

July 2022

FX Market Structure Monthly

CHANGES IN SPREAD AND VOLATILITY FOR MAJOR MARKET PAIRS

Although the absolute moves were small, spreads and volatility widened in July. Spreads and volatility widened for 17 of the 23 pairs we track during the 12:00-16:00 GMT trading window. In the most liquid pairs, EUR.USD and GBP.USD, as well as EUR.AUD, EUR.NOK, and USD.NOK, intraday spreads widened throughout the day. Throughout July, USD.CAD was the only pair to register lower spreads. The USD.CAD spread is narrower now than three months ago.

READING THE RESULTS

In the intraday charts, the green line presents the average spread or volatility for the past 12 months, the black line is for the past three months and the blue line is for the past month. On the daily charts, the green area represents the 95th percentile confidence interval for the spread and volatility, showing the stability of the calculated median value.

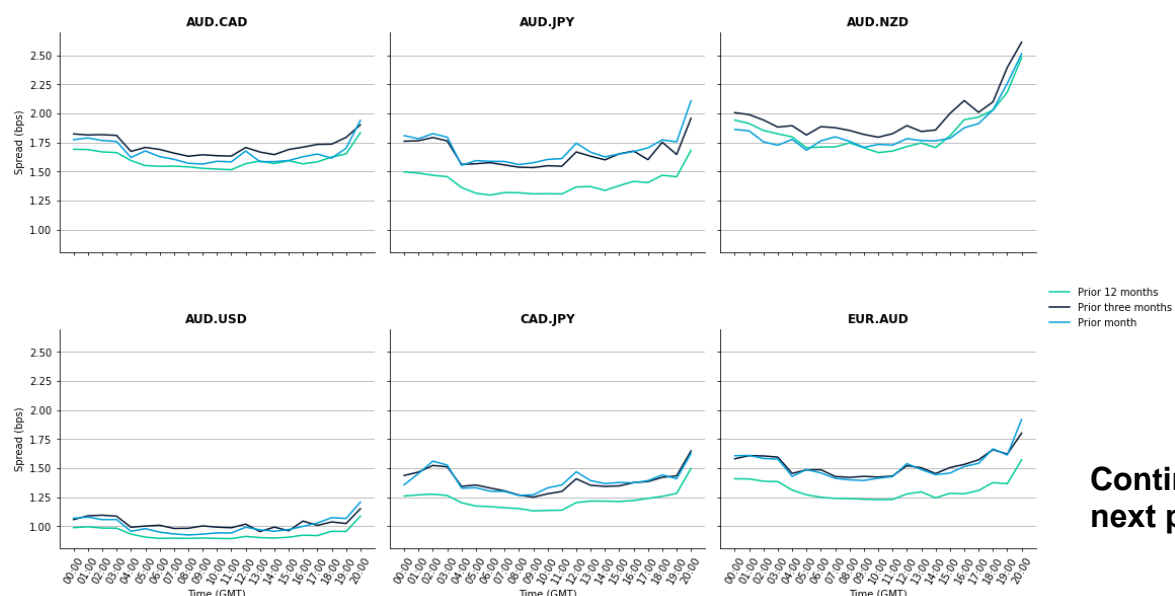
SPREADS

As spread changes were subdued this month, we decided to examine how spreads changed before the Russian invasion of Ukraine. In order to compare pre-invasion spreads with those after the initial assault, October 1, 2021 to February 23, 2022 were used as our baseline.

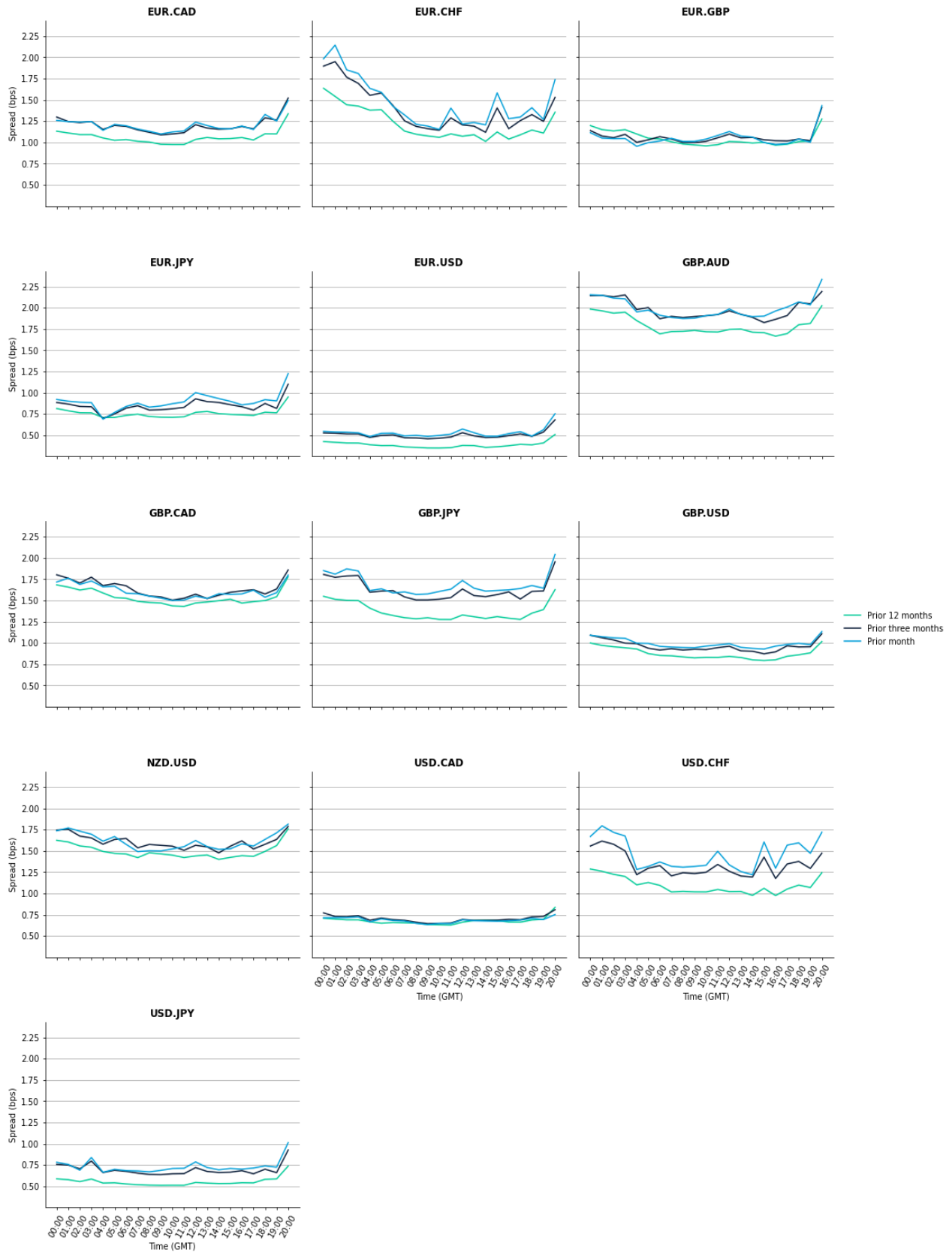
- In absolute terms, spreads for most pairs have widened by five to 20 pips. In the most liquid pairs, GBP.USD spreads widened by about seven pips, or 10%, USD.JPY spreads widened 16 pips, or 35%, and EUR.USD spreads widened 16 pips, increasing 50% from the base period.
- USD.CAD changed little after the invasion, widening less than one pip.
- In absolute terms, the four Scandinavian pairs had the widest spread, about 155 pips wider, and had the greatest percentage increase, about 60%.

G-10 Currency Pairs: Average Hourly Spread, 00:00-20:00 GMT

Comparison over the past month, three months and year



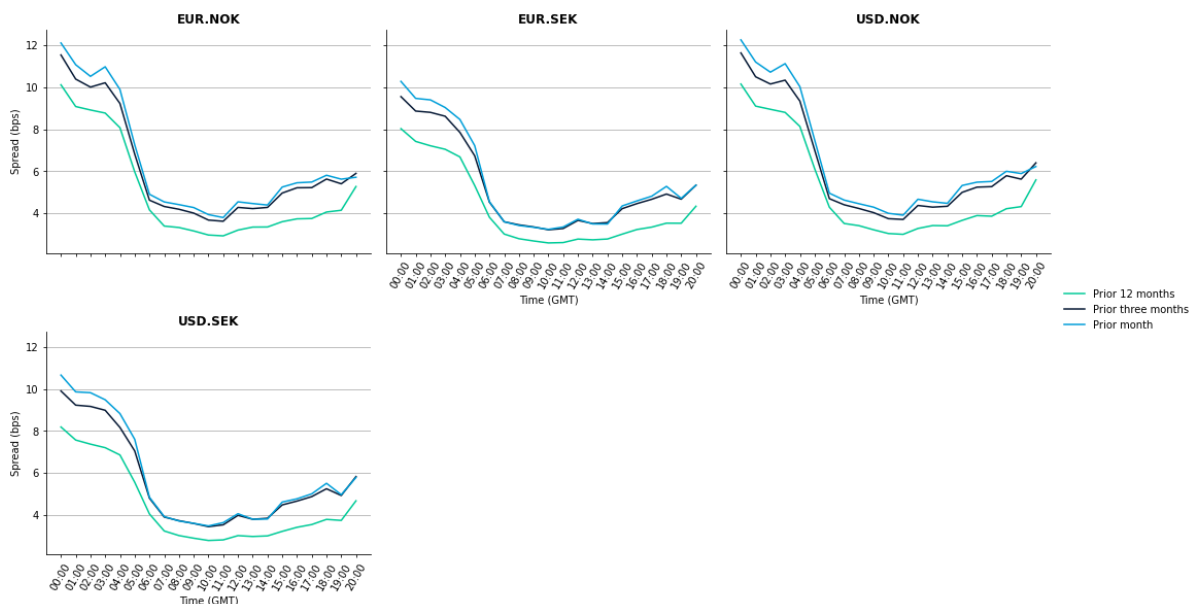
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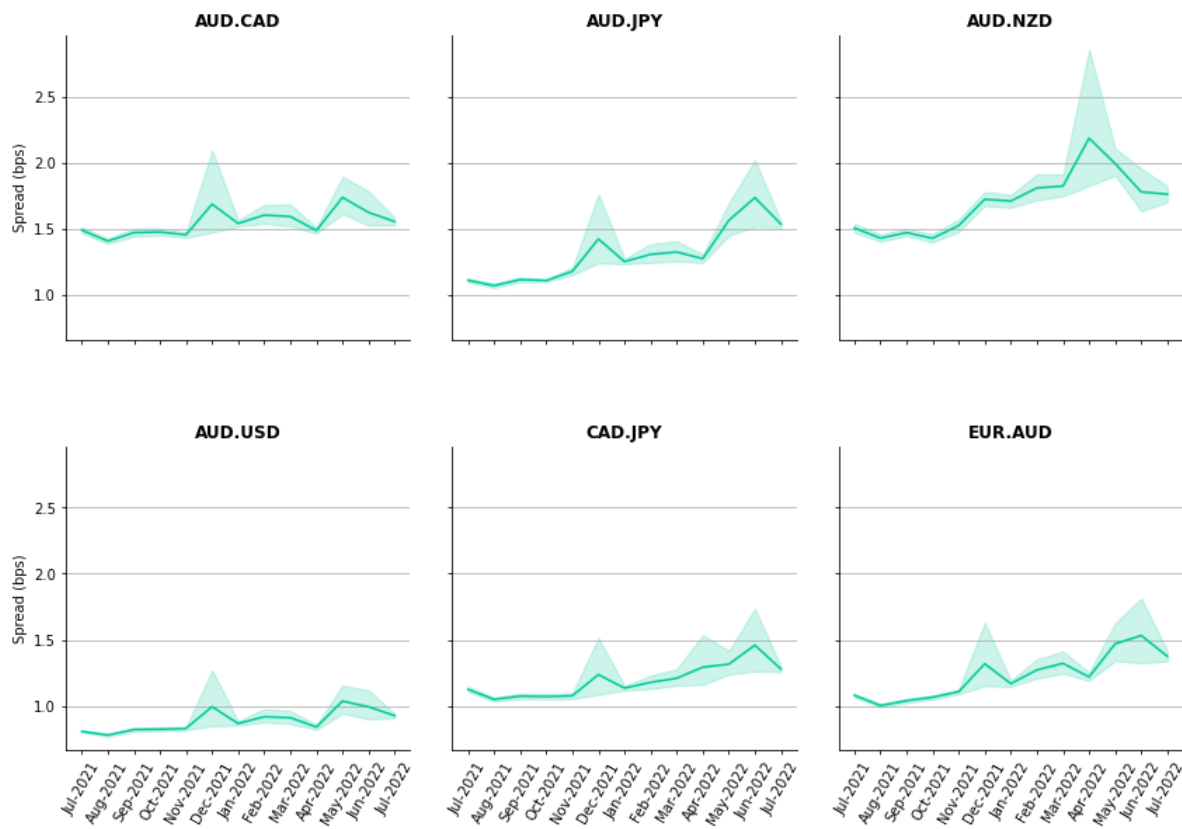
All chart sources: Virtu Financial, 2022. Spread and volatility calculations are derived from sources that Virtu believes to be reliable, but Virtu does not make any claims to its accuracy. USD.NOK, USD.SEK, EUR.NOK and EUR.SEK are shown in separate exhibits.



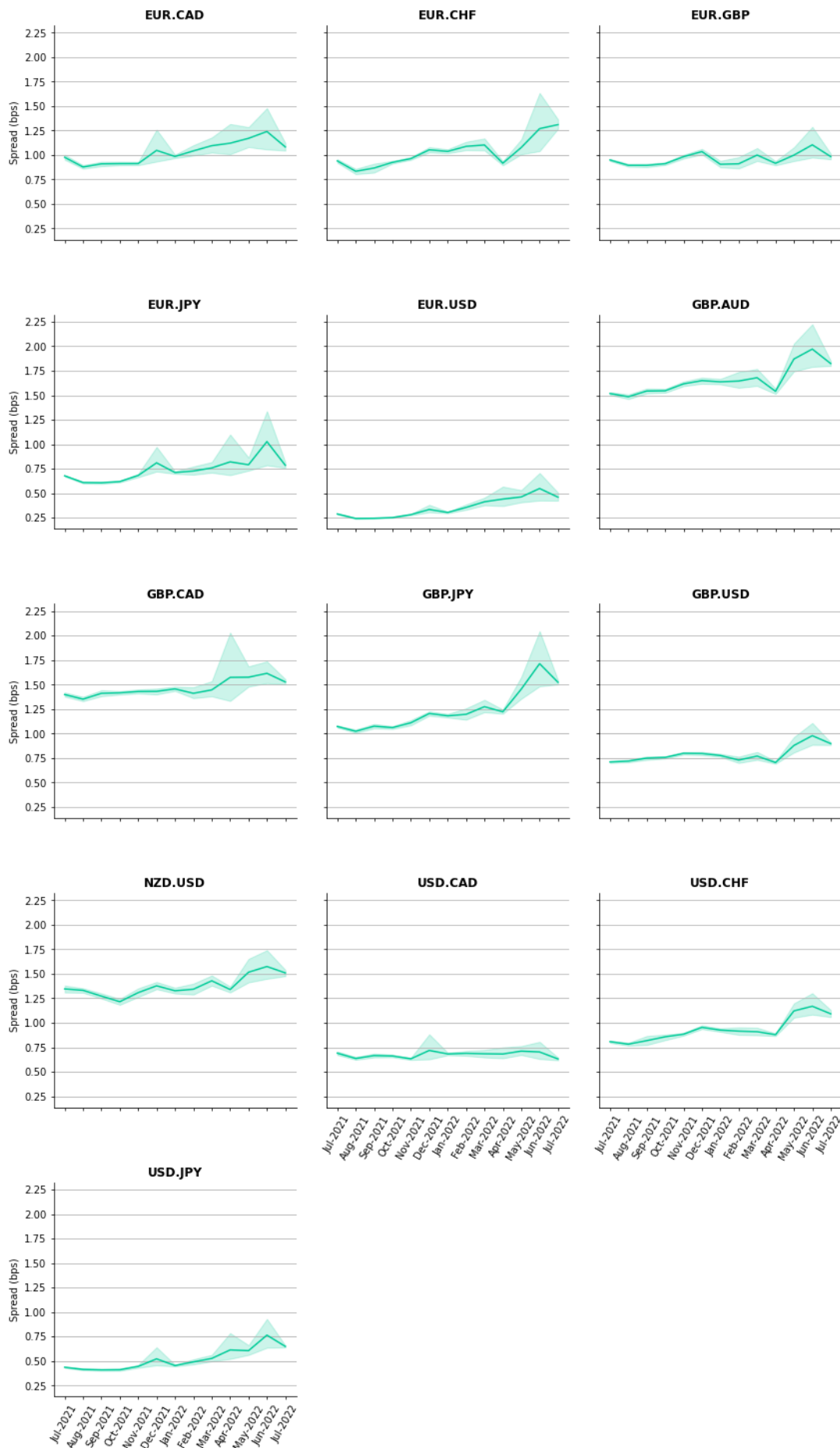
Scandinavian G-10 Currencies: Average Hourly Spread, 00:00-20:00 GMT Comparison over the past month, three months and year



G-10 Currencies: Average Daily Spread, 12:00-16:00 GMT July 2021- July 2022



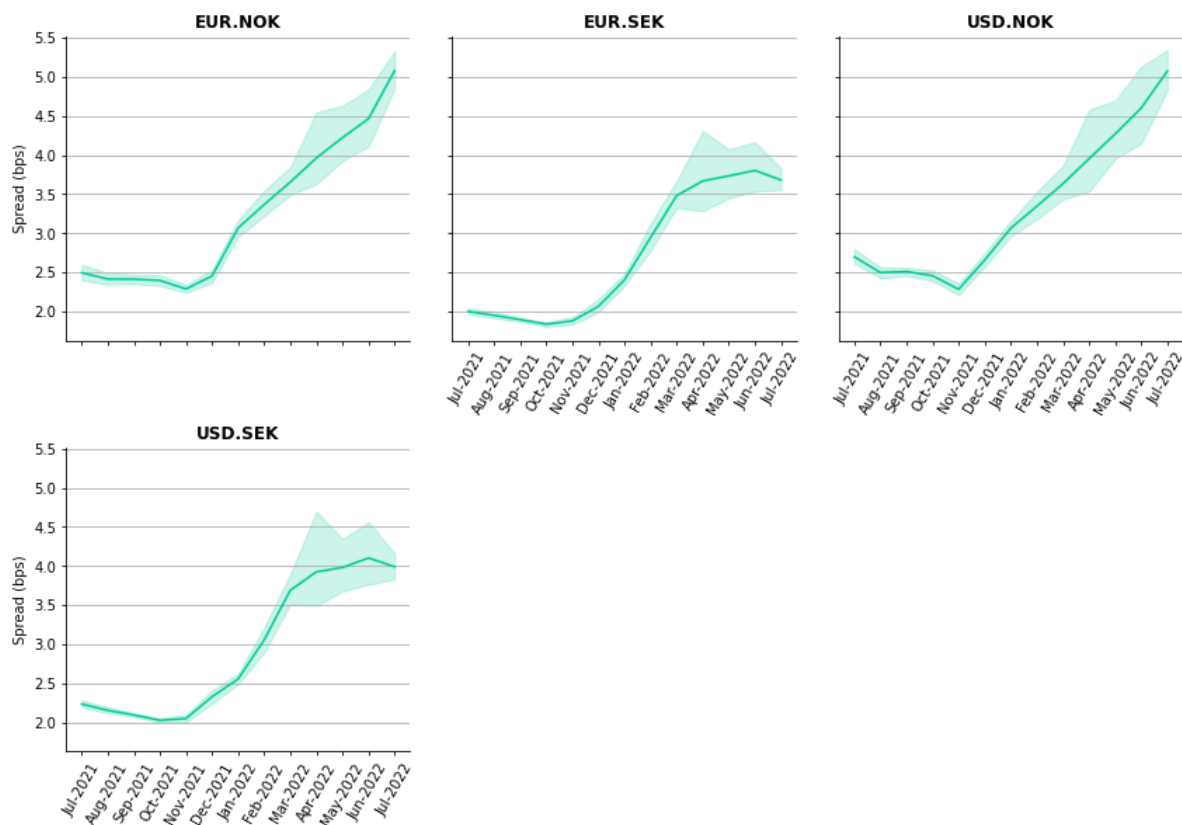
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Scandinavian G-10 Currencies: Average Daily Spread, 12:00-16:00 GMT July 2021-July 2022



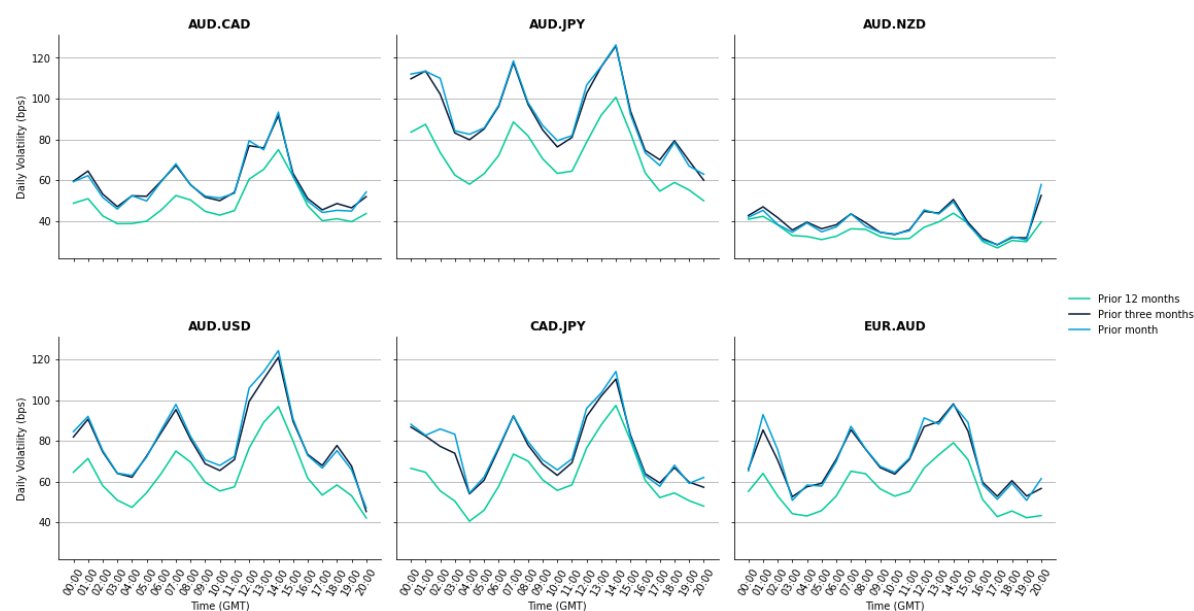


VOLATILITY

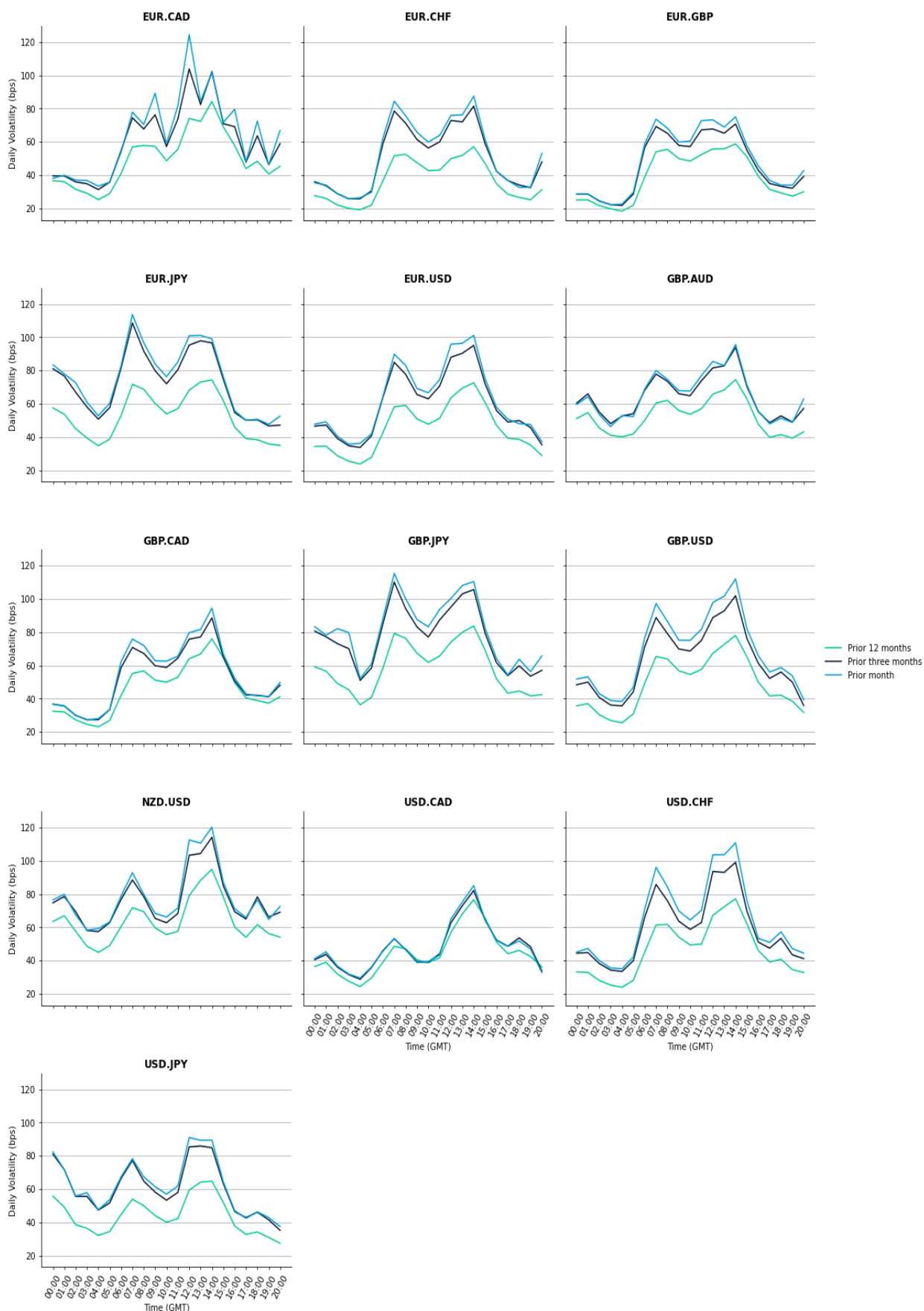
- A marginal increase in volatility occurred in July, continuing the trend of recent increases. Volatility increased for 14 of 23 pairs during the 12:00-16:00 GMT trading window. The volatility of EUR.USD and GBP.USD was the only one that increased intraday throughout all three desk hours. In contrast, USD.JPY was the only pair to record lower volatility throughout all three sessions.
- As with spreads, volatility changes were subdued this month. So, for this commentary, we measured how volatility in the 12:00-16:00 GMT trading window changed from before the Russian invasion of Ukraine. We used October 1, 2021 to February 23, 2022 as our base period to compare to post-invasion daily volatility.
- As we saw with spreads, daily volatility for GBP.USD, USD.JPY and EUR.USD widened substantially, both in absolute and relative terms. The daily volatility of GBP.USD rates increased 26 bps or 30%, USD.JPY rates increased 24 bps or 32%, and EUR.USD rates rose 32 bps or 36%.
- Before the invasion, only the AUD.NZD cross had lower intra-day volatility than the USD.JPY and EUR.USD. The daily volatility of EUR.GBP was the same as the volatility of the two major currencies. In the post-invasion period, CAD crosses with USD, AUD, and GBP all recorded lower daily volatility than USD.JPY and EUR.USD daily volatility is equal to GBP.USD.
- As we saw with spreads, USD.CAD recorded the smallest change in daily volatility, up about nine bps or 12%.

G-10 Currencies: Average Daily Volatility, 00:00-20:00 GMT

Comparison over the past month, three months and year



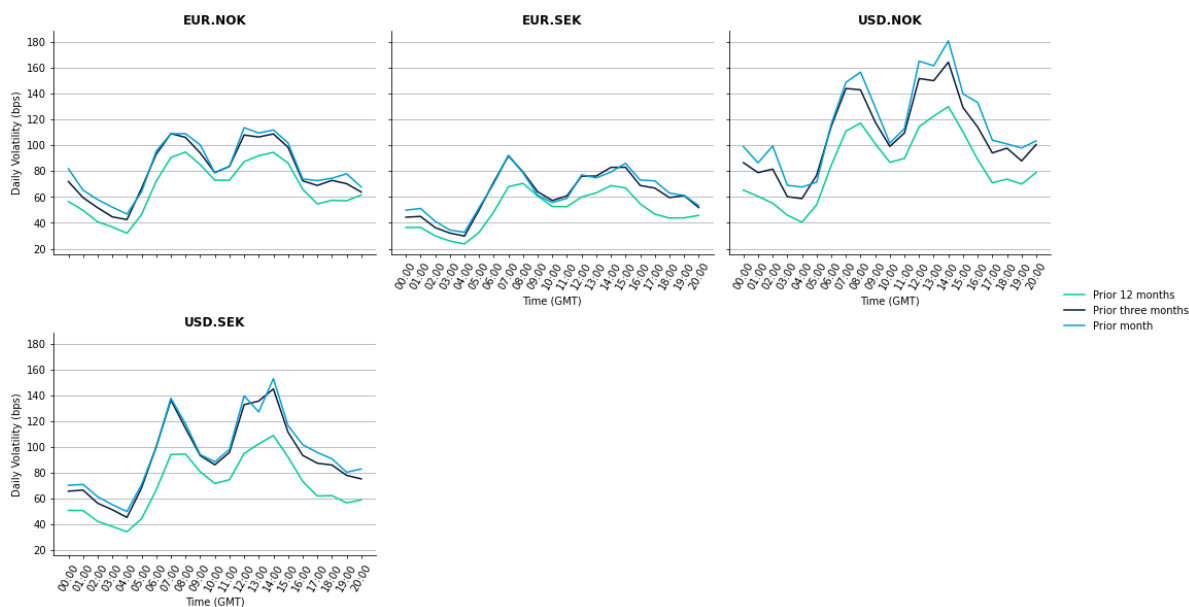
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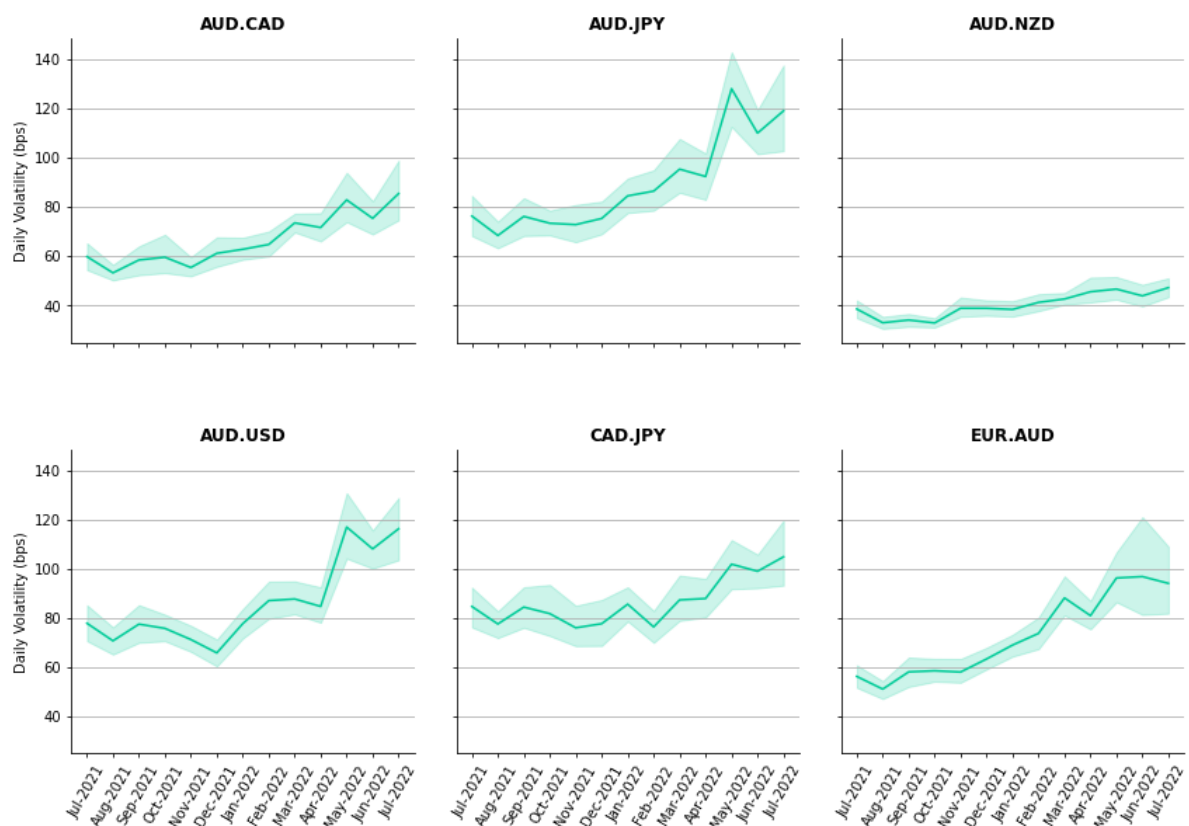
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Scandinavian G-10 Currencies: Average Daily Volatility, 00:00-20:00 GMT Past month, three months and year



G-10 Currencies: Average Daily Volatility, 12:00-16:00 GMT July 2021-July 2022



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Scandinavian G-10 Currencies: Average Daily Volatility, 12:00-16:00 GMT July 2021-July 2022



Have questions? To learn more, contact your regional Virtu Analytics representative.
AMERICAS +1.866.265.4519 | **APAC** +852.3405.3755 | **EMEA** +44.20.7670.4000
analytics@virtu.com | www.virtu.com

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