PENSION OBLIGATION BONDS

Analysis Prepared at the Request of

The Honorable Alderman Gilbert Villegas

February 7, 2020

Summary

Governments issue Pension Obligation Bonds (POBs) in order to deposit the proceeds of debt in their pension funds, which then invest the proceeds. They do so because, in general, pension funds' investment returns are higher than municipal bond interest. Many governments have used POBs successfully, but POBs have also contributed to major municipal bankruptcies.

POBs carry two major risks: that investment returns will fall short of bond interest, and that the bonds will encourage irresponsible behavior by the issuing government. The State of Illinois' 2003 $10 billion POB issue appears to illustrate the later risk. COFA believes that the risk of abuse can largely be eliminated through appropriate legal frameworks. POBs should always be approached with great caution, because investment risk can never be eliminated.

However, at the time of this report, municipal bonds are being sold at the lowest interest rates ever recorded, and are trading half a percentage point lower than the day Mayor Emanuel left office.[1] Therefore, *if* there will ever be an appropriate time for Chicago to issue POBs, this would appear to be it.

Analysis

O2018-9961, introduced by Mayor Emanuel, would have established the Dedicated Tax Securitization Corporation (DTSC), an entity similar to the Sales Tax Securitization Corporation (STSC). The City would sell its share of state income tax collections and personal property replacement taxes to the DTSC, along with all of the residual sales tax revenue the City receives from the STSC, after the STSC deducts the service on its debt. The DTSC would issue up to $7.7 billion in Pension Obligation Bonds (POBs). The bond proceeds would be deposited in the City's four pension funds, which would invest the funds for the benefit of their members. The DTSC would use its tax revenue to pay its debt service, and would remit any residual revenue to the City.

The ordinance would also have authorized the City to sell up to $2.3 billion in Water and Sewer Excise Tax Revenue Bonds. The bond proceeds would have been deposited in the pension funds. The Water and Sewer Excise Tax is already earmarked for the pension funds, so the bond would have given the funds early access to their own income stream.

O2019-9961 failed to pass. It is unlikely that Mayor Lightfoot would propose an identical ordinance, so this report will not analyze all of the specific details of that particular proposal. Instead, it will examine more general arguments for and against using POBs to address Chicago's pension challenges, and whether an entity modeled after the STSC is an appropriate vehicle to do so.

POBs are not new, but $10 billion would be by far the largest POB issue by a US city to date. The only other POB of that size by any US government was a $10 billion issue by the State of Illinois in 2003.

[1] Based on Bloomberg BVAL Muni Benchmark 30Y, measured at 2.47% on May 20, 2019, and 1.91% on February 6, 2020. https://www.bloomberg.com/quote/BVMB30Y:IND

The basic concept underlying the proposed transaction is straightforward. The POBs would be beneficial if the pension funds can earn a higher rate of return on their investments than they pay in interest. COFA agrees with Mayor Emanuel's statement that this would not represent new debt, because it would be directly applied towards the City's unfunded pension liability. That the pension liability is a real debt, due to constitutional provisions and court rulings which make it an absolute obligation, and it is already counted as a long-term liability in the City's Comprehensive Annual Financial Reports (CAFRs).

On the other hand, we do not concur with Mayor Emanuel's characterization of the transaction as a refinancing. We feel it would be more accurate to describe it as a speculative arbitrage play, in which one form of risk is traded for another.

POBs have become very controversial, and have many critics, in large part because they contributed to municipal bankruptcies in Detroit, Stockton, CA and San Bernardino, CA.[2] The Government Finance Officers Association (GFOA) strongly advises its members to refrain from issuing POBs because of their vulnerability to investment risk, and because of the danger that the governments will use debt as a substitute rather than a supplement for pension contributions, leading to greater problems in the long run. They particularly warn governments to resist the temptation to issue POBs with interest-only payments in the early years.[3]

A 2014 Civic Federation study of the 2003 Illinois POBs found that at the time of the study the bonds had financially benefitted the state in the sense that investment returns had outpaced interest, although the results would not be final until the bonds matured in 2033. The study found that the state's pension funding had deteriorated because it had used the bonds as an excuse to avoid making contributions. It also found that the bonds severely worsened the state's exposure to the 2009 financial market collapse.[4] The Civic Federation remains generally skeptical of POBs as a strategy for both Chicago and Illinois.

Similarly, the Center for Retirement Research at Boston College examined all 5,109 POBs issued between passage of the Tax Reform Act of 1986 (which made POBs taxable) through 2013. The found that the bonds had an average net Internal Rate of Return of 0.8% from 1992 through 2007; -2.6% from 1992 through 2009, and 1.5% from 1992 through 2013. This suggests that positive net returns are possible, but that a severe downturn can, at least temporarily, wipe out the positive results of prior years. Their study also underlines how large a $10 billion POB issue is. Their study included Illinois' $10 billion POB, while the other 5,108 issues totaled $95 billion.[5]

That Center for Retirement Research cited loss of flexibility as another risk associated with POBs: "Requirements to amortize unfunded pension liabilities may be relatively flexible obligations that can be smoothed over time, while the POB is an inflexible debt with required annual payments." However, that issue does not apply to Chicago's current circumstance, because Chicago has already lost its flexibility,

---

[2] "Rahm Emanuel Shouldn't Gamble on Chicago's Pensions," by Brian Chappatta, *Bloomberg News*, December 12, 2018
Also, "Pension Obligation Bonds: Risky Gimmick or Smart Investment? POBs have bankrupted cities, including Stockton, yet some are big players," by Eric Schulzke, *Governing*, January, 2013

[3] *Advisory- Pension Obligation Bonds*, Government Finance Officers Association, January, 2015

[4] *Illinois Bond Disclosures Show Risk of Pension Borrowing*, Civic Federation, September 4, 2014

[5] *An Update on Pension Obligation Bonds,* by Alicia H. Munnell, Jean-Pierre Aubrey, and Mark Cafarelli, Center for Retirement Research at Boston College, July, 2014

due to the state-legislated "Pension Ramp," which dictates that the City will make Actuarially Determined Contributions necessary to bring the funds up to 80% of full funding within 35 years, beginning in 2023.

POBs have their supporters. There has been a surge in POB issues by California cities in recent years. But, Chicago's $10 billion POB would dwarf the latest and largest California issue (436 million by Huntington Beach), and even the $2.2 billion total of all California issues since 2015.[6] The Center for Tax and Budget Priorities (CTBP) has strongly advocated POBs for both Chicago and Illinois, not only for the potential investment gains, but as a strategy to smooth out the ramp to sustainable pension contributions.[7]

In COFA's view, if there will ever be a time when Chicago should issue POBs, this is it. As of this writing (February 5, 2020), municipal bond rates have been at historic lows for several months- even lower than when Mayor Emanuel proposed POBs. We believe that the City can largely eliminate the risk that it would abuse POBs to shortchange its contribution obligations or that the bonds would fail due to the City's other financial challenges if the transaction were structured correctly. Specifically:

- That, as O2019-9961 would have done, the City create the Dedicated Tax Securitization Company (DTSC), a bankruptcy-remote entity, modeled after the STSC. Bankruptcy remote means that the entity would not go bankrupt if the City did. The revenue streams would actually be sold to the entity, so that they could not be withheld in the event of City bankruptcy.
- The City sell an adequate revenue stream to the DTSC to insure investor confidence. For example, O2019-9961 would have sold the City's share of state income tax collections and personal property replacement taxes to the DTSC, along with all of the residual sales tax revenue the City receives from the STSC. The combined 2020 forecast for those revenues is over $1 billion. The debt service on a $10 billion, 30-year POB issue would be $120 million per year, even assuming a high 6% interest rate. So, that arrangement would have offered ample debt coverage. As with the STSC, the DTSC would remit residual revenues after debt service to the City.
- That the bonds not contain early interest-only payments or other forms of deferred payment.
- That the City continue to be required to make ADC contributions to bring the funds to 90% funding levels within 35 years. Thus, the City would enjoy lower payments to the extent that the POBs provide actual savings, but the City could not use the POBs give the pension funds just enough of a lifeline to "push the can down the road." Currently, the City's ADC requirements are codified in Illinois law. Laws can be changed, so in order to offer greater certainty to investors, COFA recommends the additional step of having the DTSC make the ADCs on the City's behalf, prior to remitting residual tax revenues. If the DTSC were obligated to do so under the terms of the bond contracts, the obligation could not be undone by future General Assemblies.

Strong safeguards, such as those outlined above, would be essential to ensure investor confidence, and thus access to the lowest available rates. Details would be very important. With a true lockbox, there is no reason the DTSC would not earn the highest bond ratings.

---

[6] "Largest deal yet brewing for California's new pension bond boom," by Keeley Webster, *The Bond Buyer*, January 9, 2020

[7] COFA has only found written position statements on POBs for the State of Illinois from both the Civic Federation and the Center for Tax and Budget Priorities. However, from hearing multiple presentations by their respective Executive Directors (Laurence Msall and Ralph Martire), and seeing a PowerPoint presentation from Mr. Martire, we are confident that they hold the same positions regarding Chicago POBs.

The only possible investor reservation we foresee arises from a 2019 federal court ruling (which the Supreme Court declined to review) holding that Puerto Rico's municipal revenue bond payments are not exempt from reductions due to the Territory's bankruptcy. The City of Chicago has argued that the ruling does not affect the STSC, which they say is truly bankruptcy remote because the City has actually sold revenue streams to it. Most analysts concur, although Fitch Ratings' cut the STSC's rating from AAA to AA-minus, because it is limiting the ratings of such entities to no better than six notches above their parent government's GO credit, so long as the STSC's financial independence has not been tested in Court.[8]

As with anything, the steps outlined above would have certain downsides. If either tax revenues fell or the ADC were to increase due to short-term losses in pension fund investments, investors and the funds would be made whole, but the City would bear the full burden through reduced residual tax revenues. Unfortunately, when those two events do occur, they are likely to come at the same time due to a recession. The City already bears some of that risk, since the pension obligations are absolute, but the POBs would magnify the exposure to short-term investment returns.

We strongly recommend that any POBs carry a thirty-year term in order to lock in the current low rates. While the thirty-year rates are generally higher than the ten or twenty-year (as of this writing, Bloomberg's BVAL Benchmark rates for AAA-rated municipal bonds is 1.23% for ten-year securities and 1.90% for thirty-year[9]). The longer term would maximize total savings and greatly reduce (although not eliminate) risk from short-term investment fluctuations. In addition, frequent refinancings should be avoided because each bond issue carries underwriting and other costs (typically around 1% of the amount borrowed[10]).

While the structure outlined here and thirty-year timelines should ensure investor confidence, and thus access to the lowest available rates, and minimize (but not eliminate) exposure to short-term market fluctuations, it would not guarantee that long-term investment returns would exceed bond interest.

[8] "Fitch tax-supported criteria revision drives cut to Chicago securitization credits," *The Bond Buyer*, January 15, 2020

[9] https://www.bloomberg.com/markets/rates-bonds/government-bonds/us

[10] *Doubly Bound, The Costs of Issuing Municipal Bonds*, by Marc Joffe, The Haas Institute For a Fair and Inclusive Society at the University of California, Berkley, 2015 https://haasinstitute.berkeley.edu/sites/default/files/haasinstituterefundamerica_doublybound_cost_of_issuingbonds_publish.pdf

Financial Outcome Scenarios

COFA has estimated the financial impact of a thirty-year POB under the following low/baseline/high scenarios for both bond interest and investment return.

The results would depend on how the City adjusts its own pension contributions in response to the income from the POB.

- The *"spendthrift"* path: the City reduces its pension contributions in the short run by spending down investment capital. Investment earnings would dwindle as principal shrinks. Ultimately, the City would be burdened by $10 billion in new debt and the pensions would still be underfunded. This report has recommended strong legal controls to prevent this from happening.
- The *"super-thrifty"* path: the City makes Actuarially Defined Contributions (ADCs) as though the POBs had never been issued. The pension funds would earn greater and greater compounding investment income, as the funds start to earn income on the income. In the short run, it would be exactly as though the POBs had never been issued. In the long run, the pension funds would reach 80% funding levels in less than 35 years, and future generations would benefit.
- The *"trust fund"* or middle path: investment income would reduce the unfunded liability. Each year, the City would contribute the ADC, minus investment income. *The fund would end each year with the same amount of investment principal.*

This report has suggested the necessity of strong legal controls to prevent the City from following the spendthrift path. The City would have to endure many years of extraordinary hardship to follow the super-thrifty course. Thus, COFA's estimate is based on the middle path. Public statements by Mayor Emanuel and former CFO Browne suggest that this is what they had in mind.[11]

POB Net Impact		Low Interest 3.82%	Baseline Interest 4.62%	High Interest 5.42%
High Return 7.60%	Total Savings (Cost)	$5.6 billion	$3.9 billion	$2.1 billion
	Savings (Cost) Net Present Value	$1.6 billion	$1.1 billion	$607 million
Baseline Return 6.30%	Total Savings (Cost)	$1.7 billion	$32 million	($1.7 billion)
	Savings (Cost) Net Present Value	$499 million	$9 million	($502 million)
Low Return 4.60%	Total Savings (Cost)	($3.3 billion)	($5.0 billion)	($6.8 billion)
	Savings (Cost) Net Present Value	($951 million)	($1.4 billion)	($2.0 billion)

Under the high return scenario, the City would benefit at any currently realistic interest rate. Under the baseline return, the City would benefit so long as the POBs carry an interest rate at or below 4.63%. Under the low return scenario, the POBs would hurt the City at any realistic interest rate.

[11] Mayor Emanuel: "We would decrease the amount of projected new revenue that will be required over the next 50 years just to fund pensions by almost $7 billion. We would save Chicago taxpayers as much as $200 million in the city's next budget." "Emanuel makes strong pitch for $10B in pension bonds," by Fran Spielman, *Chicago Sun-Times*, December 12, 2018

Investment returns will fluctuate significantly from year-to-year. Inevitably, investment returns will be negative in some years. Under the pure form of the trust fund/middle path, in those years the City would have to contribute the amount it would have contributed in the absence of the POB *plus* enough to cover the investment losses. This risk could be greatly reduced by requiring a hybrid approach: during years in which returns exceed debt service, the City could enjoy a portion of the windfall in the form of lower pension contributions, and would be required to invest the other portion to grow investment capital. During down years, when investment income falls short of debt service, the funds could spend down investment capital, reducing the City's required contribution*, so long as investment capital is never allowed to fall below the original $9.9 billion.* This would greatly reduce the City's exposure to short-term downturns, but might not fully protect it if a downturn occurred in the early years of the POB, before an adequate investment capital cushion had grown.

Note that the City has little control over long-term investment returns, but it can set a maximum interest rate for the bonds. If the City is unable to sell the bonds at its maximum rate, the transaction will not occur.

Assumptions

We assumed a $10 billion POB issue, of which $9.9 billion would provide investment capital for the pension funds, and $100 million would cover underwriting and other costs. The debt service was amortized according to a thirty-year fixed-rate loan schedule, compounded annually, with one coupon (payment) per year. The investment returns were compounded annually according to the assumed average rates of return. The average returns are assumed to be net of fees.

From February 7, 2019 through February 6, 2020 (time of writing), yields on Bloomberg's BVM Municipal Benchmark of AAA-rated 30-year bonds ranged from a high of 3.10% to a low of 1.84% on February 3, 2020. Since, August 6, 2019, rates have never risen above 2.29%. So, for test scenarios, COFA used the following assumptions:

BVM Muni Benchmark 30Y	2.0% to 3.0%
Divide yields by (1-0.37) to adjust for the fact that POBs are not tax-exempt[12]	3.17% to 4.76%
Assume the market would price DTSC bonds 65 basis points above benchmark, because it did so for the STSC's January 2020 issue.[13]	3.82% to 5.41%

So, the high and low interest rate scenarios are 3.82% and 5.41%. The midpoint between the two, 4.62%, was is the baseline scenario.

Selecting investment return scenarios was much more difficult. The funds themselves base their actuarial assumptions on 6.75% to 7.25% returns.[14] Those assumptions are in-line with industry standards. The average assumed return for the 73 largest state-sponsored pension funds was 7.3% in 2017, according to the Pew Research Center. The funds, which collectively manage 95% of all investments for state retirement systems, had lowered their assumed returns from 7.5% in 2016 and 8% in 2009.[15] However, at press time, none of the 73 funds had achieved the ability to foresee the future with perfect clarity.

The Center for Retirement Research at Boston College found that on average, public pension plans achieved a 5.5% annualized return between 2001 and 2016, well below the typical actuarially assumed

[12] 37% is the highest marginal income tax rate in 2020. While only the highest earners pay that rate, high income earners seeking sources of tax-free income provide much of the demand for the BVM's tax-exempt bonds. Much of the current surge in demand for tax-exempt municipal bonds has been driven by the 2017 tax act, which made tax havens scarcer by limiting deductions for state and local taxes.
[13] "Chicago STSC up to 40 times oversubscribed on long end," by Aaron Weitzman and Yvette Shields, *Bond Buyer*, January 16, 2020
[14] *2018 Comprehensive Annual Financial Reports* for the respective pension fund.
[15] *State Pension Funds Reduce Assumed Rates of Return*, Pew Research Center, December 19, 2019 https://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2019/12/state-pension-funds-reduce-assumed-rates-of-return

return. Within that period, the highest-earning quarter of public pension funds achieved a 6.3% return while the lowest-earning quarter of funds earned a 4.6% return.[16]

Another Center for Retirement Research study found that public pension plans relied on riskier asset mixes than private plans, in order to justify high assumed returns. That study also found that the public plans forecast higher returns for any given asset mix than private plans. The study was based on a database of 180 state and local plans, representing 95% of assets and membership in the public plan universe, during two periods: 2001-2008 and 2009-2015.[17]

Chicago's largest pension fund, MEABF, reported a 7.8% annual rate of return from 1989 through 2018 (30 years). However, that was a gross return before deducting investment expense.[18] COFA has not examined the investment expense for that entire thirty-year period. However, investment fees were 0.48% of total investments in 2018, and 0.45% of total investments in 2017.[19] Therefore we estimate that the thirty-year annual rate of return net of fees was lower by approximately half of one percent, or 7.3%

In sum, the only certain thing about investment returns is that they are uncertain.

Given the evidence that public pension funds tend to be more optimistic than private ones, and that even the highest-performing quartile of funds failed to achieve their assumed returns between 2001 and 2016, we chose 7.6% as our High Returns scenario. That return would be slightly above what Chicago's funds and the 73 largest state-sponsored funds assume, and slightly above the MEABF's 1989-2018 performance.

We chose 6.3% as our baseline return. That would be lower than the funds assume, and lower than the MEABF's 1989-2018 performance, but equal to the best performing quartile of funds from 2001-2016.

We chose 4.6% as our Low Returns scenario. That would be equal to the lowest performing quartile of funds from 2001-2016.

Given the need for governments to take a long time horizon in valuing future benefits, we chose to use the 30-year U.S. Treasury yields as the appropriate discount rate for Net Present Value (NPV) calculations. Between January 1 and February 7, 2020, those yields have varied between 1.99 and 2.38. So, we selected a discount rate of 2.15.

---

[16] *What Explains Differences in Public Pension Returns Since 2001*? By Jean-Pierre Aubrey, Anqi chen, Alicia H. Munnell and Kevin Wandrei, Center for Retirement Research at Boston College, July, 2018

[17] *Impact of Public Sector Assumed Returns on Investment Choices* by Jean-Pierre Aubrey and Caroline V. Crawford, Center for Retirement Research at Boston College, January, 2019

[18] https://www.meabf.org/assets/pdfs/pubs/MEABF_Rolling_Returns_2018.pdf

[19] *MEABF Comprehensive Annual Financial Report 2018*, p. 74 https://www.meabf.org/assets/pdfs/pubs/MEABF_Comprehensive_Annual_Financial_Report_for_the_Fiscal_Years_ended_December_31_2018_and_2017.pdf