

Comment on
Nighttime Light and the Construction Financing
Channel of Monetary Spillovers

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- Key findings and key innovation
- The comparative advantage and disadvantage of the methodology
- More versus less convincing parts of the paper
- Broader implications for the literature on open-economy macroeconomics

Key findings

- This paper revisits the international spillover effects of U.S. monetary policy, focusing on **real economic activity in China (and, in extension, other emerging markets)**.
- The central questions and the authors' answers:
 - Do U.S. monetary policy shocks have causal real effects on economic activities in China (and other emerging market economies)?
 - **The paper's answer: Yes!**
 - What is the notable patterns of the transmission?
 - **The paper's answer: Construction sector is most affected**
 - Through which transmission channel do these spillovers operate?
 - **The paper's answer: Foreign borrowing by construction sectors**

Key methodological innovation

- Nighttime light ->Land parcel matched to individual developers
- Both dollar bonds and RMB bonds matched to (publicly listed) real estate developers
- High-frequency (weekly series) of USMP surprises
- This combination of data – which the authors call integrated data – allows them to identify a cause effect of USMP surprises on Chinese construction activities

Comment 1: Big picture implications for open-economy macro

- International transmission of shocks (here, USMP shocks)
- Trilemma (Mundell): either a **flexible nominal exchange rate** or **capital controls** can reduce/block the impact of foreign shocks, allowing the home country to preserve policy autonomy.
- Dilemma (Rey): only **capital controls** can offer policy autonomy
 - “2.5 lemma” (Han and Wei, 2015): capital controls in general, and flexible exchange rate when US raises rates, would the home country to preserve policy autonomy
- China is known to have strong capital controls
 - According to IMF, Chinn and Ito, and Fernandez et al.
 - Yet, this paper concludes that USMP has a statistically and economically significant effect on Chinese economic activities
- Does this mean that even capital controls don't work.
- Uni-lemma?

- Do USMP shocks affect Chinese firms with no foreign dollar-denominated borrowing?
- I will argue that we don't know yet from the current results of the paper
- Currently we cannot reject the null that the only effect is through firms that do foreign borrowing (and maybe firms that do exports)
- From other work, I know the Chinese policy rate does not follow USMP
- The authors could raise their effort to explore this question.

Comment 2: On the USMP shocks

- Measures of monetary policy:
- Gurkaynaka et al.
 - **30-minute high-frequency change in federal funds futures around FOMC announcements** (Jarociński, 2024), aggregated to weekly frequency.
- They are “surprises” and therefore “exogenous”

- What is the nature of this weekly series?
 - 524 weeks (2012-2023)
 - 95 FOMC meetings
 - No FOMC meeting in a majority (80%) of the weeks
- Would excluding non-FOMC weeks from the X series improve the precision of the estimates?
- How robust are the results to alternative measures of USMP surprises?
 - Nakamura and Steinson and BRW?

- The empirical impulse response graph suggests that the initial response is small (not statistically significant, which is not surprising)
- ... and the effect becomes big and significant around week 7 ..
- Comment: FOMC meetings are held 8 times a year, with the time gap between the meetings around 7 weeks (6-8 weeks)
- Would be useful to also classify USMP shocks based on the pattern of adjacent FOMC shocks:
 - ++
 - +-
 - --
 - -+

Comment 3: What is NTL good at capturing?

- The paper concludes that the transmission of the USMP is mainly through the construction sector, but not as much in other sectors.
- Question:
 - Could the chosen methodology be more capable of picking up changes in the construction sector activities and less those in other sectors?

Comparative Advantage of the Nighttime Light Data (NTL)

NASA's **VIIRS Black Marble daily NTL data**, available since 2012 .

Key features:

- Daily frequency; Pixel size: ~464m × 464m
- Cloud/snow filtered; No top-coding; Time-consistent

The current version of paper makes a sales pitch on its ability to capture spatial variations in the economic activities across China and within cities (city centers vs suburbs vs non-built-up areas)

- City-level NTL (345 Chinese cities); Sector-level NTL (city center / suburb / non-built-up area); Land-level NTL (for parcels purchased by real estate firms)

- Comment: since the key regressor – USMP surprises – has no spatial dimension, the underlying data and methodology do not lend themselves to answering many questions involving genuine spatial variations.

- Instead, the key advantage of the data is to match parcel level land use information to individual developer firms, and simultaneously match individual bonds to individual firms

Suggestion

- The authors can use the spatial feature to investigate spillover questions
- If a city has more dollar bond exposed developers, does it translate into a greater impact on other developers with no dollar bonds? Does it spillover to other economic activities outside the construction sector?
- These local GE questions are important for understanding the overall effect of international transmissions, and therefor can be explore more aggressively in the paper

Comment 4: Do USMP shocks affect Chinese firms' ability to raise new funding and/or to finance pre-planned activities?

$$\left(\frac{\text{Net Bond Value Standing Value}}{\text{Operation Indicator}} \right)_{i,t} = \beta_1 x_t + \alpha_i + \varepsilon_{i,t}.$$

Ability to roll over existing short term bonds?

Ability to raise net new borrowing?

Both would require going beyond the authors' current measure

Comment 5: On the international evidence

By extending to all countries (monthly NTL), the paper finds:

- Strong negative effects in emerging markets
- Weak or insignificant in advanced economies

Thus, the paper concludes:

Spillovers are especially severe in urbanizing EMs.

Comment: Could the results reflect a comparative disadvantage of the methodology in measuring changes in economic activity in advanced economies?

Comment: Even within China, could the methodology work less well for Shanghai, Beijing, Guangzhou and other more developed regions in more recent periods?

Overall Assessment

- This is a highly original and data-rich paper
- Clever application of the NTL data to the international transmission question
- Both the effect on the construction activities and the dollar bond financing channel are very convincing
- Could sharpen or fine tune the measure of USMP shocks
- Could do more to explore the existence and quantify the size of the spillover effects to economic activities outside the dollar-borrowing firms and outside the construction sector