

Margining in Agency MBS Trading

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Margining in Agency MBS Trading

1. Introduction

Most purchases of agency mortgage-backed securities (MBS) are forward transactions that settle about one month after the trade is agreed upon, and some can also settle farther in the future. Parties to forward-settling transactions bear counterparty credit risk—the risk that a counterparty is unable or unwilling to meet its contractual obligations.¹ If one party to a forward transaction does not meet its obligations, the other party may experience a loss if it has to replace the transaction at a worse price. One common means of mitigating the counterparty credit risk of forward transactions is for the counterparties to agree to post collateral, or margin, as the market value of the securities fluctuates. The posting of margin is a common practice in the trading of agency MBS between members of the Mortgage-Backed Securities Division (MBSD) of the Fixed-Income Clearing Corporation, which became a central counterparty (CCP) in April 2012. However, margining is less common in bilateral agency MBS trading between dealers and customers that are not MBSD members.

This contrasts with practices in other forward, repo, securities lending, and derivatives markets, where margining has been pursued with greater consistency and with a more developed body of market conventions.² In these markets, margining has developed as a standard practice between participants, both in uncleared transactions and as part of central counterparty risk management systems, and in some cases has been enshrined in statutory law.

¹ Most agency MBS trading is conducted in the To-Be-Announced (TBA) market, with defined settlement dates for each month in the future. Liquid contracts are available up to two months forward, and some trade at more extended tenors. Parties that trade agency MBS outside of the TBA market may bear counterparty credit risk as well, since many non-TBA trades also settle on the TBA schedule.

² In the over-the-counter (OTC) markets, these practices have generally been based on recommendations of the International Swaps and Derivatives Association (ISDA), the Securities Industry and Financial Markets Association (SIFMA), and other industry groups.

To the extent that they remain unmarginated, uncleared agency MBS transactions can pose significant counterparty risk to individual market participants. Moreover, the market's sheer size—it is one of the largest fixed-income markets, with \$5 trillion in agency MBS outstanding and roughly \$750 billion to \$1.5 trillion in gross unsettled and unmarginated dealer-to-customer transactions—raises systemic concerns. If one or more market participants were to default on forward-settling agency MBS trades, the agency MBS market could transmit losses and risks to a broad array of other participants. While the transmission of these risks may be mitigated by the netting, margining, and settlement guaranties provided by a CCP, losses could nonetheless be costly and destabilizing. Furthermore, the asymmetry that exists between participants that margin and those that do not could have a negative effect on liquidity, especially in times of market stress.

This paper evaluates the nature of the risks posed by unmarginated agency MBS trading, describes how margining could address those risks, and discusses the operational and legal considerations associated with the more widespread use of margining. It concludes that market efficiency and financial stability would be enhanced by broader use of margining for uncleared agency MBS transactions.

2. Historical Background

The first forward-settling contracts in the United States were developed for commodities, and market participants took the initiative to centralize clearing of these contracts on exchanges in the form of standardized futures contracts organized around a central counterparty. An important aspect of these structures was the collection of capital—or margin—from participating members to serve as protection against loss. Eventually, other forward-settling markets moved from OTC structures to centralized clearing and margining, including

Treasury futures—one of the largest forward-settling markets—in 1974.

In recent decades, margining has also become a central part of the development of the OTC derivatives markets, whose transactions entail counterparty credit risk that is similar to that of forward-settling agency MBS. The development of margining practices for such derivatives transactions was motivated in part by financial market stress events and the failure of major counterparties. For example, the market stress evident in the late 1990s, centered around the Russian sovereign default, the Asian financial crisis, and the failure of Long-Term Capital Management, helped to further the market's move toward the development of more robust risk management standards for swaps.³

More recently, market events have spurred the move toward increased central clearing of derivatives and refocused attention on counterparty credit risk management for transactions not cleared by central counterparties. Traditionally, margining of uncleared derivatives transactions had been a credit risk mitigant that dealers demanded of only some of their counterparties. However, after the failure of Lehman Brothers in 2008, dealers and customers alike began to move toward greater use of margining on a bilateral basis. The movement in policy and industry practice toward margining accelerated in November 2008, when the G-20 Summit on Financial Markets called for measures to reduce systemic risks in the OTC derivatives markets—a general call that has since been interpreted as supporting the use of margining.

In the United States, the move toward increased use of margining for OTC derivatives transactions was codified in Title VII of the Dodd-Frank Act, which requires designated swap dealers and major swap participants to post margin on centrally-cleared swaps, among

³ This resulted in publications such as the *2001 ISDA Margin Provisions* and the *2002 ISDA Master Agreement* for swaps.

other requirements.⁴ Notably, the Act requires margining for both non-centrally-cleared OTC derivatives and cleared transactions.

While counterparty exposures in the \$5 trillion agency MBS market are similar in nature to those of other forward-settling and OTC derivatives transactions,⁵ the trend toward margining has not advanced as far in agency MBS trading. While the CCP accounts for a significant volume of transactions in agency MBS, many bilateral agency MBS transactions are not submitted to the MBSD and are not margined. Overall, the daily average of customer-to-dealer transaction volume is approximately \$100 billion,⁶ and anecdotal evidence suggests that roughly two-thirds of volume remains unmargined. Because the majority of transactions settle just once a month and trading is conducted using forward settlement, gross unsettled and unmargined bilateral agency MBS transactions could be in the range of \$750 billion to \$1.5 trillion at any point in time.⁷ While some of these trades could be netted down due to dollar rolls and coupon swaps, gross unsettled exposures are still an important measure of credit risk as well. Moreover, the size of even the net unsettled and unmargined positions could result in substantial exposures if one or more market

participants were to default—raising systemic concerns.

3. What Risks Is Margining Meant to Address?

In a security forward transaction, a buyer agrees to a price at which to purchase a security from a seller, with settlement designated at some future point. In the case of agency MBS, that settlement date is as much as three months in the future and on average twenty-five days forward.⁸ For example, a buyer might purchase \$100 million in agency MBS in a TBA transaction, with settlement scheduled fifteen days in the future. Until settlement occurs, each party to the transaction is subject to counterparty credit risk, owing to changes in the market value of the securities purchased.

Under standard agency MBS master agreements, in the event of a counterparty failure or default a firm may terminate all unsettled agency MBS transactions with the counterparty and calculate a net loss or gain amount for all unsettled transactions. To determine the gain or loss, the nondefaulting firm may enter into replacement transactions or rely on indicative quotes or other evidence of prevailing market prices.⁹

If the seller of the security in our example above were to fail as an institution after placing the trade but prior to settlement, the buyer could choose to purchase the security in the open market. If, by the time of the failure, market prices had increased by 5 percent, the buyer's replacement cost would be \$105 million; if no margin had been posted, the buyer's loss

⁴ To implement this legislation, a variety of regulatory bodies are reviewing their rulemaking processes, including the Commodity Futures Trading Commission, the Securities and Exchange Commission, the Federal Deposit Insurance Corporation, the Office of the Comptroller of the Currency, and the Federal Reserve. For noncleared swaps, the rules have not yet been finalized. Additional consultative principles for margin requirements for non-centrally-cleared derivatives have also been developed by the Basel Committee on Banking Supervision and the Board of the International Organization of Securities Commissions.

⁵ The months-long exposures prevalent in unsettled MBS trades are of a different order of duration from the exposures in many OTC swaps, which may last multiple years in some cases. However, the same principles and procedures of credit risk management apply, just as they do in other forward-settling markets, such as those for Treasury and commodity futures, repos, and securities loans.

⁶ Estimate is derived from data published by the Financial Industry Regulatory Authority (FINRA).

⁷ Estimate is derived from data published by FINRA and the Federal Reserve Bank of New York.

⁸ Agency MBS trades in the TBA market settle once a month. According to TRACE data published by FINRA, 70 percent of TBAs trade for the most immediate settlement date, up to one month forward. Nearly 30 percent of TBAs trade for the following month's settlement date.

⁹ In the case of a purchase, if the market value of the contract has appreciated, the defaulting counterparty would be obligated upon termination to reimburse the nondefaulting party for its loss. In the case of a sale, if the market value of the contract has depreciated, a defaulting counterparty would be obligated to reimburse the nondefaulting party for its loss.

would be \$5 million. In practice, a firm would likely have more than one trade to replace, and market prices could move much more. In such a case, the uncollateralized losses for a large defaulting institution, or a collection of firms, could rise to the billions of dollars.

The default of one or more market participants, especially large ones, on an uncleared bilateral transaction could result in chaotic trading. If the first party to default had a large net long or net short position outstanding, market functioning could deteriorate amid one-sided trading and price volatility as its counterparties sought to replace their trades at the same time. If the first party to default did *not* have a large net long or net short position outstanding, one-way trading may not occur. Nevertheless, in either scenario the counterparties to the defaulting firm could suffer substantial losses if their positions were not margined. If the losses had or were perceived to have a destabilizing effect on these counterparties, there could be a contagion effect through ex post margin calls, reluctance to establish new transactions, or redemptions by investors. While margining of eligible MBS transactions among MBS members mitigates some of this contagion risk, and could provide a partial firewall that interrupts a cascade of defaults, it would not eliminate such risk.

Thus, uncertainty about the unmargined exposures of firms and funds could lead to a rapid liquidity drain, a sudden failure, and a systemic event. Though not related specifically to agency MBS, similar scenarios played out with collateral runs, margin calls, or redemptions associated with Bear Stearns and Lehman Brothers in 2008, Long-Term Capital Management in 1998, and the Prime Reserve Fund in 2008.

4. How Does Margining Mitigate Risks?

Reducing Counterparty Credit and Systemic Risks

Counterparties in agency MBS trading can reduce the credit risk inherent in their forward transactions by exchanging margin. To implement the margining process, counterparties typically agree that they will post collateral when their counterparty's cost of replacing a trade is higher than the original price of the transaction. The margin functions as a buffer, or cushion, for absorbing losses in case the cost of replacing the position is higher than that of the original transaction. As such, margining can mitigate the risk of cascading institutional failures and one-sided or chaotic trading and help preserve market liquidity. This implies margining can potentially exert a countercyclical force and increase financial stability more broadly.

Continuing with our example transaction, suppose that the seller had posted \$2.5 million in margin to the buyer. If the seller defaults, the buyer may apply the \$2.5 million to defray its \$5 million loss on the canceled trades.¹⁰ One benefit of margining is that the nondefaulting party should have prompt access to collateral to cover its losses, rather than having to seek reimbursement of the losses from the defaulting party.

Parameters of Margin Processes

Margin agreements for many financial products require counterparties to post margin on a daily basis, in an amount equal to any mark-to-market change in the net value of the unsettled forward transactions between the parties. This margin is colloquially known as "variation margin." Variation margin is often a symmetrical regime in the sense that either counterparty may be obligated to post margin, depending on the fluctuation in the net value of the trade and the collateral already posted.

¹⁰ See the appendix for other margining examples.

In addition, certain market participants, such as CCPs, may require “initial margin” to be posted in order to cover, to a predetermined level of confidence, the market risk for the estimated period of time it will take to replace a transaction that was terminated because of default or failure to perform by one of the counterparties—a process that may take a number of days. Where it applies, the calculation of initial margin is generally determined by considering the market value at risk (VAR) over the period necessary to replace a defaulted trade. Such VAR analyses often consider the potential for market value fluctuations based on historical price changes, over a certain time interval and at a specified level of confidence or statistical significance.

While margining serves to reduce the risk of net forward exposures, it does not fully eliminate such risk. Moreover, while margining reduces credit risk, it can introduce additional operational and other risks.¹¹ Therefore, evaluation of margining practices must pay careful attention not only to how thoroughly the process reduces counterparty credit risk or how cost effectively it does so, but also to the level and nature of operational risk that the process incurs. Certain parameters of margining agreements are crucial to these analyses, including thresholds, minimum transfer amounts, frequency of deliveries and returns, acceptable collateral types, and margin triggers.

For example, to reduce the burden associated with margining, market participants may set a margining threshold—a level of unsecured exposure below which counterparties agree not to exchange any collateral.¹² Similarly, participants may set a minimum transfer amount (MTA), a net *change* in exposure below which they agree not to exchange collateral. That is,

even if the threshold is exceeded, collateral is posted only if the net new collateral transfer is of sufficient size. For example, if a firm owed \$80,000 more in collateral than its threshold level but its MTA was \$100,000, it would not post anything that day.

The frequency at which counterparties agree to reevaluate their margins and post collateral is another operational parameter used to adjust the nature and level of credit and operational risks in forward transactions.¹³ Each of the margining parameters should therefore be carefully considered in order to ensure appropriate management of counterparty and operational risks at the firm level, bearing in mind that an individual firm’s risk management will affect the financial stability of the agency MBS market as a whole.

5. Operational and Legal Issues

To implement margining of agency MBS transactions, market participants must address a number of operational and legal issues, whether they join a CCP or establish bilateral margin arrangements. While the margining terms offered by a CCP are often standardized, the terms of bilateral margining may be customized in any number of ways to suit individual relationships and operational requirements. Nevertheless, all margining processes should accomplish a variety of common functions. In general, the key functions would be measuring forward exposures, marking open positions, calculating the margin amount, communicating margin

¹¹ Accordingly, some have described margining as a process that partially converts credit risk into operational and other risks. See the ISDA’s “Market Review of OTC Derivative Bilateral Collateralization Practices,” p. 5.

¹² Thresholds are counted as an exposure against which broker-dealers must hold capital.

¹³ While market participants sometimes use various market- or credit-based triggers to initiate or adjust margining requirements, this approach has several negative consequences. For example, waiting to margin until a credit or other trigger has already been breached could leave a firm open to substantial credit risk. Further, from a financial stability perspective, widespread use of credit rating triggers is likely to generate procyclical forces, potentially sending a counterparty into a downward spiral of accelerating collateral calls. Accordingly, credit-based triggers are not recommended by groups like the Bank for International Settlements (BIS). See “The Role of Margin Requirements and Haircuts in Procyclicality,” BIS, pp. 17-8.

calls to counterparties, and delivering and receiving collateral.

More specifically, middle- and back-office resources and systems would be needed to mark unsettled positions using current and readily available pricing sources. To determine net forward exposures would require similar types of resources to maintain collateral accounts and monitor balances. If securities were pledged as collateral, current pricing information and margin calls would be needed to ensure the sufficiency of the collateral. Systems and resources must also be prepared to communicate and respond to margin calls, reconcile possible disputes, and manage collateral flows and settlement. Finally, while accounting for margining is a task that a typical finance area could handle, these activities may introduce additional complications. Many of these and other functions necessary to conduct margining are similar across asset classes, and the existence of margining for other forward transactions and derivatives may reduce the costs associated with implementing margining for agency MBS.

U.S. broker-dealers are required by regulation to establish a number of additional operational controls. For example, they must maintain records that identify the owner and location of the securities, and they must issue account statements to customers on at least a quarterly basis (as opposed to the requirement that such statements be sent for a delivery-versus-payment/receipt-versus-payment repo account only if there is activity during that period).¹⁴ Dealers may also be required to evaluate good control-location status, or the segregation at the custodial bank or the securities depository of customer and dealer securities.¹⁵ As a commercial matter, customers may put in place comparable arrangements for segregating dealer collateral.

In addition to these operational issues, implementation of margining would require participants to put in place written agreements defining the terms of their margining practices with each of a firm's uncleared bilateral counterparties, a process that would likely take a period of time. Under current law, the requirements for dealers and investors differ. For dealers, the 1934 Securities Exchange Act requires that a written margin agreement be put in place for each customer from whom margin may be collected.¹⁶ For funds registered under the Investment Company Act of 1940, a tri-party control agreement among the dealer, the fund, and the fund's custodian may be required in order to post margin. Some investors may also be required by their bylaws to obtain board approval for margining. Additionally, investors may need to execute or amend custodial and tri-party agreements to cover the margin process as well as agreements with their asset managers to process margin on their behalf.

SIFMA's Master Securities Forward Transaction Agreement (MSFTA) is currently the only industry standard template that has been developed for margining agency MBS forwards. Like the MSFTA, any written agreement that market participants employ should reflect the parties' agreement on all aspects of the margining regime, including collateral eligibility, timing and frequency of margin calls and exchanges, thresholds, valuation of exposures and collateral, and liquidation. Written agreements covering agency MBS forwards will also typically provide (as the MSFTA does) that unsettled agency MBS transactions with a counterparty that has defaulted may be canceled and otherwise liquidated. A net loss or gain amount may then be calculated for all unsettled transactions and applied against any margin posted prior to default by the defaulting party.

¹⁴ See SEC Rule 17a3 under the Securities Exchange Act of 1934 and National Association of Securities Dealers Rule 2340, respectively.

¹⁵ See SEC Rule 15c3-3.

¹⁶ See SEC Rule 17a3.

6. The Case for Industry-Driven Margining Practices

As an industry group dedicated to promoting best practices, the Treasury Market Practices Group (TMPG) believes it is appropriate to proactively support margining practices for forward-settling transactions, such as agency MBS, in order to promote the integrity and efficiency of the market. The TMPG recognizes that there are a number of operational and legal costs to the expanded use of margining. However, given the sizable portion of the MBS market that is currently unmargined and the associated systemic risks, margining can substantially benefit the agency MBS market by meaningfully mitigating counterparty risks associated with unsettled positions and supporting stability during periods of market stress.

Recall that the margining of agency MBS is consistent with the broad trend across the financial system to increase collateral and capital to fortify a variety of institutions and markets against the types of risk realized during the recent financial crisis. Alongside the Dodd-Frank Act's requirements for collateralization of swaps, the Basel III capital accord—which financial institutions are already preparing to implement—generally calls for greater capital reserves to be held against a variety of asset classes.

In this context, developing additional margining practices for agency MBS should not be substantially more expensive nor otherwise more difficult than undertaking efforts to establish margining for other equally important markets. In fact, while there are initial start-up costs to developing and implementing a margining regime for agency MBS, there may be some economies of scale to margining across different markets once firms establish the necessary systems and hire appropriate staff.

Furthermore, wider adoption of margining could promote a “level playing field” in the agency MBS market and thereby improve liquidity and promote sound risk management

practices. Participants that margin transactions today incur costs not borne by unmargined participants. This introduces an asymmetry that disadvantages firms that employ margining as part of sound risk management. Put another way, participants that do not margin transactions may gain a competitive advantage in an unsound way. Market efficiency can also be impacted when trading occurs with unmargined participants, resulting in bid-ask spreads that are wider than they otherwise would be because they reflect counterparty credit risk in addition to other transaction costs. Widespread use of margining could address both of these issues, encouraging broader use of sound counterparty risk management practices and improving market liquidity for all participants.

Finally, the need to collateralize agency MBS transactions is also no less urgent than it is in other markets. The TBA market has yet to experience the same types of disruptions or to transmit the same kinds of counterparty risk as some OTC derivatives markets not adequately margined in 2008. Yet the TBA market's sheer size—outstanding securities of over \$5 trillion, average daily trading volume between customers and primary dealers of around \$100 billion, and daily forward gross unmargined exposures of \$750 billion to \$1.5 trillion—suggests that the market may pose substantial risks, not only to individual participants but also to the financial system as a whole.

Accordingly, while agency MBS products may themselves expose market participants to less *credit* risk because they are agency-guaranteed securities, it is difficult to argue that trading in agency MBS exposes participants to less *counterparty* credit risk than trading in other markets, and thus that trading in agency MBS has less need for risk mitigation. Indeed, stable and standardized margining practices could exert a *countercyclical* force in periods of financial market distress by helping to prevent opportunistic or panic-driven collateral runs, thereby increasing financial stability.

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Appendix: Margining Examples

Example A

On day T, there is a \$100 million trade amount (face value × price) with no existing collateral. No variation margin is required because there is no forward exposure.

Example B

On day T+1, the value has gone up one point by end of day, resulting in a forward exposure for the counterparty of \$1 million. The closing market value is \$101 million. The total margin required of the dealer is now \$1 million, representing variation margin, so the margin call is \$1 million.

Example C

On day T+2, the closing market value drops to \$99 million, resulting in a forward exposure of \$1 million for the dealer. \$1 million in collateral was previously posted by the dealer, so an excess margin of \$2 million is returned by the counterparty.

Example D

On day T+3, the closing market value drops further, to \$97.5 million, resulting in a forward exposure for the dealer of \$2.5 million. The total margin required of the counterparty is \$2.5 million, of which \$1.0 million in collateral was posted previously, so only \$1.5 million in additional collateral is required.

The Treasury Market Practices Group (TMPG) is a group of market professionals committed to supporting the integrity and efficiency of the Treasury, agency debt, and agency mortgage-backed securities markets. The TMPG is composed of senior business managers and legal and compliance professionals from a variety of institutions—including securities dealers, banks, buy-side firms, market utilities, and others—and is sponsored by the Federal Reserve Bank of New York. More information is available at www.newyorkfed.org/tmpg.

