PSX MATCHING LOGIC

The NASDAQ OMX PSX (PSX) pro-rata model rewards market participants for committing capital and displaying large size. The more shares you display relative to the total PSX displayed size at the price level, the more shares you are allocated. This market structure encourages greater displayed size, which in turn increases transparency, promotes market stability and facilitates additional trading strategies.

Execution Priority on PSX

Orders posted on the PSX book are allocated shares based on the following hierarchical criteria:

1. **Best Price** – Orders at the best price execute first
2. **Displayed Orders** – Displayed orders execute prior to non-displayed orders
3. **Pro-Rata Allocation**
   a. When there are multiple displayed orders at the same price, the executions are based on pro-rata allocation
   b. After all displayed orders execute, non-displayed orders at the same price level also execute based on a pro-rata allocation

Pro Rata Allocation on PSX

Pro-rata allocation is based on the share size of an individual displayed order at the price level in relation to the total share size displayed at the price level. PSX avoids breaking orders that remove liquidity into odd lot or mixed lot executions if there are enough displayed round lots on the book to satisfy the order.

Note: Odd lots are not part of the pro-rata allocation. They execute at the end of the price/display priority level. For example, an odd lot order that is displayed will execute after all round lot and mixed lot orders displayed at the price level.

Below are a few key examples of how the PSX market model will operate. Each example set shows the same incoming order size and how it would execute differently given the number of orders that are participating on the book at a certain price level.

Example 1a

Shares Incoming 1,000

Participant	Shares on book	% of total	Total Allocation
Order 1	6,000	60%	600
Order 2	4,000	40%	400
Total	**10,000**		**1,000**

Example 1b

Shares Incoming 1,000

Participant	Shares on book	% of total	Total Allocation
Order 1	4,000	40%	400
Order 2	3,000	30%	300
Order 3	2,000	20%	200
Order 4	1,000	10%	100
Total	**10,000**		**1,000**

Example 2a

Shares Incoming 1,100

PSX Book		Matching Logic			Total Allocation	
Participant	Shares on book	% of total shares	Minimum Allocation	Probability for remaining 100 shares	60% Likelihood	40% Likelihood
Order 1	6,000	60%	600	60%	700	600
Order 2	4,000	40%	400	40%	400	500
Total	**10,000**		**1,000**		**1,100**	**1,100**

Example 2b

Shares Incoming 1,100

PSX Book		Matching Logic			Total Allocation			
Participant	Shares on book	% of total shares	Minimum Allocation	Probability for remaining 100 shares	40% Likelihood	30% Likelihood	20% Likelihood	10% Likelihood
Order 1	4,000	40%	400	40%	500	400	400	400
Order 2	3,000	30%	300	30%	300	400	300	300
Order 3	2,000	20%	200	20%	200	200	300	200
Order 4	1,000	10%	100	10%	100	100	100	200
Total	**10,000**		**1,000**		**1,100**	**1,100**	**1,100**	**1,100**

Example 3a

Shares Incoming 100

PSX Book		Matching Logic			Total Allocation	
Participant	Shares on book	% of total shares	Minimum Allocation	Probability for remaining 100 shares	60% Likelihood	40% Likelihood
Order 1	6,000	60%	0	60%	100	0
Order 2	4,000	40%	0	40%	0	100
Total	**10,000**		**0**		**100**	**100**

Example 3b

Shares Incoming 100

PSX Book		Matching Logic			Total Allocation			
Participant	Shares on book	% of total shares	Minimum Allocation	Probability for remaining 100 shares	40% Likelihood	30% Likelihood	20% Likelihood	10% Likelihood
Order 1	4,000	40%	0	40%	100	0	0	0
Order 2	3,000	30%	0	30%	0	100	0	0
Order 3	2,000	20%	0	20%	0	0	100	0
Order 4	1,000	10%	0	10%	0	0	0	100
Total	**10,000**		**0**		**100**	**100**	**100**	**100**

Example 4a

Shares Incoming 80

PSX Book		Matching Logic			Total Allocation	
Participant	Shares on book	% of total shares	Minimum Allocation	Probability for remaining 80 shares	60% Likelihood	40% Likelihood
Order 1	6,000	60%	0	60%	80	0
Order 2	4,000	40%	0	40%	0	80
Total	**10,000**		**0**		**80**	**80**

Example 4b

Shares Incoming 80

PSX Book		Matching Logic			Total Allocation			
Participant	Shares on book	% of total shares	Minimum Allocation	Probability for remaining 80 shares	40% Likelihood	30% Likelihood	20% Likelihood	10% Likelihood
Order 1	4,000	40%	0	40%	80	0	0	0
Order 2	3,000	30%	0	30%	0	80	0	0
Order 3	2,000	20%	0	20%	0	0	80	0
Order 4	1,000	10%	0	10%	0	0	0	80
Total	**10,000**		**0**		**80**	**80**	**80**	**80**

Example 5

Shares Incoming 180

PSX Book		System Logic			Total Allocation	
Participant	Shares on book	% of total shares	Minimum Allocation	Probability for remaining 80 shares	10% Likelihood	90% Likelihood
Order 1	6,000	60%	100	10%	180	100
Order 2	4,000	40%	0	90%	0	80
Total	**10,000**		**100**		**180**	**180**

Example 6

Shares Incoming 1,000

PSX Book		System Logic			Total Allocation		
Participant	Shares on book	% of total shares	Minimum Allocation	Probability for remaining 100 shares	30% Likelihood	40% Likelihood	30% Likelihood
Order 1	6,300	63%	600	30%	700	600	600
Order 2	2,400	24%	200	40%	200	300	200
Order 3	1,300	13%	100	30%	100	100	200
Total	**10,000**		**900**		**1,000**	**1,000**	**1,000**