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.
  - 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):
  \[ s_t = s^* + \theta(r_t - r^*) + \nu_t, \]

- When \(\beta = 0\) (no credit-bites-back) policy attends to financial conditions, but can still perfectly stabilize output period-by-period:
  \[ r_t = r^* + \frac{\epsilon_t}{\gamma(1+\theta)} - \frac{\nu_t}{(1+\theta)} \]
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., $r_1(ZLB) > r_1$; (ii) output at time 1 is lower than it would be if the ZLB were not binding at time 2; and (iii) $\frac{dr_1(ZLB)}{d\varepsilon_1} < \frac{dr_1}{d\varepsilon_1}$, 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.

<table>
<thead>
<tr>
<th>Country</th>
<th>∆USD 1Y</th>
<th>∆USD 10Y</th>
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</thead>
<tbody>
<tr>
<td>ΔAUD</td>
<td>0.4248</td>
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<tr>
<td>ΔCAD</td>
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<td>ΔCHF</td>
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<td>ΔEUR</td>
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<td>ΔGBP</td>
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<td>ΔJPY</td>
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