Central Bank Communications, Financial Markets and a Little Data Science

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Main messages I

- Comms via Inflation Forecast Targeting had conveyed one key message well: Target is unconditional, while horizon can be flexible. High INFL has jeopardised this.
- When the risk of policy mistakes is highest (i) when CB and markets agree but both are detached from fundamentals (ii) when CB is 'conditioning on' something at odds with markets. Exs: Nov 2020 QE; Brexit No Deal risk; Current fiscal plans. Recent (high INFL) experience partly reflects this.
- 'Conditioning' assumptions are key to (i) steering market rates (ii) clarifying that a policy expectation is not a promise, by (iii) signalling the info. set. Contrast: debate about the 'market path' assumption a sideshow. Scenario analysis would help.
- Some data science: Fan Charts do not motivate or justify policy decisions. Here, a simple alternative that motivates policy decisions by conveying (i) macro news and (ii) policy choices. More technocratic and accessible.

Messages II

- Central bank must avoid being the source of market volatility. Not that some market volatility is so bad per se. But it contributes to a type of 'Noise trader risk': rational arbitrageurs trying to respond to macro fundamentals are crowded out, afraid to be found on wrong side of Communications risk (again).
- ... resulting in market illiquidity, higher risk premia that further impairs central bank's ability to steer market rates.

BoE Inflation forecast Targeting

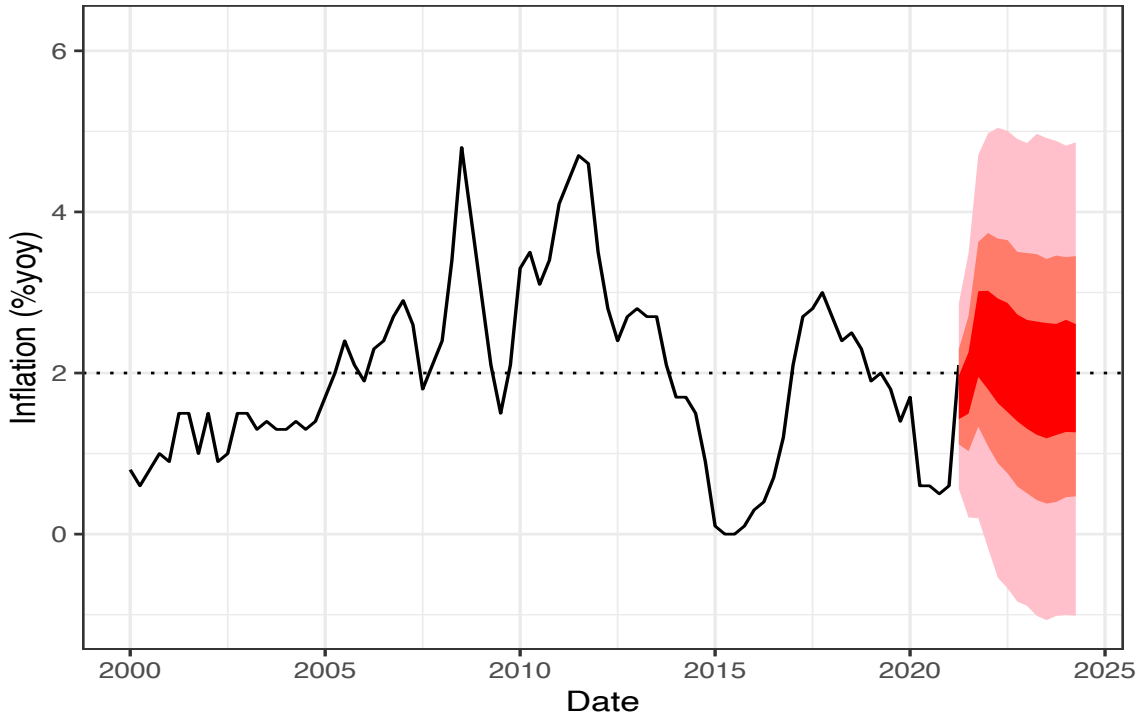

Figure 1: BoE fan chart

Who's a Fan?

Figure 2: Marcel Marceau

Bernanke (2003): "I suppose a central bank could run a"Marcel Marceau" monetary policy, allowing its actions to convey all its intended meaning. But common sense suggests that the best option is to combine actions with words–to take clear, purposeful, and appropriately timed policy actions that are supported by coherent explanation and helpful guidance about the future."

Central Bank Comms: 2 audiences in a difficult context

1. The Public in an era of Populism and rising Inequality
2. Financial markets in an era of Financialisation

Populism – are central banks perpetrators as well as victims of populism? (Rajan critique).

Examples: Mandates that strive for popular legitimacy, pursuing policies that aim to be as painless as possible (in ST).

Jars with original rationale for Central Bank Independence.

- Focus here will be on financial markets as the audience for CB Comms.

Four messages on Inflation Targeting I

1. Achieving the inflation target (IT) is unconditional, even if horizon is flexible. Both *forward-looking* (to anchor expectations) and *backward-looking* (accountability).
2. Policy in/action and Comms steer market rates to achieve IT. This makes a focus on *market rates* central. CB cannot be agnostic about what financial markets believe or why.

- ...esp when rates were far from neutral and there are large spillovers from abroad, and risks to conditioning assumptions are skewed.

Four messages II

3. Forecast targeting owing to lags in policy transmission lags. A conditional view/forecast. Being transparent about the conditioning assumptions clarifies that reaction function would respond to shocks and should be a feature, not a bug.

4. Policy challenges when conditioning assumptions are asymmetric/high risk. Examples (i) post-Brexit Vote assumes Deal (ii) current Fiscal consolidation assumed in full. Steering market rates becomes difficult as Markets price 'means not modes'.

Conditioning assumptions are key in communicating the policy message, how it would change and that a policy path is an "expectation, not a promise". Invites Scenario analysis.

Financial markets as an audience

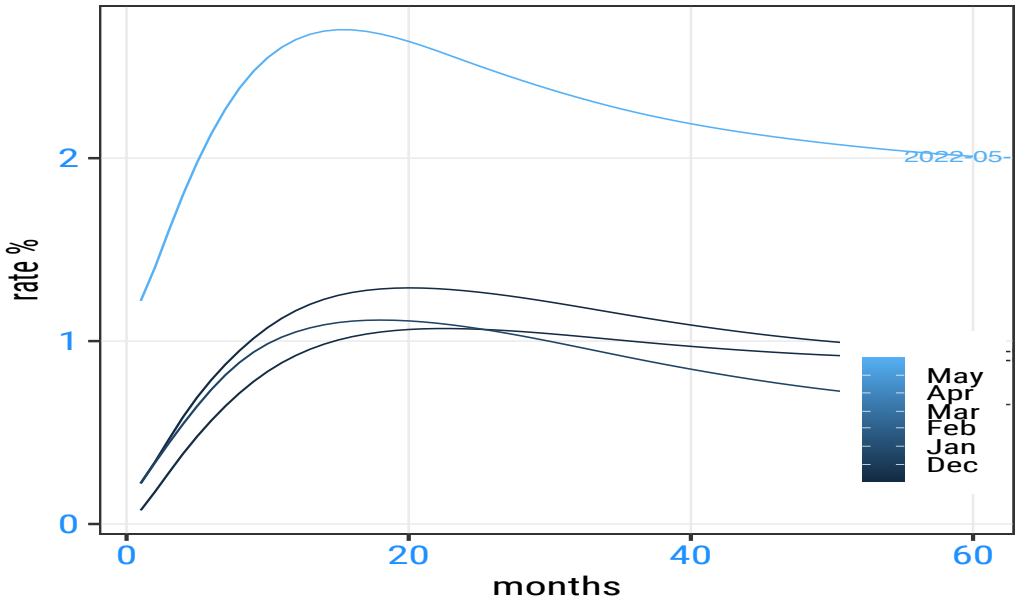

Figure 3: OIS Curves

- Cannot afford to be agnostic about market views to steer market rates. Akin to what Bernanke critiqued as the 'Marcel Marceau' approach (let the audience interpret the action). ECB: "under the present circumstances, it is very unlikely that we will raise interest rates in the year 2022." BoE: "None of us are going to endorse a market curve at any point in time."

Central banks are "in the slope business"

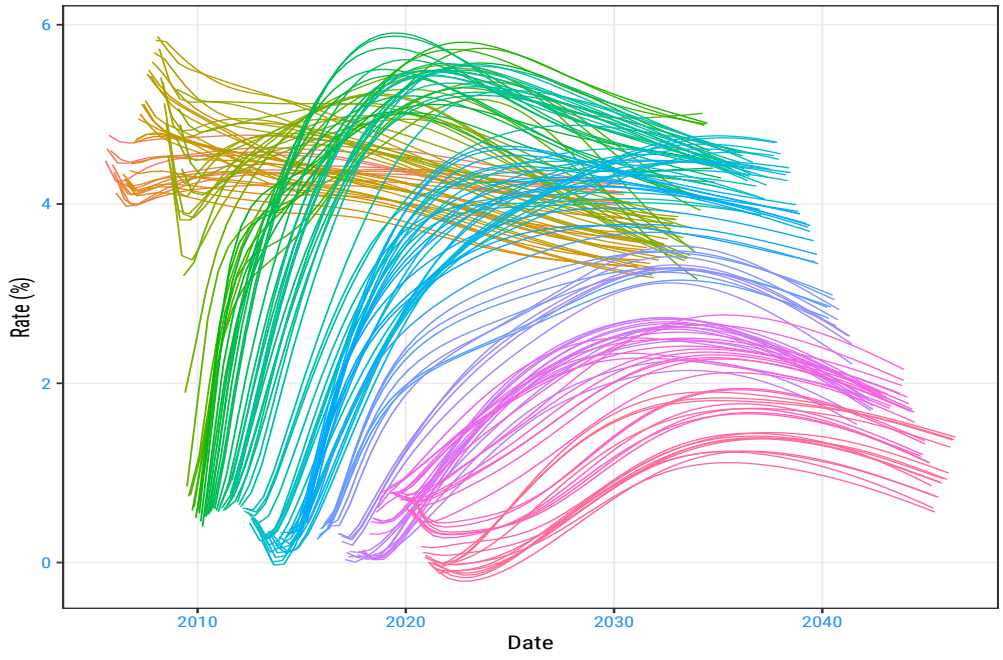

Figure 4: Evolving GBP Yield curves

- Level effect and R-star. Here, Central Banks are price-takers
- Slope effect relates to slack incl the jobs market. Central Banks are in the 'slope business' (Clarida, 2021)

Steering market rates in the era of Unconventional Policies

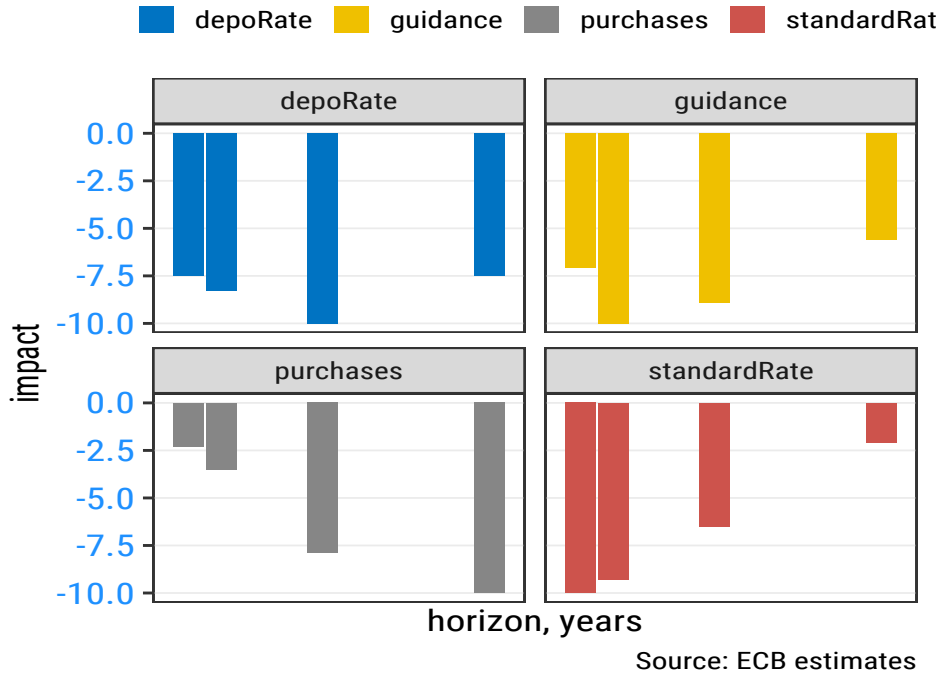

Figure 5: Unconventional policy: impacts by policy type

- Comms benchmark: Say what you are doing and do what you said. Trade-off: clarity vs complexity.
- News: conditioning assumptions as escape clause, preserving systematic component of policy. Updating, not reneging. Better if the news was 'unforecastable'.

Context for (and after) the era of unconventional monetary policy

- Rationale of 'the ends (Π^*) justify the means'; and a NK belief that proximity of lower bound meant $\Pi < \Pi^*$ spirals lower.
- **Imagine**: IS Curve and Phillips curves are flat(ter). Mon pol works primarily through Housing and FX channels. IS Curve even flatter under QE, though it creates fiscal 'space' given financial frictions. No downward spiral in Π.
- Amid rising wealth inequality + a realisation that tighter mon pol needs to be followed by tighter fiscal policy to work.
- Less technocratic, with more 'Judgement'.
- CBs communicating to the public directly reflects and reinforces their drift away from the technocratic role.
- ... and now, amid $\Pi >> \Pi^*$, having to tighten policy aggressively.

Avoiding market volatility (from Comms) not a perfect guide to good policy. But...

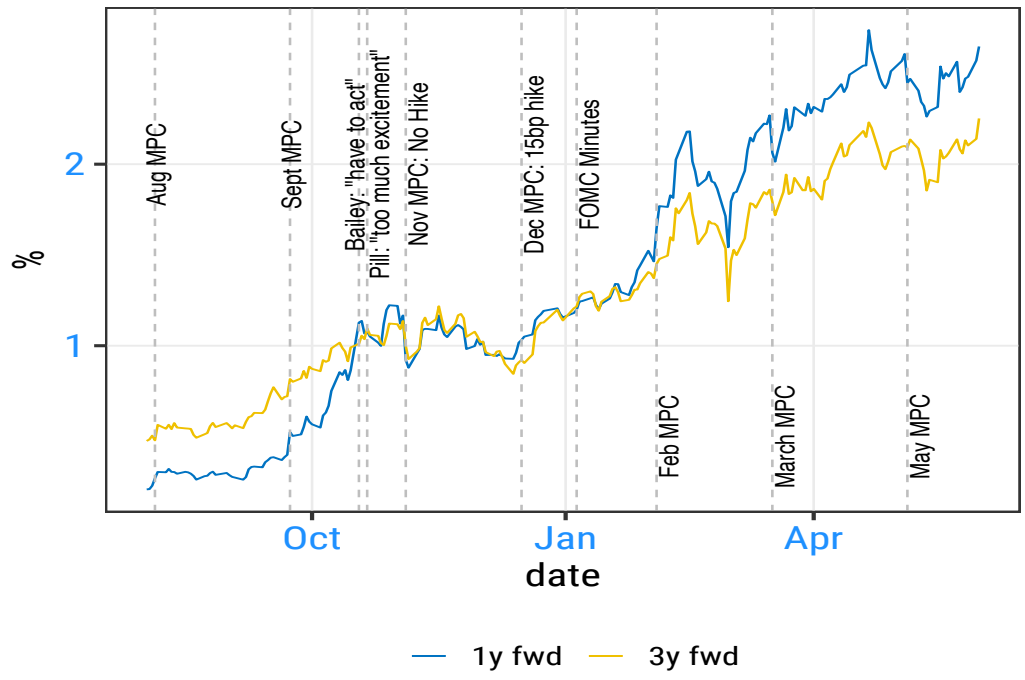

Figure 6: BoE Comms and market volatility

- Nov 2020 QE policy mistake ultimately led to Sep-Dec 2021 problems (despite little market volatility around Nov 2020).

Why Nov 2020 QE was a (big) policy mistake

- BoE had rationalised QE based on (i) restoring market functioning and (ii) signalling effects. Neither justified much more QE in Nov 2020, *amid becalmed markets and fwds pricing low rates*.
- Markets expected more [GBP100bn] QE but only 'conditioned on' a 'monetary financing' view of BoE. The BoE had wanted to disabuse markets of that view but then 'delivered' for that view and without a convincing explanation from data news.
- A 2m pre-announced, 12m QE programme [GBP150bn] stored up trouble:
  - Sep 2021 Minutes ('Para 65') switches policy ordering?
  - Sep-Nov 2021 volatility as BoE toys with r↑ (Fig. 4)
  - ...as fundamentals had detached from long QE commitment.

Noise, "Do No Harm" – and why policy-induced volatility undermines steering market rates

- Once a source of volatility, Comms discourage traders from taking a position based on fundamentals.
- Central Bank as encouraging 'Noise trader': deters rational arbitrageurs from betting against Noise (De Long et al; Black).
- Ex: Following Autumn 2021 volatility, GBP rates traded strongly with higher USD rates. BoE's reluctance to steer market rates created more space for Noise traders. Arbitrageurs reluctant to take 'BoE comms risk' and take the other side.
- Monetary policy *is* the OIS curve more than it is simply Bank Rate.

Policy harm? Pricing is some way from expected rates

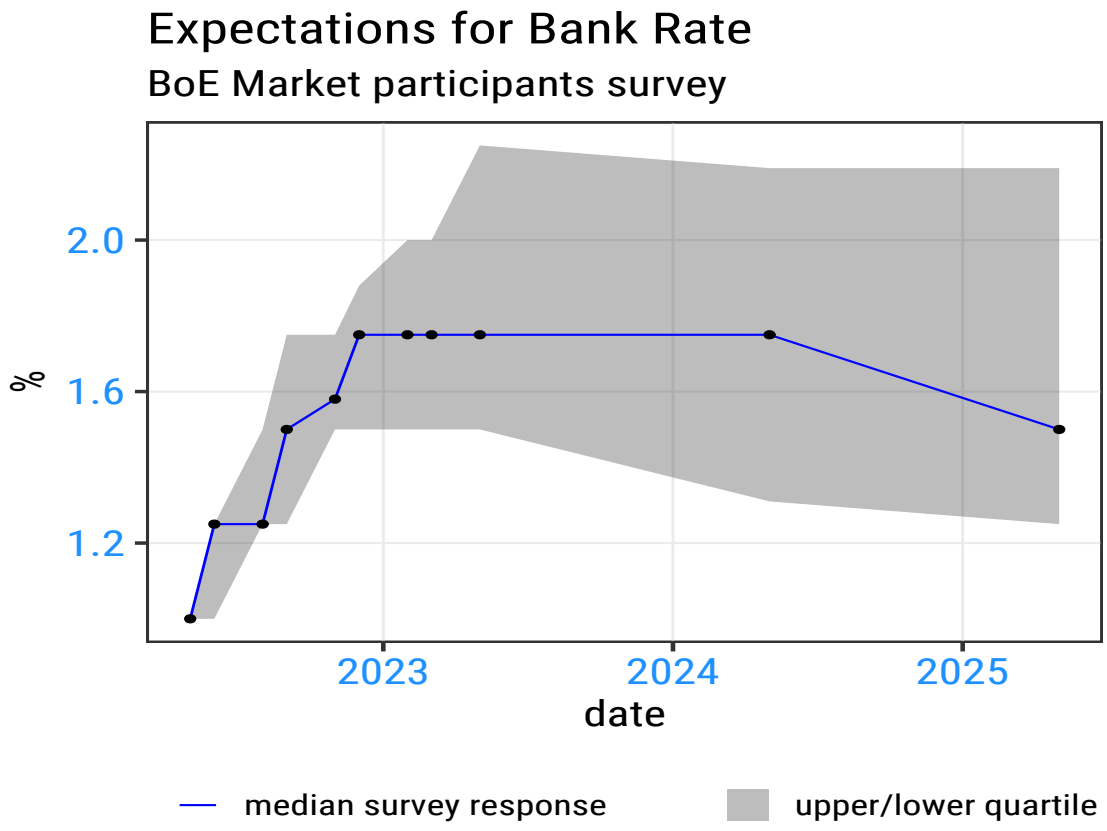

Figure 7: Survey-based expected policy rates

Classifying ECB Policy Events (from Asset Market Reactions)

Shock	Yield (short)	Yield (long)	Equities	Co-movement
Monetary policy:	$\uparrow\uparrow$	$\uparrow$	$\downarrow\downarrow$	$-$
Growth:	$\uparrow\uparrow$	$\uparrow$	$\uparrow\uparrow$	$+$
Risk premium:	$\downarrow$	$\downarrow\downarrow$	$\downarrow\downarrow$	$+$

Table 1: Shocks and their Implied Co-movement for Yields and Equities

ECB Comms: "Clear, consistent and engaging"?

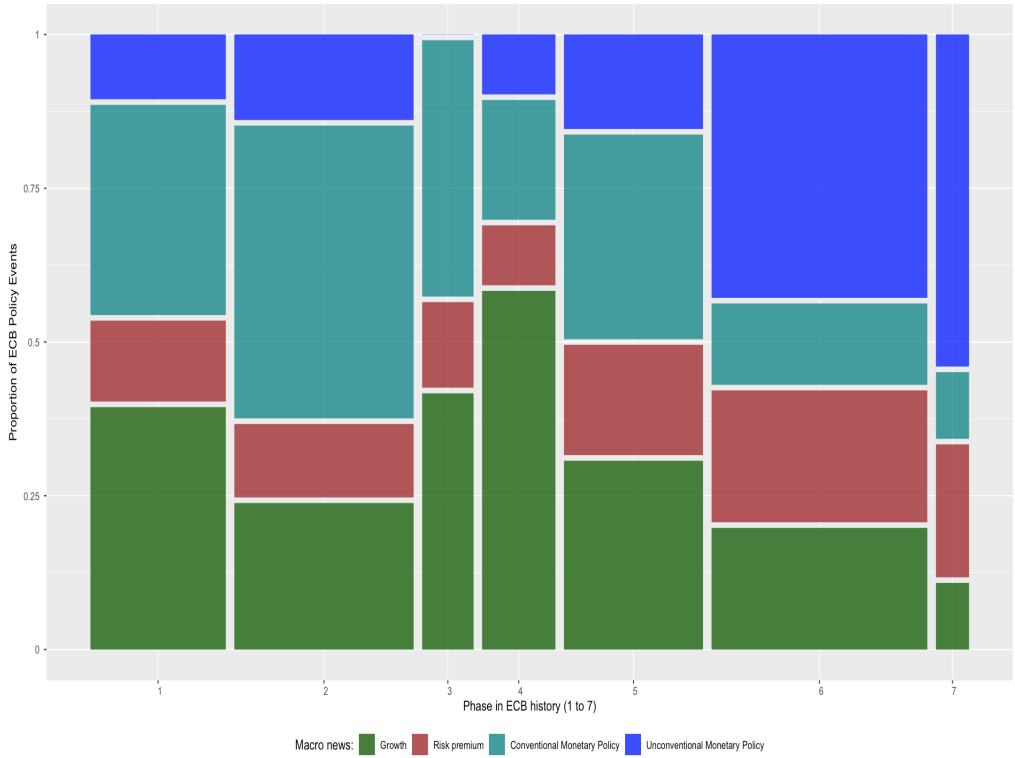

Figure 8: Classifying ECB Policy Events from Asset Markets

- Against: Recent actions have squeezed 'risk premiums', via quasi-fiscal policy. Immense political / institutional challenges.
- For: Has explained why simply 'doing more' is not always right" (Excl. March 12, 2020).

ECB: Requiring political backing amid institutional gaps

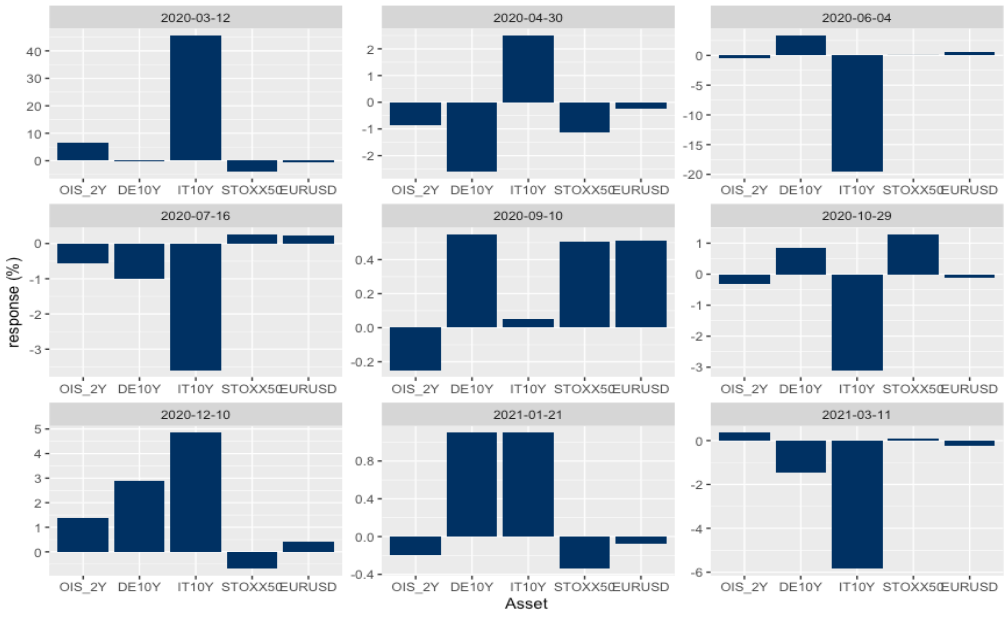

Figure 9: Market reactions at ECB Policy Events during Covid-19

- After the 'not our job to close the spread' debacle (12.03.20), subsequent policy events saw ECB learning to do just that...
- Depends on broader political support in place (eg 07/20). Likewise, 'Whatever it takes' followed July 2012 Eurogroup steps of inegration and was followed by Merkel's backing.

Why data science?

- Is Data science any different from applied statistics? *Yes* (Donoho, 2015)
- Addressing the Reproducibility crisis in Research
- Raising productivity individually and among teams
  - Data Scientists share code and 'get on' that way.
  - Contrast: Economists
- **'DNI'**: Fostering Inclusion and, thereby, Diversity.
- Improving Communications through a virtual Community (in general) and *DataViz* (more specifically).

A little data science example

```
fileno <- c(10, 12:14) # Based on list in zip folder
sheetname <- c('CPI Forecast', 'GDP Forecast',
               'Unemployment Forecast', 'GDP')

url = glue("https://www.bankofengland.co.uk/-/media/boe/fi
td <- tempdir()
tf <- tempfile(tmpdir = td, fileext = ".zip")
download.file(url, tf)
for(i in seq_along(1:4)) {
  fnamei <- unzip(tf, list=TRUE)$Name[fileno[i]]
  dfi <- read_xlsx(unzip(tf, files = fnamei, exdir = td), s
  assign(paste('df', i, sep=''), dfi)
}
```

Motivating a policy decision? Or poor DataViz?

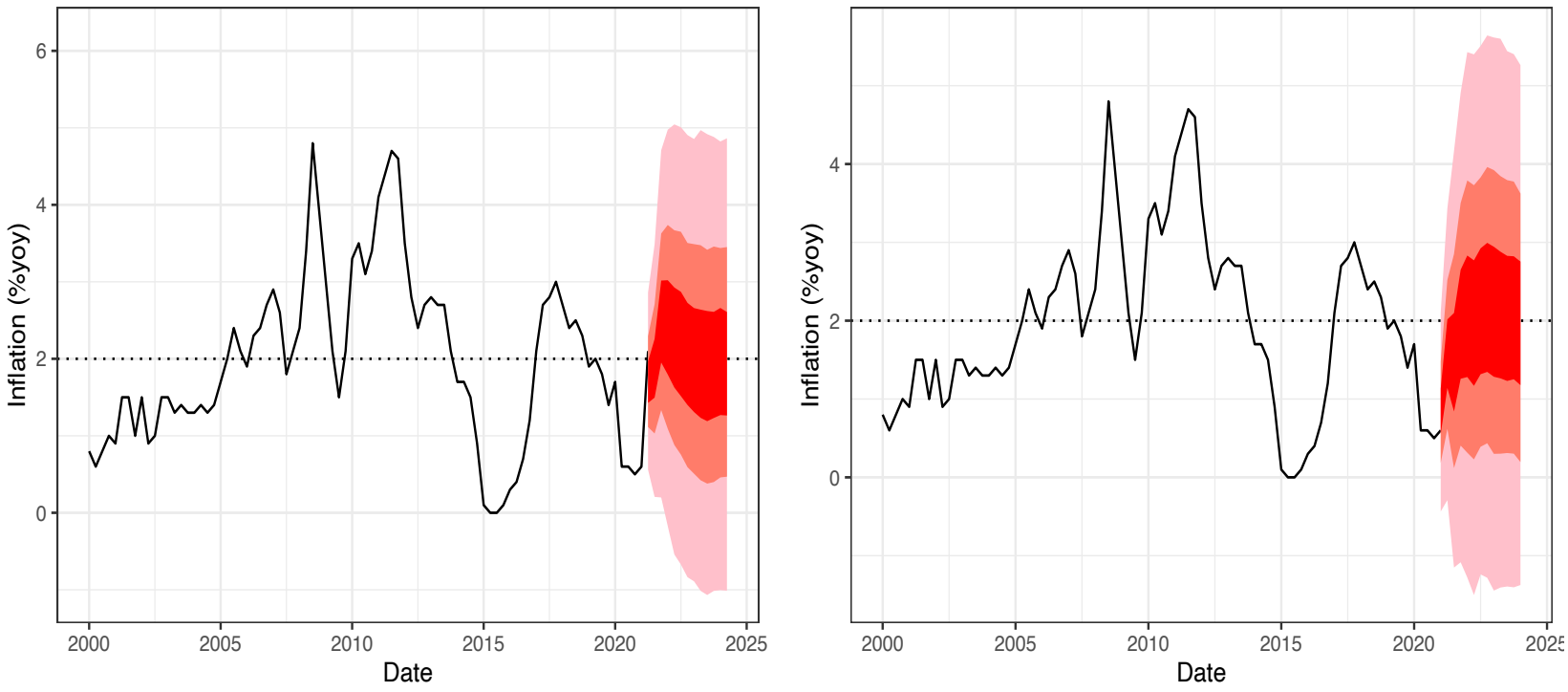

Figure 10: (Successive) BoE fan charts

- Fan charts communicate uncertainty in the outlook. They do not justify or motivate a policy decision or macro news.

Macro news: scale, persistence and source of news justifies policy decisions

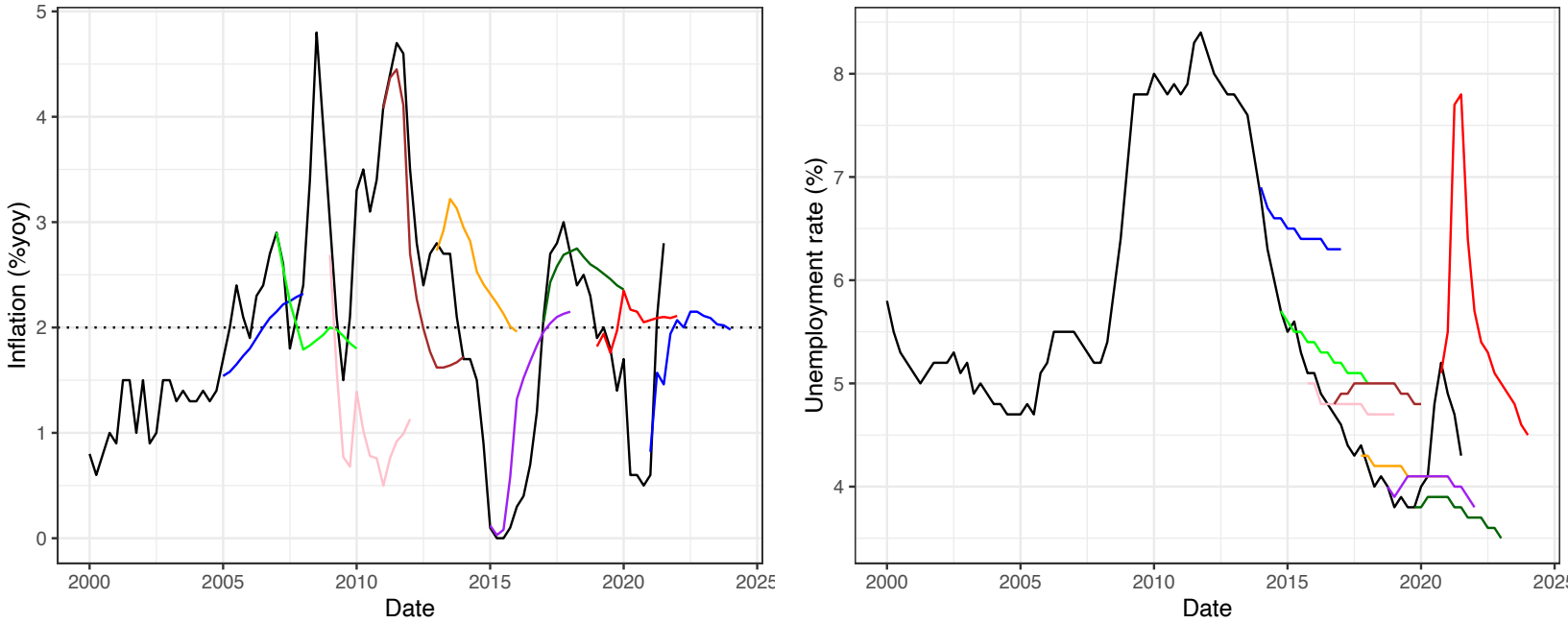

Figure 11: Communicating macro news

- How the data are evolving.
- Communicating news, and how it might persist as a basis for policy decisions...
- ...alongside conditioning assumptions, incl for rates.

Communicating policy choices and trade-offs

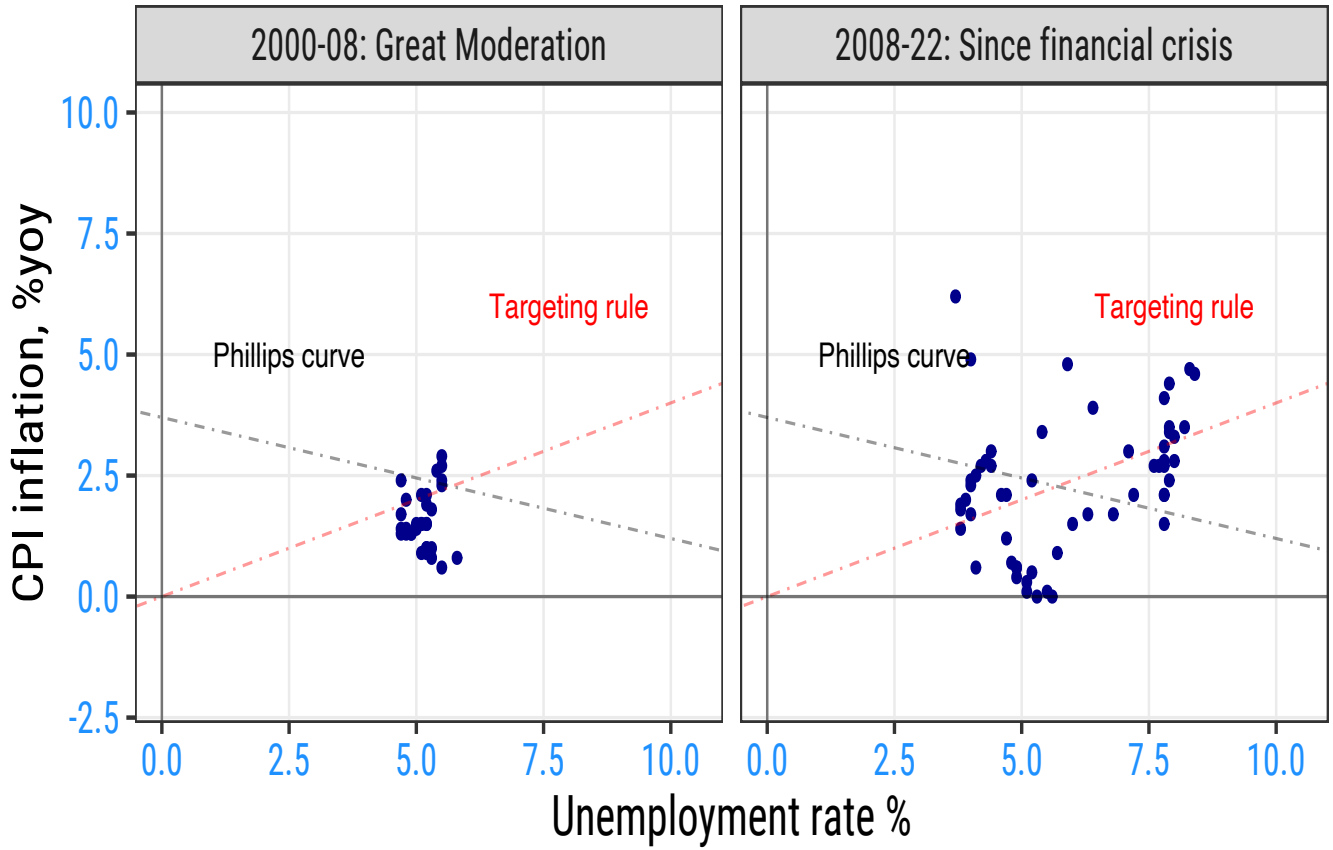

Figure 12: Unemployment and Inflation

- Tradeoff-inducing (Supply-side) shocks more prevalent.
- Contrast: pretending there are lower cost options (Rajan critique).

Unemployment and Inflation in BoE forecasts

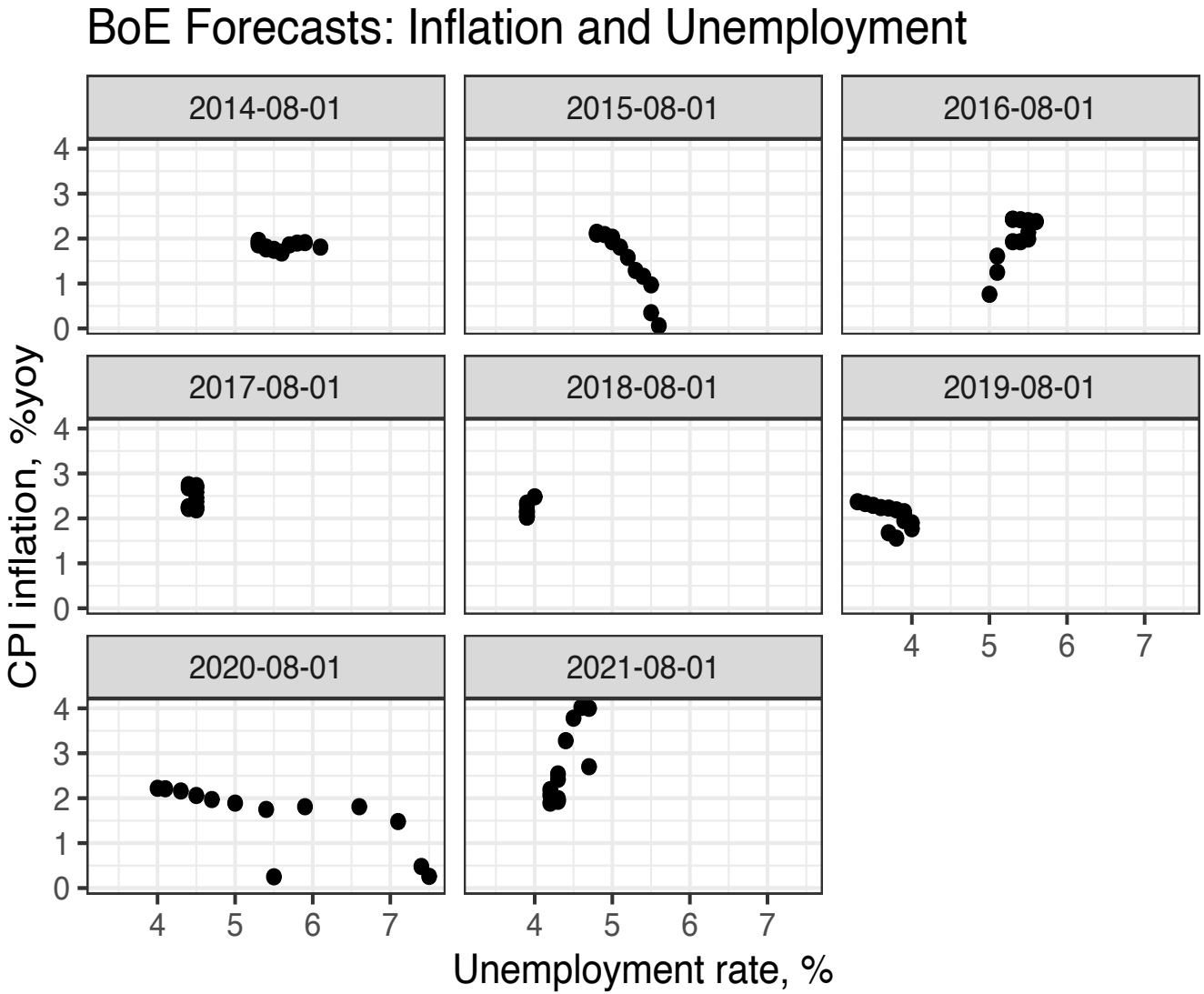

Figure 13: BoE Forecasts

Summarising Unemployment and Inflation in BoE forecasts

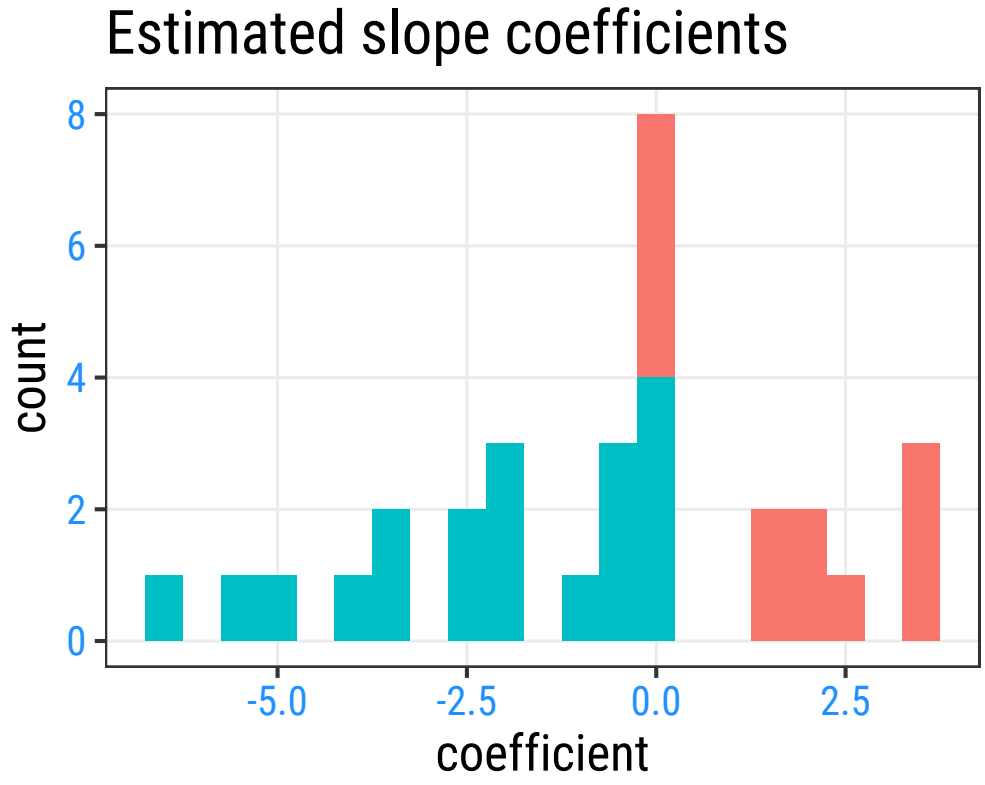

Figure 14: BoE Forecasts

- In forecasts, predominantly it is the shifting policy rule that traces out an inverse Phillips relation (rather than trade-off inducing shocks).

Key conditioning assumption: fiscal policy and Cochrane critique.

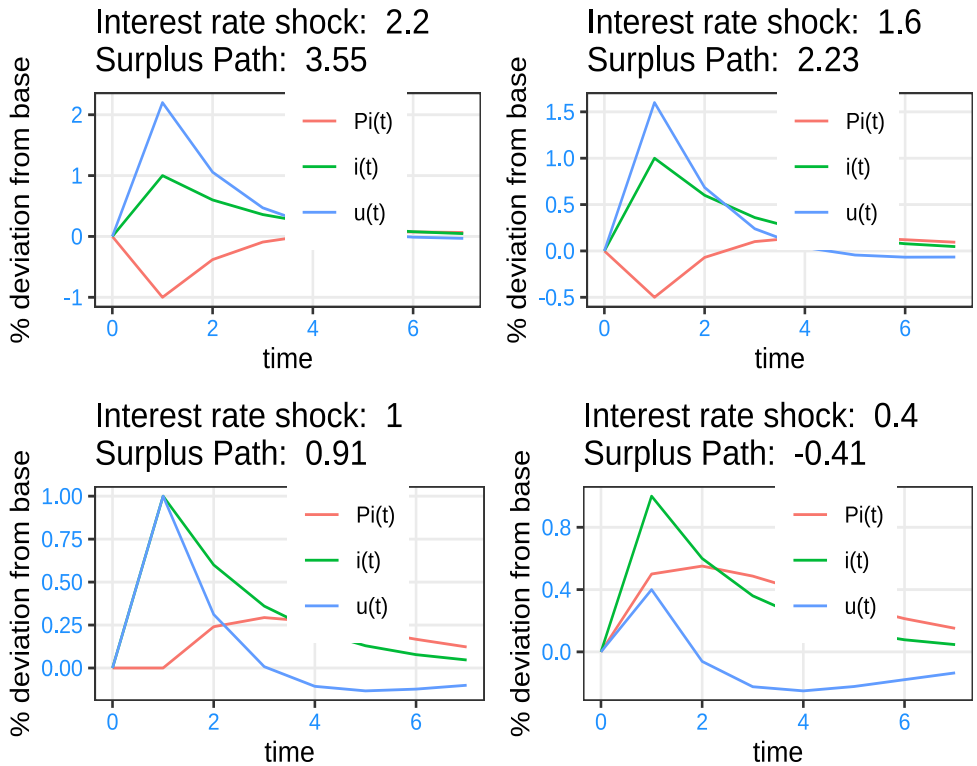

Figure 15: Some key monetary/fiscal interactions

- BoE cannot 'wash its hands' of fiscal conditioning assumptions. Invite Scenario analysis.
- The credibility of Π^* and Fiscal policy are not separable.

Biggest (risk of) policy mistakes

- When CB and markets are mutually consistent but detach from macro fundamentals. Example: Pre-IT late-1980s, UK shadowing DEU exchange rate followed by foreign shock. (Policy too loose then too tight).
- When CB conditions on an asymmetric/high-risk view that markets will not take as given Exs: Post-Brexit vote Deal was assumed by BoE; current fiscal plan assumed in full. (Market rate path + policy too loose).
  - Taking HMG policy as exogenous is questionable
  - In neither case should these be taken as fixed. Instead, Scenario analysis.
- When "the ends" – the commitment to Π^* – do not justify "the means". Policy will become Politically unsustainable.

Main messages

- Comms via Inflation Forecast Targeting had conveyed one key message well: Target is unconditional, while horizon can be flexible. High INFL has jeopardised this.
- When the risk of policy mistakes is highest (i) when CB and markets agree but both are detached from fundamentals (ii) when CB is 'conditioning on' something at odds with markets. Exs: Nov 2020 QE; Brexit No Deal risk; Current fiscal plans. Recent (high INFL) experience partly reflects this.
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