First Principles Capital Management, LLC

140 Broadway, 21st Floor, New York, NY 10005 Tel: 212-380-2280 Fax: 212-380-2290 www.fpcmllc.com

Tax-exempt housing bonds: municipals and mortgages intersect

By David Ho
Managing Director, Asset Management
dho@fpcmllc.com

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Housing finance agencies and housing bonds

State and local housing finance agencies ("HFAs") are state chartered housing agencies that serve to provide affordable housing for low to moderate income residents of their respective states. To satisfy their mandates, HFAs provide low-cost mortgages, home buyer counseling, down payment and up-front cost assistance, and proactive servicing to first-time qualifying home buyers. HFAs also provide low-cost multi-family financing to facilitate the development of affordable rental homes. State and local HFAs operate in all 50 states and many cities and counties across the country.

To help fund these low-cost loans, HFAs have issued taxable bonds, tax-exempt bonds and bonds subject to alternative minimum tax ("AMT"). These bonds are commonly known as single family mortgage revenue bonds ("MRBs") and multi-family housing bonds (collectively known as "housing bonds"). The proceeds from the issuance of these housing bonds are used to finance the low-cost, single family mortgages and affordable rental apartments that are the focus of their mandates. This paper will focus on tax-exempt and AMT housing bonds.

In 2007, HFAs issued approximately $18 billion in single-family housing bonds and $5 billion in multi-family housing bonds, accounting for about 5.4% of total municipal bond issuance of $429.2 billion. After the financial crisis of 2008, issuance plummeted. For example, single-family housing bond issuance in 2012 was only $4.6 billion and multi-family housing bond issuance was $4.55 billion.[1] In 2014, single family housing bond issuance picked up slightly from 2012 to $5.6 billion and multifamily housing bond issuance increased healthily to $7.4 billion. Annual issuance of tax-exempt and AMT housing bonds for each state is subject to Congressional cap.

Acts, bond resolutions and bond indentures

HFAs' legal authority for borrowing and lending, and the type of lending allowed is provided by state statute ("Acts"). An HFA's board of directors passes a bond resolution defining the specific purpose of a bond issuance, such as to make, purchase or otherwise finance certain allowable program loans and assets, to fund reserves and the cost of issuance, or to refund outstanding bonds. An HFA may issue under several bond resolutions and each bond resolution may consist of several programs (e.g., various single-family programs or multi-family programs). Below is an example of a bond resolution.

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[1] State Housing Finance Agencies Factbook: 2012 NCSHA Annual Survey Results.

Community Development Administration, Maryland Department of Housing and Community Development, Single Family Housing Revenue Bonds, 2013 Series A (Pass-Through Program):

> "The 2013 Series A Bonds will be issued pursuant to (i) Section 4-101 through 4-255 of the Housing and Community Development Article of the Annotated Code of Maryland, as amended (the "Act"), (ii) a Single Family Housing Revenue Bond Resolution providing for the issuance of Single Family Housing Revenue Bonds adopted by the Administration as of December 1, 2009 (the " Bond Resolution"), and accepted by Manufacturers and Traders Trust Company, as trustee (the "Trustee"), and (iii) a Series Resolution providing for the Issuance and Sale of Single Family Housing Revenue Bonds 2013 Series A (Pass-Through Program) (Non-AMT) that will be adopted by the Administration prior to the issuance of the 2013 Series A Bonds (the "2013 Series A Resolution")."

Because of the challenges faced by the HFAs in issuing new bonds following the financial crisis of 2008, the Treasury Department, using authority provided under the Housing and Economic Recovery Act of 2008 ("HERA"), initiated the New Issue Bond Program ("NIBP") to help the HFAs continue to satisfy their mandates. Through the NIBP, the Treasury provided temporary financing to HFAs to issue new housing bonds; the Treasury also purchased securities of Fannie Mae and Freddie Mac backed by these new housing bonds.[2] Many HFAs passed new bond resolutions to conform to the guidelines of these programs.

Once housing bonds have been issued and proceeds from issuances have been used to make or purchase loans or securities, all assets are delivered to a trustee (typically a trust bank). A bond indenture - the legal contract between the HFA and the trustee – governs how cash flows generated by the assets in the trust should be distributed to the various parties and accounts involved: bondholders, reserve funds, fiduciary fees, derivatives counterparties (if any), mortgage funds for purchases of more loans, etc.[3]

Loan insurance and guarantees

The single family mortgage loans that are made or acquired by the HFAs may have various types of insurance and/or guarantees:

- Insured by Federal Housing Administration ("FHA")
- Guaranteed by the Department of Veteran Affairs ("VA")
- Guaranteed in accordance with United States Department of Agriculture ("USDA"), Rural Housing Service ("RHS")
- Conventional loans, insured by a private mortgage insurance ("PMI") company (e.g. Radian, Genworth)
- Insured by state mortgage insurance funds[4]

[2] NIBP expired on December 31, 2012.

[3] Some HFAs will classify a series of housing bonds according to their bond resolutions, and some HFAs will classify these bonds according to their bond indentures. In this paper, we shall use resolution and indenture inter-changeably even though they are technically separate agreements.

[4] Some states (e.g., New York, Wyoming) have established their own mortgage insurance funds to provide primary mortgage insurance on single-family or multifamily mortgage loans.

- Some may be uninsured

HFAs will often exchange their FHA/VA/USDA-insured or guaranteed loans for Ginnie Mae ("GNMA") mortgage-backed pass-through certificates which are guaranteed by Ginnie Mae with respect to the timely payment of interest and principal.

Conventional loans with appropriate private mortgage insurance may be exchanged by the HFAs for Fannie Mae ("FNMA") or Freddie Mac ("FHLMC") mortgage-backed securities ("MBS"), which are guaranteed by FNMA or FHLMC, respectively, to the timely payment of interest and principal.

Multi-family mortgage loans may be secured by (i) mortgage insurance provided by FHA or a private mortgage insurers (including state mortgage insurance funds); (ii) guaranty by Ginnie Mae if mortgage loans are exchanged for GNMA certificates; (iii) credit enhancements provided by Fannie Mae or Freddie Mac; (iv) bank letter of credit (long term or during construction/rehabilitation phase); or may be (vi) uninsured.

Security for bonds

Housing bonds are typically secured by revenues and assets pledged to a particular bond resolution. These revenues and assets could include mortgage loans, MBS, funds, properties, investment income, etc. Series of bonds issued at different times under the same resolution are usually equally and ratably secured by the pledges of the bond resolution. This means an event of default with respect to one series of bonds will constitute an event of default with respect to all other series of bonds under the same bond resolution.

In some instances, however, specific assets are pledged to each series of bonds separate from other series under the same bond resolution. In such a case, an event of default with respect to one series of bonds will not necessarily trigger an event of default with respect to any other series under the same bond resolution.

Some housing bonds are also secured by the general obligation pledge of the HFA. In this case, if there is deficiency in revenues from pledged assets in the bond resolution to cover debt service, the HFA could use any available resource to cover the deficiency. Available resources could come from excess reserves designated to bonds from other bond resolutions or accumulated net assets of the HFA over time.

Credit considerations

In analyzing the credit quality of a particular housing bond, an investor should consider a variety of factors. Here are a few examples:

- What assets are pledged to the bond?
- What is the credit quality of the pledged assets?
    - Agency or non-Agency MBS?
    - Loan characteristics such as loan-to-value ("LTV") ratio, delinquency experience, demographics of borrowers, servicers, etc.?

    - Credit quality of private mortgage insurers (if any)?
- Are there other bonds that are equally and ratably secured? If so, what is the amount?
- What is the asset to liability ratio of the bond resolution securing the bond?
    - If the bond is backed by general obligation pledge of the HFA, how much are the net assets of the HFA?
- Are there derivatives exposures? Some HFAs have issued floating rate notes in the past and converted them into a fixed rate liability through interest rate swaps.
- Are there letters of credit? If so, what are the credit qualities and concentrations of liquidity providers?
- What type of investments are made by the HFA on available cash?
- If the HFA cannot generate sufficient income on investments (plausible in low rate environments), can pledged assets still generate enough cash flows to cover debt service?

Bond structures

Before the financial crisis of 2008, most HFA single-family housing bond structures were serial bonds where multiple maturities were issued at a price of par with the bulk of the issuances in longer maturities. After Lehman Brothers' default in 2008, municipal bond yields rose significantly, and it became uneconomical for most HFAs to issue traditional housing bonds. Consequently, many of them have added a large Planned Amortization Class ("PAC") tranche to their issuance (see Table 1 below for example).

Table 1: Georgia Housing and Finance Authority
Single Family Mortgage Bonds, 2015 Series A-1, bond structure at issuance

Maturity	Face	Coupon	Price	Next Call Date	Yield	Type
06/01/22	575,000	2.25%	100.00	Non-Call	2.25%	Serial
12/01/22	1,270,000	2.30%	100.00	Non-Call	2.30%	Serial
06/01/23	1,300,000	2.45%	100.00	Non-Call	2.45%	Serial
12/01/23	1,320,000	2.50%	100.00	Non-Call	2.50%	Serial
06/01/24	1,340,000	2.60%	100.00	Non-Call	2.60%	Serial
12/01/24	1,350,000	2.60%	100.00	Non-Call	2.60%	Serial
06/01/25	1,425,000	2.70%	100.00	12/01/24	2.70%	Serial
12/01/25	1,440,000	2.70%	100.00	12/01/24	2.70%	Serial
06/01/26	1,480,000	2.85%	100.00	12/01/24	2.85%	Serial
12/01/26	1,505,000	2.85%	100.00	12/01/24	2.85%	Serial
12/02/30	12,890,000	3.50%	100.00	12/01/24	3.50%	Serial
12/01/33	11,050,000	3.65%	100.00	12/01/24	3.65%	Serial
12/01/35	7,370,000	3.70%	100.00	12/01/24	3.70%	Serial
12/01/40	22,025,000	3.80%	100.00	12/01/24	3.80%	Serial
06/01/45	22,570,000	3.50%	107.28	12/01/24	1.95%	PAC

PAC bonds are typically linked to a portfolio of mortgage loans or MBS. If these mortgages' realized pre-payment speeds fall within a prescribed band, e.g., 75% to 400% PSA (PSA is the Public Securities Association's[5] standard pre-payment model), the PAC bonds will redeem according to a predetermined schedule, typically with average lives of approximately five years.

Since the average life assumptions of PAC bonds are shorter than traditional longer-dated serial bonds that they have partially replaced, issuers can save on interest expense in the steep yield curve environment that has been in place since 2009. With these savings, it has become economical for many HFAs to issue again.

Another popular single-family housing bond structure that followed the 2008 financial crisis is the pass-through structure, whereby investors receive principal payments directly associated with a group of loans or MBS on a pro rata basis.

For multi-family housing bonds, since most issues are tied to a single or a handful of buildings, principal pre-payments are hard to predict. In addition, there are extraordinary redemption provisions to consider (see "Pre-payment and duration considerations" section below). Hence, the most popular structure remains a single maturity term bond.

Issuer redemption options

In most mortgage investments, investors are short pre-payment options to borrowers, i.e., borrowers can refinance the loans when rates are lower and maintain the loans when rates are higher. This results in investors having more cash to re-invest in a lower rate environment and less cash to re-invest in a higher rate environment. In most housing bonds (except the pure pass-through structure), investors are short additional options to the issuers.

The most common option owned by an issuer is the right to call the outstanding issue in part or in its entirety after about ten years (see Table 1 for example). Therefore, if interest rates are lower ten years after the initial issuance, the issuer can re-issue at the lower yields and use the proceeds from the new issuance to call in part or in whole the outstanding issue.

Because of pre-payments, housing bonds often have average lives shorter than the stated final maturities on the bonds, especially for PAC bonds and serial bonds with long final maturities. In some housing bonds, issuers may choose to recycle principal payments back into mortgage loans or MBS. This means housing bonds may extend beyond the average life expectations of investors based on assumed pre-payment speeds of the underlying loans (though no bonds should extend beyond their stated final maturities). To satisfy requirements to maintain tax-exempt status, however, the Internal Revenue Service requires all principal payments received on mortgage loans or MBS purchased with proceeds from issuance of the bonds to go towards redeeming the bonds 10 years after the original issuance. Called the 10-year rule, this helps to curb some of the recycling activities.

On the opposite end of the mortgage loan recycling spectrum is cross-calling. Cross-calling occurs when an issuer redeems a series of bonds by using principal payments or other available revenues from another series of bonds either under the same bond resolution or from an entirely different bond

[5] PSA is now part of the Securities Industry and Finance Markets Association ("SIFMA").

resolution. When a housing bond is subject to cross-calling, its average life may prove shorter than investors' expectations upon receiving principal from a larger pool of mortgage loans and MBS than those purchased with issuance proceeds of the particular housing bond.

Pre-payment and duration considerations

Contractually, housing bonds cannot extend beyond their stated final maturities, but there are potentially many ways for the bonds to be redeemed before the stated final maturity. Thus, it is a challenge for investors to analyze the expected duration of housing bonds given the number of options involved. To analyze the expected duration properly, investors would need to first study the underlying mortgages' characteristics such as LTV, loan size, debt to income ("DTI") ratio, housing price appreciation ("HPI") and historical turn-over and default speeds. Furthermore, investors would need to consider the various options described above that the investors are short to the issuers such as right to call, recycling and cross-calling. Some issuers are more efficient at exercising their options than others, so historical redemption data for different issuers helps in analyzing the probability of redemption.

Most PAC bonds have been redeeming according to schedule since 2009 due to stable pre-payment speeds. Theoretically, though, if prepayment speeds increase significantly, PAC bonds could redeem faster than the pre-specified schedules. Conversely, if pre-payment speeds slow down dramatically, average lives could extend beyond five years. Since 2009, when PAC bonds first became popular, most have redeemed according to schedule because of the fairly narrow band of interest rates experienced. However, if interest rates decrease or increase significantly, we could see shortening or extension on some of these PAC bonds.

Analysis of PAC bonds is further complicated by some issuers' ability to cross-call. If prepayment speeds on the linked mortgages slow down to below the lower PAC band limit such that there aren't enough principal pre-payment receipts to cover the pre-specified redemption amounts, some issuers could make scheduled payments by using revenues from other sources. Conversely, if prepayment speeds on the linked mortgages speed up beyond the upper PAC band limit, some issuers may be able to divert the principal payments received towards calling bonds of other series.

Pure or nearly-pure pass-through structures are relatively easier to analyze since issuers have no or few options to redeem. For these structures, the focus will be on the mortgage loans themselves.

Multi-family housing bonds typically have more concentrated pre-payment or default risk since they are associated with one or a small number of apartment buildings. In addition, most multi-family housing bonds have extraordinary redemption provisions ("ERPs"), whereby the bonds may be redeemed in whole or in part as a result of damage, destruction or condemnation to the properties. An event of re-financing, default or ERP could significantly shorten the duration of a multi-family housing bond.

Markets and trading

Serial housing bonds are typically issued at prices of par. The yields usually trade at healthy spreads over the Thompson Reuters Municipal Market Data AAA curve ("MMD"). For example, 10-year housing bonds trade at spreads of approximately 80 to 110 basis points over 10-year MMD depending on market conditions and the issuer.

There are several reasons that cause housing bonds to trade cheaply vs. other municipal sectors. First, the negative convexity of mortgages combined with various issuer redemption options make it harder to gauge the durations of the bonds. This duration uncertainty manifests itself as additional yield concessions investors demand as compensate for all the options that the investors are short. Second, since most housing bonds are issued at par, they do not have much protection against the de minimis rule.[6] Third, because of the idiosyncrasies of the sector, housing bonds do not trade as frequently as some other sectors; therefore, an additional liquidity premium is demanded by investors.

PAC bonds are typically structured as slight premium bonds at issuance. Yields on PAC bonds are usually established as yields to average lives, typically five years. At issuance, these yields to average lives are normally set by adding a spread, roughly in the 80 basis points range, to 5-year MMD.

Bonds subject to AMT trade approximately 25 to 30 basis points cheaper than non-AMT bonds. For investors not subject to AMT, these bonds could add decent value.

There is no pricing standard on pass-through structures. Pass-through bonds could be issued as par bonds or premium bonds. Sometimes the bonds are priced as fixed yield spreads to the MMD curve, and sometimes they are priced as fixed price spreads to to-be-determined ("TBA") taxable agency MBS prices.

Multifamily housing bonds typically trade at similar spreads to MMD as single-family housing bonds. While multi-family housing bonds are usually not subject to recycling or cross-calling activities by issuers, they have more concentrated pre-payment, default and ERP risks. A portfolio of un-diversified multi-family housing bonds may experience significant duration shortening from time to time.

When buying housing bonds in the secondary market, investors need to beware of bonds trading at high premiums, as issuer redemptions could drop bond prices quickly to par. Conversely, for housing bonds trading at large discounts, investors need to keep in mind the de minimis rule.

[6] For tax-exempt bonds purchased after April 30, 1993, market discounts beyond a de minimis threshold amount ($0.25 per whole year from the time of purchase to the final maturity of the bond) will cause the entire market discount to be treated as ordinary income as opposed to capital gains upon maturity (it is not necessary to pay income tax on the market discount accretion annually). If this bond is sold before maturity, the amount of market discount accretion from purchase date to sale date will be taxed as ordinary income, and the remainder will be taxed as capital gains.

Summary

HFAs are chartered by states to carry out their affordable housing mandates. They make mortgage loans to low or middle income first-time homebuyers and provide funding for affordable multi-family projects. To finance these loans, the HFAs may issue tax-exempt housing bonds.

Housing bonds are normally secured by a portfolio of mortgage loans or agency MBS. Depending on the resolution or indenture, a particular series of housing bonds could be pari passu with other series of housing bonds issued under the same resolution or indenture. Some housing bonds are also secured by general obligation pledge of the issuers.

The mortgage loans or MBS held by the HFAs may have various types of insurance or guaranty, such as FHA, VA, USDA, RHS, PMI, GNMA, FNMA, FHLMC, or bank letter of credit. The credit-worthiness of the housing bonds will depend on the type of insurance/guaranty on the mortgage loans/MBS as well as the amount of assets vs. outstanding liabilities.

The most popular structure for single-family housing bonds is a series of par bonds with different final maturities. The bulk of issuance is typically in bonds with long final maturities. The structure may also include a premium PAC bond which usually has an expected average life of approximately 5 years. Another popular structure is a pass-through structure, wherein principal payments of linked mortgage loans or MBS are directed to redemption of bonds on pro rata basis. Multi-family housing bonds are typically issued as single-maturity term bonds.

In addition to the negative convexity associated with mortgages, investors of housing bonds may be short a number of options to the issuers. Issuers typically have the right to call bonds in whole or in part ten years after issuance. Issuers may also have the ability to recycle principal payments or can cross-call bonds.

The durations of housing bonds will depend on pre-payments of the underlying mortgage loans or MBS. Duration may also be affected by loan recycling or cross-calling activities by issuers. Durations of PAC bonds have been fairly stable since their rise to popularity in 2009 due to stable prepayment speeds. However, if interest rate environment changes dramatically, these PAC bonds could either shorten or extend significantly. Duration of multifamily housing bonds may change dramatically due to more concentrated idiosyncratic risks.

Housing bonds typically trade at attractive spreads over MMD. This spread can be attributed to complexity of structures, low coupons, and relatively low liquidity. Investors should give consideration to pre-payments and the de minimis rule when purchasing premium and discount housing bonds in the secondary market.

While housing bonds have a lot of built in complexity and relative lack of liquidity, for long term investors willing and able to do their homework, the reward is a portfolio of tax-exempt bonds with solid credit quality and attractive risk-adjusted yields.

David Ho is Managing Director, Asset Management of First Principles Capital Management, LLC (“FPCM”).

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For more information, please contact:

David Ho, Managing Director, Asset Management
212-380-2292 / dho@fpcmllc.com

Michael T. Girouard, Senior Vice President, Portfolio Strategy
212-380-2288 / mgirouard@fpcmllc.com

Or additional information about FPCM can be found at www.fpcmllc.com

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