```
C:\Users\amin\OneDrive\IEMBA MSC NEOMA BS\6 Market Microstructure\Group work Market
Micro\UN Group work AD FINAL ver201122.2.py:57: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame
See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/
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  smaller Quote.drop(smaller Quote[smaller Quote["BIDSIZ"] <= 0].index, inplace = True)</pre>
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  smaller Quote.drop(smaller Quote[smaller Quote["OFRSIZ"] <= 0].index, inplace = True)</pre>
C:\Users\amin\OneDrive\IEMBA MSC NEOMA BS\6 Market Microstructure\Group work Market
Micro\UN_Group_work_AD_FINAL ver201122.2.py:190: SettingWithCopyWarning:
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  smaller_Quote_t_ignore.drop(smaller_Quote_t_ignore[smaller_Quote_t_ignore["MMID"] !=
"TRIM"].index
Ticker: ['UN']
Trading day: 1999-04-13 00:00:00
The proportion of trades inside the quotes including Bid and Ask: 98.72 %
The proportion of trades outside of the quotes: 1.28 %
The proportion of trades inside the quotes (without bid and ask): 69.1 %
The proportion of trades at the Ask Quote: 11.7 %
The proportion of trades at the Mid Ouote: 17.73 %
The proportion of trades at the Bid Quote: 17.92 %
The weighted average effective spread: 9317.87
The Order Flow Imbalance is: -0.11
C:\Users\amin\OneDrive\IEMBA MSC NEOMA BS\6 Market Microstructure\Group work Market
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  smaller_Quote.drop(smaller_Quote[smaller_Quote["BIDSIZ"] <= 0].index, inplace = True)</pre>
```

The proportion of trades at the Bid Quote: 9.09 % The weighted average effective spread: 3985.61

The Order Flow Imbalance is: 0.53

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Micro\UN Group work AD FINAL ver201122.2.py:59: SettingWithCopyWarning:
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  smaller_Quote_t_ignore.drop(smaller_Quote_t_ignore[smaller_Quote_t_ignore["MMID"] !=
"TRIM"].index
Ticker: ['UN']
Trading day: 1999-04-14 00:00:00
The proportion of trades inside the quotes including Bid and Ask: 97.67 %
The proportion of trades outside of the quotes: 2.33 %
The proportion of trades inside the quotes (without bid and ask): 69.98 %
The proportion of trades at the Ask Quote: 10.42 %
The proportion of trades at the Mid Quote: 18.82 %
The proportion of trades at the Bid Quote: 17.26 %
The weighted average effective spread: 9408.34
The Order Flow Imbalance is: 0.58
C:\Users\amin\OneDrive\IEMBA MSC NEOMA BS\6 Market Microstructure\Group work Market
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A value is trying to be set on a copy of a slice from a DataFrame
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  smaller Quote t ignore.drop(smaller Quote t ignore[smaller Quote t ignore["MMID"] !=
"TRIM"].index
Ticker: ['UN']
Trading day: 1999-04-15 00:00:00
The proportion of trades inside the quotes including Bid and Ask: 97.86 %
The proportion of trades outside of the quotes: 2.14 %
The proportion of trades inside the quotes (without bid and ask): 71.21 %
The proportion of trades at the Ask Quote: 7.04 %
The proportion of trades at the Mid Quote: 17.46 %
The proportion of trades at the Bid Ouote: 19.6 %
The weighted average effective spread: 9843.79
The Order Flow Imbalance is: 0.39
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C:\Users\amin\OneDrive\IEMBA MSC NEOMA BS\6 Market Microstructure\Group work Market
Micro\UN_Group_work_AD_FINAL ver201122.2.py:53: SettingWithCopyWarning:
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  smaller Quote.drop(smaller Quote[smaller Quote["BID"] <= 0].index, inplace = True)</pre>
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  smaller Quote.drop(smaller Quote[smaller Quote["OFRSIZ"] <= 0].index, inplace = True)</pre>
Ticker: ['UN']
Trading day: 1999-04-16 00:00:00
The proportion of trades inside the quotes including Bid and Ask: 96.91 %
The proportion of trades outside of the quotes: 3.09 %
The proportion of trades inside the quotes (without bid and ask): 70.21 %
The proportion of trades at the Ask Ouote: 12.96 %
The proportion of trades at the Mid Quote: 17.02 %
The proportion of trades at the Bid Quote: 13.73 %
The weighted average effective spread: 11600.58
The Order Flow Imbalance is: 0.31
_____
C:\Users\amin\OneDrive\IEMBA MSC NEOMA BS\6 Market Microstructure\Group work Market
Micro\UN Group work AD FINAL ver201122.2.py:190: SettingWithCopyWarning:
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  smaller_Quote.drop(smaller_Quote[smaller_Quote["BID"] <= 0].index, inplace = True)</pre>
Ticker: ['UN']
Trading day: 1999-04-19 00:00:00
The proportion of trades inside the quotes including Bid and Ask: 96.82 %
The proportion of trades outside of the quotes: 3.18 %
The proportion of trades inside the quotes (without bid and ask): 68.68 %
The proportion of trades at the Ask Quote: 19.43 %
The proportion of trades at the Mid Quote: 16.42 %
The proportion of trades at the Bid Quote: 8.71 %
The weighted average effective spread: 8139.23
The Order Flow Imbalance is: 0.37
```

```
C:\Users\amin\OneDrive\IEMBA MSC NEOMA BS\6 Market Microstructure\Group work Market
Micro\UN Group work AD FINAL ver201122.2.py:55: SettingWithCopyWarning:
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  smaller_Quote.drop(smaller_Quote[smaller_Quote["BIDSIZ"] <= 0].index, inplace = True)</pre>
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  smaller_Quote_t_ignore.drop(smaller_Quote_t_ignore[smaller_Quote_t_ignore["MMID"] !=
"TRIM"].index
Ticker: ['UN']
Trading day: 1999-04-20 00:00:00
The proportion of trades inside the quotes including Bid and Ask: 99.16 %
The proportion of trades outside of the quotes: 0.84 %
The proportion of trades inside the quotes (without bid and ask): 76.18 %
The proportion of trades at the Ask Quote: 15.54 %
The proportion of trades at the Mid Quote: 21.28 %
The proportion of trades at the Bid Quote: 7.43 %
The weighted average effective spread: 11471.39
The Order Flow Imbalance is: 0.43
_____
C:\Users\amin\OneDrive\IEMBA MSC NEOMA BS\6 Market Microstructure\Group work Market
Micro\UN_Group_work_AD_FINAL ver201122.2.py:53: SettingWithCopyWarning:
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  smaller Quote.drop(smaller Quote[smaller Quote["OFRSIZ"] <= 0].index, inplace = True)</pre>
Ticker: ['UN']
Trading day: 1999-04-21 00:00:00
The proportion of trades inside the quotes including Bid and Ask: 99.23 %
The proportion of trades outside of the quotes: 0.77 %
The proportion of trades inside the quotes (without bid and ask): 75.86 %
The proportion of trades at the Ask Quote: 14.18 \% The proportion of trades at the Mid Quote: 17.43 \%
The proportion of trades at the Bid Quote: 9.2 %
The weighted average effective spread: 9721.97
The Order Flow Imbalance is: 0.14
```

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Micro\UN Group work AD FINAL ver201122.2.py:190: SettingWithCopyWarning:
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  smaller Quote.drop(smaller Quote[smaller Quote["OFR"] <= 0].index, inplace = True)</pre>
Ticker: ['UN']
Trading day: 1999-04-22 00:00:00
The proportion of trades inside the quotes including Bid and Ask: 98.23 %
The proportion of trades outside of the quotes: 1.77 %
The proportion of trades inside the quotes (without bid and ask): 77.83 %
The proportion of trades at the Ask Quote: 5.99 %
The proportion of trades at the Mid Quote: 15.08 %
The proportion of trades at the Bid Quote: 14.41 %
The weighted average effective spread: 11241.19
The Order Flow Imbalance is: -0.01
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  smaller_Quote_t_ignore.drop(smaller_Quote_t_ignore[smaller_Quote_t_ignore["MMID"] !=
"TRIM"].index
C:\Users\amin\OneDrive\IEMBA MSC NEOMA BS\6 Market Microstructure\Group work Market
Micro\UN_Group_work_AD_FINAL ver201122.2.py:53: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame
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  smaller Quote.drop(smaller Quote[smaller Quote["BID"] <= 0].index, inplace = True)</pre>
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  smaller Quote.drop(smaller Quote[smaller Quote["OFR"] <= 0].index, inplace = True)</pre>
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user guide/indexing.html#returning-a-view-versus-a-copy
  smaller_Quote.drop(smaller_Quote[smaller_Quote["BIDSIZ"] <= 0].index, inplace = True)</pre>
Ticker: ['UN']
Trading day: 1999-04-23 00:00:00
The proportion of trades inside the quotes including Bid and Ask: 99.35 %
The proportion of trades outside of the quotes: 0.65 %
The proportion of trades inside the quotes (without bid and ask): 74.73 %
The proportion of trades at the Ask Quote: 13.94 %
The proportion of trades at the Mid Quote: 18.74 \%
The proportion of trades at the Bid Quote: 10.68 %
The weighted average effective spread: 6027.12
The Order Flow Imbalance is: -0.03
_____
C:\Users\amin\OneDrive\IEMBA MSC NEOMA BS\6 Market Microstructure\Group work_Market
Micro\UN Group work AD FINAL ver201122.2.py:59: SettingWithCopyWarning:
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  smaller Quote.drop(smaller Quote[smaller Quote["OFRSIZ"] <= 0].index, inplace = True)</pre>
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  smaller_Quote_t_ignore.drop(smaller_Quote_t_ignore[smaller_Quote_t_ignore["MMID"] !=
"TRIM"].index
Ticker: ['UN']
Trading day: 1999-04-26 00:00:00
The proportion of trades inside the quotes including Bid and Ask: 98.71 %
The proportion of trades outside of the quotes: 1.29 %
The proportion of trades inside the quotes (without bid and ask): 82.26 %
The proportion of trades at the Ask Quote: 7.95 %
The proportion of trades at the Mid Quote: 19.59 %
The proportion of trades at the Bid Quote: 8.5 %
The weighted average effective spread: 8803.44
The Order Flow Imbalance is: 0.18
_____
C:\Users\amin\OneDrive\IEMBA MSC NEOMA BS\6 Market Microstructure\Group work Market
Micro\UN_Group_work_AD_FINAL ver201122.2.py:53: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame
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  smaller Quote.drop(smaller Quote[smaller Quote["BID"] <= 0].index, inplace = True)</pre>
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  smaller Quote.drop(smaller Quote[smaller Quote["OFR"] <= 0].index, inplace = True)</pre>
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  smaller_Quote_t_ignore.drop(smaller_Quote_t_ignore[smaller_Quote_t_ignore["MMID"] !=
"TRIM"].index
Ticker: ['UN']
Trading day: 1999-04-27 00:00:00
The proportion of trades inside the quotes including Bid and Ask: 96.28 %
The proportion of trades outside of the quotes: 3.72 %
The proportion of trades inside the quotes (without bid and ask): 70.8 %
The proportion of trades at the Ask Quote: 7.61 %
The proportion of trades at the Mid Quote: 16.46 %
The proportion of trades at the Bid Quote: 17.88 %
The weighted average effective spread: 6790.78
The Order Flow Imbalance is: 0.47
______
C:\Users\amin\OneDrive\IEMBA MSC NEOMA BS\6 Market Microstructure\Group work Market
Micro\UN Group work AD FINAL ver201122.2.py:53: SettingWithCopyWarning:
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  smaller Quote.drop(smaller Quote[smaller Quote["OFR"] <= 0].index, inplace = True)</pre>
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  smaller Quote.drop(smaller Quote[smaller Quote["OFRSIZ"] <= 0].index, inplace = True)</pre>
Ticker: ['UN']
Trading day: 1999-04-28 00:00:00
The proportion of trades inside the quotes including Bid and Ask: 98.52 %
The proportion of trades outside of the quotes: 1.48 %
The proportion of trades inside the quotes (without bid and ask): 71.3 %
The proportion of trades at the Ask Quote: 16.67 %
The proportion of trades at the Mid Quote: 17.41 %
The proportion of trades at the Bid Quote: 10.56 %
The weighted average effective spread: 7727.13
The Order Flow Imbalance is: 0.4
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C:\Users\amin\OneDrive\IEMBA MSC NEOMA BS\6 Market Microstructure\Group work Market
Micro\UN_Group_work_AD_FINAL ver201122.2.py:190: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame
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See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/

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user guide/indexing.html#returning-a-view-versus-a-copy
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  smaller_Quote_t_ignore.drop(smaller_Quote_t_ignore[smaller_Quote_t_ignore["MMID"] !=
"TRIM"].index
Ticker: ['UN']
Trading day: 1999-04-29 00:00:00
The proportion of trades inside the quotes including Bid and Ask: 98.2 %
The proportion of trades outside of the quotes: 1.8 %
The proportion of trades inside the quotes (without bid and ask): 74.55 %
The proportion of trades at the Ask Ouote: 7.82 %
The proportion of trades at the Mid Quote: 19.44 %
The proportion of trades at the Bid Quote: 15.83 %
The weighted average effective spread: 22933.3
The Order Flow Imbalance is: 1.53
_____
C:\Users\amin\OneDrive\IEMBA MSC NEOMA BS\6 Market Microstructure\Group work Market
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  smaller_Quote_t_ignore.drop(smaller_Quote_t_ignore[smaller_Quote_t_ignore["MMID"] !=
"TRIM"].index
Ticker: ['UN']
```

```
Trading day: 1999-04-30 00:00:00

The proportion of trades inside the quotes including Bid and Ask: 97.54 %

The proportion of trades outside of the quotes: 2.46 %

The proportion of trades inside the quotes (without bid and ask): 75.14 %

The proportion of trades at the Ask Quote: 9.29 %

The proportion of trades at the Mid Quote: 12.43 %

The proportion of trades at the Bid Quote: 13.11 %

The weighted average effective spread: 9361.21

The Order Flow Imbalance is: 0.47
```

In [2]: