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The opinions expressed in this discussion do not necessarily reflect the views of the Federal Reserve Bank of San Francisco or the Federal Reserve System.
Very ambitious and provocative

- Nice framework to think about the financial crisis and Fed policy intervention
- Shows financial frictions quantitatively important for asset prices and aggregate quantities.
- Liquidity constraints interact with nominal rigidities and zero lower bound;
- Absent policy intervention, financial shocks could lead to Great Depression 2.0.
Outline of discussion

- How does financial friction amplify shocks?
- What is externality that calls for policy intervention?
- Can we say anything interesting about housing market intervention?
The Financial Friction (KM, 2008)

- Entrepreneurs face idiosyncratic investment opportunities
- Saving entrepreneurs make portfolio choice between money and equity
- Investing entrepreneurs finance investment using money, borrowed funds (new equity issues), and resale of equity holdings.
- Equity holders face uninsurable idiosyncratic risk of limited resaleability ➔ precautionary demand for liquid assets
Financial multiplier

- Persistent negative liquidity shock reduces demand for equity and increases demand for money → flight to quality.
- Equity price falls and value of money increases: → higher liquidity premium.
- Lower equity price and tighter liquidity constraints → less external financing → investment declines.
- Lower current investment → lower future output and dividends → further decline in current equity price: a financial multiplier.
Nominal rigidities important

- Flexible prices and wages $\rightarrow$ investment tanks but not much recession in output $\rightarrow$ negative comovement (KM, 2008).
- Sticky prices $\rightarrow$ prices cannot fall to desired level $\rightarrow$ aggregate demand falls.
- Zero lower bound provides further amplification (Eggertsson, 2009; Christiano, Eichenbaum, Rebelo, 2009).
Externality and policy intervention

- **Efficient equilibrium**: Agents are unconstrained, money has no value, and equity price is constant. Liquidity shock has no effect.

- **Externality**: liquidity constraint ties investment to equity price → inefficient credit booms and busts (Lorenzoni, 2008).

- Policy that exchanges liquid for illiquid assets helps stabilize inefficient credit cycles.

- Optimal policy: Can monetary policy undo liquidity constraints and restore efficiency (without propping up zombies)?

- Moral hazard and default not in the model but important for optimal policy.
Housing market crisis can be large and long lasting

![Graph showing housing prices over time with peaks for the US Great Depression, S&P Case-Shiller National Index, and Japan Urban Land Price.]
Unconventional policy: Housing market intervention important
Housing market intervention

- Important to study housing market intervention
- A framework to study housing market: Liu, Wang, and Zha (LWZ, 2009).
- LWZ similar to DEFK: both build on various works by KM.
  - Credit constraints $\rightarrow$ investment tied to asset prices $\rightarrow$ financial multiplier leads to credit booms and busts
  - Binding credit constraints $\rightarrow$ positive shadow value of available funds (liquid assets) $\rightarrow$ time-varying credit spread
  - Credit constraints amplify shocks to asset demand (liquidity demand in DEFK vs. housing demand in LWZ)
Some differences

- A key feature of housing market: land supply is fixed.
- LWZ find housing demand shocks generate large declines in housing price, investment, and output.
- Financial multiplier in LWZ is large → policy intervention in housing market likely more important.
Credit constraints in housing market generate inefficient credit booms and busts.
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Summary

- DEFK provide very nice framework to understand equity market and policy intervention.
- Disruptions in housing market equally important and may be tied to disruptions in equity market calls for more studies about housing market imperfections.
- This paper, along with other papers presented at this conference, should be useful starting points for thinking about current crisis and policy intervention.