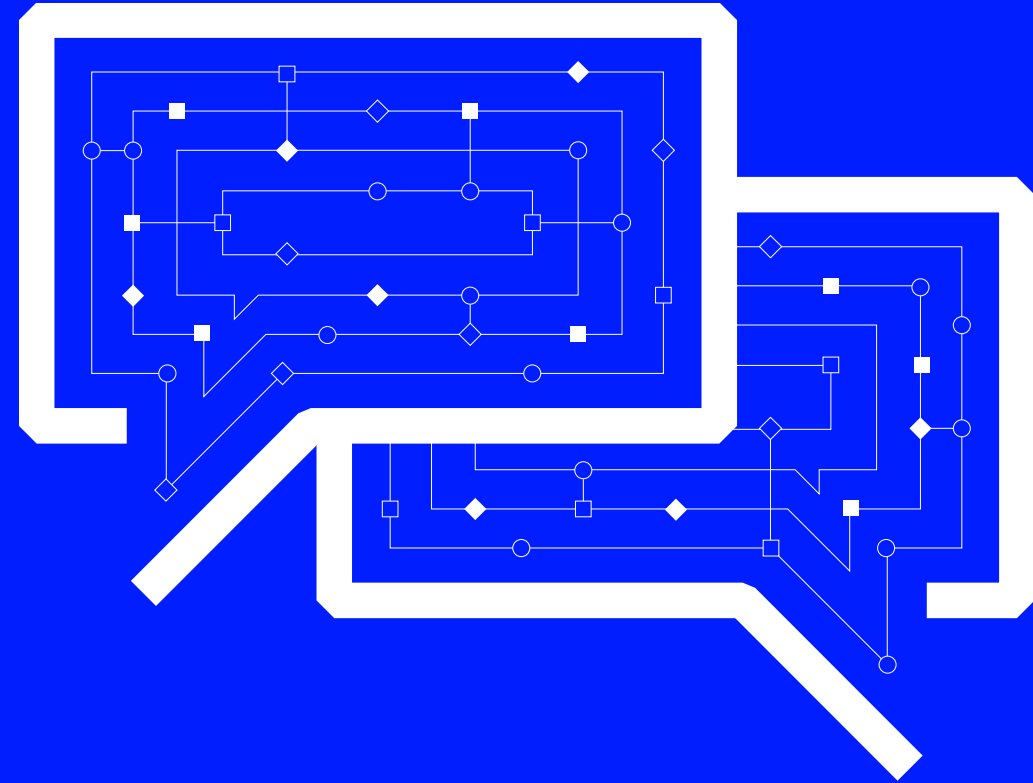


WMR Fixing Update

Update for ECB FXCG

November 2019



The Financial and Risk business of Thomson Reuters is now Refinitiv.

Disclaimer: The information in this document is sourced from Refinitiv's Matching and FXall venues. The information is provided by Refinitiv in good faith based on information available to us in our venues. Whilst every effort has been made to ensure accuracy of the information, we take no responsibility for any reliance on the information. The information is confidential and limited to use by ECB FXCG. No further disclosure is permitted to any other parties without express written consent of Refinitiv.

REFINITIVTM



Refinitiv gave an update on activity through the 4pm WMR fixing window to the Global FX Committee in May 2017

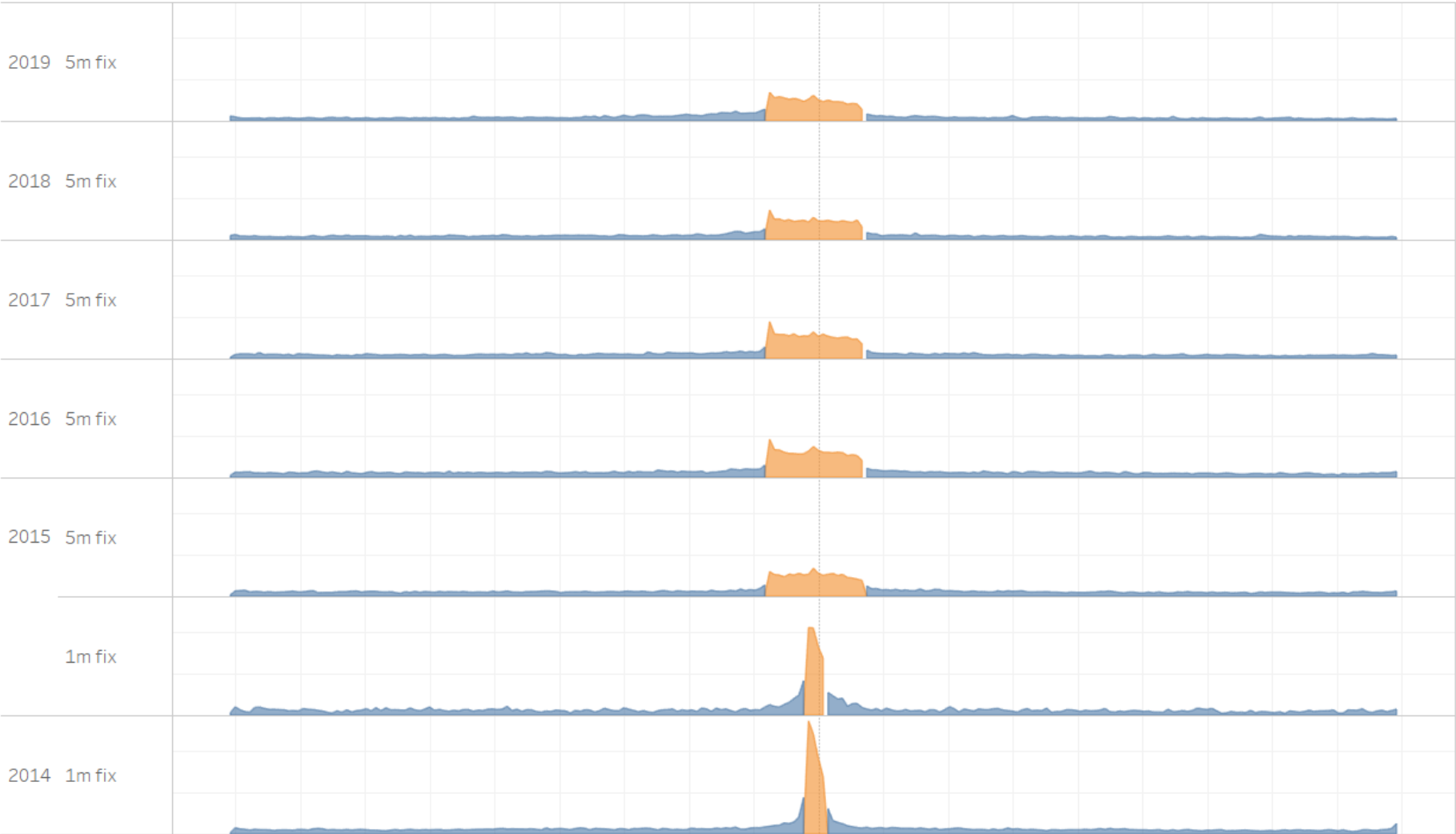
Key trends in British Pound, Australian Dollar and Canadian Dollar that have continued since the lengthening of the window to 5 minutes are:

- Volumes peak during the benchmark window
- Spreads tighten during the benchmark window
- Large amounts could be executed in the benchmark window with lower market impact

Trends that have changed since the introduction of the longer window include:

- Distribution of trading through the window has changed over time

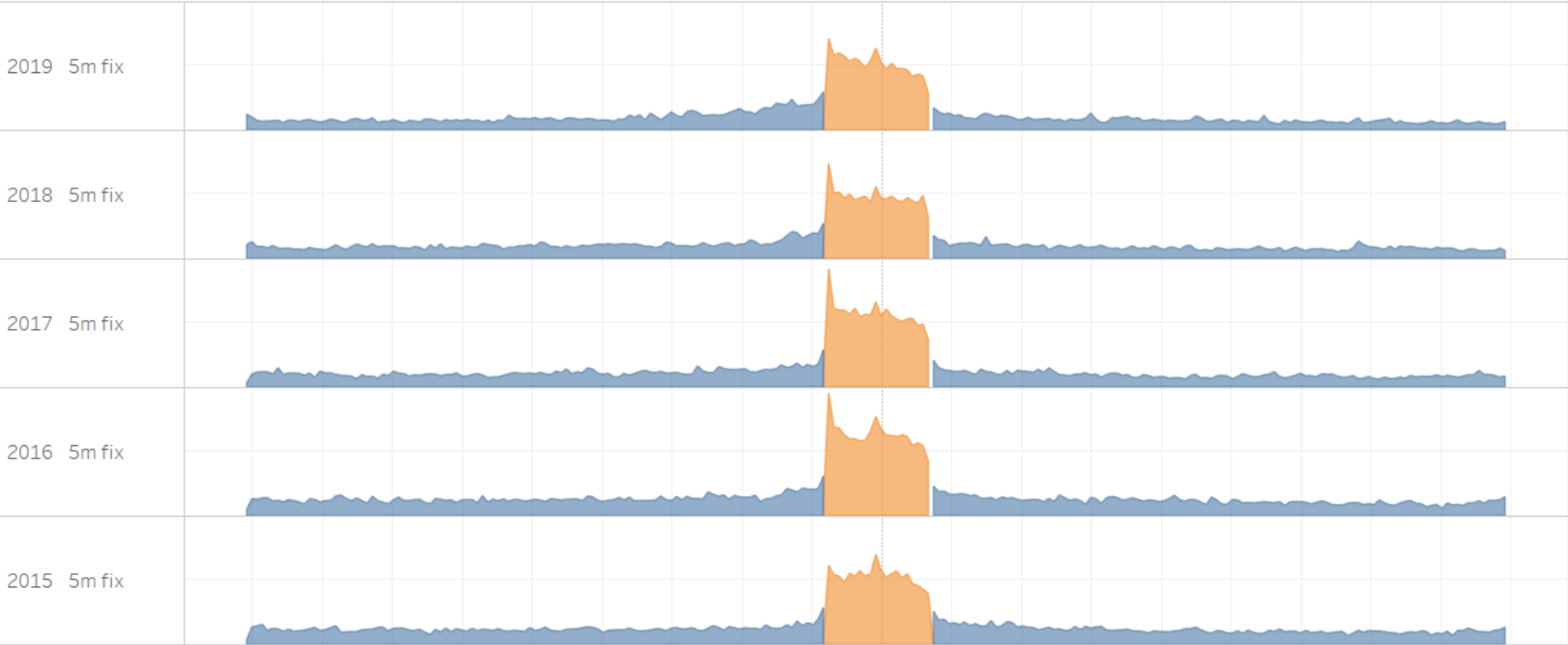
British Pound volumes on Refinitiv Matching have continued to peak during the benchmark window (5 min and 1 min fixing window)



Left:
Average quantity executed on **gbp/usd** in 15s slices from 3.30pm to 4.30pm London time

Y-axes have same scale per graph

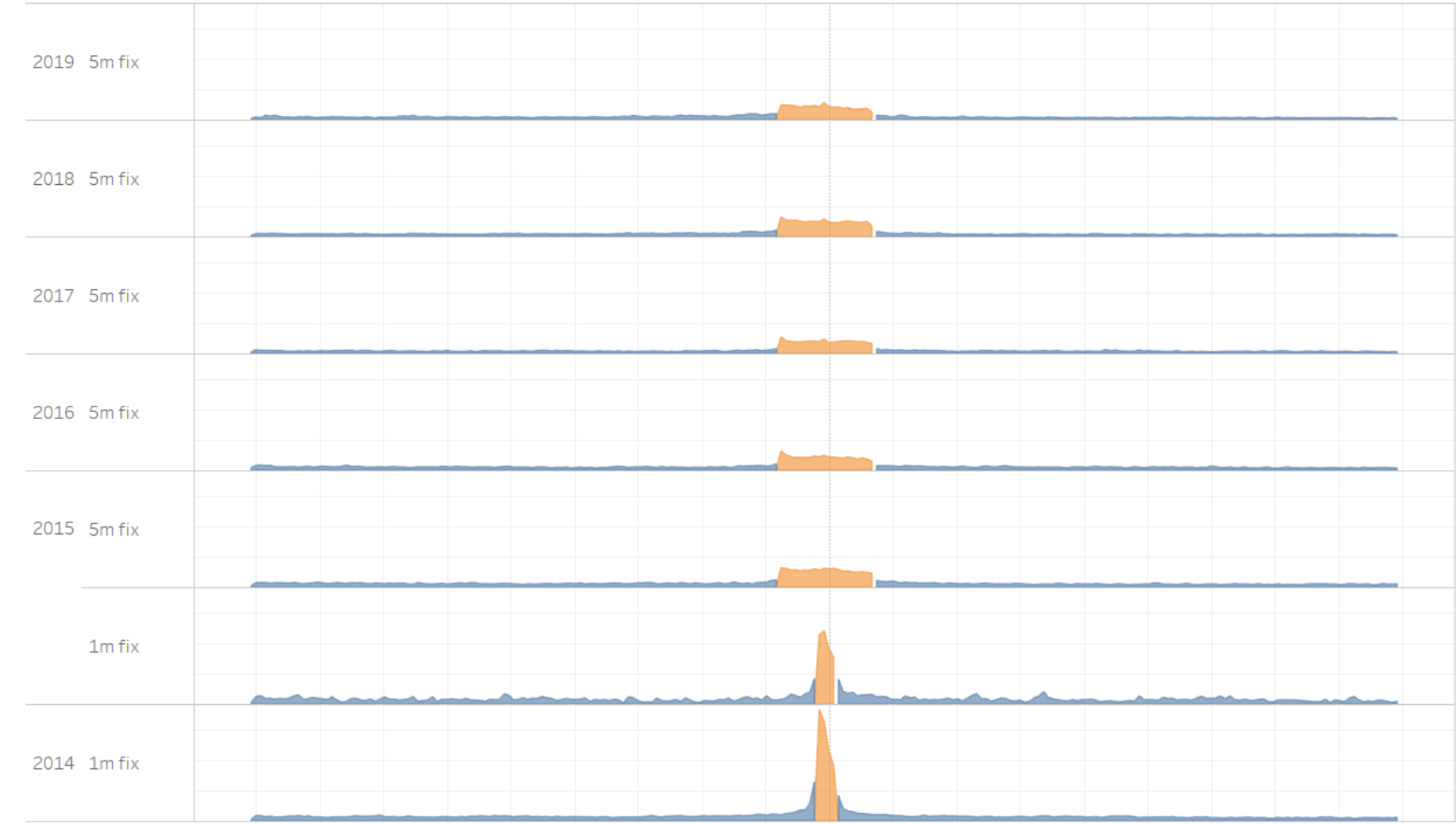
British Pound volumes on Refinitiv Matching have continued to peak during the benchmark window (5 min fixing window)



Left:
Average quantity executed on **gbp/usd** in 15s slices from 3.30pm to 4.30pm London time

Y-axes have same scale per graph

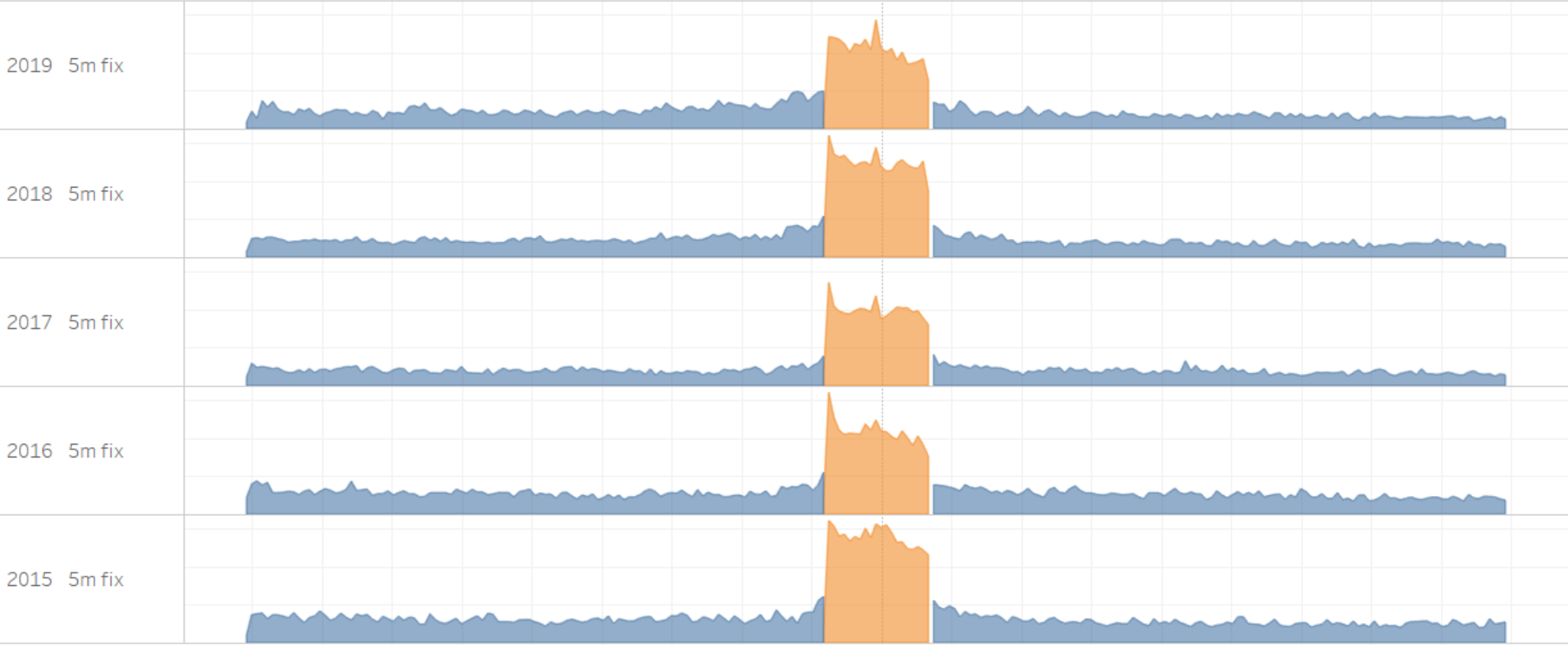
Australian Dollar volumes on Refinitiv Matching have continued to peak during the benchmark window (5 min and 1 min fixing window)



Left:
Average quantity
executed on
aud/usd in 15s
slices from 3.30pm
to 4.30pm London
time

Y-axes have same
scale per graph

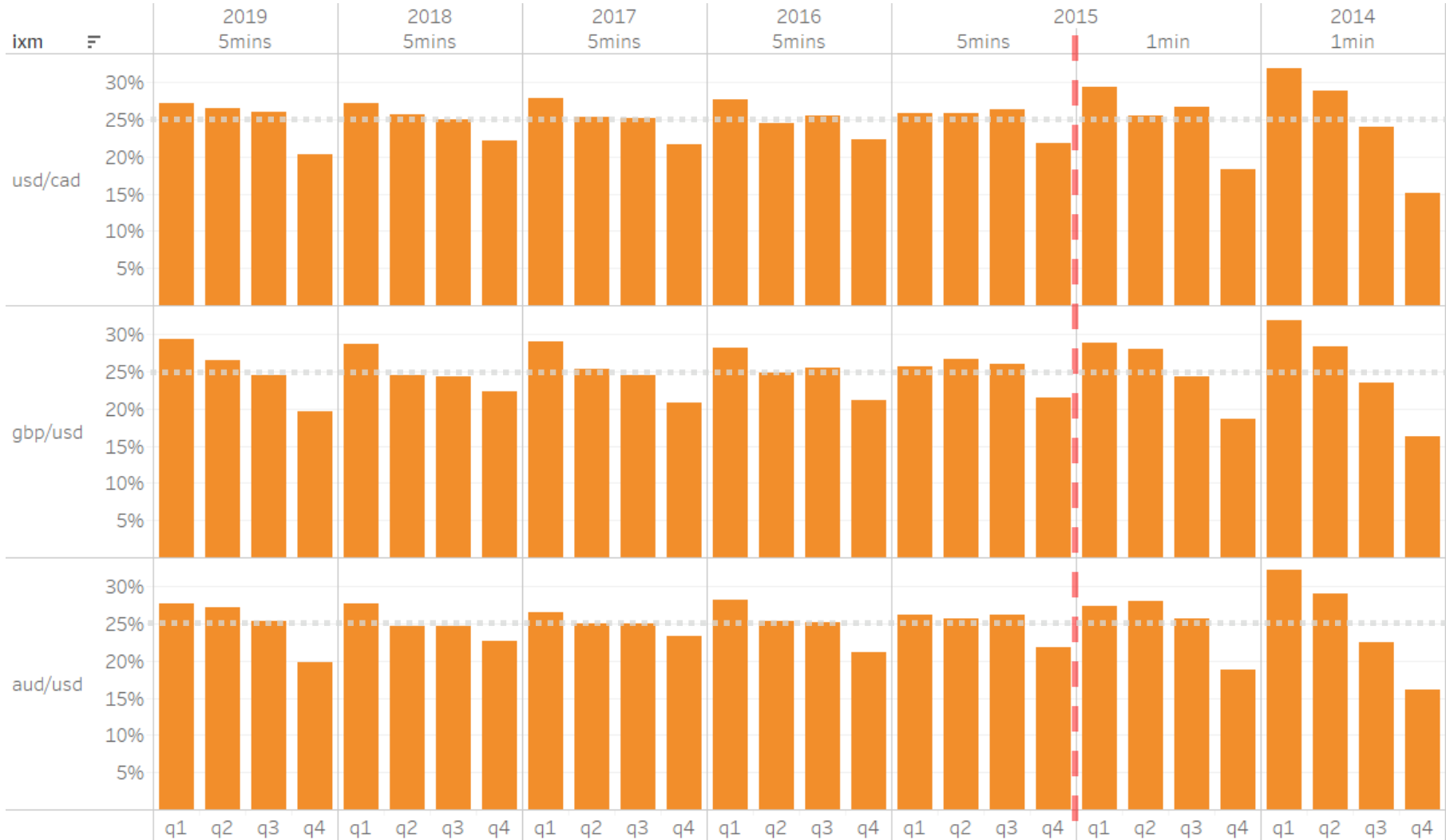
Australian Dollar volumes on Refinitiv Matching have continued to peak during the benchmark window (5 min fixing window)



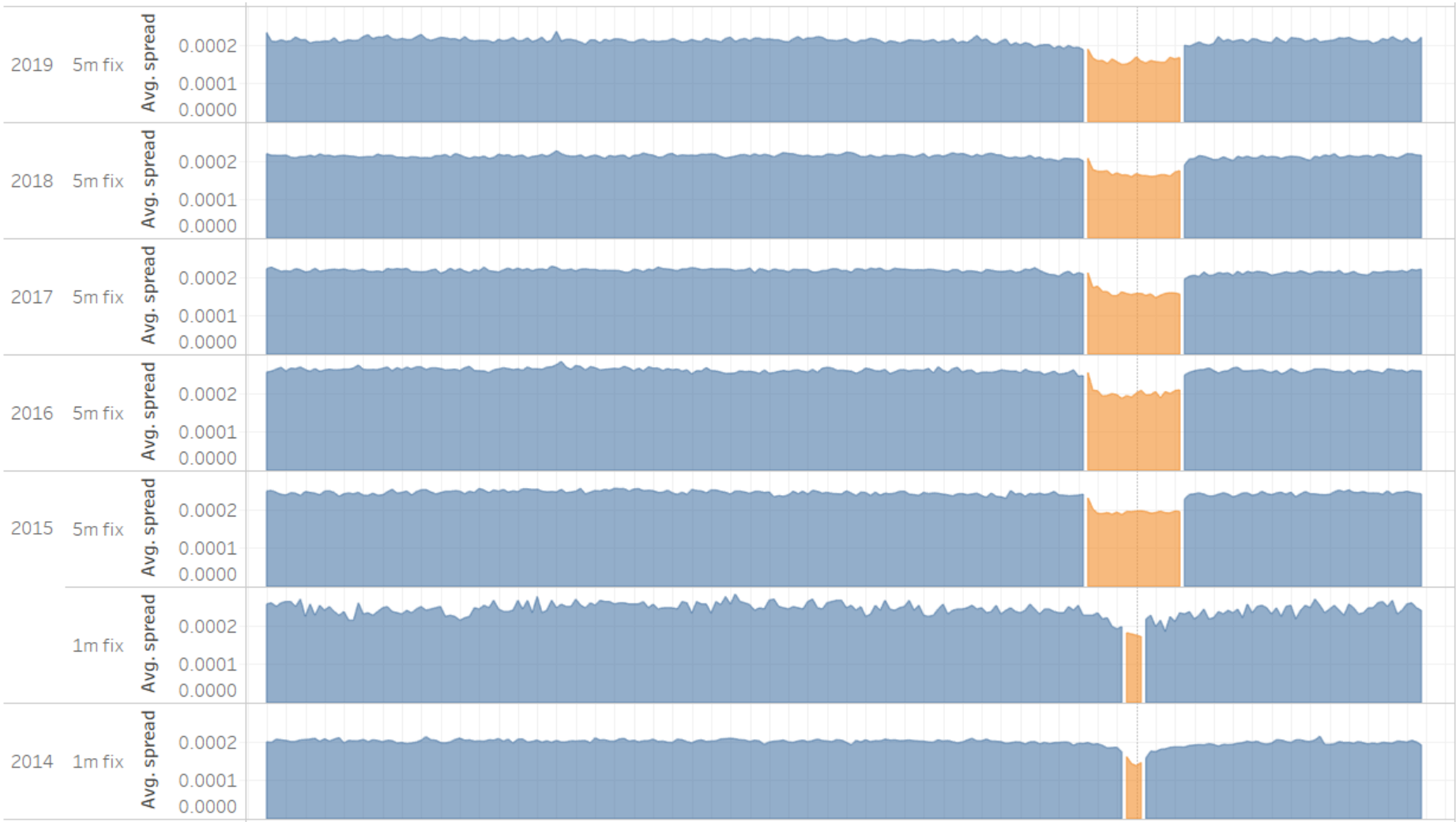
Left:
Average quantity
executed on
aud/usd in 15s
slices from 3.30pm
to 4.30pm London
time

Y-axes have same
scale per graph

Since lengthening the fix window the distribution of volume through the benchmark window has changed



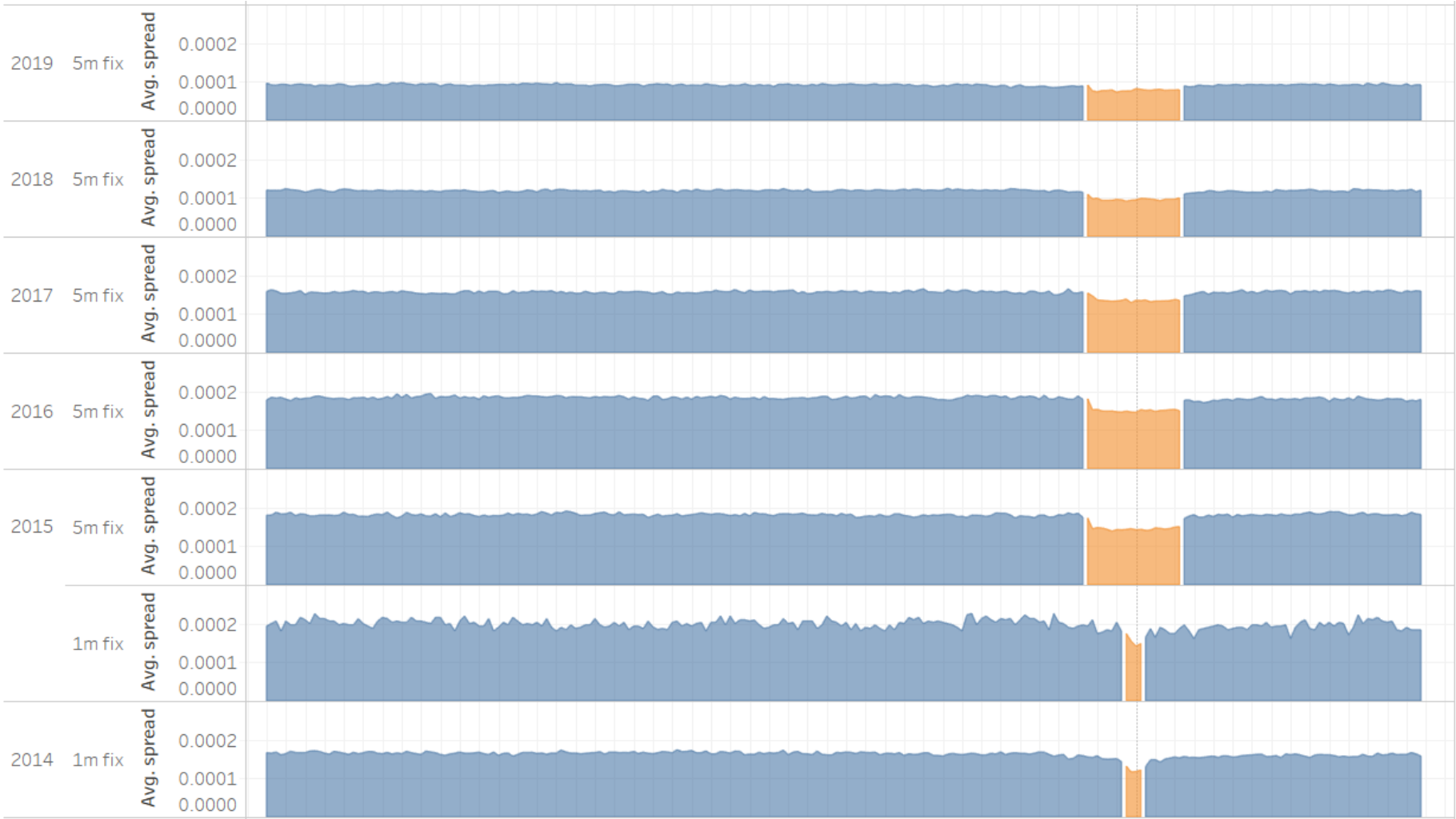
British Pound spreads on Refinitiv Matching continue to tighten during the benchmark window



Spreads at 15s intervals from 3.15pm to 4.15pm London time on **gbp/usd**

X-axis 15s slices before and after 4pm

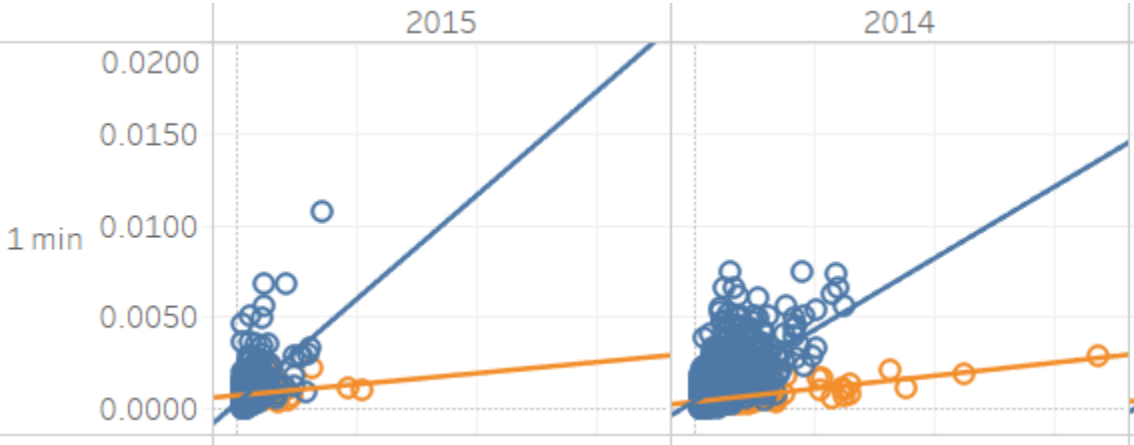
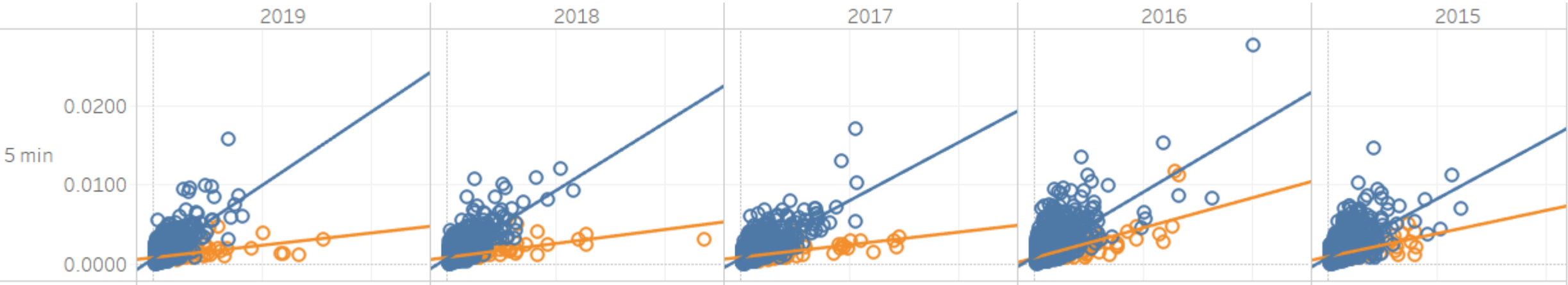
Australian Dollar spreads on Refinitiv Matching continue to tighten during the benchmark window



Spreads at 15s intervals from 3.15pm to 4.15pm London time on **aud/usd**

X-axis 15s slices before and after 4pm

Large amounts can be executed in British Pound during the benchmark window with lower market impact

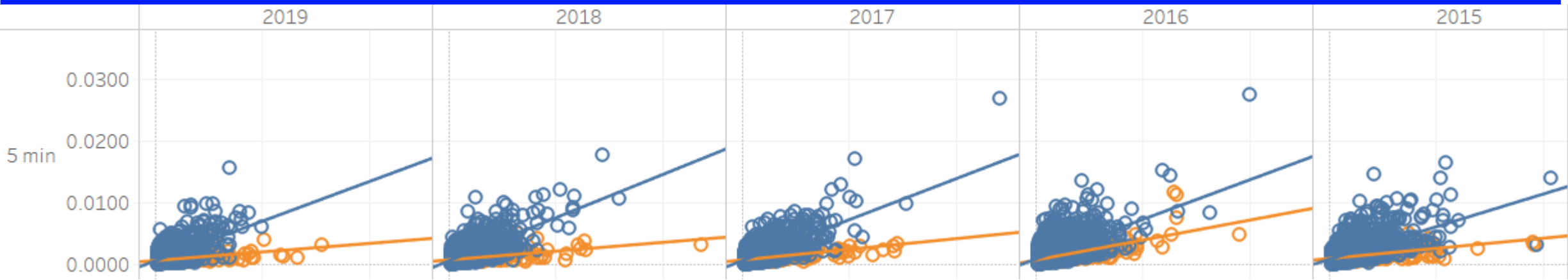


Orange: during fix
 Blue: 1 or 5 minute periods during 8am-5pm London time where >25mio executed and outside fix

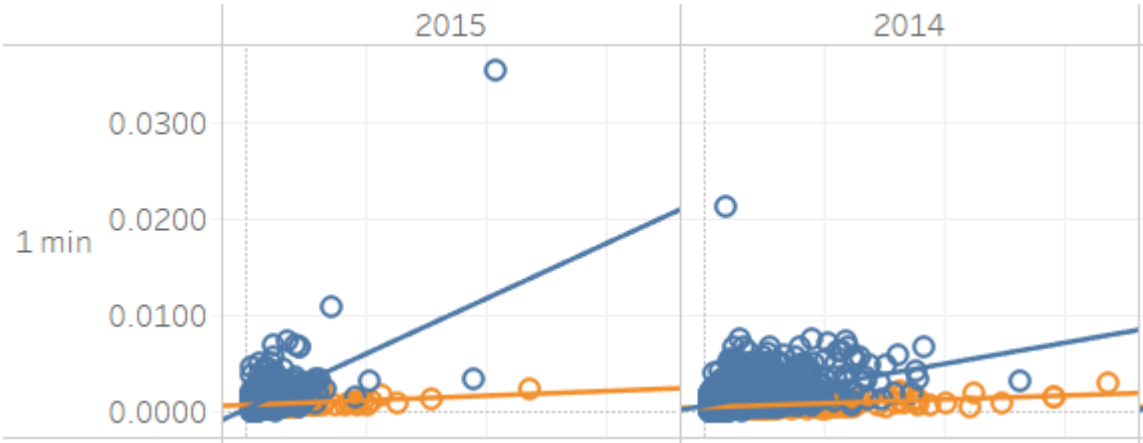
X-axis: quantities traded in each 1 min or 5min period

Y-axis: trading range for 1 min or 5 minute period

Large amounts can be executed in Australian Dollar during the benchmark window with lower market impact



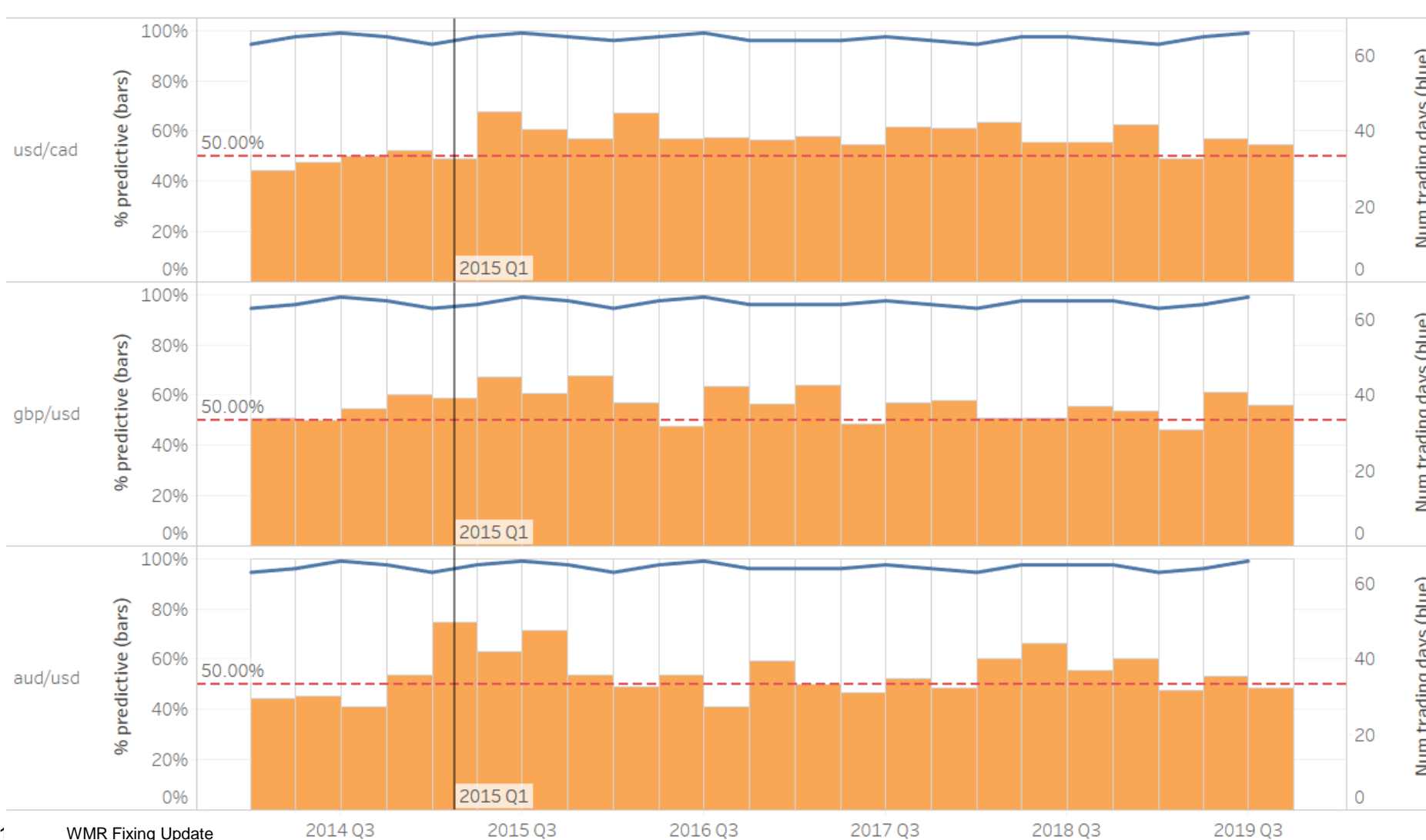
Orange: during fix
 Blue: 1 or 5 minute periods during 8am-5pm London time where >25mio executed and outside fix



X-axis: quantities traded in each 1 min or 5min period

Y-axis: trading range for 1 min or 5 minute period

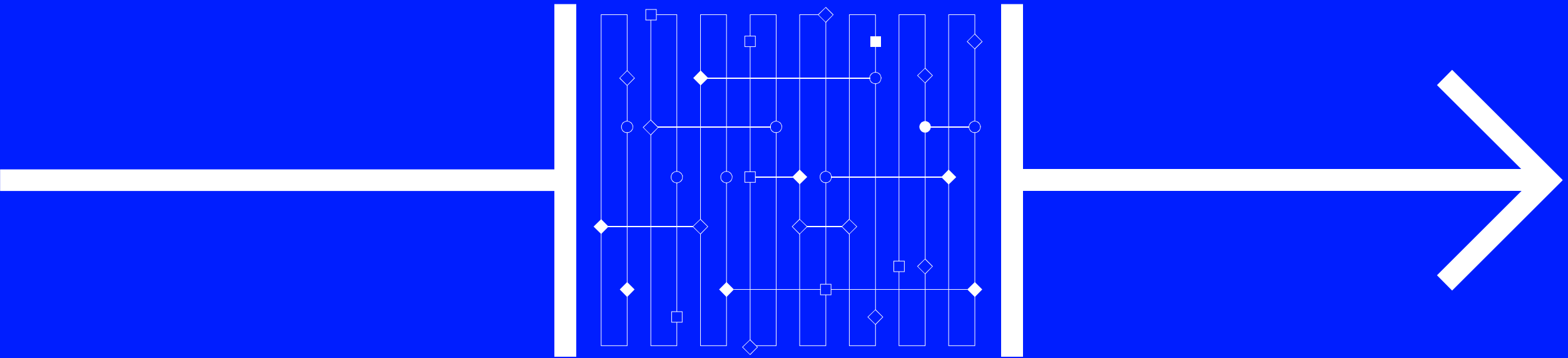
Does VWAP in the first quartile predict the final Fixing rate over the next three?



□ negatively predictive
 ■ positively predictive

Positively predictive:
upward move in first
 quarter of fix predicts
upward move in
 remaining three
 quarters

Negatively predictive:
upward move in first
 quarter of fix predicts
downward move in
 remaining three
 quarters



Questions?

Disclaimer: The information in this document is sourced from Refinitiv's Matching and FXall venues. The information is provided by Refinitiv in good faith based on information available to us in our venues. Whilst every effort has been made to ensure accuracy of the information, we take no responsibility for any reliance on the information. The information is confidential and limited to use by by ECB FXCG. No further disclosure is permitted to any other parties without express written consent of Refinitiv.