Natural Disasters and Municipal Bonds

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*The views stated herein are those of the authors and are not necessarily the views of the Chicago Fed or the the Federal Reserve System.

Summary

- How do natural disasters affect municipal bond prices?
  - Disasters reduce municipal bond returns for at least 20 weeks after the event
  - An average effect of 31 bps $\implies$ about \$10 billion in losses during the sample period
  - Negative returns concentrated among revenue and uninsured bonds.
  - Revenue stability and low leverage mitigate the disaster effects
- More severe disasters amplify the negative returns:
  - Disaster aid and ex-ante mitigation reduce the negative returns associated with disasters.

Comments

- Comment 1: Economic mechanism
- Comment 2: County-level aggregation of bond prices
- Comment 3: Disaster shocks and economic activity

Comment 1: Economic mechanism

- Explore the role of government fundamentals in post-disaster returns:
  - Revenue stability—the significance of property taxes and IG transfers as a share of revenue
  - Government size, spending relative to revenue, leverage ratios
  - Credit risk—agency ratings
- Linkages between different levels of governments:
  - Heterogeneity across states in local government organization
  - How do transfers from local governments change during disaster year?

Comment 2: County-level aggregation of bond prices

- Aggregate bond prices of counties, cities, towns, townships to the county level
  - Places high weight on the most frequently traded bonds (institutional trades?)
  - Current specifications may capture disaster effects on large cities
  - What are the effects of disasters on the remaining governments?
- Suggestions:
  - Estimate RSR models at the government level instead of at the county level
  - Examine heterogeneity across government type/revenue source
  - Investor type heterogeneity (institutional vs retail trades)

Comment 3: Disaster shocks and economic activity

- Federal funding of disaster recovery:
  - FEMA has spent about $350 billion in direct disaster outlays since 1990 (CBO 2022).
  - Positive economic effects—PCI, employment, wages, and house prices—following disasters (Roth Tran and Wilson 2023).
- How does this reconcile with the negative abnormal muni bond returns?
  - Effects concentrated in counties with low or no disaster aid (areas with less severe events)
  - External validity
- Suggestions:
  - Exploit discretion in FEMA disaster declarations? Discretion in state designation?

Roth Tran, Brigitte, and Daniel J. Wilson, 2023, The local economic impact of natural disasters, Discussion paper FRBSF Working Paper #2020-34.