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	ΔUSD 1Y	ΔUSD 10Y
ΔAUD	0.4248	0.7256
ΔCAD	0.7129	0.8371
ΔCHF	0.4250	0.5934
ΔEUR	0.5266	0.7339
ΔGBP	0.5587	0.7682
ΔJPY	0.1776	0.3258