Taking a Risk:
Explaining the Use of Complex Debt Finance by the Chicago Public Schools

Abstract: In the decade leading up to the global crisis of 2007-2008, local governments in the United States used more complex financial structures to underwrite major capital projects. These structures offered potentially lower borrowing costs while also carrying greater financial risk, and in most cases, the bond structures imploded when the crisis hit. Why did some local governments gravitate toward this part of the risk spectrum while others did not? This paper develops several explanations for local government risk-taking with a case study of the Chicago Public Schools' use of auction rate securities and interest rate swaps. We argue that the school district's exceptional use of these instruments was due to administrators' familiarity with these instruments, Chicago's long history of using creative financing techniques to defer tax increases or service cuts, and lack of knowledge about the extent to which investment banks were propping up these debt markets.

Key words: fiscal policy, municipal bonds, financial innovation, risk management, urban education

Introduction

Since the early 1800s, local governments in the United States have financed their capital activities -- roads, bridges, water and wastewater systems, buildings, and airports -- by selling debt (i.e., bonds and notes) in the municipal securities market (Sbragia 1996). Theoretically-speaking, the use of debt finance is justified by the "pay-as-you-use" principle of capital budgeting, which states that current and future beneficiaries of infrastructure development should share in its cost. Debt finance allows local government to spread the cost among generations by structuring debt repayment over an extended period of time -- sometimes as long as 40 years. In this sense, the use of debt promotes intergenerational tax equity. From a practical standpoint, few governments have enough financial resources on hand or in reserves to cover the significant price of infrastructure.

For most of the 20th century, the municipal securities market was considered a sleepy backwater. On the "buy" side, municipal securities (or "munis") were marketed to investors as tax-exempt, safe for the vulnerable and risk-averse. Banks and insurance companies held the bulk of outstanding issuances, and bond defaults were rare. On the "sell" side, most cities financed their infrastructure with debt securities that relied on conservative and/or well-seasoned market structures. Specifically, local governments sold fixed-rate general obligation bonds with repayment backed by their full faith and credit.

By using fixed rate bonds, governments identified the precise future budget resources needed to service their debt while protecting themselves from rising interest rates in the future. In the somewhat rare event they sold bonds with interest rates that changed over time, local governments relied on variable rate demand obligations (VRDOs), floating rate bond structures that had not experienced any systemic problems in the municipal securities market since their introduction in the 1970s (Petersen 1982).

Local governments entered a period of "entrepreneurial" infrastructure finance at the end of the 20th century as federal support for urban development activities declined (Clarke and Gaile 1998; Harvey 1989; Sagalyn 1990). Leverage was the name of the game as local governments committed their own-source future tax revenues (e.g., tax increment financing), remaining transfer payments from other governments (e.g., Community Development Block Grants, Federal Highway Trust Fund Grants), and ability to access lower interest rates to attract additional capital to the muni market. Instead of general obligation bonds with standard terms, revenue bonds – with higher interest rates but dedicated revenue streams -- comprised the majority of new issuances (Hildreth and Zorn 2005).[1] Some cities even looked outside of munis and imported the public-private partnership (P3) model from Europe and Asia to sell development and operating rights to private partners. Finally, and most germane to this study, many governments utilized new bond structures and financial instruments to hedge interest rate risks and, potentially, lower borrowing costs.

This paper focuses on one such novel financial instrument, auction rate securities, which were employed by some local governments in the years leading up to the global financial crisis of 2007-2008. Given the risks associated with these instruments vis-à-vis traditional fixed rate bonds, we seek to explain why some local governments gravitated toward this part of the financial risk spectrum while others did not. We build out a case study of the Chicago Public Schools (CPS), using the case material to develop new propositions and to engage existing ones about how and why local governments, as organizations, privilege different interests in their approaches to financial management. Like the stories of bankruptcies in Orange County (CA) and Jefferson County (AL), understanding the motivations and background conditions that led CPS to utilize complex debt instruments can help scholars recognize the factors that

might lead local governments to prioritize the potential for borrowing cost efficiencies over budget cost certainty.

Auction Rate Securities and Interest Rate Swaps

Auction-rate securities (ARS) are floating-rate municipal securities whose interest rates are reset every few days, weeks, or months using a competitive auction method whereby the lowest interest rate in which all the securities can be sold is determined. The first municipal auction rate security was sold in 1988 by the Industrial Development Authority of Pima County, Arizona (New York Times 1988). However, the ARS market (shown in Figure 1 as a percentage of the total floating rate municipal securities market as well as the total municipal bond market) developed slowly between 1988 and 2000. Between 1990 and 1999, total ARS issuance never exceeded 24% of all floating rate issuances (Johnson, Luby, and Moldogaziev 2014, p. 150). As a percentage of the total municipal bond market, annual ARS issuance ranged between 1% and 2% of all bond sales during that time, representing a relatively small component of the market.

[FIGURE 1 ABOUT HERE]

However, beginning in 2000, ARS issuances rose sharply as a percent of the total floating rate bond market and the total municipal market. Between 2000 and 2007, ARS issuances averaged 58% of floating rate issuances and maxed out at 86% of that market in 2004. As a percent of the entire municipal bond market, ARS issuance averaged 7% of all municipal bond sales during this period, with a maximum of 10% in 2004. There was a strong diversity of ARS issuers including states, cities, school districts, transportation authorities, cultural institutions, hospitals, and universities. Some examples of ARS issuers and projects included the Massachusetts Port Authority's modernization of Logan Airport, the Buffalo Municipal Water Finance Authority's development of its water system, New York City's expansion of the Metropolitan Museum of Art, and the State of California's construction of primary and secondary education facilities throughout the state.

While both ARS and VRDOs are similar in that their interest rates vary (or "float') over time, ARS differ from VRDOs in several significant ways that make them attractive from a financing cost perspective, but which also expose borrowers to greater risk (Johnson et al. 2014, p. 149). First, investors in ARS were different than for VRDOs during the 2000s. High net worth retail investors and corporate cash managers were the primary purchasers of ARS while tax-exempt money market funds were the primary buyers of VRDOs (*ibid*.).[2] By selling ARS, local governments were able to diversify their investor base with the intention that this diversification would yield lower interest rates.

Second, ARS, unlike VRDOs, do not include a "put" option. A put option allows investors to sell the securities back to the issuer at their par amount on any interest rate reset date regardless of whether other investors want to buy the securities.[3] A put option provides liquidity to investors, and it is usually supported by liquidity facilities purchased from banks.[4] Since ARS excludes a put option, local governments are able to avoid the cost of the letter of credit charged by banks on VRDOs. However, without liquidity support from a bank, the government entity absorbs the risk that the ARS will reset at the maximum interest rate in the event of a failed auction -- which could be significantly higher than the previous interest rate.[5] As such, the benefit of reduced credit support costs are hedged against the possibility of paying high interest rates.

As with VRDOs, auction rate securities are commonly used in combination with a type of financial derivative known as a "floating-to-fixed interest rate swap" to create "synthetic fixed rate debt." Floating-to-fixed rate swaps involve the local government entering into a contract with a bank to exchange a fixed rate payment from the government for a floating rate payment (based on a bond index like LIBOR, BMA, or SIFMA) from the bank. The floating rate payment is often structured with the expectation (but not guarantee) that it will offset the floating rate of the government's ARS, leaving the government with a net fixed interest rate payment. In this sense, the interest rate swap is meant to hedge against changes in the floating rate of the ARS, effectively converting the floating rate on the financing to a ("synthetic") fixed rate.

Figure 2 compares the cash flows between parties of a traditional fixed rate bond versus a synthetic fixed rate one. Governments use ARS in concert with interest rate swaps to obtain a lower overall borrowing cost compared to traditional financing as the fixed rate paid to the counterparty on the swap is less than the fixed rate a government would pay on a traditional fixed rate bond issuance.[6] However, the use of the interest rate swap also adds several layers of risk to the local government including (but are not limited to): 1) the floating rate received by the government not completely offsetting the interest cost of the ARS (known as "basis risk") and 2) the need to terminate the swap at fair market value due to market conditions or a government's credit being downgraded (known as "termination risk" or "credit risk"). The risks associated with the swaps are in addition to the ARS risks mentioned above.

[FIGURE 2 ABOUT HERE]

Such risks were realized in early 2008 when many more sellers than buyers participated in ARS auctions, resulting in a slew of failed auctions. The dearth of ARS buyers was caused by both the worsening finances of monoline bond insurers that were downgraded at the onset of the crisis and the mass retreat of investment banks that had previously supported the auctions. In the pre-financial crisis period, banks had prevented auction failures when there were not enough buyers by purchasing ARS themselves; they were involved in nearly 50% of auctions and were the sole buyers in almost 25% of auctions (Han and Li 2010). Banks were able to be the buyers of last resort because they had capacity on their balance sheets to allocate capital to such auctions. Investment banks withdrew because of the damage inflicted on their own balance sheets by the implosion of the subprime mortgage market (Doherty 2008; Sirri 2008). In February 2008, 82% of all ARS auctions failed with most continuing to fail over the next months (Johnson et al. 2014, p.150).

Auction failures were devastating for local governments: they had to pay the maximum interest rate on these securities, which were often well in excess of the floating rate payments they received from the bank under the interest rate swap. Looking at Figure 2, one can see how the basis risk could be substantial if the floating rate paid to the government on the swap was low while the floating rate paid to

bondholders was set at the maximum rate. Thus, the realized basis risk increased the cost of ARS dramatically beyond that which was expected when such financings were initially arranged. Moreover, when local governments then tried to convert their ARS to VRDOs or fixed rate debt, they had to pay interest rates that were higher than VRDOs (because the cost of a letter of credit increased) and higher than the ones on the ARS before the crisis (because fixed rates are higher than floating ones). They also had to pay sizeable termination penalties for cancelling the swaps (Grotto and Gillers 2014). In the wake of the financial crisis, local governments, investment banks, unions, and activists engaged in finger-pointing and blame-shifting for the higher interest payments, swap termination penalties, and subsequent credit downgrades experienced by those local governments that adopted the ARS-interest rate swap combinations.

This article does not assess the prudence of using ARS generally as such analysis would be significantly plagued by hindsight bias. However, we start from the premise that ARS paired with interest rate swaps do involve greater interest rate, basis, and credit risks than traditional fixed rate bonds and were riskier financial instrument than VRDOs given their less established history in the municipal bond market. Thus, we ask: what are some of the factors that would lead some local governments to use risky instruments like ARS?

Explaining Government Tolerance for High-Risk Debt Management Strategies

To some extent, all local governments have confronted difficulties in adequately funding infrastructure since the 1970s because of declining federal transfer payments for such activities, revenue and expenditure limitations, and increased demands by citizens (Clarke and Gaile 1998; Hildreth and Zorn 2005; Sagalyn 1990). However, they have adopted very different strategies for dealing with these constraints. Some local governments have stuck to conventional financing strategies or reduced spending, others have used modestly risky innovations (e.g., the use of a market-seasoned instruments such as VRDOs), and still others have employed the riskiest types of financial instruments such as auction rate securities and interest rate swaps (i.e., a less-seasoned instruments with interest rate, credit, and basis

risks). Our research question assumes that most governments are hard-pressed for capital funding and have similar capacities to pass legislation authorizing the use of ARS.[7] Holding some of the most critical contextual variables that determine a government's "fiscal policy space" constant (Pagano and Hoene 2010), we hypothesize about the kinds of organizational dynamics that might influence the degree of risk a local government is willing to accept. We frame our discussion in terms of the layered principal-agent relationships that influence issuer behavior and focus on two main dynamics: (1) moral hazards that arise from unaligned risk preferences, and (2) information asymmetries concerning actual financial risks.

All local governments that issue debt do so with an explicit or implicit debt management strategy. Hildreth (1993) argues that debt management strategies are intended to balance the need to obtain cost-effective financing for capital projects while simultaneously honoring other financial and policy priorities. For example, minimizing interest rates may compete with other financial management goals, such as local governments' desires for safety, for the timely availability of funds (i.e., liquidity), or to manage their reputation with creditors and ratings agencies. Given the ambiguity about goals, different stakeholders in the debt issuance process are able to advance their own self-interests and sway decision-making by claiming different financial and policy priorities. The conflicting interests of stakeholders and the potential for risk transfer sets-up a context for multiple kinds of principal-agent relationships, whereby decisions are made by some members of this network on behalf of others (Arrow 1985). A principal-agent framework is a "way to usefully model conflicts of interest and questions of performance and control in other organizations, including public organizations" (Simonsen and Hill 1998). It is also, as researchers have shown explicitly or by implication when they discuss issues of accountability, a valuable framework for examining questions of risk in bond sales and debt management more generally (Miller 1990; Simonsen and Hill 1998; Johnson and Kriz 2005).

Figure 3 shows that several key stakeholders, on their own and working in "teams," influence issuer behavior: the public (voters), elected officials, government financial managers, bond consultants, underwriters, and investors (Miller and Justice 2011; Simonsen and Hill 1998; Worsham et al. 1997;

Hildreth 1993). Despite the difficulties generalizing about their collective dispositions toward and understandings of risk, each set of stakeholders possesses incentives to embrace or avoid taking risks with public capital. Elected officials, at the top of the network, are vested with the dual responsibilities of acting as both agents of the public (the ultimate principal) and principals for the financial managers in the issuance of municipal securities. As agents of a public with a diverse set of risk preferences, it might be prudent for elected officials to err on the side of less risk rather than more. Other actors working in the public sector, especially government financial managers, have been found to be risk averse in certain circumstances (see, for example, McCue 2000). In theory, they lack material incentives for individual risk-taking, they are subject to heightened popular scrutiny of their behavior (i.e., "headline risk"), and the bureaucratized environments in which they operate reward certainty over chance (Bellante and Link 1981; Bozeman and Kingsley 1998).

[FIGURE 3 ABOUT HERE]

In contrast, the private investment banks that act as underwriters for municipal securities tend to generate more returns for their investors and for themselves (e.g., bonuses) if they take on additional risks. For investment banks, instruments like ARS typically are viewed as just another example of "creative financing"– i.e., a new financial instrument or technique that comes along every few years to exploit interest rate differentials, circumvent caps, or increase liquidity (Petersen 1982). Potential conflicts of interest arise because of the dual roles played by investment bank underwriters. As shown in Figure 3, the underwriters marketing risky instruments to local governments are effectively agents to the government in the sense that they work on behalf of elected officials, government financial managers, and the public in bringing debt transactions to market. Legally, however, these banks have an arms-length relationship with the government and do not have to serve the government's best interest.[8] According to the 2011 interpretive notice of Municipal Securities Rulemaking Board Rule G-23: "The primary role of an underwriter is to purchase, or arrange for the placement of, securities in an arm's-length commercial transaction between the issuer and the underwriter and that the underwriter has financial and other interests that differ from those of the issuer" (2011, p. 2). In contrast, banks have clear fiduciary

obligations to their investors. The interests of underwriters and governments can diverge in practice with governments wanting to pay the lowest costs possible while underwriters generally want the interest cost to be as high as possible so as to make the security attractive to investors.

Moreover, local governments also develop long-term relationships with particular underwriters, who then provide informal advice on a government issuer's debt management strategy. The advice may include a future capital market financing in which the bank hopes it can participate (Miller and Justice 2011). Simonson and Hill (1998) found that issuers choose underwriters primarily on the basis of prior relations, not the potential to lower interest costs. Given how closely investment banks work with governments, both informally outside of actual transactions and formally when engaged on a bond issuance, their standards of risk taking may take root in the public sector. Additionally, local governments have increasingly hired administrators from the investment banks and advisors who have helped them on past issuances (Weber and O'Neill-Kohl 2013).

Beyond conflicts of interest, other kinds of principal-agent problems are endemic to the crafting of an issuer's debt management strategies. Moral hazards (situations where agents take risks on behalf of the principals who will ultimately bear them) arise when principals have difficulty controlling agents and when the agent is unaware of the principal's interest. In the private sector, regulations and internal corporate governance, such as executive compensation, have been developed to mitigate moral hazard problems. In contrast, the uniqueness of the public sector, with its multiple principals and the short-term interests of elected officials, creates agency problems unlike those found in the private sector. When it comes to the debt management decisions of local governments, agents may not take the principal's interests into account, either innocently ignoring the risks of its borrowing schemes ("innocent failure") or intentionally shifting risks to others ("willful neglect").

The innocent failure kind of moral hazard occurs when the risk-taking actions of the agent and the risk preferences of the principal are manifold, unclear, or not adequately known by the other. While private and public financial managers face similar challenges in terms of their overall goals and objectives related to balancing risk/return and ensuring liquidity, the potential for these innocent failures is greater in

the public sector because the risk tolerance of masses of heterogeneous taxpayers cannot be as readily understood as that of few hundred generally homogenous owners (i.e., shareholders) in a private sector organization. For example, risk-averse taxpayers and current infrastructure users may want to maintain the principal and maximize liquidity, an option that would limit the investment return potential but ensure resources are available to fund public services. Other taxpayers, however, may prefer maximizing investment returns while constraining liquidity as a way to reduce their tax burden. Voters have fewer opportunities (in elections and referenda) to express these preferences than corporate shareholders, who can buy/sell stock, participate in annual shareholder meetings, and/or vote for board of directors.

Complicating matters is the presence of goal ambiguity in the public sector. In a private corporation, the overarching goal is to maximize shareholder value, which is clearly reflected in share prices. In contrast, the public sector juggles many competing goals, with efficiency and equity often in conflict (Chun and Rainey 2005; Dahl and Lindblom 1953). It is easier for principals to assess risk if they are only looking to optimize one metric (i.e., maximizing share price) than if they are trying to assess trade-offs with multiple metrics. One might assume that the difficulty assessing the risk preferences of the taxpayers and voters would provide public financial managers with yet another reason to take a conservative approach to financial management (Esser 1995).

On the other hand, the "willful neglect" type of moral hazard may occur when elected officials understand the risks associated with instruments like ARS, but intentionally offload them to other stakeholders, like future politicians and voters.[9] Elected officials may agree to riskier financial instruments because they lower interest rates in the short term and believe that maximizing any and all funding will satisfy external constituencies, like current voters (who are eager for a "free lunch," new services without a concomitant tax hike or budget cut) and bond rating agencies (who value market experience) (Hildreth 1993). Public choice theory about the "fiscal illusion" (Buchanan 1967) and multiple empirical examples support the idea that government officials often make financial decisions in the short-term fiscal interests of the taxpayers which provide an electoral benefit to the current politician with future ones likely bearing the burden (Bifulco et al. 2012). Contrast this with a private sector

corporation whose share price is technically the present value of all its future dividends. Because corporate financial managers are tasked with maximizing their firms' long-term profitability, they have to assess such long-term risks more systematically (Petersen 1982).

A second set of principal-agent problems relate to the presence of information asymmetry (or ignorance) about the actual risks of auction rate securities (as opposed to the risk preferences of principals). As in the case of moral hazard, this ignorance can also take two forms: 1) "innocent" ignorance based on the predictive uncertainty of certain risks and 2) ignorance as a result of incompetent advice from municipal advisors or unfair dealing by the banks that marketed and ran the auctions.

"Innocent" ignorance may have been created by the perceived success of the ARS market in the decades leading up to the 2007-2008 financial crisis. From 1988 until early 2008, auction failures were relatively rare (Johnson et al. 2014, p.149). The concern that the entire ARS market could seize up at one time may have seemed far-fetched to the government financial managers and private investment advisors that had witnessed a seemingly orderly capital market up until that point. If past was prologue, it may have been rational to sell lower-cost ARS debt compared to VRDOs or fixed rate debt.

The presence of information asymmetries between local governments and their capital market partners may have exacerbated "innocent" ignorance as similar knowledge about risks may not have been spread widely among these networks. Specifically, there are inherent asymmetries between public sector principals and private financial sector agents in capital market transactions. The investment banks that market and underwrite municipal securities are financial specialists who execute these transactions every day for state and local governments throughout the United States. In practice, underwriters have access to more detailed information about current pricing and market conditions than financial managers in the public sector. In contrast, capital market transactions are but a small fraction of a government financial manager's responsibilities. Moreover, due to budget constraints, public financial managers may lack the necessary training, experience, and/or staffing support, widening the asymmetry in knowledge between government and investment banks.[10] Even if these transactions follow appropriate regulatory and policy

procedures, and from a legal perspective the banks satisfactorily disclose the risks, local governments may still not fully comprehend the potential risks associated with complex debt instruments.

The second type of information asymmetry—incompetent advice— is more nefarious. Given the difference in expertise and divergence of interests between the banks and governments, many local governments turn to unregulated municipal advisors for assistance. Some advisors act opportunistically in playing both sides of a debt issuance deal to maximize their own fees and commissions. These advisors have an incentive to downplay the risks of instruments like ARS in order to broker transactions. Since security offerings entail lengthy contracts, underwriting guidelines, and political processes to protect taxpayer interests, local governments may be led to believe their interests are being sufficiently protected when they are not.

In the case of ARS this second type of informational asymmetry may have been due to explicit and fraudulent misrepresentations by the banks that marketed the instruments and then ultimately controlled the auctions (Bhatti and Sloan 2016). The "bamboozled theory" for why some governments absorbed the additional risk of ARS and interest rate swaps has been popular in media accounts (Chicago Sun Times 2014; Schoen 2013). To the extent that such banks shirked their responsibility to fully inform government issuers of the downside risks of the ARS structure that they proposed (e.g., maximum interest rate structure) or the risks inherent in the ways the banks ran the auctions, one could find evidence that opportunistic investment banks deceived governments. In the wake of the financial crisis, several local governments sued financial institutions involved in ARS issuances, asserting that they were misled about financial institutions' involvement in propping up the ARS market (Damon 2016; Muller 2011; Solochek 2013).[11]

Case Selection and Methodology

We undertake a case study of one local government, the Chicago Public Schools (CPS), which sold four auction rate security issuances between 2000 and 2007 totaling just over $1 billion.[12] While the amount of its total ARS issuance may be considered more ordinary when compared to utilities and special

districts, CPS is an outlier among school districts and school facility financing authorities. As Table 1 reveals, there were 52 ARS issuances for school facility construction at the national level between 1992 and 2009.[13] These issuances totaled about $6.8 billion, of which CPS – just one district -- comprised about 15% of that total.[14] Narrowing in on only school districts (as opposed to other issuers that sold ARS to finance school construction), we see that 13 such districts issued 26 ARS during this period. Of the $2.98 billion of ARS issued by school districts, CPS accounted for over one-third of the total volume.

This form of creative financing represented a significant portion of CPS' debt portfolio. At its peak in 2004-2005, ARS accounted for 10.3% of the entire municipal debt market in the United States. Looking only at CPS, ARS accounted for over 32% of the total bond debt the district issued between 2000 and 2007.[15]

[TABLE 1 ABOUT HERE]

The approach CPS took to debt management represents an extreme but illustrative case study of risky capital finance, one where the challenges discussed above are in play and can be seen clearly because of both the scale of ARS use and the attention these instruments received from the media in the wake of the financial crisis. In examining the case of Chicago, we sought to deepen our understanding of the motives and situational factors that led to the adoption of ARS. Specifically, we were interested in the fiscal status and politics of the district leading up to the decision to use ARS as well as the degree to which CPS board members and administrators appeared empowered by, ignorant of, or cajoled into using ARS. Our analysis is based on an in-depth reading of the district's bond prospectuses, operating and capital budgets, comprehensive annual financial reports, and legislation. We tacked back and forth from financial documents to policy statements, transcripts of board meeting minutes and legislative floor debates, and media accounts to determine how financial management decisions were being framed and pitched. We also interviewed ten key policy and financial decision-makers. We asked questions about the knowledge and experience of administrators, the role of intermediaries such as financial advisors, the kinds of risks administrators were seeking to avoid or shift, and how spending patterns necessitated particular financing schemes.

Even though, as of 2015, the ARS market was essentially non-existent (with only $16 billion in outstanding debt; Doherty 2015; Weitzman 2015),[16] these securities can be treated as proxies for various kinds of risky financial instruments available to local governments today and in the future. Moreover, like other cases of fiscal management failure (see, for example, Kearns's (1995) discussion of the Orange County bankruptcy; Howell-Moroney and Hall's (2011) study of Jefferson County; and Davidson and Ward's (2015) analysis of the Vallejo, California bankruptcy), an autopsy of what went wrong is instructive for those wishing to avoid a repeat performance in other places.

The Case of the Chicago Public Schools

Chicago Public Schools, the third largest school district in the United States, operates over 500 schools as well as 125 charters.[17] While the school district is a separate governmental authority from the City of Chicago, operations of CPS are nevertheless highly influenced by the mayor, who appoints the Chicago Board of Education (CBOE) and the district's Chief Executive Officer.[18]

The district's history of financial management challenges is important context for understanding its debt issuances and the capital plans that debt was intended to finance. Since the 1980s control over CPS' finances has changed several times, with state imposed oversight until the mid-1990s. The Chicago School Finance Authority (SFA) was created by the state's General Assembly in 1980 to oversee the CBOE after the district failed to secure bids for much-needed bond sales (Chicago Tribune 1979). Without proceeds from bonds, CPS lacked the funds to pay both existing debt service and payroll. The SFA effectively created a new institutional structure rather than confront the district's revenue issues head-on, particularly the mayoral desire the keep taxes low despite the teachers' union's negotiation of higher compensation. As a result, adequate revenue remained an issue, and CPS faced perpetual budgetary shortfalls. In 1985, the Chairman of the SFA summarized CPS' precarious fiscal position: "We are going to have these annual crises until a more assured cycle of annual revenue is forthcoming" (Banas 1985).

The SFA chairman's warning about structural deficits proved prescient. Although CPS balanced its

budgets in the early 1990s, it did so not by raising tax rates above the Property Tax Extension Limitation Law but by filling large operating gaps with proceeds from bonds issued by the SFA. CPS was punished by the credit rating agencies for the "board's use of bond proceeds for operating expenses and the lack of a long-term funding solution" (Hattori 1993).

In 1995 control over CPS was consolidated back into the hands of the mayor through the Chicago School Reform Amendatory Act (the "1995 Act").[19] Mayor Richard M. Daley was given control over a district in desperate need of infrastructure investment. In the 1990s, CPS was facing the twin challenges of educating a high-poverty student population and managing its "legacy infrastructure." Over half of the schools were more than 50 years old but even newer structures were falling apart. A study by the Government Accountability Office conducted in 1995 found that Chicago had been underfunding its capital budget - about 30-40% of needed repairs had been deferred annually for decades (p. 27).

The 1995 Act allowed Mayor Daley to appoint school board members without City Council approval.[20] It also replaced the position of superintendent with a Chief Executive Officer (CEO), who the Mayor selected.[21] After the passage of the 1995 Act, Mayor Daley installed Paul Vallas as the CEO and Gery Chico as the president of the Chicago School Reform Board of Trustees.[22] Prior to their appointments Vallas had served as Mayor Daley's Chief of Staff and Chico had been his Budget Director.

In addition to granting authority to the Mayor and encouraging a more corporatist organizational structure, another important aspect of the 1995 Act was that it provided CPS with greater financial flexibility through two mechanisms. First, it altered the way the state provided aid to CPS. It shifted key transfer payments from categorical state aid to two block grants (General Education and Educational Services), which the CBOE could use for any "lawful purposes."[23] Second, it consolidated CPS' property tax levies, and the CBOE was given discretion over how to allocate the resulting property tax revenue.[24] The consolidation of property tax levies effectively freed up $90 million in property tax revenue and allowed the school district to use "money that had previously been earmarked for specific purposes to help eliminate the deficit and pay for new initiatives" (Forte 1995). After pressure from the City, state lawmakers provided CPS with another concession to increase spending flexibility: the ability to forego

regular payments into its pension system. In 1997, a new state law permitted CPS to contribute only the amount of money needed to maintain the teachers' pension fund's funded ratio at 90%, freeing up revenue in CPS' budget for other things – such as debt repayment.[25] As a result, CPS contributed close to no revenue to the pension fund for 11 years even though current employees were accruing retirement benefits (Center for Tax and Budget Accountability 2013).

After the return to mayoral control, CPS sold its first bonds in April of 1996, which, officials noted, was only possible because it had "recently achieved investment grade ratings for the first time in twenty years" (CPS Tentative Budget, School Year 1996-1997). It was primarily CPS' ability to divert funds from its operations to debt service that allowed it to regain access to the municipal bond market, in-turn enabling it to execute ambitious capital improvement plans. The year after control was formally vested in Mayor Daley, all three of the major rating agencies increased their credit ratings for the district. In explaining the decision to increase CPS' credit rating, an analyst for Standard & Poor's cited "Illinois lawmakers' willingness to give [CPS'] new management team flexibility in spending state aid payments" (Ward 1997).

In an almost immediate response to those credit rating upgrades, CPS increased its multi-year capital plans from an estimated $600 million to $806 million.[26] Mayor Daley justified capital spending on the basis that it was directly correlated with broader societal goods: "People want children to be educated. If you don't educate them, they (end up) at 26th and California (Cook County Jail) or in the welfare system" (Washburn and Poe 1997). Similarly, CEO Paul Vallas tied executing a large capital improvement plan directly to the broader plan of "revolutionizing" education by arguing that CPS' obsolete buildings made learning difficult.[27] Between 1995 and 2001, rating agencies upgraded the district's credit rating 11 times (see Table 2). As its credit ratings improved, so too did the size and scope of its capital plans, which ballooned to $3 billion by 2001 – an increase of 400% from 1995.[28]

[TABLE 2 ABOUT HERE]

CPS' penchant for debt was tied to an ambitious capital plan, which went beyond renovating existing infrastructure. For example, CPS' last auction rate security, issued in 2007, was tied to Mayor Daley's Modern Schools across Chicago (MSAC) initiative. During a re-election bid Daley unveiled

MSAC, a $1.1 billion plan to construct 24 new schools and renovate three exiting schools.[29] The City pledged $666 million using bonds backed by its Tax Increment Financing (TIF) revenues, and CPS was responsible for the remaining portion. CPS' 2007 issuance filled in the gap so that the City, with its partner agency the Public Building Commission, could construct schools -- including its first $100 million school (Rossi 2007).

By increasing the scope of its plans but resisting referenda to increase property taxes beyond the state-imposed limit to pay for them, the size of the school district's financing gaps widened. To fill the gaps, CPS sought to issue debt at the lowest cost possible. CPS issued its first auction rate security in February of 2003.[30] At the time nothing in state law expressly allowed local governments to issue variable rate debt, but since nothing expressly prohibited it either, some local governments began issuing them. In a game of catch-up, the state General Assembly passed legislation in May of 2003 that augmented the State Finance Act so that variable rate debt paired with financial derivatives was specifically authorized.[31] The legislation was authored by the law firm Chapman and Cutler, and the sponsors of the legislation, Senator John Cullerton and Representative Gary Hannig, portrayed it as a mundane technical change that merely clarified existing law.[32] In a report on the legislation, an analyst for the Illinois House Republicans explained the appeal of these forms of debt, writing, "many units of local government are seeking more financial flexibility with their bonds because they are confronted with budget shortages." Thus, ARS provided a financial "fix" for the revenue needs of local governments not by increasing public funds through taxes or cuts, but by holding out the promise of reducing borrowing costs in exchange for taking on greater risk.

Between 2003 and 2007, CPS issued four different auction rate securities, each paired with interest rate swaps, as shown in Table 3. Between its return to mayoral control and the global financial crisis of 2007-2008, CPS had 29 bond issuances totally $5.33 billion.[33] Between 2004 and 2007, it is estimated that CPS received annual interest cost savings of 47 basis points (0.47%) by selling its 2003B bonds in an auction rate mode instead of as variable rate demand bonds (Johnson et. al. 2014, p. 158). Such immediate savings would serve as powerful incentive to continue to use ARS on future issuances.

In February 2008, less than a year after CPS issued its last ARS, the entire auction rate market collapsed. This had a significant impact on CPS as 32% of its outstanding debt was in the form of these securities.[34] In May of 2008, CPS refinanced its outstanding ARS debt into three new bond series, two of which were variable rate debt paired with interest rate swaps.[35] CPS paid millions in new underwriting charges to convert two of the ARS issuances into fixed rate debt, and it also paid $20 million to terminate the associated swap contracts. The *Chicago Tribune* estimated that CPS will end up paying $100 million more on the ARS, swaps, and associated refinancings than if the district had just issued fixed rate debt in the first instance (Gillers and Grotto 2014).

The ARS market imploded at the same time that CPS' financial issues were coming to light and as it was forced to start making payments to the teachers' pension fund. As its financial condition declined and was exacerbated by the recession, CPS once again issued debt to pay for day-to-day expenses. Cognizant of this growing instability, the credit rating agencies downgraded CPS in 2011 for the first time since it was returned to mayoral control. The three major rating agencies went on to downgrade CPS multiple times between 2011 and 2015 (Moody's alone downgraded CPS eight times during this period), causing the cost of new issuances to spike.

When the auction market ceased to function, CPS and its constituent taxpayers, parents, and students had to pay the price. In subsequent years, CPS has initiated layoffs and terminations of education programs in an effort to close its budget gap (Cherone 2015). In 2013, Chicago made national headlines when CPS announced it would close 49 public schools in a single year. The increased interest cost and termination payments from the use of ARS and interest rate swaps were not the only reason for the closures, but they contributed to the school district's desperate attempts to reduce expenses quickly (Lutton and Vevea 2013). There was also talk of a second state takeover of CPS and legislation to allow (or force) the district to declare bankruptcy (Geiger, Perez Jr., and Pearson 2016).

Analysis

Despite the fiscal stress experienced by local governments during the 1990s and 2000s, few gravitated

toward auction rate security-interest rate swap combinations to the extent that CPS did. Even in Illinois, where lawmakers pushed debt-based solutions to structural deficits, few school districts adopted these risky instruments. To understand why CPS issued these securities four times during the 2000s, we return to the debt management framework introduced earlier. Specifically, the case of CPS provides evidence of moral hazards and, to a lesser extent, information asymmetries.

Moral hazards: The case offers theoretical support for moral hazard as an important factor in understanding CPS' financial risk-taking. In our conceptualization, moral hazard occurs when government issuers either innocently or willfully ignore the risk preferences of their principals in the use of complex financial instruments.

CPS administrators had incentives to take on additional risk given both the (general) structures of governance and the (specific) political relations in Millennial-era Chicago. Because of the hierarchal and insulated nature of the school district's administration, financial managers operated in an environment devoid of knowledge about the risk preferences of taxpayers – other than the fact that they generally disliked paying taxes but also wanted high-quality services and facilities. Although local school councils (comprised of parents, teachers, community residents, and principals) existed, they were kept at arm's length in terms of policy-making at the district level. Moreover, there had not been any ballot measures in the years leading up to the ARS issuances, and CPS never tried to increase the tax levy beyond what was allowed by the state's Property Tax Extension Limitation Law (PTELL). As such CPS financial administrators lacked knowledge about whether voters preferred that the district minimize risk and better utilize existing school buildings or that it take on new debt and more risk to fund new construction. Although parent groups and watchdogs had urged CPS to make additional capital investments, they were not part of the conversation about how to fund those expenditures. Thus, the institutional structures and financial management decisions taken by CPS lend credence to the idea that the local government was ignorant of the actual risk preferences of taxpayers, which would have varied depending on their knowledge of the trade-offs involved in public finance, their political orientations, and whether they had children in the school system.

At the same time, we find evidence of the "willful neglect" type of moral hazard. Like his father, Mayor Richard M. Daley served six terms, governing Chicago from 1989 to 2011. His success at the polls, he likely believed, gave him and his advisors a mandate to interpret voter preferences as they wished. Daley centralized power over financial decision-making and appointed leaders, like Paul Vallas and Gery Chico, who he knew would share his views on education reform. As soon as he wrested power over the schools away from the state, Daley and the CBOE launched an ambitious capital plan to renovate aging buildings scattered cross Chicago, build new laboratories and playgrounds, and construct new school buildings. His capital priorities were aimed at relieving overcrowding in majority-Latino neighborhoods and keeping middle-class parents, who might otherwise relocate to the suburbs, in the city (Lipman 2011).

Unfortunately Daley's team at CPS discounted the risks involved in using ARS for new school construction. CPS levied at the maximum level allowable by PTELL but never went to the voters with a referendum to increase the property tax levy above the limits. The district assumed that voters, like themselves, wanted a "free lunch." To increasing spending without dramatically increasing property taxes or making budget cuts, CPS, like the City of Chicago, turned to debt and specifically to financial-engineering innovations that lowered the cost of debt in the short-term in exchange for increased risks. The first three ARS issuances occurred around the time that Daley was re-elected by a wide margin for the fifth time and when his administration recruited David Vitale from the Chicago Board of Trade to be the Chief Administrative Officer at CPS. Daley's administration was confident that the legacy infrastructures would be remembered while the risks associated with the complex financing techniques used to pay for them either would not be realized or would be forgotten.

The use of financing techniques like ARS that provide short-term benefits while exposing CPS to greater financial costs in the future fits into a larger pattern of the City's debt management during this particular historical period (Weber 2015). During Mayor Daley's tenure, the City's primary economic development program was Tax Increment Financing (which relies on revenue bonds, displaces tax rate increases to other taxing bodies, and gives the illusion that development "pays for itself"). The City also

leased the Skyway (a seven-mile tolled bridge and highway on the south-east side) and parking meter system through public-private partnerships in 2005 and 2008, respectively. The parking meter P3 generated $1.2 billion in upfront sale proceeds used primarily to fund short-term operating budget deficits while turning over potential windfall revenues to the private operator for the subsequent 75 years (Snyder and Luby 2012). To pay for the renovation of Soldier Field in 2001, the Illinois Sports Facilities Authority sold over $400 million in bonds, and that financing relied on an optimistic 5.6% annual growth rate in hotel tax revenue to repay the bonds. When hotel tax growth was lower than anticipated, the City had to allocate some of its own general fund revenues to fund the deficiency (Chicago Tribune 2011). Considering the City's history of discounting future risks and costs, the case of CPS' use of ARS does not look out of place.

Informational asymmetries: The case lends weaker support for information asymmetries as the key driver of CPS' debt management decisions. This explanation for risk taking assumes extreme differences in knowledge about risks between CPS and the private entities that sold and advised them about ARS.

On one hand, the experienced board and management team at CPS was familiar with and knowledgeable about the risks involved in ARS. The composition of the CBOE, management team, and advisors in place at the time of the CPS issuances had strong connections to the financial sector. The Daley administration hired seasoned financial administrators from Wall Street and contracted out key responsibilities to a set of boutique financial services firms. The transmission of knowledge about the risks posed by ARS moved between the buy and sell sides through these personal and professional relationships.

Figure 4 shows a hierarchical map of the CBOE, the CPS management team, and its municipal advisors for the period (2003-2007) that the four ARS securities were issued. The names in red were professionals that were likely familiar with complex financial instruments in their prior professional careers as CFOs, consultants, bankers, or municipal advisors. For example, the CBOE included bankers

and investment advisors, including Norman Bobbins (CEO of LaSalle Bank), Albert Cararro (senior vice president of the nation's largest Hispanic bank, Banco Popular), and Roxanne Ward (vice president of Ariel Capital Management, a Chicago-based investment firm). The board also included well-connected public finance specialists like Gene Saffold, who was the head of public finance for JP Morgan Securities and would later become the CFO of the City of Chicago. AC Advisory, Kirkpatrick Pettis, and FPT&W Limited were experienced municipal advisors that had advised many other clients on the use of swaps and ARS. The president of AC Advisory, Adela Cepeda, had become well versed in the use of floating rate debt and financial derivatives through her professional experience at Smith Barney. A former managing partner of FPT&W Limited was John Filan, who would become budget director of the State of Illinois in 2003 where he oversaw the state's first use of variable rate debt and an interest rate swap. Filan was also a former member of the CBOE and in 2015 again began serving as a consultant to CPS (Hinz 2015).

[FIGURE 4 ABOUT HERE]

Perhaps the most influential member of the CPS team in terms of its financing practices was David Vitale, the chief administrative officer from 2003 to 2006 and former special advisor to the CEO. Vitale was a former CEO of the Chicago Board of Trade and Bank One and a director at Ariel Investments. He was in charge of overseeing CPS' borrowing strategy during his tenure. Given his previous experience leading large private sector financial institutions, Vitale was comfortable utilizing complex financial instruments for CPS especially in light of its need for additional resources. When asked about CPS' use of ARS, he told the *Chicago Tribune* in 2014: "I have 30 years in the business. I am not a neophyte" (Grotto and Gillers 2014). However, given the dominance of finance in the training and professional socialization of many of the key decision-makers and advisors of CPS at the time, it is probably not accurate to attribute to Vitale all the credit (or blame) for CPS' use of ARS. Rather, Vitale's financial policies likely reflected the consensus view among the experienced and influential members of the management team.

The management team steered the district toward ARS – and not without reason. Initially, proceeds from the sale of ARS allowed CPS to pay down past debts, fund current operations, and invest in capital projects in a more cost-efficient manner. CPS was taking advantage of the different options it

had in capital markets, with public managers trading off a potentially larger reward (in terms of interest cost saving) for assuming larger risks.

Knowledge about the risks seemed to have been understood by high-ranking CPS finance officials based on newspaper quotes, and the interest rate, credit, and basis risks were stated clearly in policy documents (e.g., debt policy, swap policy) and offering statements connected to the ARS sales (Grotto and Gillers 2014). As early as February of 2005 PricewaterhouseCoopers and other major accounting firms urged that, "corporations should, in general, classify ARSs as 'investments' rather than 'cash equivalents' in financial reports" (Austin 2012). This change in financial reporting signaled that ARS were not considered liquid investments (i.e., assets with maturities of three months or less). Importantly, the official statement for CPS' last ARS issuance (the 2007A Series) mentions the Securities and Exchange Commission's settlement with banks regarding their involvement in preventing auction failures. The official statement also mentions the risks the CBOE was exposed to through its interest rate swaps. While district administrators and the CBOE may not have fully understood this information, such evidence suggests that CPS was informed about some of the risks of issuing ARS and swaps as well as the role banks were playing in the market.

It is important to note that in the municipal securities market, the standard by which the SEC evaluates the conduct between banks and governments is not just fraud but also "unfair dealing."[36] While, technically, the lower threshold of "unfair dealing" should reduce the likelihood of ignorance being caused by nefarious actions of banks, this assumes both that the banks abided by that standard and that the standard was enforced during the time before the financial crisis. An internal investigation by the City of Chicago found that the banks provided adequate disclosure on swap risks in pitchbooks to the City (Drinker, Biddle, and Reath 2015; Reed 2016).[37] Moreover, while some other local governments sued the banks that ran their auctions (claiming that the banks were artificially supporting the ARS market by purchasing securities when there was not enough investor demand to clear the auction), neither CPS nor the City of Chicago has to date pursued litigation against the banks (Gillers 2015).[38] This lack of action could indicate that CPS believes the banks were not intentionally keeping them in the dark and could

refute the bamboozlement theory. It could also demonstrate that CPS and the City of Chicago does not want to antagonize the capital markets on which they so heavily depend.

On the other hand, "innocent" informational asymmetries were present given that this market was performing well in the years leading up to the CPS ARS issuances. Initial success in managing interest rate risk, reinforced by the strong initial performance of CPS' first ARS issuance during the pre-financial crisis period, likely caused CPS to discount the other risks of ARS. The fact that the City of Chicago, State of Illinois, and Illinois Tollway were also successfully using floating rate securities paired with interest rate swaps normalized this risky behavior (Bhatti and Sloan 2016). The City of Chicago, which was the *de facto* steward of CPS, was engaged in at least 25 swap deals during this period (Drinker, Biddle, and Reath 2015).[39] Moreover, its private sector partners used swaps with impunity. For example, as CPS was preparing to issue its first ARS, the City was in the process of leasing the Skyway to an investment consortium that used swaps to lower its own interest rates (Ashton, Doussard, and Weber 2012).

In terms of information asymmetries caused by some incompetent advisory services and/or self-dealing bank behavior, the answer is less clear. CPS was being aggressively pitched ARS for years before its first issuance. As early as 2000, a vice president of municipal finance at Goldman Sachs asked to meet with CPS officials about the possibility of the district issuing ARS (Grotto and Gillers 2014). While it may be hard to imagine the savvy experts sitting on the Board of Education being intentionally hoodwinked by broker-dealers, it is possible that they were not provided adequate information by their advisors. Prior to the Dodd-Frank Act, municipal advisors were not regulated despite concerns about their competency. A *Chicago Tribune* investigation interviewed and cited market experts who reviewed and criticized the analyses provided by CPS' municipal advisors claiming that the analyses did not detail the full scope of ARS risks (Gillers and Grotto 2014). Moreover, communication channels may also have been blocked in the other direction: it is not clear that their bank partners or CPS' financial advisors had sufficiently deep, local knowledge about the precarious nature of the district's fiscal situation. We do not know the extent to which CPS disclosed its skipped pension payments, its ongoing antagonism with the

State of Illinois, and its funds lost to the City's TIF program.

In addition, while the school district's advisors informed them of the fact that investment banks were not just selling but also purchasing ARS securities to keep the market afloat (the information included in the 2007A series documents), CPS may not have understood the extent to which the banks were artificially supporting this market prior to the financial crisis (Han and Li 2010). This ignorance could be the fault of CPS: wishful thinking and a focus on past success may have kept them from incorporating the possibility of real danger, particularly in the case of the late 2007 issuance. Or the ignorance could be due to intentionally duplicitous behavior on the part of banks, which possessed more information than they shared with issuers about the ways they were propping up the ARS market through their own purchases of these securities. Unfortunately we lack evidence to determine whether optimism or calculated misconduct was at fault. This combined with the decades of financial expertise at CPS leads us to believe that information asymmetries contributed less to risk-taking by CPS than moral hazards, i.e., the fact that CPS was being run by a mayor and private sector professionals that could shift the risks of the district's debt management strategy to other (future) stakeholders.

Conclusion

Novel yet risky financial instruments like auction rate securities and interest rate swaps were initially viewed by local governments as being able to reconcile the contradiction of ballooning expenditure needs with increasingly scarce revenues. The Government Finance Officers Association acknowledged the potential benefits of floating rate debt (like ARS) and interest rate swaps even while offering precautions on their use (1997; 2010). But not all local governments heeded the call. Take up of complex debt instruments by local governments differed depending on the proclivities of the individual public financial managers: some were receptive, many were not. In this article, we built out a theoretical framework based on principal-agent theory that allowed us to identify several factors influencing the receptivity of the Chicago Public Schools.

Specifically, we saw that the school district's reliance on these risky instruments was due not just to slick brokers, lower interest rates, or bad timing. Instead there were a variety of organizational reasons for its choices. While the municipal securities market filled the funding vacuum left in the wake of devolution and revenue-raising constraints like tax caps, CPS possessed both the legal authority and the professional familiarity with ARS to do issue this form of debt. While fiscal stress and discrepancies in information between public and private sectors are more generalized phenomena, few local governments other than CPS had the combination of outsized development ambitions, financial flexibility, political control, and savvy professional networks to undertake four major ARS issuances. CPS board members were former private sector financial professionals who understood the interest rate savings and also knew about the risks involved, with the possible exception of the extent of the investment banks' artificial support of this market before the crisis. Such familiarity was augmented by municipal advisors who had executed these types of financings for other governments, including the City of Chicago. The revolving door between financial advisory firms, City Hall, and the Board of Education normalized the use of financial instruments that, in hindsight, were anything but. Such risk absorption was encouraged by city leadership whose trading of short-term benefits for potential long-term costs fit the mayor's financial policymaking pattern of prioritizing current taxpayers over future ones.

Even though ARS are not likely to be used again to the same extent in the future, this case is illustrative of a more generalized phenomenon of governments drifting toward more complex and risky financial instruments. Local governments have moved from relying on general obligation bonds with fixed rates to variable rate instruments to less-seasoned securities paired with derivatives. It is not surprising that several local governments – from Detroit to Jefferson County, Alabama to transit authorities in San Francisco and New York City -- have experienced collateral calls and terminations of their interest rate swaps, which has triggered hundreds of millions of dollars in penalties and costs. Understanding the motives of administrators and the political and fiscal contexts for adoption may help anticipate which governments will embrace the next financial ingenuity promising to cater equally to investors and issuers, altering interest rates, terms, and time horizons to satisfy the needs of each.

We take a principal-agent approach to the question of ARS adoption, which views local governments as taking more risks if they hire more employees and advisors from the private financial sector, if financial managers are ignorant or opportunistic about the interests of voters, and if they lack knowledge about the extent of the risks involved. Other approaches alternative research designs to the case study method also could test explanations for ARS adoption. Specifically, if data on ARS use nationally were available, a large "n" binomial logistic analysis could measure the degree to which variations in fiscal stress, expenditure patterns, or prior debt volumes caused ARS adoption. In the absence of this information, a richly descriptive but theoretically informed analysis of a case of extreme ARS use fills in some of the gaps in the urban policy and public administration literatures, which has yet to completely grasp the degree to which complex and risky private financing techniques are influencing public policy.

Notes

[1] General obligation bonds are backed by the taxing power (i.e., "the full faith and credit") of the government whereas revenue bonds are backed by those revenues associated with a particular project. Because of their broader repayment pledge, investors usually view general obligations bonds as safer investments than revenue bonds.
[2] Money market funds cannot hold auction rate securities because ARS lack the necessary liquidity to qualify as an eligible security under the Security and Exchange Commission's Rule 2a-7, 17 C.F.R. 270.2a-7.
[3] The par amount of a security is its face value, which is the amount the investor is lending the issuer of the security.
[4] Liquidity facilities include letters of credit and standby bond purchase agreements. These arrangements serve to provide liquidity on variable rate demand obligations in the event that the VRDO cannot be resold to another investor on specified dates.
[5] The maximum interest rate on ARS is established in the offering documents of the ARS and is set either as fixed interest rate or a floating interest rate tied to an index.
[6] The general benefit of interest rate swaps is based on the principles of comparative advantage and arbitraging the differences in borrowing costs in different financial markets. A full description of this concept is beyond the scope of this paper but readers should consult Bicksler and Chen (1986) for a robust discussion of the topic.
[7] Singla (2015), one of the only large "n" studies examining the adoption of financial innovations by municipal governments, did not find any statistically significant relationship between fiscal stress and the use of interest rate swaps.
[8] Rule G-37 and other regulations were put in place to prevent "pay to play" schemes whereby underwriters use political contributions and other rewards to ensure their participation on offerings (Simonsen and Hill 1998).
[9] Hylton (2012) describes the core moral hazard problem for governments in a parallel situation, the case of public sector pensions, as the "apparently irresistible tendency of state legislators and executive branch officials to spend taxpayer dollars to enhance benefits and decrease contributions during flush economic times in exchange for voter support at the polls…The argument here is that politicians have essentially spent and committed future taxpayer dollars with far less care than if they would have spent their own, private funds. This behavior is explained by a desire to gain the support of public sector unions and their members and encouraged by a generally ignorant and unsuspecting public" (pp. 415-416).
[10] Challenging this perspective, Singla (2015) found that cities were more likely to use financial derivatives if the city was larger (with size viewed as a proxy for financial sophistication) and the city had previous experience using derivatives.

[11] These lawsuits raise create more potential for moral hazard, particularly if local government issuers use them to deflect from the fact that they made bad/risky decisions despite good advice from their advisors at the time of issuance.
[12] This figure represents the total principal amounts listed in the Official Statements for the four auction rate securities: $183.775 million for Series 2003B, $257.925 million for Series 2003D, $298.075 million for Series 2004B, and $262.785 million for Series 2007A.
[13] The source of all aggregate data on ARS is Thomson Reuters' SDC Platinum database.
[14] Table 1 also reveals that only a handful of states – Florida, Illinois, New Jersey, and Pennsylvania -- account for the bulk of this kind of borrowing for school facilities, which is likely due to the uneven regulatory landscape. Not all states have authorized, either explicitly or implicitly, the use of these kind of debt instruments.
[15] Between 2000 and 2007, CPS issued 22 bonds totaling $3.089 billion. This figure sums the principal amounts listed in the Official Statements for each issuance for 2000-2007 (available on CPS'S website: http://cps.edu/About_CPS/Financial_information/Pages/Officialstatements.aspx) and the principal amounts for issuances in 2000, 2001, and the 2003C issuance are from CPS' 2007 Comprehensive Annual Financial Report.
[16] As a point of comparison, as of 2015 there was $215 billion in outstanding municipal VRDOs compared to $16 billion in outstanding ARS (Doherty 2015; Weitzman, 2015).
[17] As of August 2016, CPS reported having 516 district-run schools and 125 charters schools.
[18] Debt issued on behalf of CPS is technically sold by the CBOE. We use CBOE and CPS interchangeably in this article.
[19] Illinois Public Act 89-15. For a review of the Chicago School Reform Amendatory Act, see *Catalyst* 1995.
[20] A five-person, Chicago School Reform Board of Trustees was initially created, but Illinois Public Act 89-15 also specified that the Chicago Board of Education replace the School Reform Board of Trustees by July 1, 1999.
[21] The CEO is in charge of selecting a Chief Financial Officer, Chief Purchasing Officer, and Chief Educational Officer. The Chicago School Reform Board of Trustees had to approve the CEO's administrative team selections.
[22] Vallas served as CEO from 1995-2001 and was succeeded by Arne Duncan. Chico was president of the school board from 1995-2001.
[23] See subsection B of 105 ILCS 5/1D-1 in Illinois Public Act 89-15.
[24] See 105 ILCS 5/34-53 in Illinois Public Act 89-15.
[25] See changes to 40 ILCS 5/17-129 in Illinois Public Act 90-548.
[26] The Tentative Budget 1996-7 states that, "Due to the ratings boost, CPS was able to finance its $806 million capital improvement plan."
[27] Letter from Vallas accompanying the Final 1995-1996 Budget. Interview with budget activist 2014.
[28] Figure for 1996 from the FY1996 budget book, and figures for 1997-2001 from p. PH-1 of the 2001-2005 CIP
[29] The City pledged $666 million using bonds backed by Tax Increment Financing, and CPS was responsible for the remaining $434 million.
[30] The series was $183,775,000 Board of Education of the City of Chicago, Unlimited Tax General Obligation Bonds, Series 2003B (Auction Rate Securities).
[31] Illinois Public Act 93-9
[32] See the House transcript from May 31, 2003 and Senate transcript from March 26, 2003.
[33] Sum of the par amounts for the 29 issuances. Par amounts for issuances in 1996-2001 and the 2003 C issuance (14 total) were obtained from CPS's 2007 Comprehensive Annual Financial Report; par amounts for all other issuances were obtained from the official statements available on CPS's website.
[34] Calculated using the outstanding debt data in CPS's Official Statement for its 2009A Series issuance (p. A-34). The calculation excluded issuances 2008 ABCD and included the outstanding amounts for the ARSs the 2008 issuances refunded.
[35] The 2003B and 2004B Series were refunded and refinanced by the 2008C Series, which is fixed-rate debt. The 2003D and 2007A Series were refinanced and refunded by the 2008A and 2008B Series. The 2008A and 2008B Series are private placement variable bonds (meaning they are a direct lending arrangement) with Dexia Credit Local (see p. 61 of the Official Statement for the 2015CE Series). Since the 2008A and 2008B Series are private placements, the terms of those contracts are not publicly available.
[36] MSRB Rule G-17 reads: "The conduct of its municipal securities or municipal advisory activities, each broker, dealer, municipal securities dealer, and municipal advisor shall deal fairly with all persons and shall not engage in any deceptive, dishonest, or unfair practice." (2011, p. 1).
[37] This internal investigation only covered pitchbooks provided to the City of Chicago not CPS. However, it is likely that the investment banks used similar language in all their swap pitchbooks. It should also be noted this report only covered risks related to swaps not ARS.
[38] However, Kurt Summers, the City Treasurer, is advocating that the city enter a class action suit against the banks that executed interest rate swaps with state and local governments (Reed 2016). The Chicago Teacher's Pension Fund filed a lawsuit against major banks in 2015 arguing that they controlled the swap market. Mayor Rahm Emanuel has resisted such entreaties.
[39] Interestingly, although the City issued many series of floating rate securities in conjunction with interest rate swaps, only one bond issue used ARS as the floating rate security and the rest were VRDOs (Author interview with staff in the City of Chicago's finance department).

References

Arrow, Kenneth. "The Economics of Agency." In *Principals and Agents: The Structure of Business,* edited John Pratt and Richard J. Zeckhauser, 37-51. Boston: Harvard Business School, 1985.

Ashton, Philip, Marc Doussard, and Rachel Weber. 2012. "The financial engineering of infrastructure privatization: What are public assets worth to private investors?" *Journal of the American Planning Association* 78(3): 300-312.

Austin, D. Andrew. 2012. *Auction-Rate Securities*. Washington: Congressional Research Service, 2012. https://fas.org/sgp/crs/misc/RL34672.pdf

Baily, Martin Neil, Robert E. Litan, and Matthew S. Johnson. 2008. *The origins of the financial crisis.* Washington, DC: Brookings Institution.

Banas, Casey. 1985. "School finance group warns of next crisis." *Chicago Tribune,* January 22. Accessed August 1, 2016. http://articles.chicagotribune.com/1985-01-22/news/8501050072_1_school-year-board-george-munoz

Bellante, Don, and Albert N. Link. 1981. "Are public sector workers more risk averse than private sector workers?" *Industrial & Labor Relations Review* 34(3): 408-412.

Bhatti, Saqib, and Carrie Sloan. 2016. *Turned Around: How the Swaps that Were Supposed to Save Illinois Millions Became Toxic*. ReFund America. January.

Bicksler, James, and Andrew Chen. 1986. "An Economic Analysis of Interest Rate Swaps." *The Journal of Finance,* 41 (3): 645-655.

Bifulco, Robert, Beverly Bunch, William Duncombe, Mark Robbins, and William Simonsen. 2012. "Debt and deception: how states avoid making hard fiscal decisions." *Public Administration Review*, *72*(5): 659-667.

Bozeman, Barry, and Gordon Kingsley. 1998. "Risk culture in public and private organizations." *Public Administration Review* 58(2): 109-118.

Buchanan, James. 1967. *Public finance in democratic process: Fiscal institutions and individual choice*. Chapel Hill: UNC Press.

California Debt and Investment Advisory Commission. 2004. "Auction Rate Securities." August. Accessed December 16, 2016. http://www.treasurer.ca.gov/cdiac/issuebriefs/aug04.pdf

Catalyst. 1995. "The New Regime." *Catalyst,* September VI(1). Accessed January 18, 2016. http://catalystchicago.wpengine.netdna-cdn.com/files/archive/files/assets/19950901/6catsep1995.pdf

Center for Tax and Budget Accountability. 2013. "Analysis of the Proposed FY2014 Chicago Public Schools Budget." August.

Cherone, Heather. 2015. "CPS Announces Special Education Cuts, But Questions Remain." *DNAinfo Chicago,* September 28. Accessed December 16, 2016. https://www.dnainfo.com/chicago/20150928/jefferson-park/cps-announces-special-education-cuts-but-wont-answer-any-questions

Chicago Sun-Times. 2014 "How the Banks Bamboozled Chicago." *Chicago Sun-Times,* November 17. Accessed December 16, 2016. http://chicago.suntimes.com/politics/how-the-banks-bamboozled-chicago/

Chicago Tribune. 1979. "The Board of Education's Crisis." *Chicago Tribune,* November 16.

Chicago Tribune. 2011. "The Soldier Field Fiasco: The next time city hall pols tell you, 'don't worry, no risk', remember this:" *Chicago* Tribune, December 9. Accessed December 16, 2016. http://articles.chicagotribune.com/2011-12-09/opinion/ct-edit-soldierfield-20111209_1_hotel-tax-chicago-bears-taxpayers

Chun, Young Han, and Hal G. Rainey. 2005. "Goal Ambiguity in US Federal Agencies." *Journal of Public Administration Research and Theory* 15(1): 1-30.

Chung, Christin Sgarlata. 2013. "Municipal Securities: The Crisis of State and Local Government Indebtedness, Systemic Costs of Low Default Rates, and Opportunities for Reform." *Cardozo Law Review* 34: 1455-1538.

Civic Committee of the Commercial Club of Chicago. 2010. "Chicago's Underfunded Pension Plans." April. http://www.civiccommittee.org/Media/Default/pdf/Chicagos_Underfunded_Pension_Plans_FINAL.pdf

Cho, David, and Tomoeh Murakami Tse. 2008. "Credit Crisis Adds Millions to D.C.'s Interest Payments." *Washington Post,* April 7. Accessed June 12, 2017.

Clarke, Susan E., and Gary L. Gaile. 1998. *The Work of Cities.* Minneapolis: University of Minnesota Press.

Dahl, Robert, and Charles E. Lindblom. 1953. *Politics, Economics, and Welfare.* New York: Harper and Row.

Damon, Anjeanette. 2016. “Reno to settle Goldman Sachs lawsuit for $750,000.” *USA Today,* November 30. Accessed June 19, 2017.

Davidson, Mark, and William Kutz. "Grassroots austerity: municipal bankruptcy from below in Vallejo, California." *Environment and Planning A* 47.7 (2015): 1440-1459.

Doherty, Jacqueline. 2008. “The Sad Story of Auction Rate Securities.” *Barron’s,* May 26.

Doherty, Jacqueline. 2015. “Auction Rate Securities: Still Frozen in Time.” *Barron’s*, March 28. Accessed December 16, 2016. http://www.barrons.com/articles/auction-rate-securities-still-frozen-in-time-1427505026

Drinker, Biddle and Reath. 2015. “An Analysis of Potential Legal Challenges to the City of Chicago’s Interest Rate Swap Transactions.” Accessed on December 14, 2016. https://www.cityofchicago.org/content/dam/city/depts/fin/supp_info/Bonds/Swaps/Report_by_Outside_Counsel_on_City_Swaps.pdf

Esser, Jeffrey L. 1995. “SLY Investing Encouraged in the Public Sector.” *Government Finance Review* 11(1).

Forte, Lorraine. 1995. “New law lets board shift money to balance budget.” *Catalyst.* September. Accessed January 18, 2016. http://catalystchicago.wpengine.netdna-cdn.com/files/archive/files/assets/19950901/6catsep1995.pdf

Geiger, Kim, Juan Perez Jr., and Rick Pearson. 2016. "Rauner on CPS takeover attempt: 'The mayor has failed'." *Chicago Tribune*, January 20. Accessed January 20, 2016. http://www.chicagotribune.com/news/local/breaking/ct-illinois-republican-cps-bankruptcy-met-20160120-story.html

General Accounting Office. 1995. “School Facilities: Condition of America’s Schools.” February. http://www.gao.gov/assets/230/220864.pdf

Gillers, Heather. 2014. “Cash-crunched Chicago schools missed chance to file claim against banks.” *Chicago Tribune,* July 14. Accessed December 16, 2016. http://www.chicagotribune.com/ct-cps-auction-rate-claim-met-20150714-story.html

---. 2015. “Experts: Planned municipal advisers test may not protect CPS, others.” *Chicago Tribune,* January 2. Accessed December 16, 2016. http://www.chicagotribune.com/news/watchdog/cpsbonds/ct-chicago-public-schools-bonds-adviser-rules-20141231-story.html

Gillers, Heather, and Jason Grotto. 2014. “How the Tribune analyzed CPS' bond deals.” *Chicago Tribune,* November 7. Accessed August 24, 2015. http://www.chicagotribune.com/news/watchdog/cpsbonds/ct-chicago-public-schools-bonds-methodology-met-20141107-story.html

Government Finance Officers Association.1997. *Using Variable Rate Instruments.*

Government Finance Officers Association. 2010. *Use of Debt-Related Derivative Products and the Development of a Derivatives Policy*

Grotto, Jason, and Heather Gillers. 2014. “Risky bonds prove costly for Chicago Public Schools.” *Chicago Tribune*, November 7. Accessed December 29, 2015. http://www.chicagotribune.com/news/watchdog/cpsbonds/ct-chicago-public-schools-bond-deals-met-20141107-story.html

Han, Song, and Dan Li. 2010. “The Fragility of Discretionary Liquidity Provision: Lessons from the Collapse of the Auction Rate Securities Market.” Federal Reserve Board. https://www.federalreserve.gov/pubs/feds/2010/201050/201050pap.pdf

Hattori, April. 1993. “S&P Demotes Chicago Schools, Overseer Because of Continuing Financial Crisis.” *The Bond Buyer,* April 22.

Harvey, David. 1989. "From managerialism to entrepreneurialism: the transformation in urban governance in late capitalism." Geografiska Annaler. *Series B*, *Human Geography* 71(1): 3-17.

Hildreth, W Bartley, and C. Kurt Zorn. 2005. “The Evolution of the State and Local Government Municipal Debt Market Over the Past Quarter Century.” *Public Budgeting & Finance* 25(4s): 127-153.

Hildreth, W Bartley. 1993. “State and Local Governments as Borrowers: Strategic Choices and the Capital Market.” *Public Administration Review* 53(1): 41-49.

Hinz, Greg. 2015. “John Filan pops up as a consultant at CPS.” *Crain’s Chicago Business,* September 3. Accessed December 16, 2016. http://www.chicagobusiness.com/article/20150903/BLOGS02/150909908/john-filan-pops-up-as-consultant-at-cps

Howell-Moroney, Michael E., and Jeremy L. Hall. 2011. “Waste in the Sewer: The Collapse of Accountability and Transparency in Public Finance in Jefferson County, Alabama.” *Public Administration Review*, 71: 232–242

Hylton, Maria O.Brien. 2012. “Combating Moral Hazard: The Case for Rationalizing Public Employee Benefits.” Indiana Law Review 45.

Johnson, Craig L., Martin J. Luby, and Tima T. Moldogaziev. 2014. *State and Local Financial Instruments: Policy Changes and Management Practices*. Northampton: Edward Elgar Publishing Limited.

Johnson, Craig L., and Kenneth A. Kriz. 2005. "Fiscal institutions, credit ratings, and borrowing costs." Public Budgeting & Finance 25(1): 84-103.

Kearns, Kevin. 1995. "Accountability and entrepreneurial public management: The case of the Orange County investment fund." *Public Budgeting & Finance* 15(3): 3-21.

Lipman, Pauline. 2011. *The New Political Economy of Urban Education: Neoliberalism, Race and the Right to the City*. New York: Routledge.

Luby, Martin, and W. Bartley Hildreth, 2014. “A Descriptive Analysis of the Municipal Advisors Market” *Municipal Finance Journal* 34 (4): 69-98.

Lutton, Linda, and Becky Vevea. 2013. "Chicago proposes closing 53 elementary schools, firing staff at another 6." *WBEZ,* March 21.

McCue, Clifford. 2000. “The Risk-Return Paradox in Local Government Investing.” *Public Budgeting & Finance* 20(3): 80-101.

Miller, Gerald. 1990. Strategic finance, public authorities, and network politics. *Policy Studies Journal*, 18(4): 961-973.

Miller, Gerald, and Jonathan Justice. 2011. “Debt Management Networks and the Proverbs of Financial Management.” *Municipal Finance Journal* 31(4): 19-40.

Moldogaziev, Tima, and Martin J. Luby. 2016. “Too Close for Comfort: Does the Intensity of Municipal Advisor and Underwriter Relationship Impact Borrowing Costs?” *Public Budgeting & Finance* 36(3): 69-93.

Muller, David. 2011. “Louisana state officials claim Merrill Lynch steered them into shoddy securities deal.” *New Orleans City Business*, December 15. Accessed June 19, 2017.

Municipal Securities Rulemaking Board. “Rule G-17: Conduct of Municipal Securities and Municipal Advisory Activities.” Accessed on June 29, 2016. http://www.msrb.org/Rules-and-Interpretations/MSRB-Rules/General/Rule-G-17.aspx

Municipal Securities Rulemaking Board. 2011. “MSRB Notice 2011-65: Reminder of Upcoming Effective Date of Revised MSRB Rule G-23 Concerning the Activities of Financial Advisors,” November 18. Accessed on August 11, 2016. http://www.msrb.org/Rules-and-Interpretations/Regulatory-Notices/2011/2011-65.aspx?n=1

New York Times. 1988. “Finance/New Issues; A Dutch Auction Security Debut.” *New York Times,* March 17. Accessed December 25, 2015. http://www.nytimes.com/1988/03/17/business/finance-new-issues-a-dutch-auction-security-debut.html

Pagano, Michael, and Christopher Hoene. “States and the Fiscal Policy Space of Cities.” In *The Property Tax and Local Autonomy*, edited by Michael Bell, David Brunori, and Joan Youngman, 243-284. Cambridge: Lincoln Institute of Land Policy, 2010.

Petersen, John. 1982. ‘‘Creative Capital Financing in the State and Local Sector.’’ *Public Budgeting & Finance* 2(4): 73–89.

Reed, Robert. 2016. “Mayor, treasurer Summers at odds over anti-trust lawsuit against big banks.” *Chicago Tribune,* November 3. Accessed November 4, 2016. http://www.chicagotribune.com/business/columnists/ct-kurt-summers-versus-banks-robert-reed-1103-biz-20161102-column.html

Rossi, Rosalind. 2007 "Westinghouse High to cost $103 million.” *Chicago Sun-Times*, March 29.

Sagalyn, Lynne B. 1990. “Explaining the Improbable Local Redevelopment in the Wake of Federal Cutbacks.” *Journal of the American Planning Association* 56 (4): 429–41.

Sbragia, Alberta M. 1996. *Debt Wish: Entrepreneurial cities, US federalism, and economic development.* Pittsburgh: University of Pittsburgh Press

Schoen, John. 2013. “Damage to city budgets: Self-inflicted with help from Wall Street” NBC News, November 18.

Simonsen, Bill, and Larry Hill. 1998. "Municipal Bond Issuance: Is There Evidence of a Principal-Agent Problem?" *Public Budgeting & Finance* 18(4): 71-100.

Singla, Akheil. 2015. "Financial Crises and Financial Derivatives: Government Use of Interest Rate Swaps from 2003-2012." Unpublished Dissertation. Ohio State University, John Glenn School of Public Affairs

Sirri, Erik. 2008. "Testimony Concerning Municipal Bond Turmoil: Impact on Cities, Town and States." Testimony before the Committee on Financial Services, US House of Representatives. March 12.

Solochek, Jeffrey S. 2013. "Pasco Schools to Sue Citigroup." *Tampa Bay Times*, June 19. Accessed June 19, 2017.

Snyder, Thomas, and Martin J. Luby. 2012. "The Sale and Lease of Public Assets: Fiscal Savior or Sacrilege?" *Public Works Management and Policy* 18(3): 204-228.

Ward, Andrew. 1997. "S&P Upgrades Chicago Schools to A-Minus." *The Bond Buyer*, April 8.

Washburn, Gary, and Janita Poe. 1997. "Daley Puts Stock in Old Bonds For Schools: $800 Million Fixup Plan Won't Raise Taxes, Mayor Says." *Chicago Tribune*, September 9. Accessed December 11, 2015. http://articles.chicagotribune.com/1997-09-09/news/9709090160_1_new-schools-chicago-public-schools-property-tax

Weber, Rachel. 2015. *From Boom to Bubble: How Finance Built the New Chicago.* Chicago: University of Chicago Press.

Weber, Rachel, and Sara O'Neill-Kohl. 2013. "The Historical Roots of Tax Increment Financing, or How Real Estate Consultants Kept Urban Renewal Alive." *Economic Development Quarterly* 27(3): 193-207.

Weitzman, Aaron. 2015. "New Player Seeks to Revive VRDO Market." *The Bond Buyer*, July 13.

Worsham, Jeff, Marc Allen Eisner and Evan J. Ringquist. 1997. "Assessing the Assumptions: A Critical Analysis of Agency Theory." *Administration and Society* 28(4): 419-440

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Rachel Weber is a professor in the Department of Urban Planning and Policy at the University of Illinois at Chicago. Her research focuses on the relationship between capital markets and the built environment. Her latest book, *From Boom to Bubble: How Finance Built the New Chicago* (University of Chicago Press, 2015), won the 2017 Best Book in Urban Affairs Award from the Urban Affairs Association.

I. TABLES AND CHARTS

Figure 1

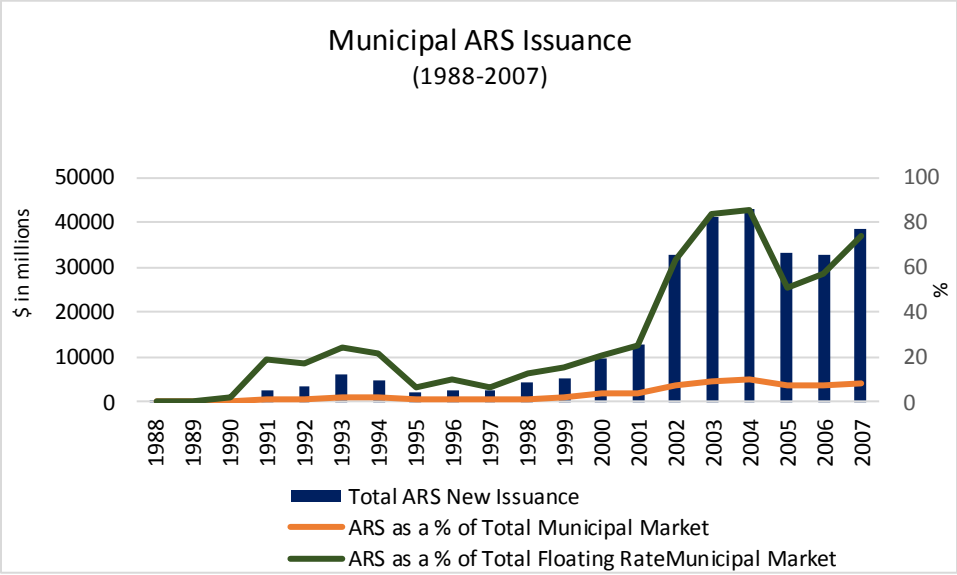
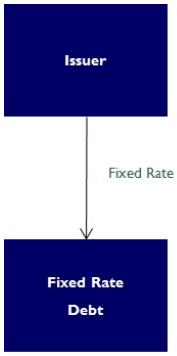


Figure 2

Traditional Fixed Rate Bond Issuance



Synthetic Fixed Rate Bond Issuance

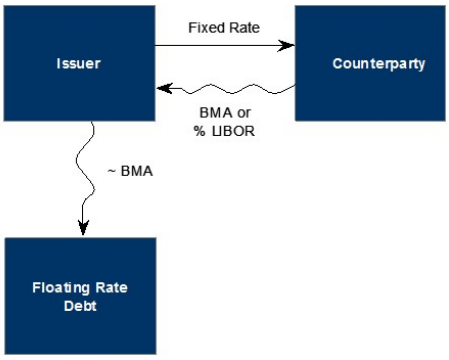
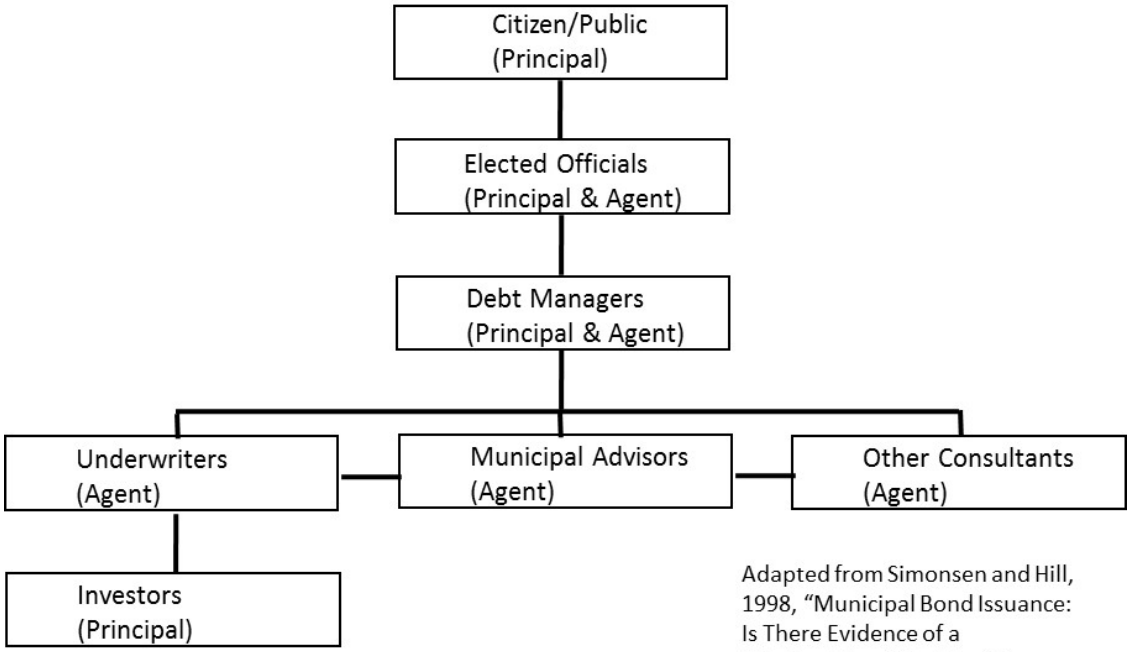


Figure 3



Adapted from Simonsen and Hill, 1998, "Municipal Bond Issuance: Is There Evidence of a Principal-Agent Problem?"

Table 1

Municipal ARS Use by US School Districts and School Facility Financing Authorities
(Number of Issues and Issuers)
1988-2005

State	Number of Issuers	Number of Issuances	Total Amount of ARS Issued for School Facility Construction (in Millions)	Number of Issuers (School Districts Only)	Number of Issuances (School Districts Only)	Total Amount of ARS for School Facility Construction Issued by School Districts ($ Millions)
AL	1	1	$200	0	0	$0
AZ	1	1	$247	1	1	$247
CA	4	6	$301	1	1	$84
CO	1	1	$21	0	0	$0
CT	1	1	$42	0	0	$0
FL	6	11	$842	6	11	$842
IL	2	9	$1,011	1	8	$1,003
IN	1	1	$17	0	0	$0
MI	1	1	$500	0	0	$0
MN	1	1	$35	1	1	$35
NH	1	1	$28	0	0	$0
NJ	1	5	$2,300	0	0	$0
NY	3	3	$87	0	0	$0
PA	4	7	$800	2	3	$716
SC	2	2	$223	1	1	$50
WI	1	1	$131	0	0	$0
Total	**31**	**52**	**$6,783**	**13**	**26**	**$2,977**

Source: Thomson Reuters

Table 2

Chicago Public Schools Capital Plans and Bond Ratings 1995-2001[39]							
	1995	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
Capital Improvement Plans (in billions)[39]	$0.60	$0.81	$1.40	$1.40	$2.00	$2.50	$3.00
Standard & Poor's Rating Services	BBB-	BBB	A-	A-	A-	A+	A+
Moody's Investor Services	Ba	Baa	Baa1	Baa1	A3	A3	A2
Fitch Ratings	No Rating	BBB	BBB+	A-	A-	A	A

Table 3

Chicago Public Schools Auction Rate Security Issuances		
Bond Series Name	**Issuance Date**	**Par Amount** (in millions)
2003B	2/13/2003	$183.775
2003D	12/12/2003	$257.925
2004B	4/6/2004	$298.075
2007A	9/5/2007	$262.785

Figure 4

Chicago Board of Education Hierarchical Chart (2003-2007)