

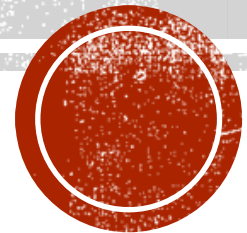
MONETARY POLICY WHEN THE CENTRAL BANK SHAPES FINANCIAL MARKET SENTIMENT

(BASED ON JOINT WORK WITH ANIL KASHYAP)

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TWO PREMISES

- **Monetary policy influences risk premiums on securities and bank loans.**
 - Stock market (Bernanke-Kuttner 2005).
 - Treasury term premiums (Hanson-Stein 2015; Hanson-Lucca-Wright 2021).
 - Credit spreads (Gertler-Karadi 2015).
 - Bank lending terms (Paligorova-Santos 2017; Dell’Ariccia-Laeven-Suarez 2017).
- **“Credit bites back” (Jorda-Schularick-Taylor 2013): following rapid credit growth and compressed risk premiums, there is elevated risk of recession or financial crisis.**
 - Mian-Sufi-Verner (2017); López-Salido-Stein-Zakrajšek (2017); Kirti (2020) Greenwood-Hanson-Shleifer-Sorensen (2022).
 - Not just mean/median outcomes, but especially lower tail of activity: Adrian-Boyarchenko-Giannone (2019); Carpenter-Harris-Hooper-Kashyap-West (2022).

AN INTERTEMPORAL TRADEOFF FOR MONETARY POLICY?

- Ability to influence risk premiums means accommodative policy can be powerful, even near ZLB.
- But downside is that compressed risk premiums can reverse and increase odds of recession in the future.
- More of a concern when financial regulation is less effective.

A SIMPLE MODEL

- The usual IS curve with aggregate demand shocks:

$$y_t = y^* - \gamma(r_t - r^*) + \epsilon_t$$

Central bank's objective function:

$$\min \sum_{t=0}^{\infty} E (y_t - y^*)^2$$

- In this setting, can stabilize perfectly by leaning against demand shocks:

$$r_t = r^* + \frac{\epsilon_t}{\gamma}$$

ADDING FINANCIAL CONDITIONS

- Modified IS curve:

$$y_t = y^* - \gamma((r_t + s_t) - (r^* + s^*)) - \beta(s_t - s_{t-1}) + \epsilon_t$$

- s_t is the credit spread at time t .
 - $-\beta(s_t - s_{t-1})$ is “credit bites back” term.
- Monetary policy affects financial conditions (e.g., via reaching for yield):

$$s_t = s^* + \theta(r_t - r^*) + v_t,$$

- When $\beta = 0$ (no credit-bites-back) policy attends to financial conditions, but can still perfectly stabilize output period-by-period:

$$r_t = r^* + \frac{\epsilon_t}{\gamma(1+\theta)} - \frac{v_t}{(1+\theta)}$$

WHEN CREDIT BITES BACK

- Now consider two-period version where $\beta > 0$, where there is a negative demand shock at time 1, and where ZLB may bind at time 2, so that policy cannot offset all potential damage to real economy at this time.
- **Proposition:** If the ZLB binds at time 2, then: (i) the optimal policy rate at time 1 is higher than it would be if the ZLB were not binding at time 2, i.e., $r_1(ZLB) > r_1^s$; (ii) output at time 1 is lower than it would be if the ZLB were not binding at time 2; and (iii) $\frac{dr_1(ZLB)}{d\varepsilon_1} < \frac{dr_1^s}{d\varepsilon_1}$, so that it is no longer optimal for the central bank to fully offset negative time-1 demand shocks.
- **Intuition:** if central bank cuts rates at time 1 enough to fully stabilize, this will overheat markets and create potential drag on time-2 output that cannot be offset if ZLB binds at time 2.
- This is not about policy “leaning against the wind” of an exogenous sentiment shock. Here, central bank is driver of changes in risk premiums.

IMPLICATIONS

- Modifications to the policy process: need better summary measures of those financial-market risk premiums that are most useful for capturing credit-bites-back effects.
 - Status quo practice seems to be that if multiple indicators are not flashing red, just ignore it.
 - Contrast with more pre-emptive early-intervention approach to inflation.
- History-dependence in r^* : easy policy creates a boom in asset prices, may corner policymakers into keeping policy easy for fear of damaging reversal.
 - Complementary to other stories of hysteresis in r^* : durable goods, mortgage refinancing.
- International considerations (Rey 2013): if policy-induced changes in risk premiums are correlated across countries, individual central banks have less effective independence.

CORRELATIONS OF TERM PREMIUMS ACROSS COUNTRIES

Table 1. Correlations between one-month changes in one-year and ten-year U.S. and advanced economy government bond yields.

The left column shows the correlation of one-month changes in one-year yields between U.S. government bonds and those from, respectively: Australia, Canada, Switzerland, Germany, Great Britain, and Japan. The right column repeats the exercise for ten-year yields. The sample period runs from January 1998 to December 2021.

Country	Δ USD 1Y	Δ USD 10Y
Δ AUD	0.4248	0.7256
Δ CAD	0.7129	0.8371
Δ CHF	0.4250	0.5934
Δ EUR	0.5266	0.7339
Δ GBP	0.5587	0.7682
Δ JPY	0.1776	0.3258