VANDERBILT Ave.
ASSET MANAGEMENT

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CMO GLOSSARY

The CMO Glossary contains terms used commonly in the CMO market. Some of the terms presented may have multiple meanings. Only those definitions pertaining to the mortgage market are shown.

Accrual Bond — Deferred coupon tranche of a CMO. An accrual bond receives cash payments of neither principal nor interest until all tranches preceding it are retired. In effect, an accrual bond is a deferred interest obligation, resembling a zero coupon bond prior to the time that the preceding tranches are retired, except that accrual bonds carry an explicit coupon rate. The accrual bond then receives cash payments representing interest and principal on the accrued amount outstanding. Accrual bonds are purchased most frequently by investors who require the greatest degree of protection against reinvestment and call risk, or who seek the greater price leverage afforded by these classes. Also called Z Bond.

Arbitrage — The profit opportunity available to an entity that issues a CMO and uses the proceeds to simultaneously purchase the collateral. This opportunity arises because of periodic price discrepancies between the CMO and mortgage pass-through markets

Average Life — The weighted average retirement date of a bond; the average amount of time each dollar of principal amount will be outstanding. Average life is computed by multiplying each principal repayment by the time of payment (months or years from the evaluation date), summing these products, and dividing the sum by the total amount of principal repaid. See also Duration.

Bond Administrative Expenses — The periodic costs of services necessary to maintain CMO bonds, such as trustee, accounting, and legal fees.

Bond Value — The principal amount of CMO bonds that underlying mortgage collateral can support. Mortgages with coupons below current coupons have a low bond value, and mortgages with high coupons have a higher bond value.

Builder Bend — A CMO issued by a home builder, usually to reap tax benefits of installment sales accounting.

CBE Yield — Corporate Bond Equivalent Yield. An internal rate of return on an investment, calculated as if coupon payments were made semiannually, as on a corporate or Treasury security. Yields computed for monthly or quarterly pay securities are often converted to a CBE basis to facilitate comparisons.

Calamity Call — See Special Redemption.

Cash Flow Bond — See Pay-Through Bond.

Class See Tranche.

Clean Up Call — A form of optional redemption provided in a CMO indenture allowing an issuer to call bonds when only a small amount remain outstanding. The call trigger mechanism is typically based on a percentage of original principal amount outstanding (10 percent for example), thereby enabling an issuer to avoid excessive administration expenses in servicing a small portion of remaining bonds outstanding. Also called Nuisance Call.

Closing Date — The date on which a CMO settles and the collateral is delivered to the Trustee.

Collateral — The mortgages underlying a mortgage-backed pass-through security or bond; the mortgages and/or pass-through securities underlying a CMO.

Collateralized Mortgage Obligation (CMO) — A corporate bond backed by a pool of mortgages in which the principal cash flows of the pool are channeled sequentially into one or more classes, or tranches, of bonds. Interest payments are made on all tranches expect, in some CMOs, the accrual bond or Z bond.

Collection Account — A separate account established by a CMO trustee to aggregate and record the receipts and disbursements relating to a particular CMO. Receipts include collateral principal and interest payments and reinvestment interest. Disbursements include bond principal and interest payments, bond administrative expenses, and residual cash flow released to the residual owner.

Concurrent Pay — A CMO tranche that pays principal simultaneously with another tranche, rather than sequentially. Also called Parallel Pay.

Conditional Prepayment Rate (CPR) — The percentage of outstanding mortgages in a pool expected to prepay on average over a one-year period. See also Single Monthly Mortality.

Conduit — A system that allows issuers with a limited amount of collateral to pledge collateral along with similar issues to market a single large bond offering.

Constant Percent Prepayment (CPP) — A prepayment model in which the average monthly prepayment rate (SMM) is annualized by multiplying it by twelve. See also Single Monthly Mortality and Conditional Prepayment Rate.

Controlled Amortization Bond (CAB) — A generic term for a CMO tranche containing a sinking fund provision. Also called PAC (Planned Amortization Class) Bond.

Conventional Loan — A mortgage loan usually granted by a bank or thrift institution not insured or guaranteed by a government agency.

Coupon Rate — The annual rate at which each tranche of a CMO will pay interest while the tranche is outstanding. On an accrual tranche, the coupon interest accrues and is added to the principal amount outstanding to be paid when the Z-bond begins to make payments.

Credit Enhancement — Additional security required of a CMO backed by whole loans to obtain a high quality rating. The amount of credit enhancement depends on the specific loan portfolio characteristics and may take the form of a pool insurance policy, a letter of credit, subordination, and/or reserve fund.

Dated Date	The date from which a newly issued CMO begins to accrue interest, ordinarily about a month prior to the closing date.
Debt Service Fund	See Reserve Fund.
Decrement (DEC) Table	A table in the prospectus supplement or offering memorandum of a CMO with the projected percentage of principal balance that would be outstanding at various dates for each tranche, given various prepayment speeds. Also called Prepayment Table.
Delay	The time between the record date and the payment date. A bond that pays interest on the record date has zero delay.
Duration	The weighted average retirement date of a bond; the average amount of time each dollar of full price (including accrued interest) will be outstanding. Duration is computed by multiplying each principal and interest payment by its present value, summing these products, and dividing the sum by the full price of the bond. Also called Unmodified Duration and Macaulay Duration. See also Effective Duration and Modified Duration.
Effective Duration	An empirical measure of the sensitivity of a bond's price to changes in yield computed by reference to recent market price movements relative to a benchmark security (a Treasury security, for example). The effective duration of a noncallable Treasury security is equivalent to its modified duration; these two measures of price sensitivity will diverge for callable and/or non-Treasury securities.
Effective Spread	The spread to or margin over 3-month LIBOR at which a floating rate CMO trades taking into consideration market price, payment basis, payment and refri frequency, and payment delay.
Equity	See Residual.
Excess Cash Flow	Overcollateralization, mismatched coupons, and reinvestment income may generate more cash flow than is required to retire bonds; excess may be used to retire additional bonds early or may be passed back to the issuer or the investor who purchase the residual interest. See also Residual.
Expected Maturity	The date when the final principal payment of a CMO tranche is anticipated assuming the prepayment speed used when the deal was priced. See also Stated Maturity.
Factor	The ratio of the outstanding principal amount of a pass-through pool or CMO tranche to its original principal amount. See also Z factor.
Fannie Mae	See Federal National Mortgage Association.
FHA Experience	A statistical study prepared by the Actuarial Division of the Department of Housing and Urban Development describing the probability of an FHA-insured mortgage prepaying or defaulting in a given year of its life. The data, which date back to 1957, are updated annually and are compiled for each state as well as for the nation as a whole.

Federal Home Loan Mortgage Corporation (FHLMC)

A corporate instrumentality of the United States, created by an act of Congress on July 24, 1970 in order to increase the availability of mortgage credit for the financing of housing. FHLMC raises funds by issuing securities backed by pools of conventional mortgages, either Participation Certificates (PCs), Guaranteed Mortgage Certificates (GMCs), Collateralized Mortgage Obligations (CMOs), or Mortgage Cash Flow Obligations (MCFs). Also called Freddie Mac.

Federal Housing Administration (FHA)

Established on June 27, 1934, under the National Housing Act to encourage improvement in housing standards and conditions, to provide a system of mutual mortgage insurance as an aid to builders and buyers of homes and to mortgage-lending institutions, and for other purposes. FHA is authorized to insure mortgage loans made for a variety of purposes, mostly related to housing.

Federal National Mortgage Association (FNMA)

A government-sponsored corporation, now owned entirely by private stockholders, established in 1938 to provide additional liquidity to the mortgage market. In 1968, the original FNMA was broken into two corporations: the privately owned FNMA and the government owned GNMA. It is subject to regulation by the Secretary of Housing and Urban Development. It purchases and sells residential mortgages insured by FHA or guaranteed by VA, as well as conventional home mortgages. Purchases of mortgages are financed by the sale of corporate obligations and pass-through securities called FNMA Mortgage Backed Securities to private investors. Also call Fannie Mae.

Final Maturity

See Stated Maturity.

Financing

A reason for issuing a CMO whereby the issuer already owns the collateral and wishes to obtain long-term capital to fund the underlying mortgage loans.

First Call Date

The earliest date specified in the prospectus supplement on which optional redemptions may take place. When no date is specified in the prospectus supplement, it is often the date on which a given condition is met, such as when a certain percentage of original principal amount remains.

First Payment Date

The date on which principal and interest payment commence on applicable tranches within a CMO.

Foreign-Targeted

Tranches of a CMO issued by U.S. borrowers in bearer form for sale exclusively to non-U.S. investors.

Foreign Withholding Tax

A provision of the United States tax law that requires a 30 percent withholding tax on income other than compensation for services that is paid to a nonresident alien or foreign corporation. "Portfolio investment interest," as defined in the Internal Revenue Code, received by nonresident aliens from obligations issued after July 18, 1984 is not subject to the tax. Foreign holders of regular interests in REMICs are not subject to withholding. Foreign holders of residual interests in REMICs may be subject to withholding.

Freddie Mac

See Federal Home Loan Mortgage Coporation.

Ginnie Mae

See Government National Mortgage Association.

Government National Mortgage Corporation (GNMA)
A wholly-owned U.S. Government corporation within the Department of Housing and Urban Development, established in 1968 as a spinoff from the Federal National Mortgage Association (FNMA). GNMA took over the assets and liabilities and operation of the Special Assistance Functions and the Management and Liquidating Functions of FNMA. GNMA can raise funds by issuing securities backed by pools of mortgages. The primary function of GNMA is the guaranteeing of mortgage-backed securities issued against pools of FHA and VA mortgages. Also called Ginnie Mae. See also Pass-Through.

GNMA I
A security issued by GNMA that is backed by a pool of FHA or VA mortgages, under the original GNMA guidelines. See also GNMA II.

GNMA II
A security issued by the GNMA that is backed by a pool of FHA or VA mortgages. GNMA II securities differ from GNMA I securities by the use of a central paying agent and the availability of larger, geographically dispersed multiple issuer pools.

Graduated Payment Mortgage (GPM)
A mortgage that calls for monthly payments that rise by a fixed percentage each year for a specified period of time. Early payments are insufficient to cover interest on the outstanding loan balance, resulting in negative amortization.

Gross Coupon
The interest rate on the underlying collateral of a mortgage-related security. Where a CMO is backed by pass-through securities, the gross coupon refers to the mortgage loans behind the pass-through securities. See also Gross WAC and Net Coupon.

Gross WAC
Gross Weighted Average Coupon. The average Gross Coupon of the mortgage loans backing a mortgage security, weighted by the principal amount of each loan.

Guaranteed Sinking Fund
A sinking fund provision providing for a mandatory minimum schedule of early bond retirements regardless of prepayment rates on the underlying collateral. Usually the operation of a guaranteed sinking fund is based on a cumulative as opposed to a periodic base.

Indenture
For debt securities, the contract that specifies all legal obligations of the issuer with respect to the securities and any qualifications or restrictions that may exist.

Indenture Supplement
A supplement governing a particular series of a CMO issue. Generally, all issues of a particular issuer fall under one indenture while each series is also governed by a supplement unique to the particular series.

Independent
A standard usually imposed on accountants by a CMO indenture requiring that they be free from any obligation to or interest in the issuer, its management or its owners. The standard requires that the accountants be without bias with respect to the issuer since otherwise they would lack the impartiality necessary for the dependability of their findings.

Interest Rate Cap
Associated with floating rate CMOs, interest rate caps fix the maximum coupon rate for a floating rate tranche.

Inverse Floater — See Reverse Floater.

Issuer — The legal entity that issues CMOs. CMOs can be issued directly by corporations, banking and thrift institutions, and governmental agencies, although CMOs are more frequently issued by limited purpose finance subsidiaries of these type companies.

LIBOR (London Interbank Offered Rate) — The daily posted rate at which prime banks offer to make Eurodollar deposits available to other prime banks for a given maturity, which can range from overnight to five years. One-, three-, and six-month LIBOR are used as indices for determining floating rate CMO coupons with the three-month rate being the most commonly used benchmark.

Macaulay Duration — See Duration.

Modified Duration — A measure of the sensitivity of a bond's price to changes in yield. It is computed by dividing a bond's unmodified duration by one plus the bond's periodic yield. A bond's periodic yield is its yield to maturity divided by the discounting frequency per year.

Mortgage-Backed Security (MBS) — An ordinary bond backed by an undivided interest in a pool of mortgages or trust deeds. Income from the underlying mortgages is used to pay off the securities.

Mortgage Cash Flow Obligation (MCF) — A multi-class, mortgage-backed corporate bond with a sequential payment structure similar to that of a CMO. Payments of principal and interest, however, are not secured by a lien on the underlying collateral, as is the case with a CMO. Holders of MCFs are relying on the issuer's contractual obligation to apply the cash flow from the underlying collateral and reinvestment income thereon to the payment of principal and interest.

Net Coupon — The coupon rate on a mortgage-related security. Net coupon is equal to the gross coupon minus servicing fees. See also Gross Coupon and Net WAC.

Net WAC — Net Weighted Average Coupon. The average pass-through rate on the mortgage securities backing a CMO. See also Pass-Through Rate.

Nuisance Call — See Clean Up Call.

Option Adjusted — An evaluation method for mortgage-backed securities that incorporates the effect on price of homeowners' prepayment options under various interest rate assumptions.

Optional Redemption — Indenture provision permitting an issuer to retire or call the whole or part of an issue prior to its maturity. See also First Call Date.

Original Issue Discount (OID) — The amount that the original issue price of a CMO tranche is below par. In most cases, the IRS treats the accretion of this discount over the life of the security as current income.

Overcollateralization
A situation in which the current principal balance of the collateral backing a CMO exceeds the total current par amount of the CMO. CMOs need to be overcollateralized when the coupon rate of the collateral is below the highest coupon rate on the CMO.

Owner Trust
An entity established to issue CMOs. Ownership of the entity may be sold in the form of shares of beneficial interest.

PAC (Planned Amortization Class)
See Controlled Amortization Bond.

Parallel Pay
See Concurrent Pay.

Participation Certificate (PC)
A security issued by FHLMC representing an undivided interest in a pool of conventional mortgages. Principal and interest payments on the mortgages are passed through to the certificate holders each month. Participation certificates qualify as "loans secured by an interest in real property" and as "qualifying real property loans" with respect to certain thrift institutions.

Pass-Through
A mortgage-backed security for which the payments on the underlying mortgages are passed from the mortgage holder through the servicing agent (who usually keeps a portion as a fee) to the security holder. There are three types of pass-through securities:

1) Straight Pass-Through. The security holder receives principal and interest actually collected by the servicing agent.

2) Modified Pass-Through. The security holder receives interest due, whether or not it has been collected, and principal as collected.

3) Fully Modified Pass-Through. The security holder receives principal and interest due, whether or not they have been collected.

Pass-Through Rate
The coupon rate of a pass-through security.

Pass-Through Yield
A convention for computing the yield of a pass-through security based on a cash flow with no prepayments until a certain date, at which point all unamortized principal is prepaid in full. For example, 30-year pass-throughs have yields based on 12-year prepayment; the balloon prepayment is assumed to occur after 1 year. In contrast to pass-through yield is HTG yield, for which prepayments are posited in every month according to an established prepayment model.

Pay-Through
A general obligation bond secured by mortgage collateral. Also called Cash Flow.

Paying Agent
The trustee, typically a commercial bank, with whom the issuer has placed the collateral for the CMO, who also distributes the interest and principal payments to bondholders when they are due.

Payment Frequency
The number of times per year that interest and principal payments are made on a CMO. Payments on CMOs can be made monthly, quarterly, or semiannually.

Prepayment	Any principal payment made before its originally scheduled payment date. In particular, the full or partial repayment of a mortgage loan before such payment is due.
Prepayment Model	Predictive model of prepayment rates. Models include the 12-year life assumption, FHA experience (of various vintages, including Old, New, and New New), Single Monthly Mortality (SMM), Conditional Prepayment Rate (CPR), Constant Percent Prepayment (CPP), and the Public Securities Association Standard Prepayment Model (PSA).
Prepayment Reserve Fund	Fund established to protect mortgage investors in the event a large percentage of principal is prepaid early in a bond period. See Special Redemption.
Prepayment Table	See Decrement Table.
Pricing Date	The date on which a CMO is initially priced and offered to investors.
Pricing Speed	The prepayment assumption used to project the cash flows on the underlying collateral of a given CMO when initially priced and offered to investors. These cash flows in turn determine the expected maturities and average lives of each tranche in the CMO.
Prospectus	A statement filed with the SEC by the CMO issuer that contains most of the pertinent information regarding the issuer and the securities being offered. A prospectus supplement is frequently issued pursuant to a CMO offering that is part of a shelf registration with the SEC. The prospectus supplement contains the details of the particular issue or series of CMOs being sold. See also Prospectus Supplement.
Prospectus Supplement	An additional statement filed with the SEC, which contains information regarding a security being offered that is not contained in the prospectus. Supplements are usually issued in conjunction with a security that is part of a shelf registration with the SEC and contains the details of the particular issue being sold. See also Prospectus.
PSA Standard Prepayment Model	FHA experience specifies standard prepayment percentages for each year of a mortgage's life. PSA, on the other hand, specifies a standard percentage for each month, and annualizes that percentage. 100% PSA calls for prepayment at annual rates of .2 in the first month, .4% in the second month, .6% in the third month, and so on until, in months 30 and beyond, the mortgage (or mortgage pool) will prepay at an annual rate of 6%. Also called Standard Prepayment Assumption.
Record Date	The date on which a bondholder must officially own the bond in order to be entitled to a principal and interest payments. For CMOs, it is generally a month prior to the payment date.
Reinvestment Rate	The rate at which cash payments from the collateral of a CMO can be reinvested until the next bond payment date.

REMIC

Real Estate Mortgage Investment Conduit. A mortgage securities vehicle, authorized by the Tax Reform Act of 1986, that holds residential or commercial mortgages and issues securities representing interest in those mortgages. A REMIC may be formed as a corporation, partnership, or segregated pool of assets. The REMIC itself is generally exempt from federal income tax, but the income from the mortgages is reported by investors. For investment purposes, REMIC securities are virtually indistinguishable from CMOs.

Reserve Fund

A fund established by a bond issuer that may be used by the trustee to make principal and interest payments or to pay administrative expenses when funds are not otherwise available. Also called Debt Service Fund.

Residual

Cash flows resulting from the difference between the cash inflow generated by a pool of mortgage collateral and the cash outflow necessary to fund bonds that are entirely supported by that collateral. These amounts accrue to the issuer, or to the owners of the trust if it has been sold. Also called Equity. See also Excess Cash Flow.

Reverse Floater

A floating rate CMO whose coupon resets inversely to the floating index, typically LIBOR. Downward movements in LIBOR result in increases in tranche coupon rates while upward movements in LIBOR cause downward adjustments to coupon rates at the specified reset dates. Reverse floaters may carry interest rate caps and floors. Also called Inverse Floater.

Scenario Analysis

An evaluation method that provides holding period expected returns for a security under various projected interest rate environments. The calculation of expected returns considers the receipt of principal and interest, reinvestment income on interim cash flows, and price appreciation or depreciation of the remaining principal balance over the holding period.

Seasoning

Refers to mortgages that have been outstanding for a period of time, generally from one to three years. Seasoned mortgages are considered to have somewhat higher and more stable cash flows than newly originated mortgages.

Series

The designation that distinguishes one CMO and its tranches from another CMC of the same issuer. A CMO series is typically noted by a letter (for example, CMSC Series A) or a number (for example, ASW Series 1). Each series of a CMO issuer is unique, having different collateral and various coupons and maturities singular to that particular CMO as set forth in the prospectus supplement.

Sinking Fund

Indenture provision providing for the orderly amortization of a CMO tranche over the life of the tranche within a broad range of prepayment speeds. The amortization schedule mandates a fixed principal payment on each payment date covered by the schedule. A CMO sinking fund is subject to the effects of significant shifts in prepayment rates unless it is a guaranteed sinking fund. See also Controlled Amortization Bond.

Special Redemption

A call feature allowing for the retirement of principal earlier than scheduled. A special redemption in mortgage-related securities occurs when the cash flow generated from the underlying collateral is insufficient to support scheduled principal and interest payments; the amount of principal redeemed is limited to the amount that would have been retired at the next scheduled payment date. Also called Calamity Call.

Spread

1) The amount in basis points that the yield of a CMO tranche exceeds a Treasury of similar average life.

2) The difference between the bid and the asked price or yield in the quotation of a security.

3) The margin over an index, usually LIBOR, which determines the coupon rate on a floating rate CMO. For example, for floating rate tranche with a coupon reset formula of 3-month LIBOR + 50 b.p., 50 b.p is the spread or margin, to LIBOR

Standard Prepayment Assumption (SPA)

See PSA Standard Prepayment Model

Stated Maturity

The date when the final principal payment of CMO tranche will be made, assuming no prepayments on the underlying collateral. The stated maturity is calculated based solely on the scheduled interest and principal payments of the mortgages pledged to the CMO. See also Expected Maturity and Final Maturity.

Strip

A mortgage-backed security created by altering the distribution of interest and principal from pro-rata to an unequal allocation. CMO strips are a category of Concurrent bonds.

Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA)

An act of taxation legislation containing revisions to the Internal Revenue Code. Among other provisions, the Act requires withholding on interest and dividends and provides other measures designed to improve compliance with existing laws.

Total Return

Coupon income, reinvestment income, and change in market value of a bond over a certain time period divided by the initial price, expressed as a percentage.

Tranche

One of the individual bonds within the sequential pay structure of a CMO. Each tranche within a given CMO deal has a different coupon and maturity and is identified by a different title indicating their position in the sequence of the CMO (for example, ASW A-1 vs. ASW A-2). Also called Class.

Trustee

An institution, usually a commercial bank, that holds CMO collateral for the benefit of CMO bond holders. The trustee collects principal and interest payments on the collateral, invests the cash between payment dates, and makes funds available to pay principal and interest on the CMO bonds.

Underwriter The firm that agrees to buy an issue of securities on a given date at a specific price, or agrees to buy the unsubscribed securities of an issue, thus assuming the liability of guaranteeing the issuer the full anticipated proceeds.

Unmodified Duration See Duration.

WAC Weighted Average Coupon. WAC is calculated by multiplying the coupon of each mortgage (Gross WAC) or mortgage security (Net WAC) by its remaining balance, summing the products, and dividing the result by the total remaining balance.

WAM Weighted Average Maturity. WAM is calculated by multiplying the maturity of each mortgage in a given pool by its remaining balance, summing the products, and dividing the result by the total remaining balance.

WART Weighted Average Remaining Term. Equivalent to the WAM expressed in months or years, and often used interchangeably.

Whole Loan A mortgage loan, generally one that is not part of a pass-through security.

Yield The effective annual rate of return expressed as a percentage; the discount rate which, if applied to each cash flow, sets the sum of the present value of the cash flows equal to the price (internal rate of return).

Z Bond See Accrual Bond.

Z Factor The ratio of the outstanding accreted principal amount of a Z bond to its original principal amount. See also Factor.

Vanderbilt Research Team

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Emad is the Managing Partner and Chief Executive Officer of Vanderbilt Avenue Asset Management LLC. Vanderbilt's client base includes Multi-national Corporations, Public Funds, Foundations/Endowments, and Taft Hartley accounts.

Previously, Emad was Chairman of Institutional Business at Pioneer Investments. Pioneer investments has more than $300 Billion in assets under management. The parent of Pioneer, UniCredit S.p.A., is the largest bank in Italy and the second largest bank in Europe. Pioneer had purchased Vanderbilt Capital Advisors, of which Emad was the founder and Chief Executive Officer.

Emad has had numerous articles published in professional and academic journals such as *The Journal of Forecasting*, *The American Economist* and *The Journal of Fixed Income*. He is a Board member of The National Investment Company. Emad was a member of the Board of Advisors of the Pacific Institute, The Advisory Committee of Fulcrum Global Partners, The Chief Executive Officers Club and formerly a board member of The Foreign Policy Association. He also served on the Board of Directors of the University of Albany Foundation, NextGen Healthcare Inc., The Park Avenue Bank, AA Bank and The New Providence Fund and Associates LP.

Emad is an FINRA Arbitrator. He is also a member of the National Association for Business Economists and The Economic Club of New York. Emad served as an adjunct professor at the University of Kansas and St. John's University.

Emad holds a Bachelor of Science from the University of Albany, and a M.A. and Ph.D. in Economics from the University of Kansas.