Abstract

We examine the relationship between disclosure as evidenced by the possession of the GFOA certificate for excellence in financial reporting (COA) and the cost of debt in the municipal bond market. Using a large database of tax-exempt municipal bonds issued by cities during 1994-2003, we find a statistically and economically significant relationship showing that disclosure reduces borrowing costs. We also find that compensation for city administrators and chief financial officers of cities attaining the COA is significantly higher than compensation for officials in cities without the COA. Overall, cities derive financial benefits that exceed the costs of obtaining the COA.

The GFOA Certificate Revisited: Excellence in Financial Reporting and the Costs and Benefits of High Disclosure.

In an influential paper, Evans and Patton (1983) explore the incentives of municipal officials to participate in the Government Finance Officers Association (GFOA) Certificate of Achievement for Excellence in Financial Reporting program (COA).[1] One incentive in particular that Evans and Patton (1983) suggest as important is that of achieving lower borrowing costs. However, because of data constraints, Evans and Patton (1983) do not directly test this empirically.[2] Further, over 25 years have passed since the time of their study, and the municipal environment has substantially changed in the interim. As examples, the market for municipal bonds has evolved, the bond insurance market has expanded, and the disclosure environment is now much richer, with GAAP mandated in many states, and the COA is now relatively commonplace (Reck et al. 2001). Because disclosure is costly, and no direct relation between the COA and borrowing costs has been established, provides reasons to re-examine municipal incentives to voluntarily comply with COA requirements using recent data.

Our study attempts to fill this void by exploring the financial benefits and costs of attaining the COA. Specifically, we examine whether the COA is associated with a financial benefit in terms of lower borrow costs, as well as a potential cost in the form of higher municipal official salaries. In so doing, our study also provides further insights concerning the incentives of municipal officials to participate in the COA program.

[1] At the time their paper was published the program was called the Municipal Finance Officers Association Certificate of Conformance Program. The name of the Association has subsequently changed to the Government Finance Officers Association and the program is now called the Certificate of Achievement for Excellence in Financial Reporting.

[2] Evans and Patton (1983, p.154) state "We were also unable to directly test for the interest rate impact of CCP participation in this study because of data availability problems". They do provide indirect evidence that the COA affects interest costs by analyzing post-participation bond rating changes for certificate winners and showing that bond rating increases were greater for cities obtaining the certificate compared to cities that did not have the certificate.

We first analyze the effect that obtaining the COA has on municipal borrowing costs using a large sample of 1173 municipal bonds issued during the period 1995-2003. Utilizing a two-stage instrumental variable approach to mitigate inherent econometric issues, we show that obtaining the COA provides significant interest cost benefits to municipal bond issuers. This result holds even after controlling for bond ratings and other issue and issuer specific characteristics that previous research has shown to be important determinants of interest costs. Our results also indicate that underwriter gross spread is not affected by the COA. Taken together, the results suggest that reoffering yields are also lower for issuers who have the COA, indicating that the market also recognizes and rewards greater disclosure as signaled by the COA possession.

In order to explore the potential financial costs of high disclosure, we investigate whether managers at municipalities that are awarded the GFOA certificate receive significantly higher salaries. We find that both the Chief Administrative Officer (CAO) and the Chief Financial Officer (CFO) are paid significantly higher salaries (ranging from 16-33%, and 17-53%, respectively) when the municipality is awarded the GFOA certificate.

The topics of disclosure, financial reporting and earnings quality, and their impact on cost of capital for corporate firms have received considerable attention in recent research (for example, see Botosan (1997), Sengupta (1998), Leuz and Verrecchia (2000), Botosan and Plumlee (2002), Francis, Lafond, Olsson, and Schipper (2004), Lambert, Leuz, and Verrecchia (2005)). Generally, the results in the corporate literature are consistent with increased disclosure leading to lower costs of both equity and debt capital.

Recent research in the municipal sector examining disclosure is relatively limited, and none focus on the COA. Baber and Gore (2006), and Daniels, Deis, and Vijayakumar (2006) find that compliance with GAAP reduces borrowing costs for debt. Earlier research (for example, Ingram (1983), Benson, Marks, and Raman (1984)) shows that more regulation of accounting practices that leads to better financial reporting influences borrowing costs. Prior municipal sector studies such as Wallace (1981), Wilson and Howard (1984), Feroz and Wilson (1992) that use the COA in their analyses find inconclusive or no evidence that obtaining the COA has an effect on borrowing costs. The main focus of these papers, however, was not on examining the costs and benefits of COA participation in reducing borrowing costs. In addition, some of these studies suffer from the same small sample size issues and other data limitations encountered by Evans and Patton (1983).

Our paper contributes to the literature in several ways. We provide direct evidence that the COA reduces borrowing costs for issuers and measure both the financial costs and benefits associated with high disclosure. In so doing, we extend Evans and Patton (1983, 1987) by demonstrating that while municipalities with higher debt are more likely to receive the GFOA certificate, they also directly experience reduced debt costs from it. We also extend the compensation literature in general by finding evidence that good-quality financial reporting is rewarded in the form of higher manager compensation. Such a relation has not been documented previously in either the corporate or municipal sector literature. We show that overall, increased disclosure is beneficial to the municipalities despite the increased compensation costs associated with it.

Our results should be interpreted with some caution, however. Our focus is on measuring tangible financial benefits associated with pursuing high disclosure in the form of the GFOA certificate. It is plausible that high disclosure fulfills other beneficial roles, such as demonstrating good financial stewardship, which cannot be readily measured.

The rest of the paper is organized as follows. We discuss COA participation and its implications for local governments and officials in section 2. Section 3 presents the data while section 4 describes our methodology and discusses empirical results. Conclusions and limitations are presented in section 5.

2. The GFOA Certificate of Achievement for Excellence in Financial Reporting

The COA program has been in existence since 1945. Started by the Municipal Finance Officers Association,[3] the program is voluntary and is meant to recognize and reward city governments whose financial statements and reports adhere to strict standards of preparation and disclosure. The GFOA website states,

> "The Certificate Program, which was established in 1945, is designed to recognize and encourage excellence in financial reporting by state and local governments."

Unlike corporate financial reporting, which is regulated to a large extent by the Securities and Exchange Commission and by the Financial Accounting Standards Board (FASB), municipal financial accounting is not uniform and the accounting principles governing it vary widely across the fifty states.[4] Thus, while corporate firms have to meet

[3] The Association now called The Government Finance Officers Association is the professional association of State and Local Government Finance Officials. Started in 1906, its members consists of officials such as directors of finance, chief financial officers, controllers, city-managers, and other professionals dealing with accounting and finance related issues.

[4] Even though the GASB can be perceived as the technical equivalent of FASB for State and Local Governments, and GASB pronouncements are widely followed, each State still has considerable latitude in dictating accounting principles governing preparation of financial statements by local governmental entities in its jurisdiction. A recent survey reported in Baber and Gore (2006) for example, shows that only 15 states mandate usage of GAAP in the preparation of financial statements by their local government entities.

certain common standards of reporting and disclosure in order to have access to financial markets, governmental entities do not always have to conform to GAAP.

The COA is awarded to state and local governments whose Comprehensive Annual Financial Reports (CAFRs) meet both standards mandated by GAAP as well as other additional disclosures. The GFOA also has extensive checklists updated periodically to take into account changes in accounting standards that state and local governments can use as guidance in the preparation of financial statements that conform to standards necessary to obtain the COA. Participation in the COA is entirely voluntary. Each state and local government entity must apply for the COA annually and submit its CAFR for review by the GFOA before it is awarded. The CAFR's are reviewed by experts familiar with state and local government accounting practices, and the certificate awarded if the CAFR meets the GFOA required standards. In addition, each applicant receives detailed suggestions and comments for improvements to their financial reports (Evans and Patton (1983)). The certificate is awarded for a given year, can be renewed annually with a fresh application and subject to meeting the GFOA criteria again for that year, and is usually printed in the entity's subsequent year's financial report. Entities not awarded the COA can reapply the following year. As Evans and Patton (1983, p. 153) note, the COA reflects the "quality of information disclosure" of the entity. It is not a reflection or indication of the financial health of the entity.

Prior research in the corporate sector generally shows that greater disclosure levels lead to a lowered cost of capital. For example, Botosan (1997) shows that firms with low analyst following experience significantly lowered cost of equity capital with greater disclosure. Sengupta (1998) provides evidence that firms with high disclosure

quality ratings from financial analysts enjoy lower borrowing costs for debt capital. Healy and Palepu (2001), in a review of the disclosure literature, generally confirm these and other findings and posit the view that increased disclosure has beneficial consequences for firms. Botosan and Plumlee (2002) also show a negative association between disclosure and cost of capital. Leuz and Verrecchia (2000) find that increased disclosure leads to a reduction in bid-ask spreads and other proxies for the cost of capital. More recently, Francis et al. (2004) provide evidence of a negative relationship between the cost of equity capital and seven attributes of earnings, including attributes such as accrual quality, persistence, value relevance and conservatism. Lambert, Leuz, and Verrecchia (2005) develop a theoretical model showing that the quality of accounting information influences the cost of capital.

As discussed previously, research in the municipal sector (for example, Wallace (1981), Wilson and Howard (1984), Feroz and Wilson (1992), Baber and Gore (2006)) find inconclusive or no evidence that the COA matters for borrowing costs. However, Evans and Patton (1983) find indirect evidence that the COA leads to better bond ratings.

On one hand, given the recent strong corporate sector evidence showing that disclosure is associated with lower borrowing costs, coupled with relatively higher levels of information asymmetry in the municipal sector, increased disclosure in the municipal sector will be associated with lower borrowing costs. On the other hand, because municipal sector disclosure is now much richer than in the 1980s, with greater numbers of states mandating GAAP accounting, and the GFOA experiencing a significant increase in the number of cities and counties participating in the COA, it is also plausible that we

find no relation between the COA and borrowing costs. Thus, our first hypothesis, stated as the null, follows:

> H_1: *Ceteris Paribus*, there will be no relation between cities with the COA and borrowing costs.

Municipal officials such as the city managers, chief administrators, and chief financial officers are educated rational individuals. As Zimmerman (1977) points out, they are also rational, utility maximizing individuals. Evans and Patton (1983) also argue that officials such as city managers are interested in maximizing their own utility and will not undertake actions unless the perceived benefits to them exceed the costs associated with any action. Professional city managers are interested in signaling their superior abilities as a means to improve their professional careers and prospects. One way of doing so is to obtain the COA. However, this is not costless to them. Obtaining the COA requires that financial reports be prepared in accordance with GAAP. Also, once the COA is obtained, not maintaining the COA every year may also be perceived as an indication of degradation of professional abilities.[5] Thus, continuous effort is needed to maintain the COA, and more so when GAAP is not state-mandated. Given that only 15 states (Baber and Gore 2006) mandate preparation of financial reports using GAAP, for most city government officials, participating in the COA entails significant effort. Further, given competitive labor markets, municipal officials will demand higher compensation for participating in and obtaining the COA. Hence, we expect that officials in cities that obtain the COA will be compensated better than officials in cities that do not obtain the COA. Hypotheses 2, stated in alternate form, follows:

[5] Our data and experience with COA participants indicates that most cities once they obtain the COA continue to maintain the COA for a number of years. Very few cities drop out of the program.

H_2: *Ceteris Paribus*, compensation for officials is higher for cities with the COA than for cities that do not have the COA.

Participation in the program is open to a variety of state and local governments such as states, cities, counties, school districts, and revenue authorities. Given the wide diversity of operations that exists across such entities, following Evans and Patton (1983), we focus on cities in our subsequent analyses.[6] Our next section describes the data used in our tests.

3. Data

Our data consists of tax-exempt municipal bonds issued by cities during the period 1994-2003. This 10-year window is selected taking into account Census and other data availability concerns. We obtain from the Thomson Financials Securities Data Company (SDC) database all bonds issued by cities during the time period mentioned above. The SDC database is a comprehensive source of municipal bond data and has been used extensively in prior municipal bond research. We also obtain from the U.S. Bureau of Census data relating to population, long term debt, and other revenue and expenditure items. Data concerning COA possession at the time of bond issue are compiled from GFOA. Each year, the GFOA publishes lists of state and local government entities that are awarded the COA, and we obtain these lists for the time

[6] While only a small percentage of all eligible entities apply to get the COA, the percentage appears higher for cities, counties, and state governments. The GFOA website states that,"Over 69 percent of all cities and 46 percent of all counties with populations in excess of 50,000 participate in the program, as well as 43 state governments," and that 3486 CAFRs for fiscal years that ended in 2004 were submitted to the COA program.

period corresponding to our sample, and hand code the COA data for use in our analyses.[7]

Compensation data relating to city government officials are obtained from the International City/County Managers Association (ICMA) surveys. Relatively detailed compensation data are available for CAOs and CFOs through surveys provided by the ICMA. ICMA survey response rates are typically high (i.e., 52% for 2003 compensation data). We use two such surveys - the salary surveys, which provide CAO and CFO salaries, and the fringe benefit surveys, which provide data for CAO age, tenure, and level of education.

We exclude from our bond analyses bonds of maturity less than one year and bonds of size less than $1 million so that short term bonds and very small size bond issues respectively, are not included. In addition, bonds that did not have all necessary data needed for our analyses either in the SDC data base or in the Bureau of Census databases were also excluded. Our sample thus consists of 1173 bonds for which full data are available.

Table 1 shows descriptions of the variables used in the study, while Table 2 provides descriptive data concerning our sample. Panel A of Table 2 provides data for our full sample while panel B shows data separately for COA and non-COA participants.

[7] Typically, cities apply for the COA after the end of the financial year and after their financial reports are finalized. The applications are then reviewed by the GFOA review committee members and a decision to award the COA or not is taken and communicated to the applicant. Using the annual lists of COA awardees published by the GFOA can cause some ambiguity concerning whether the city did have the COA for the year prior to the year of issue at the time of issue of the bond since we cannot ascertain from the lists the actual date of communication of the award to the city by the GFOA. This is particularly true for cities which obtained the COA either for the first time, or again after a break of some time period. In order to mitigate this problem, we compiled COA data for two years prior to the year of issue of the bond. We carried out extensive sensitivity analyses for the tests reported in the paper to make sure that our results reported are not affected by coding errors. Results (available with the authors) show that the results reported in the paper are not affected in any manner using other alternative specifications.

Insert Tables 1, 2 about here

Panel A of table 2 shows that the average size of the issue in our sample is $26 million, while the average years to maturity is 17. 44% of our sample consists of competitively bid bonds. 83% of the bonds in our sample are callable. These statistics are comparable to sample statistics of bonds used in previous research. 55% of the sample bonds consists of general obligation bonds, with the remaining 45% comprising revenue issues.[8] The sample is also well-distributed regionally with no more than 25% of the issues coming from any one of the 5 regions.[9] The underlying bond rating is AAA for about 2% of the sample, AA for about 12.5%, and BBB for about 13%. Approximately 70% of the bonds in our sample are non-rated, and 48% are insured.[10]

52% of bonds in our sample are by issuers who possess the COA. The average population of cities in our sample is approximately 143,000, and 23% of their revenue is derived from property taxes, with about 6% of their revenues going to pay for interest on long term debt.

Examining panel B, the data show that the average population of cities with the COA is greater, 216,892 compared to 63,890 for cities without the COA. The percentage of revenue from property taxes is also smaller, with approximately 20% for cities with

[8] General obligation bonds are backed by the full faith and credit of the issuer while revenue issues are backed by project specific revenues.

[9] We follow the regional classification developed by the Bond Buyer the pre-eminent municipal bond market trade publication, with the five regions being Far west, Midwest, Northeast, Southeast, and Southwest, respectively.

[10] The bond rating and insurance statistics reflect a growing trend in the municipal bond market to trade off the benefits of ratings for that of bond insurance. Issuers trade off the benefits that can be obtained from a bond rating with that through insurance since typically, insured bonds borrowing costs are comparable to that of A or AA rated bonds. Thus, if an issuer feels that its issue cannot get a superior bond rating whose benefits would outweigh the benefits that can be obtained through bond insurance, or if the issuer feels that its ratings are not likely to be very good, issuers skip the rating process all together and go in for bond insurance. Our statistics reflect this. Thus, while approximately 70% of our issues are non-rated, 61% of these non-rated issues have bond insurance. Of the approximately 29% of our sample whose ratings are investment grade or better, that is, BBB or above, only 15% of these issues have bond insurance.

the COA compared to 26.5% for cities without the COA. However, interest expense for long term debt consumes a greater percentage of total revenues, with 7.2% for cities with the COA, contrasted with 5% for cities without the COA, suggesting that issuers with the COA have more debt. This is also supported by the data for per capita debt, which is seen to be higher for issuer cities possessing the COA. The differences reported here are also statistically significant at $p < 0.01$. Thus, overall, COA cities are larger, have more debt, and possess a more diversified revenue stream than do cities that do not attain the COA.

Turning to issue characteristics, panel B shows that the average issue size for cities with the COA is $39.8 million, which is significantly larger than the $11.22 million average issue size made by cities without the COA ($p < 0.01$). The average maturity is also significantly longer, with 17.76 years compared to 16.39 years for issues not possessing the COA ($P < 0.01$). Bond ratings for issues with the COA also appear to be better (2%AAA, 18%AA, 15% A, and 63% non-rated) compared to issues without the COA (2%AAA, 7%AA, 11%A, and 78% non-rated).[11] The average True Interest Cost (TIC) for borrowings however, is not lower (5.111%) for issues with the COA relative to those without the COA (5.089%).[12] The difference, however, is not statistically significant at conventional levels. The next section presents and discusses results in a multivariate setting.

4. Analyses and Results

4.1. COA and Borrowing Costs

[11] We used the Standard and Poor's (SP) rating if only SP is available, or Moody's rating if only Moody's was available. If both ratings were available, and were not the same, we use the lower rating.

[12] TIC is the rate that will discount all future cash payments so that the sum of the present values of all cash flows will equal the bond proceeds (Temel 2001, p.76). TIC takes into account the time value of money and the price at which underwriters purchase the issue from issuers, and represents the borrowing cost to issuers.

We estimate cross-sectional regressions of the following general form to examine associations between obtaining the COA certificate and its effects on bond interest costs.

$$TIC_i = \gamma_0 + \gamma_1 COA_i + \gamma_2 INDEX_i + \sum \gamma_j CONTROL_{j,i}, \qquad (1)$$

The variable of interest to us is the disclosure variable COA. We expect that the coefficient of COA will be negative and significant implying that better disclosure leads to lower borrowing costs.

Our control variables are included based on prior research (for example, Kessel (1971), Mitchel (1977), Hendershott and Kidwell (1978), Ingram (1981), Leonard (1983), Wilson and Howard (1984), Kidwell et. al (1987), Feroz and Wilson (1992), Gershberg et. al (2001)), and are used to control for factors that have been shown to influence borrowing costs. INDEX is the bond-buyer index of municipal revenue or G.O bonds at time of issue, and is used to control for market-wide interest rate effects. We expect TIC to be negatively related to BID since competitively bid issues have lower borrowing costs, and to be positively related to AMOUNT, YMAT, and CALL since larger sizes and maturity increases issue specific risk. Investors also will charge the issuer more for the cost of the call provision. DGO is expected to be negative since GO bonds are traditionally perceived to be less risky than revenue obligations. Similarly, BANKQ is also expected to be negatively related to TIC since bank qualified issues confer tax advantages to commercial banks and hence provide issuer benefits due to clientele effects.[13] We also control for whether an issue is a refunding issue since refunding issues generally are less risky than other issues. We include variables to control for credit

[13] Bank qualified issues are those for which banks may deduct 80% of the cost of purchasing and holding a bond because the issuer intends to sell no more than $10 million in bonds annually.

quality and bond insurance and expect that insured and higher rated issues will have lower borrowing costs.[14] We include a series of dummy variables to control for region specific effects. In addition, POP, TLD, BURDEN, TAX, and TIE are variables obtained from bureau of census data and used as controls. In general, these variables are either indicators of financial health or distress or repayment capacity and have been shown in prior research (Mitchel (1977), Ingram (1983)), to be indicators of these conditions.

Table 3 presents the regression results.

Insert Table 3 about here

The model appears well-specified with the overall model being significant (F-value 87.96, $p < .0001$) and with reasonable explanatory power (adjusted R-square = 0.60).[15] Almost all control variables are of the predicted sign with most of the coefficients also being statistically significant at conventional levels of $p < 0.01$ or 0.05.[16]

Our focus is however on the COA variable. The coefficient of COA is negative as expected (-0.16) and significant at $p < 0.01$ (t-value -3.66). Thus, on average, borrowing costs of issues of cities with the COA are 16 basis points lower than issues of cities not possessing the COA. The coefficient of COA is thus not only statistically significant but also economically significant. Based on the average issue size of approximately $40 million for cities with the COA, on average, cost savings amount to issuers with the COA are of the order of $64,000 per year.[17]

[14] In the results presented, we use a dummy variable DINV to classify bonds as either investment or non-investment grade. We do this since as reported earlier 70% of our sample consists of non-rated bonds. Untabulated results using a more detailed specification (dummies for AAA rate, AA rate, and A rate) of credit quality do not change any of our results reported here and in the rest of the paper.

[15] An examination of the correlation matrix (not presented here) does not show very high correlations that can be of concern in the regressions estimated and presented in the paper.

[16] We use the more conservative two-tailed tests even though we specify directional expectations.

[17] This is just based on our sample average issue size. Cost savings if the total amount of long term debt outstanding is considered (assuming that all debt was issued after the city had obtained the COA) may be

4.1.1 Additional Tests

While our regression results show that the coefficient of COA is negative and significant at $p < 0.01$, it is possible that our analyses may have problems associated with endogeniety and simultaneity issues. Specifically, these issues relate to the relationships between COA and ratings and borrowing costs. If this is the case then our regression coefficient estimates may be biased.

To mitigate these issues we follow a two stage instrumental variables approach following Ham (1982), that is extensively used in prior research. In the first stage, effectively we estimate bivariate probit models with COA and DINV as the dependent variables respectively, and use the created fitted values IMRCOA and IMRDINV as instrumental variables for COA and bond ratings in the second stage OLS regressions with TIC as the dependent variable.[18] This leads to consistent coefficient estimates in the second stage regression.

Table 4 presents the second stage OLS regression results with TIC as the dependent variable and using the created fitted values for COA and ratings as instrumental variables.

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even higher. We also carried out tests to see if the COA impacted bond ratings. Controlling for factors shown to influence bond ratings, untabulated results show that the COA is significantly ($p < 0.01$) associated with higher ratings where higher ratings signify better credit quality. The city may thus have other cost savings and benefits (both tangible and intangible) also from having the COA in terms of lower transaction costs and better financial management practices for most of its financial transactions.

[18] The bivariate probit models we estimate in the first stage are:
COA = f(POP,TLD,BURDEN,TAX,TIE,DGAAP,DNGAAP) and
DINV = f(BID,AMT,MAT,COA,POP,TLD,BURDEN,TAX,TIE,MGAAP,NGAAP,DREF,DCALL).
The independent variables are based on prior research (Evans and Patton (1983), Mitchel (1977), Ingram (1983)). The fitted values of COA and DINV from these estimations IMRCOA and IMRDINV are computed as the ratio of the product of the univariate standard normal density and distribution functions relative to the bivariate standard normal distribution function (Ham 1982), and used in the second stage TIC regression. Untabulated results show that both the first stage bivariate probit models have classification accuracy of over 70%. In addition, the COA regression shows that larger cities, cities with lower reliance on property taxes and hence having greater diversity in revenue sources, cities with lower interest expense as a proportion of revenues, and cities in states that mandate GAAP are more likely to obtain the COA.

Insert Table 4 about here

The results are very similar to those presented in table 3. All coefficients are of the predicted sign with significance levels unchanged compared to reported results in table 3. In addition, the coefficient of IMRCOA is negative, (-0.13, t = -4.73) and significant at $p < 0.01$. Thus, these results also confirm our previous result that possessing the COA leads to lowered borrowing costs.

Overall, our results thus show that greater disclosure and better quality of financial reporting have significant impact on borrowing costs. Possessing the COA is thus clearly seen by market participants as a signal of better quality financial reporting and the market rewards COA holders financially through lower borrowing costs. Hypothesis 1 is thus strongly supported.

4.2 COA and Compensation

We use the following OLS model to examine the relation between the GFOA certificate and municipal managers' salaries (Hypothesis 2):

$$COMP_i = \gamma_0 + \gamma_1 COA_i + \sum \gamma_j CONTROL_{j,i}, \qquad (2)$$

where COMP is defined as the log of the manager's total annual base salary and the remaining variables are defined previously. We control for the size of the municipality using the natural log of population as a proxy, and also include year dummies and state dummies to control for time and state specific salary issues and levels.

We focus on two municipal officials who are most likely to be compensated for signaling higher-quality disclosure, namely, the CAO and the CFO. Further, both positions are typically present across a broad cross-section of municipalities, including both cities and towns. Note that in the case of cities, the CAO is typically the city

manager, while in the case of towns, the CAO is the top administrator. In contrast, the majority of elected officials hold part-time positions with very small salaries. In addition, relatively detailed compensation data are available for CAOs through surveys provided by the International City/County Manager Association (ICMA). ICMA survey data are commonly used in the economics literature, and the survey response rates are typically high (i.e., 52% for 2003 compensation data). We use two such surveys in the tests that follow - the salary surveys, which provide CAO and CFO salaries, and the fringe benefit surveys, which provide data for CAO age, tenure, and level of education.

Our sample for the compensation tests is obtained by merging the ICMA salary surveys data with the bureau of census data for the time period 1995-2003. Descriptive statistics for the 1995-2003 salary data used in our tests are in panel A of Table 5.

Insert Table 5 about here

The mean CAO salary is $78,093, while the mean CFO salary is $64,445. The mean CAO tenure is 7 years. On average, 90% of CAOs have college degrees. Note that the ICMA survey distinguishes CAOs by age category, where 1 represents ages less than or equal to 30 years old, 2 represents ages 31-35, etc. CAOs are between the ages of 46 and 50 on average, which is represented by the age category of 5.

Multivariate results are presented in panel B of Table 5. Column 1 shows that there is a positive and significant relation between the GFOA certificate and CAO salaries (t=18.09), and column 2 shows a similar relation for CFOs (t=19.22). However, the preceding results do not consider manager-specific variables which can also explain salaries, such as the manager's age, tenure, and level of education. We next control for these characteristics by merging the salary survey data with the fringe benefit survey data

for the subset of municipalities for which ICMA data are available.[19] Note that such data are only available for the CAO, however. The results (not tabulated) are consistent with those presented.

It is plausible that self-selection could be a concern, in that good-quality municipal managers (who are paid relatively more) choose good-quality disclosure. We therefore estimate a first-stage probit specification of the choice to attain the GFOA certificate (similar to that discussed in the previous section), and include the inverse Mills ratio (denoted Lambda) from the first stage bivariate probit analysis in the compensation regressions, following procedures outlined in Heckman (1979). We find that the positive estimate for the GFOA certificate is robust to the two-step procedure.

Thus, overall, our results confidently support hypothesis 2 and show that good quality disclosure is significantly associated with higher manager compensation for both the CAO and the CFO. In terms of economic significance, the results (after controlling for self-selection) show that municipalities receiving the GFOA certificate pay their CAO's 33% more, and their CFO's 53% more, on average.[20]

5. Conclusions and Limitations

We examine the benefits and costs of greater disclosure and better financial reporting practices as evidenced by the possession of the GFOA certificate of achievement for excellence in financial reporting. We find that municipal borrowing

[19] The salary and fringe benefit surveys are prepared within two months of each other and therefore are likely to contain data about the same given CAO. However, it is possible that the CAO left in the two months between surveys. As a specifications test, we exclude CAOs with tenure of less than one year, and find results consistent with those reported.

[20] Quantifying the net salary costs because of COA possession shows that attaining the GFOA certificate costs a given municipality 59,927 per year on average, combining the estimates for the CAO ($78,093(mean CAO salary)*1.33 – 78,093 = 25,771) with those for the CFO ($64,445*1.53 – 64,445 = 34,156).

costs are significantly lower for bond issuers possessing the certificate. Further, our results show this relation is also economically significant. Thus, cities appear to derive real economic benefits from attaining the certificate. Our results also show positive relationships between possessing the certificate and better bond ratings. Hence, additional tangible benefits in the form of lower transaction costs for other financial transactions may also accrue to ,cities with the certificate.

One type of cost associated with the COA is the increased compensation that cities appear to pay for their administrators and finance officials. Our results indicate a statistically and economically significant increase in compensation levels for city administrators and chief financial officers of cities with the COA. In addition, there may be other costs of COA participation such as more effort and costs associated with complying with the COA requirements and applying for the COA. On balance, however, we believe that our results support the view that cities benefit economically from having the COA.

Our study overall contributes to the literature that examines the association between greater disclosure and cost of capital. It is perhaps the first study to establish in the municipal sector that disclosure has economic benefits both to the municipalities and to its officials. Our study also fills a void mentioned by Evans and Patton (1983) by directly examining the link between the COA and bond market effects. Untabulated results also show that underwriter gross spread is not affected by the COA. In conjunction with the regression results for TIC, this implies that reoffering yields are also lower for issues with the COA. Thus, investors also appear to recognize the benefits of greater disclosure.

One limitation of our study at this stage is that we examine bond market effects only for cities. Given the different types of municipal entities that issue bonds, we cannot confidently state that our results will hold for other types of entities also. Future research should perhaps examine this issue.

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Table 1 - Descriptions of Variables Used

TIC	: is the discount rate that equates the principal and interest to the price of the issue.
SPREAD	: is the underwriter gross spread measured as the difference between the offered amount and the proceeds to the issuer as a percentage of the issue size.
INDEX	: is the bond buyer index reflecting market yields on an index of long term revenue bonds or general obligation bonds at time of issue.
AMOUNT	: is the natural log of the size of issue.
YMAT	: is the years to maturity of the issue.
POP	: Population of the city
TLD	: Percapita long term debt
BURDEN	: ratio of total expenditures to total revenue
TAX	: ratio of property taxes to total revenues
TIE	: ratio of interest expense on long term debt to total revenues
COA	: is coded 1 if the bond issuer possessed the GFOA certificate at the time of bond issuance, 0 otherwise
CALL	: is coded 1 if the issue is callable, 0 otherwise.
BID	: is coded 1 if the bid is a competitive offering, 0 otherwise.
INS	: is coded 1 if the bonds are insured, 0 otherwise.
DGO	: is coded 1 if the issue is a general obligation bond, 0 otherwise.
AAARATE	: is coded 1 if the Standard and Poor's rating is AAA+ through AAA-, or if the Moody's rating is Aaa, 0 otherwise.
AARATE	: is coded 1 if the Standard and Poor's rating is AA+ through AA-, or if the Moody's rating is Aa1 or Aa, 0 otherwise.
ARATE	: is coded 1 if the Standard and Poor's rating is A+ through A-, or if the Moody's rating is A1 or A, 0 otherwise.
BBBRATE	:bonds rated BBB, by Standard and Poor's or Baa by Moody's.
BBRATE	:bonds rated BB, and B by Standard and Poor's or Ba, or B by Moody's
NRRATE	: is coded 1 if the issue is not rated, 0 otherwise.
DINV	: is coded 1 if the bond is investment grade, i.e., if the bond is rated BBBRATE or greater, 0 otherwise
BANKQ	: is coded 1 if the issue is classified as bank qualified, 0 otherwise
DFW, DMW, DNE, DSE, DSW	: dummy variables coded 1 if the issuer is located in the Bond Buyer regions Far west, Midwest, Northeast, Southeast, and Southwest, respectively, 0 otherwise.
COA	: is coded 1 if the issuer possessed the GFOA certificate of excellence in financial reporting at the time the bond was issued, 0 otherwise
MGAAP	: is coded 1 if the issuer is located in a state that mandates usage of GAAP for financial reporting, 0 otherwise
NGAAP	: is coded 1 if the issuer is located in a state that does not mandate usage of GAAP for financial reporting or impose any other state-specific reporting requirements, 0 otherwise
MIXGAAP	: is coded 1 if the issuer is in a state that imposes hybrid, state-specific disclosure requirements, 0 otherwise

Table 2 – Descriptive Statistics

Panel A – Full Sample

Variable	Mean	Std.Devn	N
TIC	5.10	1.00	1173
SPREAD	0.67	0.62	1173
AMOUNT	26.05	85.57	1173
YMAT	17.10	7.66	1173
INDEX	5.64	0.71	1173
POP	143239.19	548828.01	1173
TLD	2.12	12.03	1173
BURDEN	1.01	0.23	1173
TAX	0.23	0.19	1173
TIE	0.06	0.06	1173
DGO	0.56	0.50	1173
BID	0.44	0.50	1173
CALL	0.84	0.37	1173
DREF	0.32	0.46	1173
INS	0.48	0.50	1173
BANKQ	0.39	0.49	1173
COA	0.52	0.50	1173
AAARATE	0.02	0.14	1173
AARATE	0.13	0.33	1173
ARATE	0.13	0.34	1173
BBBRATE	0.01	0.10	1173
BBRATE	0.01	0.07	1173
NRRATE	0.71	0.46	1173
DINV	0.29	0.45	1173
DNW	0.25	0.43	1173
DMW	0.25	0.43	1173
DNE	0.23	0.42	1173
DSE	0.17	0.38	1173
DSW	0.10	0.31	1173
MGAAP	0.21	0.41	1173
NGAAP	0.20	0.40	1173
MIXGAAP	0.59	0.49	1173

Table 2 (contd.)
Panel B – Descriptive statistics for issues with and without COA

Variable	Issues with COA (N=608)	Issues without COA (N=565)
TIC	5.11	5.09
SPREAD	0.62	0.67
AMOUNT	39.82	11.23**
YMAT	17.76	16.39**
INDEX	5.66	5.61
POP	216892.25	63980.67**
TLD	2.15	2.08**
BURDEN	1.01	1.01
TAX	0.20	0.27**
TIE	0.07	0.05
DGO	0.51	0.61
BID	0.44	0.45
CALL	0.85	0.83
DREF	0.36	0.26
INS	0.42	0.54
BANKQ	0.32	0.47
COA	1.00	0.00
AAARATE	0.02	0.02
AARATE	0.18	0.07
ARATE	0.15	0.11
BBBRATE	0.01	0.02
BBRATE	0.00	0.01
NRRATE	0.63	0.78
DINV	0.36	0.21
DNW	0.32	0.17
DMW	0.25	0.25
DNE	0.08	0.39
DSE	0.20	0.14
DSW	0.16	0.05
MGAAP	0.29	0.12
NGAAP	0.15	0.25
MIXGAAP	0.55	0.63

1. ** - Significantly different from the mean of issues with COA at $p < 0.01$.
2. All variables are defined in Table 1.
3. AMOUNT is in S million and POP is in raw numbers. The natural logarithm of both are used in regressions.

Table – 3 OLS Regression Results Using TIC as Dependent Variable.

Variable	Coeff.	t-value	
Constant	1.35	5.55	**
BID	-0.26	-5.69	**
AMOUNT	0.00	5.77	**
YMAT	0.04	11.88	**
DGO	-0.04	-0.87	
CALL	0.39	6.68	**
BANKQ	-0.19	-4.44	**
DREF	-0.24	-5.25	**
INDEX	0.62	21.97	**
POP	0.01	0.94	
TLD	0.00	-1.05	
BURDEN	-0.19	-2.27	*
TAX	-0.45	-3.69	**
TIE	0.64	4.41	**
DNW	0.14	1.99	*
DMW	-0.02	-0.34	
DNE	0.05	0.57	
DSE	-0.08	-1.06	
INS	-0.33	-7.29	**
COA	-0.16	-3.66	**
DINV	-0.34	-6.77	**
F - Value	87.96**		
Adjusted R-square	0.60		
N	1173		

1. All variables are as defined in table 1.
2. **, * - Indicates statistical significance at $p < 0.01, 0.05$, two-tailed tests.

Table – 4 2nd Second Stage OLS Regression Results Using Fitted Values for COA and Bond Ratings. Dependent Variable TIC.

Variable	Coeff.	t-value	
Constant	1.41	5.76	**
BID	-0.32	-7.08	**
AMOUNT	0.00	6.32	**
YMAT	0.04	12.38	**
DGO	-0.07	-1.54	
CALL	0.39	6.65	**
BANKQ	-0.19	-4.38	**
DREF	-0.27	-5.95	**
INDEX	0.62	21.87	**
POP	-0.01	-0.97	
TLD	0.00	-1.19	
BURDEN	-0.16	-1.91	
TAX	-0.44	-3.56	**
TIE	0.60	4.07	**
DNW	0.15	2.11	*
DMW	-0.04	-0.57	
DNE	0.03	0.37	
DSE	-0.12	-1.52	
INS	-0.32	-7.04	**
IMRCOA	-0.13	-4.73	**
IMRDINV	-0.19	-6.28	**
F - Value	86.96 **		
Adjusted R-square	0.60		
N	1173		

IMRCOA and IMRDINV are fitted values obtained from first stage probit regressions
All other variables are as defined in table 1.
****, * - Indicates statistical significance at $p < 0.01, 0.05$, two-tailed tests.**

Table 5
Relation between GFOA Disclosure Levels and Manager Compensation

Panel A. Descriptive statistics for manager compensation data.

Variable	n	Mean	Standard deviation
CFO Salary (in $$$)	11,049	64,445.00	24,000.00
CAO Salary (in $$$)	13,841	78,093.00	29,796.00
CAO Tenure	2,028	7.41	6.08
CAO Degree	2,076	0.90	0.30
CAO Age	2,056	5.27	1.57

Variable descriptions are as follows: *CFO Salary* is the Chief Financial Officer's annual base salary; *CAO Salary* is the Chief Administrative Officer's annual base salary; *CAO Tenure* is the log of the total years the manager has been in his current position; *CAO Degree* is a dummy variable equal to one if the manager has an undergraduate or graduate degree, and zero otherwise; and *CAO Age* is the log of the manager's age category, where 1=ages <30, 2=ages 31-35,...10=ages>70.

Panel B. Multivariate regressions of manager compensation.

	CAO Compensation		*CFO Compensation*	
Variable	OLS model (n=13,833)	Controlling for self-selection (n=13,817)	OLS model (n=11,045)	Controlling for self-selection (n=11,032)
Intercept	9.81 (177.94)***	10.04 (113.47)***	9.42 (151.33)***	9.94 (102.16)***
GFOA	0.16 (18.09)***	0.33 (7.26)***	0.17 (19.22)***	0.53 (11.08)***
Size	0.15 (33.88)***	0.12 (12.00)***	0.16 (29.00)***	0.09 (8.17)***
Lambda		-0.10 (-3.91)***		-0.22 (-7.85)***
Year dummies	Included[2]	Included[2]	Included[2]	Included[2]
State dummies	Included[2]	Included[2]	Included[2]	Included[2]
Adjusted R^2	0.66	0.67	0.64	0.65

*, **, *** indicate significance at p <.10, .05, and 01; based on two-tailed tests.
[1]t-statistics are reported in parentheses, using robust standard errors clustered on municipality.
[2]For brevity, the year-specific and state-specific intercept terms are not reported.
Entries are OLS estimates for specifications of Chief Administrative Officer (CAO) and Chief Financial Officer (CFO) salaries, computed as the log of annual base salary in year t. Independent variables are as follows: *GFOA* is an indicator variable equal to one if the municipality receives the GFOA certificate, and 0 otherwise; *Size* is the log of population; and *Lamda* is the inverse Mills ratio from a first-stage probit regression of the choice to receive a GFOA certificate, to control for self-selection following procedures outlined in Heckman (1979). Standard errors are adjusted for clustering within municipalities using procedures advanced in Rogers (1993).