Presentation materials provided for distribution at meeting. Full presentation includes verbal commentary and discussion.

Kern County Superintendent of Schools
Understanding and Managing Debt Workshop

Bond "Flavor of the Month"

Government
Financial
Strategies
inc.

Presented by Lori Raineri
November 6, 2014

Two Ideas To Discuss

- **Refundings**
  - **Advance vs. Current**
  - **Crossover**
  - **Forward**
  - **Synthetic**
- **Tender Offers**

✔ ***Both are methods of replacing outstanding bonds with new bonds.***

✔ ***This involves <u>buying</u> or calling outstanding bonds and <u>selling</u> new bonds to generate the funds to do so.***

Buying and Selling

KAL ©1989 Cartoonists and Writers Syndicate

- Markets are for trading.
- Capital markets are for trading securities.

A Common Securities Violation

- Churning
  - "Churning occurs when a broker engages in excessive buying and selling of securities in a customer's account chiefly to generate commissions that benefit the broker."
    - » U.S. Securities and Exchange Commission
  - Why is churning wrong?
    - » Goal of an investment account is to earn a profit.
      - Profit can be represented by growth in value or income distribution
      - Churning can:
        - Reduce gains (or cause losses) due to commissions (transactions costs)
        - Nominal profits and losses are quantified by the alternative

Churning as Defined by the MSRB

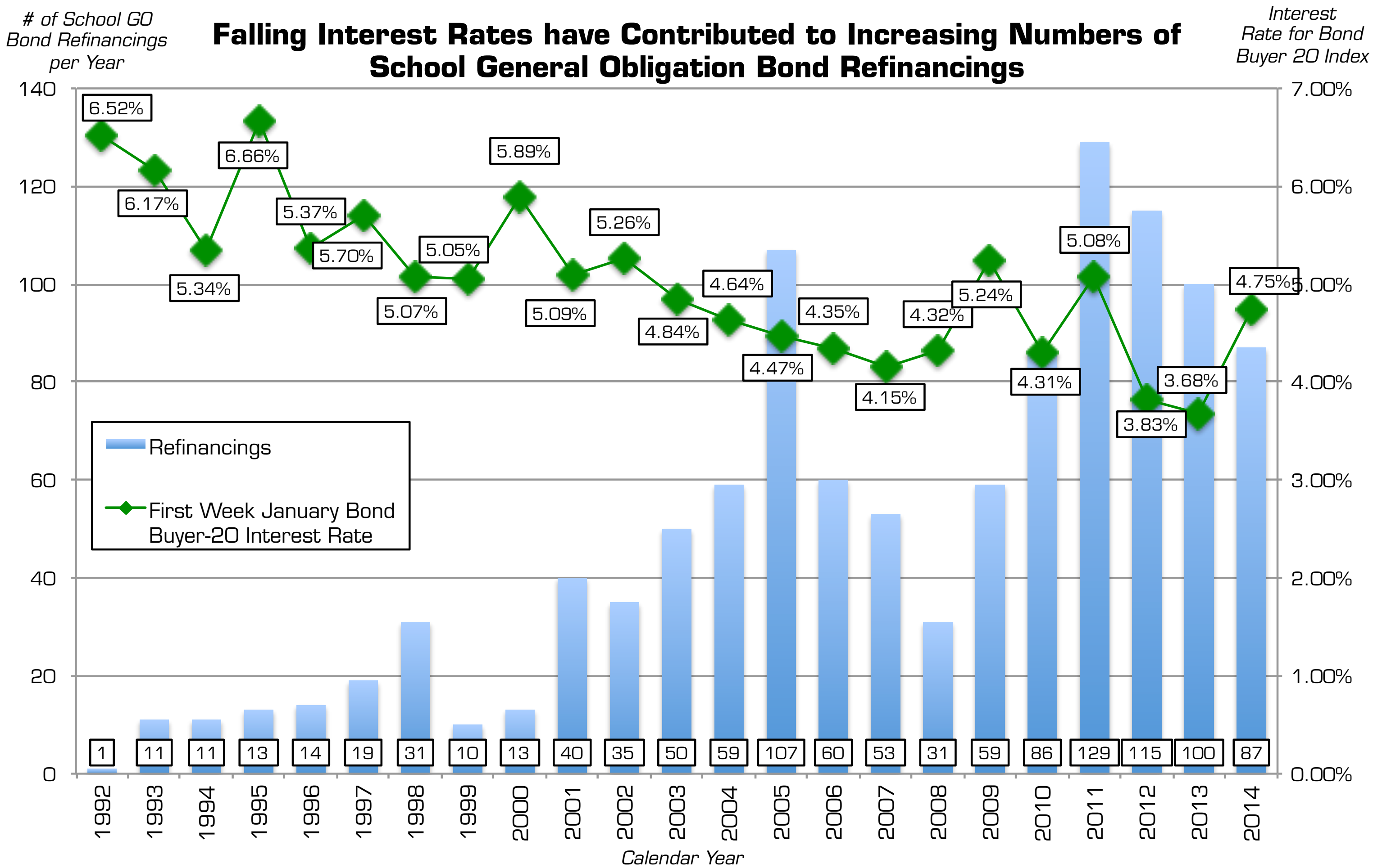
- **"An improper practice in which an investment professional effects an excessive number of securities transactions chiefly for the purpose of maximizing the income (in commissions, sales credits or mark-ups) derived from the customer's account for the investment professional's benefit."**
    - » **Municipal Securities Rulemaking Board**

MSRB

Inappropriate Refunding . . .

- . . . can be a form of churning
- Refunding is buying and selling
  - Buying back outstanding bonds and selling new bonds
  - Most refundings are decided on the basis that savings can be achieved without comparison to alternatives
    - » i.e., the particular buy and sell (or "trades") will produce a savings, though not necessarily that these are the optimal trades

Rates Decrease & Refinancings Increase



School district GO bond refinancing information is an extract from CDIAC database provided by California State Treasurer's Office. Interest rate data is the Bond Buyer 20 Index rates reported in the first week of January each year. The 20-Bond Index is the average yield on the 20th year maturity for 20 general obligation bonds with an average rating equivalent to Moody's Investors Service's "Aa2" rating & Standard & Poor's Rating Service "AA." The Index is weekly as of each Thursday. Data through September 30, 2014.

Refinancings: A Growing Business

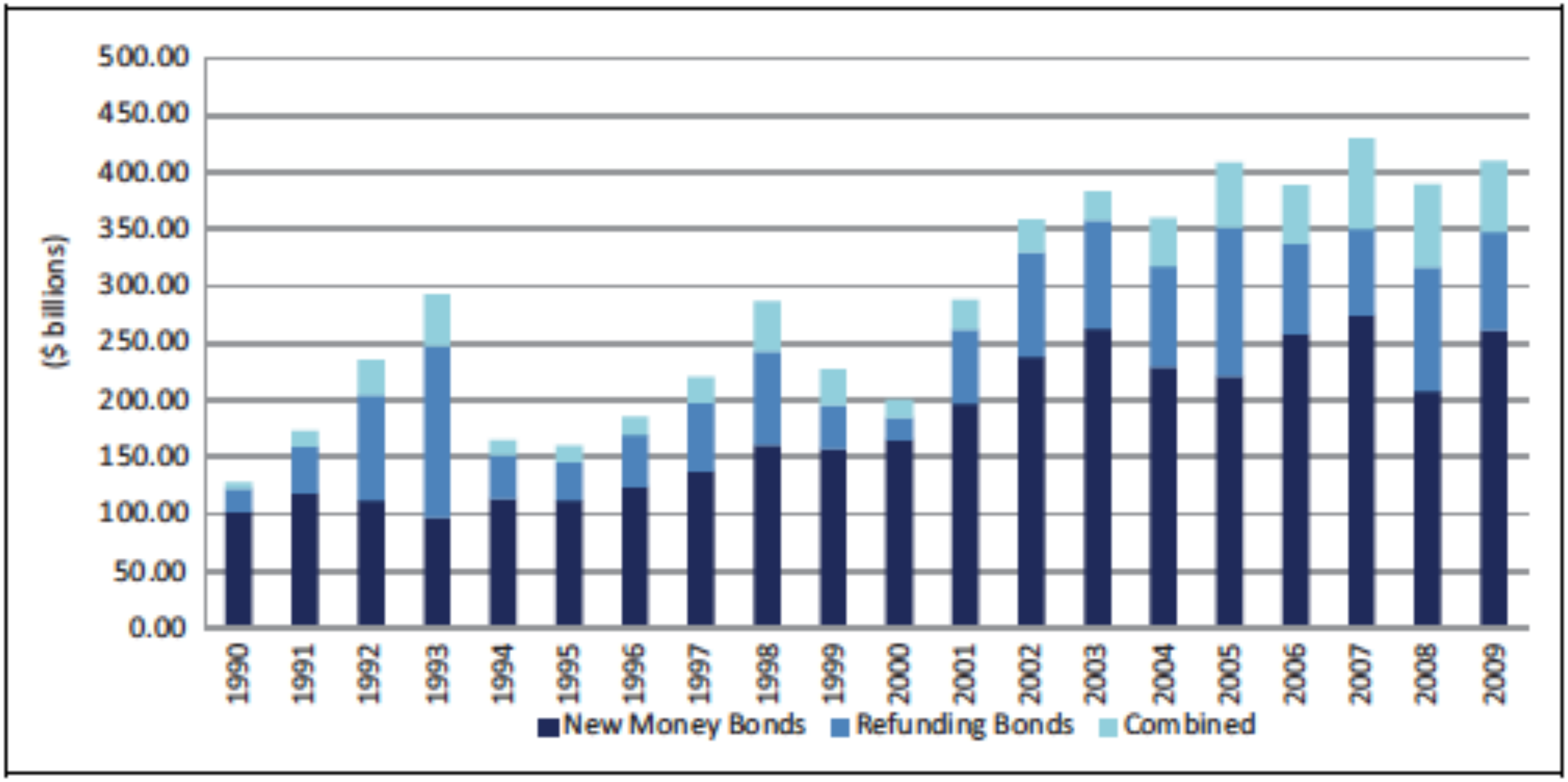


Figure 1. State and local government annual aggregate bond issuance, new money and refunding
Source: The Bond Buyer.

Example Yield Curve for a G.O. Bond

Maturity Date September 1	Principal Amount	Coupon Interest Rate	Reoffering Price or Yield	Maturity Date September 1	Principal Amount	Coupon Interest Rate	Reoffering Price or Yield
2007	$ 415,000.00	10.000 %	3.000 %				
2008	445,000.00	10.000	3.100	2019	$ 785,000.00	4.000 %	3.950 %
2009	475,000.00	10.000	3.200	2020	820,000.00	4.000	4.000
2010	515,000.00	10.000	3.300	2021	855,000.00	4.000	4.000
2011	545,000.00	3.000	3.000	2022	895,000.00	4.000	4.000
2012	580,000.00	3.125	3.125	2023	935,000.00	4.125	4.125
2013	615,000.00	3.250	3.250	2024	980,000.00	4.200	4.200
2014	640,000.00	3.375	3.375	2025	1,030,000.00	4.250	4.250
2015	665,000.00	3.500	3.500	2026	1,080,000.00	4.250	4.250
2016	690,000.00	4.000	3.650	2027	1,130,000.00	4.300	4.300
2017	720,000.00	4.000	3.750	2028	1,190,000.00	4.375	4.375
2018	750,000.00	4.000	3.850	2029	1,245,000.00	4.375	4.375

- **After a year, some of the bonds have already matured**
  - **The bonds that have matured usually have lower interest rates (lower on the yield curve)**
  - **The bonds that are still outstanding, and can be refinanced, usually have higher interest rates**
  - **The average callable coupon increases over time, even though rates were fixed at the time of issuance**

Why Refinancing Saves Money

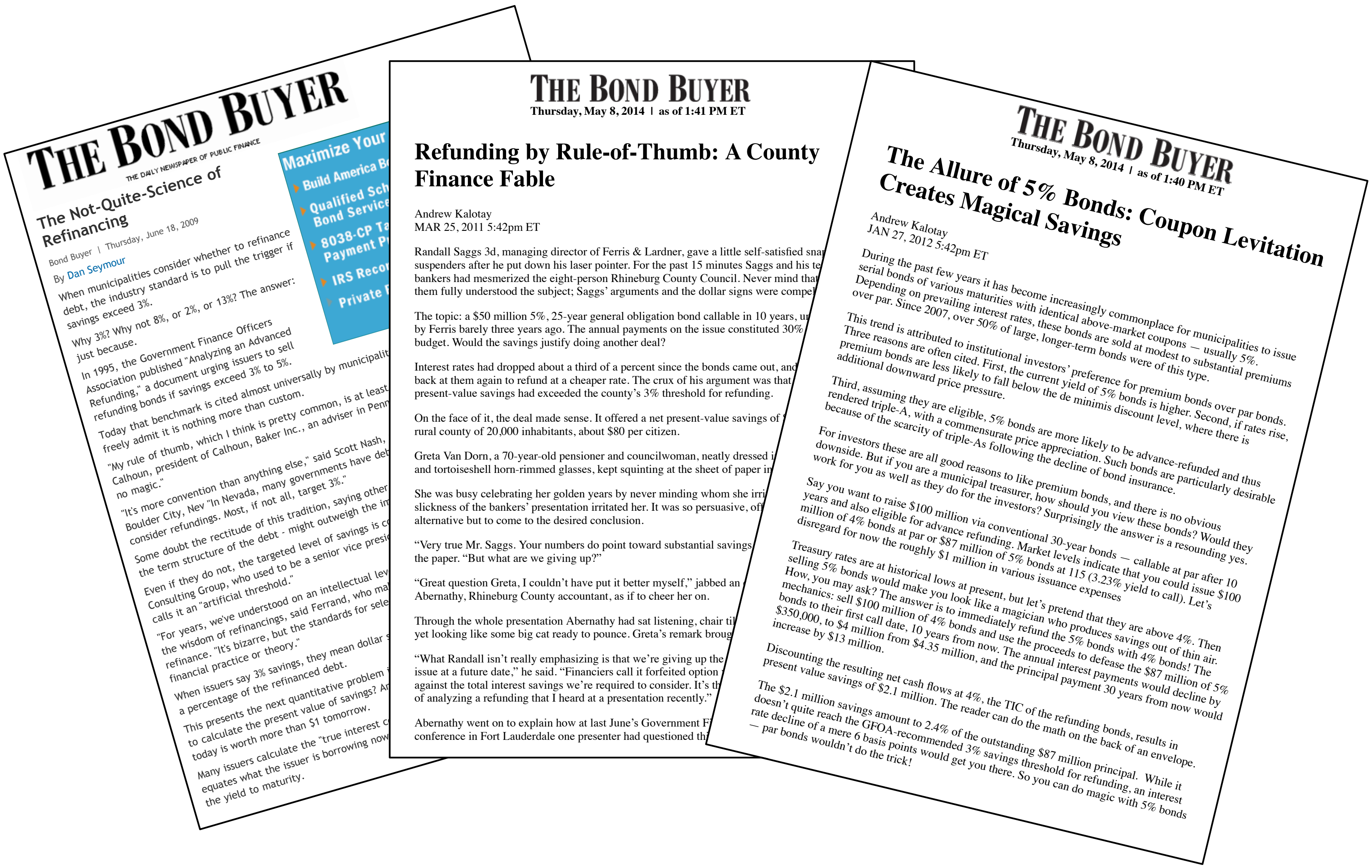
- **A refinancing usually has a shorter life than the bonds that were originally issued**
  - **If 10 years have passed, the original final maturity of 25 years is now 15 years away**
    - **The refinancing places the maximum term earlier on the yield curve which means lower overall interest rates**
    - **Due to negative arbitrage in a defeasance escrow**
      - **Higher interest rates can improve savings**
      - **Less time in escrow, or waiting, can improve savings**

✔ ***Eventually a refi. will likely produce savings***

- ***So, every transaction can be done twice, or more***
  - ***It is important to be thoughtful about reserving call options in an original issue***

40 Years of Academic Research

Professionals Make the Math Work



THE BOND BUYER
THE DAILY NEWSPAPER OF PUBLIC FINANCE

The Not-Quite-Science of Refinancing

Bond Buyer | Thursday, June 18, 2009

By Dan Seymour

When municipalities consider whether to refinance debt, the industry standard is to pull the trigger if savings exceed 3%.

Why 3%? Why not 8%, or 2%, or 13%? The answer: just because.

In 1995, the Government Finance Officers Association published "Analyzing an Advanced Refunding," a document urging issuers to sell refunding bonds if savings exceed 3% to 5%.

Today that benchmark is cited almost universally by municipalit[...] freely admit it is nothing more than custom.

"My rule of thumb, which I think is pretty common, is at least [...]" Calhoun, president of Calhoun, Baker Inc., an adviser in Penn[...] no magic."

"It's more convention than anything else," said Scott Nash, [...] Boulder City, Nev "In Nevada, many governments have deb[...] consider refundings. Most, if not all, target 3%."

Some doubt the rectitude of this tradition, saying other [...] the term structure of the debt - might outweigh the im[...]

Even if they do not, the targeted level of savings is c[...] Consulting Group, who used to be a senior vice presi[...] calls it an "artificial threshold."

"For years, we've understood on an intellectual lev[...] the wisdom of refinancings, said Ferrand, who ma[...] refinance. "It's bizarre, but the standards for sele[...] financial practice or theory."

When issuers say 3% savings, they mean dollar s[...] a percentage of the refinanced debt.

This presents the next quantitative problem [...] to calculate the present value of savings? An[...] today is worth more than $1 tomorrow.

Many issuers calculate the "true interest c[...] equates what the issuer is borrowing now[...] the yield to maturity.

Maximize Your [...]
Build America B[...]
Qualified Sch[...] Bond Service[...]
8038-CP Ta[...] Payment P[...]
IRS Recor[...]
Private [...]

THE BOND BUYER
Thursday, May 8, 2014 | as of 1:41 PM ET

Refunding by Rule-of-Thumb: A County Finance Fable

Andrew Kalotay
MAR 25, 2011 5:42pm ET

Randall Saggs 3d, managing director of Ferris & Lardner, gave a little self-satisfied snap [...] suspenders after he put down his laser pointer. For the past 15 minutes Saggs and his te[...] bankers had mesmerized the eight-person Rhineburg County Council. Never mind that [...] them fully understood the subject; Saggs' arguments and the dollar signs were compel[...]

The topic: a $50 million 5%, 25-year general obligation bond callable in 10 years, u[...] by Ferris barely three years ago. The annual payments on the issue constituted 30% [...] budget. Would the savings justify doing another deal?

Interest rates had dropped about a third of a percent since the bonds came out, and [...] back at them again to refund at a cheaper rate. The crux of his argument was that [...] present-value savings had exceeded the county's 3% threshold for refunding.

On the face of it, the deal made sense. It offered a net present-value savings of [...] rural county of 20,000 inhabitants, about $80 per citizen.

Greta Van Dorn, a 70-year-old pensioner and councilwoman, neatly dressed i[...] and tortoiseshell horn-rimmed glasses, kept squinting at the sheet of paper i[...]

She was busy celebrating her golden years by never minding whom she irri[...] slickness of the bankers' presentation irritated her. It was so persuasive, of[...] alternative but to come to the desired conclusion.

"Very true Mr. Saggs. Your numbers do point toward substantial savings[...] the paper. "But what are we giving up?"

"Great question Greta, I couldn't have put it better myself," jabbed an [...] Abernathy, Rhineburg County accountant, as if to cheer her on.

Through the whole presentation Abernathy had sat listening, chair ti[...] yet looking like some big cat ready to pounce. Greta's remark broug[...]

"What Randall isn't really emphasizing is that we're giving up the [...] issue at a future date," he said. "Financiers call it forfeited option [...] against the total interest savings we're required to consider. It's th[...] of analyzing a refunding that I heard at a presentation recently."

Abernathy went on to explain how at last June's Government F[...] conference in Fort Lauderdale one presenter had questioned th[...]

THE BOND BUYER
Thursday, May 8, 2014 | as of 1:40 PM ET

The Allure of 5% Bonds: Coupon Levitation Creates Magical Savings

Andrew Kalotay
JAN 27, 2012 5:42pm ET

During the past few years it has become increasingly commonplace for municipalities to issue serial bonds of various maturities with identical above-market coupons — usually 5%. Depending on prevailing interest rates, these bonds are sold at modest to substantial premiums over par. Since 2007, over 50% of large, longer-term bonds were of this type.

This trend is attributed to institutional investors' preference for premium bonds over par bonds. Three reasons are often cited. First, the current yield of 5% bonds is higher. Second, if rates rise, premium bonds are less likely to fall below the de minimis discount level, where there is additional downward price pressure.

Third, assuming they are eligible, 5% bonds are more likely to be advance-refunded and thus rendered triple-A, with a commensurate price appreciation. Such bonds are particularly desirable because of the scarcity of triple-As following the decline of bond insurance.

For investors these are all good reasons to like premium bonds, and there is no obvious downside. But if you are a municipal treasurer, how should you view these bonds? Would they work for you as well as they do for the investors? Surprisingly the answer is a resounding yes.

Say you want to raise $100 million via conventional 30-year bonds — callable at par after 10 years and also eligible for advance refunding. Market levels indicate that you could issue $100 million of 4% bonds at par or $87 million of 5% bonds at 115 (3.23% yield to call). Let's disregard for now the roughly $1 million in various issuance expenses.

Treasury rates are at historical lows at present, but let's pretend that they are above 4%. Then selling 5% bonds would make you look like a magician who produces savings out of thin air. How, you may ask? The answer is to immediately refund the 5% bonds with 4% bonds! The mechanics: sell $100 million of 4% bonds and use the proceeds to defease the $87 million of 5% bonds to their first call date, 10 years from now. The annual interest payments would decline by $350,000, to $4 million from $4.35 million, and the principal payment 30 years from now would increase by $13 million.

Discounting the resulting net cash flows at 4%, the TIC of the refunding bonds, results in present value savings of $2.1 million. The reader can do the math on the back of an envelope.

The $2.1 million savings amount to 2.4% of the outstanding $87 million principal. While it doesn't quite reach the GFOA-recommended 3% savings threshold for refunding, an interest rate decline of a mere 6 basis points would get you there. So you can do magic with 5% bonds — par bonds wouldn't do the trick!

Current Bond Flavors To Be Wary Of

- **Advance Refundings**
  - **Sensitivity and volatility analyses are needed to avoid acting too early**
  - **Investing *and* borrowing is involved so increasing interest rates can be beneficial - no need to rush *just* because interest rates are low now**
  - **Don’t use the one “advance refunding” option on the wrong transaction**
    - **Particularly to be considered with partial refundings**
      - **Further, costs for multiple transactions need to be considered**
- **Tender Offers**
  - **The bond market is not offering a bargain**


News From Bloomberg
http://www.businessweek.com/news/2012-09-13/detroit-shows-wall-street-never-loses-on-bad-swaps-muni-credit
Detroit Shows Wall Street Never Loses on Bad Swaps: Muni Credit
By Darrell Preston September 13, 2012

Framework for Prudent Refinancing*

- Intergenerational equity
  - the incidence of a debt burden among different generations of taxpayers, both present and future
- Economic efficiency
  - the opportunity cost of refinancing the debt later at a greater savings amount ("time value option")
- Measurability/certainty
  - Certainty refers to the likelihood that a government will have to forgo future resources
  - Measurability assesses the feasibility of valuing the amount of such foregone resources
- Management flexibility
  - the degree that a refinancing has constrained or freed a government entity's future financial decision making

*From "Not All Refinancings Are Created Equal: A Framework for Assessing State and Local Government Debt Refinancing Measures" by Martin J. Luby

Portfolio Perspective

- Think about outstanding debt as a portfolio of liabilities for which we want to reduce the interest and perhaps the term
- Refinancing involves buying and selling bonds, and therefore affects the portfolio value
  - Portfolio performance is not evaluated according to whether today's value is better than yesterday's
    - » Portfolio performance is evaluated according to whether it was managed well compared to a benchmark, which represents the alternative management decisions which could have been made

Expectations Are Relative