Unconventional Policy Tools at the Fed: Lessons from Theory and Practice

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Silvana Tenreyro (LSE, CEPR)
Mo Wazzi (University of Oxford)

Motivation:

UMP tools played a central role since the GFC and were extensively used during Covid

Need to assess their design, transmission and effectiveness

This presentation:

1. UMP Tools: Theory and Evidence
    - Forward Guidance
    - Asset Purchases
2. 2020-2024 Experience
    - The Fed’s Role
    - Take-aways and Reflections
3. Looking Forward: Lessons and Open Questions

UMP tools: theory and evidence

Forward Guidance

What is Forward Guidance?

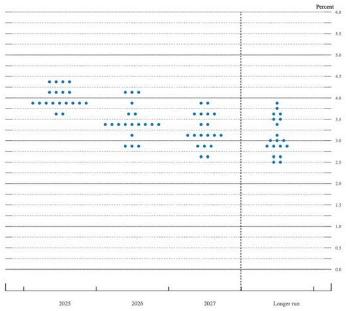
- It is the CB communication regarding future path of policy or the economy.
  Not new, in use since at least 1999 – Rudebusch and Williams (2008).

- It has two main forms:

Delphic	Odyssean
Forecast of likely future policy actions, without commitment • Mostly communication about reaction function • State contingent and time consistent by nature	Stronger guidance with (partial) commitment to a policy path • Often time inconsistent

▶ Under FAIT, Delphic guidance may deliver effects previously thought to require Odyssean strategies – Evans (2017).

Forward guidance is multidimensional: types and examples

	Open-ended	Calendar-based	State-contingent	Explicit rate forecast	*Knockouts*
⊕ **Pros:**	High degree of flexibility	Offers greater certainty	Anchors expectations to data	Shapes expectations, staying flexible	Can help ensure robustness to shocks
⊖ **Cons:**	Conveys limited information	Limits policy flexibility	Needs public understanding	Signals without commitment	Risk of confusing communication
Examples:	*August 2003: 'policy accommodation' could 'be maintained for a considerable period'.* *January 2004: that it could 'be patient in removing its policy accommodation'.*	*August 2011: FOMC indicated it would keep the fed funds rate near zero "at least through mid-2013".*	*December 2012: FOMC indicated it would keep the fed funds rate low until unemployment remained above 6.5%, inflation is no more than 0.5% above target , and long-term expectations remained anchored.*	*FOMC Dot Plot:* 	*August 2013 (BoE): BoE guidance suspended if any of outlined knockouts hit, e.g. CPI inflation forecast exceeded 2.5% in 18–24 months or medium-term inflation expectations unanchored.*
	Source: Link (1), Link (2).	*Source: Link.*	*Source: Link.*	*Source: Link.*	*Source: Link.*

▶ Though often tied to specific formats, the Delphic–Odyssean distinction is more conceptual.

How does FG work?

	Theory	Evidence
Reduces uncertainty	Lowers term premia and reduces risk premia in other asset markets *(Bundick, Herriford and Smith, 2017)*	Reduced interest rate uncertainty *(Hattori, Schrimpf and Sushko, 2016; and Ehrmann et al., 2019)*
Can directly affect policy rate expectations	Lowers medium- and long-term yields *(Bernanke, 2020). Note: Delphic FG may also lower expectations if market pricing is sufficiently misaligned.*	Had significant effects on yields, equities and broader asset prices *(Campbell et al., 2012; Femia, Friedman, and Sack, 2013; Raskin, 2013; Del Negro, Giannoni, and Patterson, 2012; and Swanson, 2016, 2021, 2024)*
Can raise inflation and growth expectations	Further stimulates household and firm spending *(Woodford, 2012)*	Macroeconomic effect on output or inflation only estimated imprecisely *(Kim, Laubach and Wei, 2023)*

UMP tools: theory and evidence

Asset Purchases

What are Asset Purchases?

- They are large-scale central bank asset purchases, financed by CB reserves; they **swap assets for reserves,** altering the composition of private sector wealth – not a transfer of wealth.

- **Multidimensional tool:** different structures, objectives and design:

Assets

- Different asset types (sovereign bonds, corporate bonds, MBS)
- Different maturities
- Different risk

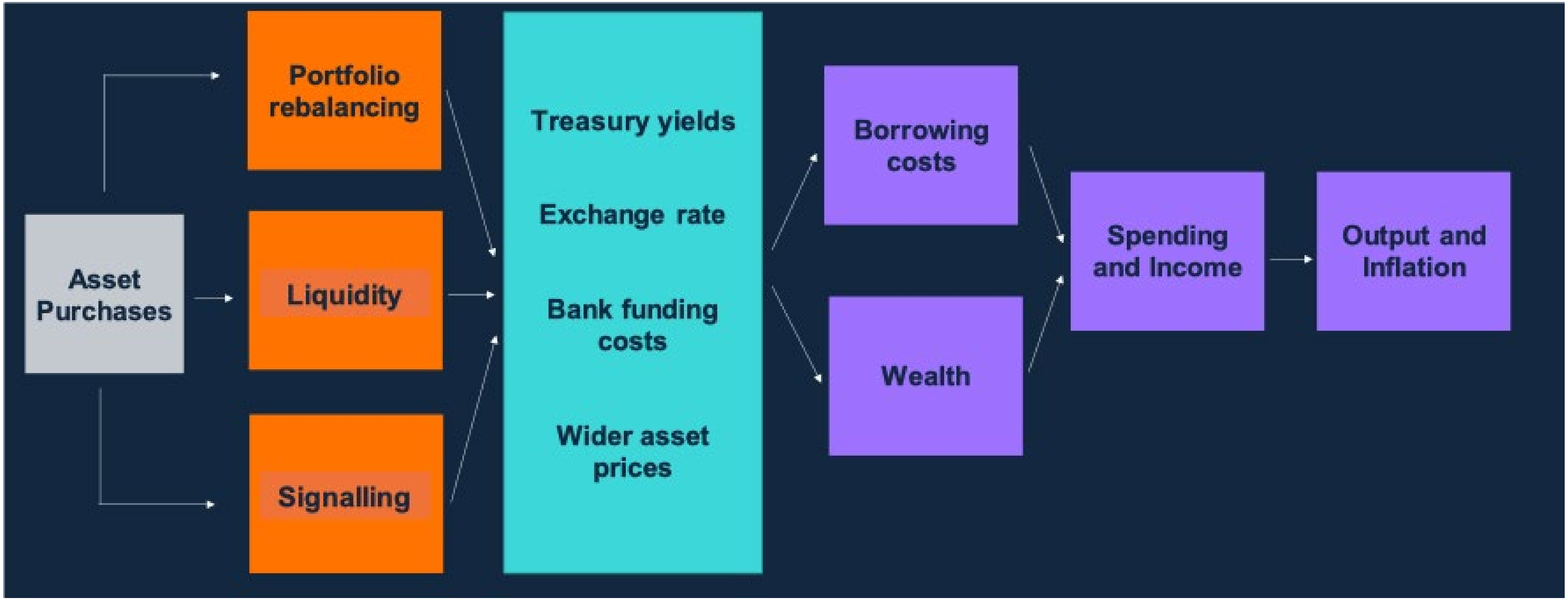
Purpose

- Monetary stimulus vs financial stability (liquidity provision / market functioning)

Design

- Fixed quantity vs open-ended
- Price-based vs quantity-based

Stylized Transmission Mechanism of Asset Purchases



Source: Adapted from Bailey et al (2020).

How do Asset Purchases work?

Channel	Theory	Evidence
Portfolio Balance	Operates through relative supply of assets available to private investors to reduce risk premia in targeted securities and other markets *(Vayanos & Vila, 2021; Greenwood et al., 2023)*. Strength may depend on market conditions.	• Early LSAPs reduced yields on targeted assets, consistent with supply and duration effects *(Gagnon et al., 2011; D'Amico & King, 2013; Cahill et al., 2013)* • Yield impacts estimated to be larger during periods of market stress *(Ray, Droste and Gorodnichenko, 2024)*
Liquidity	Injects liquidity and signals a committed buyer, reducing illiquidity risk. Frees up dealer balance sheets to support market functioning *(Duffie & Keane, 2023)*.	• Market stabilisation may be driven by actual purchases, not just expected holdings—seen clearly in March 2020 Treasury market stress *(Vissing-Jorgensen, 2021)* • Credible announcements can also resolve stress. E.g corporate bond purchase announcements in 2020 lowered spreads, reflecting reduced liquidity premia from perceived backstop *(Haddad, Moreira & Muir, 2021)*
Signalling	Lowers expectations of future path for policy through several possible mechanisms. May also reduce uncertainty and in turn risk premia.	• LSAPs significantly affect rate expectations, indicating a strong signalling role *(Bauer & Rudebusch, 2014; Christensen & Rudebusch, 2012)* • Limited evidence on signalling effects for post-2010 LSAPs.
Other	• *Backstop:* Reassures markets that the central bank stands ready to intervene to reduce tail risk • *Bank lending:* Increases in banks' reserve holdings may affect lending decisions, but direction ambiguous.	• Evidence of state-contingent policy impact using options data, indicating backstop role *(Haddad, Moreira & Muir, 2025)* • Positive link between reserves and lending during LSAP episodes *(Kandrac & Schlusche, 2021)* • Reserves may crowd out lending under leverage constraints *(Diamond, Jiang & Ma, 2024)* • Evidence abroad that increases in reserves support lending via liquidity self-insurance mechanism *(Chavaz, Patozi & Wazzi, forthcoming)*

The macro effects of Asset Purchases

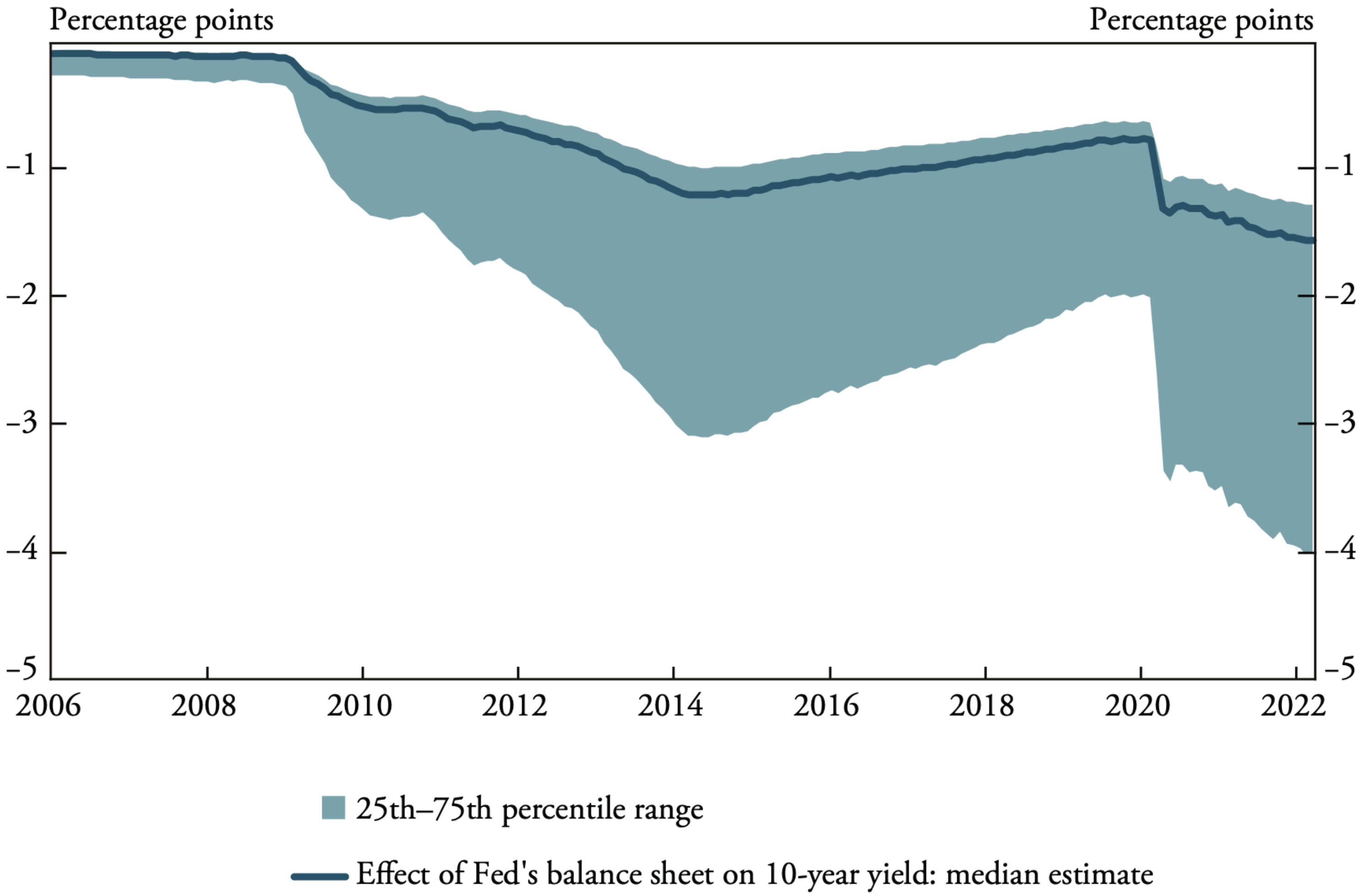
- **Estimation:**
- LSAPs have been effective aggregate demand tools
- Wide dispersion in macro estimates across time, countries, and methods
  (Fabo et al., 2021; Gulati & Smith, 2022)
- Estimates vary owing to identification strategies, modelling assumptions, and transmission

Study	Approach	Estimated Macro Effect
Baumeister & Benati (2013)	VAR + event study	QE1 avoided -10% GDP contraction, -1% inflation
Kim, Laubach & Wei (2023)	High-frequency IV	\$500bn LSAP → ↑ output +1.2%, ↑ prices +0.8%
Swanson (2024)	High-freq + local projections	Yield effects persistent; no macro effect
Chen, et al. (2012)	DSGE (limited segmentation)	QE2 → ↑ GDP +0.13%
Gertler & Karadi (2013)	DSGE (with leverage frictions)	QE → ↑ GDP ≈ +1%
Ray, et al. (2024)	DSGE (preferred habitat)	QE1 → macro effect ≈ 50-75bp rate cut

▶ Evidence that macro impact exists, though magnitudes sensitive to methodology

There is significant uncertainty around the effect of LSAPs

Estimates of Accommodation from the Federal Reserve's Balance Sheet

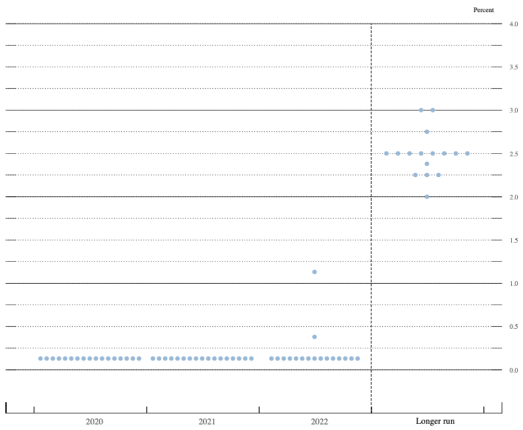


Source: Gulati and Smith (2022).

The 2020-2024 experience

What did the Fed do?

Forward Guidance 2020-24

Dot Plots	Rates Guidance	Asset Purchase Guidance	Lift-Off Sequencing
	“keep the target range for the federal funds rate at 0 to 1/4 percent and expects it will be appropriate to maintain this target range until labor market conditions have reached levels consistent with the Committee’s assessments of maximum employment **and** inflation has risen to 2 percent **and** is on track to moderately exceed 2 percent for some time.”	“continue to increase its holdings of Treasury securities by at least $80 billion per month and of agency mortgage-backed securities by at least $40 billion per month until substantial further progress has been made toward the Committee’s maximum employment and price stability goals.”	• Lift-off would not occur until purchases stopped • FOMC intended to provide “ample warning” before tapering asset purchases
June 2020, Link	*September 2020, maintained until November 2021, Link*	*December 2020, maintained until June 2021, Link*	*December 2021, Link* *June 2021, Link*

Asset Purchases 2020-24

Smooth Market Functioning

FOMC announces asset purchases aimed at supporting **smooth market functioning** in March/April 2020

- **15 March**: Purchases of min $500bn UST and min $200bn MBS
- **23 March**: Unlimited UST and MBS purchases + announced IG corporate bond purchases
- **9 April**: Corporate bond program expanded to include some HY debt

Smooth Market Functioning *and* Monetary Policy Accommodation

In September 2020, justification for UST and MBS purchases was expanded to include both **market functioning** and fostering **'accommodative financial conditions'**

- Two goals; **no substantial change in asset purchase composition**
- **Forward guidance** (previous slide) **focused on monetary policy goals**

The 2020-2024 experience

Takeaways and reflections

Reflections: Forward Guidance

- **Trade-off between commitment (for initial effectiveness) versus flexibility. More weight on effectiveness, with limited flexibility.**

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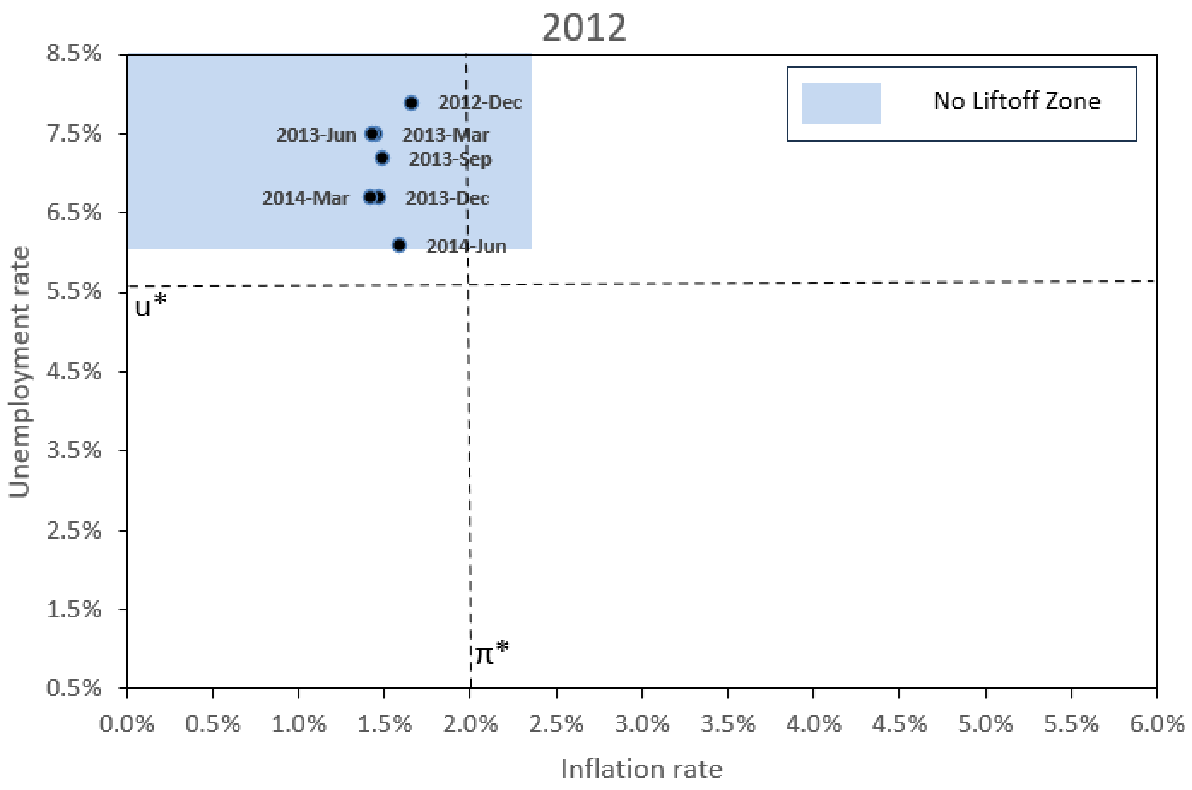
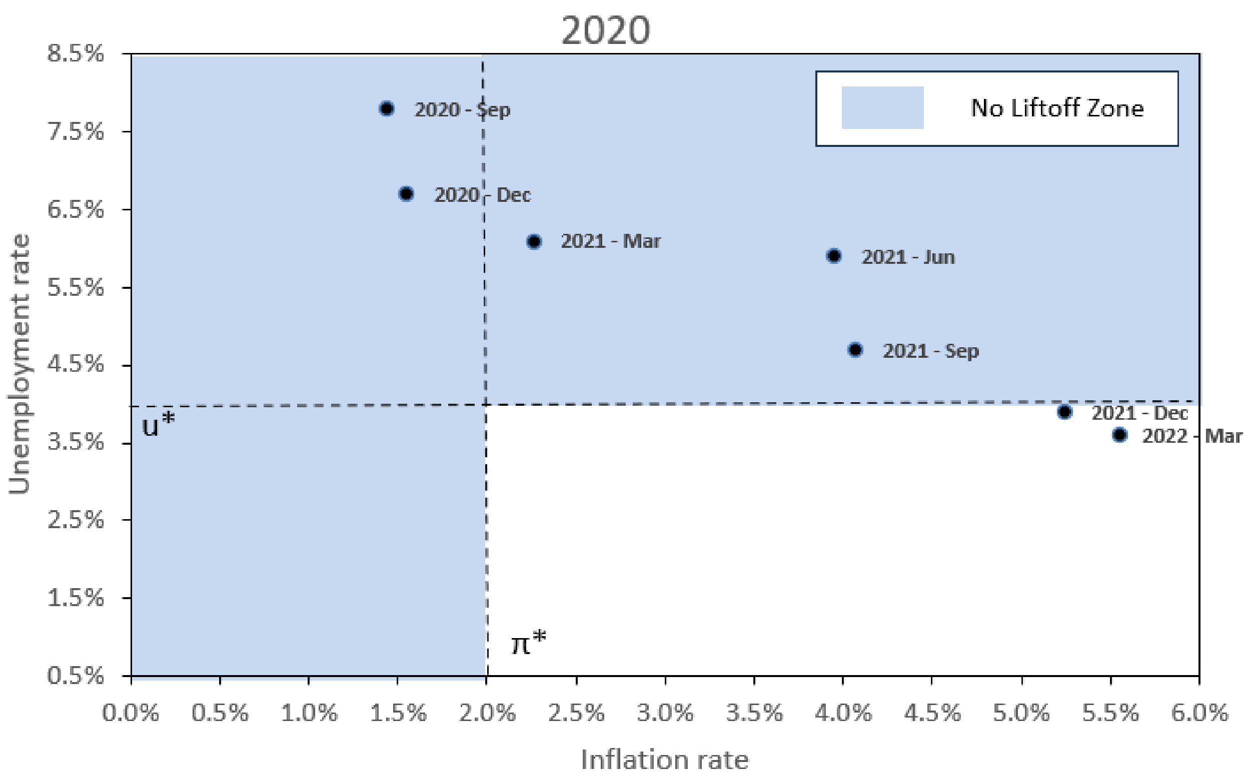
1. Rate lift-off criteria set **a high bar** and were **insufficiently robust** to trade-off-inducing shocks. <u>Stress-testing FG should be highly beneficial</u>

Forward Guidance conditions set too high a bar





Note: Graphs reproduced from English and Sack (2023)

Reflections: Forward Guidance

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1. Rate lift-off criteria set **a high bar** and were **insufficiently robust** to trade-off-inducing shocks. <u>Stress-testing FG should be highly beneficial</u>

2. Sequencing guidance could have potentially **clashed** with main FG on LSAP and rates, if time between conditions for LSAP conclusion and conditions for rate lift off was too short – not enough time to give ample warning for tapering without delaying lift-off.

3. Conditions were **outcome-based**, limiting ability to act pre-emptively in response to changing outlook or risks

4. Escape clause **not sufficiently integrated**

Reflections: Asset Purchases

- **Two observations**

1. Initial purchases were successful at restoring market functioning *(Vissing-Jorgensen, 2021)* LSAPs provided monetary policy stimulus *(e.g., Kim, Laubach and Wei, 2023)*

2. There was insufficiently clear **differentiation between goals**: liquidity provision versus monetary policy stimulus
   - Although the share of long-dated USTs purchased did increase, the structure of UST and MBS purchases did not change materially as goals evolved.
   - A clear separation in design and message could enhance effectiveness, and increase agility to change course if needed.

Looking Forward

Lessons and open questions

Overall lesson

Premise: keep forward guidance and asset purchases in the toolkit

- In designing and deploying UMP, policymakers must **balance policy effectiveness at the time of deployment with the flexibility** needed to respond to future shocks

- **Stress-testing policies** before deployment using scenario analysis should be helpful in the design and implementation of the intervention.

Tool-specific lessons: Forward Guidance

1. **FG should be stress-tested to ensure robustness under different scenarios**

2. **State-contingent guidance provides the best balance** between flexibility and effectiveness. Care must be given to conditionality to avoid being boxed in, even if at the expense of some effectiveness.

3. **Contingent nature of policy must be clear**, e.g. via a simple, integrated escape clause.

4. **FG should avoid being too outcome-based**. Given lags in the MTM, guidance should allow for pre-emptive adjustments in the MP stance.

5. **Guidance can be revised in extraordinary circumstances**, with the rationale for adjustments is articulated clearly

These considerations must be weighed against the need for the language to be **clear and accessible**.

Lessons: Asset Purchases

1. **Stress-test tool decision under different scenarios**

2. **Have a clear distinction between policy goals**
   - By not differentiating them, unwind of purchases made for liquidity purposes are tied to monetary policy
   - **With separation, tapering, ending or unwinding liquidity purchases would be interpreted as a positive signal** about market conditions and allow for less purchase inertia
   - In scenarios where stress and stimulus needs coincide, separating objectives may be operationally challenging, underscoring the **importance of assessing trade-offs and preparing frameworks in advance**
   - If kept as a single integrated tool, **structure of purchase programs should align with evolving goals**

3. **While sequencing lift-off after ending asset purchases is desirable, it should not be a hard constraint**
   - If delaying rate hikes threatens credibility, a **temporary overlap between tapering and raising rates need undermine policy effectiveness** provided the rationale is clearly communicated

Pending points in the research agenda

Estimated Impacts

Range of estimated impacts of FG and Asset Purchases remains wide

- How much have Asset Purchases lowered the yield curve?
- How persistent are the estimated effects from Asset Purchase announcements?
- What is the impact of QT?

Integrated Cost-Benefit Framework

An integrated framework to assess macroeconomic benefits and costs is needed for accountability and transparency:

- Discussion often narrowly focused on fiscal costs, missing macro benefits (d'Avernas et al, 2024).
- QE for financial stability in general leads to gains in CB balance sheet.
- But if QE for monetary policy is successful, it should lead to balance sheet losses, as the economy leaves the ELB. (Probably implying larger macroeconomic gains.)

Other Tools for ELB

Other tools for the ELB should not be ruled out

- Negative rates can open additional monetary policy space (McLeay et al 2025).
- If long yields are low, LSAP or FG cannot provide further stimulus.
- Funding-for-lending schemes

Final recommendations

1. **Retain FG and LSAPs in the policy toolkit**: evidence supports their effectiveness across multiple transmission channels at the ELB
   - Above the ELB, Delphic guidance should be routine practice and LSAPs should be deployed in times of financial market dysfunction
2. **Stress-test design**: instruments should be stress-tested ex ante to perform under a range of conditions; trade-offs must be explicitly considered
3. **Clarify objectives**: distinguish between the roles of asset purchases (e.g. market functioning vs. macro stimulus) and calibrate accordingly
4. **Encourage more research**: further empirical work is needed to narrow the range of estimated effects; more work to develop integrated frameworks for evaluating benefits and costs
5. **Remain open to complementary tools**, including negative interest rates and funding-for-lending schemes, where appropriate