# New Developments and Credit Trends in the Illinois Municipal Bond Market

## Insight that will Help Improve Your Municipality's Access to the Municipal Bond Market


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# Issuing Debt Through the Illinois Finance Authority

- Bonds issued through the Illinois Finance Authority (IFA) are exempt from both federal and Illinois income taxes
  - Given Governor Pritzker's new income tax proposal, which increases the state income tax on those individuals and families making more than $250,000 per year, a bond issue that exempts state income tax in addition to federal income tax may be attractive to investors residing in Illinois
  - A referendum question regarding the implementation of a graduated tax rate will appear on the November 2020 ballot

- The IFA serves as a conduit issuer to many units of local government
  - The IFA is the "Issuer" of the bonds and the local unit of government is the "Obligor"
  - The bonds carry the rating of the Obligor who is contractually obligated to make the payments to the IFA

- The IFA's Board meetings are held monthly on the 2nd Tuesday

# Issuing Debt Through the Illinois Finance Authority

- The process to issue through the IFA is as follows:
  - The local government, with the assistance of its financing team, would submit an application to the IFA approximately three weeks prior to the next IFA Board meeting
  - The IFA staff will review the application at an internal meeting approximately two weeks prior to the IFA Board meeting
  - Near-final draft of the Bond Ordinance is due eight days prior to the IFA Board meeting
  - The remaining documents require sign-off by IFA's counsel in substantially final form by the Thursday prior to the IFA Board meeting (IFA's counsel has discretion based on their schedule to move that deadline forward or back one day)

- The fees for the IFA are as follows:
  - $250 application fee plus 0.15% of the total par amount of bonds issued
  - IFA counsel fee (varies by par amount; one inquiry noted a fee of $11,750 for a par amount of $50 million)

# Issuing Debt Through the Illinois Finance Authority

- Recent sales issued through the IFA were analyzed* against other comparable sales (similar rating, principal amounts, etc.) that did not sell through the IFA
  - The data suggests that bond principal payments through approximately the first 10 years (shorter bonds) did not benefit enough from the IFA to compensate for its fees
  - The annual bond principal payments due 10 years or later (longer bonds) may have benefited by 0.05% to 0.15% after controlling for differences in fees

- Based on this analysis, in the current bond market, it may benefit a unit of government to sell longer bonds through the IFA and selling shorter bonds directly by the unit of government itself

*PMA analysis of sales from June 14, 2019 through August 9, 2019

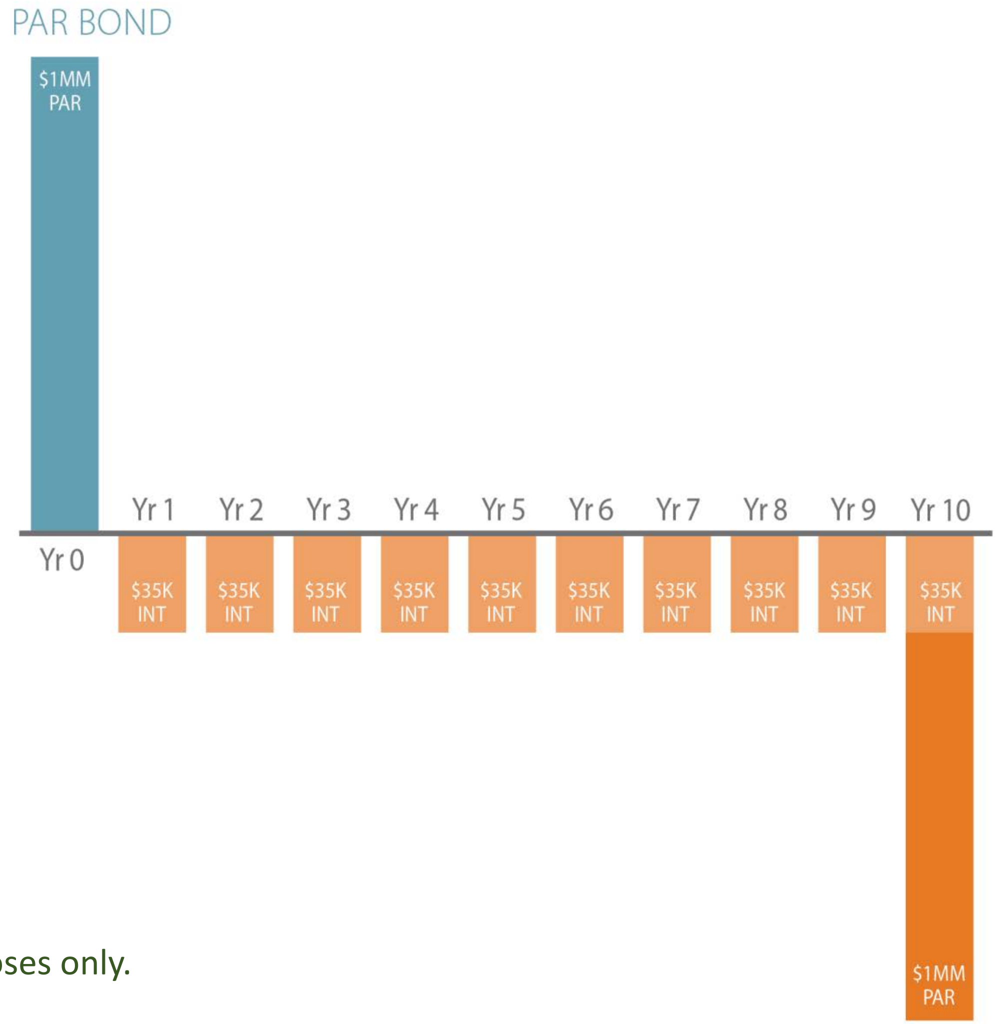
# Bond Components

- Three basic components of a bond:
  - The Par Amount: The stated dollar amount of the bond
  - The Yield
    - The true cost of capital to the issuer, or conversely, the true rate of return to the investor
    - In most cases, particularly regarding noncallable bonds, the yield is the rate that should concern the issuer the most since it reflects the true cost of the financing
  - The Coupon
    - Reflects the cash flow paid by the issuer to the investor or, stated differently…
    - It is the amount of interest that the issuer agrees to pay back to the investor
    - The difference between the coupon and the yield is an important distinction, particularly with a premium bond
    - In the case of a par bond, the distinction is less necessary since, with a par bond, the coupon and the yield are the same

# Par Bond

- Par Bond Example
  - Assume an issuer needs to borrow $1 million for a capital project and would like to pay that money back as a single maturity in ten years
  - Further assume that the yield on this ten-year bond is 3.50%
  - In this case, a par bond would have a coupon that is also 3.50% and the par amount of the borrowing would also be $1 million
  - The figure on the following slide illustrates the initial $1 million of proceeds received when the financing occurs and the 10 subsequent annual interest payments associated with this par bond as well as the principal amount of $1 million due in the 10th year

# Par Bond Example

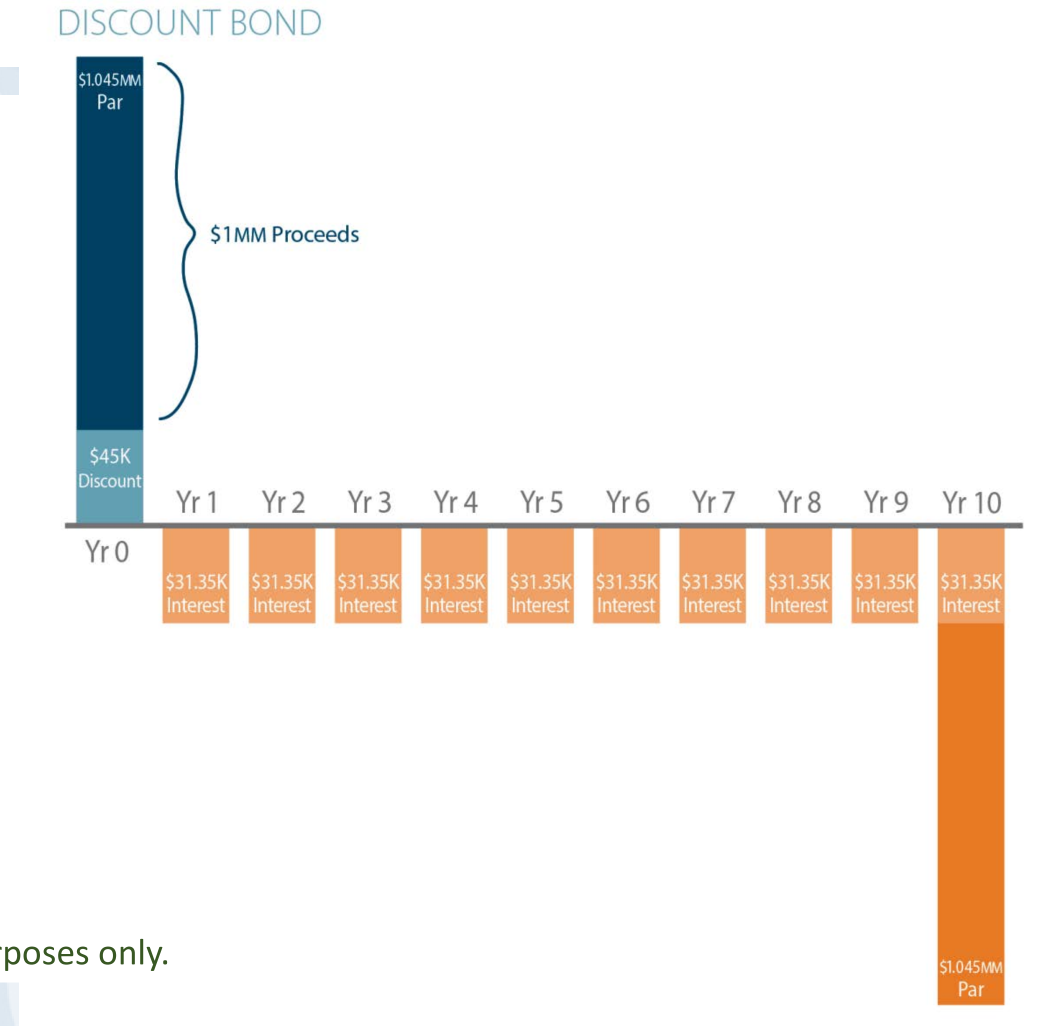



*The graph above is for illustrative purposes only.

# Discount Bond

- Discount Bond Example
  - A discount bond is one in which the yield is higher than the coupon
  - The initial issuance of discount bonds causes the par amount of the bonds to increase.
  - Example: When an investor pays $90 for a $100 bond, the $10 under the par value of the bond is the discount associated with this maturity.
  - The figure on the following slide illustrates the initial $1 million of proceeds received when the financing occurs and the 10 subsequent annual interest payments associated with this discount bond as well as the principal amount of $1,045,000 due in the 10th year

# Discount Bond Example




*The graph above is for illustrative purposes only.

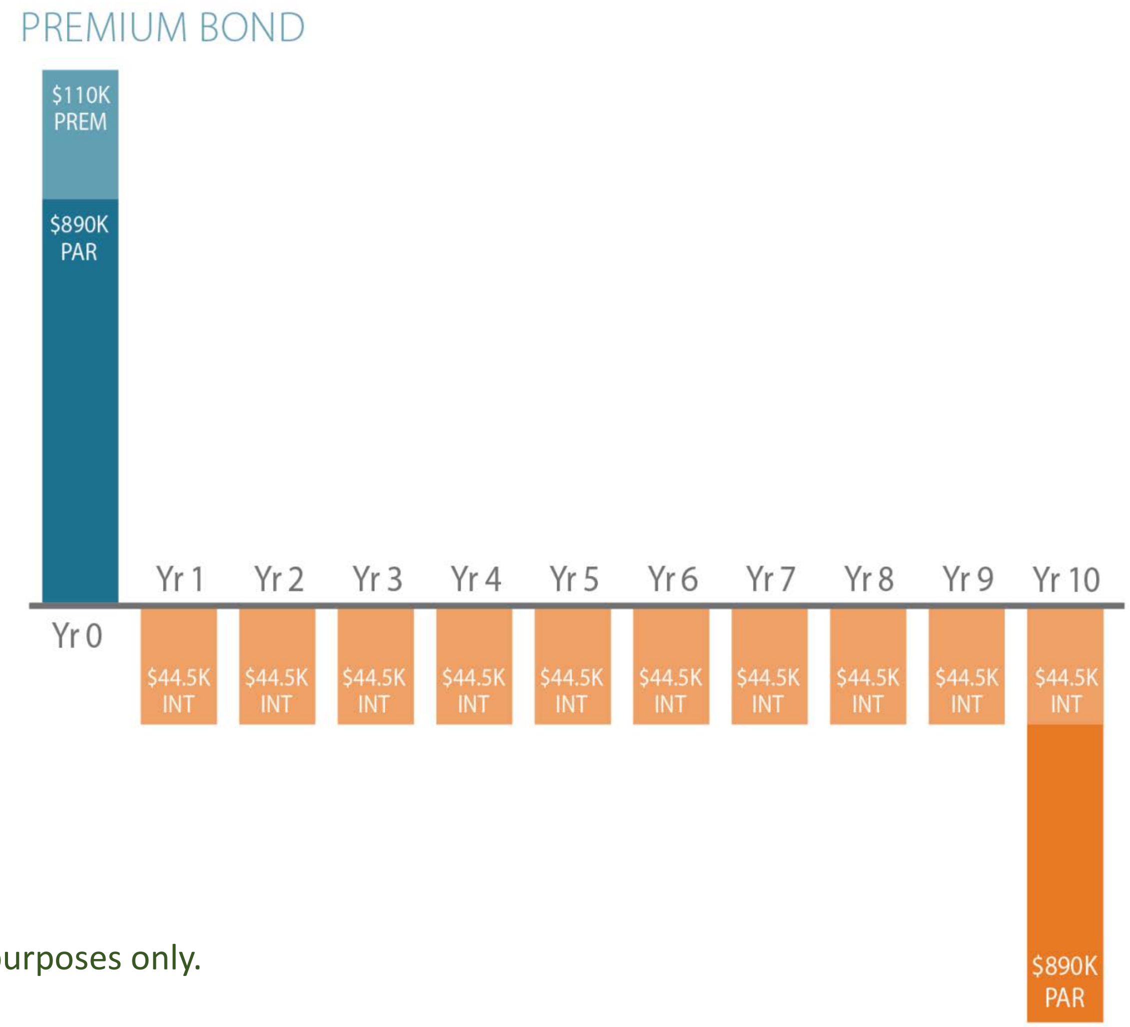
# Premium Bond

- Premium Bond
  - A premium bond is one in which the coupon is higher than the yield
  - Even though the cost of the financing is reflected in the yield, the issuer agrees to pay back to the bondholder an amount of interest higher than the yield
  - Why would an issuer do this?
    - In exchange for making an annual interest payment to the investor that is higher than the yield, the issuer receives an upfront amount over and above the par amount of the bonds
    - This incremental amount is called the premium
    - Thus the term “premium bond.”
    - Example: When an investor pays $110 for a $100 bond the $10 generated over the par value of the bond is the premium generated for this maturity.

# Premium Bond Example

- Premium Bond Example
  - Assume that the investor would like a 5.00% coupon on the above-stated bond that yields 3.50%
  - The issuer still needs $1 million for its project, but in this case, the principal amount of the bonds would be $890,000
  - The investor would give the issuer the full $1 million ($890,000 in principal and approximately $110,000 in premium)
  - The issuer would agree to pay back the investor annual interest payments equal to 5.00% of $890,000 ($44,500) instead of 3.50% of $1 million ($35,000)
  - While the annual interest payments are now higher, the issuer enjoys a lower principal payment at the 10th year ($890,000 versus $1 million)
  - On a present value basis these two debt service schedules are equivalent
  - The figure on the following slide illustrates the cash flow associated with the premium bond

# Premium Bond Example




*The graph above is for illustrative purposes only.

# Premium Callable Bond

- Premium Callable Bonds
  - Bonds with premium after the call are priced using the assumption that they will be called at the earliest call date
  - The same bond – if sold as noncallable – would instead be priced to its maturity
  - This difference affects how much an issuer will receive in proceeds from the bond
  - The table on the following slide illustrates how an example $1,000,000 premium bond with a 15 year maturity prices differently depending on the call provision

# Premium Callable Bond Examples*

| | Maturity | Call | Coupon | Yield* | Price | Par | Proceeds |
|---|---|---|---|---|---|---|---|
| **Premium Bond, 9 Year Call** | 15 years | 9 years | 4.00% | 3.00% | 107.836% | $1,000,000 | $1,078,360 |
| **Premium Bond, 10 Year Call** | 15 years | 10 years | 4.00% | 3.00% | 108.584% | $1,000,000 | $1,085,840 |
| **Premium Bond Noncallable** | 15 years | n/a | 4.00% | 3.00% | 112.007% | $1,000,000 | $1,120,070 |

* The listed bonds are for illustrative purposes only and do not reflect actual pricing results. Please note that actual bonds with these assumed structures may not have the same yields as is indicated above.

# Value of the Call Option

- Potential Value of Future Refinancing
  - An important component to the analysis for the call provision and coupon alternatives is the potential future benefit of a refinancing
  - Generally, an issuer pays a price today to have the ability to call a bond later
  - This is particularly true for a premium bond
    - The earlier the call date, the more an issuer pays for the call provision
    - This higher price is reflected in the higher True Interest Cost (TIC) associated with premium callable bonds relative to par/discount bonds even though premium callable bonds have a lower yield-to-call
    - The TIC is a measure of the cost of a financing assuming the bonds are never refunded, but instead, are held to maturity
    - The yield-to-call is the interest associated with a bond assuming that it is refunded at the call date

# Value of the Call Option

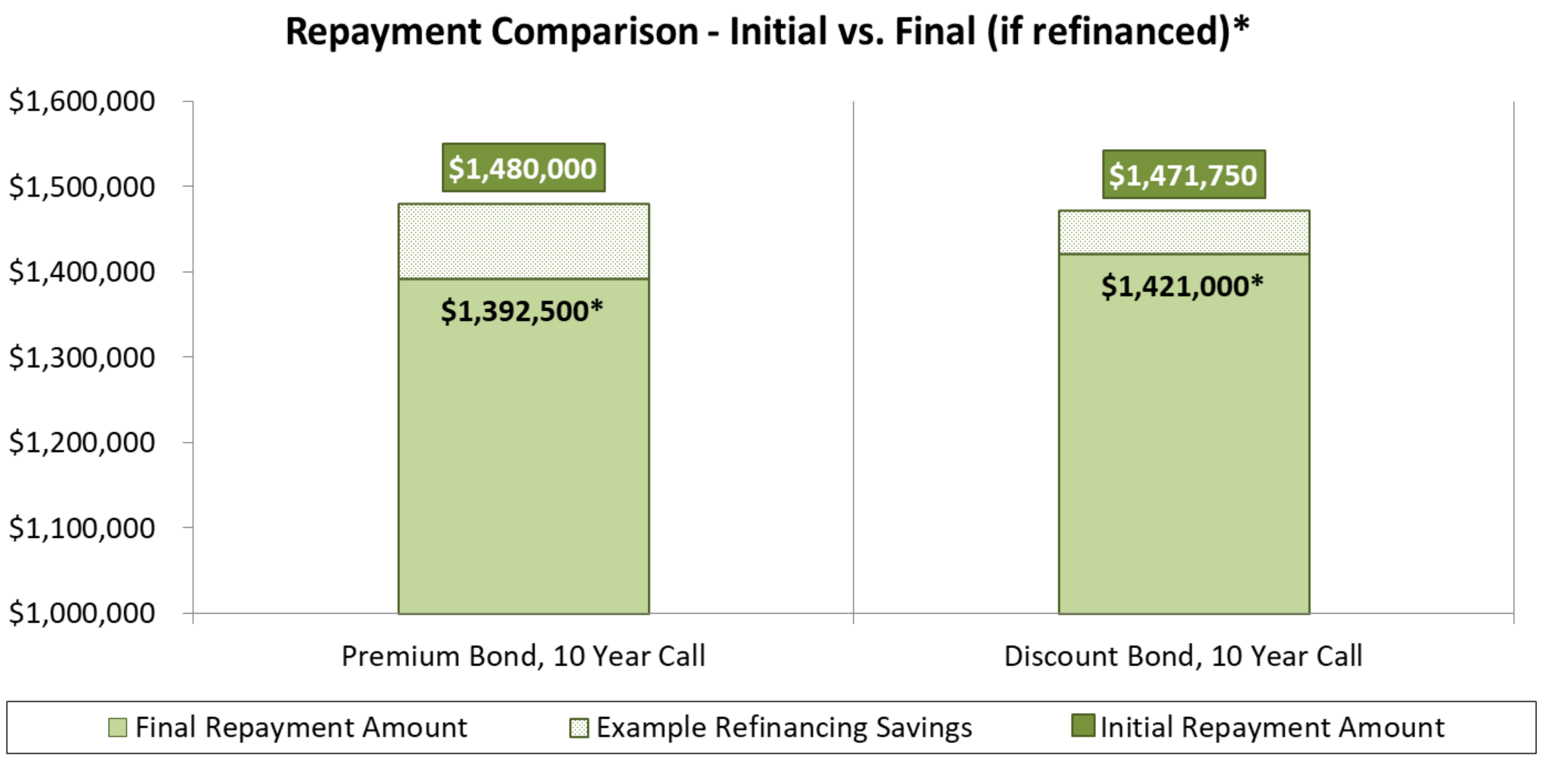
- Potential Value of Future Refinancing (cont.'d)
  - It's important to consider the potential future benefit of a refinancing.
  - The final repayment amount of a callable bond, whether premium or par/discount, is only truly known once it has either been refinanced at a new yield or paid off without exercising the call option
  - Therefore, a relevant and interesting question to be asking is which of the following provides the lowest overall cost of financing to the issuer:
    - Premium callable bond with a lower-yield-to-call, but a higher TIC
    - Par/discount bond with a higher-yield-to-call, but a lower TIC
    - Please note that in nearly every competitive bond sale, the winning bidder is determined as that underwriter providing the lowest TIC for the bonds

# Value of the Call Option: Examples of Premium vs. Discount Bonds*

| | | | | | | After Refinancing at 2.00% | |
|---|---|---|---|---|---|---|---|
| | Call | Coupon | Yield | True Interest Cost (TIC) | Initial Repayment | Combined TIC | Final Repayment |
| **Premium Bond, 15 Year Maturity** | 10 years | 4.00% | 3.00% | 3.27% | $1,480,000 | 2.75% | $1,392,500 |
| **Discount Bond, 15 Year Maturity** | 10 years | 3.00% | 3.10% | 3.10% | $1,471,750 | 2.81% | $1,421,000 |

* The listed bonds are for illustrative purposes only and do not reflect actual pricing results.

# Value of the Call Option: Examples of Premium vs. Discount Bonds




*Assumes bond is refinanced at a yield 1.00% lower than initial level for illustrative purposes only. Future savings from refinancing are not guaranteed and cannot be predicted with certainty.

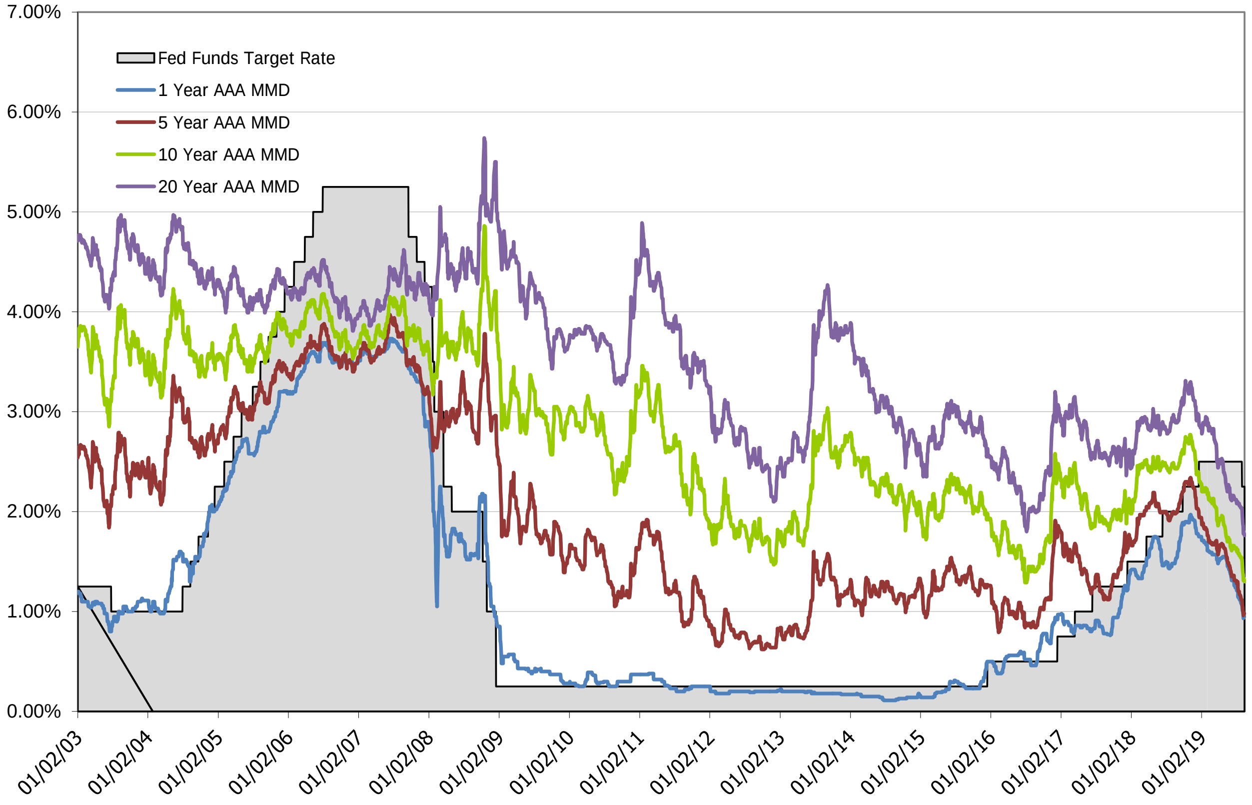
# Value of the Call Option: Final Thoughts

- Potential Value of Future Refinancing
  - While future interest rates cannot be predicted, and therefore savings from a future refinancing cannot be guaranteed, the comparison in the previous table shows how the final repayment *could be* lower with a premium callable bond than with a par/discount callable bond
  - However, the initial repayment is higher for a premium callable bond
  - If the future yield at the call date is not low enough, the premium callable bond would not be refinanced and savings would not be realized

# Value of the Call Option: Final Thoughts

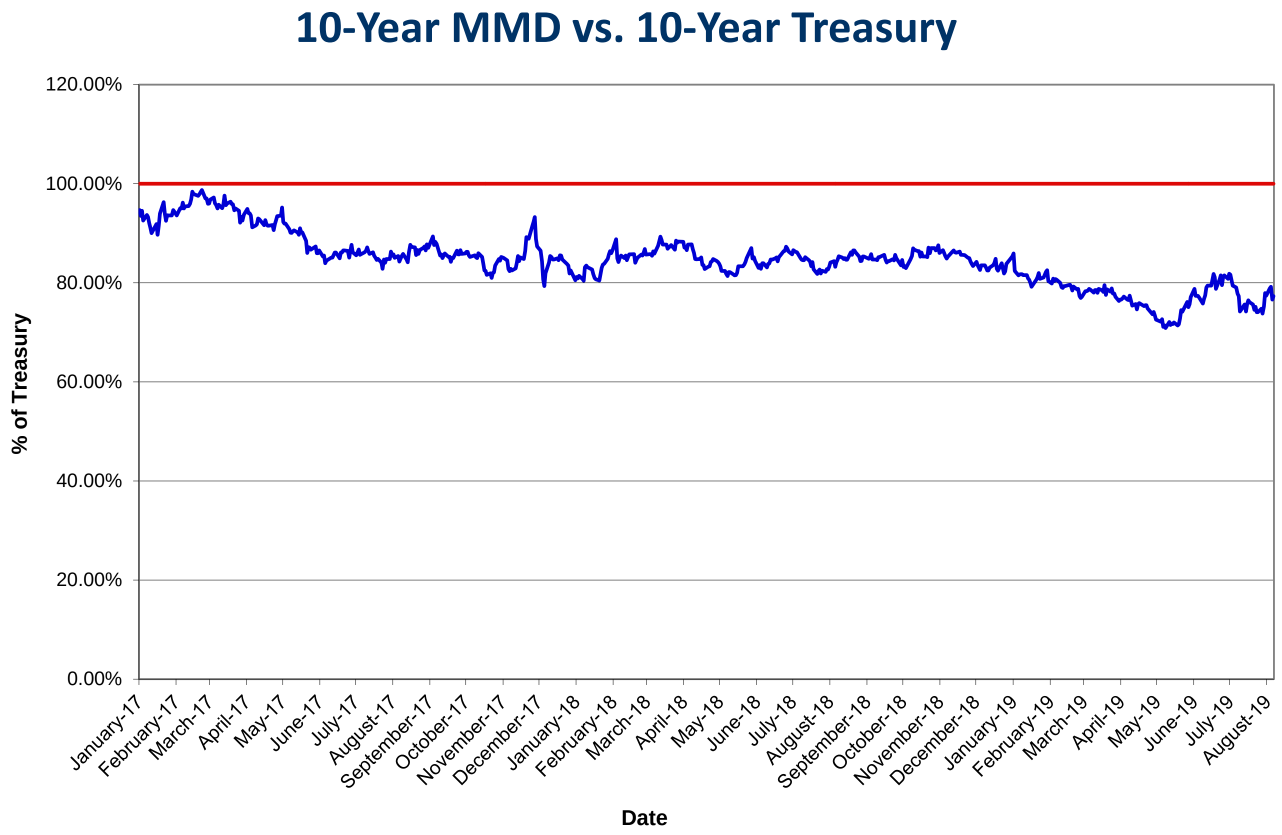
- Conclusion
  - Whether or not an issuer should structure a debt issuance with premium bonds or par/discount bonds after the call date is a complex question
  - Only after an analysis of the issuer's existing debt profile, current and future financial needs, and risk tolerance are considered and coupled with current market data can an informed decision be made
  - There are ongoing discussions in the market and scientific research about how issuers could potentially better evaluate various coupon and call provision scenarios

# Market Update: Fed Funds Target Rate vs. MMD*




*The Municipal Market Data "MMD" is a AAA municipal bond market index produced by TM3. As of August 13, 2019.

# Market Update: 10-YR MMD vs. 10-YR UST




*The Municipal Market Data "MMD" is a AAA municipal bond market index produced by TM3. As of August 8, 2019.

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# Key topics

1. Recent trends and legislation
2. Pensions and retiree health care
3. Special revenue pledges
4. ESG & cyber risk

# Sectors and key considerations

| Sector | Institutional framework score | Perennial notching | Trends and considerations |
|---|---|---|---|
| CCD | A | State pension support | History of severe state funding delays, but positive recent trend. |
| Cities | A | Home rule status | Rising fixed costs, disparate revenue composition and financial trends. |
| Counties | A | NA | Moderate pensions, generally strong finances, human service and criminal justice expenses. |
| Fire Districts | A | NA | Rising fixed costs, limited revenue raising flexibility, but generally strong reserves. |
| Library Districts | Aa | NA | Predictable and flexible costs. |
| Park Districts | Aa | NA | Generally strong financial and credit trends, some exposure to enterprise risk. |
| School Districts | A | State pension support | Disparate revenue composition, significantly increasing state aid for some. |

# Current trends

## Factors impacting credit of Illinois local governments

### Revenues and tax base

- Uncertain new potential sources of revenue – cannabis, casinos, sharing from graduated income tax
- Valuations – growing, but the some LGs still below previous peaks.

### Population, economic growth and demographics?

- Stagnant to declining population in much of the state.
- Significant wealth many affluent communities in Chicago metro.
- Impact rising tax burdens in some communities.

### Finances

- Most rated LGs have strong reserves and stable financial operations, but pockets of stress.
- Financial operations are considered in context of pension funding practices.
- Timely state budget and increased aid reduces immediate risk for LGs, but lowest rated state .

### Debt and pensions

- Large pension burdens for some sectors with rising fixed costs and differing pension contribution practices.
- Bonded debt burdens remain modest.
- OPEB minimal for most with some exceptions

# Spate of recent legislative developments

| Gambling expansion | Cannabis legalization | Progressive income tax | Capital program |
|---|---|---|---|
| Sports betting, as many as six new casinos, expansion of existing casinos and video gaming.. | Cities and counties can implement cannabis tax plus existing sales tax applies. | Residents will vote on in 2020. | Doubling of motor fuel tax, with 32% of new revenue going to locals; authority to increase local rates. |

**Credit Implications**

| | | | |
|---|---|---|---|
| Positive, but highly volatile and difficult to project. | Positive, though not likely to be a major source of new revenue. | To be determined. | Positive, significant new revenue stream for capital. |

# Gambling expansion

- All rated cities chosen for casinos have pension funding challenge (*see exhibit)*
- At the current ten gambling sites in Illinois, the local share of revenue generated in 2018 ranged from $3 million to $25 million.
- Even if new casinos generated at the low end it could have meaningful impact for some, but revenues produced by existing locations is declining.
- Increased competition could exacerbate the trend of declining revenues.

**Illinois cities getting new casinos all have large pension contribution shortfalls**

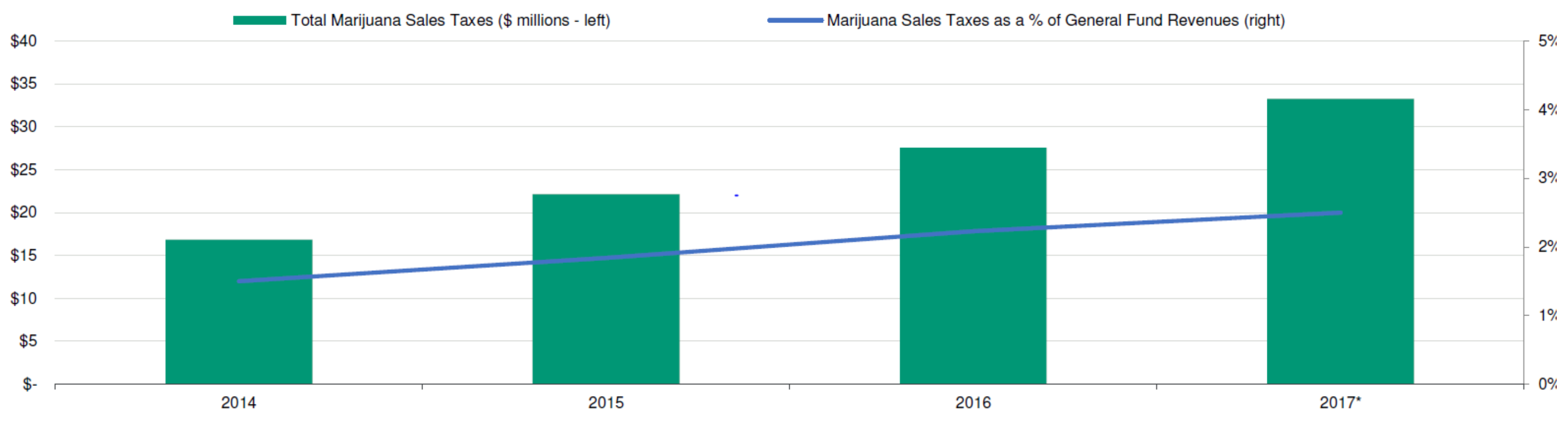
| City | Rating | Tread water gap ($millions) | Tread water gap as % of revenue |
|---|---|---|---|
| Waukegan | A2 | $5.9 | 7% |
| Rockford | A2 negative | $7.2 | 5% |
| Danville | Baa3 stable | $2.2 | 7% |
| Chicago | Ba1 stable | $1,068.0 | 20% |

*Sources: Municipal Financial Ratio Analysis, Moody's Investors Service: ANPL rise for most of the 50 largest local governments in 2017*

# Cannabis legalization

- Local governments in states that have legalized marijuana also experience minimal, but still credit positive, revenue effects (*see exhibit)*
- Communities may opt out of licensing retail outlets.
- Colorado's second largest city (Colorado Springs) opted out, allowing neighboring cities to take advantage of revenues from larger population and tourism base.

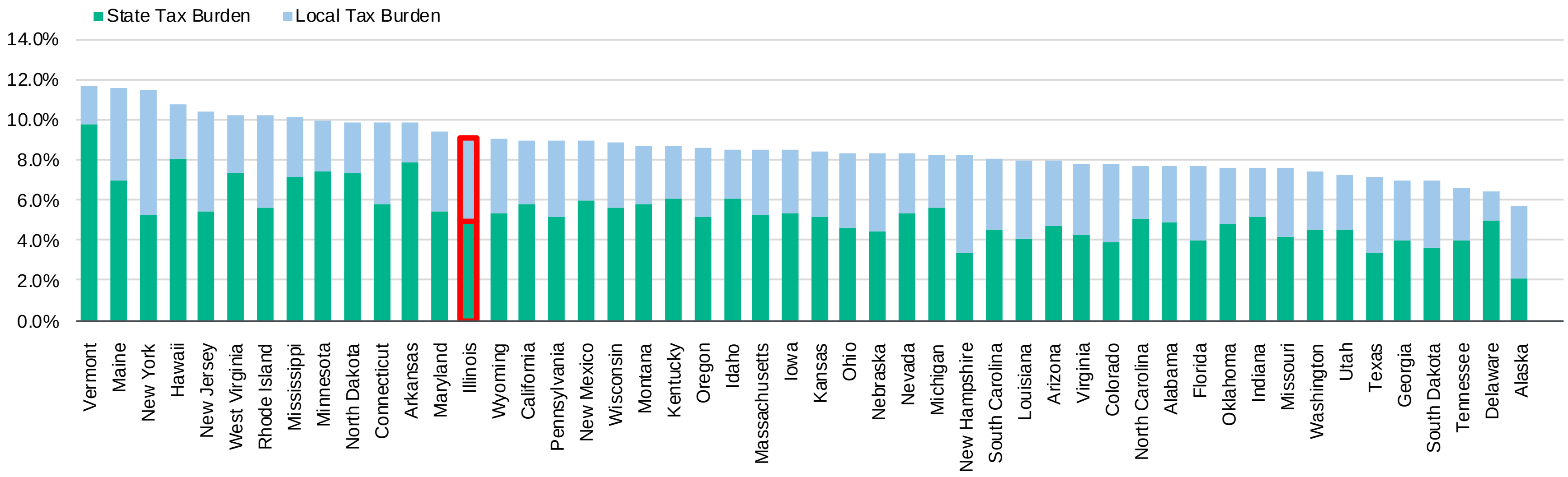
**Denver's marijuana sales taxes have grown significantly but still remain a small portion of total revenues**




*unaudited
*Source: City and County of Denver, CO*

# Progressive income tax reduces risk of state cuts, but could impact taxing headroom.

- State's economy has the capacity to support a larger tax burden, though taxes already account for above-average share of GDP (*see exhibit)*
- Amount and application of increased income tax revenue will determine credit effects
- Unclear whether LGs would get a material share, but reduces likelihood of cuts.
- Could impact practical ability to increase taxes in wealthier communities.

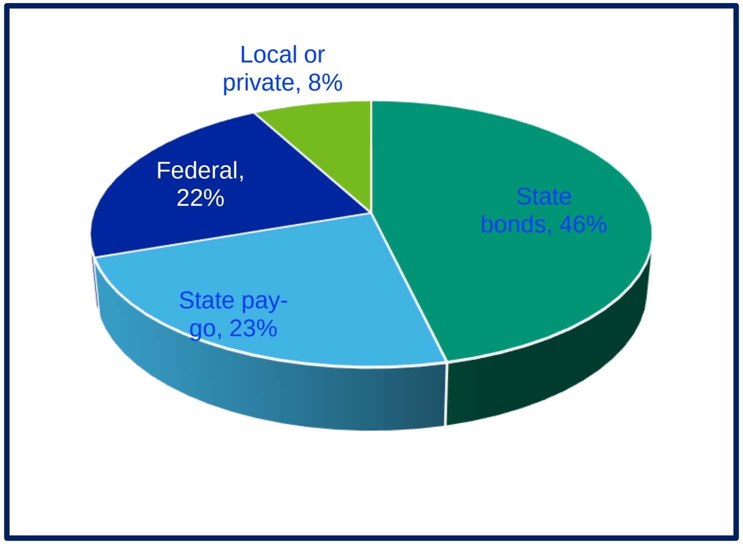



**Sources**: US Census Bureau, US Bureau of Economic Analysis.

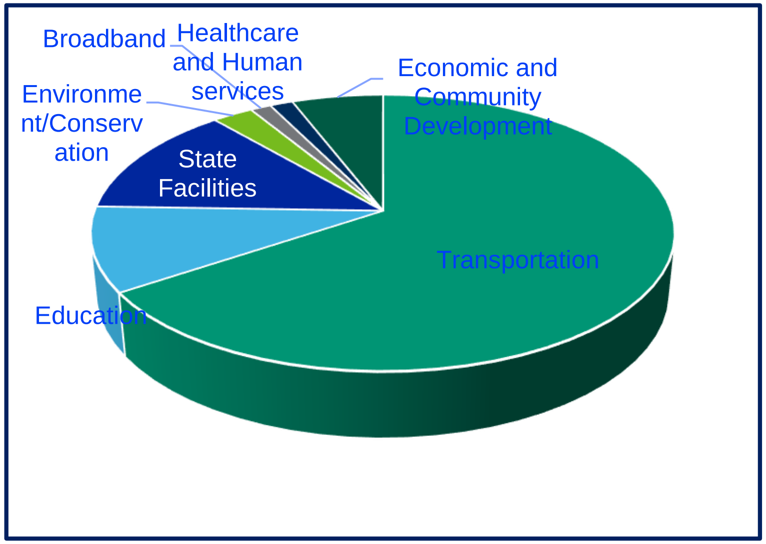
# Municipalities benefit from the state's first capital program since 2009

- Doubling (and indexing) of gasoline tax, parking garage tax, and raising vehicle fees
- Local governments receive significant portion of new revenues from gasoline tax and can increase local gas tax.
- Also benefit from other parts of planned $45 billion investment (see exhibit) would enhance growth prospects both because of construction employment and benefits of improved transportation infrastructure

**Sources of capital**




**Types of projects**




**Source**: State of Illinois.

2

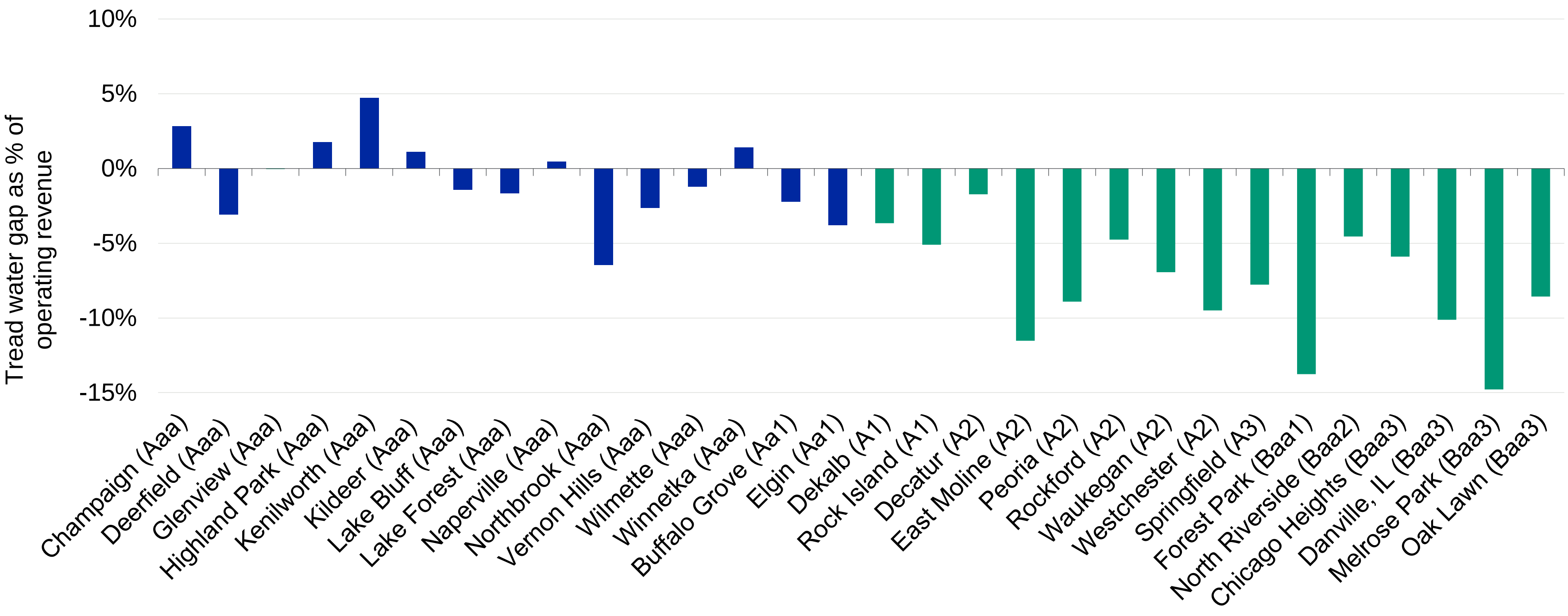
# Pensions & retiree health care

# Pension funding targets vary

| | |
|---|---|
| State minimum requirement | For single employer public safety plans, the State of Illinois requires most municipalities to make annual pension contributions that cover current benefit accruals, plus an amount designed to achieve a 90% funded ratio by 2040. |
| Actuarial determined contribution | Typically more stringent than the state minimum but not always. Additionally, many actuarial determined contributions are weak compared to plan funding needs. |
| Tread water indicator | The metric we use to measure the strength of pension contributions. Tread water is the amount required to prevent reported net pension liabilities from growing, given the entity's actuarial assumptions. |

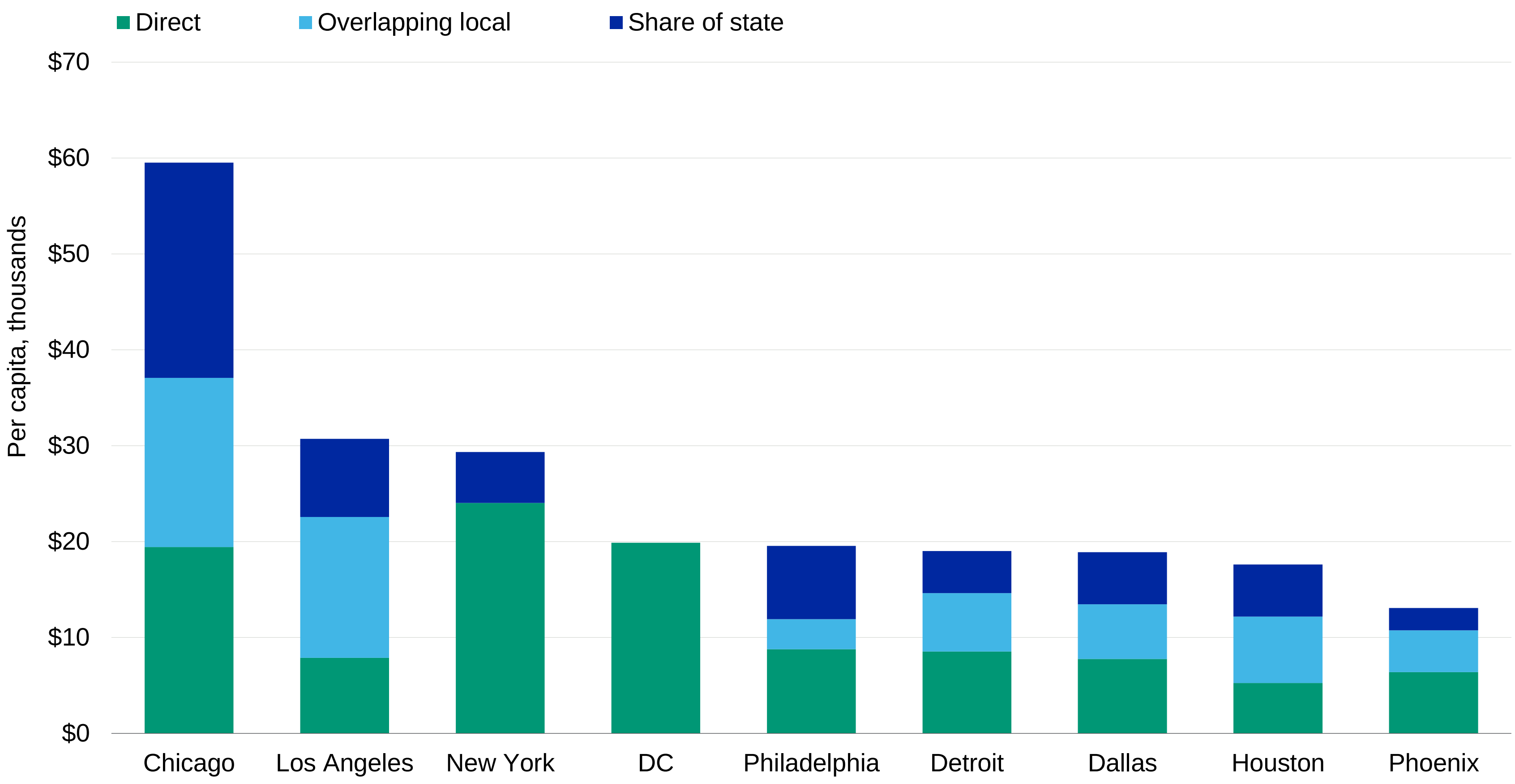
# Illinois cities

## Credit quality correlated with pension contribution practices



# Overlapping debt can be a consideration if elevated

## Chicago's overall leverage from state & local governments




*Source: Moody's Investors Service*

# New OPEB accounting in most governments' fiscal 2018 reporting now aligns with pensions

## Data collected as of March 2019: ~$968 billion in reported unfunded liabilities

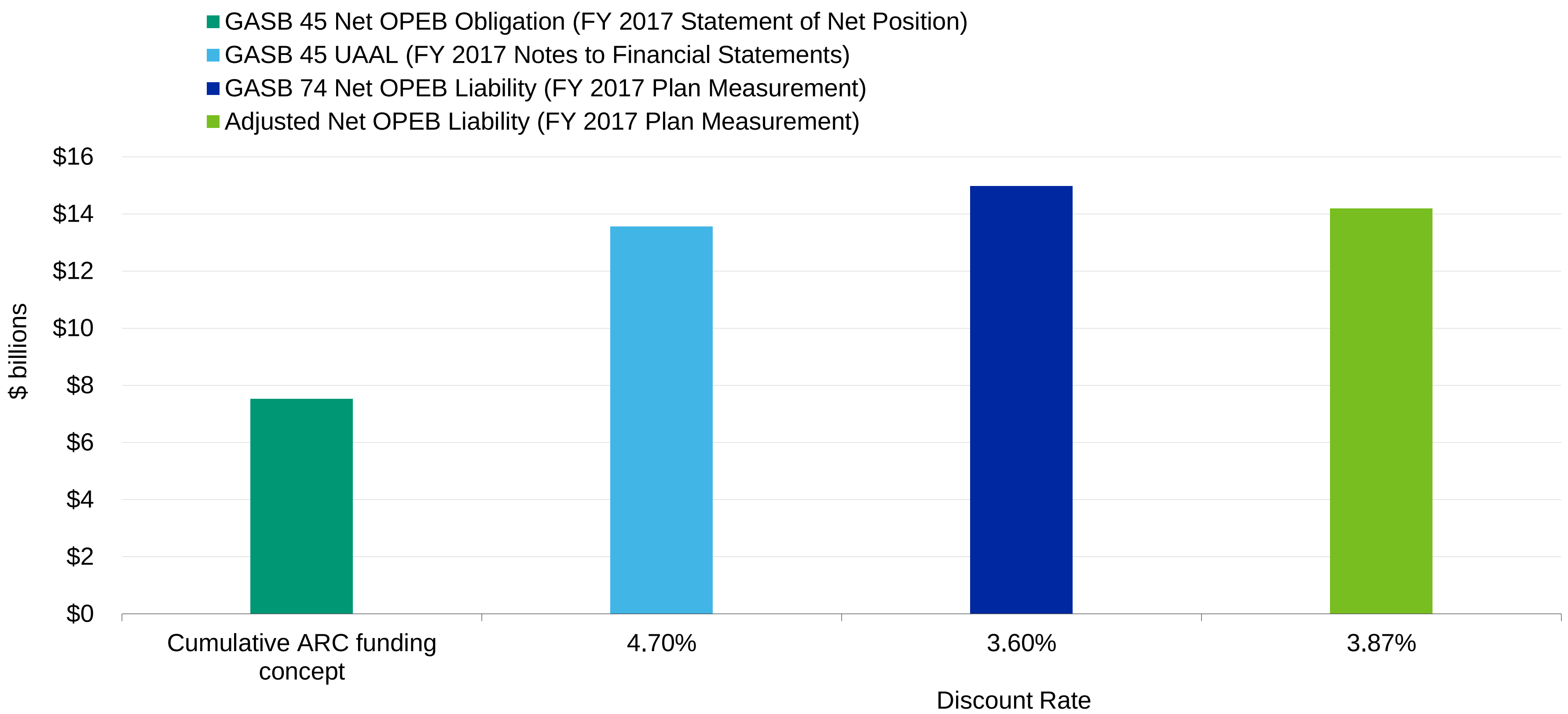
- OPEB risk in state and local government rating methodologies
  - Contributions an element of "fixed costs"
  - Outsized liabilities an additional risk consideration

- GASB Statement 74 (OPEB plan reporting) and GASB Statement 75 (government reporting)
  - OPEBs are primarily retiree healthcare benefits, but also can include other benefits such as: death benefits, life insurance, disability benefits (termination payments for unused leave are <u>not</u> considered OPEBs)

- Key changes
  - Net OPEB liability now on statement of net position, similar to UAAL previously reported in notes
  - Proportionate shares of multiple-employer cost-sharing OPEB plans
  - GASB "depletion" discount rate rules
  - Sensitivity disclosures surrounding changes to discount rate, health care cost trend assumptions
  - Benefits accrue as level % of pay over the course of employee careers, regardless of vesting terms
  - GASB OPEB expense on statement of activities (accrual basis only)

# GASB 75 moves unfunded OPEB liability to balance sheet from the notes

## Change in reporting location is not an economic change, thus not a credit event




*Sources: Los Angeles Unified School District CAFRs and OPEB actuarial valuations, Moody's Investors Service*

# 3

# Special revenue pledges

# Special tax and utility revenue bonds almost always aligned with GO credit

| | |
|---|---|
| Special Tax Bonds | Generally are not rated above the GO rating absent strict legal separation of pledged revenue. |
| Utility Revenue Bonds | Usually rated within a band of two notches above or below the GO rating given the following types of linkages:<br>➢ Economic<br>➢ Financial<br>➢ Governance<br>➢ Legal |

# Securitized bonds also closely tied to the GO credit absent certain features

| | |
|---|---|
| May exceed a local government's GO rating because: | Statutory liens and separation of pledged revenues are correlated with higher recoveries. |
| No more than two to three notches above a local government's GO rating unless: | The state is actively involved in the creation of the special purpose entity. Municipal bankruptcies and defaults are rare, and most recent cases have been settled via negotiation, so creditor protections are uncertain. |

# Puerto Rico ruling highlights importance of parent government credit quality

- First Circuit decision held that Puerto Rico HTA is not required to pay debt service on special revenue pledges during the bankruptcy-like proceeding.

- Moody's ratings on most such credits are already closely linked to the general government rating. However, we placed 10 ratings on review for downgrade because the ratings are more than 2 notches above the parent.

# 4 ESG & cyber risks

# Credit relevant ESG “taxonomy” created

## ENVIRONMENTAL

- Air pollution
- Carbon regulations
- Natural & man-made hazards
- Soil/water pollution & land-use restrictions
- Water shortages

*Environmental subcategories from heat map. Carbon regulation exposures provide starting point for carbon transition series; natural & man-made hazards for physical risks series .

## SOCIAL

| | |
|---|---|
| Consumer relations | Access to basic services |
| Demographic & Societal Trends | Demographics |
| Human Capital | Education |
| Health & safety | Health & safety |
| Responsible Production | Housing |
| | Labor & income |

* Categories are for private sector (left) and public finance (right).

## GOVERNANCE

| | |
|---|---|
| Board of Director Oversight & Effectiveness | Corruption |
| Compliance, Controls & Reporting | Rule of law |
| Financial Oversight & Capital Allocation | Political representation |
| Management Structure & Compensation | Data transparency |
| Ownership & Control | Credibility & effectiveness |

* Categories for corporates (left) and sovereign (right).

# Rating methodologies capture material ESG issues through different channels

**Illustrative example of how ESG considerations are reflected in our methodology for automobile manufacturers**

We consider material ESG issues in our rating methodologies through different channels

**Captured within scored factors**

**Example:**
*Business Profile:*
Assessment of emissions-reducing technologies and alternative fuel vehicle (AFV) product development in terms of innovation and customer acceptance; and sufficiency to meet future regulatory standards

**Explicitly scored factor**

**Example:**
*Financial Policy:*
Assessment of company's desired capital structure or targeted credit profile, its history of prior actions, including its track record of risk, and its adherence to its commitments

**Outside of scorecard**

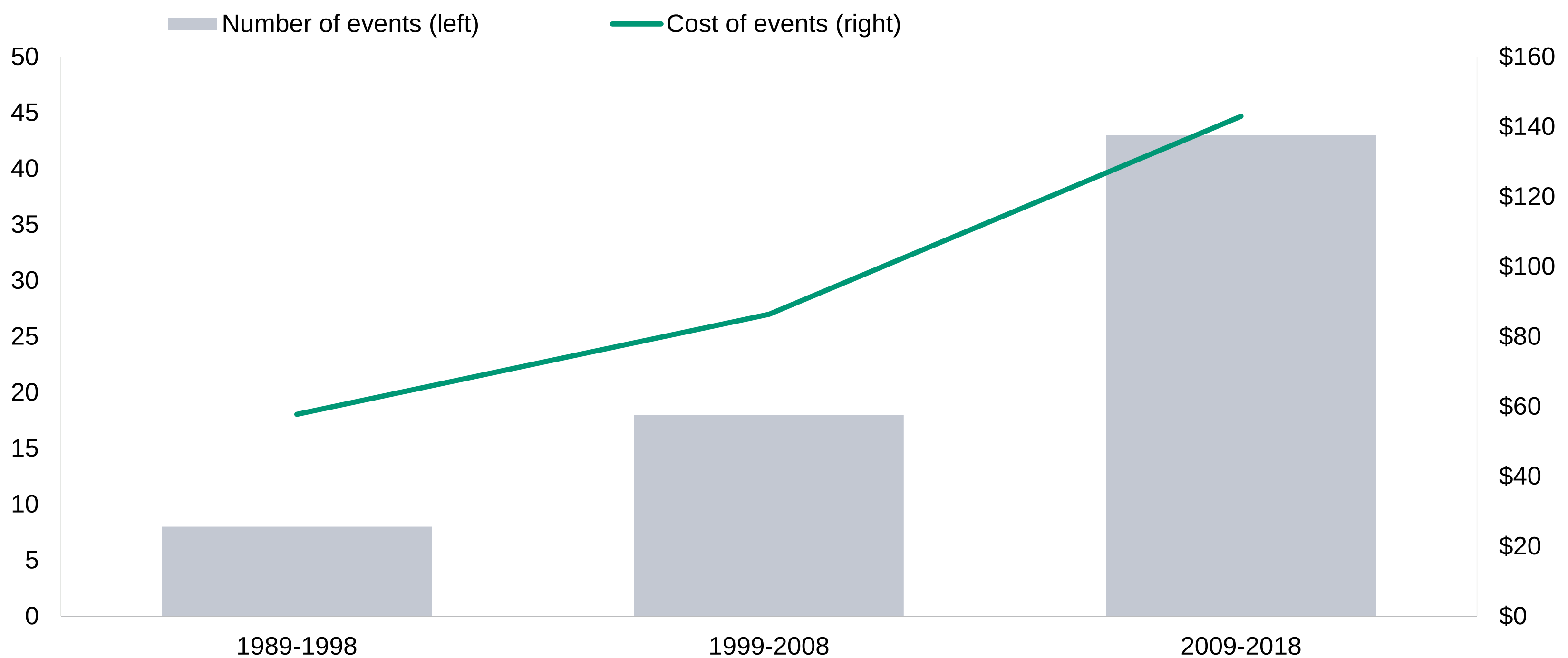
**Example:**
*Environmental and Other Regulatory Considerations:*
Assessment of implications of environmental standards and regulatory oversight for company's market position, product breadth or strength, and expectations of future financial metrics

Sources: Moody's Investors Service

# Farming illustrates environmental risk

- The frequency and cost of extreme weather events is rising, particularly in the Midwest
- Agricultural land is typically valued based on productivity for property tax purposes
- As extreme weather becomes more frequent, farmland in calamitous regions can become less productive and drive down taxable land values

**The Midwest is experiencing a significant rise in the frequency of billion dollar weather events**




*Sources: NOAA National Centers for Environmental (NCEI) US Billion-Dollar Weather and Climate Disasters (2019)*

# Cyber risk

1

**We view cyber risk as event risk and see a rising tide;** digitization, greater intersection of supply chains, connectivity and access to data are creating new vulnerabilities for governments and businesses

2

**Our assessments consider the financial impact of an attack that could lead to weakened credit profile;** these primarily derive from reputational impacts and/or disruption of core business processes

3

**13 sectors assessed as high or medium-high risk;** common attributes include significant reliance on technology / data; limited ability to fall back on manual processes; represent critical global infrastructure