The Evolving Municipal Advisor Market in the Post Dodd-Frank Era

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Abstract

The municipal advisor market is diverse, with advisory businesses operating successfully at both very large and very small scales. Advisors give advice on bond issuance, on the investment of bond proceeds, on escrow arrangements, on derivatives, as well as soliciting business for third-parties; the precise mix differs from advisor to advisor. The Dodd-Frank Act enhanced the regulation of municipal advisors by the MSRB and SEC, for the first time imposing a fiduciary duty on them as well as new registration, compliance and continuing education responsibilities. This paper analyzes developments in the size, structure, service mix, and regulatory compliance of municipal advisors since passage of the Dodd-Frank Act. The paper also provides a preliminary analysis of the impact of various municipal advisor characteristics on the average bond price increase of municipal securities in the immediate post issuance market.

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Municipal advisors play an important role in the system through which our nation finances its investments in infrastructure. Among other services, financial advisors help issuers determine the structure of bonds that they issue, they give advice on bond sale tactics, and they often aid in the preparation of offering and continuing disclosure documents. The structure of the municipal market, with its large number of bond issuers and its relative infrequency of issuance by the typical bond issuer, makes these third-party providers of expertise vital. Previous research documented over 70 percent of the par value volume of municipal debt issuance is sold with assistance from a municipal advisor in recent years (Luby and Hildreth, 2014), and state and local governments' increasing tendency to use advisors may reflect the increasing complexity of financial markets (Vijayakumar and Daniels, 2006).

The regulation and market structure of the municipal advisory business has changed significantly since the enactment and implementation of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (the "Dodd-Frank Act".) The Dodd-Frank Act enhanced the regulation of municipal advisor and for the first time imposed on advisors a fiduciary duty to their clients. The implementation of the Dodd-Frank Act has brought new registration, compliance and continuing education responsibilities for municipal advisors. This market is extremely diverse, and it appears that advisory businesses operate successfully at both very large and very small scales. The mix of services offered by advisors, which may include advice on issuance, investment of proceeds, escrow arrangements, derivatives, as well as solicitation of business for third-parties, differs from advisor to advisor. Some advisors are affiliated with broker-dealers that also provide underwriting services, while other municipal advisors are standalone entities.

This paper analyzes developments in the size, structure, service mix, and regulatory history of municipal advisors since passage of the Dodd-Frank Act. The paper also provides a preliminary analysis of the impact of various municipal advisor characteristics on the average price increases in the immediate post-issuance market, defined as the first thirty days post-issuance, for municipal securities. The work updates and expands on previous research by Luby and Hildreth (2014), which provided an initial descriptive analysis of the municipal advisor market immediately after the Dodd-Frank Act. That paper

was based on data from the temporary municipal advisor filings (the Securities and Exchange Commissions's MA-T filings) made by advisors after Dodd-Frank, while this paper is based on combining data from the SEC, including both filings of municipal advisory firms and the MA-I filings of individual advisors with data from the Municipal Securities Rulemaking Board (MSRB), and data on bond characteristics from the Mergent, a private vendor of municipal bond reference data.

The paper begins by providing an overview of municipal advisors and the general role these financial intermediaries occupy in the municipal securities market. We then detail previous research on municipal advisors paying particular attention to previous descriptive research on this market. We proceed with a description of the various changes experienced in the municipal advisor market. First, we describe the various data sources that populate (and confound) our analysis and then detail our taxonomy of changes which include five categories: 1) entry and exit of registered municipal advisors, 2) firm characteristics, 3) mix of services offered, and 4) previous regulatory and violation actions, and 5) select characteristics of municipal advisor professionals by type of firm. The paper will conclude with a preliminary analysis of the impact of various municipal advisor characteristics on the average bond price increase of municipal securities in the immediate post issuance market.

1. Overview of Municipal Advisors

One of the primary activities of state and local governments is to finance, build and maintain the physical infrastructure of their jurisdictions. This infrastructure takes many forms and can include roads, bridges, government buildings, water and wastewater systems, airports, and telecommunications systems. While taxes and user fees ultimately fund these infrastructure projects, governments often need to raise substantial sums of money up front in order to finance these types of large-scale projects. Many state and local governments will finance infrastructure by borrowing money from the sale of bonds in the municipal securities market. These securities, known as municipal bonds, are underwritten by investment and commercial banks (e.g., Goldman Sachs, JP Morgan) and ultimately sold to investors. State and local governments enlist the help of financial advisors to make recommendations with respect to the most

advantageous terms, timing and structure of these securities. Municipal advisors often possess specialized capital market knowledge and can use that knowledge in order to mitigate information asymmetries between state and local governments and the investment banks that underwrite their bonds. These bond issues are often very large in size, and the impact of their structure and terms on the financial health and flexibility of issuers can last for decades. What may appear ex ante to be small changes in the financing terms can have significant material impact on the long-term financial health of a locality, and the infrequent nature of issuance from the perspective of the typical issuer means that issuers are often at an information disadvantage vis-à-vis the underwriters who purchase their bonds.

State and local governments sold $470 billion in municipal bonds in 2016 with the total amount of municipal debt outstanding in the trillions of dollars (Bergstresser and Luby, 2017). The 2007-2009 financial crisis and its aftermath saw the disruption of a number of markets that the state and local sector had used for financing infrastructure; the disruption in the Auction Rate Securities (ARS) market was particularly severe, and there is some evidence ex-post that municipal issuers may have imperfectly understood the risks involved in the particular debt structures they were using. These impacts were exacerbated by a type of financial derivative known as an interest rate swap that were often paired with these Auction Rate Securities and other floating-rate structures. The dislocation in these markets during the financial crisis attracted both media attention and the attention of regulators and lawmakers, and increased the degree of concern about the quality and independence of municipal financial advice. The landmark Dodd-Frank Act reforms impose a stricter regulatory regime for the first time on municipal advisors, including taking the step of defining what a municipal advisor is and does. These changes were part of efforts by the federal government to ensure that state and local governments receive advice from qualified and competent advisors, and that this advice is consistent with the newly articulated fiduciary responsibilities of advisors to the governments they advise. Under the Dodd-Frank Act the Municipal Securities Rulemaking Board (MSRB) has been tasked with writing rules for the regulation of municipal advisors while the Securities Exchange Commission (SEC) has the task of enforcing compliance.

The Dodd-Frank Act amended Section 15B of the Securities and Exchange of 1934 to require "municipal advisors" to register with the SEC. Municipal advisors were defined in Rule 15Ba1-1 as: "Any person not otherwise excluded or exempted under the Rule who, provides advice to or on behalf of a municipal entity or obligated person, with respect to municipal financial products or the issuance of municipal securities, or undertakes a solicitation of a municipal entity or obligated person." In terms of their specific activities, municipal advisors perform many tasks as identified in the regulatory framework that governs their activities. All municipal advisors must disclose on their annual MA-A filings with the SEC the specific financial advisory services they provide to clients. The MA-A filing includes the following financial advisory services related to: 1) issuance of municipal securities, 2) investment of municipal securities proceeds, 3) municipal escrow investments, 4) other investments of municipal entity, 5) guaranteed investment contracts, 6) municipal derivatives, 7) solicitation of investment advisory business from a municipal entity on behalf of an unaffiliated person or firm, 8) solicitation of business other than investment advisory business from a municipal entity on behalf of an unaffiliated person or firm, 9) advice on selection of other municipal advisors or underwriters, and 10) brokerage of municipal escrow investments.

The regulations promulgated under the Dodd-Frank Act have imposed several compliance requirements on municipal advisors beyond just registration. First and perhaps foremost, the Dodd-Frank Act places a fiduciary duty on municipal advisors to their clients as detailed in MSRB Rule G-42. The fiduciary duty takes two forms: duty of care and a duty of loyalty. Duty of care mainly entails possessing "the degree of knowledge and expertise needed to provide a particular client informed advice; to make a reasonable inquiry as to the facts that are relevant to a client's determination as to whether to proceed with a course of action or that form the basis for any advice provided to the client; and have a reasonable basis for any advice provided to the client" (Municipal Securities Rulemaking Board, 2016). The duty of loyalty requires "a municipal advisor to deal honestly and with the utmost good faith with the municipal entity client; act in the best interests of the client without regard to the interests of the municipal advisor; and not engage in municipal advisory activities if the municipal advisor cannot manage or mitigate its

conflicts of interest in a manner that will permit it to act in the municipal entity's best interest" (Municipal Securities Rulemaking Board, 2016). The regulation of municipal advisors also entails other requirements related to compliance maintenance and books and records (MSRB Rules G-8, 9 and 44), pay-to-play restrictions and restrictions on gifts and gratuities (MSRB Rules G-20 and 37), and professional qualification and continuing education (MSRB Rules G-2 and 3).

2. Previous Research

The use of municipal advisors in bond financings has been the subject of academic research for almost three decades. This research includes two dominant strands. The first strand has primarily focused on the efficacy of municipal advisors in terms of resulting in lower cost of capital or engaging in certain bond sale decisions. This research has focused on the two areas of most interest to federal regulators: on the competence and on the independence of municipal advisors. Most (although not all) of this research has pointed towards a positive impact of municipal advisors in bond transactions, at least to a certain degree. Forbes et. al. (1992) found that municipal advisors were associated with modestly lower underwriting fees but not lower reoffering yields. Johnson (1994b) found that issuers who most likely needed the help of municipal advisors (i.e., governments that are smaller, lower-rated or infrequent issuers of debt) were more likely to use them. Vijayakumar and Daniels (2006) found that the use of municipal advisors was related to lower borrowing costs, reoffering yields and underwriter gross spreads. However, this study did not find a statistically significant relationship between the quality or prestige level of municipal advisors and these borrowing cost measures. Allen and Dudney (2010) did find an inverse relationship between "prestige quality" of municipal advisor and bond yields (i.e., more prestigious municipal advisor firms were associated with lower bond yields).

Clarke (1997) explored the impact of financial advisors who turned to underwriters on competitive bond sales. Clarke (1997) found that there were no interest cost implications from this role switching but did find that financial advisors who did switch roles were more likely to be the winning bidder for unrated bond issues. Robbins and Simonsen (2003) found that issuers that use "independent"

municipal advisors were more likely to use competitive sales rather than negotiated sales. Assuming that competitive bond sales result in lower borrowing costs, Robbins and Simonsen concluded that independent municipal advisors can provide bond borrowing cost benefits to state and local governments. Moldogaziev and Luby (2016) found that "independent" and "competent" municipal advisors were both associated with lower true interest costs on a bond issue. Independence was evaluated in terms of the intensity of underwriter-advisor linkage, which we also test in this paper.

The second strand of research on municipal advisor is smaller and more descriptive documenting the development of the industry over time. This paper is an extension of this second strand of research. The first industry-wide study of municipal advisors was Johnson (1994b). Johnson (1994b) documented the evolution of municipal advisors when their use was really beginning to grow in the late 1980s and early 1990s. Luby and Hildreth (2014) was the first industry-wide descriptive analysis of the municipal advisor sector after passage of the Dodd-Frank Act. This research was based on municipal advisor registrations under the temporary rules pending final definition of municipal advisors. The Luby-Hildreth study was based on municipal advisor registrants between October 1, 2010 and October 31, 2012, and included a sample of 1,180 firms actively registered as municipal advisors.

Luby and Hildreth's primary findings were as follows: 1) most municipal advisors offer a wide-range of services and this is especially true for the large municipal advisors; thus, most firms can be seen not as specialists but rather generalists, 2) the top 20 municipal advisors dominate the registered municipal advisor market in terms of total par amount of bonds sold, 3) there was a correlation between giving advice on derivatives and providing other issuance services, one that the authors proposed further study of, 4) a large number of firms were engaged in "finder-fee" arrangements (i.e., solicitation activities) and 5) there was significant segregation among the top 20 municipal advisor firms and all other firms in terms of prior experience with financial regulatory enforcement.

Given the six years that have passed since Luby and Hildreth's previous research, it is appropriate now evaluate the subsequent developments in the municipal advisor marketplace. One change has been

enhanced data collection on municipal advisors by both the SEC and MSRB; this study attempts to make use of these data. These changes in the regulatory framework likely have altered the composition and structure of the industry and may have changed the types of firms, firm characteristics and services municipal advisors offer. This paper aims to examine the extent of such changes in the municipal advisor market.

3. Data

This paper relies on three data sources for its analysis: 1) Municipal Securities Rulemaking Board (MSRB) data, 2) Securities and Exchange Commission (SEC) data and 3) the Mergent fixed income database, a reference database with characteristics of municipal bonds and issues, including the identities of underwriters and advisors associated with each bond issue. The MSRB collects data on municipal advisor firms in terms of their registration status, location, business activities, political contributions and clients. This data is collected on the annual A-12 form filing and quarterly G-37 filing. The SEC also collects data on municipal advisor firms through the annual MA-A form filing. This form collects information on locations, registration, number of employees, form of organization, number of clients, types of clients, size of business, other business activities, compensation agreements, solicitation activities, violations and regulatory actions, etc. The SEC also collects data on various characteristics of individual municipal advisor professionals through the MA-I form filing.

The MA-A and MA-I filings are supposed to be updated when there are changes to the business or to individual MA professionals. One of the challenges in our analysis, which in an important sense is our key finding, is that there seems to be a discrepancy between the data collected by the MSRB and SEC. For example, the MSRB lists 525 firms that have an advisor who passed the Series 50 competency exam. As of September 2017, all municipal advisor professionals need to pass the Series 50 to be able to serve as a municipal advisor to clients. The SEC website however, it lists 593 firms that currently serve as municipal advisors. Even on a standalone basis, without reference to the MSRB data, the SEC data appear incomplete: of these 593 firms in the municipal advisor business that are presumably still active,

182 have not updated their annual MA-A filings since calendar year 2016. Thirty-nine have not updated their filings since 2014.

The lack of updates of their filings poses an important problem for anyone – whether they are an academic, a regulator, or anyone else – trying to create an accurate point-in-time snapshot of the municipal advice market. Some firms continue to be registered with the SEC while being apparently (on the basis of filings with the MSRB) no longer in the business; other firms have extremely stale data with the SEC but appear to remain active. This means that any assessment of the market structure and characteristics of the advisor market must grapple with the question of the extent to which available data are a noisy reflection of reality. In addition to highlighting this problem, for the purposes of our analysis, where applicable, we present data from two perspectives: 1) filings made within the calendar year and 2) filings in force within the calendar year. Table 3 documents and shows the differences in results in terms of filings between these two perspectives.

4. Entry and Exit of Registered Municipal Advisors

We begin our descriptive analysis of the changing municipal advisory market by examining the registration activity of MA firms. Table 1 illustrates the increase in registered MA firms between 2010 (544) and 2013 (931) with a decline in the number of registered firms beginning in 2014 (812) through 2018 (561). Table 1 also provides the annual initial registrations and withdrawals during this period which correspond to the annual registration numbers. This general trend is not surprising as it coincides with the regulation of MA firms beginning in 2010 after passage of the Dodd-Frank Act, the final MA rules implementation in 2014 and the Series 50 examination requirement in 2017. Given the uncertainty of the MA definition that persisted for the first couple years after Dodd-Frank's passage, it is not surprising to see a ramp up of registrations in the beginning of the period and then a decline once the final MA rules were implemented and then again when MA professionals were required to pass a competency examination.

Table 1 breaks down the number of firms that are "large" which we define as firms with more

than 20 employees (the reference category "small" is not shown in the table but includes firms with under 20 employees). We count employees by matching individual advisor MA-I filings to the firms identified in those individual filings as employing the advisor. The number of firms in the "large" category was small and remained relatively consistent during the period ranging from 43 to 53. Given the total number of registered firms ranged from 544 to 931 during the period, it is clear that the municipal advisory market is numerically dominated by "small" firms, although most advisors are employed by firms that are not small. Also, since the period witnessed a significant reduction in the number of MA firms and large firms did not vary much during the period, we can safely conclude that most of the decline in number of registered firms consisted of "small" MA firms. What is unclear is whether this reduction in "small" firms was the result of acquisitions by larger firms or by these "small" firms and their employees exiting the business completely.

Table 1 also details the number of firms that serve as MAs and broker dealers which ranged from 223 (2013) to 115 (2018). Based on this number, we see that a significant majority of municipal advisors are solely municipal advisors rather than municipal advisors that also serve as broker dealers. Table 1 includes the number of annual registration withdrawals by MA-broker/dealers. As shown in the table, the number of annual registration withdrawals of MA-Brokers/dealers constituted a small amount with most withdrawal activity from firms that solely provide advisory services. One interpretation of this finding is that firms that have had a history with regulation (such as municipal advisors that are also broker/dealers) were less likely to exit the business as a result of the increased regulatory burden because they were already accustomed to such compliance requirements.

5. Municipal Advisor Firm Characteristics

We now turn to the various characteristics of municipal advisors in terms of their number of employees, clients, client types and other business activities. Tables 4 and 5 detail the number of MA firm employees under two registration update filing scenarios as previously discussed: a) filings made within the calendar year and b) filings in force within the calendar year. The filings in force within the

calendar year are the set of filings made in or prior to that year that have not been updated, either by a new filing, by an amendment, or by a filing indicating that the advisor has withdrawn from the market. Table 4 focuses on total firm employees – including employees that are not municipal advisor professionals. The total number of employees declined steadily between 2014 and 2018 under the universe of municipal advisors who made SEC filings within a calendar year. Drawing conclusions from this decline can be misleading since the count of firms declined considerably during this period. Looking at the universe of MA firms that had filings in force within the calendar year, the decline in employees exists but is smaller (82,980 in 2014 to 76,071 in 2018). Table 4 also shows the percentage share of employees at the top 5 and top 10 largest municipal advisor firms. As shown in the table, the total employees of MA firms are significantly made up by the top 10 largest firms with 76 and 58 percent of all MA firm employees working at these large MA firms in 2018 depending on the filing scenario observed.

Table 5 is more germane to our study than Table 4 as it focuses on employee count of municipal advisor professionals rather than all employees. Focusing on the universe of firms that had their filings in force within the calendar year, the number of municipal advisor professionals has declined slightly from 3,677 in 2014 to 3,485 in 2018. Compared to dominance of the largest MA firms in total employees, only about one-third of municipal advisor professionals work at the top 10 largest MA firms. That said, this one-third employee share is still large compared to the small number of firms (specifically "10") that make up the top 10 largest firms out of the hundreds that are active. But the most important conclusion from our work should be that assessing the concentration of this market is complicated by the potential staleness of the data. Depending on whether the analysis uses filings made in a given year or filings that are plausibly in force in that year, an analyst could paint a picture of either rapidly increasing or more stable concentration in the advisor market in the post Dodd-Frank period.

Table 6 provides data on the total number of clients of MA firms during the 2014 to 2018 period. These data are based on part of the MA filing where advisors indicate the number of clients that they serve. For the universe of municipal advisors where filings were made within the calendar year, the number of total clients basically declined steadily from 20,195 to 13,661 between 2014 and 2018. Under

the scenario where filings are in force within calendar year, the total clients varied somewhat year to year but ended up at similar levels: 20,171 in 2014 and 19,850 in 2018. In terms of the number of clients secured by large firms, the top 10 largest firms engaged between 34 and 45 percent of the total number of clients which again evidences a substantial influence of the largest municipal advisory firms in the market. Depending on the way in which an analyst handles the data – whether they use filings made in a given year, or filings presumably in force in that year – a researcher could paint a picture of a market in which concentration is either increasing or falling.

Table 7 details the category types of clients that MA firms provide advice: 1) municipalities, 2) non-profits, 3) corporations, 4) other, and 5) soliciting clients for third parties rather than providing advice. Between 2014 and 2018, there does not seem to be any significant change in the composition of client types. Municipalities remain the primary client type with over 76 percent of firms advising this client type. The second most common type of client, non-profits, was consistently in the low forty percent range while advice to corporations averaged in the mid-twenties. The share of municipal advisors that did not provide financial advice but only engaged in solicitation activities remained at 10 percent or below during the time period. Thus, it appears that most municipal advisors' interactions with their clients involve providing financial advice rather than just soliciting business for other clients.

Beyond providing defined municipal advisory services, many of these firms engaged in other business activities, which are detailed in Table 9. The largest activity, of course, was the broker-dealer engagement as many of these firms also serve as broker-dealers as previously discussed. About a quarter of municipal advisors in each year between 2014 and 2018 reported broker-dealer as an "other business." The second most commonly cited "other business" was investment advisor which ranged from 14 and 17 percent of firms between 2014 and 2018. The remaining specific categories all were below 5% percent in any given year except for the "other" category which ranged between 9 and 15 percent per year. Summing up these various categories, one can conclude that "regulated" municipal advisory work is only one component of many of these firms' service portfolios and it does not seem that the greater regulatory requirements have impeded these firms in engaging in other business activities over the last few years.

6. Mix of Services Offered

The previous section concluded with a description of prevalence and type of other services beyond regulated municipal advisory services offered by the universe of municipal advisor firms. We will now examine the types of advice given by municipal advisors during our period of study. Table 8 details the 11 categories of advice required to be disclosed by municipal advisors on their regulatory filings. As a percent of firms, both universe of filings (i.e., filings made within calendar year and filings in force within the calendar year) show similar trends. As such, we will focus only on filings in force within the calendar year.

Advice on the issuance of securities was by the most common service. Between 80 and 85 percent of firms stated that they provide advisory services on the issuance of securities. The second most common services were advice on investing bond proceeds and escrow investment. About half of all firms provided these services to their clients. Other investment advisory, GICs and derivatives were provided by about one-third of firms. Soliciting investment advisory and other soliciting business activities were both reported by under 10 percent of firms which again underscores that most municipal advisors are providing financial advisory services rather than engaging in solicitation activities.

Providing advice on the selection of underwriters was reported by under 60 percent of firms during the period. This finding is somewhat surprising since the conventional wisdom is that financial advisors have significant influence on what underwriters their clients should use. Between 17 and 23 percent of firms reported that they provided “other” services, which represents a significant amount “other services” that are unreported. It would be interesting from a regulatory and research perspective to get a better sense of the various services that comprise this “other” category.

7. Previous Regulatory and Violations Actions

The SEC also collects data on municipal advisor regulatory actions and other violations. Table 10 details disclosures made by MA firms related to criminal, regulatory, revocations, civil disclosures and current proceedings. Not surprisingly, regulatory disclosures consist of the majority of disclosures made

by firms. All other violation/disclosure categories including criminal disclosures represented a very small amount of activity reported. By 2018, over 85% of firms made disclosures related to regulatory actions. Also, not surprisingly, this increase in regulatory disclosures trended upward during the period as more MA firms interacted with regulators under the new regulatory regime. In terms of type of regulatory actions, SEC/CFTC was the largest and growing regulatory disclosure type through the period. In sum, over the four-year period between 2014 and 2018, the violation/regulatory disclosures paint a picture of an industry increasingly engaging with its new regulatory regime and actors.

8. Municipal Advisor Professionals

The SEC collects data on individual municipal advisor professionals through its MA-I form. This data collection effort allows us to analyze some data trends at the professional level. Table 13 provides some data statistics on professionals breaking them down among seven group categories: 1) all MA firms, 2) small firms, 3) large firms, 4) firms that have withdrawn, 5) firms that are still registered, 6) professionals with adverse disclosure and 7) professionals with no adverse disclosure. There are a few interesting findings from grouping professionals along these categories.

First, there does not seem to be a substantial difference along several categories among professionals that work at small and large firms. Specifically, professionals in these two types of firms are not much different related to average years on job, years in municipal industry and years of total employment. So, there does not seem to be a different in length of experience between professionals that work at small MA firms and large MA firms. Second, there does seem to be a difference in the number of hours per week spent on other jobs. Professionals that work in small firms spent over three times as much time on average on other jobs per week compared to individuals at larger firms.

Finally, MA professionals that work at firms that have withdrawn did not spend on average any more time on other business activities (10) than all firms (9.90). One could hypothesize that firms that have withdrawn would have been firms where municipal advisory business was a smaller part of their work portfolio whereby it would make business sense to relive itself of the increased regulatory burden by

withdrawing. Thus, the results based on these averages lead us to consider it debatable whether increased regulatory burden has driven out these "marginal" firms. This is an interesting finding that needs further exploration since it gets at an important question of how regulation impacted the entry/exit decision of certain firms.

9. Analysis of Various MA Characteristics on Average Bond Mark-ups

The previous sections of this paper provided a descriptive analysis of the various characteristics and attributes of the evolving municipal advisor market since the Dodd-Frank Act. This section investigates if there are any statistical associations between a few of these attributes and an important financial outcome for municipal entities. The outcome variable we will investigate is the average bond price increase in the post issuance market. Average bond price increase consists of the difference between the initial offering price of a bond and the average price the bond is sold to final investors in the first 30 days after the initial offering sale. The smaller the increase, the better the initial offering sale is from the perspective of the municipal entity in that the sale price they received can be seen as closest to its "true value." By extension, since municipal advisors provide advice on the sale price of bonds, a smaller bond price increase can be interpreted as the municipal advisor doing a "better job" in providing financial advice.

We investigate the association of six municipal advisor variables on average bond price increase. These variables include 1) total amount of bonds firms advised on, 2) concentration of advisor-underwriter link, 3) concentration of advisor by state, 4) whether the firm is a broker dealer, 5) number of regulatory disclosure items and 6) average number of disclosure items on matched individual filings. Two of these variables need additional description. The "concentration of advisor-underwriter link" is created by calculating a "Herfindahl index" of underwriter shares for each advisor. The Herfindahl index is the sum of the squared shares, so if an advisor only advised on bonds that went through one underwriter it would be 1^2 = 1. If the advisor advised on equal amounts of bonds that went through two different underwriters it would be .5^2 + .5^2 = .5. The "concentration of advisor by state" is the Herfindahl

index based on shares in different states for each advisor. If an advisor was 100 percent Texas, it would be 1. We identify the state of the issuer from Mergent data, which are based on the official statement which also identifies the municipal advisor.

Table 12 details the results of the regression analysis. The table provides several empirical model specifications. The last two columns in Table 12 account for changes in market movements between the initial offering date and the final price as well as other bond and offering characteristics. The independent variables statistically significant in at least one model specification include 1) concentration of advisor-underwriter link, 2) concentration of advisor by state, 3) average number of trades in post issuance market and 4) whether the MA was a broker dealer or not. The first two statistically significant independent variables are of most interest to this study. As shown in the table with the positive sign on the coefficient, the more concentrated the relationship between underwriter and municipal advisor, the higher the average bond price increase. In other words, advisors whose "link" to their primary underwriter is more intense appear to do a somewhat "worse" job in placing bonds, in the sense that (based on the increase in prices in immediate post issuance market) they appear to leave money on the table from the standpoint of the issuers they serve. This finding supports previous research by Moldogaziev and Luby (2016). Similarly, the more concentrated the business a municipal advisor does in the state that it is advising on a bond sale, the higher the average bond price increase.

The empirical findings offer a few possible policy implications. First, municipal issuers should avoid selecting bond financing teams in which the underwriters and municipal advisors have consistently worked with each other. This may entail more common request for proposal processes to keep their vendor pool “fresh” or it may necessitate working with firms that they have not in the past and “taking a break” from firms that they may be comfortable with. Second, issuers should consider at least rotating their municipal advisor to include national firms that may not have as strong of a local presence. The lack of statistical significance on one of the other variables also offers a salient policy implication. Specifically, the lack of statistical significance for firms that have more regulatory actions implies that municipal issuers should temper their assessment of advisory quality simply looking at the amount of

regulatory disclosures a firm may have in its history. However, we need to be cautious interpreting this finding too strongly given its lack of statistical significance.

10. Conclusion

The municipal advisory industry continues to evolve in the post Dodd-Frank era. While there are some significant challenges in synchronizing the data collected on MAs by the SEC and MSRB, some interesting findings did surface from our analysis. Registration has waxed and waned as the definition of a "municipal advisor" was clarified. Not surprisingly, it seems that withdrawals from the industry have mainly been the result of "smaller" MA firms leaving the business. While the number and types of firms have changed over the last few firms, the number of municipal advisor professionals has remained steady so it appears that municipal entities still being serviced by a similar sized universe of MA professionals even as the name and location of the firms that they have worked at may have changed. These municipal advisor firms and professionals continue to have a robust portfolio outside of providing municipal advisory services. Finally, our empirical analysis further substantiated the value of municipal advisors in helping municipal entities finance their infrastructure. Specifically, our analysis illustrated that some of the specific characteristics of MA firms and the manner in which an MA firm is used in a debt management network has a statistical association with financial outcomes. Such finding further reinforces the importance of properly regulating municipal advisors given their considerable role in the municipal securities market.

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Table 1: Municipal Securities Rulemaking Board database of municipal advisors, by year

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	Note: 2018
Count	544	817	916	931	812	748	687	592	561	
Note: observations that match to SEC data	305	436	503	536	613	639	619	558	535	
Note: observations that match to Mergent	232	301	327	342	364	359	347	319	312	
Initial registrations	548	304	135	75	136	73	30	35	12	
Withdrawals	4	31	36	60	255	137	91	130	43	
Note: count that are MA/Dealers	156	198	217	223	205	181	162	127	115	
Note: count that are large (> 20 emps)	43	51	51	51	53	53	52	50	48	
Share active in that year that report ever giving advice, by type of advice										
Issuance advice	80.5%	78.2%	77.1%	78.3%	80.4%	80.9%	82.7%	84.0%	85.4%	82.2%
Issuance advice - among dealers	85.3%	84.3%	84.3%	86.1%	85.4%	83.4%	84.6%	86.6%	89.6%	86.1%
Issuance advice - among large firms	97.7%	96.1%	96.1%	96.1%	90.6%	90.6%	90.4%	92.0%	93.8%	93.8%
Advice on GICs	29.8%	27.2%	26.6%	27.4%	29.7%	31.3%	33.2%	35.0%	36.4%	32.3%
Investment advice - bond proceeds	28.1%	25.5%	25.4%	27.1%	36.5%	39.3%	42.1%	44.9%	46.5%	43.7%
Investment advice - other funds	19.1%	17.4%	17.1%	18.7%	24.9%	28.1%	29.4%	31.3%	31.4%	28.7%
Derivatives	34.0%	31.9%	30.7%	31.7%	32.9%	34.9%	36.1%	37.3%	38.1%	34.8%
Solicitation - Investment Advisory	13.6%	13.0%	14.1%	15.1%	19.0%	20.2%	20.5%	19.9%	20.1%	14.4%
Escrow advice	25.7%	22.9%	22.1%	23.4%	29.8%	32.8%	35.4%	39.2%	40.6%	39.6%
Escrow brokerage	9.4%	7.8%	7.6%	8.3%	10.8%	12.0%	12.7%	14.2%	14.4%	12.8%
Other solicitation	14.7%	14.1%	14.3%	15.9%	20.2%	20.9%	21.5%	21.5%	21.2%	14.8%
Advice on selecting underwriters	44.9%	40.0%	39.7%	42.5%	53.8%	58.7%	62.9%	65.9%	67.9%	66.7%
Other advice	33.3%	35.0%	34.6%	35.2%	34.9%	34.5%	33.6%	33.1%	32.3%	30.1%

Note: Final column shows the percent of advisors that report giving that type of advice in 2018. Other columns show share of advisors active in that year who report giving that advice in any period.

Table 2: Sample based on SEC MA and MA-W filings

Panel A: All firms

	Final date of filing						Note: share withdrawn in
First date of filing	2014	2015	2016	2017	2018	Total	MSRB data
2014	42	61	51	113	241	508	29.0%
2015	0	74	18	55	47	194	38.0%
2016	0	0	27	17	10	54	37.5%
2017	0	0	0	26	11	37	3.2%
2018	0	0	0	0	18	18	8.3%
Total	42	135	96	221	327	811	30.3%

Panel B: Firms that have not withdrawn from SEC registration

	Final date of filing						Note: share withdrawn in
First date of filing	2014	2015	2016	2017	2018	Total	MSRB data
2014	39	29	17	50	235	370	4.1%
2015	0	67	6	16	39	128	9.7%
2016	0	0	24	4	10	38	14.7%
2017	0	0	0	26	10	36	3.2%
2018	0	0	0	0	18	18	8.3%
Total	39	96	47	96	312	590	6.0%

Panel C: Firms that have withdrawn from SEC registration

	Final date of filing						Note: share withdrawn in
First date of filing	2014	2015	2016	2017	2018	Total	MSRB data
2014	3	32	34	63	6	138	95.6%
2015	0	7	12	39	8	66	93.7%
2016	0	0	3	13	0	16	92.9%
2017	0	0	0	0	1	1	NA
Total	3	39	49	115	15	221	94.8%

Table 3: Filings made by year, and in force by year, SEC data

Panel A: Filings made within the calendar year.

Year	All	Regular	Within-year update	Registration withdrawal	Match to MSRB data?	Match to Mergent data?
2014	538	508	27	3	530	350
2015	800	530	230	40	783	483
2016	651	377	224	50	633	433
2017	751	390	245	116	739	458
2018	436	316	107	13	426	293

Panel B: Filings in force within the calendar year*

Year	All	Regular	Within-year update	Registration withdrawal	Match to MSRB data?	Match to Mergent data?
2014	508	482	23	3	500	328
2015	589	422	124	43	577	325
2016	592	375	125	92	573	331
2017	752	406	140	206	730	393
2018	810	492	100	218	782	416

* Note: "in force" means that the filing has not been updated with a new filing and there is no SEC record of withdrawal as a municipal advisor.

Table 4: Total employee counts, SEC registrations

Panel A: Filings made within the calendar year.

Year	Filing count	Total employee count	Count at largest 5 firms	Share at largest 5	Count at largest 10	Share at largest 10
2014	482	57,074	18,907	33.1%	30,988	54.3%
2015	383	20,210	9,833	48.7%	13,621	67.4%
2016	251	12,622	8,777	69.5%	10,522	83.4%
2017	240	17,891	10,083	56.4%	13,210	73.8%
2018	250	26,580	15,818	59.5%	20,152	75.8%

Panel B: Filings in force within the calendar year*

Year	Filing count	Total employee count	Count at largest 5 firms	Share at largest 5	Count at largest 10	Share at largest 10
2014	504	82,980	37,107	44.7%	51,971	62.6%
2015	546	80,080	38,549	48.1%	52,384	65.4%
2016	500	81,007	43,607	53.8%	57,938	71.5%
2017	546	67,663	30,874	45.6%	43,534	64.3%
2018	590	76,071	35,313	46.4%	48,509	63.8%

* Note: "in force" means that the filing has not been updated with a new filing and there is no SEC record of withdrawal as a municipal advisor.

Table 5: Total employee counts - advisors, SEC registrations

Panel A: Filings made within the calendar year.

Year	Filing count	Total employee count	Count at largest 5 firms	Share at largest 5	Count at largest 10	Share at largest 10
2014	482	3,134	650	20.7%	980	31.3%
2015	383	1,677	321	19.1%	487	29.0%
2016	251	1,081	256	23.7%	372	34.4%
2017	240	1,966	762	38.8%	1,007	51.2%
2018	250	1,932	684	35.4%	914	47.3%

Panel B: Filings in force within the calendar year*

Year	Filing count	Total employee count	Count at largest 5 firms	Share at largest 5	Count at largest 10	Share at largest 10
2014	504	3,677	717	19.5%	1,142	31.1%
2015	546	3,563	686	19.3%	1,104	31.0%
2016	500	3,152	643	20.4%	1,020	32.4%
2017	546	3,607	832	23.1%	1,242	34.4%
2018	590	3,485	763	21.9%	1,169	33.5%

* Note: "in force" means that the filing has not been updated with a new filing and there is no SEC record of withdrawal as a municipal advisor.

Table 6: Total client counts, based on municipal advisor filings with SEC

Panel A: Filings made within the calendar year.

Year	Filing count	Total client count	Count at largest 5 firms	Share at largest 5	Count at largest 10	Share at largest 10
2014	482	16,705	5,552	33.2%	7,261	43.5%
2015	383	12,193	5,562	45.6%	6,921	56.8%
2016	251	6,549	2,449	37.4%	3,429	52.4%
2017	238	12,147	4,913	40.4%	6,710	55.2%
2018	250	12,870	4,830	37.5%	6,530	50.7%

Panel B: Filings in force within the calendar year*

Year	Filing count	Total client count	Count at largest 5 firms	Share at largest 5	Count at largest 10	Share at largest 10
2014	504	20,171	6,862	34.0%	8,902	44.1%
2015	546	19,913	6,662	33.5%	8,977	45.1%
2016	500	15,652	3,614	23.1%	5,338	34.1%
2017	544	19,212	4,913	25.6%	7,196	37.5%
2018	590	19,850	4,830	24.3%	7,171	36.1%

* Note: "in force" means that the filing has not been updated with a new filing and there is no SEC record of withdrawal as a municipal advisor.

Table 7: Types of clients advised, based on MA filings with SEC

Panel A: Filings made within the calendar year.

	Share of firms giving advice, by client type				
Year	Municipalities	Nonprofits	Corporations	Other	Not advising - soliciting for third parties
2014	84.2%	41.9%	22.8%	8.3%	7.9%
2015	76.2%	39.4%	22.5%	8.4%	11.5%
2016	78.5%	39.4%	25.1%	9.2%	9.2%
2017	77.5%	44.6%	25.8%	10.0%	10.0%
2018	84.5%	45.4%	26.7%	8.8%	5.2%

Panel B: Filings in force within the calendar year*

	Share of firms giving advice, by client type				
Year	Municipalities	Nonprofits	Corporations	Other	Not advising - soliciting for third parties
2014	84.2%	43.0%	23.0%	8.5%	7.5%
2015	78.4%	42.1%	24.5%	8.6%	11.0%
2016	78.8%	43.6%	26.0%	8.4%	9.0%
2017	78.8%	45.1%	26.2%	8.2%	9.3%
2018	78.5%	42.6%	25.5%	8.3%	9.8%

* Note: "in force" means that the filing has not been updated with a new filing and there is no SEC record of withdrawal as a municipal advisor.

Table 8: Types of advice given by muncipal advisors, based on filings with SEC

Panel A: Filings made within the calendar year.

Year	Bond issuance	Investing bond proceeds	Advising escrow investing	Other investment advice	GICs	Deriv-atives	Soliciting: in-vestment advisory	Other soliciting	Advise on selecting under-writers	Brokerage of escrow accounts	Other
2014	85.3%	49.4%	47.9%	30.7%	30.5%	32.0%	7.1%	5.4%	54.8%	8.5%	16.6%
2015	78.1%	43.6%	38.9%	26.1%	24.5%	28.2%	9.9%	7.6%	49.6%	5.2%	18.5%
2016	83.3%	44.6%	48.6%	29.5%	28.7%	31.5%	7.2%	6.4%	57.0%	7.6%	22.7%
2017	83.8%	49.2%	50.8%	28.7%	30.4%	34.2%	10.0%	6.7%	60.4%	7.1%	25.0%
2018	86.1%	52.6%	51.8%	33.1%	33.9%	37.1%	8.8%	4.4%	63.7%	8.8%	30.3%

Panel B: Filings in force within the calendar year*

	Bond issuance	Investing bond proceeds	Advising escrow investing	Other investment advice	GICs	Deriv-atives	Soliciting: in-vestment advisory	Other soliciting	Advise on selecting under-writers	Brokerage of escrow accounts	Other
2014	85.0%	49.3%	48.9%	30.1%	30.9%	32.7%	6.7%	5.1%	55.2%	8.7%	17.2%
2015	80.0%	49.1%	44.5%	29.5%	28.9%	31.7%	8.4%	6.8%	52.4%	7.7%	18.7%
2016	82.4%	48.6%	47.2%	30.2%	30.6%	33.8%	8.2%	6.0%	56.6%	8.6%	23.2%
2017	83.0%	49.8%	47.8%	29.3%	30.4%	34.1%	9.3%	6.4%	57.5%	7.1%	22.9%
2018	82.2%	49.6%	47.5%	30.5%	29.9%	33.8%	9.5%	6.1%	56.7%	6.9%	22.5%

* Note: "in force" means that the filing has not been updated with a new filing and there is no SEC record of withdrawal as a municipal advisor.

Table 9: Other businesses that SEC-registered firms report engaging in.

Panel A: Filings made within the calendar year.

Year	2014	2015	2016	2017	2018
1 - Broker-Dealer	26.6%	25.6%	20.3%	23.7%	21.9%
2 - Registered rep	4.6%	5.0%	2.0%	2.9%	2.8%
3 - Commodity Pool	0.6%	0.0%	0.0%	0.0%	0.0%
4 - CTA	2.5%	2.1%	1.2%	2.9%	2.4%
5 - Futures commission	0.8%	0.0%	0.4%	0.8%	0.0%
6 - Swap participant	0.0%	0.0%	0.0%	0.0%	0.0%
7 - Security-based swap participant	0.0%	0.0%	0.0%	0.0%	0.0%
8 - Swap dealer	0.0%	0.0%	0.0%	0.0%	0.0%
9 - Security-based swap dealer	0.0%	0.0%	0.0%	0.0%	0.0%
10 - Trust company	2.1%	2.1%	1.2%	0.4%	1.2%
11 - Real estate	0.6%	1.0%	1.2%	0.8%	0.4%
12 - Insurance	4.8%	5.0%	5.2%	5.0%	5.2%
13 - Bank	4.4%	2.6%	1.6%	2.1%	1.6%
14 - Inv advisor	13.9%	12.8%	10.8%	12.5%	16.7%
15 - Attorney	1.0%	1.8%	3.2%	0.4%	1.6%
16 - Accountant	2.7%	3.7%	2.8%	1.7%	2.4%
17 - Engineering	1.7%	1.0%	0.4%	0.8%	2.0%
18 - Other	8.9%	10.4%	10.0%	14.6%	11.6%

Panel B: Filings in force within the calendar year*

Year	2014	2015	2016	2017	2018
1 - Broker-Dealer	26.7%	27.8%	25.8%	24.2%	23.7%
2 - Registered rep	4.4%	4.4%	3.0%	3.5%	3.7%
3 - Commodity Pool	0.8%	0.7%	0.8%	0.4%	0.5%
4 - CTA	2.8%	2.9%	2.4%	2.7%	2.7%
5 - Futures commission	1.0%	0.5%	0.8%	0.7%	0.7%
6 - Swap participant	0.0%	0.0%	0.0%	0.0%	0.0%
7 - Security-based swap participant	0.0%	0.0%	0.0%	0.0%	0.0%
8 - Swap dealer	0.2%	0.2%	0.2%	0.2%	0.2%
9 - Security-based swap dealer	0.0%	0.0%	0.0%	0.0%	0.0%
10 - Trust company	2.0%	2.0%	1.8%	2.0%	2.0%
11 - Real estate	0.6%	0.9%	1.4%	1.5%	1.2%
12 - Insurance	4.8%	5.3%	5.6%	4.8%	4.6%
13 - Bank	4.2%	3.3%	2.4%	2.7%	2.5%
14 - Inv advisor	14.3%	15.2%	13.8%	14.3%	14.4%
15 - Attorney	1.0%	1.6%	2.6%	2.0%	2.4%
16 - Accountant	2.6%	3.5%	3.0%	2.9%	3.2%
17 - Engineering	1.6%	0.9%	0.8%	0.7%	1.0%
18 - Other	8.9%	9.9%	10.4%	12.6%	11.8%

* Note: "in force" means that the filing has not been updated with a new filing and there is no SEC record of withdrawal as a municipal advisor.

Table 10, Panel A: Regulatory and other Violation Disclosures, municipal advisors, based on filings with SEC

Note: This table shows share of filings in each year indicating event for which disclosure is required. Table 10, Panel B shows share of filings that are presumably in force in each year.

Year	2014	2015	2016	2017	2018
Criminal disclosure					
9a1 - Felony conviction	0.8%	0.3%	1.2%	0.8%	0.4%
9a2 - Charged with felony	1.2%	0.0%	1.2%	0.8%	0.0%
9b1 - Misdemeanor conviction	0.6%	0.0%	0.8%	0.4%	0.0%
9b2 - Charged with misdemeanor	0.6%	0.0%	0.8%	0.4%	0.0%
Regulatory action disclosure: SEC/CFTC-related disclosure					
9c1 - False statement	3.3%	1.3%	2.0%	3.7%	3.2%
9c2 - Violation	8.7%	5.2%	5.6%	9.2%	11.2%
9c3 - Cause for denial	0.2%	0.5%	0.4%	0.0%	0.0%
9c4 - Entered an order against?	7.9%	4.7%	4.4%	8.7%	10.8%
9c5 - Imposed penalty?	8.3%	5.0%	5.6%	8.7%	10.8%
Regulatory action disclosure: Disclosure related to other regulators					
9d1 - False statement	3.5%	3.1%	2.0%	1.7%	4.4%
9d2 - Violation	2.5%	0.5%	1.6%	0.8%	1.2%
9d3 - Cause for denial?	0.8%	0.3%	0.0%	0.0%	1.6%
9d4 - Entered an order against?	9.1%	6.5%	4.0%	7.1%	9.2%
9d5 - Imposed penalty?	4.8%	3.7%	2.8%	3.7%	7.6%
Regulatory action disclosure: Disclosure related to self-regulatory organizations					
9e1 - False statement?	2.5%	1.6%	0.8%	1.3%	2.8%
9e2 - Violation?	17.0%	13.3%	10.4%	12.5%	15.9%
9e3 - Cause for denial?	0.0%	0.5%	0.0%	0.0%	0.8%
9e4 - Entered an order against?	3.5%	3.9%	3.6%	3.3%	6.4%
Revocations					
9f1 - Revocation of authorization?	0.4%	0.3%	0.0%	0.4%	0.4%
Ongoing proceedings					
9g1 - Proceedings?	2.5%	1.0%	0.4%	0.0%	1.6%
Civil disclosure					
9h1a - Enjoined applicant?	1.7%	0.0%	0.4%	0.8%	0.8%
9h1b - Found responsible?	2.5%	0.5%	1.6%	0.8%	1.2%
9h1c - Dismissed case?	1.2%	1.0%	0.8%	1.7%	1.2%
Current proceedings					
9h2 - Current civil proceedings?	2.1%	0.3%	1.2%	0.4%	1.6%

Table 10, Panel B: Regulatory and other Violation Disclosures, municipal advisors, based on filings with SEC

Note: This table shows share of filings presumably in force in each year indicating event for which disclosure is required.					
year	2014	2015	2016	2017	2018
Criminal disclosure					
9a1 - Felony conviction	0.8%	0.5%	1.0%	0.9%	0.5%
9a2 - Charged with felony	1.2%	0.7%	1.0%	0.9%	1.0%
9b1 - Misdemeanor conviction	0.8%	0.4%	0.8%	0.7%	0.5%
9b2 - Charged with misdemeanor	0.8%	0.4%	0.8%	0.7%	0.5%
Regulatory action disclosure: SEC/CFTC-related disclosure					
9c1 - False statement	3.6%	3.5%	3.6%	3.8%	3.9%
9c2 - Violation	9.3%	9.7%	11.0%	10.6%	10.2%
9c3 - Cause for denial	0.2%	0.4%	0.4%	0.2%	0.2%
9c4 - Entered an order against?	8.5%	9.0%	10.2%	10.3%	10.0%
9c5 - Imposed penalty?	8.9%	9.2%	10.6%	10.3%	9.8%
Regulatory action disclosure: Disclosure related to other regulators					
9d1 - False statement	4.0%	4.0%	3.6%	3.7%	3.9%
9d2 - Violation	2.8%	2.6%	2.4%	2.0%	2.0%
9d3 - Cause for denial?	0.8%	0.7%	0.6%	0.5%	1.0%
9d4 - Entered an order against?	9.1%	9.3%	8.8%	9.3%	9.5%
9d5 - Imposed penalty?	5.0%	5.3%	5.6%	5.3%	5.6%
Regulatory action disclosure: Disclosure related to self-regulatory organizations					
9e1 - False statement?	2.8%	2.7%	2.6%	2.4%	2.2%
9e2 - Violation?	17.4%	15.9%	15.0%	15.0%	15.1%
9e3 - Cause for denial?	0.0%	0.4%	0.0%	0.0%	0.3%
9e4 - Entered an order against?	3.4%	4.6%	4.8%	5.3%	5.8%
Revocations					
9f1 - Revocation of authorization?	0.4%	0.4%	0.2%	0.4%	0.3%
Ongoing proceedings					
9g1 - Proceedings?	2.8%	3.1%	2.0%	1.6%	1.7%
Civil disclosure					
9h1a - Enjoined applicant?	1.8%	1.8%	1.6%	1.5%	1.5%
9h1b - Found responsible?	2.8%	2.6%	2.4%	2.0%	2.0%
9h1c - Dismissed case?	1.6%	1.8%	1.6%	1.3%	1.2%
Current proceedings					
9h2 - Current civil proceedings?	2.0%	1.6%	1.6%	1.8%	1.5%

Table 11 : Bond characteristics (links from SEC advisor data to Mergent bond characterstic data

Panel A: SEC filings in each year					
Year	2014	2015	2016	2017	2018
Municipal advisors filing in that year					
Count in SEC data	482	383	251	240	251
Count that match to Mergent data	309	195	145	143	158
Year	2014	2015	2016	2017	2018
Avg bonds ever advised by that advisor	4024	4346	3230	7304	6691
(weighted by bond)	55201	75067	24405	87300	86077
Average bonds advised in that year	265	346	286	145	NA
(weighted by bond)	3330	5435	1794	1764	NA
Year	2014	2015	2016	2017	2018
Herfindahl of underwriters based on entire sample	0.324	0.358	0.343	0.299	0.311
(weighted by bond)	0.101	0.095	0.104	0.09	0.092
Herfindahl based on that year	0.514	0.517	0.481	0.547	NA
(weighted by bond)	0.192	0.183	0.184	0.206	NA
Year	2014	2015	2016	2017	2018
Post-issuance price increase: average over entire					
sample (first 30 days post issuance)	0.227	0.229	0.216	0.214	0.215
(weighted by bond)	0.172	0.159	0.147	0.161	0.161
Based just on that year	0.129	0.281	0.227	NA	NA
(weighted by bond)	0.072	0.213	0.168	NA	NA
Year	2014	2015	2016	2017	2018
Post-issuance trade count (first 30 days post issuance)	11.313	11.098	10.3	10.295	10.676
(weighted by bond)	10.035	9.785	8.876	9.973	10.365
Based just on that year	10.623	10.875	10.223	NA	NA
(weighted by bond)	9.696	10.224	9.124	NA	NA
Year	2014	2015	2016	2017	2018
Herfindahl of advisor's business across states	0.799	0.805	0.834	0.797	0.787
(weighted by bond)	0.524	0.448	0.617	0.379	0.372
Based just on that year	0.841	0.846	0.874	0.838	NA
(weighted by bond)	0.529	0.479	0.607	0.373	NA

Table 11 : Bond characteristics (links from SEC advisor data to Mergent bond characterstic data

Panel b: SEC filings in force in each year					
Year	2014	2015	2016	2017	2018
Municipal advisors filing in that year					
Count in SEC data	505	546	500	546	591
Count that match to Mergent data	325	298	284	307	324
Year	2014	2015	2016	2017	2018
Avg bonds ever advised by that advisor	4659	4495	4932	4677	4454
(weighted by bond)	62011	67166	69223	67764	67416
Average bonds advised in that year	306	378	456	89	NA
(weighted by bond)	3959	5159	6216	1405	NA
Year	2014	2015	2016	2017	2018
Herfindahl of underwriters based on entire sample	0.317	0.331	0.323	0.329	0.336
(weighted by bond)	0.096	0.096	0.097	0.098	0.098
Herfindahl based on that year	0.508	0.503	0.454	0.563	NA
(weighted by bond)	0.178	0.178	0.161	0.234	NA
Year	2014	2015	2016	2017	2018
Post-issuance price increase: average over entire					
sample (first 30 days post issuance)	0.225	0.222	0.232	0.235	0.231
(weighted by bond)	0.171	0.166	0.163	0.164	0.164
Based just on that year	0.131	0.283	0.216	NA	NA
(weighted by bond)	0.075	0.231	0.174	NA	NA
Year	2014	2015	2016	2017	2018
Post-issuance trade count (first 30 days post issuance)	11.354	11.18	11.445	11.514	11.462
(weighted by bond)	9.74	9.833	10.244	10.227	10.233
Based just on that year	10.586	11.324	10.724	NA	NA
(weighted by bond)	9.468	10.147	9.968	NA	NA
Year	2014	2015	2016	2017	2018
Herfindahl of advisor's business across states	0.796	0.778	0.79	0.793	0.797
(weighted by bond)	0.51	0.472	0.449	0.45	0.452
Based just on that year	0.837	0.832	0.822	0.842	NA
(weighted by bond)	0.518	0.5	0.449	0.465	NA

Table 12. Regressions of average price increase in secondary market, by advisor on advisor characteristics

Dependent variable is the average price increase in the immediate post-issuance secondary market, calculated based on sales to customers over the first 30 days post-issuance. In the final two columns the average is calculated based on price increase measures that are adjusted to control for bond characteristics.

Independent var	Average price increase of bonds issued	Average price increase of bonds issued	Average price increase of bonds issued	Average price increase of bonds issued	Average price increase of bonds issued	Average price increase of bonds issued - adjusted for bond characteristics	Average price increase of bonds issued - adjusted for bond characteristics
Log total bonds advised b	-0.0196***	-0.00293	0.000487	0.00344	0.00364	0.00840	0.00325
	(-3.62)	(-0.41)	(0.07)	(0.52)	(0.55)	(1.31)	(0.49)
Concentration of advisor-underwriter link		0.156**	0.0831	0.0934	0.0947	0.0286	0.0638
		(2.59)	(1.52)	(1.68)	(1.70)	(0.53)	(1.04)
Concentration of advisor by state		0.104**	0.142***	0.141***	0.141***	0.158***	0.160***
		(2.77)	(4.11)	(4.11)	(4.09)	(4.78)	(4.78)
Average number of trades in post-issuance market			0.00966***	0.0101***	0.0101***	0.00798***	0.00766***
			(8.49)	(9.02)	(9.01)	(7.38)	(4.50)
Broker-dealer dummy			-0.0654**	-0.0418	-0.0420	-0.0263	-0.0138
			(-3.04)	(-1.62)	(-1.62)	(-1.05)	(-0.55)
Count of disclosure items				-0.00582	-0.00589	-0.00338	-0.00298
				(-1.48)	(-1.50)	(-0.89)	(-0.78)
Average count of disclosure items on matched individual filins					0.00558	-0.00183	-0.0102
					(0.27)	(-0.09)	(-0.51)
Constant	0.365***	0.133	0.00943	-0.0163	-0.0184	-0.240***	-0.208**
	(9.90)	(1.93)	(0.14)	(-0.24)	(-0.27)	(-3.70)	(-2.93)
N	355	355	355	325	325	324	299

Table 13. Information about Individual municipal advisors, linked to firms (Based on SEC MA and MA-I data)

	All firms	Small firms (<= 20 matching individual filints)	Larger firms (> 20)	Firms that have withdrawn	Firms that are still registered	Professionals with adverse disclosure	No adverse disclosure
MA-I filing count	6689	2600	4089	1215	5474	305	6384
Count of matched firms	811	751	60	221	590		
Average count of individual filings ma	85.78	7.41	135.60	77.37	87.64	60.15	87.00
Years on current job	6.47	7.32	5.93	8.25	6.07	7.54	6.42
Years in municipal industry	9.46	10.13	9.03	9.99	9.34	11.39	9.37
Years of employment	14.70	15.02	14.49	15.21	14.58	15.90	14.64
Hours/week in other jobs	9.90	17.17	5.28	10.00	9.88	12.51	9.78
Disclosure dummy (violation)	4.6%	6.3%	3.5%	5.3%	4.4%	100.0%	0.0%