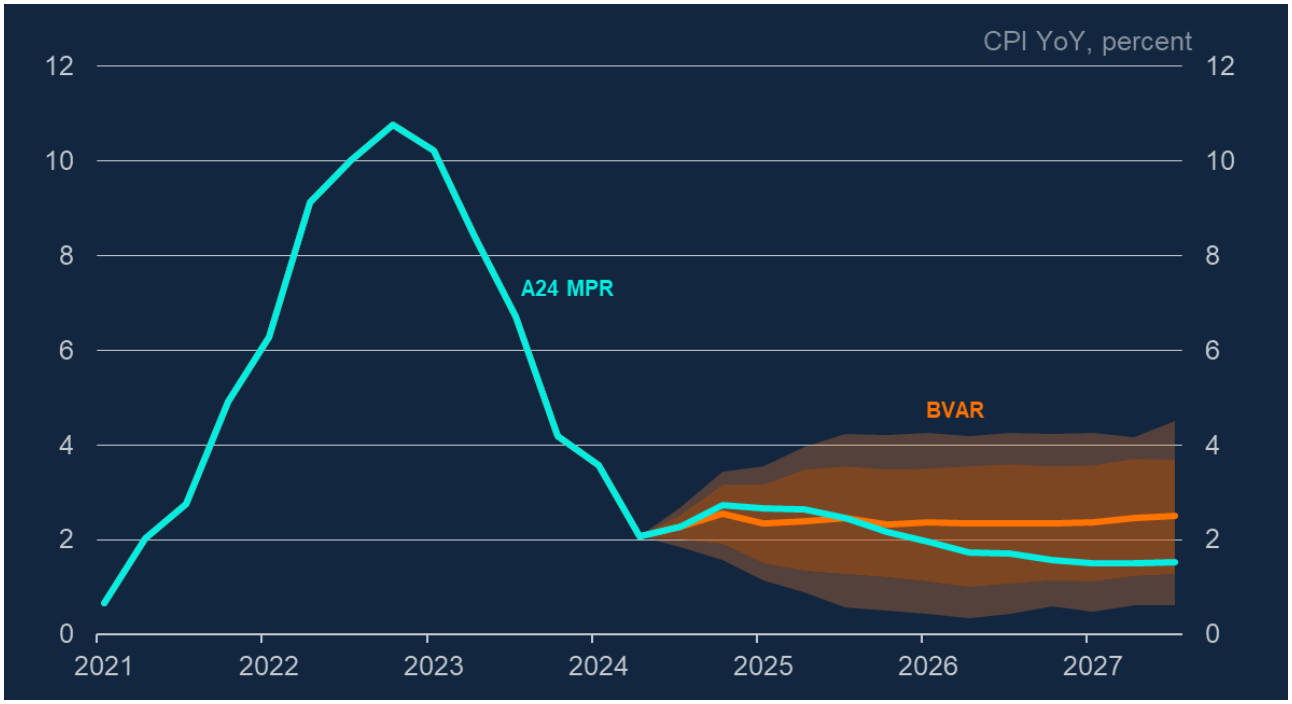
7 Pill (2023a), Box (1976).

8 Bonciani and Braun (2024). This BVAR uses a set of linear equations to model jointly the multivariate dynamics of fifteen key UK macroeconomic variables and 5 variables summarising the global outlook. The estimation sample starts in 1990 and uses time dummies to account for pandemic outliers. (The authors of this analysis should not be held responsible for the interpretations offered here.)

reflecting the MPC's persistence judgements might have been too small rather than too big.

Chart 5: BVAR versus MPC baseline inflation forecast in August 2024

Consumer price index; annual percentage change



Note: The chart compares the YoY inflation forecast for the August 2024 MPR (aqua line) vs the YoY inflation forecast as predicted by the BVAR (orange line) in August 2024, along with the 90th and 68th credible intervals.

Source: Monetary Policy Report August 2024, Bank calculations.

Any economist will tell you that it is not enough to rely on purely statistical forecasts. You must always strive to explain the economic behaviour that drives statistical outcomes – that is the value add of the economics profession (such as it is). In short, doing economics requires you to ask: *why?*

One tool to support this endeavour is a ***Structural Vector Auto-regression*** (SVAR) model. Such models impose restrictions on the data intended to allow for an economic interpretation of the shocks and behaviour underlying observed outcomes. The beauty of these models is that the restrictions imposed are *minimalist* – they interfere as little as possible with allowing the data 'to speak' – and *transparent* – they are clear and therefore subject to scrutiny. As such, they can be seen as lying somewhere between a BVAR (which gives maximum scope for the data to speak while offering essentially no behavioural story) and the MPC's baseline forecast (which embodies a lot of assumptions and judgments about economic behaviour).

My colleagues on the Bank of England staff have also estimated a SVAR model for the UK, which attributes the evolution of inflation to a combination of global and domestic

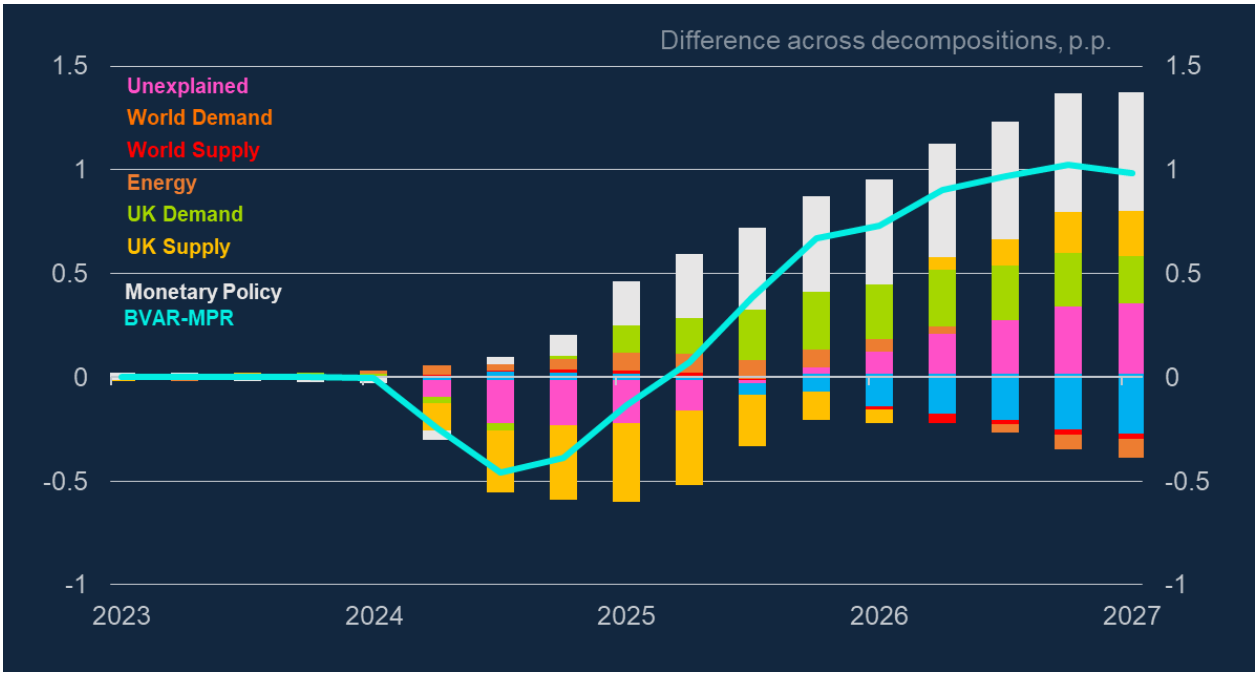
shocks to demand, supply, costs and policy, while still leaving scope for some developments to remain unexplained.[9]

(Speaking to a room of accountants, I do feel compelled to reassure you that the approach – just like double-entry bookkeeping – does ensure that these elements all add up to explain the evolution of inflation in full. That said, there is no single, uniquely appropriate SVAR model of the UK economy. There are many ways to skin this particular cat.)

To be clear on the nature of the exercise: we are not using this SVAR to produce yet another forecast of UK inflation. Rather we are treating the BVAR and MPC baseline forecasts as data, and exploring how the SVAR model explains that data. The two forecasts are each decomposed into a common and comparable set of underlying economic shocks identified by the SVAR framework. For the purposes of *cross-checking* between the two forecasts, the interesting insight follows not from the drivers of each forecast in isolation, but rather by an understanding of how the SVAR interprets the *difference* between the two forecasts (**Chart 6**).

Chart 6: SVAR-based explanations of the difference between BVAR and MPC baseline inflation forecasts

Contributions to difference in annual CPI inflation forecasts; percentage points



Note: The chart depicts the difference across the decompositions of the BVAR and MPR forecasts. The chart is constructed in two steps: (i) Decompose the forecast of the MPR and BVAR respectively into the structural shocks identified in the SVAR; (ii) Computing the difference across the two forecasts. The solid line depicts the overall difference, the bars represent the contribution of each different shocks.

Source: Monetary Policy Report August 2024, Bank calculations.

[9] Brignone and Piffer (2024). The model includes (the levels of) global real GDP, global CPI, the sterling oil price, Bank rate, the sterling exchange rate, UK real GDP, and the UK CPI and its energy component. It is estimated using Bayesian methods over the sample 1992Q1 – 2023Q2 with Covid period dummies. (The authors of this analysis should not be held responsible for the interpretations offered here.)

And to be concrete: in my view, the SVAR 'shock decomposition' of the *difference* between the two forecasts provides a well-specified and tractable answer to the key issue: *why is the BVAR forecast for inflation higher than that in the MPC's baseline?* That is the essential question that a BVAR 'cross-check' of the standard MPC inflation forecast begs.

Structural drivers As is often the case in economics, interpretation of the results of such an exercise (like beauty) lies in the eyes of the beholder. Let me outline three lessons I draw from the analysis.

First, the BVAR inflation forecast is higher in part because that model sees monetary policy as having been less restrictive than implicitly assumed in the MPC baseline. (Without wanting to push interpretation of the model beyond reasonable limits, I suggest that this is consistent with the view that the framework underlying the MPC's forecasts assumes too low a level for the natural rate of interest or R-star.)

Second, the BVAR forecast is higher in part because there is less 'economic slack' in the UK within the framework than is embodied in the MPC baseline. Such slack is typically assumed to weigh against inflationary pressure; so less slack means less downward pressure on inflation. (Again, without wanting to stretch my interpretation of the model beyond breaking point, this observation would be consistent with the view the MPC's forecasts are based on too low a view of the natural rate of unemployment or NAIRU (U-star), or equivalently too optimistic a view of the supply potential of the UK economy, which determines the 'speed limit' at which spending can expand without creating inflation.)

And *third,* the BVAR inflation forecast is higher in part because of unexplained factors. (Even if this is unsatisfactory in itself, it would be consistent with the view that the structural behaviour of the economy has changed relative to the past in a manner that is not embodied in the MPC baseline, but is inflationary in character.)

None of this is definitive. It is not in the nature of cross-checking to offer definitive answers. Rather cross-checking points to risks and concerns that are not captured by the baseline framework, and yet are relevant when seeking robust monetary policy choices.

Of course, there are alternative alternative models to the BVAR, which might point in other directions. For example, given the recent modest pace of broad money growth, a monetarist interpretation of inflation might suggest weakness compared to the MPC baseline. This is an issue that deserves further study.[10] Different estimation periods will give different results. And no model can be expected to give a completely definitive and unimpeachable answer to the monetary policy problem – that is not how statistics works;

[10] Beck and Wieland (2010). More generally, the Bernanke (2024) review is the catalyst for a wider reassessment of macroeconomic modelling at the Bank of England.

that is not how economics works; and that is not how the world works (given all its attendant risks and uncertainties).

In recent correspondence with the (now former) Chair of the House of Commons Treasury Committee, I quoted the leading statistician Prof. George Box: *"all models are wrong, but some are useful".*[11] I think this aphorism captures the spirit of the cross-checking approach I have just discussed.

Looking back to the August MPC meeting, the upside risks to persistence implied by BVAR forecasts of inflation relative to the MPC's baseline did not deter me from believing that some reduction in the restrictiveness of the monetary policy stance was likely to be needed as the disinflation process proceeded. Lower Bank Rate would be required as inflation fell to avoid an increase in the real rates that influence spending decisions. And I had growing confidence that a virtuous cycle of self-reinforcing easing in headline inflation, inflation expectations, pay growth and domestic services prices would support a sustained fall of CPI inflation to the 2% target.[12]

But the same strength of BVAR forecasts of inflation relative to the MPC's baseline gave me pause for thought about the timing and the magnitude of this removal of restriction. In particular, it pointed to a need for caution. I felt that August was somewhat too early to start cutting Bank Rate from 5¼%.

And the SVAR analysis of the deeper behavioural drivers of the strength of BVAR forecasts of inflation relative to the MPC's baseline – admittedly in a suggestive rather than definitive way – may hint to changes in the structure of the economy (including changes relative to their likely levels over the past thirty years in the so-called starred variables that ultimately pin down longer-run performance) that could impart a more lasting inflationary dynamic into the economy. Such structural changes may thus require higher interest rates to achieve the required level of monetary policy restriction.

This thinking influenced my decision to vote to hold rates in August. And the framework it reflects continues to influence my thinking today.

Concluding remarks (and the conjuncture)

This naturally brings me to the September MPC decision and the Committee's assessment of the immediate conjuncture.

[11] Pill (2023b).
[12] Pill (2024b).

The MPC held Bank Rate at 5% in September. In parallel – and as I mentioned earlier – the Committee introduced a new form of communication, identifying three distinct cases to characterise the economic outlook.

The first case sees disinflation from here as a process largely independent of other developments in the economy. Disinflation owes to a self-sustaining virtuous cycle of declining headline inflation, falling inflation expectations, weaker pay growth and easing domestic services price inflation. Just as inflation rose on the back of external shocks, it will revert to target as those shocks recede.

The second case also foresees continued disinflation. This again owes to the self-sustaining virtuous cycle of declining headline inflation which I already outlined. But what is distinctive here is that this virtuous cycle relies on the maintenance of a restrictive monetary policy stance to bear down on inflationary pressures. Bank Rate will need to fall over time, but at a pace that ensures sufficient restriction is maintained in the transition for UK inflation to reach target in a lasting and sustained manner, not just fleetingly or in passing.

The third case posits deeper structural changes in the UK economy that threaten to impart a more lasting inflationary dynamic, if not met with an equally lasting monetary policy response necessary to return inflation to target and keep it there.

I see merit in all three of these cases as ways of thinking about the challenges the MPC faces at present. Articulating our views about the outlook for inflation and monetary policy via these three cases has proved a useful way to improve our internal debate within the Committee. I hope they will serve our collective external communication in the coming months.

I would not identify my current position solely or exclusively with any of these three cases. On the contrary, the robust monetary policy I seek to deliver would guide inflation back to target, while avoiding volatility in economic activity and employment, in all three cases. That said, my modal outlook is probably closest to the second case the MPC has described, while – for the reasons I have explained, developed in part through the cross-checking exercises I have discussed – I remain concerned about the possibility of structural changes sustaining more lasting inflationary pressures (as articulated in the third case).

As we approach the next MPC meeting in November, we will have more data and new forecasts. I will have to update my assessment of the character, likelihood and relevance of the cases and their implications for policy votes and decisions. Given that the cases described in September continue to focus on the dissipation of the large pandemic and invasion shocks, we also need to be alert to new disturbances to the global and UK economies that may require a more substantial revision to our approach.

The cross-checking framework I have discussed today leads me to conclude that, at present, there is ample reason for caution in assessing the dissipation of inflation persistence. While further cuts in Bank Rate remain in prospect should the economic and inflation outlook evolve broadly as expected, it will be important to guard against the risk of cutting rates either too far or too fast.

For me, the need for such caution points to a gradual withdrawal of monetary policy restriction.

I would particularly like to thank Saba Alam, Davide Brignone, Louise Everett, Adrian Paul and Michele Piffer for their help in the preparation of these remarks.

The text has also benefitted from helpful comments from Andrew Bailey, Fabrizio Cadamagnani, Alan Castle, Neil Kisserli, Catherine Mann, Josh Martin, Sir Dave Ramsden, Martin Seneca, Fergal Shortall and Chris Young for which I am most grateful.

Opinions (and all remaining errors and omissions) are my own. In particular, the Bank staff who have developed the BVAR and SVAR models discussed in this speech should not be held responsible for my interpretation of their results.

References

Bailey, A.J. (2024). "**Reflecting on recent times**", remarks at the Federal Reserve Bank of Kansas City 2024 Economic Symposium, Jackson Hole WY, 23 August.

Beck, G. and V. Wieland (2010). "**Money in monetary policy design: Monetary cross-checking in the New Keynesian model**", ECB working paper no. 1191.

Bernanke, B.S. (2024). "**Forecasting for monetary policy making and communication at the Bank of England: A review**", 12 April.

Box, G.E.P. (1976). "**Science and statistics**", *Journal of the American Statistical Association* 71(356), pp. 791–799.

Bonciani, D. and R. Braun (2024) "**A statistical benchmark for MPR projections**", Bank of England *mimeo.*

Brignone, D. and M. Piffer (2024). "**A structural VAR for the UK economy**", Bank of England *mimeo*.

Hunt, J. (2023). "**Remit for the Monetary Policy Committee**", 22 November.

Monetary Policy Committee (2024). "**Monetary policy summary**", 19 September.

Pill, H. (2024a). "**Transformation and conjuncture**", remarks at Asia House, 10 July.

Pill, H. (2024b). "**Strategy and stance**", remarks at the London campus of the Chicago Booth School of Business, 23 April.

Pill, H. (2023a). "**Recent experience with macroeconomic forecasting for UK monetary policy**" in P. Hartmann and J. Slacalek (eds.) *Macroeconomic stabilisation in a volatile inflation environment,* Proceedings of the 2023 ECB central banking forum.

Pill, H. (2023b). "**Bank of England inflation forecasts and models**", response to the House of Commons Treasury Committee, 29 June.