Merrill

FREQUENTLY ASKED QUESTIONS (FAQ)

# Naked Option Stress Analysis (NOSA)

Merrill uses a variety of tools to protect both the firm and its clients from the risk associated with margin trading and uncovered option trading. It's important to understand how those tools may affect an individual investor's account, potentially including the issuance of a margin call or the rejection of a client-entered trade, prior to and when engaging in uncovered option trading in a margin account.

## What is NOSA?

The Naked Option Stress Analysis tool (NOSA) is Merrill's proprietary margin requirement system, which assesses margin requirements on uncovered option accounts. These requirements, both initially and to be maintained daily, are separate from industry-wide initial and maintenance requirement minimums found in Regulation T and FINRA Rule 4210. These requirements were developed by the firm to address specific risk associated with uncovered options.

## How does NOSA impact uncovered option accounts?

NOSA largely impacts uncovered option accounts in two ways:

1) At the time an online order is placed by a client, NOSA evaluates the pre-trade and post-trade holdings within the account and determines if the account has sufficient margin to allow the trade to be executed. If approved, the order continues through the standard order life cycle. If rejected, the order is not allowed to be executed. Note, accounts and trades without uncovered options are not subject to this trade review.
2) Additionally, at the close of every business day, NOSA evaluates uncovered option accounts to determine if the account maintains sufficient margin. If it's determined there is insufficient margin, a minimum option equity margin call is issued.

## What margin analysis is completed by NOSA?

NOSA's margin analysis contains several components:

- NOSA evaluates an uncovered option account's collateral by valuing all of the margin, non-option securities in the account. The collateral value of a long margin holding is less than the total market value of the security. The amount discounted is dependent on the security type; more volatile securities types are generally discounted more than less volatile security types. The sum value of all of an account's margin securities less their respective discounts is referred to as the account's NOSA collateral value.
- NOSA requirements are the sum value of all of the NOSA requirements of the naked option positions in the account. NOSA calculates an account's requirements based on three separate hypothetical scenarios; 1) the implied volatility of each naked option significantly increased, 2) the underlying security value of each naked option significantly increased, and 3) the underlying security value of each naked option significantly decreased. Then, for each scenario, NOSA uses an option pricing model to determine the cost to close each naked option position. A naked option's requirement is set to that modeled price based on the scenario that results in the highest overall requirement value for the given account.
- NOSA also calculates what are referred to as family adjustments. These adjustments are deviations from the standard NOSA collateral and NOSA requirement calculations, which help to account for the correlated side risk associated with holding a symbol in both the option and non-option portfolio. Once all components are calculated, NOSA compares an account's NOSA collateral value to its NOSA requirement value. If the collateral is in excess of the requirements, it's determined that an account has a NOSA buffer. If the requirement is greater than the collateral value, a NOSA need is calculated. Any NOSA need evaluation results in a minimum option equity call being issued for that amount.

## Margin considerations for option accounts

It's important to remember that option trading in a margin account presents unique risk. Review the Margin Lending Program Client Agreement for additional information.

Before opening a margin account, you should carefully review the terms governing margin loans. For Individual Investor Accounts, these terms are contained in the Margin Lending Program Client Agreement. For all other accounts, the terms are in your account agreement and disclosures. It is important that you fully understand the risks involved in using margin. These risks include the following:

- **You can lose more funds than you deposit in the margin account.**

  A decline in the value of securities that are bought on margin may require you to provide additional funds to us to avoid the forced sale of those securities or other securities in your account(s).

- **We can force the sale of securities in your account(s).**

  If the equity in your account falls below the maintenance margin requirements or Merrill's higher "house" requirements, we can sell the securities in any of your accounts held by us to cover the margin deficiency. You also will be responsible for any shortfall in the account after such as sale.

- **We can sell your securities without contacting you.**

  Some investors mistakenly believe that they must be contacted for a margin call to be valid, and that securities in their accounts cannot be liquidated to meet the call unless they are contacted first. This is not the case. We will attempt to notify you of margin calls, but we are not required to do so. Even if we have contacted you and provided a specific date by which you can meet a margin call, we can still take necessary steps to protect our financial interests, including immediately selling the securities without notice to you.

- **You are not entitled to choose which securities in your account(s) are liquidated or sold to meet a margin call.**

  Because the securities are collateral for the margin loan, we have the right to decide which security to sell in order to protect our interests.

- **We can increase our "house" maintenance margin requirements at any time including on specific securities experiencing significant volatility and are not required to provide you advance written notice.**

  These changes in our policy may take effect immediately and may result in the issuance of a maintenance margin call. Your failure to satisfy the call may cause us to liquidate or sell securities in your account(s).

- **You are not entitled to an extension of time on a margin call.**

  While an extension of time to meet margin requirements may be available to you under certain conditions, you don't have a right to the extension.

- **Additional considerations**

  If you have any questions or concerns about margin and the margin lending program, please contact the Merrill Investment Center at 855.332.5920.

**Options involve risk and are not suitable for all investors. Certain requirements must be met to trade options. Before engaging in the purchase or sale of options, investors should understand the nature of and extent of their rights and obligations and be aware of the risks involved in investing with options. Please read the options disclosure document titled Characteristics and Risks of Standardized Options (PDF) before considering any option transaction. You may also call the Investment Center at 877.653.4732 for a copy. A separate client agreement is needed. Multi-leg option orders are charged one base commission per order, plus a per-contract charge.**

The maximum loss, gain and breakeven of any options strategy only remains as defined so long as the strategy contains all original positions. Trading, rolling, assignment, or exercise of any portion of the strategy will result in a new maximum loss, gain and breakeven calculation, which will be materially different from the calculation when the strategy remains intact with all of the contemplated legs or positions. This is applicable to all options strategies inclusive of long options, short options and spreads.

Long options are exercised and short options are assigned. Note that American-style options can be assigned/ exercised at any time through the day of expiration without prior notice. Options can be assigned/ exercised after market close on expiration day.
View definitions for investment terms in our Glossary.

**For purposes of all the computations discussed in this article, commissions, fees and margin interest and taxes, have not been included in the examples. These costs obviously will impact the outcome of any stock or option transaction. Any strategies discussed, including examples using actual securities and price data, are strictly for illustrative and educational purposes only and are not to be construed as an endorsement, recommendation or solicitation to buy or sell securities. Past performance is not a guarantee of future results.**

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