Internal Audit Guidelines

Mortgage-Backed Securities (“MBS”), Collateralized Mortgage Obligations (“CMO”) and MBS Derivatives

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TABLE OF CONTENTS

I. INTRODUCTION AND BACKGROUND

Mortgage Pass-Through Securities

Although other types of mortgage-related securities exist, the most prevalent type is the mortgage pass-through certificate. The Mortgage Backed Securities ("MBS") Pass-Through market has been in existence since 1979 and represents the cornerstone of the MBS market. Pass-Throughs offer homeowners a vehicle for competitive financing through the securitization process (i.e., lower home mortgage rates). They also offer the investor a liquid, standardized investment vehicle, and provide the collateral for the first derivative of the mortgage market, Collateralized Mortgage Obligations ("CMOs").

- **Features and Benefits**

Attractive yields	• Typically some of the highest of any government or agency security. • Usually exceeds most investment grade corporate issues. • Varies by coupon and term, typically MBS with higher coupons produce higher yields but carry a greater prepayment risk.
Credit quality	• Credit risk is affected by homeowners or borrowers defaulting on their loans. Credit risk is considered minimal for mortgages backed by federal agencies or federally sponsored agencies.
High current income	• Investors may receive high payments compared to the income generated by investment grade corporate issues.
Liquidity	• The secondary market is generally large and liquid, with active trading by dealers and investors.

- **Risks**

MBSs with higher coupons have shorter average lives (defined below) while issues with lower coupons have longer average lives. Lower interest rates, relative to the rate obtained by the mortgage borrower, may lead some borrowers to refinance their mortgage, while those holding loans with interest rates closer to current market rates are less likely to refinance their mortgage.

Prepayment risk	• Prepayment risk is the risk that homeowners will pay off more than their required monthly mortgage payments. • Prepayment is usually precipitated by a decline in interest rates. • As prepayments occur, the amount of principal retained in the bond declines faster than what otherwise may be expected-thereby shortening the average life of the bond by returning principal prematurely to the bondholder, potentially at a time when interest rates are low.

Extension risk	• Extension risk is the risk that homeowners will decide not to make prepayments on their mortgages to the extent initially expected- instead they make only the required monthly payment. • Extension can be the result of an increase in interest rates. As rates rise, there is little incentive to refinance. • As expected / anticipated prepayments fail to materialize, the average length of term (average life) originally estimated begins to creep out further along the curve, resulting in a security with a longer average life.

A. GNMA, FNMA, FHLMC Securities

The Pass-Through market is backed by the Federal Home Loan Mortgage Corporation ("FHLMC" or Freddie Mac), the Federal National Mortgage Association ("FNMA" or Fannie Mae), and the Government National Mortgage Association ("GNMA" or Ginnie Mae). These three agencies are government-sponsored entities ("GSE") that are mandated to provide a guarantee behind the principal and interest ("P&I") cash flow streams generated by home mortgages. GNMA is differentiated by the fact it offers the only explicit U.S. government guarantee, the exact same guarantee we have on U.S. Treasury Obligations. FNMA and FHLMC carry implied government guarantees, in the form of credit lines to the federal government, and are publicly traded companies.

The U.S. mortgage market provides numerous financing options for homeowners. The different mortgages are outlined below:

1. Adjustable Rate Mortgage - the interest rate the homeowner pays fluctuates on an annual basis tied to either treasury or LIBOR rates
2. 5-Year Balloon: 5-year fixed rate with a 30-year amortization schedule, with a balloon payment at the end of 5-years
3. 7-Year Balloon: 7-year fixed rate with a 30-year amortization schedule, with a balloon payment at the end of 7-years
4. 15-Year Mortgage: 15-year fixed rate, level pay, 15-year amortization schedule (level pay: same payment each month for the life of loan)
5. 20-Year Mortgage: 20-year fixed rate, level pay, 20-year amortization schedule
6. 30-Year Mortgage: 30-year fixed rate, level pay, 30-year amortization schedule
7. Interest Only – no mortgage principle payments, rather the borrower pays interest only. One reasons for the growth in "flexible" interest-only mortgage is that a borrower can take the principle payments saved, by not entering a traditional 30-year loan, and invest it in something that would bring a higher rate of return or paydown other debt.

Each of these types of mortgages can be securitized by the GSEs or by private financial firms. Mortgages that conform to certain criteria back the most liquid securities. These criteria include the following: loan to value ratio; loan size; minimum income requirements; and minimum percentage of debt to income.

If all requirements are met, the mortgage banking industry moves the loan into securitization and forms large pools of homeowner loans. These loans are then grouped together to form a tradable block of securities ($1,000,000 to $100,000,000 or larger in size). These blocks are then sold into the capital markets via informal auctions.

A MBS Pass-Through is an ownership share of an underlying mortgage pool where each security receives a pro-rata share of both the P&I paid by the underlying mortgages. Modelling an MBS Pass-Through's cash flow is essentially modelling N mortgages with the prepayment option explicitly included in the cash flows.

Table 1: Mortgage-Backed Securities Basics

Category	**Description**	**Notes**
GNMA I	30 year term mortgages	("Ginnie Maes") A mortgage-backed security representing interest in a pool of residential mortgages insured by the FHA or guaranteed by the Veterans Administration ("VA") or by the Rural Housing Service ("RHS"). The roman numeral "I" refers to "1" issuer – i.e., a pool of mortgages all issued by one issuer, all with the same interest rate, and all issued at around the same time (within a few months). GNMA guarantees the timely payment of monthly principal and interest (commencing 45 days after issue) and the guaranty is backed by the full faith and credit of the U.S. Government. Payment of principal and interest is made through a central paying agent.
GNMA II	30 year term mortgages	("Ginnie Mae Two's") A "Ginnie Mae" security featuring a central paying agent; the geographic diversity and greater prepayment consistency of multiple issuer pools (or optional "custom pools" with single issuers); and the ability to mix mortgages of different interest rates within the same pool. Principal and interest is paid monthly (commencing 50 days after issue) and guaranteed by GNMA (GNMA is backed by the full faith and credit of the U.S. government).
GNMA Midget	15 year term mortgages	GNMA 15-Year ("Ginnie Mae Fifteen years"; "Midgets") A "Ginnie Mae" representing a pool of mortgages with a stated maturity of fifteen years rather than thirty years. The guarantees are the same as for the 30-year Ginnie Mae's.

Category	Description	Notes
GNMA GPM	30 year term mortgages	(“Jeeps”; “Gypums”) A mortgage-backed pass-through security representing interest in a pool of Graduated Payment Mortgages (“GPM”) which have payments rising by a pre-determined percentage but not beyond the 61st month, when level payments must begin. The guaranty of timely, monthly principal and interest payments is provided by GNMA and backed by the full faith and credit of the U.S. Government. Principal is not paid down until the monthly payment becomes large enough to cover the interest.
Mobile Homes	12-20 year term mortgages	(“Mobiles”, aka, Manufactured Housing) A “Ginnie Mae” security representing interest in a pool of Mobile Home mortgages. There are several “Types”: A-with a maturity of 12 years; B-with a maturity of 15 years; C-with a maturity of 18 years; and D-with a maturity of 20 years. The guarantees and the payments of principal and interest are the same as for Ginnie Mae’s.
GNMA REMICS	2-20 year term mortgages	Real Estate Mortgage Investment Conduits (“REMICS”) are multi-class securities with different maturities that are backed by a pool or trust of mortgages or mortgage - backed securities (e.g., GNMA I, GNMA II) whereby payments are made from the MBS income stream. GNMA Platinum- GNMA PLATNUM pool GNMA MBS pools with the same interest rates into larger pools. Only previous issued GNMA pools are eligible for this program. GNMA ARMs- Adjustable Rate Mortgages are issued for 15 or 30 years. Their interest rate is reset periodically. Some have caps or floors limiting the amount that interest rates can fluctuate. GNMA Multi-Family Project loans are Federal Housing Administration (“FHA”) loans that are pooled into a pass through security and carry the additional guarantees of GNMA.

Category	Description	Notes
FNMA Mortgage-Backed Security	Most are 30 year term mortgages	FNMA issued its first pass though in 1981. The pass-through securities offered are similar to the FHLMC Participation Certificate ("PC"). FNMA guarantees the timely payment of interest and principal for all the securities FNMA issues. Freddie Macs also issue multi-class securities. Most of these are issued as REMICs with interest paid monthly and principal paid when due.
FHA Projects	Most are 30 year term mortgages	Freddie Mac Participation Certificate (Commonly known as "PCs"), these pass-through securities are based on pools of conventional single-family mortgages, some of which are guaranteed by the VA or insured by the FHA. Note: There are a small number of PCs based on multi-family mortgages. PC's can serve as collateral for other transactions (e.g., repurchase agreements). Importantly, the FHLMC guarantees the timely payment of interest and the ultimate payment of the principal on all underlying mortgages in the pool. (Please note that GNMA and FNMA guarantee the timely payment of both principal and interest.) The FHLMC passes through the principal it collects and guarantees payment of the balance within one year. Freddie Mac Gold PCs have a fixed coupon rate and pay principal and interest with a 45 day delay. Freddie Mac ARMs adjust coupon rates one of two ways. If the issue is a Weighted Average Coupon ("WAC"), the rate is reset monthly. If it is an indexed ARM the rate is set by movements of the index. Freddie Macs also issue multi-class securities. Most of these are issued as REMICs with interest paid monthly and principal paid when due.

Table 2: Trading Practices

Trade Type	Description
TBA Forward Transactions	GNMA, FNMA and FHLMC pass-through securities are generally traded for corporate settlement or on a delayed delivery basis. The delayed delivery of the underlying pass-through securities is known as the TBA (To Be Announced) forward market. A liquid market is maintained by the major MBS brokers and dealers that specialize in these products. The trades are compared and cleared through Mortgage Backed Security Division ("MBSD") of the Fixed Income Clearing Corporation ("FICC") – a subsidiary of the Depository Trust & Clearing Corporation ("DTCC"). The TBA forward transaction provides the standardization necessary to trade non-homogeneous pools of GNMA, FNMA and FHLMC. A TBA transaction will specify the type of MBS, coupon rate, dollar price and settlement month. On a monthly basis TBA forward transactions are settled by the seller allocating and making "good delivery" of generic pools to the purchaser.
TBA Allocation and Settlement	The standard terms established for the execution and settlement of TBA forwards are established by the Securities Industry & Financial Markets Association ("SIFMA"; formerly known as the Bond Market Association). SIFMA guidelines specify the "good delivery" standards that include minimum pool size, number of pools deliverable per million and acceptable variance levels for allocation purposes (currently +/- .01%). The .01% variance is based on the TBA amount (e.g. $1,000,000 TBA would have pools with a total current face amount between $999,900 and $1,000,100). Current guidelines can be obtained directly from SIFMA. There are currently four monthly allocation and settlement dates for the various MBS products (see http://www.ficc.com/mbs/mbs.proc.sched.jsp?NS-query=mbs%20processing%20schedule for details). The four monthly allocation and settlement classes are as follows: 1. Class A – 30 year FHLMC, FNMA, with the exception of multi-family, ARMs and VRMs. 2. Class B – 15 year FHLMC, FNMA, GNMA with the exception of multi-family, ARMs and VRMs and those listed in Class D. 3. Class C – 30 year GNMA with the exception of multi-family, ARMS and VRMS. 4. Class D – FHLMC, FNMA Balloons ARMS, VRMS, Multi family GPMs and Mobile Homes of FHLMC, FNMA and GNMA.

Trade Type	Description
Specified Transactions	TBA transactions are generally executed in accordance with the SIFMA guidelines. However, MBS transactions may contain specific instructions such as one pool per million for TBA transactions, seasoned pools, or a specific pool must be delivered. The transactions must be executed according to the exact instructions entered into by the trader.

B. Collateralized Mortgage Obligations

Collateralized Mortgage Obligations ("CMOs"), which were introduced in 1983, are debt instruments that restructure cash flows from mortgage collateral in order to meet the needs of a broader investor base. The CMO is archaic, and the REMIC is a more current vehicle for derivatives of a portfolio of mortgages.

Typically, CMOs have multiple bond classes, called tranches, with varying coupons, payment structures and maturities. Debt service on the bonds is secured by the cash flow generated from particular pools of mortgage securities or whole loans. CMOs backed by GNMA collateral offer mortgage market participants an alternative to traditional 30-year and 15-year fixed-rate pass-through securities. CMOs, enable investors to employ funds in a mortgage-related investment over a specific time horizon while reducing the investment risk involved in unanticipated prepayments.

CMOs are generally obligations of a trust established solely for the purpose of issuing the CMOs. The bonds issued by the trust represent obligations solely of the issuer and generally will not be insured or guaranteed by any governmental agency. However, if the underlying assets of the trust are solely composed of GNMAs or other government guaranteed securities, the cash flow will be guaranteed to the owner of the underlying assets, i.e., the issuer of the trust. As a result of the guaranteed cash flow, the CMOs issued by the trust are generally AAA rated by each of Standard & Poor's Corporation and Fitch Investors Service Inc. This rating is the highest bond rating that the respective rating organizations can assign to debt obligations.

Within each trust, the CMOs tend to consist of separate classes of bonds with various stated maturities and interest rates, including a floating rate issue. The CMO structure substitutes sequential redemption of bonds for the pro-rata principal returns of the pass-through obligations. Depending on the provisions of the issuer trusts, the cash flow generated by the underlying collateral in excess of that required for interest payments is used to retire the bonds by class. All principal payments go first to the "fastest-pay" class of bonds as specified in the prospectus. Each succeeding class of bonds is retired in accordance with the prescribed order contained in the prospectus.

- **Features and Benefits**

The cash flow segmentation inherent in CMOs permits a structure of bonds to more accurately match investors portfolio needs in terms of call protection and maturities. Because of the underlying guarantees of timely payment, CMOs are rated AAA. CMOs generally offer higher yields than comparable treasury bonds, or corporate bonds rated AAA or AA with comparable average lives.

- CMO Investors-
  Investors tend to generally be thrifts, pension funds, commercial banks and insurance companies making CMOs largely an institutional product.

- Other Considerations-
  CMOs are issued in fully registered form, are subject to Tax and Equity Fiscal Responsibility Act of 1982 ("TEFRA") regulations and are fully taxable under the Internal Revenue Code. Settlement of CMO transactions occur in Federal funds. Secondary transactions normally settle similar to corporate bonds, i.e., on the second business day. CMOs are settled through clearing banks at the FED. Most MBS CMOs are now REMICs under the 1986 Tax Refund Bill, whereby a CMO may elect to be treated as a REMIC. A REMIC is generally exempt from federal income tax. The income generated from the mortgages held by the REMIC is reported by the holders of the REMIC in the manner prescribed in the law. The REMIC election does not affect the processing, reporting or auditing approach to the underlying CMO. A REMIC election is essentially an accounting and taxation issue, which is not part of this standard.

- **Risks**

  Due to the prepayment risk of the underlying collateral, the CMO investor is subject to some uncertainty regarding the timing of their cash flow. If prepayments are significantly more rapid than anticipated, an investor may be susceptible to reinvestment risk.

Pricing or Valuation	• Since CMOs tend to be underwritten and distributed rather than held by broker/dealers, any positions held for long periods of time should be carefully evaluated.
Interest and Cash Flow Assumptions	• Due to prepayment risk, which will vary with changes in interest rates, positions held are subject to rapid changes in value. • Actual yields may differ on each class of security as a result of changes in either short-term interest rates or the rate at which the collateral is expected to prepay.
Customer Suitability	• The CMO market is largely an institutional market and the investment vehicle presents major suitability questions if sold to individuals.
Credit / Payment	• The volatility inherent in the CMO interest amount may increase the credit/payment risk in the event of adverse price changes.

C. Stripped Mortgage-Backed Securities

Stripped securities are created by separating the principal and interest cash flows from the mortgages in the underlying pool. Although GNMA does not have a program for creating stripped Mortgage-Backed Securities, investment bankers, brokers and others have issued "strips" backed by GNMA securities. This has been accomplished by issuing principal only ("P/O") and interest only ("I/O") securities through a CMO Trust.

The GNMA collateral is placed in the trust and the cash flow from the mortgage is used to make payments on the P/O and I/O securities.

Purchasers of P/O securities receive principal payments from the mortgages comprising the body of the CMO trust. The total amount of the cash flow over the life of the P/O will equal the original principal balances of the underlying mortgages. The timing of the cash flow depends on the prepayment rates and varies with economic conditions.

Purchasers of I/O securities receive interest payments at the stripped coupon rate, based on the amount of principal outstanding on the underlying mortgages at the record date for that payment period.

If mortgage interest rates fall below the interest rates on the underlying GNMA pool, the rate of prepayment would be expected to increase, thereby benefiting holders of P/O securities. If mortgage interest rates rise above the rates on the underlying GNMA certificates, the rate of prepayment would be expected to decrease, which would adversely affect the yield on the P/O securities. The price paid for the P/O and I/O are based on the "present value" of the instruments expected cash flow. The longer the period, the lower is the present value of that payment.

Investors in I/O securities will benefit from slower than expected prepayment since principal will be returned more slowly when interest rates rise. Conversely, faster than expected prepayments will negatively impact their anticipated yield and could result in the investor not recovering his initial investment when interest rates fall.

Payments of principal and interest are generally paid monthly. Principal payments are generally paid pro-rata in the proportion which the outstanding principal balance of each bond bears to the aggregate outstanding principal balance of all the bonds.

Therefore, on each payment date, each holder of I/O securities will receive an interest payment. Each holder of P/O securities receives a principal payment which reduces the outstanding face value of the holder's obligation.

- **Risks**

The major risks associated with a stripped MBS is the extreme volatility related to changes in the mortgage rate or general economic climate and the prepayment risk noted earlier. The yield to maturity of each type of bond will be directly affected by the rate of principal repayment experienced on the underlying GNMA certificate.

Inverse Relationship	• Since the I/O and P/O securities are inversely related, interest rate changes and prepayment rate changes affect each class of security in a different manner. The P/O securities yield to maturity will be greater if the actual rate of prepayment is higher than the assumed rate and less if the actual rate is lower. • Holders of I/O securities, if purchased at a premium, run the risk that accelerated prepayments can result in the customer not recovering his initial investment.
Pricing or Valuation	• Since I/Os and P/Os tend to be thinly traded, any position owned and held for long periods of time should be carefully evaluated.
Customers	• The I/O & P/O market is largely an institutional market and suitability questions should be raised if the investment vehicle is sold to individuals.
Credit / Payment Risk	• The volatility inherent in the interest amount will increase the credit/payment risk in the event of adverse price changes.

- **Other Considerations**

Stripped Mortgage-Backed Securities (both I/O and P/O) are issued in fully registered form. They are subject to TEFRA regulations and are taxable obligations under the Internal Revenue Code. Settlement of transactions in I/O and P/O instruments occur in fed funds and settle in three business days similar to corporate bonds.

D. Whole Loans

Whole Loans is a term used to designate the purchase and sale of individual mortgage obligations. The mortgage note as well as the original legal documents are purchased and delivered to the purchaser. Conforming whole loans that comply with certain industry standards are subsequently guaranteed by the Government mortgage agencies (GNMA, FNMA, FHLMC) and private pass-through issuers. Conventional mortgage pass-throughs are issued directly by private originators and are not insured by any government agency.

Conventional pass-throughs provide originators with a means to securitize mortgage loans that do not conform to the criteria of the federal programs. The majority of these loans are considered non-conforming due to the jumbo status-in excess of the FNMA/FHLMC limit.

The conforming loan limit is set every January by the Office of Federal Housing Enterprise Oversight ("OFHEO"), and can be found by searching for "conforming loan limit" on their website www.ofheo.gov).

E. Operational Overview

Operational Processes	**Term / Description**
Allocation Process	The allocation process described below does not apply to CMOs, Stripped MBS or Whole Loans because trading in these instruments is executed on a specific identification basis. The allocation process is conducted on two business days during the month for the aforementioned securities. However, it is not unusual for deviation from the TBMA guidelines providing that both parties are in agreement to any changes. Pool information to satisfy the TBA forward transactions are exchanged via the Electronic Pool Notification ("EPN") System or telephone on the appropriate allocation date. The seller informs the purchaser and provides the TBA amount and price, original face, and pool numbers that will be delivered to the purchaser. Delivery is generally accomplished directly with the purchaser two days after the pool allocation is made.
FNMA / FHLMC / GNMA Clearance	FNMA, FHLMC and GNMA clearance is performed via the Federal Reserve Bank's Fedwire System with the assistance of clearing banks. The Fedwire maintains positions in a book-entry format and recordkeeping is also maintained for the monthly MBS P&I payments. Agency CMOs are settled at the Fed through participants clearing banks. Non Agency CMOs are settled through the Depository Trust Co division of the DTCC, if they are eligible securities. Whole Loan clearance is accomplished by the receipt/delivery of the mortgage note(s) and the agreed upon loan documentation. Stripped Mortgage-Backed Securities generally are settled in a manner consistent with the underlying collateral of the stripped issue.
MBSD div. of FICC	The MBSD division of FICC provides operational processing of MBS transactions that include automatic trade comparison and transaction netting among member firms.
Trade Comparison	Transactions are entered into the MBSD for comparison with the terms entered by trade counterparties. The MBSD matches the trade data and notifies both parties of any discrepancies.

Operational Processes	Term / Description
SBO Netdown	The SBO (Settlement Balance Order) netdown is executed among member firms to reduce the amount of MBS transactions that will require settlement via security delivery. The netdown results in a cash payment or receipt to the MBSD.
Principal and Interest (P&I)	One of the characteristics of mortgage-backed securities that distinguishes them from other government securities is the monthly payment of principal and interest (P&I). The holder of the security on the P&I record date is entitled to the payment. Mortgage-backed securities are registered in the name of the holder (either nominee or beneficial). The P&I Department performs the following functions: 1. Receives P&I checks in lump sum from paying agents. 2. Allocates these payments to the corresponding security. 3. Prepares P&I entries to the holder's account. 4. Processes P&I claims due to others. 5. Claims P&I due from others and prepares management reports to track the collection of such. 6. Prepares P&I due bills (see below). 7. Performs controls and balancing procedures to ensure that the Firm receives all P&I due. Principal and interest payments are made periodically to holders of MBS certificates. The record date is the last business day of the month. Payment dates vary depending on the security, as follows: <u>Security</u> — <u>Payable date*</u> GNMA — 15 days after record GNMA II — 20 days after record GPM — 20 days after record FHLMC — 45 days after record FNMA — 25 days after record CMO's, Whole Loans — Various * or the next business day if payable date falls on a holiday or a weekend. The P&I area receives the payments and calculates the correct amounts of principal and interest to be allocated to each account.

Operational Processes	**Term / Description**
	P&I Due Bills- Due Bill for Principal and Interest on Mortgage- Backed Securities. - All deliveries of mortgage-backed securities which have a settlement date prior to a record date where delivery and payment occur between the record date and a payable date should be accompanied by a P&I Due Bill. - All deliveries of mortgage-backed securities with a settlement date prior to a given record date, where delivery and payment occur after both record date and the principal and interest payment date, should be accompanied by payment for such principal and interest.

II. AUDIT GUIDELINES

Risks to be Managed	Types of Controls to Manage or Eliminate Risks	Potential Audit Workstep
A. Trading		
1. Trading Supervision MBS Pass-Through personnel are not properly supervised, which may result in untimely discovery of improprieties such as trading unapproved products, exceeding position limits, engaging in improper business activities and violating regulatory requirements.	• The Desk Head monitors MBS Pass-Through Desk activities. • Monthly attestations are provided to Compliance indicating that a representative from the Desk has performed supervisory responsibilities as outlined in the Firm's Compliance Manual.	• Evaluate the adequacy of the MBS Pass-Through supervisory procedures and management reports used to authorize, monitor, and/or document trade input, hedging and trading strategies, inventory, desk limits, and employee trading. • Select a sample of days and verify that daily trading activity (including fails, cancels / corrects, and "as ofs") was reviewed for unauthorized activity. Ascertain whether any negative trends or concentration exist that require further investigation. • Obtain a copy of the monthly Compliance attestation to determine whether certification was signed and submitted timely.

Risks to be Managed	Types of Controls to Manage or Eliminate Risks	Potential Audit Workstep
2. New Product Review New products are introduced and or traded by the business without effective review and approval. This may cause significant risk and loss to the Firm in the event that such instruments are traded without the required legal, financial and risk infrastructures in place.	The MBS Pass-Through Desk is required to obtain pre-approval for new businesses, products and / or twists and wrinkles to existing businesses and products.	Through inquiry and observation, determine if the Desk is trading any new products or is involved in any new businesses. If so, request and review any new product / new business documentation to ensure the Desk is in fact approved to trade.
3. Deal Folders CMO deals are structured and executed without maintaining critical documentation in a centralized location. Inaccurate or incomplete records may violate the terms of the GSE Underwriting Agreements or could result in disciplinary action during GSE Examinations.	The CMO Desk uses a CMO Deal File Checklist to gain reasonable assurance that critical documentation is maintained on file.	Obtain and review a representative sample of CMO deal folders and compare the contents to the CMO New Deal File Checklist for completeness. Determine whether deal files are maintained in a centralized location and adhere to the Firm documentation retention policies.

Risks to be Managed	Types of Controls to Manage or Eliminate Risks	Potential Audit Workstep
B. Operations		
1. Segregation of Duties Trading Desk personnel have reporting lines or functional roles that are inadequately segregated and / or intertwined with back office staff, increasing the risk of fraud or embezzlement.	MBS Pass-Through trading personnel have reporting lines and functional roles that are independent from their support groups (i.e., Finance, Risk Management, Corporate Credit and Operations Departments, Legal, etc.).	Obtain and review organizational charts, job descriptions and/or reporting lines for all trading and supervisory staff; conduct discussions with Fixed Income Management to ensure that there is clear and adequate segregation of duties between the Desk and back office functions.
2. Trade Capture Trade data is not recorded properly, resulting in errors in financial and regulatory reports.	• Traders and Fixed Income Trade Support enter trades to the Front Office System, which in turn feeds the Back Office System (i.e., books and records). The Back Office System then feeds Desk's positions to the Firm's risk system(s). • Daily reconciliations of trade data are performed to ensure all positions are captured accurately.	• Review system diagram and/or process flow charts for the MBS Pass-Through Desk and verify that trade data is reconciled to each subsequent downstream system and adequate controls exist to prevent breaks in the transactional process. • For a sample period, obtain copies of Front-to-Back System reconciliations performed and analyze the following: – Verify that reconciliations are performed daily and that discrepancies are investigated and resolved timely. – Trace and agree all reconciliation data back to source documentation. • Select a sample of trades and gain reasonable assurance that transactions were input timely to front-office trading systems, feed all relevant support systems accurately, and key controls are operating appropriately.

Risks to be Managed	Types of Controls to Manage or Eliminate Risks	Potential Audit Workstep
3. Cancels / "As of" Trades Inadequate controls regarding changes in trade details may result in unauthorized amendments and inaccurate books and records.	Adjustments, cancel-corrects and/or "as of" trades are reviewed by management through a supervisory review system or process.	Select a sample of cancel and "as of" trades and ensure sufficient review by management. If the occurrence of these is rare, perform a walkthrough of the process.
4. Confirm / Settlement & Exchange Reconciliations Trade data is not reconciled with the Fixed Income Clearing Corporation ("FICC") thereby increasing the likelihood that missed, late, unauthorized, or duplicate transactions may not be readily identified.	• Fixed Income Operations' Allocations reconciles trade data to the FICC timely. • For trades not cleared through FICC, trade confirms are sent to counter-parties on T+1 to ensure agreement of trade details prior to settlement date.	• For reconciliations with FICC, review a sample of days for reasonableness and accuracy. • For trading activity outside of FICC, ensure controls over confirms and settlement are in place, reasonable and timely.

Risks to be Managed	Types of Controls to Manage or Eliminate Risks	Potential Audit Workstep
5. P&I Reconciliations Incomplete or untimely P&I reconciliations may result in untimely recognition of losses.	• The P&I group in Operations performs daily reconciliations of Principal and Interest items and pool changes. Un-reconciled items are put into suspense accounts while being investigated immediately. All suspense account items are aged and reported to senior management daily. • Items greater than 90 days aged are booked to an aged suspense account and require senior management approval when cleared. • The system functionality for all payment applications prevents the same user from initiating and approving a wire transfer.	• Review the P&I reconciliations and Aged Suspense controls. Verify that reconciliations are prepared daily and unreconciled items are investigated and moved into suspense, aged, reported to senior management, and resolved in a timely manner. • Obtain and review the Firm's Funds Transfer Policy to evaluate the adequacy of the associated process and system controls. • For a sample of payments and receipts ensure that they were recorded timely by tracing the details to the nostro account history. Verify that outgoing payments in the sample were approved according to Firm policy.

Risks to be Managed	Types of Controls to Manage or Eliminate Risks	Potential Audit Workstep
6. Failed Trades Failed transactions may not be properly investigated or resolved. As a result, the Firm may incur additional costs associated with processing such transactions.	Operations reports failed transactions to the Desk and Operations Management daily and researches cause of fail with the FICC counterparty to ensure fail is resolved on a timely basis.	• Review of outstanding failed payments / receipts and determine whether follow-up was conducted timely and that the fails were not indicative of a control weakness in the settlement process. • Perform a similar review for trading activity outside of FICC.
C. Finance / Product Control		
1. Profit / Loss ("P/L") Reporting P/L issued to management (i.e., daily and month-end P/L) is recorded directly to the books and records without reconciliation may be misstated. As a result, significant P/L variances may not be readily identified to senior management.	• Finance reconciles their daily P/L to the Desk's estimated P/L. Differences greater than a pre-defined threshold are investigated and reported to management. • As part of the month-end closing process, Finance reconciles the month-end P/L report to the general ledger. All differences are reconciled timely.	• Obtain and review Finance policy and procedures. • Walkthrough / document the Daily P/L process. • For the month-end, verify that the P/L reconciles to the books and records. If variances are identified, verify that material variances are explained and reported to both business and Finance management.

Risks to be Managed	Types of Controls to Manage or Eliminate Risks	Potential Audit Workstep
2. Independent Price Verification There is no independent review of the Desks' positions and associated fair market values. As a result, the Desks' portfolio may be incorrectly marked and P/L and B/S may be inaccurately reported.	• Finance reviews Trader's marks monthly to ensure fair market values by using broker quotes, pricing models in Bloomberg, and external pricing feeds (e.g., SPS and IDC). Intra-month, Finance monitors P&L for large movements that will require further investigation.	• Based on a sample of positions, gain reasonable assurance that Finance reviews Trading's marks for fair market values vs. independent sources, and that all discrepancies are researched and resolved timely by Finance. • If marks cannot be verified by Finance, verify that they were reported to businesses and Finance management.
3. Reserves Reserves/Provision are not approved or reviewed for this business, leading to misstatements in the Balance Sheet ("B/S") and P/L.	• Finance reviews the aging of positions at month-end. • Finance obtains bid-to-mid spread indications at month-end from 3rd Party Brokers and take valuation adjustments for thinly traded products (i.e., CMOs, I/Os and P/Os). • Finance, in coordination with Risk Management, reviews any models and model input parameters	• Determine, through inquiry with management whether a reserves / valuation adjustments / provision are needed for the Business.

Risks to be Managed	Types of Controls to Manage or Eliminate Risks	Potential Audit Workstep
	and take valuation adjustments where necessary.	
4. B/S Reporting B/S accounts do not have owners and are therefore not reviewed against supporting schedules. As a result, erroneous or suspended items may not be identified or reported.	• Finance reviews and signoffs on their B/S accounts on a monthly basis. Material items are investigated and reported to Finance. • As the Desk maintains a regular turnover of inventory, aging is not a problem.	• Review and document the B/S closing process to gain reasonable assurance that all accounts are accurately and timely reported at month end. • Review a sample of month-end reconciliations and verify that variances were identified and investigated. • Determine, through inquiry with management whether a provision is needed for this business. • Ensure that, if needed, a provision is established for the business and appropriately approved and booked.
5. Regulatory Reporting Regulatory reports do not accurately capture the activity of the Desk leading to fines and disciplinary action.	Regulatory Reporting relies on the books and records of the firm to produce their reports.	Determine if regulatory reports are accurately and completely capturing activity that is unique to the Desk.

Risks to be Managed	Types of Controls to Manage or Eliminate Risks	Potential Audit Workstep
D. Credit / Market Risk Management		
1. Limit Monitoring Risk & Credit limits have not been established, reviewed, approved and / or monitored and therefore allow for MBS Pass-Through transactions to be traded without a means of evaluating market/credit risk against the Firm's acceptable risk appetite / tolerance levels.	• Risk Management has established a limit structure that includes maximum long or short position, sensitivity (i.e., Greeks, VaR, Risk Capital, etc.), and stop-loss limits. • Risk Management independently monitors market risk limits, which include position, sensitivity (i.e., Greeks, VaR, Risk Capital, etc.) and stop-loss limits, through the Daily Guidelines Report. • Violations of formal limits are reported to the Trader, Division Head, and the Firm's Risk and Credit Committee. Violations of sub-limits are addressed between the Trader, Trading	• Ensure risk limits agree with the most current limits approved by the Firm's Resource Management Committee. • Interview Risk Managers and gain reasonable assurance that risk limits are appropriately set for this business. • Based on a sample of Daily Guideline Reports, gain reasonable assurance that the Desk operates within their approved risk limits and that Risk Management is monitoring exposures and reporting violations to management timely. • Review a sample of MBS Pass-Through counterparties to verify that Corporate Credit performs periodic counterparty reviews and that risk limits have been set consistently (i.e., based upon credit quality). • Review a sample of credit limit reports for the MBS Pass-Through Desk to gain reasonable assurance that credit risk limit violations are being monitored and resolved timely and that repeat violations are escalated accordingly.

Risks to be Managed	Types of Controls to Manage or Eliminate Risks	Potential Audit Workstep
	Manager and Risk Management. Violation of loss limits is addressed between the Trader and Risk Management. • Corporate Credit performs the initial due diligence annual reviews of MBS Pass-Through counterparties and establishes credit and forward settlement risk limits accordingly. • Corporate Credit independently monitors daily credit exposures against established credit risk limits. Corporate Credit tracks credit limit violations and provides daily reports to Desk management and Division Heads. Repeat violations by the same employee or counterparty may be escalated to the Firm's Risk & Credit Committee.	

Risks to be Managed	Types of Controls to Manage or Eliminate Risks	Potential Audit Workstep
2. Risk Computation Risk components inherent in products traded by the Desk are not identified for inclusion in the Firm's risk computation methodology, thereby skewing risk exposure calculations.	The approved Firm's risk computation methodology is applied to calculate and monitor market risk limits for the Desk.	• Review the Risk Management Policies & Procedures to determine whether the Firm's risk computation methodology includes the inherent risks of products traded by the Desk. • Verify that the approved methodology is used to calculate and monitor risk exposures for inclusion in the Firm's Risk System and the daily risk reports to both Trading and Senior Management.
3. Data Integrity Risk data may be incomplete or inaccurate causing risk management reporting to be incorrect.	Risk Management relies on automated feeds from the Back Office System to the Firm's Risk Management System that are reconciled daily.	Review a sample of system feed status reports between the Back Office System and the Firm's Risk Management System and gain reasonable assurance that breaks and / or feed failures are researched and resolved timely.
4. Stress Testing The impacts of market risk under stress scenarios or unlikely events may not be evaluated. As a result, losses may be much higher than anticipated under extraordinary circumstances.	Market risk exposures are subject to monthly stress testing to evaluate and report potential economic impacts to Firm Management.	• Discuss with Risk Management the stress testing process to gain an understanding of the scenario analysis performed and to assess the adequacy of variables stressed. • Ensure the portfolio is subject to monthly stress testing. Understand scenario analysis performed and assess adequacy of variables stressed.

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5. Model Review Models are not approved by Risk Management; do not accurately quantify or simulate market conditions or inherent risks of the MBS Pass-Through Business; and / or are not properly segregated from Front Office personnel resulting in control deficiencies that could expose the Firm to realized losses in excess of calculated exposures.	All models and underlying assumptions are vetted, approved, and documented by Risk Management prior to production.	• Review the analysis performed by Risk Management to ensure that the models (i.e., Intex and Polypaths) used by the Desk have been validated and cannot be altered by the Traders.
E. Legal / Compliance		
1. Trader Registration Inadequate Compliance monitoring of employee registrations may cause the Firm to be in violation of regulatory requirements, exposing the Firm to fines and/or disciplinary action.	Compliance monitors/ verifies employee registration and continuing education requirements to ensure employees hold the required registrations based on their job function.	Ensure employees have their required registrations and are up to date with continuing education requirements in relation to their job functions.

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2. Offering Documentation Purchasers of new issue Agency REMICs are not provided with the associated offering documentation within the allotted distribution period, thereby violating the terms and conditions of the GSE Underwriting Agreements.	Operations verify purchasers' receipt of new issue REMIC offering documentation.	• Document and evaluate the process controls associated with the delivery of offering materials to counterparties that purchased new issue REMIC securities. • Ensure Terms Sheets, changes to Term Sheets and Offering Documentation are circulated to all purchasers timely.
3. Customer Suitability MBS Derivative products could be sold to customers that do not have the expertise or knowledge to understand the associated risks and thus could result in legal proceedings harming the Firms' reputation.	Sales and Compliance are responsible for periodically monitoring the suitability of products on a customer-by-customer basis.	Determine whether Sales and Compliance have the necessary controls to monitor customer trades for suitability.

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4. Training Employees do not receive adequate training regarding key regulations and internal policy creating legal risk for the Firm.	Compliance provides annual compliance seminars on key topics and ensures employees complete sign-in sheets.	Ensure employees of the Desk have attended the annual compliance seminar.

III. GLOSSARIES

- **Glossary & Investors Guide** - Securities Industry & Financial Markets Association's ("SIFMA"; formerly known as the Securities Industry Association and Bond Market Association). An Investor's Guide to Mortgage Securities offers basic information on investing in pass-throughs, CMOs, REMICs and strips. The Guide provides answers to the most commonly asked questions with regard to who issues mortgage securities, the history of the market, safety, yield, liquidity, tax status and market risk. It also includes information on how mortgage securities compare to other fixed-income securities, minimum investment and costs.
  http://archives1.sifma.org/assets/files/an_investors_guide_to_mortgage_securities.pdf

- **Glossary** – Investopedia's Dictionary of Investment Terminology, Acronyms and Buzzwords
  http://www.investopedia.com/terms/p/passthroughsecurity.asp

- **Fixed Income Clearing Corporation's** - MBS Clearing Corporation websites
  - http://www.dtcc.com/ProductsAndServices/fixed/index.htm
  - http://www.ficc.com/mbs/mbs.index.jsp

- **Office of Federal Housing Enterprise Oversight ("OFHEO")** - OFHEO's mission is to promote housing and a strong national housing finance system by ensuring the safety and soundness of Fannie Mae and Freddie Mac.
  http://www.ofheo.gov/