

**The effect of credit ratings on disclosure:
Evidence from the recalibration of Moody's municipal ratings**

Internet Appendix

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Table IA.1. Falsification test—Insured bond issuers

This table presents difference-in-differences estimates of municipal financial reporting around the Moody’s ratings recalibration for municipalities that exclusively issued insured bonds in the four year prior to the recalibration (sample of 8,070 observations). We estimate the same specification as in column (6) of Table 3, Panels B and C, respectively, except that we replace *Treated* with *TreatedInsured*, a binary indicator variable equal to one for issuers of exclusively insured bonds that experienced a rating upgrade from the Moody’s recalibration, and zero for municipalities that issued exclusively insured debt rated only by S&P in the four year prior to the recalibration. All other variables are as defined in Appendix A. *t*-statistics appear in parentheses and are based on standard errors clustered by issuer. ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail), respectively.

Dependent variable:	<i>FinReporting</i>	<i>FinReporting_Freq</i>
	(1)	(2)
<i>TreatedInsured</i> x <i>Post</i>	−0.005 (−0.24)	−0.005 (−0.19)
Control variables		
<i>Issue</i>	−0.024 (−0.66)	−0.004 (−0.10)
<i>AmountIssued</i>	0.010 (0.91)	−0.001 (−0.08)
<i>%CallableBonds</i>	0.016 (0.70)	0.034 (1.29)
<i>%GOBonds</i>	0.032 (1.36)	0.058** (2.13)
<i>GSP</i>	−0.002 (−1.20)	−0.004*** (−3.00)
<i>PCI</i>	−0.001 (−1.19)	0.000 (0.21)
<i>HPI</i>	0.252*** (4.54)	0.246*** (4.14)
<i>Unemployment</i>	0.010 (1.12)	0.030*** (2.83)
Year FE	Yes	Yes
Underwriter FE	Yes	Yes
Issuer FE	Yes	Yes
Observations	8,070	8,070
R ² (%)	71.2	65.6

Table IA.2 Cross-sectional test: The role of ex-ante information asymmetry

This table presents results from examining whether the difference-in-differences estimates of municipal financial reporting around the Moody's ratings recalibration vary with issuers' levels of ex-ante information asymmetry. In Panel A, we estimate the same specification as in column (6) of Table 3, Panels B and C, respectively, except that we interact *Treated x Post* with *RevenueBonds*, a binary indicator variable equal to one for municipalities that issued revenue bonds over the four years prior to the recalibration. In Panel B, we estimate the same specification as in Panel A, except that we interact *Treated x Post* with *SmallIssuer*, a binary indicator variable equal to one for non-state, non-city or non-county municipalities. All variables are as defined in Appendix A. *t*-statistics appear in parentheses and are based on standard errors clustered by issuer. ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail), respectively.

Panel A. Issuers of revenue bonds

Dependent variable:	<i>FinReporting</i> (1)	<i>FinReporting_Freq</i> (2)
<i>Treated x Post x RevenueBonds</i>	-0.068*** (-2.71)	-0.064** (-2.38)
<i>Treated x Post</i>	-0.033** (-2.13)	-0.026* (-1.69)
<i>Post x RevenueBonds</i>	0.023 (1.26)	0.047** (2.55)
Control variables		
<i>Issue</i>	-0.007 (-0.39)	0.021 (1.01)
<i>AmountIssued</i>	0.011** (2.19)	0.016*** (2.90)
<i>%CallableBonds</i>	-0.023* (-1.90)	-0.014 (-1.07)
<i>%GOBonds</i>	0.026** (2.00)	0.014 (0.99)
<i>GSP</i>	-0.003*** (-3.47)	-0.003*** (-3.27)
<i>PCI</i>	0.000 (1.08)	0.001** (2.20)
<i>HPI</i>	0.053 (1.21)	0.002 (0.04)
<i>Unemployment</i>	0.004 (0.70)	0.011* (1.76)
Year FE	Yes	Yes
Underwriter FE	Yes	Yes
Issuer FE	Yes	Yes
Observations	21,085	21,085
R ² (%)	68.1	61.1

Table IA.2 Cross-sectional test: The role of ex-ante information asymmetry (cont'd)

<i>Panel B. Small issuers</i>		
Dependent variable:	<i>FinReporting</i>	<i>FinReporting_Freq</i>
	(1)	(2)
<i>Treated x Post x SmallIssuer</i>	-0.067*** (-2.65)	-0.058** (-2.19)
<i>Treated x Post</i>	-0.014 (-0.67)	-0.016 (-0.74)
<i>Post x SmallIssuer</i>	0.032* (1.73)	0.004 (0.22)
Control variables		
<i>Issue</i>	-0.008 (-0.46)	0.015 (0.76)
<i>AmountIssued</i>	0.012** (2.33)	0.016*** (2.91)
<i>%CallableBonds</i>	-0.023* (-1.93)	-0.015 (-1.09)
<i>%GOBonds</i>	0.026** (2.04)	0.023 (1.58)
<i>GSP</i>	-0.003*** (-3.40)	-0.003*** (-3.33)
<i>PCI</i>	0.000 (1.03)	0.001** (2.13)
<i>HPI</i>	0.051 (1.14)	0.009 (0.19)
<i>Unemployment</i>	0.004 (0.70)	0.013** (2.03)
Year FE	Yes	Yes
Underwriter FE	Yes	Yes
Issuer FE	Yes	Yes
Observations	21,085	21,085
R ² (%)	68.1	61.1

Table IA.3 Alternative control group: Matched sample of recalibrated non-upgraded issuers

This table presents our analysis using issuers that experienced a rating upgrade from the Moody's ratings recalibration and their matched counterpart of recalibrated non-upgraded issuers. We match issuers in the reporting period starting prior to the recalibration (July 1, 2009 – June 30, 2010) on level of government, type of sector, the % of GO bonds issued and Moody's rating in the year prior to the recalibration. All other variables are as defined in Appendix A. *t*-statistics appear in parentheses and are based on standard errors clustered by issuer. ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two-tail), respectively.

Dependent variable:	<i>FinReporting</i> (1)	<i>FinReporting_Freq</i> (2)
<i>Treated x Post</i>	-0.154** (-2.07)	-0.151** (-2.31)
Control variables		
<i>Issue</i>	0.084 (1.21)	0.130** (2.27)
<i>AmountIssued</i>	-0.003 (-0.23)	-0.009 (-0.58)
<i>%CallableBonds</i>	-0.050 (-1.24)	-0.030 (-0.91)
<i>%GOBonds</i>	-0.000 (-0.00)	-0.000 (-0.00)
<i>GSP</i>	-0.006 (-1.57)	-0.006* (-1.68)
<i>PCI</i>	0.003** (2.10)	0.004** (2.27)
<i>HPI</i>	0.007 (0.04)	-0.004 (-0.02)
<i>Unemployment</i>	-0.016 (-0.49)	0.015 (0.49)
Year FE	Yes	Yes
Underwriter FE	Yes	Yes
Issuer FE	Yes	Yes
Observations	7,450	7,450
R ² (%)	78.4	69.7

Table IA.4 Tables showing full set of control variables

This table presents the full results for all tables that omit coefficients on control variables in the paper.

Panel A. Table 4 (Panel A)

Dependent variable:	<i>Audited Annual Financial Statements</i>	<i>Other Annual Financial Information</i>	<i>Interim Financial Information</i>	<i>Budget</i>	<i>Other Financial Information</i>
	(1)	(2)	(3)	(4)	(5)
<i>Treated x Post</i>	-0.033** (-2.52)	-0.024** (-2.08)	-0.004* (-1.92)	-0.003 (-0.45)	-0.000 (-0.04)
Control variables					
<i>Issue</i>	0.022 (1.10)	-0.034* (-1.94)	-0.002 (-0.44)	0.001 (0.11)	0.005 (0.69)
<i>AmountIssued</i>	0.006 (1.13)	0.005 (1.10)	-0.001 (-1.01)	0.001 (0.44)	0.001 (0.31)
<i>%CallableBonds</i>	0.000 (0.02)	-0.010 (-0.91)	0.004* (1.88)	-0.012* (-1.77)	0.004 (0.90)
<i>%GOBonds</i>	-0.008 (-0.54)	0.026** (2.10)	0.001 (0.53)	0.007 (1.00)	-0.001 (-0.13)
<i>GSP</i>	-0.001 (-0.87)	-0.001 (-0.73)	-0.000 (-1.52)	-0.002*** (-2.71)	0.000 (1.03)
<i>PCI</i>	-0.001*** (-3.09)	0.001*** (2.89)	0.0003*** (3.13)	0.001*** (2.96)	-0.000 (-0.46)
<i>HPI</i>	0.136*** (2.89)	-0.098*** (-2.60)	-0.014 (-1.35)	0.006 (0.24)	-0.019 (-1.12)
<i>Unemployment</i>	0.014** (2.33)	-0.017*** (-3.30)	-0.001 (-1.03)	0.007** (2.25)	0.003 (1.28)
Year FE	Yes	Yes	Yes	Yes	Yes
Underwriter FE	Yes	Yes	Yes	Yes	Yes
Issuer FE	Yes	Yes	Yes	Yes	Yes
Observations	21,085	21,085	21,085	21,085	21,085
R ² (%)	57.6	58.8	67.0	50.3	40.6

Table IA.4 Tables showing full set of control variables (cont'd)

Panel B. Table 4 (Panel B)

Dependent variable:	<i>Audited Annual Financial Statements Frequency</i> (1)	<i>Other Annual Financial Information Frequency</i> (2)	<i>Interim Financial Information Frequency</i> (3)	<i>Budget Frequency</i> (4)	<i>Other Financial Information Frequency</i> (5)
<i>Treated x Post</i>	-0.038*** (-3.28)	-0.017* (-1.88)	-0.005* (-1.82)	0.002 (0.30)	0.000 (0.03)
Control variables					
<i>Issue</i>	0.033* (1.76)	-0.023* (-1.67)	-0.003 (-0.60)	0.001 (0.17)	0.001 (0.13)
<i>AmountIssued</i>	0.008 (1.58)	0.005 (1.28)	-0.001 (-0.97)	0.002 (0.83)	0.001 (0.51)
<i>%CallableBonds</i>	0.004 (0.28)	-0.008 (-0.89)	0.003 (1.19)	-0.012* (-1.91)	0.005 (1.33)
<i>%GOBonds</i>	-0.008 (-0.63)	0.021** (2.20)	0.004 (1.06)	0.003 (0.55)	0.000 (0.08)
<i>GSP</i>	-0.001 (-0.62)	-0.001 (-1.01)	-0.000 (-0.66)	-0.001*** (-2.90)	0.000 (0.69)
<i>PCI</i>	-0.001*** (-2.66)	0.001*** (2.75)	0.0003*** (3.04)	0.001*** (3.23)	-0.000 (-0.48)
<i>HPI</i>	0.101** (2.47)	-0.076** (-2.57)	-0.026* (-1.81)	0.000 (0.00)	-0.010 (-0.72)
<i>Unemployment</i>	0.016*** (3.02)	-0.013*** (-3.29)	-0.002 (-1.26)	0.007** (2.31)	0.002 (1.39)
Year FE	Yes	Yes	Yes	Yes	Yes
Underwriter FE	Yes	Yes	Yes	Yes	Yes
Issuer FE	Yes	Yes	Yes	Yes	Yes
Observations	21,085	21,085	21,085	21,085	21,085
R ² (%)	53.5	56.2	74.7	51.1	42.3

Table IA.4 Tables showing full set of control variables (cont'd)

Panel C. Table 5 (Panel A)

Dependent variable:	<i>FinReporting</i> (1)	<i>FinReporting_Freq</i> (2)
<i>Treated x Post x Liquidity</i>	−0.108*** (−2.77)	−0.114*** (−3.20)
<i>Treated x Post</i>	0.034 (0.93)	0.044 (1.37)
<i>Post x Liquidity</i>	0.028 (1.62)	0.030* (1.83)
Control variables		
<i>Issue</i>	−0.008 (−0.42)	0.015 (0.77)
<i>AmountIssued</i>	0.011** (2.30)	0.017*** (2.94)
<i>%CallableBonds</i>	−0.023* (−1.94)	−0.015 (−1.12)
<i>%GOBonds</i>	0.026** (2.02)	0.022 (1.52)
<i>GSP</i>	−0.003*** (−3.41)	−0.003*** (−3.32)
<i>PCI</i>	0.000 (1.09)	0.001** (2.27)
<i>HPI</i>	0.049 (1.11)	−0.001 (−0.02)
<i>Unemployment</i>	0.004 (0.66)	0.012* (1.86)
Year FE	Yes	Yes
Underwriter FE	Yes	Yes
Issuer FE	Yes	Yes
Observations	21,085	21,085
R ² (%)	68.1	61.1

Table IA.4 Tables showing full set of control variables (cont'd)

Panel D. Table 5 (Panel B)

Dependent variable:	<i>FinReporting</i> (1)	<i>FinReporting_Freq</i> (2)
<i>Treated x Post</i>	−0.067** (−2.37)	−0.079*** (−3.10)
<i>Treated x Post x PctRetailQ2</i>	0.005 (0.11)	0.039 (0.92)
<i>Treated x Post x PctRetailQ3</i>	−0.043 (−1.03)	−0.034 (−0.75)
<i>Treated x Post x PctRetailQ4</i>	−0.013 (−0.30)	0.006 (0.14)
<i>Post x PctRetailQ2</i>	0.002 (0.04)	−0.034 (−0.97)
<i>Post x PctRetailQ3</i>	0.018 (0.51)	0.032 (0.85)
<i>Post x PctRetailQ4</i>	0.013 (0.39)	−0.016 (−0.52)
Control variables		
<i>Issue</i>	0.008 (0.36)	0.036 (1.48)
<i>AmountIssued</i>	0.007 (1.16)	0.013* (1.90)
<i>%CallableBonds</i>	−0.019 (−1.39)	−0.017 (−1.05)
<i>%GOBonds</i>	0.027* (1.80)	0.029* (1.65)
<i>GSP</i>	−0.003*** (−3.00)	−0.003*** (−3.02)
<i>PCI</i>	0.001 (1.33)	0.001** (2.48)
<i>HPI</i>	−0.022 (−0.41)	−0.054 (−0.95)
<i>Unemployment</i>	0.008 (1.11)	0.016** (2.08)
Year FE	Yes	Yes
Underwriter FE	Yes	Yes
Issuer FE	Yes	Yes
Observations	15,125	15,125
R ² (%)	56.9	52.1

Table IA.4 Tables showing full set of control variables (cont'd)

Panel E. Table 6 (Panel A)

Dependent variable:	<i>FinReporting</i> (1)	<i>FinReporting_Freq</i> (2)
<i>Treated x Post x NationalUnd</i>	−0.047* (−1.74)	−0.055* (−1.90)
<i>Treated x Post</i>	−0.040*** (−2.64)	−0.035** (−2.24)
<i>Treated x NationalUnd</i>	0.054* (1.76)	0.050 (1.56)
<i>Post x NationalUnd</i>	0.003 (0.12)	0.033 (1.61)
<i>NationalUnd</i>	−0.021 (−0.73)	−0.017 (−0.62)
Control variables		
<i>Issue</i>	−0.008 (−0.42)	0.014 (0.69)
<i>AmountIssued</i>	0.011** (2.22)	0.017*** (2.93)
<i>%CallableBonds</i>	−0.023* (−1.92)	−0.014 (−1.06)
<i>%GOBonds</i>	0.027** (2.11)	0.023 (1.57)
<i>GSP</i>	−0.003*** (−3.41)	−0.003*** (−3.32)
<i>PCI</i>	0.000 (1.06)	0.001** (2.23)
<i>HPI</i>	0.047 (1.05)	−0.001 (−0.03)
<i>Unemployment</i>	0.005 (0.79)	0.012* (1.95)
Year FE	Yes	Yes
Underwriter FE	Yes	Yes
Issuer FE	Yes	Yes
Observations	21,085	21,085
R ² (%)	68.1	61.1

Table IA.4 Tables showing full set of control variables (cont'd)

Panel F. Table 6 (Panel B)

Dependent variable:	<i>FinReporting</i> (1)	<i>FinReporting_Freq</i> (2)
<i>Treated x Post x SingleAudit</i>	0.070*** (2.76)	0.069*** (2.61)
<i>Treated x Post</i>	-0.082*** (-5.43)	-0.076*** (-4.83)
<i>Post x SingleAudit</i>	-0.042** (-2.29)	-0.018 (-1.01)
Control variables		
<i>Issue</i>	-0.009 (-0.49)	0.015 (0.75)
<i>AmountIssued</i>	0.011** (2.27)	0.016*** (2.88)
<i>%CallableBonds</i>	-0.022* (-1.86)	-0.014 (-1.08)
<i>%GOBonds</i>	0.027** (2.11)	0.023 (1.58)
<i>GSP</i>	-0.003*** (-3.44)	-0.003*** (-3.33)
<i>PCI</i>	0.000 (1.06)	0.001** (2.17)
<i>HPI</i>	0.052 (1.18)	0.008 (0.17)
<i>Unemployment</i>	0.004 (0.70)	0.012* (1.92)
Year FE	Yes	Yes
Underwriter FE	Yes	Yes
Issuer FE	Yes	Yes
Observations	21,085	21,085
R ² (%)	68.1	61.1

Table IA.4 Tables showing full set of control variables (cont'd)

Panel G. Table 7 (Panel A)

Dependent variable:	<i>FinReporting</i>		<i>FinReporting_Freq</i>	
<i>TreatedAlt</i> =	<i>Only_Moodys</i>	<i>Moodys_S&P</i>	<i>Only_Moodys</i>	<i>Moodys_S&P</i>
	(1)	(2)	(3)	(4)
<i>TreatedAlt</i> x <i>Post</i>	-0.057*** (-3.90)	-0.062*** (-4.16)	-0.068*** (-4.59)	-0.039** (-2.34)
Control variables				
<i>Issue</i>	0.005 (0.23)	-0.023 (-1.01)	0.044* (1.81)	0.005 (0.20)
<i>AmountIssued</i>	0.009 (1.29)	0.013** (2.25)	0.010 (1.39)	0.018*** (2.65)
<i>%CallableBonds</i>	-0.032** (-2.20)	-0.024* (-1.65)	-0.021 (-1.35)	-0.024 (-1.47)
<i>%GOBonds</i>	0.025 (1.62)	0.034** (2.25)	0.003 (0.15)	0.038** (2.22)
<i>GSP</i>	-0.002* (-1.68)	-0.003*** (-2.93)	-0.002* (-1.77)	-0.003*** (-3.02)
<i>PCI</i>	0.001 (1.21)	-0.001 (-1.42)	0.001** (2.29)	0.000 (0.23)
<i>HPI</i>	0.097* (1.84)	0.046 (0.90)	0.050 (0.95)	-0.001 (-0.02)
<i>Unemployment</i>	-0.000 (-0.02)	0.002 (0.23)	0.004 (0.51)	0.010 (1.36)
Year FE	Yes	Yes	Yes	Yes
Underwriter FE	Yes	Yes	Yes	Yes
Issuer FE	Yes	Yes	Yes	Yes
Observations	16,340	16,105	16,340	16,105
R ² (%)	68.7	69.3	61.8	63.4

Table IA.4 Tables showing full set of control variables (cont'd)

Panel H. Table 9 (Panel A)

Dependent variable:	<i>FinReporting</i> (1)	<i>FinReporting_Freq</i> (2)
<i>Treated x Post1</i>	-0.030** (-2.47)	-0.029** (-2.17)
<i>Treated x Post2</i>	-0.047*** (-3.45)	-0.041*** (-2.76)
<i>Treated x Post3</i>	-0.048*** (-3.19)	-0.033** (-2.01)
<i>Treated x Post4</i>	-0.109*** (-6.48)	-0.110*** (-6.28)
Control variables		
<i>Issue</i>	-0.009 (-0.49)	0.014 (0.71)
<i>AmountIssued</i>	0.011** (2.15)	0.016*** (2.78)
<i>%CallableBonds</i>	-0.022* (-1.79)	-0.013 (-0.99)
<i>%GOBonds</i>	0.026** (2.05)	0.022 (1.55)
<i>GSP</i>	-0.003*** (-3.26)	-0.003*** (-3.16)
<i>PCI</i>	0.000 (1.04)	0.001** (2.21)
<i>HPI</i>	0.045 (1.03)	-0.004 (-0.09)
<i>Unemployment</i>	0.004 (0.64)	0.012* (1.85)
Year FE	Yes	Yes
Underwriter FE	Yes	Yes
Issuer FE	Yes	Yes
Observations	21,085	21,085
R ² (%)	68.1	61.2

Table IA.4 Tables showing full set of control variables (cont'd)

Panel I. Table 10 (Panel B)

Dependent variable:	<i>FinReporting</i>	<i>FinReporting_Freq</i>
	(1)	(2)
<i>Treated x Post</i>	-0.061*** (-2.68)	-0.066*** (-2.76)
Control variables		
<i>Issue</i>	0.040 (1.20)	0.078** (1.99)
<i>AmountIssued</i>	0.005 (0.50)	0.008 (0.76)
<i>%CallableBonds</i>	-0.015 (-0.70)	-0.026 (-1.09)
<i>%GOBonds</i>	-0.004 (-0.16)	0.011 (0.38)
<i>GSP</i>	-0.003** (-2.14)	-0.003* (-1.95)
<i>PCI</i>	0.001* (1.93)	0.002*** (3.17)
<i>HPI</i>	-0.004 (-0.04)	-0.046 (-0.56)
<i>Unemployment</i>	0.035*** (2.96)	0.034*** (2.76)
Year FE	Yes	Yes
Underwriter FE	Yes	Yes
Issuer FE	Yes	Yes
Observations	16,790	16,790
R ² (%)	55.9	49.2