ZOMBIE FIRM DYNAMICS AND CHINA’S MONETARY POLICY
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INTRODUCTION

Monetary policy shocks and firm dynamics

▶ leverage (Ottonello & Winberry 2018) / liquidity (Jeenas 2018) / age (Cloyne Ferreira Froemel & Surico 2019)

Low real interest rates and productivity

▶ increased forbearance after crises (Caballero Hoshi & Kashyap)
▶ financial frictions and consumption-boom induced misallocation (Gopinath Kalemli-Özcan Karabarbounis & Villegas-Sanchez 2018)

Countercyclical policy and productivity

▶ mon pol alleviates financial headwinds to intangibles (Ahn Duval Sever 2019)
▶ policy constraints and endogenous growth (Benigno & Fornaro 2018, Garga & Singh 2016)
▶ can generate very persistent effects (Jordá Singh & Taylor 2019)
Overview of Discussion

- Brief overview
- Monetary policy in China
- Comments along the way
MONETARY POLICY SHOCKS IN CHINA

Take the Chen, Ren and Zha (2018) measure of monetary policy shocks for China (1999Q1 - 2016Q4)

$$\Delta M_t = a + \rho \Delta M_{t-1} + \phi_\pi (\pi_{t-1} - \pi^*) + \phi_{y,t} (\Delta Y_t - \Delta Y^*_{t-1}) + \epsilon_{m,t}$$

Figure 1: Identified China Monetary Policy Shocks (Quarterly)

Notes: Estimations based on quarterly data from 1999Q1 to 2016Q4. Shocks $\epsilon_{M,t} > 0$ denote monetary expansion in terms of M2 Growth. Blue dashed line and black solid line respectively denote the series of monetary policy shocks estimated based on Markov-Switching estimation and GMM estimation. Red-dotted line marks the year-over-year M2 growth rate.
Central bank decisions

- The State Council sets targets for GDP and M2 growth in December every year
- Politburo (CPC, State Council and PBC governor) decide on M2 growth on quarterly basis
- GDP growth target is a lower bound for PBC

Instruments

- (annual) M2 growth rarely different from the last December target set
- OMOs, PBC base interest rates, PBC lending, reserve requirements: multi-dimensional
- OMOs since 1998: repo, reverse repo, spot trading,...
- RRR since 1984 used intermittently to meet M2 growth target
LOWER BOUND F
Institutional details: Chen et al 2018

Bank lending channel: through two regulations

- M2 growth and bank loans move closely
- 75% ceiling on ratio of bank loans to deposits (LDR): banks offer higher deposit rates to recoup deposit shortfalls
- Safe loan regulation: reduce bank credit to real estate since 2010 (2006)

Shadow Banking and monetary policy nexus in China

- Non-state owned banks face incentive to increase shadow banking activity
- Construct a special investment vehicle ARI: accounts receivable investment
- Tight monetary policy increased shadow bank activity
PUTTING PIECES TOGETHER

What are these shocks?

- Within year variations in M2 growth rate
- Predictable over the full year
- State-dependent shocks
AGGREGATE IRFs

Source: Chen Higgins Wagonner Zha 2016
FIRM LEVEL DATA CONSTRUCTION

Panel data from China Annual Survey of Industrial Firms: 1998-2013

Construct zombie firms indicator

- $\text{Gap}_{i,t} = \left( R^\text{Pay}_{i,t} - R^*_i, t \right) / B_{i,t-1}$ where
  - $R^*_i, t = r^{ST}_{t-1} SD_{i,t-1} + r^{LT}_{t-1} LD_{i,t-1}$

- $(\text{Gap} < 0) + (\text{Profits} < 0) \rightarrow \text{zombie firm}$

- Comment: definition of zombie firms likely to underestimate aggregate losses

- Comment: R&D intensive firms can have negative profitability and negative interest rate gaps

- Theoretical mapping: firms with low idiosyncratic low real interest rate and productivity
Panel data regressions

- Interestingly, they find firms with low leverage ratio associated with higher investment after an expansionary shock
- consistent with Ottonello Winberry results

\[ \text{Spec: } y_{icst} = \delta_{cst} + \alpha_i + \beta \text{Zombie}_{icst} \times \epsilon_{M,t-1} + \gamma X_{icst} + \epsilon_{icst} \]

- why lag by one year?
- Would be useful to estimate the impulse responses. Do the responses look like the aggregate investment dynamics?
- State dependent effects?
- TFP implications unclear from the main empirical estimates, but find significant dispersions in MRPFs associated with zombie shares at city industry year level.
Main concern: there may not be a causal monetary policy shock at the annual level

micro to macro: delayed peak investment responses in aggregate, but focus on impact effect

possible accounting for intangibles and productivity

Q’s about dimensions of monetary policy in China

Overall an exciting paper.