



GSE DEBT SECURITIES

*Various debt instruments
to meet
investor needs.*



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THE GSE DEBT MARKET: AN OVERVIEW

GSE Issuers and Their Financing Needs

Government-sponsored enterprises (GSEs) are financing entities created by Congress to fund loans to certain groups of borrowers such as homeowners, farmers and students. Through the creation of GSEs, the government has sought to address various public policy concerns regarding the ability of members of these groups to borrow sufficient funds at affordable rates. GSEs are also sometimes referred to as federal agencies or federally sponsored agencies. The reader should note, however, that there are organizational differences among the GSEs although all are established with a public purpose: Student Loan Marketing Association (Sallie Mae), Federal National Mortgage Association (Fannie Mae) and Federal Home Loan Mortgage Corporation (Freddie Mac) are privately owned corporations, while the Federal Home Loan Banks and the Federal Farm Credit Banks are systems comprising regional banks. *All GSE debt is sponsored but not guaranteed by the federal government, whereas government agencies such as Government National Mortgage Association (Ginnie Mae) are divisions of the government whose securities are backed by the full faith and credit of the United States.* To conduct their lending business, GSEs have significant funding requirements. While many are stockholder-owned companies that can raise equity capital, most GSEs rely primarily on debt financing to fund their day-to-day operations. Among the most active issuers of debt securities are: Federal Home Loan Banks, Freddie Mac, Fannie Mae, Federal Farm Credit Banks, Sallie Mae and Tennessee Valley Authority (TVA). Supranational and international institutions, such as the World Bank, also issue debt securities. Complete descriptions of each GSE are provided beginning on page 21.



Buyers of GSE-issued debt securities include domestic and international banks, pension funds, mutual funds, hedge funds, insurance companies, foundations, other corporations, state and local governments, foreign central banks, institutional investors and individual investors.

The Credit Quality of GSEs

In general, debt securities issued by GSEs are considered to be of high credit quality. The senior debt of the GSEs is rated AAA/Aaa, while the subordinated debt of Fannie Mae and Freddie Mac is currently rated AA-/Aa-. Some GSEs have explicit, though limited, lines of credit from the U.S. Treasury. As a group, GSEs benefit from a perceived tie to the federal government as institutions established under federal legislation.

However, debt securities issued by GSEs are solely the obligation of their issuer and, unless explicitly stated, do not carry any guarantee by the federal government. They are considered to carry greater credit risk than securities issued by the U.S. Treasury and certain government agencies (e.g., Ginnie Mae) whose securities have the full-faith-and-credit guarantee of the U.S. government. For this reason, GSE debt obligations often carry a yield premium over Treasury securities with comparable maturities. The premium varies with market volatility, and the structure, maturity, and general supply and demand for the particular security.

The Growing Use of Regular Issuance Programs & Auctions

The GSEs utilize a variety of issuance formats for their securities. Most long-term debt is issued in public monthly security sales through designated dealer groups using both syndicate and auction pricing methodologies. Currently, the majority of GSE term debt is issued through various programmatic issuance formats, as outlined in greater detail below. All the GSEs have created issuance programs that incorporate funding calendars for large-size issues. Due to differences in the GSEs' organizational and

corporate structures, the separate funding calendars will vary as to specified issuance details.

In 1997, the Federal Home Loan Banks Office of Finance began using auctions in its issuance of short-term discount notes. Since then Freddie Mac and Fannie Mae have also incorporated auction formats in their programmatic short-term funding. Additionally, all the GSEs post daily rates for discount notes. Currently, most of the non-callable term debt that is issued is in the form of conventional notes having maturities of one, two, three, five, ten and thirty years. However, many GSEs have incorporated floating-rate and callable securities into their issuance programs and regularly issue these structures as well.

Today, GSEs increasingly choose to raise funds through a variety of formal debt issuance programs. Freddie Mac 'Reference Notes™', 'Reference Bonds™' and 'Reference Bills™'; Fannie Mae 'Benchmark Notes™', 'Benchmark Bonds™' and 'Benchmark Bills™'; Federal Home Loan Bank 'TAP Issues™'; and Federal Farm Credit Bank 'Designated Bonds™' and Calendar Bond Program™ have all been developed recently to brand these particular securities with certain attributes of liquidity and pricing transparency. Several factors have contributed to this recent change in the GSE debt market:

- 1) Continued strong demand in the domestic housing and agricultural markets
- 2) The development of a successful futures market in certain GSE debt
- 3) A reduction in the issuance of debt by the U.S. Treasury and other governments and the increase in investor demand for GSE debt
- 4) The broad availability of systems that provide enhanced fixed-income analytic capabilities
- 5) New funding efficiencies offered by Internet technology and the development of hedging markets.

The selective application of auction methodology in debt issuance by the GSEs in the last few years has introduced greater regularity and transparency to the securities pricing process and made possible for the first time a true “when issued” (WI) market in those short- and long-term issues which are scheduled to be auctioned. Working through The Bond Market Association, the dealers and issuers have helped establish commonly used trading guidelines that govern WI trading in GSE auctioned issues of term debt with a maturity of two years and longer. (See “Practice Guidelines for When-Issued Trading in GSE Auctioned Securities,” www.bondmarkets.com/agrees/practice_guidelines_for_wi_trading.pdf.)

Additionally, advances in technology have enhanced the market for customized interest rate swaps, options and futures, and allowed the GSEs to issue a variety of structured products that can be highly tailored to simultaneously meet the very specific needs of issuers and investors. For instance, the GSEs have various medium-term-note (MTN) programs that allow them to come to market on a continuous basis with different debt offerings. As a result, GSEs have gained the flexibility to structure the size and terms of their debt issues to meet the requirements of a particular investor or class of investors. Under these programs, issuers may choose a variety of maturities with either callable or fixed maturities as well as floating interest rates, interest rates linked to one or more market indices, different interest payment dates and other key features. The same flexibility can be achieved through individually negotiated security offerings.

The variety of issued securities enable GSEs to lower their cost of funding by targeting an issue to a particular investor need, since investors are typically willing to pay a premium to obtain a desired cash flow or implement a particular market view. Issuers also use the structures to obtain options from investors in a cost-effective manner. For example, an investor will demand a yield premium for allowing



the issuer the option to call a bond or note, but if interest rates decline the issuer might ultimately save money by exercising the call option.

In connection with these structures, issuers often enter into customized options and/or swap agreements with a third party. The third party may be an investment bank, a subsidiary of an investment bank, a swap dealer or another entity. Under these agreements, the issuer receives a cash flow needed to fulfill the terms of the security offering while agreeing to pay its counterparty a rate that might better match the incoming cash flow on its assets. The GSE issuer assumes all counterparty credit risk; a default by the issuer’s counterparty on an option or swap agreement does not change the issuer’s obligations to investors in the related security.

INVESTOR BENEFITS

The variety of GSE-issued debt securities and programs offer investors a unique combination of high credit quality, liquidity, pricing transparency and cash flows that can be customized to closely match an investor’s objective to:

- implement a current interest rate or currency view;
- hedge a specific risk;
- enhance portfolio liquidity;
- balance portfolio performance characteristics;
or
- minimize transaction costs.

The wide range of debt securities can be viewed as a way of enabling investors to achieve the benefits available from interest rate (and other) swap and option arrangements without incurring the operational and transactional expenses required to estab-



lish and manage swap agreements and the related counterparty credit risk.

INVESTOR RISKS

The wide variety of new GSE debt structures require a higher level of investor sophistication and awareness. Different structures behave differently when interest rates, yield curve shapes, exchange rates and/or other market indices change. Typically, structured debt securities preserve investors' principal if purchased at par and held to maturity. However, some structured securities add features that can accelerate final maturities and place interest flows, and in some cases principal, at risk. Certain structures have become common, while others remain unique in both issuance and investor applicability. As the variations expand, it is crucial that investors know exactly how the instrument is affected by market changes.

Investors should fully understand the price sensitivity and performance characteristics of the instrument they are considering, and make a complete analysis of both potential risks and benefits. The key to success in this market is to be fully aware of all the characteristics of the particular instrument and to understand how the security will react to changes in relevant market rates and in combination with other portfolio holdings. Once investors purchase these securities, they should also monitor their performance continuously.

Furthermore, certain MTN issues can have limited liquidity. Certain structured securities have a narrower base of potential investors, because securities that have been structured for a particular investor's needs may not match the needs of other investors. With such products, buyers in the secondary market may be much more difficult to find.



FEDERAL & CONGRESSIONAL OVERSIGHT OF THE GSES

To assure that the GSEs continue to fulfill their public mission of reducing borrowing costs for certain groups, their activities are monitored and periodically reviewed by their respective regulators and congressional oversight committees. In recent years, Congress has, from time to time, also considered reevaluating and/or modifying the nature of their federal status and broadening the authority of agencies like the Office of Federal Housing Enterprise Oversight (OFHEO) to oversee certain GSEs. Public criticism of the GSEs can obviously create some level of political uncertainty and price volatility in these markets. This “political headline” risk has so far never affected the current credit of outstanding GSE debt, but it can impact trading spreads and temporarily disrupt liquidity in the GSE market.

Investors should therefore remain cognizant that, as large as the GSE debt market has become, Congress and other federal oversight authorities will continue to play a key role in assuring that the GSEs do their utmost to fulfill their missions, maintain their high credit ratings and adhere to their charters. At times this may create a certain amount of short-term volatility in these markets. Yet, responsible federal oversight ultimately helps strengthen the long-term viability of the GSE debt market.

GENERAL DESCRIPTION OF GSE DEBT SECURITIES

GSE-issued debt securities can be structured to offer investors fixed or floating interest rates. While the basic structures share many characteristics of non-structured fixed- or floating-rate debt, many variations are possible. This overview attempts to describe some forms common in today's market, moving from the simplest to the most complex.



FIXED-RATE SECURITIES

Standard Fixed-Rate Features

Fixed-rate debt securities have fixed interest rates and fixed maturities. If held to maturity, they offer the benefits of preservation of principal and certainty of cash flow. Prior to maturity, however, the market value of fixed-rate securities fluctuates with changing interest rates. In a falling-rate environment, market values will rise, with the degree of increase determined by the time remaining to maturity or call date, creating the potential for capital gains. In a rising-rate environment, prices will fall, creating the risk of loss when securities that have declined in market value are sold prior to maturity.

Debt Variations

■ **Callable Securities.** These structures give the issuer the right to redeem the security on a given date or dates (known as the call dates) prior to maturity. Essentially, an option to call the security is sold by the investor to the issuer, and the investor is compensated with a higher yield. The value of the call option at any time depends on current market rates relative to the interest rate on the callable securities, the performance of assets funded with the proceeds of callable issues, and the time remaining to the call date. The period of call protection between the time of issue and the first call date varies from security to security. Documentation for callable securities usually requires that investors be notified of a call within a prescribed period of time.

Issuers typically exercise call options in periods of declining interest rates, thereby creating reinvestment risk for the investor. On the other hand, if an investor expects a security to be called and it is not, the investor faces an effective maturity extension that may or may not be desirable. Certain securities may be called only in whole (i.e., the entire security is redeemed), while others may be called in part (i.e., a portion of the total face value is redeemed)



and possibly from time to time as determined by the issuer. The three most common callable features are: (i) European—callable only at one specific future date; (ii) Bermudian—callable only on interest payment dates; and (iii) American—callable on any date, normally with 30 days notice. In almost all cases, the right of the issuer to exercise a call is deferred to the end of an initial “lock-out period.”

The Valuation of Callable GSE Debt. When interest rates move, the values of almost all debt securities change. For non-callable fixed-rate instruments, the price of the security will go down as rates go up (and up as rates go down) so that yields remain in line with prevailing market rates.

For securities with embedded options, however, the market price also has to account for the change in the value of the embedded option. A call option, for example, becomes more valuable to the issuer as interest rates fall and the yield to investors adjusts to reflect that higher value. The degree of such shifts, however, may be difficult to determine accurately in advance. Market volatility will also affect the price investors are willing to pay for a given security.

Several valuation methods are available to help investors calculate the value of a specific debt security. Results can vary widely from model to model. While no single valuation method is universally preferred, some are used more commonly than others. The option-adjusted spread (OAS), for example, calculates the annual value of an embedded call option (in basis points, based on an assumed rate of volatility) and subtracts it from the security’s yield spread. This adjusted spread can then be compared to the available spread on a non-callable security of similar credit quality with the same maturity. If the callable GSE security’s adjusted spread is less than the yield on a non-callable GSE security, the non-callable security may be a better investment choice. The current calculations of the OAS on most outstanding GSE structured debt securities are available through leading information vendors.



Other approaches involve comparing the risk/reward profile of the security to that of other securities; performing a forward-rate analysis, which assumes forward rates will reflect current yield curve assumptions; reviewing the range of performance possibilities based on historical distribution of interest rates or under a stress scenario (e.g., a 200-basis-point shift in the yield curve); and calculation of an instrument's internal rate of return.

■ **Step-Up Securities.** An initial fixed interest rate is paid until a specified date, generally a call date. On a five-year note, for example, the call date may be two years after issuance. On the prescribed date, if the security has not been called, the interest payment “steps up” to a specified higher rate that was fixed prior to the issuance of the security. A single security can have more than one step-up period.

Step-up securities are typically structured so that they are callable by the issuer at any interest payment date on or after the first call, or step-up, date. Some step-up securities have been issued so that they are continuously callable after the first call date, meaning they can be called at any time, not just on the payment dates.

A less common variation is the step-down security, also callable, which provides the investor with a higher initial interest rate but greater uncertainty about maturity.

■ **Indexed Amortization Notes.** (IANs; also known as Indexed Principal Redemption Bonds, Principal Amortization Notes or Indexed Sinking-Fund Debentures.) These securities pay a fixed rate of interest and repay principal usually according to an amortization schedule which is typically linked to the level of a designated interest rate index such as the three-month U.S. dollar London Interbank Offered Rate (LIBOR). The amortizing principal payments usually begin at the end of a prescribed “lock-out” period. For example, a five-year IAN might have a two-year lockout period during which interest is

paid on the full principal amount. Between years three and five, investors receive partial repayments of principal, at an amortization rate determined by the designated index, and interest based on the amount of principal still outstanding. At the stated maturity date, any outstanding principal is retired regardless of the level of the index.

Note: IANs are often compared to Planned Amortization Class (PAC) tranches in collateralized mortgage obligations (CMOs). Like some CMO PAC bonds, they have a guaranteed minimum life and an expected amortization schedule, although the actual amount of future cash flows remains unknown because it depends on interest rate movements. Unlike with CMO PAC bonds, however, any prepayment risk that exists is created by movements in the selected index rather than by actual prepayments on underlying mortgage loan collateral. Furthermore, an IAN does not depend on the amount or timing of principal repayment of other tranches in the same offering, as is typical in the case of CMO PAC bonds.

FLOATING-RATE SECURITIES

Rather than paying a fixed rate of interest, floating-rate securities (or floaters) offer interest payments which reset periodically, with rates tied to a representative interest rate index. Floaters were first issued during a period of extreme interest rate volatility during the late 1970s. From the investor's perspective, floaters can offer enhanced yields when compared to a strategy of rolling over comparably rated short-term instruments and paying the related costs associated with each transaction. Floating-rate securities also allow investors to match asset and liability cash flows.

Standard Features:

Base Index. Indices used to set the interest rate on floaters include:

- CMT: Constant Maturity Treasury Index
- COFI: Cost of Funds Index, typically the one published by the 11th District Federal Home Loan Bank
- CP: Federal Reserve Commercial Paper Composite

- Fed Funds Rate
- LIBOR: London Interbank Offered Rate for U.S. dollars and other currencies: three-month, six-month or one year
- Prime Rate
- Treasury bill rates: three-month, six-month or one year
- Foreign interest rate or currency exchange rate: see non-dollar section. page 15.

The rate may also be set as some combination of the above, such as Prime minus 10-year CMT plus three-month LIBOR. The glossary beginning on page 23 describes each index in more detail.

Yield Spreads. Floater yields are typically defined as a certain number of basis points (or spread) over or under the designated index. Floaters based on indices such as T-bills will generally add the spread (e.g., the interest rate will be T-bill plus 40 basis points), while those based on other indices such as the prime rate might have the spread subtracted from the rate (e.g., the interest rate will be Prime minus 240 basis points). Typically, spreads are set when the securities are priced and remain fixed until maturity so that changing interest rates affect the amount of interest paid on the security but not the spread.

When floating-rate securities are purchased at a price other than par, the difference between the purchase price and par is converted to a percentage and discounted for the remaining life of the security to calculate an effective yield, also known as the discount margin or sometimes as “spread for life.”

Reset Periods. The interest rate on floaters may be reset daily, weekly, monthly, quarterly, semiannually or annually. In some cases, the reset period will be determined by the index used. Fed funds floaters, for example, might reset daily because the rate is an

overnight rate, while T-bill floaters usually reset weekly following the weekly T-bill auction. Some floaters, particularly those with more frequent resets, set their rate as of a date prior to the coupon payment date. The period between the date the rate is set and the payment date is referred to as a “lock-out” period. Floaters with longer reset periods may be more vulnerable to interest rate and price volatility.

Day Count Periods. Floating-rate securities generally use a month/year day count convention of 30/360, actual/360 or actual/actual to calculate the number of days in the interest payment period. For example, a security with a 30/360 convention assumes there are 30 days in every month and 360 days in every year. As a result, the rate of interest accrues daily at 1/360th of the nominal interest rate for the calculated number of days in the interest period; even in a 31-day month, interest is calculated on the basis of 30 days. Actual/360 uses the actual number of days in the month and a 360-day year; actual/actual uses the actual number of days in both the month and the year. Day count periods can vary by issuer and by issue. They are disclosed in offering documents.

Payment Periods. Interest payments on floaters may be made monthly, quarterly, semiannually or annually. Interest on floaters is usually not compounded, but the more frequent the payments, the more the investor stands to earn from reinvesting. The higher the prevailing interest rate for reinvested funds, the more noticeable this potential compounding effect will be.

Maturity. Floaters may be issued with any maturity, and those with longer maturities generally carry a slight yield premium. With a fixed-rate security, the yield premium for longer maturities tends to compensate investors for credit and interest rate risk during the time the security is outstanding. Yield premiums for longer maturities on floating-rate securities can also reflect the possibility of credit changes and, to a lesser degree, interest rate movements.

Interest Rate or Coupon. Because the interest payment on a floater is tied to an index through some formula, the actual interest paid may be lower than the rate paid on a conventional fixed-rate debt security. For some issues, a zero interest rate is possible.

Note too that floaters tied to indices such as COFI or Prime, which tend to lag behind the market, may perform better in a falling-rate environment, while floaters tied to coincident market indices such as LIBOR may do better in a rising-rate environment. Floaters tied to T-bills, meanwhile, can suffer from falling rates created by high T-bill demand during times of political crisis or extreme market shifts. Investors should remember that not all indices perform alike under different interest rate scenarios.

Valuation. The secondary market value of a floater is based on the volatility of the base index, the time remaining to maturity, the outstanding amount of such securities, market interest rates and the credit quality or perceived financial status of the issuer. Each of these factors is dynamic, and can result in higher or lower secondary market values. As with all securities, supply and demand must be taken into consideration. With respect to demand, investors should keep in mind that securities structured to meet the needs of a particular investor may have limited liquidity because of the challenge of finding another buyer.

Basis Risk. Basis generally refers to the difference between two indices. Basis risk refers to the possibility that this difference will change in an unanticipated manner. For example, if an investor with liabilities tied to one index, such as the T-bill rate, matches those liabilities to assets tied to another rate, such as LIBOR, the investor could be subject to basis risk if the two rates move in different directions than expected or at differing rates of change.

NON-DOLLAR PROGRAMS AND STRUCTURES

Programmatic and MTNplatform issued debt securities with either fixed or floating-rate interest may incorporate features that allow investors to hedge foreign currency risk or to participate in higher overseas interest rates. Investors may also use these structures to take a position on an expected movement in foreign exchange or interest rates. For example, an inverse floater tied to an overseas interest rate would allow the investor to benefit from falling interest rates in that particular market.

These structures may be denominated in a currency other than U.S. dollars, or they may have their interest rate payment linked to a non-dollar interest rate or to an exchange rate between two or more currencies. Interest can be payable in a foreign currency or in U.S. dollars even though the rate is based on a foreign rate. Generally, structures that are denominated in U.S. dollars and pay in U.S. dollars do not expose the investor to currency risk, although some of the other variations will be denominated and pay interest in a foreign currency. Maturities generally range from two to 10 years and, as is the case with Freddie Mac's Euro Reference Programme™, can be accompanied by an issuance calendar and a highly liquid secondary market. The special risk in these instruments is related to the possibility of changing relationships in foreign exchange rates and/or a marked change in the value of the dollar's exchange rate with a particular foreign currency. If the spread between the U.S. interest rate and the relevant foreign interest rate changes in an unexpected way, investors may earn a lower or higher relative rate.

PRIMARY GSE ISSUANCE PROGRAMS

Federal Farm Credit Banks—Designated Bonds™, MasterNotessm, Calendar Bond Program™, Discount Notes

Federal Home Loan Banks—TAP Issues™, Medium-Term Notes, MasterNotessm, Discount Notes

Freddie Mac—Reference Notes™, Reference Bonds™, Reference Bills™, Euro Reference Programme™, Discount Notes, Medium Term Notes, FreddieNotes™, and EstateNotes™

Fannie Mae—Benchmark Notes™ and Benchmark Bonds™, Benchmark Bills™, Callable Benchmark Notes™, Discount Notes, Medium-Term Notes and Fannie Mae Investment Notes™

Sallie Mae—Monthly Six-Month Floating Rate Notessm, MasterNotessm, Medium-Term Notes and Discount Notes

TVA—Electronotes™, Power Bonds™ and Discount Notes

OFFERING DOCUMENTATION FOR GSE STRUCTURED DEBT SECURITIES

In offering structured debt securities, GSEs generally prepare disclosure documents that discuss all the material terms of the investment. Dealers routinely provide these documents before settlement, and investors may obtain documentation directly from the issuer or, in some cases, from one of several financial information vendors. The investor should carefully read and fully understand the information in the offering documentation.

THE SECONDARY MARKET FOR GSE DEBT

A liquid and active secondary market in most of the GSEs' programmatic debt issues has developed over the last few years. The enhanced liquidity of GSE programmatic debt issues, with regular and broad investor distribution, has been accompanied by an active repo and securities lending market in many of these issues. Additionally, an active "WI" trading market has developed in those Reference Notes™ currently auctioned by Freddie Mac.

Almost all of the programmatic issues and many of the MTNs are quoted through electronic information systems, and secondary market prices are provided by many domestic and foreign dealers. Further, a number of electronic exchanges have listed programmatic GSE debt in their systems.

It is important for investors to understand that GSE-issued MTNs are often tailored to the needs of a particular investor or class of investors. As a result, they are generally intended to be held until maturity. The underwriter of a GSE-issued structured debt security will usually agree to make a market for a customer who wants to sell the security prior to maturity; in fact, some issuers have obligated their underwriting dealers to do so. However, the high level of customization in this market can make it difficult to find another buyer. As the market grows, some structures are becoming more standard, and liquidity in these types of instruments could increase.

Still, as stated earlier, investors need to understand the characteristics of structured securities before they invest in them, particularly the ways in which their value will be affected by different interest rate scenarios and other market conditions. In most cases, they should be prepared to hold the investment to maturity or to risk a loss of principal due to both interest rate movements and illiquid markets if

they need to sell before maturity. They should also consider the potential impact of changing values if they have to mark the securities to market for financial reporting purposes.

REGULATORY ISSUES RELATING TO GSE-ISSUED STRUCTURED DEBT SECURITIES

Some investors, such as those subject to the Securities and Exchange Commission's Rule 2a-7 governing money funds, may face regulatory restrictions on their purchase of certain structured floating-rate notes. For example, such funds are prohibited from investing in floating-rate notes to the extent that, at the time of issuance, changes in interest rates or other conditions can reasonably be foreseen that would result in their market value not returning to par at the time of an interest rate adjustment. Other restrictions have to do with time remaining to maturity or reset and caps on floating-rate securities. The investment suitability of structured securities has recently been the subject of heightened regulatory examination and is likely to continue to be scrutinized in the future.

The Securities and Exchange Commission has listed other types of structured securities deemed inappropriate for money funds. The Office of the Comptroller of the Currency has also issued a release stating that "the OCC considers it an unsafe and unsound practice for a bank to purchase material amounts of structured notes, or any other bank asset, without a full understanding of the risks involved." Similar pronouncements have been made by the Office of Thrift Supervision and the Board of Governors of the Federal Reserve System. Investors should, therefore, consult their legal advisors before investing to determine whether, and to what extent, a GSE-issued structured debt security constitutes a legal investment for them.

A CAUTION ON TAX AND ACCOUNTING ISSUES

Apart from legal investment issues, the variations of structured debt securities make it impossible to generalize about appropriate tax and accounting treatment for an investor. Investors should consult with their own tax advisors and accountants prior to investment.

QUESTIONS INVESTORS SHOULD ASK AND INFORMATION RESOURCES

Many dealers and information vendors provide detailed research and product information on GSE debt securities. Additionally, the GSEs' own Web sites contain much descriptive information about their debt securities.

Following are some questions that should be asked before investing in any GSE debt securities:

1. Does this investment conform to my investment guidelines?
2. Does it also conform to my suitability standards in terms of: portfolio objectives, liquidity needs, cash-flow requirements, credit diversity and structure diversity?
3. What interest rate assumptions are embedded in this security?
4. How much additional yield am I receiving in this structure and for what risk?
5. What is the best-case interest rate scenario for this product?
6. How might it perform if rates move in the opposite direction?

7. What is the worst-case interest rate scenario?
8. Is there leverage in this structure? If so, how does it apply in the best-case and worst-case scenarios?
9. If the investment has a floating rate, is there a cap, floor or collar? If so, how will these features affect the security's performance under different interest rate scenarios?
10. Am I taking the risk of a zero or negative interest payment?
11. How is my principal repayment affected under different interest rate scenarios? To what extent is principal at risk?
12. Will there be a buyer for this security at a price that reflects its current value if I have to sell it sooner than I anticipate?
13. Are there high minimum denominations indicating a complex security that may have a limited universe of possible buyers?
14. Have I seen all the relevant documentation on this issue?
15. How can I get a price and analysis on this security?
16. Do I understand the structure, the issuer and its business?

Investors should keep asking questions until they feel completely secure in their knowledge of the security they are considering for purchase and of the ways it fits with their investment goals.

THE ISSUERS: WHO ARE THEY AND WHAT DO THEY DO?

Federal Farm Credit System (FFCB)

Created by Congress in 1916, this nationwide system of banks and associations provides mortgage loans, credit and related services to farmers, rural homeowners, and agricultural and rural cooperatives. The banks and associations are cooperatively owned, directly or indirectly, by their respective borrowers. The banks of the Farm Credit System issue securities on a consolidated basis through the Federal Farm Credit Banks Funding Corporation. Additional information regarding the Federal Farm Credit System can be obtained at www.farmcredit-ffcb.com

Federal Home Loan Bank System (FHLBanks)

Created in 1932, this system consists of 12 regional banks, which are owned by private member institutions and regulated by the Federal Housing Finance Board. Functioning as a credit reserve system, the system facilitates extension of credit through its owner-members in order to provide access to housing and to improve the quality of communities. Federal Home Loan Bank issues are joint and several obligations of the 12 Federal Home Loan Banks and issued through the Federal Home Loan Banks Office of Finance. Further information on the Federal Home Loan Bank System and the Office of Finance can be obtained at www.fhlf-of.com.

Freddie Mac

A stockholder-owned corporation established by Congress in 1970 to provide a continuous flow of funds to mortgage lenders, primarily through developing and maintaining an active nationwide secondary market in conventional residential mortgages. Freddie Mac purchases a large volume of conventional residential mortgages and uses them to collateralize mort-

gage-backed securities. Freddie Mac is a publicly held corporation; its stock trades on the New York Stock Exchange. Further information on Freddie Mac can be obtained at www.freddiemac.com.

Fannie Mae

A federally chartered but privately owned corporation which traces its roots to a government agency created in 1938 to provide additional liquidity to the mortgage market. Today, Fannie Mae carries a congressional mandate to promote a secondary market for conventional and FHA/VA single- and multifamily mortgages. Fannie Mae is a publicly held company whose stock trades on the New York Stock Exchange. Further information on Fannie Mae can be obtained at www.fanniemae.com.

Student Loan Marketing Association, or SLMA (Sallie Mae)

A government-sponsored entity created to provide liquidity for private lenders (banks, savings and loan associations, educational institutions, state agencies and other lenders) participating in the federal Guaranteed Student Loan Program, supplemental loan programs, the Health Education Assistance Loan Program and/or the PLUS loan program for parents of undergraduates. Established by the Higher Education Act of 1965, Sallie Mae is owned by its stockholders, and its shares trade on the New York Stock Exchange. The agency purchases student loans, makes warehousing advances and offers forward commitments for both instruments. It offers participations, or pooled interests, in loans and assists in financing student loans either as a direct lender or as a source of funds to eligible guarantee agencies or other lenders. Sallie Mae issues unsecured debt in the form of discount notes, floating-rate notes, long-term fixed-rate securities and zero-coupon bonds. In 1997 Sallie Mae began the process of unwinding its status as a GSE; until this multi-year process is completed, all debt issued by Sallie Mae under its GSE status will be “grandfathered” as GSE debt until maturity. Further informa-

tion on Sallie Mae can be obtained at www.salliemae.com

Tennessee Valley Authority (TVA)

A wholly owned corporation of the U.S. government that was established in 1933 to develop the resources of the Tennessee Valley region in order to strengthen the regional and national economy and the national defense. Power operations are separated from non-power operations. TVA securities represent obligations of TVA, payable solely from TVA's net power proceeds, and are neither obligations of nor guaranteed by the United States. TVA is currently authorized to issue debt up to \$30 billion. Under this authorization, TVA may also obtain advances from the Treasury of up to \$150 million. Further information about the Tennessee Valley Authority can be found at www.tva.gov.

GLOSSARY

Amortization: Repayment of debt principal through periodic installment payments rather than in a lump sum.

Average life: On a security where principal is subject to prepayment, the average time to receipt of each dollar of principal, weighted by the amount of each principal prepayment, based on prepayment assumptions.

Benchmark and Reference Notes: Large (\$2 to \$4 billion minimum size) debt tranches issued by Fannie Mae and Freddie Mac, respectively, in a non-scheduled but regular pattern of maturity and size meant to establish a yield curve framework for the government and the GSE marketplace.

Blended yield to maturity: The combination and average of two points on the yield curve to find a yield at the midpoint.

Bond: An interest-bearing debt obligation.

Bond equivalent yield: An adjustment to yield on a note which has monthly or quarterly interest payments. The frequency of such interest payments, compared to semiannual interest payments on most other types of securities, may result in a different present value of the interest income.

Bought Deals: GSE-issued securities sold through negotiated direct placements or competitive bids, with terms and size determined by the immediate needs of the GSE.

Bullet: A security with a fixed maturity and no call feature.

Call risk: See Reinvestment risk.

Callable security: A security that the issuer has the right to redeem prior to maturity.

Cap: A maximum interest rate on a floating-rate security. The rate paid can never exceed the cap even though the calculation of the rate at the time might be higher.

CMT: See Constant Maturity Treasury Series.

COFI: See Cost of Funds Index.

Collar: Upper and lower limits (cap and floor, respectively) on the interest rate of a floating-rate security.

Constant Maturity Treasury Series (CMT): The average yield of a range of U.S. Treasuries with various fixed maturities. The five- and ten-year CMTs are commonly used as indices on floating-rate notes whose rates are tied to long-term interest rates. The index may be found in the Federal Reserve H.15 Report.

Convexity: A measure of the change in a security's duration with respect to changes in interest rates. The more convex a security is, the more its duration will change with interest rate changes.

Cost of Funds Index (COFI), 11th District: The monthly weighted average cost of funds for sav-

ings institutions in Arizona, California and Nevada that are members of the 11th Federal Home Loan Bank District. Published on the last day of the month, the rate reflects the cost of funds for the prior month and is used to set rates on adjustable-rate mortgages, mortgage-backed securities and public issues of floating-rate debt. Some issues may use the national COFI rather than the 11th District's.

CP Index: Usually the Federal Reserve Commercial Paper Composite calculated each day by the Federal Reserve Bank of New York by averaging the rate at which the five major commercial paper dealers offer "AA" industrial Commercial Paper for various maturities. Most CP-based floating-rate notes are reset according to the 30- and 90-day CP composites.

Credit Spread: A yield difference, typically in relation to a comparable U.S. Treasury security, that reflects the issuer's credit quality. *Credit spread* also refers to the difference between the value of two securities with similar interest rates and maturities when one is sold at a higher price than the other is purchased.

Coupon: The stated interest rate on a security.

Day Count: The convention used to calculate the number of days in an interest payment period. A 30/360 convention assumes 30 days in a month and 360 days in a year. An actual/360 convention assumes the actual number of days in the given month and 360 days in the year. An actual/actual convention uses the actual number of days in the given interest period and year.

Discount margin: The effective spread to maturity of a floating-rate security after discounting the yield value of a price other than par over the life of the security.

Discount note: Short-term obligations issued at discount from face value with maturities ranging from overnight to 360 days. Discount notes have no periodic interest payments; the investor receives the note's face value at maturity.

Duration: A measure of the price sensitivity of fixed-income securities for a given change in interest rates.

Fed Funds effective rate: The overnight rate at which banks lend funds to each other, usually as unsecured loans from regional banks to money center banks. The Fed Funds rate is the average dollar-weighted rate of overnight funds. It is reported with a one-day lag (Monday's rate is reported Tuesday morning) and may be found in various financial information services.

Federal Reserve Commercial Paper Composite: See CP Index.

Floor: The lower limit for the interest rate on a floating-rate security.

Global Debt Facility: The issuance platform used by most GSEs when issuing "global" debt into the international marketplace or a particular foreign market. Has same credit characteristics as nonglobal debt but is more easily "cleared" through international clearing facilities.

Inflation-Indexed Securities: Notes periodically issued by the GSEs whose return is adjusted with changes in the PPI or CPI.

Lock-Out Period: A prescribed period of time before principal repayments begin on a security that has amortizing principal repayments. On some floating-rate securities, the term "lock-out period" also applies to the interval between the day the rate for the current interest period is set and the actual payment date, which may be several days apart (see page 10).

Maturity: The date on which a bond or note must be fully redeemed by its issuer if not subject to prior call or redemption.

Medium-Term Note: A debt security issued under a program that allows an issuer to offer notes continuously to investors through an agent. The size and terms of medium-term notes may be customized

to meet investors' needs. Maturities can range from one to 30 years.

Note: In the government securities market, a note is a coupon issue with a maturity of one to ten years.

Option-Adjusted Spread (OAS): For a security with an embedded option, the yield spread over a comparable Treasury security after deducting the cost of the option.

Optional Principal Redemption Bond: Term used to describe callable securities issued with either fixed- or floating-rate structures.

Perpetual floating-rate note: A floating-rate note with no stated maturity date.

Prime Rate: A commercial bank's stated reference rate for lending.

Rate reset: The adjustment of the interest rate on a floating-rate security according to a prescribed formula.

Reinvestment risk: For an investor, the risk that interest income or principal repayments will have to be reinvested at lower rates in a declining-rate environment. Reinvestment risk applies to fixed-rate callable securities. Because issuers typically call fixed-rate securities when rates are falling, the investors will have to reinvest their returned principal at a lower prevailing rate. This risk is sometimes referred to as call risk.

Sinkers: A security with a sinking fund. In a sinking fund, an issuer sets aside money on a regular basis, sometimes from current earnings, for the specific purpose of redeeming debt.

Subordinated debt (Sub-debt): A type of debt that places the investor in a lien position behind or subordinated to a company's primary creditors. Securities issued as subordinated debt will pay interest and principal but only after all interest that is due and payable has been paid on any and all senior debt.

T-Bill Rate: The weekly average auction rate of the three-month Treasury bill stated as the bond equivalent yield.

Term funding: A financing done to meet specific cash-flow needs for a specific period of time.

Trigger: The market interest rate at which the terms of a security might change. Triggers are common on index amortization notes and range securities.

Undated issue: A floating-rate note with no stated maturity date (see also Perpetual floating-rate note).

Volatility: A representation of the uncertainty of future securities prices. Technically, volatility is the amount of price variation around a general trend. It is a major determinant of the value of any option.

Yield: The annual percentage rate of return earned on a security, as computed in accordance with standard industry practice. Yield is a function of a security's purchase price and coupon interest rate.

Yield curve: The charting of yields on a particular type of security over a spectrum of maturities ranging from three months to 30 years.

Yield to call: A yield on a security calculated by assuming that interest payments will be paid until the call date, at which point the security will be redeemed.

Yield to maturity: A yield on a security calculated by assuming that interest payments will be paid until the final maturity date, at which point the principal will be repaid by the issuer.



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