

Discussion of
**Macroeconomic and Fiscal Consequences of
Quantitative Easing**

by Adrian, Erceg, Kolasa, Lindé and Zabczyk

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IMF Advances in Monetary Economics Conference
September 19, 2024

Overview of the paper

Consider quantitative easing (QE) in a DSGE model featuring:

- ▶ bond market segmentation
- ▶ behavioral discounting
- ▶ non-linear Phillips curve

QE affects the **central bank balance sheet/ profits**, has **macroeconomic consequences** and also has implications for **fiscal consolidation position**.

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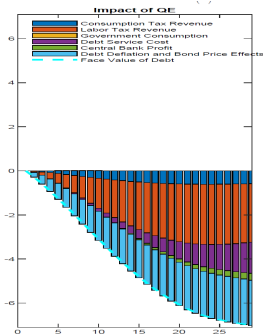
Effectiveness of QE depends on particular scenario, is **state-dependent**

- ▶ Large effects in **deep** recessions and liquidity traps. Smaller effects in shallow liquidity traps.
- ▶ Also highlight overheating concerns, particularly implications for inflation, in **fast** versus slow recovery scenarios.

Regardless, in all scenarios, the implications for fiscal position remain important.

Critical ingredients

Fiscal consequences of QE



$$\underbrace{B_t^f + P_{L,t} B_{L,t}^f}_{\text{issuance of short and long-term bonds}} + \overbrace{T_t}^{\text{tax revenue}} + \underbrace{\Phi_t^c}_{\text{central bank profits}}$$

$$= \underbrace{R_{t-1} B_{t-1}^f}_{\text{interest payment on ST bonds}} + \overbrace{(1 + \kappa P_{L,t}) B_{L,t-1}^f}^{\text{current price on LT bonds}} + P_t g_t$$

Non-linear Phillips curve

- ▶ Lowers sensitivity of inflation to policy actions in an economic slump
- ▶ Upside inflation risks become more significant.

Figure 2: Linearized and Nonlinear Phillips Curve with Cost-Push Shocks

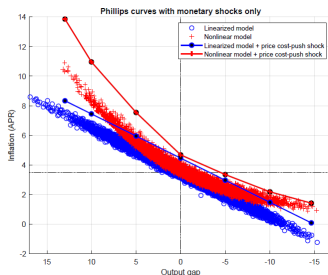
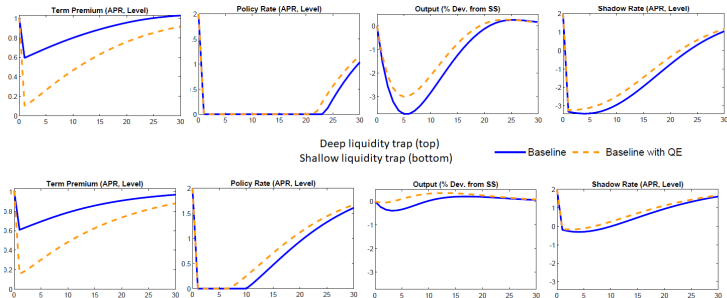


Figure from Harding, Lindé and Trabandt (2023)

- ▶ Right panel aligns with missing disinflation and QE effects in Great Recession
- ▶ Left side coincides with the fast recovery scenarios during post-Covid inflation

QE effectiveness based on longer-term commitments



- ▶ QE works well in **deep liquidity traps**, and smaller "bang for buck" in shallow liquidity traps.
 - ▶ Duration of ZLB longer in deep traps. **Myopic agents** care less about lift-off further it is in the future.
 - ▶ Lift-off earlier, as policy function is stronger, in shallow trap. Shadow rate starts below ZLB and becomes unconstrained soon after intervention.

Missing ingredients - with potential consequences

Supply side effects of QE

- ▶ There is no capital in the model, and consideration of supply side/ cost channels for QE to affect inflation.
- ▶ Boehl, Goy and Stroebl (2024, ReStat) consider a DSGE model with QE and highlight opposing forces on inflation:
 - ▶ Increase in demand - upward pressure on inflation
 - ▶ Change in financial conditions and borrowing costs - affecting marginal costs of firms - downward pressure on inflation
 - ▶ In their estimated DSGE model the **downward pressure on inflation dominates**.
 - ▶ Investment rises and consumption crowded out - compositional difference in responses, relative to Adrian et al.
- ▶ Inflation response to QE shocks depends on demand *and* supply side channels, also emphasized by Sims, Wu and Zhang (2024, Restat).
 - ▶ QE is significantly **less inflationary** than conventional monetary policy shocks - when both normalized to have same output effects.

Supply side effects of QE

- ▶ Fabo et al. (2021) review of empirical literature suggests insignificant or small effect on inflation in QE.

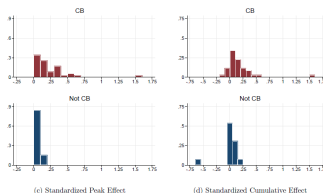
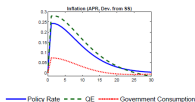


Figure 3: Effects of QE on Inflation by Central Bank Affiliation. The figure plots histograms for the

- ▶ In this paper, inflation has a significant and slightly larger response to QE than standard monetary shock.



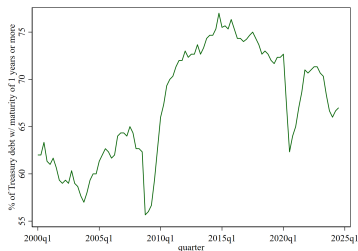
- ▶ Careful consideration of inflation effects of QE needed, potentially dampening inflation/ compositional implications of QE in this analysis.

Debt management by the Treasury

- ▶ Assume the share of short term and long term issuance by the Treasury is **constant**. So only QE actions affect maturity split available to public.

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- ▶ Treasury makes adjustments to its share of short and long term holdings - tends to extend maturity of debt as overall debt burden grows.
 - ▶ Treasury Borrowing Advisory Committee suggested in November 2009 that *"the potential for inflation, higher interest rates, and rollover risk should be of material concern... lengthening the average maturity of debt from 53 months to 74–90 months was recommended."*
- ▶ Allowing for fiscal policy discretion in bond issuance could have consequences for effects of QE on bond prices.

Fiscal policy action effects on yields and term premium

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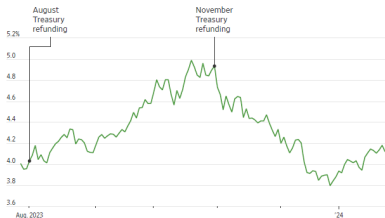
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U.S. 10-year Treasury note



Note: Annotated points mark the day before Treasury announced its decisions.

Source: Tullett Prebon

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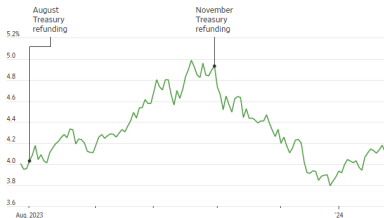
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- ▶ Cram, Kung and Lustig (Jackson Hole, 2024): Focus on CBO cost releases. 1 pp. surprise increase in the expected supply of Treasurys, as fraction of GDP, corresponds to an increase of the 10-year nominal yield by 31 bps
- ▶ Phillot (AEJ Macro): Focus on Treasury announcements. Surprise increase in Treasury supply increases yields for all maturities and term premium.
- ▶ Evolving literature, but might become even more relevant as we encounter increased debt expansion episodes and face fiscal sustainability concerns.

Interaction of fiscal policy and QE

- ▶ *“By changing the composition of governmental liabilities, QE can alter the timing of the effects of increased federal deficits on private investment... Larger deficits (during economic downturns) place upward pressure on interest rates, which crowds out investment A QE program would reduce that upward pressure on interest rates, thereby reducing the crowding out effect.” CBO 2022 document*

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- ▶ *“Treasury’s decision to lengthen the average maturity of the debt(to mitigate fiscal risks associated with govt’s growing debt) has partially offset the Federal Reserve’s attempts to reduce the supply of long-term bonds held by private investors through its policy of quantitative easing.” Greenwood, Hanson, Rudolph and Summers, 2014*

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- ▶ Could QE amplify or mitigate the macroeconomic or financial effects of fiscal policy? Could fiscal policy mitigate the effects of QE?
- ▶ Slow and fast recovery scenario could be modified to be scenarios with and without fiscal interventions.

Relation to existing literature

- ▶ *State-dependent* effects of QE have been analyzed by others... in different contexts.
- ▶ Empirical example: Ray, Droste and Gordnichenko (2024, JPE) study Treasury auctions. Show that targeted Treasury purchases have larger effects in crisis (classified 2008-2012) versus non-crisis.
- ▶ Theoretical example: Cantore and Meichtry (2024, EER) consider a TANK model with QE and QT. Find state-dependence in effects - larger effects when ZLB is binding. Also study the interaction between state dependency of QE/QT and household heterogeneity. Document more action in consumption than labor.
 - ▶ That would have consequences for effects on consumption versus labor tax revenue in context of this paper.
- ▶ Given publication dates - seems like a very active area of research!

Conclusion

- ▶ Thought-provoking paper with a lot of potential to grow in interesting directions.
- ▶ **Broad and novel lesson:** Going beyond balance sheet and macro effects of quantitative easing - important fiscal effects.
- ▶ Particularly important as we consider monetary and fiscal interactions.