

NYSE ARCA EXCHANGE TRADED  
PRODUCTS LISTINGS

# NYSE Arca Lead Market Maker Performance Requirements

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Lead Market Makers (LMMs) will be expected to meet certain daily liquidity requirements (the “Requirements”). Each month, LMMs will be evaluated against the Requirements to assess the quality of their performance relative to the Requirements.

The LMM program is for listed securities on NYSE Arca, especially Exchange Traded Products (“ETPs”)<sup>1</sup>

## LMM Requirements

The Requirements are designed to ensure a tight and liquid market for investors. Keeping in mind the bid and ask prices are always available to trade small amounts of stock immediately, the bid-ask spread can be narrow, the Requirements seek to ensure liquidity and depth using the LMM inside prices to drive trading during the day and during the auctions.

### 1. Specific LMM Requirements (NYSE Arca Rules 7.23 - 7.25):

Rule 7.23 Obligations of Market Makers

Rule 7.24 Designated Market Maker Performance Standards

### 2. Continuous two-sided quote

The LMM is required to maintain a continuous two-sided quote within the parameters defined in NYSE Arca Rule 7.23, using displayed limit orders during the Core trading session.

### 3. Inside Quote Requirement

To ensure a tight market, LMMs will be required to maintain “Inside Quotes” with a maximum width and for a minimum depth. Inside Quotes will vary by stock depending on the stock’s monthly average daily share volume and price<sup>1</sup> See Exhibit 1 and 2 for details. Please note that if the ETP is trading at less than \$1.00 for the month then this metric is not required.

To determine the Inside Quote calculation, prices for all orders, not just the LMM quotes and orders are considered. If limit orders posted on ArcaBook or other market centers meet the Requirements, the LMM is not required to provide additional liquidity. However, in the case that the natural supply of public liquidity is not sufficient to meet the Requirements, the LMM will be required to provide additional liquidity.

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<sup>1</sup> Daily volume shall mean average daily consolidated volume. Please note that how a firm calculates price is at the discretion of the firm but must have reasonable justification and be consistently applied against the Requirements.

Inside Quotes will be calculated as a time-weighted average throughout the trading day and then averaged, by day, across the month. Within a day, the depth will be calculated as the average of the time-weighted bid depth and the average time-weighted ask depth.

## 4. BBO Requirement

LMMs must also contribute to providing a liquid inside BBO on NYSE Arca. The requirement can be maintained by meeting either the (4.1) Time at the Inside Requirement or (4.2) Size-Setting NBBO Requirement.

### 4.1 Time-at-Inside Requirement

LMMs must have quotes or orders at the inside price at least 15% of the trading day. Both Q orders and regular displayed limit orders will be considered for this calculation. Time-at-the inside is calculated as the average of (a) the percentage of time the LMM has a bid at the national best bid and (b) the percentage of time the LMM has an ask at the national best ask.

### 4.2 Size-Setting NBBO Requirement

Exchange listed ETPs must have quotes or orders Size-Setting the National Best Bid and Offer (NBBO) at least 25% of the trading day on NYSE Arca. Both Q orders and displayed limit orders will be considered for this calculation. To determine the Size-Setting NBBO calculation, prices for all displayed NYSE Arca orders, not just the LMM quotes and orders are considered. If limit orders posted on NYSE Arca book meet the requirements, the LMM is not required to provide additional liquidity. However, in the case that the supply of public liquidity on NYSE Arca is not sufficient to meet the Requirements, the LMM will be required to provide additional liquidity. The setting NBBO calculation is calculated during the core trading hours only (9:30 am ET – 4 pm ET) in milliseconds and then averaged, by day, across the month.

### 4.3 Quotes Must be Displayed

Reserve or other hidden orders entered by the LMM will not be included in the Inside Quote or the Time-at-inside calculations. This is important for two reasons. First, this is necessary so that the LMM can identify circumstances in which it needs to improve liquidity to comply with the Requirements. Second, liquidity begets liquidity. A key role of the LMM is to act as a catalyst for trading. By displaying liquidity, the LMM will attract additional order flow to NYSE Arca.

## 5. Auction Participation

All LMMs are required to enter limit orders with the intent to participate in the NYSE Arca Opening and Closing auctions.

**EXHIBIT 1. MINIMUM REQUIREMENTS FOR INSIDE BID-ASK QUOTE FOR REDEEMABLE ETPS.**

DAILY SHARE VOLUME	QUOTE TYPE	REQUIREMENT	PRICES (\$)			
			1-4.99	5-14.99	15-49.99	50 or more
0-4,999	Inside	Spread (%) Depth (sh)	15.00	6.00	5.00	4.00
			700	400	300	200
5,000-24,999	Inside	Spread (%) Depth (sh)	7.00	3.00	2.00	1.50
			700	400	300	200
25,000-74,999	Inside	Spread (%) Depth (sh)	5.00	1.50	1.00	0.70
			700	400	300	200
75,000-199,999	Inside	Spread (%) Depth (sh)	3.00	1.00	0.50	0.30
			700	400	300	200
200,000-499,999	Inside	Spread (%) Depth (sh)	2.00	0.60	0.30	0.20
			700	400	300	200
500,000 or more	Inside	Spread (%) Depth (sh)	1.00	0.30	0.20	0.10
			2000	1000	500	300

**EXHIBIT 2. MINIMUM REQUIREMENTS FOR INSIDE BID-ASK QUOTE FOR NON-REDEEMABLE CERTIFICATES AND WARRANTS.**

QUOTE TYPE	REQUIREMENT	
Inside	Spread (%)	15.00
	Depth (sh)	100

**EXHIBIT 3. LMM PERFORMANCE REPORT STATISTICAL DEFINITIONS**

Date	% Inside	% w/in 3c	Depth	Total Vol	% Total	PI Vol	NYSE Arca Vol
27-Sep-09	55.99	74.44	303	5,300	28.93	50	18,322
Month To Date	58.89	63.88	426	93,147	19.56	200	476,180
Year To Date	49.79	67.21	491	649,361	12.44	325	5,219,856

Date	Market Vol	Market Share	Spread	Quoted Depth	Spread %	% NYSE Arca Size - Setting NBBO
27-Sep-09	18,500	99.04	0.08	334	0.3569	65
Month To Date	846,900	56.23	0.1	419	0.4581	52.23
Year To Date	7,404,400	70.5	0.07	832	0.3875	54.25

Note: all measurements, with the exception of NYSE Arca Vol and Market Vol, are for Core hours only (9:30 – 16:00). NYSE Arca Vol and Market Vol data is for 04:00 to 20:00.

**% Inside** – Average percentage of time that the LMM is displayed at or better than the NBBO, where by LMM's top of book is computed and compared against the NBBO. For any LMM price that is equal to the NBBO, the length of time that that LMM price persists is counted in seconds, and the resulting % of time at the bid (offer) is calculated based on the number of seconds the LMM passes the test relative to the total seconds in the core trading day. The percentage Time at the inside is the average of the calculated the % time at the bid and the % time at the ask. Excludes non-displayed order types such as PL, IOC, NOW, and Market orders; all orders sizes must

be equal to or greater than 100 shares. Changes to quantity are not observed, unless the LMM top of book size is partially executed to display less than 100 shares in which case the order is no longer at the inside. Calculation is only computed when the market is not locked or crossed.

**% w/in 3c** – the average % of time the LMM's displayed limit orders are within .03 of the NBBO. (same method as above)

**Depth** – Average displayed size of their quote when the LMM is at the NBBO.

**Total Vol** – LMM total liquidity adding volume

**% Total Vol** – LMM's total liquidity adding volume as a percentage of the consolidated volume for the Core session (note: this figure could be greater than 100% due to odd-lot executions that are captured internally but not reported to the tape).

**PI Vol** – Price Improved Volume. The number of shares that are executed between the displayed NBBO (note: even though Directed Orders and Passive Liquidity orders may not be used by that particular LMM, PI Vol may still appear due to the following reasons:

1. The millisecond latency between orders executing and displaying as the NBBO
2. Discretionary orders
3. Other orders that are blind to the book

**PI %** - Price Improved Volume Percentage. The number of shares that are executed between the NBBO expressed as a percentage of the total LMM's liquidity adding volume.

**NYSE Arca Vol** – Total number of matched shares executed from 4:00 to 20:00 on NYSE Arca marketplace (excludes routing).

**Market Vol** – The consolidated volume from 4:00 to 20:00 (this includes NYSE Arca volume).

**Market Share** – NYSE Arca core session volume as a percentage of consolidated market volume.

**Spread** – The time weighted average NBBO spread for the security during the core session. For example:

Assume that the core trading hours has a total of 5,000 seconds. And the total NBBO's for the stock were:

10.05 x 10.15 – for 1000 seconds

10.01 x 10.90 – for 3500 seconds

10.10 x 10.12 – for 500 seconds

.10 x 1000 = 100

.89 x 3500 = 3115

.02 x 500 = 10

Sum = 3225

Divide by 5000

.645 average spread

**% NYSE Arca Size Setting NBBO** – NYSE Arca will calculate Size Setting the National Best Bid and Offer (“NBBO”) based upon data from the Consolidated Quote System (“CQS”) during the core trading hours only (9:30 am ET – 4 pm ET) in milliseconds. The National Best Bid and Best Offer price includes only displayed liquidity. CQS identifies, after every quote, which exchange (or market maker within an ADF) has size set the National Best Bid (“NBB”) and the National Best Offer (“NBO”). The rules for calculating the NBBO are based upon the following criteria:

**Price** – The Exchange with the NBB and NBO have the overall priority.

**Size** – Largest size takes precedence when multiple exchanges submit the NBB or NBO.

**Time** – Earliest time takes precedence when multiple exchanges submit the NBB or NBO with the same price.

To avoid dissemination of duplicate calculations, if a quote is received from an exchange that is currently part or all of the National best price, and the national best price is not affected by the quote, then the national best price is not updated with a later time.

NYSE Arca calculates time size setting the best bid and time size setting the best offer. The percent time at the inside calculation is:  
$$\frac{(\text{Milliseconds at best bid on exchange} + \text{milliseconds at best offer on exchange})}{(\text{total milliseconds valid bid on any exchange} + \text{total milliseconds valid offer any exchange})}$$

