

Discussion of
Andrey Alexandrov and Markus K. Brunnermeier
Optimal (Un)Conventional Monetary Policy

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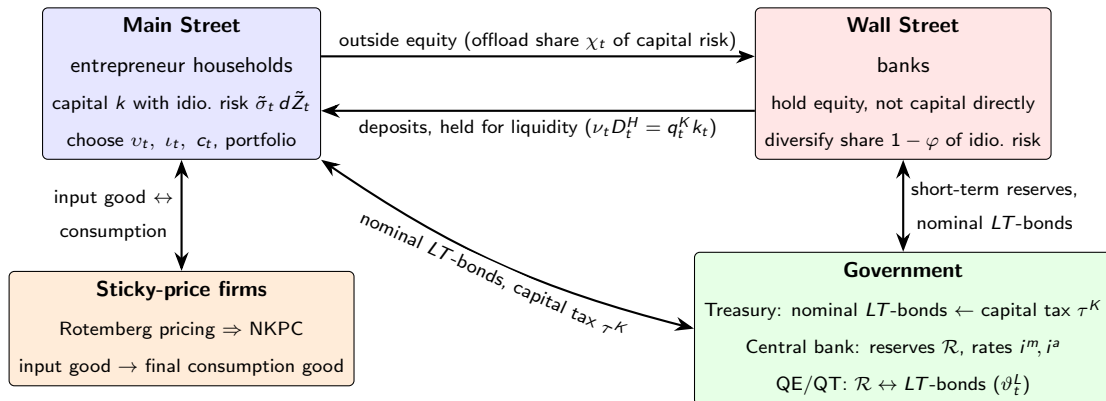
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Overview: framework

- ▶ Optimal *joint* conduct of conventional (interest rate) and unconventional (QE/QT) monetary policy
- ▶ Established macro-finance framework [[Brunnermeier and Sannikov, 2016](#), [Merkel, 2020](#), [Li and Merkel, 2025](#)] with New Keynesian features
 - ▶ Analytical characterization of constrained efficiency and of the optimal policy mix
- ▶ Two agents
 - ▶ Entrepreneur households (*Main Street*): hold capital, produce, invest
 - ▶ Banks (*Wall Street*): diversify risk, lever up, issue deposits

Stylized structure of the model economy

Aggregate shock dZ_t : volatility of idiosyncratic risk $\tilde{\sigma}_t^2$



All necessary ingredients for monetary policy analysis

- ▶ Key frictions
 - ▶ *Sticky prices*: require and allow monetary policy intervention
 - ▶ *No Ricardian equivalence*: long-term nominal government bond is net wealth, funded from capital tax
 - ▶ *Household costs of holding deposits*: imperfect aggregate risk sharing btw entrepreneurs and banks (no family)
- ▶ Standard NK model features
 - ▶ *Utilization decision*: short-term output affected by demand
 - ▶ *Investment decision* with adjustment costs: variable price of capital q_t^K
 - ▶ *Business cycle shock*: (persistent) volatility shock
 - ▶ *Institutional asymmetry*: central bank responds on impact, fiscal policy with delay

Key channels of monetary policy

- ▶ *Wealth revaluation, not substitution* through the real interest rate
 - ▶ Log utility $\Rightarrow C_t = \rho N_t$
- ▶ *Price* of the long-term nominal bond: short-rate path + term premium, through the aggressiveness of policy rule
- ▶ *Supply* of the long-term bond in private hands (QE/QT): quantity and distribution of duration risk
- ▶ Two policy rates, on *required* and on *excess* reserves: controls both the *marginal* (i_t^m) and the *average* (i_t^a) rate paid to banks
 - ▶ Wealth redistribution; realism: *tiering* (different rate up to a threshold, and above)

Praise and comments

► Praise

- Interesting, relevant and elegant framework
- Allows *analytical* characterization of the optimal interest rate – QE policy mix

► Comments

1. Volatility/risk shock
2. Optimal QE
3. Alternative fiscal automatic stabilizers?

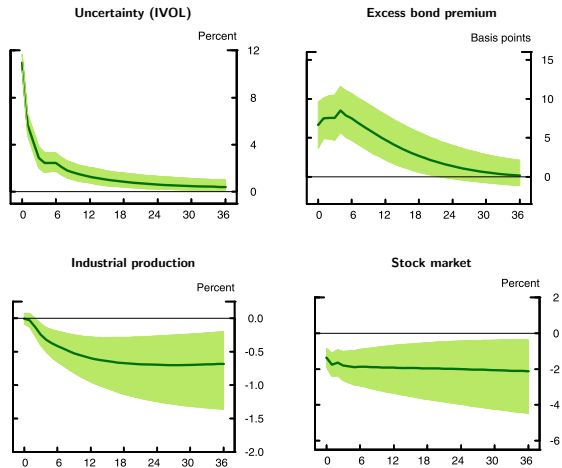
Comment 1: Key assumption — no inefficient bank balance-sheet constraints

- ▶ Banks here are *unconstrained*, risk-averse investors: leverage limited by risk aversion and net worth share, *not* by agency frictions
- ▶ $\Rightarrow$ QE does not work by *relaxing constraints*, unlike Gertler and Karadi [2011], Gertler and Kiyotaki [2010], Karadi and Nakov [2021]
- ▶ How realistic is this assumption and how robust are the results to it?

Comment 1: Business cycle driver: volatility shock

- ▶ The aggregate shock here: volatility of *idiosyncratic* capital returns $\tilde{\sigma}_t^2$
- ▶ Christiano et al. [2014]: in an estimated NK model with financial frictions, the risk shock (time-varying idiosyncratic volatility of entrepreneurial returns) is the *single most important* driver of U.S. business cycles ($\sim 60\%$ of output fluctuations)
- ▶ Caldara et al. [2016]: identification of uncertainty shocks
 - ▶ Monthly Bayesian SVAR (1975–2015), incl. an uncertainty proxy and the EBP
 - ▶ Penalty function approach [Uhlig, 2005]: uncertainty shock = the innovation that *maximizes the impulse response of the uncertainty proxy* over the first 6 months
 - ▶ Their IVOL proxy [Gilchrist et al., 2014]: common factor in firms' *idiosyncratic* equity volatility — the closest empirical counterpart to $\tilde{\sigma}_t^2$

IVOL uncertainty shock: heightened EBP and a sizable downturn



IRFs to a 1-std. IVOL uncertainty shock, σ -EBP identification; 90% credible bands. Source: [Caldara et al. \[2016\]](#), Figs. 3–4.

Comment 1: Does uncertainty shocks tighten inefficient financial constraints?

- ▶ *Excess bond premium* [Gilchrist and Zakrajšek, 2012] — proxy for inefficient financial distortions — compensation on corporate bonds *over and above* expected default losses.
Inefficient parts:
 1. Quantitatively large: requires either large risk aversion or financial frictions
 2. Strong predictive power: a low EBP predicts excess growth [Gilchrist and Zakrajšek, 2012]
 3. ... but generates a downturn later: exuberant credit-market sentiment (low EBP) predicts reversal and recession 2–3 years out [López-Salido et al., 2017]
- ▶ An IVOL uncertainty shock raises the EBP by ~ 10 bps on impact and triggers a sizable downturn: industrial production bottoms out 0.5–1% below trend after ~ 14 months
- ▶ Suggests a likely *tightening of inefficient financial constraints* after volatility shocks

Comment 2: Optimal response to a volatility shock — cut rates, but do QT

- ▶ Proposition 5: after a rise in $\tilde{\sigma}_t^2$, optimal mix = marginal rate *cut* on impact, but balance sheet *contraction* ($\vartheta_t^L \uparrow$): more long-term bonds in private hands
- ▶ Paper's intuition: redistribution works through bond price risk borne by intermediaries
 - ▶ Going forward, rate policy turns *milder* (lower $\sigma_t^{P^L}$): keeps long-term bonds attractive, prevents intermediaries from shedding duration
 - ▶ Preserving nominal wealth volatility $\sigma_t^B = \vartheta_t^L \sigma_t^{P^L}$ then requires *more* privately held duration $\Rightarrow$ QT
- ▶ Theoretically very interesting: ease rates, tighten the balance sheet
- ▶ With financial frictions [Gertler and Karadi, 2011, Karadi and Nakov, 2021], QE (not QT) is the *optimal response*: it eases binding constraints

Comment 3: Relabel QT as a fiscal stabilizer — deficit finance in recessions

- ▶ With a consolidated government, “QT” is just an increase in privately held long-term bonds ($\vartheta_t^L \uparrow$): irrelevant whether the central bank *sells* or the treasury *issues* — only the responsiveness assumption assigns the job to the central bank
- ▶ Suggestion: consider relabeling QT as a *fiscal* shock — the recession calls for *deficit finance*: lower the capital tax, funded by extra issuance of long-term bonds $\Rightarrow$ raises long-bond supply, exactly the optimal $\vartheta_t^L \uparrow$
- ▶ Monetary policy counteracts: the rate path delivers the efficient bond-price volatility $\sigma_t^{P^L}$
- ▶ Implementation: requires an automatic ‘stabilizer’ rule — issuance responding *on impact* to the volatility state; not easy with actual fiscal policy

Conclusion

- ▶ Elegant, relevant and interesting model
 - ▶ *Analytical* characterization of the optimal interest rate–QE policy mix, with a novel duration-risk channel for the central bank balance sheet
- ▶ Comments and suggestions
 1. How realistic is the assumption that spreads are *efficient*? Sizable, predictable excess bond premium suggests inefficient components
 2. If spreads are not efficient, would the model not imply *QE* — rather than QT — as the optimal response to a volatility shock?
 3. An alternative: relabel QT as *fiscal* policy — deficit finance via long-term bond issuance — making this a model of optimal *monetary–fiscal coordination*

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Overview: framework, cont.

- ▶ Production requires capital, held by households
 - ▶ Subject to *idiosyncratic* risk; aggregate shock: its time-varying *volatility* $\tilde{\sigma}_t^2$
- ▶ Households offload part of the risk by issuing (outside) *equity*; hold deposits for liquidity
- ▶ Banks do not hold capital directly; they hold households' equity
 - ▶ Diversify away a fraction $1 - \varphi$ of its idiosyncratic risk (+ possible subsidy)
 - ▶ Lever up: issue the deposits that households hold for liquidity $\Rightarrow$ convenience yield
- ▶ Choices: capital utilization, investment rate, individual consumption, portfolios
- ▶ Long-term *nominal* government bond, funded by capital taxes; central bank swaps reserves for long-term bonds (QE/QT)

Asset structure

- ▶ Real asset: *capital*, held by households, subject to idiosyncratic risk
- ▶ *Outside equity*: issued by households to offload capital risk; held by banks, who diversify part of the idiosyncratic risk
- ▶ *Long-term nominal government bond*: positive net supply, coupons funded by capital taxes; held by both agents
- ▶ *Short-term reserves*: issued by the central bank, held by banks
- ▶ *Deposits*: issued by banks, held by households for liquidity (convenience yield)

Backup: CFGZ (2016), Figs. 3 and 4 (σ -EBP identification)

