# Disclosure Interventions in Municipal Bond Markets: Secondary market price effects and the relative impacts on institutional and retail investors


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## Regulatory Disclosure in Financial Markets

- Financial disclosure is important to minimize information asymmetry and incentive problems in capital markets (Akerlof 1970; Smith & Warner 1979)

- Regulated disclosure may involve (Tadesse 2006):
  - more comprehensive dissemination of information
  - more timely financial reporting ('reduced delay')
  - supply of credible financial information

## Municipal Bond Markets and Regulatory Disclosure

- SEC created the MSRB to provide regulatory oversight in municipal securities markets.

- The MSRB's disclosure initiatives over the years include:
  - establishing automated clearance and settlement systems (1984)
  - requiring filings of disclosure documents (1990)
  - creating a daily transaction reporting system (1995)
  - developing an electronic official statement submission system (2002)
  - making available comprehensive 'real' time trade reporting (2005)

# Focus of this Presentation

- MSRB's major regulatory disclosure intervention in 2008.
- The regulatory body introduced a series of disclosure rules between March 31 2008 and June 1 2009.
- The rules required broker-dealers to disclose trade information on a near-real time and continuing basis to a new online portal known as EMMA.

# EMMA

- The EMMA regime presents a natural experiment to shed new light on the effectiveness of disclosure-based regulation.

- Investigate the intervention's impacts on pricing in municipal securities secondary markets

- Assess how the intervention affected price efficiency across different market segments

# Research Questions

- What is the impact of the EMMA regulatory intervention on secondary market pricing of municipal securities?

- How has institutional investors' trade price advantage over retail investors changed in the aftermath of the intervention?

# Previous Studies

- Most studies analyze earlier regimes (e.g. Schultz 2012)
- The few studies on the EMMA regime ignore the influence of market factors (e.g. Sirri 2014)
- Also, studies on EMMA do not present strong evidence on whether the intervention reduced big investors' price advantage over small investors (e.g. Cuny 2013).

# Hypotheses

- The EMMA disclosure regime is associated with a significant improvement in trade price efficiency.

- The EMMA disclosure intervention is associated with a reduction in the trade price advantage institutional investors have over retail investors.

# Data

- Trade data on California state issued bonds

  - Random sample of 100 bonds stratified over 10 years

  - Generated 27, 807 trades, being trades in the first 6 months of bond issuance

  - Pairing of trades and classification into trading days gives 2720 days of trading information.

  - Unit of analysis: municipal security trade

  - Source of data: Bloomberg LLP and MSRB

# Variables

- Dependent Variables:
  - Trade Price Differential
  - Trade Price Volatility

- Independent Variable: EMMA Disclosure Regime

- Other Independent Variables:
  - Trade Frequency, Trade Size
  - Issue Size, Term to Maturity, Coupon Rate
  - Current market conditions

# Methodology

- Time series model:

$$y_t = \boldsymbol{x\beta} + e_t \qquad \text{(Equation 1)}$$

- Estimates for the full sample of security trades

- Additional estimations for subsamples of institutional and retail investor trades

- All estimates are robust to heteroscedasticity

- Analyses also account for the Great Recession

# Results

- Results confirm the study hypothesis that the EMMA disclosure intervention is associated with a significant improvement in trade price efficiency.

    Daily trade price differential declined by $0.18, on average, in the post-EMMA regime.

    Volatility in daily prices also declined by a margin of 0.26 percent, on average, post-EMMA.

# … Results

- Results also show that the relative price advantage institutional investors have continued post-EMMA.

  Institutional investors trade price differential declined by a margin of $0.28, on average.

  By contrast, retail investors trade price differential did not decline significantly.

  Also, both investor groups showed significant declines in volatility, but the margin of decline was larger for institutional investors.

# Policy Implications

- Findings weigh into policy discussions on the merits and demerits of market regulation.

  - Confirm that disclosure interventions improve price efficiency in municipal securities secondary markets.

- Regulatory policy must respond more effectively to reduce pricing disparities across market segments:

  - target specific market spaces with soft-enabling rules
  - sustain and deepen strides in investor education