

Simulation of **Market Order FAK** (**Fill and Kill**)



Market Order FAK

Case: Market Order FAK Volume **Equal or Less Than** Order Book Volume (1/2)

1. There are some limit order on order book. The best bid/buy price is 60 and best ask/sell price is 65 which the volume of bid and ask is 100 lots each.

| | | | | | | |
|------------|------------|---------|-----------|-----------|---------|------------------|
| | Order Type | Bid Vol | Bid Price | Ask Price | Ask Vol | Order Type |
| Best Bid → | Limit | 100 | 60 | 65 | 100 | Limit ← Best Ask |
| | Limit | 100 | 59 | 66 | 100 | Limit |
| | Limit | 100 | 58 | 67 | 100 | Limit |
| | Limit | 100 | 57 | 68 | 100 | Limit |
| | Limit | 100 | 56 | 69 | 100 | Limit |

2. There is a new buy order using market order FAK (fill and kill) with the volume 300 lots. This order will be fully or partially matched with the sell open order on order book. In this case, the buy market order (FAK) will be fully matched with 300 lots sell volume at price 65, 66 and 67.

| | | | | | | |
|--------------------|------------|---------|-----------|-----------|---------|------------------|
| | Order Type | Bid Vol | Bid Price | Ask Price | Ask Vol | Order Type |
| Market order FAK → | Market | 300 | - | 65 | 100 | Limit ← Best Ask |
| Best Bid → | Limit | 100 | 60 | 66 | 100 | Limit |
| | Limit | 100 | 59 | 67 | 100 | Limit |
| | Limit | 100 | 58 | 68 | 100 | Limit |
| | Limit | 100 | 57 | 69 | 100 | Limit |
| | Limit | 100 | 56 | | | |

Market Order FAK

Case: Market Order FAK Volume **Equal or Less Than** Order Book Volume (2/2)

3. After FAK order fully matched in 300 lots, then best bid/buy will be the limit order with price is 60 and the best ask/sell price is 68. There are still 200 lot volume open order sell/ask on order book.

| Order Type | Bid Vol | Bid Price | Ask Price | Ask Vol | Order Type |
|------------|---------|-----------|-----------|---------|------------|
| Limit | 100 | 60 | 68 | 100 | Limit |
| Limit | 100 | 59 | 69 | 100 | Limit |
| Limit | 100 | 58 | | | |
| Limit | 100 | 57 | | | |
| Limit | 100 | 56 | | | |

Best Bid →

← Best Ask

Market Order FAK

Case: Market Order FAK Volume **More Than** Order Book Volume (1/2)

1. There are some limit order on order book. The best bid/buy price is 60 and best ask/sell price is 65 which the volume of bid and ask is 100 lots each.

| | Order Type | Bid Vol | Bid Price | Ask Price | Ask Vol | Order Type | |
|----------|------------|---------|-----------|-----------|---------|------------|----------|
| Best Bid | Limit | 100 | 60 | 65 | 100 | Limit | Best Ask |
| | Limit | 100 | 59 | 66 | 100 | Limit | |
| | Limit | 100 | 58 | 67 | 100 | Limit | |
| | Limit | 100 | 57 | 68 | 100 | Limit | |
| | Limit | 100 | 56 | 69 | 100 | Limit | |

2. There is a new buy order using market order FAK (fill and kill) with the volume 1.000 lots. This order will be fully or partially matched with the sell open order on order book. In this case, the buy market order (FAK) will be partially matched with 500 lots sell volume at price 65, 66, 67, 68, and 69.

| | Order Type | Bid Vol | Bid Price | Ask Price | Ask Vol | Order Type | |
|------------------|------------|---------|-----------|-----------|---------|------------|----------|
| Market Order FAK | Market | 1000 | - | 65 | 100 | Limit | Best Ask |
| Best Bid | Limit | 100 | 60 | 66 | 100 | Limit | |
| | Limit | 100 | 59 | 67 | 100 | Limit | |
| | Limit | 100 | 58 | 68 | 100 | Limit | |
| | Limit | 100 | 57 | 69 | 100 | Limit | |
| | Limit | 100 | 56 | | | | |

Market Order FAK

Case: Market Order FAK Volume **More Than** Order Book Volume (2/2)

3. Since market order (FAK) is fully matched at 500 lots, the remaining volume that couldn't be matched will be expired automatically (withdraw from order book). It happened because market order has an immediate order duration type.

Remaining volume will be expired ←

| Order Type | Bid Vol | Bid Price | Ask Price | Ask Vol | Order Type |
|------------|---------|-----------|-----------|---------|------------|
| Market | 500 | - | - | - | |
| Limit | 100 | 60 | - | - | |
| Limit | 100 | 59 | - | - | |
| Limit | 100 | 58 | - | - | |
| Limit | 100 | 57 | - | - | |
| Limit | 100 | 56 | - | - | |

Best Bid →

Market Order FAK

Case: Market Order FAK Volume Equal or Less Than Order Book Volume, but Available Volume is **More Than Sweep limit Regulation** (1/2)

1. There are some limit order on order book. The best bid/buy price is 60 and best ask/sell price is 65 which the volume of bid and ask is 100 lots each.

| | Order Type | Bid Vol | Bid Price | Ask Price | Ask Vol | Order Type |
|------------|------------|---------|-----------|-----------|---------|------------------|
| Best Bid → | Limit | 100 | 60 | 65 | 100 | Limit ← Best Ask |
| | Limit | 100 | 59 | 66 | 100 | Limit |
| | Limit | 100 | 58 | 67 | 100 | Limit |
| | Limit | 100 | 57 | 90 | 100 | Limit |
| | Limit | 100 | 56 | 91 | 100 | Limit |

2. There is a new buy order using market order FAK (fill and kill) with the volume 500 lots. This order will be fully or partially matched with the sell open order on order book. In this case, the buy market order (FAK) will be partially matched with 300 lots sell volume at price 65, 66, and 67. It happened because another 200 lots sell/ask order are more than sweep limit regulation (the sweep limit price should be maximum at 75 or 10 tick from best ask price).

| | Order Type | Bid Vol | Bid Price | Ask Price | Ask Vol | Order Type |
|--------------------|------------|---------|-----------|-----------|---------|------------------|
| Market Order FAK → | Market | 500 | - | 65 | 100 | Limit ← Best Ask |
| Best Bid → | Limit | 100 | 60 | 66 | 100 | Limit |
| | Limit | 100 | 59 | 67 | 100 | Limit |
| | Limit | 100 | 58 | 90 | 100 | Limit |
| | Limit | 100 | 57 | 91 | 100 | Limit |
| | Limit | 100 | 56 | | | |

Market Order FAK

Case: Market Order FAK Volume Equal or Less Than Order Book Volume, but Available Volume is **More Than Sweep limit Regulation** (2/2)

3. Since market order (FAK) partially matched in 300 lots, the remaining volume that couldn't be matched will be expired automatically (withdraw from order book). It happened because there are sell/ask price that's more than sweep limit regulation and market order has an immediate order duration type.

| Order Type | Bid Vol | Bid Price | Ask Price | Ask Vol | Order Type |
|------------|---------|-----------|-----------|---------|------------|
| Market | 200 | - | 90 | 100 | Limit |
| Limit | 100 | 60 | 91 | 100 | Limit |
| Limit | 100 | 59 | | | |
| Limit | 100 | 58 | | | |
| Limit | 100 | 57 | | | |
| Limit | 100 | 56 | | | |

Remaining volume will be expired →

Best Bid →

← Best Ask

Simulation of **Market Order FOK** (**Fill or Kill**)



Market Order FOK

Case: Market Order FOK Volume **Equal or Less Than** Order Book Volume (1/2)

1. There are some limit order on order book. The best bid/buy price is 60 and best ask/sell price is 65 which the volume of bid and ask is 100 lots each.

| | | | | | | | |
|----------|------------|---------|-----------|-----------|---------|------------|----------|
| | Order Type | Bid Vol | Bid Price | Ask Price | Ask Vol | Order Type | |
| Best Bid | Limit | 100 | 60 | 65 | 100 | Limit | Best Ask |
| | Limit | 100 | 59 | 66 | 100 | Limit | |
| | Limit | 100 | 58 | 67 | 100 | Limit | |
| | Limit | 100 | 57 | 68 | 100 | Limit | |
| | Limit | 100 | 56 | 69 | 100 | Limit | |

2. There is a new buy order using market order FOK (fill or kill) with the volume 300 lots which means the order will be fully matched or not at all (none) with open order on order book. In this case, the buy market order FOK will be fully matched with 300 lots sell volume at price 65, 66 and 67.

| | | | | | | | |
|------------------|------------|---------|-----------|-----------|---------|------------|----------|
| | Order Type | Bid Vol | Bid Price | Ask Price | Ask Vol | Order Type | |
| Market order FOK | Market | 300 | - | 65 | 100 | Limit | Best Ask |
| Best Bid | Limit | 100 | 60 | 66 | 100 | Limit | |
| | Limit | 100 | 59 | 67 | 100 | Limit | |
| | Limit | 100 | 58 | 68 | 100 | Limit | |
| | Limit | 100 | 57 | 69 | 100 | Limit | |
| | Limit | 100 | 56 | | | | |

Market Order FOK

Case: Market Order FOK Volume **Equal or Less Than** Order Book Volume (2/2)

3. After FOK order fully matched in 300 lot, then the best bid/buy will be the limit order with price is 60 and best ask/sell price is 68. there are still 200 lot volume open order sell/ask on order book.

| Order Type | Bid Vol | Bid Price | Ask Price | Ask Vol | Order Type |
|------------|---------|-----------|-----------|---------|------------|
| Limit | 100 | 60 | 68 | 100 | Limit |
| Limit | 100 | 59 | 69 | 100 | Limit |
| Limit | 100 | 58 | | | |
| Limit | 100 | 57 | | | |
| Limit | 100 | 56 | | | |

Best Bid →

← Best Ask

Market Order FOK

Case: Market Order FOK Volume **More Than** Order Book Volume (1/2)

1. There are some limit order on order book. The best bid/buy price is 60 and best ask/sell price is 65 which the volume of bid and ask is 100 lots each.

| | | | | | | |
|------------|------------|---------|-----------|-----------|---------|------------------|
| | Order Type | Bid Vol | Bid Price | Ask Price | Ask Vol | Order Type |
| Best Bid → | Limit | 100 | 60 | 65 | 100 | Limit ← Best Ask |
| | Limit | 100 | 59 | 66 | 100 | Limit |
| | Limit | 100 | 58 | 67 | 100 | Limit |
| | Limit | 100 | 57 | 68 | 100 | Limit |
| | Limit | 100 | 56 | 69 | 100 | Limit |

2. There is a new order buy using market order FOK (fill or kill) with the volume 1000 lots which means the order will be fully matched or not at all (none) with sell open order on order book. In this case, the buy market order FOK exceed sell/ask volume on book order and can not be matched.

| | | | | | | |
|--------------------|------------|---------|-----------|-----------|---------|------------------|
| | Order Type | Bid Vol | Bid Price | Ask Price | Ask Vol | Order Type |
| Market Order FOK → | Market | 1000 | - | 65 | 100 | Limit ← Best Ask |
| Best Bid → | Limit | 100 | 60 | 66 | 100 | Limit |
| | Limit | 100 | 59 | 67 | 100 | Limit |
| | Limit | 100 | 58 | 68 | 100 | Limit |
| | Limit | 100 | 57 | 69 | 100 | Limit |
| | Limit | 100 | 56 | | | |

Market Order FOK

Case: Market Order FOK Volume **More Than** Order Book Volume (2/2)

3. Since FOK order can't be matched, market order will be expired (withdraw from order book) because market order has an immediate order duration type. And then best bid/buy will be back at 60 and best ask/sell will be at 65

Market Order FOK will be Expired

Best Bid

| Order Type | Bid Vol | Bid Price | Ask Price | Ask Vol | Order Type |
|------------|---------|-----------|-----------|---------|------------|
| Market | 1000 | - | 65 | 100 | Limit |
| Limit | 100 | 60 | 66 | 100 | Limit |
| Limit | 100 | 59 | 67 | 100 | Limit |
| Limit | 100 | 58 | 68 | 100 | Limit |
| Limit | 100 | 57 | 69 | 100 | Limit |
| Limit | 100 | 56 | | | |

Best Ask

Market Order FOK

Case: Market Order FOK Volume Equal or Less Than Order Book Volume, but Available Volume is **More Than Sweep limit Regulation** (1/2)

1. There are some limit order on order book. The best bid/buy price is 60 and best ask/sell price is 65 which the volume of bid and ask is 100 lots each.

| | Order Type | Bid Vol | Bid Price | Ask Price | Ask Vol | Order Type |
|------------|------------|---------|-----------|-----------|---------|------------------|
| Best Bid → | Limit | 100 | 60 | 65 | 100 | Limit ← Best Ask |
| | Limit | 100 | 59 | 66 | 100 | Limit |
| | Limit | 100 | 58 | 67 | 100 | Limit |
| | Limit | 100 | 57 | 90 | 100 | Limit |
| | Limit | 100 | 56 | 91 | 100 | Limit |

2. There is a new buy order using market order FOK (fill or kill) with the volume 500 lots. This order will be fully matched or not at all (none) with the sell open order on order book. In this case, the buy market order FOK can't be matched because there is another 200 lots sell/ask order that are more than sweep limit regulation (the sweep limit price should be maximum at 75 or 10 tick from best ask price).

| | Order Type | Buy Vol | Price | Price | Sell Vol | Order Type |
|--------------------|------------|---------|-------|-------|----------|------------------|
| Market Order FOK → | Market | 500 | - | 65 | 100 | Limit ← Best Ask |
| Best Bid → | Limit | 100 | 60 | 66 | 100 | Limit |
| | Limit | 100 | 59 | 67 | 100 | Limit |
| | Limit | 100 | 58 | 90 | 100 | Limit |
| | Limit | 100 | 57 | 91 | 100 | Limit |
| | Limit | 100 | 56 | | | |

Market Order FOK

Case: Market Order FOK Volume Equal or Less Than Order Book Volume, but Available Volume is **More Than Sweep limit Regulation (2/2)**

3. Since FOK order can't be matched, market order will be expired (withdraw from order book) because market order has an immediate order duration type. And then best bid/buy will be back at 60 and best ask/sell will be at 65

Market Order FOK will be expired →

| Order Type | Bid Vol | Bid Price | Ask Price | Ask Vol | Order Type |
|------------|---------|-----------|-----------|---------|------------|
| Market | 500 | - | 65 | 100 | Limit |
| Limit | 100 | 60 | 66 | 100 | Limit |
| Limit | 100 | 59 | 67 | 100 | Limit |
| Limit | 100 | 58 | 90 | 100 | Limit |
| Limit | 100 | 57 | 91 | 100 | Limit |
| Limit | 100 | 56 | | | |

← Best Ask

Best Bid →

Simulation of **Market Order MTL** (**Market to Limit**)



Market Order MTL

Case: Market Order MTL Volume **Equal or Less Than** Order Book Volume (1/2)

1. There are some limit order on order book. The best bid/buy price is 60 and best ask/sell price is 65 which the volume of bid and ask is 100 lots each.

| | | | | | | | |
|----------|------------|---------|-----------|-----------|---------|------------|----------|
| | Order Type | Bid Vol | Bid Price | Ask Price | Ask Vol | Order Type | |
| Best Bid | Limit | 100 | 60 | 65 | 100 | Limit | Best Ask |
| | Limit | 100 | 59 | 66 | 100 | Limit | |
| | Limit | 100 | 58 | 67 | 100 | Limit | |
| | Limit | 100 | 57 | 68 | 100 | Limit | |
| | Limit | 100 | 56 | 69 | 100 | Limit | |

2. There is a new order buy using market order MTL (Market to Limit) with the volume 300 lots. This order will be fully matched or not at all (none) with the sell open order on order book. In this case, the buy market order (MTL) will be partially matched with 300 lots sell volume at price 65, 66 and 67

| | | | | | | | |
|------------------|------------|---------|-----------|-----------|---------|------------|----------|
| | Order Type | Bid Vol | Bid Price | Ask Price | Ask Vol | Order Type | |
| Market order MTL | Market | 300 | - | 65 | 100 | Limit | Best Ask |
| Best Bid | Limit | 100 | 60 | 66 | 100 | Limit | |
| | Limit | 100 | 59 | 67 | 100 | Limit | |
| | Limit | 100 | 58 | 68 | 100 | Limit | |
| | Limit | 100 | 57 | 69 | 100 | Limit | |
| | Limit | 100 | 56 | | | | |

Market Order MTL

Case: Market Order MTL Volume **Equal or Less Than** Order Book Volume (2/2)

3. After MTL order fully matched in 300 lot, then best bid/buy will be the limit order with price is 60 and best ask/sell price is 68. There are still 200 lot volume open order sell/ask on order book.

| Order Type | Bid Vol | Bid Price | Ask Price | Ask Vol | Order Type |
|------------|---------|-----------|-----------|---------|------------|
| Limit | 100 | 60 | 68 | 100 | Limit |
| Limit | 100 | 59 | 69 | 100 | Limit |
| Limit | 100 | 58 | | | |
| Limit | 100 | 57 | | | |
| Limit | 100 | 56 | | | |

Best Bid →

← Best Ask

Market Order MTL

Case: Market Order MTL Volume **More Than** Order Book Volume (1/2)

1. There are some limit order on order book. The best bid/buy price is 60 and best ask/sell price is 65 which the volume of bid and ask is 100 lots each.

| | | | | | | |
|------------|------------|---------|-----------|-----------|---------|------------------|
| | Order Type | Bid Vol | Bid Price | Ask Price | Ask Vol | Order Type |
| Best Bid → | Limit | 100 | 60 | 65 | 100 | Limit ← Best Ask |
| | Limit | 100 | 59 | 66 | 100 | Limit |
| | Limit | 100 | 58 | 67 | 100 | Limit |
| | Limit | 100 | 57 | 68 | 100 | Limit |
| | Limit | 100 | 56 | 69 | 100 | Limit |

2. There is a new order buy using market order MTL (Market to Limit) with the volume 1000 lots. This order will be fully or partially matched with the sell open order on order book. In this case, the market order MTL will be partially matched with 500 lot sell volume at price 65, 66, 67, 68, and 69.


| | | | | | | |
|--------------------|------------|---------|-------|-------|----------|------------------|
| | Order Type | Buy Vol | Price | Price | Sell Vol | Order Type |
| Market Order MTL → | Market | 1000 | - | 65 | 100 | Limit ← Best Ask |
| Best Bid → | Limit | 100 | 60 | 66 | 100 | Limit |
| | Limit | 100 | 59 | 67 | 100 | Limit |
| | Limit | 100 | 58 | 68 | 100 | Limit |
| | Limit | 100 | 57 | 69 | 100 | Limit |
| | Limit | 100 | 56 | | | |

Market Order MTL

Case: Market Order MTL Volume **More Than** Order Book Volume (2/2)

3. After MTL order fully matched in 500 lots, the remaining 500 lots of MTL order volume will be converted into limit order with the last matched price (69). Hence, the best bid/buy will be at 69.

The remaining volume will be converted into limit order



| Order Type | Bid Vol | Bid Price | Ask Price | Ask Vol | Order Type |
|------------|---------|-----------|-----------|---------|------------|
| Limit | 500 | 69 | | | |
| Limit | 100 | 60 | | | |
| Limit | 100 | 59 | | | |
| Limit | 100 | 58 | | | |
| Limit | 100 | 57 | | | |
| Limit | 100 | 56 | | | |

Market Order MTL

Case: Market Order MTL Volume Equal or Less Than Order Book Volume, but Available Volume is **More Than Sweep limit Regulation** (1/2)

1. There are some limit order on order book. The best bid/buy price is 60 and best ask/sell price is 65 which the volume of bid and ask is 100 lots each.

| | Order Type | Bid Vol | Bid Price | Ask Price | Ask Vol | Order Type | |
|----------|------------|---------|-----------|-----------|---------|------------|----------|
| Best Bid | Limit | 100 | 60 | 65 | 100 | Limit | Best Ask |
| | Limit | 100 | 59 | 66 | 100 | Limit | |
| | Limit | 100 | 58 | 67 | 100 | Limit | |
| | Limit | 100 | 57 | 90 | 100 | Limit | |
| | Limit | 100 | 56 | 91 | 100 | Limit | |

2. There is a new order buy using market order MTL (Market to Limit) with the volume 500 lots. This order will be fully or partially matched with the sell open order on order book. In this case, the market order MTL will be partially matched with 300 lot sell/ask order at price 65,66, and 67. It happened because another 200 lots sell/ask order are more than sweep limit regulation (the sweep limit price should be maximum at 75 or 10 tick from best ask price).

| | Order Type | Bid Vol | Bid Price | Ask Price | Ask Vol | Order Type | |
|------------------|------------|---------|-----------|-----------|---------|------------|----------|
| Market Order MTL | Market | 500 | - | 65 | 100 | Limit | Best Ask |
| Best Bid | Limit | 100 | 60 | 66 | 100 | Limit | |
| | Limit | 100 | 59 | 67 | 100 | Limit | |
| | Limit | 100 | 58 | 90 | 100 | Limit | |
| | Limit | 100 | 57 | 91 | 100 | Limit | |
| | Limit | 100 | 56 | | | | |

Market Order MTL

Case: Market Order MTL Volume Equal or Less Than Order Book Volume, but Available Volume is **More Than Sweep limit Regulation (2/2)**

- After MTL order partially matched in 300 lots, the remaining volume that couldn't be matched will be converted into limit order with the last matched price (67). Hence, the best bid/buy will be at 67.

Market Order MTL remaining volume will be converted into limit order and will be the new best bid

| Order Type | Bid Vol | Bid Price | Ask Price | Ask Vol | Order Type |
|------------|---------|-----------|-----------|---------|------------|
| Limit | 200 | 67 | 90 | 100 | Limit |
| Limit | 100 | 60 | 91 | 100 | Limit |
| Limit | 100 | 59 | | | |
| Limit | 100 | 58 | | | |
| Limit | 100 | 57 | | | |
| Limit | 100 | 56 | | | |

Best Ask