AUDIT GUIDELINES
MARGIN

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iad SIA Securities Industry Association

I. INTRODUCTION TO MARGIN

General Background

A margin transaction is a security transaction (purchase or sale) in which a firm lends a customer a portion of the principal amount of the trade. The portion of the principal that may be advanced by the broker-dealer is specified by Regulation T (Reg T) of the Federal Reserve Board (discussed later). The firm charges the customer interest on the amount lent, also called the debit balance, on a purchase at a predetermined percentage over the broker's cost of money – usually the broker call rate. On a short sale the broker-dealer is lending the customer the securities being sold and generally does not pay interest on the resulting credit balance. "Margin" is the amount of cash that the customer must maintain with the securities firm in order to obtain the loan.

The securities firm must monitor the market value of any securities that the customer has on margin. If the excess of the market value over the amount lent drops below levels specified by the regulations, the firm is required to call for more margin in the form of either cash or securities. If the margin call is not met, then the firm is required to liquidate the customer's position. Since good business practice dictates that the collateral securing the credit extended be closely monitored in order to protect the firm from potential loss, most firms set their own margin requirements, generally referred to as house requirements, at levels higher than the minimum regulatory requirements.

Customers desire margin accounts because it offers them two distinct advantages: (1) the customer is able to purchase more securities with the same amount of cash outlay they would make in a cash account, and (2) the customer is able to leverage their investment and thereby enhance their rate of return if the investment appreciates in value.

From the perspective of the broker-dealer, margin accounts are viewed as advantageous because: (1) interest charged on debit balances can represent a significant revenue stream, and (2) margin account customers typically are much more active and substantial traders than cash account customers.

Minimum margin requirements are established on two levels. The initial requirement that must be met by the customer at the time the loan is made is set by the Federal Reserve Board under Reg T. Subsequent to the original loan, and effective as long as there is a loan balance outstanding, minimum requirements (maintenance requirements) are regulated by the SRO's through their respective margin rules. While certain securities, such as U.S. Government securities, are specifically exempt from the Reg T requirement, they are subject to the maintenance requirements set by the SRO's.

Opening a margin account changes the relationship between a customer and broker-dealer. In a margin account the firm has become the customer's creditor. All securities purchased on margin are registered in street name and may be used by the broker-dealer to finance the monies lent to the customer within the limits established under SEC Rule 15c3-3 (Customer Protection Rule). Each margin account that is opened should have a margin and a loan consent agreement signed by the customer that sets forth the conditions of the account, including the basis for charging interest and the right of the broker-dealer to pledge the securities in the account.

The margin process is a particularly complex operational area of a broker-dealer, requiring extensive calculations that vary greatly depending on the securities involved. Like many other areas, margin has its own unique terminology.

General Background

A glossary of key margin terms has been included as Appendix A as a guide to this terminology. Also included as Appendix B is a sample of various types of margin calculations.

Role of the Margin Department

There are various risks associated with a margin business. For an investor the risks include the interest cost for the use of the firm's funds and, more significantly, the cost of posting additional collateral should the value of margin positions decline (or increase in the case of short positions). For the firm, the primary risk is if the value of the positions held by the broker-dealer as collateral declines below the amount of the loan and the broker-dealer is forced to liquidate, the proceeds may not be adequate to cover the amount loaned to the customer. This would result in what is referred to as a partially secured account (pre-liquidation) or an unsecured account (post-liquidation). The broker-dealer might not be able to collect the monies owed to them by the customer, thus incurring losses.

The Margin Department performs various functions, including maintaining customer account records, credit control, regulatory and firm compliance, and customer service. As the area responsible for maintaining customer account records, the Margin Department is responsible for approving cash and securities distributions from accounts, providing customer service to the sales force, ensuring prompt transfer of assets to another firm in accordance with NYSE Rule 412 (the ACAT Rule) and ensuring that assets being transferred in are properly collateralized.

In order to properly discharge their responsibilities the Margin Department receives daily exception reports produced by the firm's margin system. It uses these reports to take appropriate action as indicated by the particular type of report. For example, reports indicating that additional collateral should be obtained from the customer are used to either issue margin calls to the accounts listed or to request extensions of time in accordance with the rules.

A partial listing of Margin Department responsibilities includes the following:

- Maintain a current, complete and accurate record of the customer's account holdings and balance.
- Maintain margin calculations in order to provide the customer and the sales person with timely and accurate information as an aid in determining the ability to trade and to monitor credit exposure.
- Monitor transactions in retail and institutional cash accounts to ensure customer payment/delivery of securities within appropriate timeframes.
- Take action on all calls in accordance with firm and/or regulatory requirements.
- Maintain complete margin call records.
- Ensure prompt transfer of customer accounts as required by NYSE Rule 412.
- Approve payment of funds and delivery of securities to clients.
- Post, adjust and monitor margin interest charges on customer accounts.
- Research and make adjusting entries to customer accounts to correct erroneous entries.
- Request and monitor extensions of time for meeting margin requirements from the regulatory authority.
- Ensure that margin calls are met on a timely basis.

Role of the Margin Department

- Ensure liquidation of positions when the customer has not met their requirements.
- Monitor accounts for “free-riding” (selling positions prior to meeting Reg T requirements).
- Restricting accounts that practice free-riding or otherwise do not comply with firm or regulatory requirements.
- Maintaining accurate records of margin requirements and actions taken to satisfy margin deficiencies.

It should be noted that in some firms, the Margin Department is responsible for margin activities for COD accounts, but in other firms the Cashiering Department may have primary responsibility (e.g., DVP extensions, obtaining Letters of Free Funds, etc.).

Credit Risk Management

Most firms that have a substantial margin business have instituted a higher level of procedures and controls in order to avoid significant credit losses. Often these procedures and controls are performed by areas independent from the Margin Department. Essentially, the focus of these procedures is to provide early recognition of excessive exposure so that appropriate actions can be taken to minimize possible loss. As in any credit exposure area, early recognition is critical to avoiding losses.

Examples of the types of higher-level procedures that might be utilized include the following:

- Use of a real time margin system that provides intraday margin account status and produces red flags for high-risk accounts as trades are posted during the day.
- Credit exposure systems that analyze the level of credit being extended across the customer account base on individual securities or on categories of securities (e.g., by industry type).
- Systems that provide analysis of credit exposure based on volatility models.

These procedures help enable a firm to identify potential exposure conditions that exceed the firm’s established thresholds and to take appropriate action to minimize the exposure, such as raising the margin requirements (initial and/or maintenance) on individual securities or classes of securities.

Regulation

The primary regulator governing the extension of credit in the U.S. is the Federal Reserve Board. The Board of Governors of the Federal Reserve, exercising the authority granted to them under the Securities Exchange Act of 1934, issued four major regulations governing the extension of credit for security transactions, as follows:

- Regulation X – Rule governing borrowers who obtain securities credit
- Regulation G – Rule governing securities credit by persons other than banks, brokers or dealers

Regulation

- Regulation T – Rule governing credit by brokers and dealers
- Regulation U – Rule governing credit by banks for the purpose of purchasing or carrying margin stocks

Regulation T is the primary regulation for purposes of this Guideline.

In addition to Reg T, SRO's also play a significant role in regulating margin business. The New York Stock Exchange (NYSE) has issued Rules 431 and 432, while the NASD has issued Rule 2520. Both rules contain essentially the same requirements.

Following is a brief summary of the key provisions of regulations impacting margin business:

Reg T

- Establishes minimum requirements for initial margin (Reg T requirement) for securities subject to Reg T (currently 50%).
- Defines margin eligible securities, securities subject to Reg T and securities exempt from Reg T.
- Establishes timeframes for meeting Reg T requirement.
- Defines different types of accounts.
- Provides conditions under which a broker-dealer must liquidate customer positions.

NYSE 431 and 432 and NASD Rule 2520

- Establishes maintenance margin requirements for securities subject to Reg T requirements and initial and maintenance requirements for margin eligible securities exempt from Reg T requirements (e.g., currently 25% for long equities).
- Defines "customer" for purposes of the rule.
- Sets the minimum dollar requirement in margin accounts at $2,000.
- Requires that a daily record of required margin, including disposition, be retained.

SEC Rule 15c3-1 (Net Capital Rule)

- Requires capital charges for deficits in unsecured and partly secured accounts after application of calls for margin outstanding for five business days or less.
- Requires a deduction for maintenance margin calls outstanding more than five business days.

SEC Rule 15c3-3 (Customer Protection)

- Paragraph (m) requires that broker-dealers must obtain possession of securities (other than exempt securities) within 10 days of settlement date from customers on whose behalf the broker-dealer executed a sell order.
- In the Reserve Formula, customer debit balances in margin accounts must be reduced when a specific security, which is collateral for margin accounts, exceeds 15% of the value of all securities collateralizing margin accounts.
- Requires a reduction of customer debit balances in the Reserve Formula when there is a concentration of credit extended to a single customer.
- Prohibits the use of customer excess margin securities by the broker-dealer. Excess margin securities are defined as the market value of securities in an account in excess of 140% of the debit balance in the account (outside the scope of this Guideline).

NYSE Rules 325 and 326

- Sets forth requirements for lending money against control and restricted securities.
- Requires Net Capital charges for margin deficiencies as computed under Rule 431.

Risks/Audit Objectives

In most cases firms that have an extensive margin business have diversified their customer risk over a large customer account base. Nevertheless, the volatile nature of the markets has magnified the potential for significant losses being incurred within a relatively short period of time. If a firm has concentrated their margin lending within a small number of customer accounts or against a small number of individual securities their exposure to loss is much greater. To effectively manage the risks attendant with a margin business it is critical that a firm have adequate systems, procedures and controls, including an effective back up contingency plan to ensure sufficient trained resources are available to cope with the additional potential exposure during periods of high volatility/volume. Additionally, it is extremely important that individuals understand their roles and that there is effective and timely communication among responsible groups. For purposes of this Guideline the risks have been organized into four general categories. These categories and the related audit objectives are:

Financial and accounting risk relates to the potential for an organization to suffer unexpected financial loss or to have inaccurate books and records. The inability of a firm to identify early situations of high risk potential will prevent them from taking timely preventive action to avoid loss.

> *Audit objective:* Ensure that credit exposure is properly and timely identified and Managed and that activity related to margin is accurately recorded.

Regulatory risk is a particular concern in the area of margin. There are a myriad of regulatory requirements that must be met on a daily basis. This requires effective exception reporting as well as disciplined procedures and controls to ensure compliance. Regulatory examinations, almost without exception, include a comprehensive review of margin procedures.

> *Audit objective:* (1) Determine that all regulatory requirements are being met on a timely basis. (2) Ascertain that records are sufficiently maintained to support compliance with rules and regulations.

Risks/Audit Objectives

Technology risk exists from two perspectives. First, if the margin system is unavailable or not sufficiently robust, a firm will not be able to meet either its regulatory obligations or sound risk management responsibilities. Secondly, the system must provide accurate calculations and must have sufficient safeguards against unauthorized access and modification.

> *Audit objective:* Ascertain that margin systems provide accurate information and are sufficiently robust to handle significant peaks in volume.

Reputational risk is present because margin activities impact a large, and important, portion of the customer base. Failure to extend credit at competitive rates to credit worthy customers, improper issuance of margin calls and inappropriate liquidations of customer positions can all cause severe harm to the firm's reputation and its ability to keep and attract customers.

> *Audit objective:* Verify that margin agreements are obtained and that they provide appropriate disclosure, and that margin calls and liquidations are made only when necessary.

Audit Guidelines

The following guidelines are presented to assist the internal auditor in conducting a review of margin activities. The scope of this Guideline is intended to cover margin considerations related to equities and fixed income securities for retail broker-dealers. However, the margin concepts covered are equally applicable to other instruments such as commodities and derivatives and, therefore, the Guideline should be a useful tool in evaluating controls over the extension of credit on such instruments. There may be certain sundry tasks performed by a particular margin department that are not specifically covered within the Guideline. Examples of such tasks include, but are not limited to, sweeping of free credit balances to money market funds and automatic transfers of balances between account types. In addition there may be other considerations for larger clearing firms, such as joint back office (15c3-1) leverage, offshore leverage facilities and margining introducing firms' PAIB (Proprietary Accounts of Introducing Brokers) accounts. It is important to note that these guidelines are general in nature and do not necessarily represent an exhaustive set of procedures for auditing margin. Judgment should be exercised when determining the specific procedures to be performed and those procedures should be tailored to the environment being reviewed.

II A. AUDIT GUIDELINES

This guideline is intended to provide members of the Securities Industry Association, Internal Auditors Division, with information for the purpose of developing or improving internal audit programs. The information is designed to provide guidance to member firms in the preparation of procedures tailored to the specific needs of their individual environment. Internal auditors should always use professional judgment in determining the specific procedures to complete audit steps.

The numbered references in the "Risks to be Managed" section of the following tables are a cross-reference to the "Margin Process Flowchart" included on page 22. These references are included for informational purposes and can be used to determine the potential areas of margin processing that may be affected.

Financial and Accounting Risk

Risks to be Managed	***Types of Controls to Manage or Eliminate Risks***	***Potential Audit Work Step***
Financial loss may be incurred through inappropriate extension of credit or failure to identify, monitor and take appropriate action on credit exposure. • Margin credit is extended to poor customer credit risks or high-risk customers. • Credit is extended on non-eligible, high-risk or otherwise inappropriate securities. • Margin rates are not properly maintained. • Margin calculations are not accurate. • Excessive credit risk is extended to high-risk customers or against high-risk securities. • Partly secured and unsecured accounts are not properly identified, monitored, reported or subjected to follow up procedures. • Payment for securities purchased in cash accounts is not received.	• A signed margin lending agreement from the customer is required before a margin account may be opened. • New margin accounts are subjected to an external credit check. • Personnel independent from the margin department code securities for margin eligibility on the Security Master. ♦ Securities listed on an exchange and OTC National Market Securities (NMS) are automatically coded as eligible. ♦ All other securities (e.g., fixed income, derivatives) are reviewed for margin eligibility and approved by a responsible group with no other margin responsibilities.	• For a sample of margin accounts ascertain that a signed margin agreement is on file. • Verify that the margin agreement was received prior to margin trading commencing in the account. • Review the due diligence process followed to determine the credit worthiness of customers. ♦ Ascertain that credit checks are performed and that references are verified. ♦ Determine that customers are monitored for adherence to credit requirements and that repeat offenders are restricted from credit transactions. • Review the process for coding securities for margin eligibility and for non-standard (i.e., different than normal house rate) margin rates. ♦ Verify that responsibility for coding securities for margin eligibility and rate is performed by a group independent of all other margin functions.

Financial and Accounting Risk

Risks to be Managed	*Types of Controls to Manage or Eliminate Risks*	*Potential Audit Work Step*
Risk of credit loss, cont'd. • Account transfers are not adequately monitored so as to avoid acceptance of partly secured accounts or delivery of securities from accounts with a debit balance. • Securities or cash is paid out of a customer's account creating a partially secured condition. • Excessive credit is extended on restricted securities. (1, 2, 7, 8, 10, 11, 12, 13, 14)	♦ A group that is independent of other margin functions codes margin rates. • Margin calculations are coded into the margin system and have been subjected to system and user testing. • Criteria has been developed for identifying customers (e.g., concentration of collateral, amount of margin credit extended, non-traditional securities, etc.) considered to be high risk, and: ♦ Accounts meeting high-risk criteria have been identified. ♦ A real-time margin system (including 'what if' capability) is used to monitor high-risk accounts on an intra-day basis. ♦ Reports are produced and distributed on credit extended to high-risk accounts. ♦ Margin rates are increased, when appropriate, on accounts deemed to represent excessive risk.	♦ Select a sample of non-listed and non-NMS securities collateralizing margin accounts and determine whether appropriate approval has been obtained to make the securities margin eligible. ♦ Select a sample of margin rate modifications and verify proper authorization. • Verify that margin calculations have been coded into the margin system. ♦ Determine that margin system calculations have been adequately tested for accuracy. ♦ Select a sample of margin calculations for a variety of accounts with differing activity and positions and verify that margin calculations are accurate. • Determine that high-risk accounts are properly identified and monitored. ♦ Ensure that the existing process adequately identifies all high-risk accounts and that the type of high-risk activity within the accounts is acceptable under the firm's policy (e.g., naked options, restricted securities, collateral concentration). ♦ Review reports detailing high-risk accounts and test for accuracy and completeness. ♦ Review monitoring activities to determine that accounts are stringently monitored. ♦ Assess appropriateness of margin rates assigned to high-risk accounts.

Financial and Accounting Risk

Risks to be Managed	*Types of Controls to Manage or Eliminate Risks*	*Potential Audit Work Step*
	• Criteria has been established for determining high risk margin collateral (e.g., amount of credit extended, volatility of security, etc.): ♦ Securities meeting the criteria have been identified. ♦ Securities identified as high risk are monitored on a daily basis. ♦ Reports are prepared and distributed showing the amount of credit extended against high risk securities. ♦ When it is deemed that credit exposure collateralized by high risk securities is excessive, margin rates are increased. ♦ The above process is performed by a group that has no other margin functions. • The margin system produces daily reports of partly secured and unsecured accounts. ♦ Reports include debits and shorts in cash accounts resulting from unpaid security transactions. ♦ Follow up procedures are performed. ♦ Positions are liquidated in accordance with regulatory and firm requirements. ♦ Uncollected amounts are referred to collection within a reasonable timeframe.	• Determine that high-risk securities are identified and monitored. ♦ Verify that there is a reasonable definition of what constitutes a high-risk security and that it has been approved by management. ♦ Ensure that the process is sufficient to identify all types of potential high-risk securities. ♦ Assess whether the process considers individual securities as well as classes of securities and that it takes into consideration all relevant data (e.g., amount of credit extended, market volatility, float, trade volume, financial condition, etc.). ♦ Determine that the monitoring process is continuous and timely. ♦ Ascertain whether the margin requirements on high-risk securities are sufficient to avoid excessive lending and that they have been approved. ♦ Verify that individuals responsible for monitoring high-risk securities and for setting margin rates are not responsible for monitoring customer margin activity. ♦ Ensure that there is a sufficient level of supervision and review over the process. • For a sample of high-risk securities: ♦ Determine that the margin requirements are sufficient in light of the potential exposure.

Financial and Accounting Risk

Risks to be Managed	Types of Controls to Manage or Eliminate Risks	Potential Audit Work Step
Margin interest revenue may be lost through: • Incorrect calculation of margin interest in customer accounts. • Failure to monitor and increase margin interest rates when appropriate. (15, 16, 19)	• Margin department controls account transfers by: ♦ Reviewing accounts being transferred in and rejecting any accounts liquidating to a deficit. ♦ Approving all security movements in accounts being transferred out. • Margin Department approval is required for cash or security distributions from customer accounts. ♦ System controls prevent entries to pay out cash or securities that would result in a partially secured account. • Lending against restricted securities is monitored by an independent group. ♦ The amount of margin eligible restricted securities is limited to the amount of securities that can be sold. ♦ Margin rates are set at a level that is higher than the normal house rate. • Interest on debit balances is automatically recorded. ♦ Margin interest rates are established by an independent group. ♦ The finance department periodically (e.g., monthly) reviews margin interest revenue for reasonableness. Margin interest adjustments and overrides made to customer accounts are reviewed and approved.	♦ Ascertain that the securities are subjected to continuous and timely review. ♦ Verify that the margin requirements have been properly coded within the margin system. • Verify that daily reports of aged partly secured and unsecured accounts are produced. ♦ Test the accuracy and completeness of the reports. ♦ Ascertain that the reports include unsecured debits and shorts in cash accounts. ♦ Determine that appropriate follow up is performed to bring these accounts into credit compliance. ♦ Verify that positions are liquidated when appropriate. ♦ Review and test the process for referring accounts to collection and the monitoring process on accounts so referred. • Review the procedures for processing account transfers and approving delivery of securities out of accounts. ♦ Select a sample of in-coming account transfers and verify that no accounts liquidating to a deficit have been accepted. ♦ Select a sample of out-going account transfers and verify that pending trades have cleared before transferring the account. ♦ Verify that margin department approval is required for delivery of securities out of accounts.

Financial and Accounting Risk

Risks to be Managed	*Types of Controls to Manage or Eliminate Risks*	*Potential Audit Work Step*
Accounting records may be inaccurate due to: • Improper recording of margin interest. • Failure to monitor and write off uncollectible accounts. (14, 19) Ineffective management oversight. • Meaningful management reports are not produced. • Management reports are not distributed timely or to appropriate personnel. (9, 10, 12)	• Partly secured and unsecured accounts are reviewed for collectibility. ♦ Aging reports are produced regularly. ♦ Guidelines have been established for determining accounts to be written off. ♦ Write offs are made or approved by the finance department. ♦ The finance department establishes reserves for uncollectible accounts. • Daily, weekly, and monthly management reports of margin activity are produced and distributed. Examples of reports include, but are not limited to: ♦ Amount of margin credit extended and the amount of margin collateral. ♦ Credit extended to high-risk accounts and collateral held. ♦ Partly secured and unsecured accounts (aged). ♦ Margin calls past due date (aged). ♦ Securities collateralizing significant margin debits. ♦ Margin accounts liquidated, including any related losses.	• Ascertain that only Margin Department personnel can make entries to pay out cash and securities. • Verify that the margin system prevents entries delivering cash or securities that would result in a partially secured account. • Review and test the process for extending credit against restricted securities. ♦ Determine that an independent group monitors credit exposure. ♦ Verify for a sample of accounts secured by restricted securities that the number of shares is not greater than the salable amount. ♦ Ascertain that margin requirements have been set at a level consistent with firm policy. • Test the process for calculating and maintaining margin interest rates. ♦ Select a sample of accounts and test the accuracy of the margin interest charged on the account. ♦ Verify that the account statement properly reflects the margin interest. ♦ Determine that margin interest rates are maintained by an independent group. ♦ Review margin interest adjustments and overrides to customer accounts to determine that they are appropriate and have been properly approved.

Financial and Accounting Risk

Risks to be Managed	*Types of Controls to Manage or Eliminate Risks*	*Potential Audit Work Step*
		♦ Verify that the finance department performs an overall review of margin interest revenue for reasonability. Determine that the review is performed accurately and consistently and that the results are reviewed by management. • Review and test the process for monitoring credit exposure. ♦ Review and test the accuracy of aging reports of partly secured and unsecured accounts. ♦ Verify that guidelines have been established, are reasonable and are followed for write offs of uncollectible accounts. ♦ Ascertain that write offs are performed or approved by a group that is independent of other margin functions. ♦ Review reasonableness of reserve for uncollectible accounts. • Determine that monitoring reports (see Types of Controls to Manage or Eliminate Risks) are produced on a regular basis. ♦ Test the accuracy of the reports. ♦ Evaluate the appropriateness of the report distribution.

Regulatory Risk

Risks to be Managed	***Types of Controls to Manage or Eliminate Risks***	***Potential Audit Work Step***
Failure to comply with the following rules and regulations regarding margin lending will expose the organization to regulatory sanctions. • Reg T establishes, among other things: ♦ What constitutes margin eligible securities and which of those are subject to Reg T. ♦ Initial margin requirements on securities subject to Reg T. ♦ Timeframes for meeting Reg T requirements. ♦ Actions to be taken, including liquidation, when Reg T requirements are not met. ♦ Customers are restricted to one SMA account. ♦ Margin may not be extended on new issues, including open-end mutual funds, for 30 days after issuance.	• A group independent from margin functions is responsible for coding securities for margin eligibility and margin rates (see Financial and Accounting Risk). • Daily exception reports are received by the margin department showing all outstanding Reg T margin calls. ♦ Margin clerks follow up on calls that are past due by contacting the salesperson or the customer. ♦ When appropriate, extensions of time are requested from the applicable SRO. ♦ For customers who do not meet their margin calls a notice of liquidation is sent. ♦ Positions are liquidated if customer still does not meet their margin call. • Customers are permitted only one SMA account. If separate accounts are permitted they are automatically linked in order to calculate overall SMA balance. • System restrictions prohibit extension of credit against new issues for 30 days after issuance.	• Review and test procedures for coding securities for margin eligibility and rates. See Financial and Accounting Risk section. • Review and test procedures for identifying and issuing house calls, maintenance calls and Reg T calls. ♦ Obtain call reports for several days and verify that calls were calculated properly. ♦ Review disposition of calls to determine that they were resolved timely and properly (i.e., call was met, extension was granted). ♦ In those cases where extensions were requested verify that appropriate reason codes were assigned and that SRO approval was obtained. ♦ For customers not meeting their calls, ascertain that liquidation notices were sent and that positions were liquidated if the call was still not met. ♦ Select a sample of accounts where liquidations occurred and verify that the account was placed on restriction. ♦ Review and test the process for restricting accounts that repeatedly are delinquent in meeting margin calls. ♦ Review and test the accuracy of the aging of outstanding calls and determine that appropriate action is being taken to resolve the call.

Regulatory Risk

Risks to be Managed	*Types of Controls to Manage or Eliminate Risks*	*Potential Audit Work Step*
Risk of regulatory sanctions, cont'd. • NYSE Rules 431 and 432 and NASD Rule 2520 establish, among other things: ♦ Maintenance margin requirements for eligible securities. ♦ Initial and maintenance margin requirements on securities exempt from Reg T. ♦ Minimum dollar requirements for margin accounts. ♦ Timeframes for meeting margin requirements. ♦ Requesting extensions of time for meeting margin requirements. ♦ Higher minimum equity and special maintenance margin requirements for patterned day traders.	• House requirements are set for all securities at a rate higher than the maintenance requirement. In addition to providing enhanced credit control, this insures that action will be taken prior to an account falling below maintenance. ♦ The margin department receives daily exception reports detailing accounts requiring house or maintenance calls. ♦ Margin clerks notify the customer that a margin call must be met. ♦ When appropriate, requests for extensions of time are requested from an SRO (an acceptable reason must be given). ♦ The margin department also receives daily exception reports showing the aging of unmet margin calls. ♦ When required, customers with unmet margin calls are sent a notice of liquidation and, if the call remains unmet, positions are liquidated. • Patterned day traders are identified and their accounts are coded to meet applicable day trading margin requirements.	• See testing above re maintenance and house requirements. • Verify that margin supervisors review the daily work of their margin clerks. • Ascertain that there is an established (preferably in writing) procedure for escalation to management of high-risk situations. • Determine that customers are permitted to open only one SMA account or that multiple customer SMA accounts are automatically linked. • Verify that the margin system restricts extension of credit against new issues for 30 days after issuance. • Ascertain that the system properly identifies patterned day traders, codes the accounts as such and calculates margin requirements accurately to meet day trading margin requirements. • Determine that records are produced and retained in accordance with regulatory requirements showing the results of margin calculations and the disposition of exception items. • Review written supervisory procedures to ascertain that they adequately address key supervisory and regulatory practices and that they are being followed.

Regulatory Risk

Risks to be Managed	***Types of Controls to Manage or Eliminate Risks***	***Potential Audit Work Step***
Risk of regulatory sanctions, cont'd. ♦ Records must be maintained showing the results of margin calculations and the disposition of calls, extensions, etc. • SEC Rule 15c3-1 (Net Capital Rule) specifies capital charges for: ♦ Deficits in unsecured and partly secured accounts. ♦ Aged (over 5 business days) unmet margin maintenance calls. • SEC Rule 15c3-3 (Customer Protection) requires: ♦ Reduction of margin account debit balances for concentrated margin collateral positions.	• Records are produced and retained that show the results of margin calculations and the disposition of exception items such as margin calls, extensions, etc. • Customers who repeatedly are delinquent in meeting margin calls are placed on cash up front restriction. • Margin supervisors review the daily work of the margin clerks. • Reports are produced that indicate all accounts that liquidate to a deficit. ♦ Margin and finance personnel review the reports for reasonableness. ♦ Any necessary adjustments are made for regulatory reporting purposes. • A report is generated indicating all maintenance margin calls over 5 business days old. ♦ Margin and finance personnel review the reports for reasonableness. ♦ Any necessary adjustments are made for regulatory reporting purposes.	• Review finance department workpapers supporting capital charges for deficits in customer accounts. ♦ Verify accuracy of report. ♦ Ascertain that any adjustments made to partly secured and unsecured amounts are accurate. • Review and test report indicating maintenance margin calls over 5 business days old. ♦ Test accuracy of report. ♦ Verify that proper capital charge is included in the FOCUS report. • Ensure that capital charges are either prepared by or reviewed by the finance department. • Review and test the weekly reports of collateral concentration and customer margin balance concentration. ♦ Verify accuracy of report. ♦ Review any adjustments made to the report amounts to determine whether or not they are reasonable. ♦ Ascertain that the finance department computes or reviews the charges included in the Reserve Formula.

Regulatory Risk

Risks to be Managed	*Types of Controls to Manage or Eliminate Risks*	*Potential Audit Work Step*
Risk of regulatory sanctions, cont'd. ♦ Reduction of margin debit balances for concentrated customer debit balances. ♦ That securities sold by customers and not long in their accounts be obtained within 10 days of settlement (longer for MBS and certain other securities).	• Weekly reports of margin collateral concentration and customer margin balance concentration are produced for regulatory reporting purposes. ♦ Margin and finance personnel review the reports for reasonableness. ♦ Any necessary adjustments are made for regulatory reporting purposes. • Aging reports of securities sold not long in customer accounts are received daily: ♦ Follow up procedures are employed to obtain possession of the securities. ♦ After 10 business days the position is bought in.	• Review a sample of reports of securities sold not long in customer accounts and: ♦ Determine that follow up procedures are performed to obtain possession of the securities (e.g., contacting the branch or the customer). ♦ For securities not obtained within 10 business days of settlement date verify that the position is bought in.
• NYSE Rules 325 and 326 set forth requirements for extending credit against control and restricted securities and requires capital charges for any related deficiencies. (3, 4, 5, 6, 9, 17, 18)	• The group responsible for monitoring the extension of credit against restricted securities prepares reports calculating any required capital charges. ♦ The reports specify the details of the charges by account. ♦ Finance personnel review the reports for reasonableness.	• Review and test the process for calculating capital charges under NYSE Rule 326. ♦ Verify accuracy of the calculations. ♦ Ascertain that the charges are either computed by or reviewed by the finance department.

Technology Risk

Risks to be Managed	***Types of Controls to Manage or Eliminate Risks***	***Potential Audit Work Step***

Technology risk can lead to system unavailability, unauthorized access or inappropriate authority levels.
• Repeated and extended periods of system availability will seriously impede the organization's ability to manage credit exposure and to comply with regulatory margin requirements.
• Disaster recovery is not adequate to ensure continued margin capability.
• System program changes are not sufficiently tested and controlled.
• System access is not appropriately restricted to authorized users.
	• Margin systems are subjected to rigorous stress testing.
	• System outages are analyzed to determine their cause and required corrective action.
	• Business continuity and disaster recovery plans exist and have been tested.
	• Program controls automatically log system changes.
	• An enacted process and approval hierarchy has been developed for system changes.
	• User groups are integrally involved in testing and reviewing results of program changes.
	• Establishment of individual access and authority is controlled by a designated individual who has no margin responsibility.
		• Determine that the margin system is stress tested on a regular basis.
		  ♦ Review results of stress testing.
		  ♦ Discuss with margin department management the scope and results of the testing.
		• Verify the existence and regular testing of a Business Contingency Plan.
		• Select a sample of system changes.
		  ♦ Verify that the changes were implemented following approved change protocols.
		  ♦ Determine that user groups were integrally involved in testing and approval of changes.
		• Determine that the system administrator has no other margin capability.

Technology Risk

Risks to be Managed	***Types of Controls to Manage or Eliminate Risks***	***Potential Audit Work Step***
Technology risk, cont'd. • The functions of coding securities for margin eligibility, changing margin requirements and daily margin functions are not segregated through establishment of system authority levels. (20, 21,22,23)	• System access and authority levels assigned to individuals are approved by a responsible business manager. • Access violations are reviewed and acted upon on a regular basis.	• Obtain system reports of user access and authority, and: ♦ Determine that only appropriate personnel have system access. ♦ Ensure that user authority levels are commensurate with their roles and responsibilities. • Verify that system access reports are produced and reviewed by appropriate business managers. • Ensure that user ID's and passwords are required and must be changed regularly. • Determine that the system limits log-on attempts. • Verify that system exception reports of failed log-on attempts are reviewed daily.

Reputational Risk

Risks to be Managed	*Types of Controls to Manage or Eliminate Risks*	*Potential Audit Work Step*
Inappropriate margin lending practices may adversely impact the organization's reputation. • Customer margin agreements do not clearly delineate the rights and responsibilities of the organization and the customer. • Signed margin agreements are not obtained from customers. • Margin interest rates are not competitive. • Margin calls and liquidations are made unnecessarily. Contingency plans are not in place to address high volume peaks in margin service activity. • Staffing contingencies do not exist to augment margin department personnel. • Contingency staff has not been adequately trained to handle margin duties. (1, 4, 6, 15)	• The margin agreement clearly sets forth the terms of the account, to include: ♦ Basis for charging margin interest. ♦ Right for the firm to require additional collateral. ♦ Responsibility of the customer to promptly meet calls for margin. ♦ Right of the firm to liquidate positions in the account. ♦ Right of the firm to pledge or otherwise use securities in the account collateralizing margin debt. • The legal and compliance areas have approved the margin agreement. • Margin interest rates are monitored for industry competiveness on an on-going basis. • Margin calls and liquidations are made primarily on the basis of exception reports. ♦ All liquidations must be approved by an appropriate manager. ♦ Any margin calls issued on a basis other than the applicable exception report must be approved by an appropriate manager. • Contingency plans are in place to cover peak volume periods and contingency staff are adequately trained.	• Review the standard margin agreement and: ♦ Determine that it contains all the appropriate disclosures (see Types of Controls). ♦ Ascertain that the legal and compliance areas have approved the agreement. • Determine that the finance department (or some other department independent from margin) monitors industry margin interest rates to ensure that rates charged are competitive. • Select a sample of liquidations and verify that they were properly approved. • Select a sample of liquidations that were reversed and ascertain the reason. Determine whether there is a pattern indicating that liquidations were done inappropriately. • Select a sample of margin calls that were issued on a basis other than margin exception reports (e.g., margin call was issued prior to equity falling below house requirements) and ascertain that the calls were approved by an appropriate manager. • Ascertain that contingency plans are in place to cover peak periods of margin activity and that contingency staff have been adequately trained to assume assigned margin responsibilities.

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II B. SEGREGATION OF DUTIES CHECKLIST

Introduction

Adequate segregation of duties reduces the likelihood that errors (intentional or unintentional) will not be prevented and remain undetected. The basic idea underlying segregation of duties is that no one employee or group of employees should be in a position both to perpetrate and to conceal errors or irregularities in the normal course of their duties. Additionally, errors may occur due to inadequate supervision of employee activity. In general, the principal incompatible duties to be segregated are: authorization, custody of assets, and recording or reporting of transactions. In addition, the risk management function as well as other oversight functions (Controllers, Compliance, Legal, Credit) should be separated from the functions that are originating risk itself and the processing of a transaction. As it relates to Margin in particular, it is important that those employees who perform the day-to-day "routine margining" functions be independent from those who determine the parameters that establish the benchmarks for defining exception and actionable items (e.g., margin requirements, margin eligibility, margin interest rates, etc.). This ensures that the person responsible for taking action on exception items has no ability to control what constitutes exceptions.

A practical method for using this checklist is to list the names of individuals responsible for particular functions. Review the checklist for individuals whose names are listed more than once and then make a determination whether that represents a potential lack of segregation of duties. Also consider whether individuals are performing incompatible duties. Once an individual is identified as performing incompatible duties, all duties performed by that individual should be challenged as to whether the effectiveness of those duties is reduced or eliminated by the lack of segregation of duties identified. Larger organizations may find it sufficient to list only the department performing each of these duties or functional job titles, rather than the names of individuals. Those companies could then evaluate whether any departments were performing incompatible duties.

Keep in mind that not all instances where an individual performs more than one function represent a lack of segregation of duties. In addition, it is important to remember that there is a possibility of a lack of segregation of duties within the same category. Consequently, completion of this checklist is intended to highlight potentially conflicting duties, not to be the only method of identifying all such conflicting duties. The segregation of duties checklist is located on the following page.

SEGREGATION OF DUTIES CHECKLIST

Margin Eligibility and Margin Rates
Who codes securities for margin eligibility? ____________
Who approves coding of securities for margin eligibility? ____________
Who codes securities for minimum margin requirements? ____________
Who approves coding of securities for minimum margin requirements? ____________
Who establishes margin rates and eligible shares for restricted securities? ____________
Who identifies, monitors and reports credit exposure related to high-risk securities? ____________
Who identifies, monitors and reports credit exposure related to high-risk accounts? ____________
Who establishes and approves margin requirements on high-risk securities and accounts? ____________

Margin Interest Rates
Who establishes margin interest rates? ____________
Who codes margin rates into the system? ____________
Who approves coding of margin interest rates? ____________
Who approves exceptions to standard margin interest rates? ____________

Accounting and Regulatory
Who prepares write off's and adjustments? ____________
Who approves write off's and adjustments? ____________
Who monitors industry margin interest rates? ____________
Who reviews margin interest revenue for reasonableness? ____________
Who prepares calculations of Net Capital and Reserve Formula charges related to margin accounts? ____________
Who reviews Net Capital and Reserve Formula charges? ____________

System Access and Authority
Who is responsible for granting margin system and security master access? ____________
Who establishes user authority levels? ____________
Who approves system access and user authority levels? ____________
Who reviews system access reports? ____________

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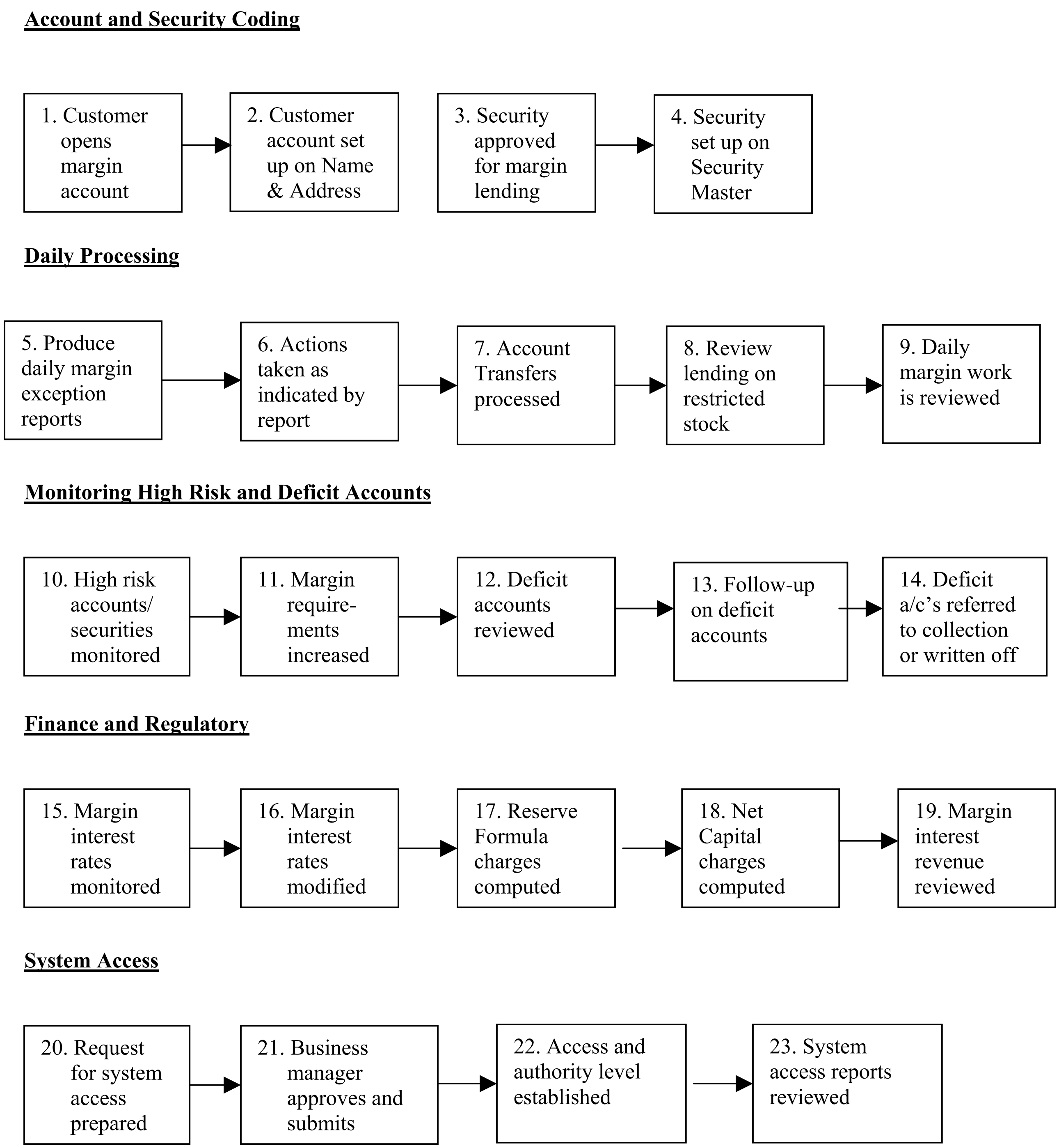
III. MARGIN PROCESS FLOWCHART

The following flowchart illustrates some of the typical activities that take place in a margin process. Definitions for the individual process steps are included below. Such definitions are numbered in order to cross-reference with the appropriate process steps.

Margin Process Diagram Flowchart



Definition of Process Steps

1. The customer opens a margin account signing a margin agreement and loan consent form. An external credit check is performed.
2. Customer is set up as a margin account on the Name and Address master file.
3. The security is approved for margin lending on an exception basis. Typically all listed and OTC NMS securities are automatically coded as margin eligible at the standard house rate.. Other securities are reviewed individually and approved or not approved by management as margin eligible.
4. As securities are added to the security master they are coded for margin eligibility.
5. Daily margin exception reports are produced over night. See Audit Guidelines for examples of exception reports produced.
6. Margin clerks review margin call reports and issue calls or request extensions where appropriate. Requests for extensions are made to an SRO and must include an acceptable reason code. The SRO either grants or denies the exception. Customers are permitted only 5 extensions industry-wide during any 12-month period. If the extension is denied a margin call is issued to the customer. When necessary, positions are liquidated.
7. Account transfers are processed, requiring margin department approval.
8. Margin lending against restricted and control stock is monitored by a separate group that controls the number of shares eligible and the margin requirement.
9. The margin supervisor reviews the daily work of the margin clerks.
10. High-risk accounts and securities are monitored through real time credit risk systems and/or exception reports.
11. Margin requirements on high-risk securities and accounts are increased when necessary to reduce potential exposure.
12. Reports are produced and reviewed on partly secured and unsecured accounts.
13. Follow-up action is taken to reduce the deficit in the account.
14. When appropriate, deficit accounts are referred to a collection group for further action. When the account is no longer deemed collectible it is written off. Appropriate management approval is required for write off's.
15. The interest rate charged on margin accounts by the organization is continually monitored against industry margin rates for competitive purposes.
16. When appropriate, margin interest rates are modified, either for competitive reasons or as a result of changes in the financing costs of the organization.
17. Reserve Formula charges are computed weekly.
18. Net Capital charges are computed monthly.
19. The finance department performs an overall review of margin interest revenue for reasonableness.
20. Request for system access form is prepared for individuals requiring access.
21. The business manager approves the request form and submits it to the system administrator.
22. System access and authority level is established after determining that authority level is consistent with the individual's responsibilities.
23. System generated reports showing who successfully accessed the system and who unsuccessfully attempted to access the system are reviewed by the system administrator. Periodically, reports detailing who has access and the level of their access are sent to the business managers for verification.

Margin Transaction Timeline

Date	Retail Trade	DVP Trade
Trade date (T)	Transaction executed	Transaction executed
T+3	Transaction settled Margin requirement due Margin call issued	Transaction settled (2)
Settlement day +7	Margin call must be met or Extension of time requested and granted (1)	
Settlement day +10	Securities sold, not long, must be received or position must be closed(1)	
Settlement day +35		Payment must be received from agent bank

Notes

(1) The branch will normally contact the customer to ensure that the margin call is met or that the securities are received from the customer. If the branch determines that a legitimate reason exists for applying for an extension of time they will notify the margin department of the reason.

(2) DVP trades are settled through the appropriate clearing agency and then with the agent bank representing the institutional client. Reg T allows additional time to complete settlement of these transactions.

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IV. APPENDICES

A. Key Margin Terms
B. Examples of Margin Calculations

Appendix A

Key Margin Terms

Initial Margin (Reg T Requirement)

- The amount identified by Reg T, currently 50%, as the amount of the purchase price the investor must supply on securities transactions in Reg T applicable securities.

Loan Value

- Amount that a B/D may lend to an investor for the purchase of securities on margin. The loan value is currently 50% of the purchase price.

- The loan value and the margin requirement complement each other, that is, they always add up to 100%.

Credit Balance (CR)/Debit Balance (DR)

- Credit balance is the funds available to an investor in a cash or margin account. A credit balance in a short account cannot be used by the investor until the short position is closed out.

- Debit balance is the amount of money loaned by the B/D to the investor, an obligation of the investor. This is the amount on which monthly interest is charged by the B/D.

Equity

- The portion of the account's market value that the investor would be entitled to if all positions in the account were liquidated.
- Equity fluctuates with the current market value of the securities in the account.
- Equity is calculated as LMV + CR – SMV – DR.
- The NYSE requires at least $2,000 of initial equity ($25,000 for a patterned day trader) before the investor may borrow in the account.

Free Riding

- Purchase and sale of a security before satisfaction of the Reg T requirement. Free riding is a violation of Reg T.

Appendix A

Key Margin Terms

Maintenance Margin

- SRO requirement establishes the amount of equity an investor must maintain in a margin account.
- NYSE Rule 431and NASD Rule 2520 defines minimum maintenance requirements for all products traded in margin accounts: 25% for long stocks; 30% for short stocks; 1 - 6% of CMV for US Government and agency issues; greater of 15% of market value for Municipal issues (20% for corporate bonds) or 7% of face value.
- Many firms set higher levels for their own protection (House Requirements).

Maintenance Call

- Request for additional funds from an investor in order to meet the maintenance requirement.
- Generated when the market value of securities on margin move so as to reduce the equity in the account below the maintenance requirement. Maintenance calls must be met "promptly."
- Calls for funds to satisfy the house requirement (see above) are referred to as "house calls."
- Investors who do not meet maintenance calls or house calls promptly are subject to liquidation of the securities in the account to restore the account to minimum maintenance or house requirement.
- Calls for a de minimus amount (e.g., $500) are typically not issued.

Margin Call (Reg T Call)

- Request for deposit of initial margin under Reg T.

Margin Excess (Excess Equity)

- Amount by which the equity in a margin account exceeds the Reg T requirement based on today's market value:

  Excess = Equity - Reg T Requirement on today's market value

Excess Margin Securities

- Excess of market value of securities over 140% of the debit balance in the account.

- Excess margin securities must be segregated in accordance with SEC Rule 15c3-3.

Appendix A

Key Margin Terms

House Requirements

- B/D requirement over and above the regulatory standard (minimum maintenance) established.
- The NYSE mandates a 25% maintenance requirement, but many house requirements are as high as 40 %.
- House calls are calls to meet the house requirement (see maintenance calls above).

Special Memorandum Account (SMA)

- Bookkeeping account representing credit (not cash) available to the investor.
- May be used to buy securities or sell securities short without posting additional collateral, or cash may be advanced against it.
- Excess Equity is translated into SMA daily.

Buying Power

- Dollar amount of margin eligible securities that an investor may purchase or sell short using SMA or a usable credit balance, without incurring a margin call.
- Determined using the ratio:

$$\frac{\text{Available Funds}}{\text{Reg T Requirement (50\%)}}$$

- So where Reg T requirement is 50% and funds available is $10,000, an investor's buying power equals:

$$\frac{\$10{,}000}{.50} \text{ or } \$20{,}000 \text{ (can purchase } \$20{,}000 \text{ of securities)}$$

Patterned Day Trader

- Trader that trades 4 or more times in a 5 business day period.
- Day trading activity for the 5 business day period exceeds 6% of total customer trading activity for the same period.

Appendix B

Examples of Margin Calculations

Margin Purchase

- Example 1 - Initial margin; increase in market value and equity; computation of excess and SMA
  - An Investor purchases 100 shares of Merck at $75
  - B/D issues Reg T call for 50 % of the market value- the call is met
    - Status of the Account:

Long Market Value	=	$7,500
Debit Balance (loan)	=	$3,750
Equity (initial margin)	=	$3,750
Reg T Requirement (RTR)	=	$3,750
Excess, Restriction	=	$ 0

    - Result:
      - Initial margin has been satisfied and the account is perfectly margined
- On the next day, the price of Merck rises to $85:
    - Status of the Account

Long Market Value	=	$8,500
Debit Balance	=	$3,750
Equity	=	$4,750
RTR	=	$4,250
Excess	=	$ 500
SMA	=	$ 500

    - Result:
      - The investor's equity has risen with the market value to $4750. The Reg T requirement (RTR) has increased also, to $4,250, resulting in an excess, of $500.
      - This $500 is called Reg T excess, or excess equity. This excess may be used to purchase $1,000 worth of securities ($500 / .50), or to withdraw up to $500 cash from the account. If it is not used or withdrawn, the excess is transferred to the SMA. If it is used, the amount of excess used is added to the debit balance.

Appendix B

Examples of Margin Calculations

Margin Purchase

- Example 2 - Decrease in market value and equity; computation of restriction and SMA
  - Using the previous Example 1, after its rise of the day before, on the next day, the price of Merck falls to $55:
    - Status of the Account

Long Market Value	=	$5,500
Debit Balance	=	$3,750
Equity	=	$1,750
RTR (50% X $5,500)	=	$2,750
Restriction	=	($ 1,000)
SMA	=	$ 500

    - Result:
      - $3,000 drop in market value (from $8,500) is reflected in the $3,000 reduction in equity (down from $4,750). This account is now said to be restricted. Restricted only means that the account is less strong than it would have to be if it were established at today's Reg T requirement of 50%. No action is required of the investor at this point, and the SMA of $500 still resides with the account as a credit.
      - The maintenance requirement on a market value of $5,500 is $1,375 of equity. This account has $375 more equity than is required, so no maintenance call is issued, and no action is required on the investor's part.
      - Returning to the SMA, note that, of the $500 in SMA, only $375 is available to the investor. Use of the SMA increases the debit balance, which in turn decreases equity. Use of more than $375 of the SMA would result in the account's equity falling below the maintenance requirement of 25% of the market value. Use of the SMA in such a way as to trigger a maintenance call is not permitted. The $125 worth of unusable SMA is often referred to as 'phantom' or inflated SMA.

Examples of Margin Calculations

House Maintenance and House Calls

- ♦ Example 3 – Decline in market value causes equity to fall below house requirement
  - If the B/D carrying this margin account had a house maintenance requirement of 40% equity (15% above the 25% NYSE requirement), the account would need additional equity at this point to satisfy the house (maintenance) requirement.
    - Status of the Account
      - 40% (House Requirement) x $5,500 (long market value) = $2,200 equity required. This account would now be subject to a house call to bring the equity into line with the house requirement.
      - $2,200 House requirement - $1750 existing equity = $450 deficiency
    - Result
      - A house call would be issued for $450. Deposit of the $450 would satisfy the house call and the house requirement.
      - House requirements have no impact on SMA.

Examples of Margin Calculations

Minimum Maintenance and Maintenance Calls in Long Accounts

- Example 4:
  - Merck subsequently falls to $45 per share
    - Status of the Account

Long Market Value	=	$4,500
Debit Balance	=	$3,750
Equity	=	$ 750
Reg T Requirement (on $4500)	=	$2,250
Restriction	=	($1,500)

    - Result:
      - The equity in the account is now below the minimum equity of $1125 (25% of $4,500). A maintenance call must be issued for $375, the amount needed to restore the equity to 25% of the current market value.
      - The customer must meet the maintenance call "promptly," but in no case later than 15 days after it is issued. If the customer does not meet the maintenance call, the B/D will liquidate enough of the securities in the account to restore the equity to 25%. The rule states 15 days from when the account goes on call but rarely will the B/D wait that long.

Examples of Margin Calculations

Margin Short Sale

- ♦ An investor sells a security that he/she doesn't own.
  - Investor must be able to borrow the security before execution of sale.
  - B/D arranges to borrow the security and lend it to the investor.
  - All short selling must occur in margin account.
  - The transaction must occur only on a plus-tick or a zero-plus tick.
  - Types:
    - ◻ Regular Short Sale - Investor sells stock with the intention of buying it in the future
    - ◻ Short vs. the Box – A tax postponement strategy-investor owns the security but does not wish to deliver it - instead investor creates a perfect hedge by borrowing the stock to deliver against the short sale
- ♦ Result:
  - The Reg T requirement is the same as for long accounts (i.e., 50%).
  - Maintenance requirement is 30%, versus 25% for a long account.

Examples of Margin Calculations

Margin Short Sale

- Example 5 – A profitable short sale: an investor sells short 1000 shares of Coca-Cola @ 50.
  - Reg T is 50%, therefore a Reg T deposit of $25,000 is required. In addition, 100% of the short sale proceeds remain in the account as a credit balance.
    - Status of the Account

Reg T deposit	=	$25,000
Proceeds of sale	=	$50,000
Credit balance	=	$75,000
Short Market Value	=	$50,000
Equity	=	$25,000
RTR	=	$25,000
Excess, Restriction	=	$ 0

- Coca Cola falls to $45:
    - Status of the Account

Credit balance		=	$75,000
Short Market value		=	$45,000
Equity		=	$30,000
Reg T Requirement	(50% of SMV)	=	$22,500
Excess Equity		=	$ 7,500
SMA		=	$ 7,500

    - Result:
      - The $5 drop in the short market value produced an excess equity of $7,500, the decrease in market value of $5,000 plus the reduction in the 50% Reg T requirement of $2,500 = $7,500.
      - Short accounts are more sensitive to market movement than long accounts. Excess equity increases faster than the short market value decreases in a short account, because at the same time the market price is decreasing, Reg T is decreasing. This does not happen in a long account. As in the long account, excess equity not used is added to the SMA.

Examples of Margin Calculations

Margin Short Sale

- Example 6 – A non - profitable short sale: an investor sells short 1000 shares of Coca-Cola @ 50.
  - Coca Cola subsequently rises in price to $55 per share:
    - Status of the Account

Credit balance	=	$75,000
Short Market value	=	$55,000
Equity	=	$20,000
RTR (50% of SMV)	=	$27,500
(Restriction)	=	($ 7,500)
SMA	=	$ 7,500

    - Result:
      - The rise in market price coupled with the increase in the Reg T requirement (50% of the higher market value) has reduced the equity and produced a restricted account.
      - As in the long account, equity is still above the minimum required.
      - The SMA still resides with the account.

Examples of Margin Calculations

Margin Short Sale

- Example 7 - Maintenance in a short account
  - Coca Cola rises to $60 per share:
    - Status of the Account

Credit balance	=	$75,000
Short Market value	=	<u>$60,000</u>
Equity	=	$15,000
RTR (50% of SMV)	=	<u>$30,000</u>
(Restriction)	=	($15,000)
SMA	=	$ 7,500

    - Result:
      - Since the equity in this short account is below the 30% minimum (.30 X $60,000=$18,000), the B/D will issue a maintenance call of $3,000 for the difference between the equity in the account and that required. As in the long account, the maintenance call must be met promptly or the firm will buy in enough securities to bring the equity up to the minimum required.
      - Margin maintenance for short accounts is higher than for long accounts, and higher still for short sales of low priced securities:
      - For stocks less than $5, maintenance is the greater of $2.50 per share or 100% of market price. For stocks priced above $5 maintenance is the greater of $5 per share or 30% of market price.

Appendix B

Examples of Margin Calculations

Margin on Options

- Long Options
  - Initial margin is 100% of the option premium
  - Minimum maintenance does not apply since the long option positions are fully paid
  - Example 8:
    - Customer buys 2 ABC Jan 50 Calls @ $4; market price of ABC is 51
    - Margin requirement is $800 ($4 x 200 shares)

- Short Naked Stock Options
  - Reg T Requirement:

20%	of the market value of underlying stock
Plus	amount of premium
Minus	out of the money amount
Reg T Requirement	
Minus	premium received
Margin Call	

  - Maintenance Requirement:

10%	of the market value of underlying stock
Plus	amount of premium
Minimum Maintenance	

- Must always maintain the higher of the initial margin requirement or the maintenance requirement.

Appendix B

Examples of Margin Calculations

- Short Naked Stock Options

  - Example 9:
    - Customer sells 1 ABC Jan 50 Put @ $3; market price of ABC is 51
    - Margin Requirement is:

20% of $5100	=	$1020
Premium	=	+ 300
Out of money	=	- 100
Reg T Req	=	$1220
Premium	=	- 300
Margin Call	=	$ 920

    - Maintenance Requirement is:

10% of $5100	=	$ 510
Premium	=	+ 300
Maintenance	=	$ 810

    - Higher amount ($1220) must be maintained.

- Covered Options

  - Short call covered by a long position
    - No margin required on the call option
    - Margin requirement is computed on the long security position
    - Example 10:
      - Customer sells 1 ABC Jan 50 call @ $5; customer holds 100 shares of ABC in their account.
      - No margin is required on the short call; customer may use the $500 premium any way they want.

  - Short put covered by a short position
    - No margin is required on the put option
    - Margin requirement is computed on the short security position
    - Example 11:
      - On the same day a customer sells short 100 shares of ABC at 50 and sells 1 ABC Jan 50 Put @ $5
      - Margin Requirement is:

50% of stock sale	=	$2500 (Margin Req)
Premium on option	=	- 500
Cash Deposit	=	$2000

Appendix B

Examples of Margin Calculations

- Straddles (long or short put and call)

  - Only the in the money side of a short straddle (side with the higher premium) is margined

  - Premium from the out of the money side is added to the margin requirement

  - Formula for a short straddle is:

    20% of the market value of the underlying stock

    Plus 100% of both premiums

    Reg T Req

    Minus premium received

    Cash Deposit

  - Requirement for long straddles is 100% of both premiums

  - Example 12:

    - Customer: sells 1 ABC Jan 50 Call @ $5
      sells 1 ABC Jan 50 Put @ $4
      market price of ABC is 51

    -

Call		Put
20% of $5100 = $1020		$1020
Premium = 500		400
Premium = 400	Out of the money	(100)
Reg T Req =$1920		$1320
Prem Rec'd = 900		
Cash Deposit =$1020		

    - Margin applies to the higher of the two sides (i.e., call)
    - If above example was a long straddle (buys) the margin requirement would be $900

Appendix B

Examples of Margin Calculations

- Spreads (long and short the same option)
  - Margin requirement is always the maximum potential loss
  - Debit spread (long premium is higher and must expire on or after the short side)
    - Maximum loss is the net debit (long premium - short premium x shares)
  - Credit spread (short premium is higher and must expire on or before the long side)
    - Maximum loss is the difference between the strike prices times the number of shares, or the calculation for an uncovered short, whichever is less
    - Cash deposit is the requirement minus the net credit (short premium – long premium x shares)
  - Example 13:
    - Debit spread: Buy 1 ABC Jan 50 Call @ $5
Sell 1 ABC Jan 55 Call @ $2
      - Net debit (deposit) = $5 - $2 = $3 x 100 shares = $300
    - Credit spread: Sell 1 ABC Jan 50 Call @ $5
Buy 1 ABC Jan 55 Call @ $2
Current market price is $53
      - Requirement

        On spread:

        $5 (55-50) x 100 shares = $500 requirement - $300 = $200

        On uncovered option:

        20% of $5300 = $1060

        Premium = 500

        Out of money = 300
Requirement = $1260
      - Margin requirement is the lower ($500), cash deposit is $200