Product Profile | FX

WMR Intraday Spot Rate benchmarks - Intraday liquidity in APAC currencies

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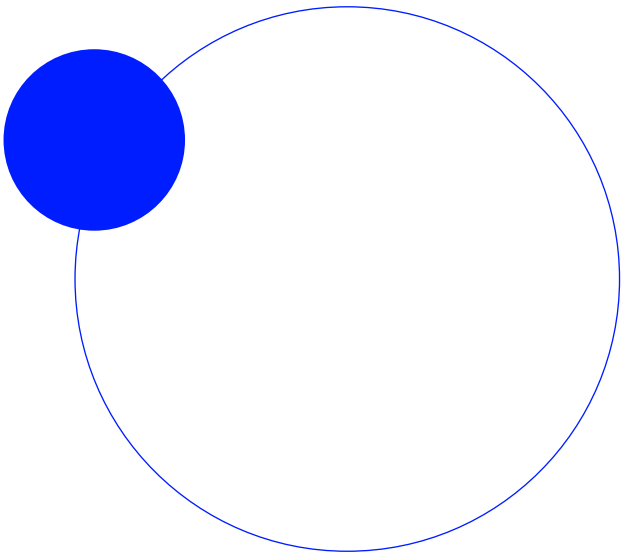
Overview

This paper examines intraday liquidity across five APAC currency pairs: AUD/USD, USD/CNH, USD/JPY, NZD/USD, and USD/SGD. It compares trade activity, bid-ask spreads, and price impact during local market hours, as at WMR Intraday spot rate calculation times, with the WMR Closing (London 4pm) benchmark. The results show that London 4pm remains the deepest liquidity point overall, with the highest trade activity, tightest spreads, and lowest per trade price impact, especially for AUD/USD and NZD/USD. For USD/CNH, USD/SGD, and USD/JPY, local windows exhibit substantial liquidity, often close to London 4pm levels. However, London 4pm becomes relatively more liquid at month end and during periods of elevated market uncertainty. The findings suggest that trading venue inputs during local times for the WMR Intraday benchmarks have high liquidity for some APAC currencies, but London 4pm remains a crucial global liquidity time, supported by concentrated benchmark flows, execution depth, and netting efficiencies.



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1. Introduction

The WMR London 4pm benchmark is one of the most important institutional reference points in global foreign exchange (FX) markets. It is widely used by index providers as an input into benchmark indices, by asset managers seeking for fund valuations, by corporates for accounting purposes, as a settlement rate for derivatives, and as a general reference for fair value in FX rate markets. Its central role reflects both the scale of benchmark-linked flows and the alignment of 4pm London with the close of major European equity markets.

However, the timing of the 4pm fix is naturally optimised for European market participants. For Asia-Pacific (APAC) regions, this window falls during late evening or overnight hours, potentially creating operational friction and limiting the ability of APAC-based firms to execute benchmark trades during local business hours. In response, industry guidance has encouraged firms in Singapore, Japan and Australia to consider executing FX transactions during local trading hours, where business requirements do not necessitate execution at the WMR Closing benchmark rates (4pm London fix). In Singapore, for example, recent industry work highlights the benefits and practical considerations of adopting Asian time-zone benchmarks for FX execution.

This paper examines the empirical liquidity profile of APAC currencies during WMR Intraday benchmark calculations across the trading day. The analysis focuses on five currencies in pairs against the United States Dollar (USD): Australian Dollar (AUD/USD), Chinese Yuan (USD/CNH), Japanese Yen (USD/JPY), New Zealand Dollar (NZD/USD), and Singapore Dollar (USD/SGD). For each pair, we compare trade activity, time-weighted bid-ask spreads, and price impact per trade across hourly WMR benchmark windows, expressed in each currency's local time.

The evidence shows that London 4pm remains the deepest liquidity time overall. Across the five currencies, it is generally associated with the highest trade activity, tightest bid-ask spreads, and reduced price impact per trade. This pattern is strongest for AUD/USD and NZD/USD, where London 4pm is clearly the deepest point of liquidity. USD/JPY also exhibits high liquidity at London 4pm, although the 10am Tokyo WMR fix, calculated from 9:52:30am to 9:57:30am, is comparably liquid.[1] For USD/CNH and USD/SGD, the picture is more balanced: local afternoon benchmark windows exhibit substantial liquidity on input trading venues, with trade activity and spreads often close to London 4pm levels.

The relative liquidity increase of London 4pm vs local is not constant over time. For AUD/USD and NZD/USD, London 4pm is persistently more liquid than the relevant local benchmark windows. For USD/CNH and USD/SGD, liquidity differences are more variable, with local windows sometimes matching or exceeding London 4pm. For USD/JPY, London 4pm was the more liquid benchmark window before 2022, but liquidity has since shifted increasingly toward the 10am local WMR fix. During periods of market stress, however, liquidity appears to concentrate more strongly at the London fix, suggesting that its role as a global focal point becomes more important when uncertainty is elevated.

This pattern is confirmed in the regression evidence. London 4pm becomes relatively more liquid on end-of-month days and when the CBOE Volatility Index (VIX) is higher.[2] Trade counts shift further toward London 4pm, and bid-ask spreads become relatively tighter at the London fix during these periods. This is consistent with the institutional role of London 4pm as a benchmark for portfolio rebalancing flows and as a trusted liquidity point during stressed market conditions.

These results do not suggest that input trading venues lack liquidity during local benchmark times. On the contrary, WMR Intraday benchmarks appear suitable for some APAC currencies, particularly USD/SGD and USD/CNH, where local afternoon liquidity is often close to London 4pm, and USD/JPY at 10am Japanese Standard Time (JST). However, London 4pm remains a crucial global liquidity time. The concentration of activity at a common fixing time can provide important benefits, including deeper execution, coordination of global benchmark flows, and netting efficiencies. Any greater use of local benchmarks, including Singapore 4pm, should therefore be assessed in this broader context: average local liquidity is important, but so too are month-end demand, stressed-market resilience, and the benefits of a single global reference point.

[1] For USD/JPY, WMR publishes more than one relevant 10am Tokyo benchmark. In this paper, unless otherwise stated, the "10am Tokyo benchmark" refers to the high-liquidity USD/JPY Tokyo benchmark calculated over the 9:52:30am to 9:57:30am JST window. WMR also publishes the standard 10am USD/JPY benchmark centred on 10:00am JST; liquidity at that window remains substantial relative to London 4pm, but is significantly lower than in the 9:52:30am to 9:57:30am window. For example, average trade frequency at the standard 10am window is approximately 50% of London 4pm, compared with around 130% at the 9:55am-centred Tokyo benchmark.

[2] The CBOE VIX is broadly used as a measure of market uncertainty or volatility. The use of the Deutsche Bank Currency Volatility Index measure does not impact the conclusions of this paper.

The remainder of the paper is organised as follows. Section 2 describes the data. Section 3 presents the intraday liquidity analysis. Section 4 examines liquidity differences over time and their relationship with month-end effects and market uncertainty. Section 5 concludes.

2. Data

Data is sourced from LSEG Tick History and LSEG Workspace. The dataset comprises best bid and offer updates sampled at 100-millisecond frequency, together with all executed trades on LSEG Matching and Electronic Broking Services (EBS), for five currency pairs: AUD/USD, USD/CNH, USD/JPY, NZD/USD and USD/SGD. WMR benchmark rates are also obtained for each currency pair. The sample period spans 2 January 2018 to 27 February 2026.

Trade activity is measured for hourly WMR benchmark windows as the number of trades executed during the corresponding 5-minute fixing interval. For USD/JPY, the analysis distinguishes between two WMR 10am benchmarks. The main USD/JPY local benchmark used in the paper is the Tokyo benchmark calculated from 9:52:30am to 9:57:30am JST, which is centred at 9:55am and exhibits higher liquidity relative to the WMR benchmark centred at 10am. To facilitate comparison across currencies and time, trade counts are expressed relative to activity at the London 4pm fix. Trade activity aggregates transactions across both LSEG Matching and EBS.

A second proxy for liquidity is the time-weighted average bid-ask spread (TWAS) calculated within each benchmark window. Bid-ask spreads are sourced from the venue that historically facilitates the greatest share of trading for each currency pair and benchmark window: EBS for USD/JPY, and LSEG Matching for AUD/USD, USD/CNH, NZD/USD, and USD/SGD. For USD/CNH, trading activity is broadly comparable across EBS and LSEG Matching.

We also employ the Amihud (2002) illiquidity ratio, a widely used measure of price impact per unit of trading activity. The ratio is calculated at the one-minute frequency and averaged across each five-minute benchmark window:

$$ILLIQ_t = \frac{1}{5}\sum_{i=1}^{5}\frac{|R_{it}|}{V_{it}}$$

where *t* denotes the benchmark window and *i* denotes each minute within that window. The absolute mid-rate log return in minute *i* for benchmark window *t* is denoted $|R_{it}|$, and V_{it} is trading activity. As transaction volume is unavailable, the number of trades is used as a proxy for volume. Assuming a trade size of USD 1 million, the measure can be interpreted as the basis-point price impact associated with a USD 1 million trade. Throughout this article the Amihud (2002) illiquidity ratio is referred to as price impact.

The two liquidity measures capture complementary dimensions of market quality. Bid-ask spreads measure the immediate transaction cost faced by market participants, while price impact more broadly captures execution costs associated with market depth. In the absence of order-book data, this price impact ratio provides a useful proxy for market depth; Ranaldo and Magistris (2022) show that it is inversely related to market depth across a range of FX currencies. Together, bid-ask spreads and price impact provide a comprehensive assessment of underlying market liquidity.

3. Liquidity across the day

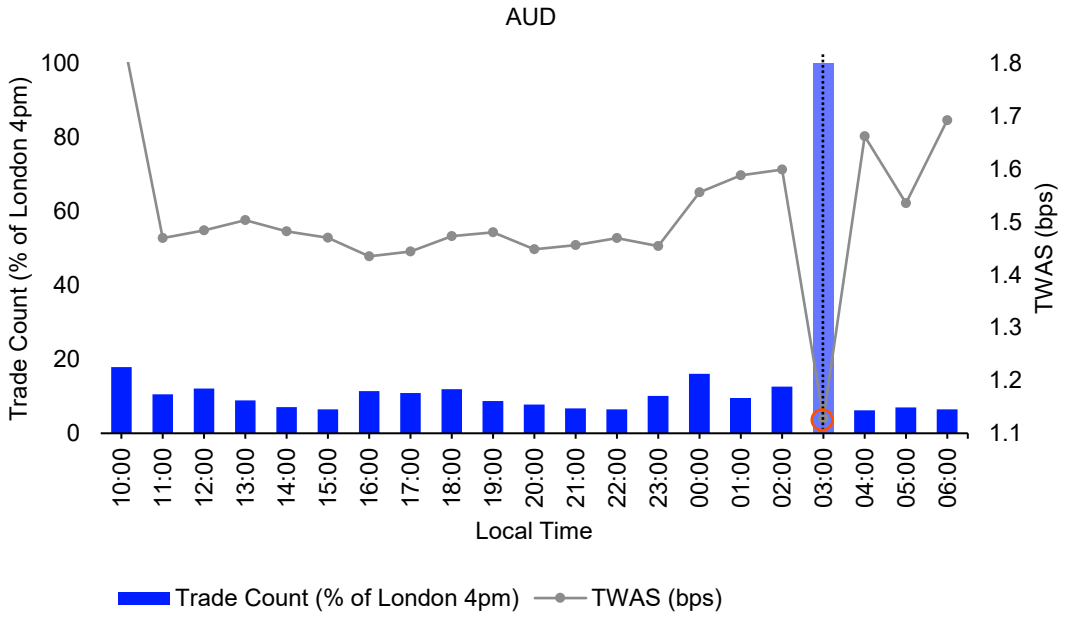
Figure 1 plots trade activity and time-weighted bid-ask spreads across benchmark windows for each currency, expressed in local time. Across all five currencies, London 4pm is associated with the highest trading activity and among the tightest bid-ask spreads, confirming its role as the leading global liquidity event.

The strength of this pattern varies across currencies. For AUD/USD and NZD/USD, London 4pm is clearly the deepest point of liquidity, with trade activity substantially exceeding that observed at local benchmark times. USD/JPY exhibits a similar pattern, although liquidity is further elevated around the 10am WMR Tokyo benchmark, reflecting the domestic importance of the Tokyo fix. For USD/JPY, trade counts are generally below 35% of London 4pm levels throughout the day. The clear exception is the 10am Tokyo WMR window, where average trade counts are around 130% of London 4pm. Trading costs are also reduced, with bid-ask spreads just under 0.8 bps, broadly in line with London 4pm.

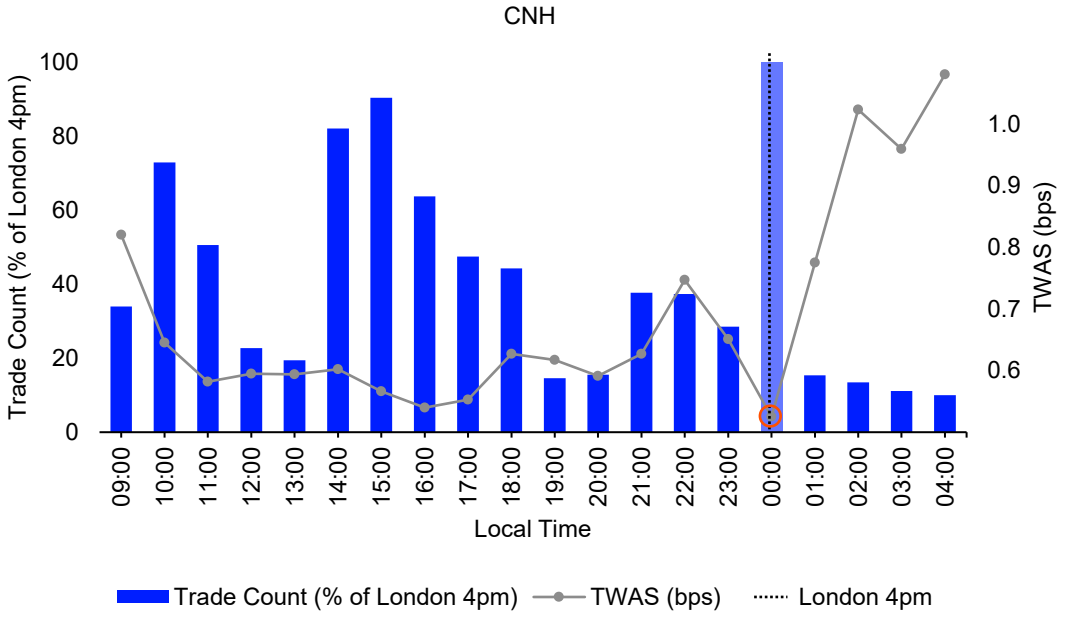
Figure 1: Trade frequency (% of 4pm) and TWAS at different times of the day

Notes: These figures plot intraday trade frequency (in percentage terms) for each currency over the period 2 January 2024 to 27 February 2026. The figures overlay a) average daily trade frequency within each 5-minute benchmark window, expressed as a share of total trading activity across all benchmark windows, and b) average daily time weighted bid-ask spread within each 5-minute benchmark window. The x-axis is shown in local time. London 4pm observations are aligned to a fixed non-BST time slot across the sample. During BST and other daylight-saving mismatches, London 4pm remains in the same bin while the corresponding local times shift to adjacent bins, enabling consistent comparison between local trading hours and the London 4pm benchmark.

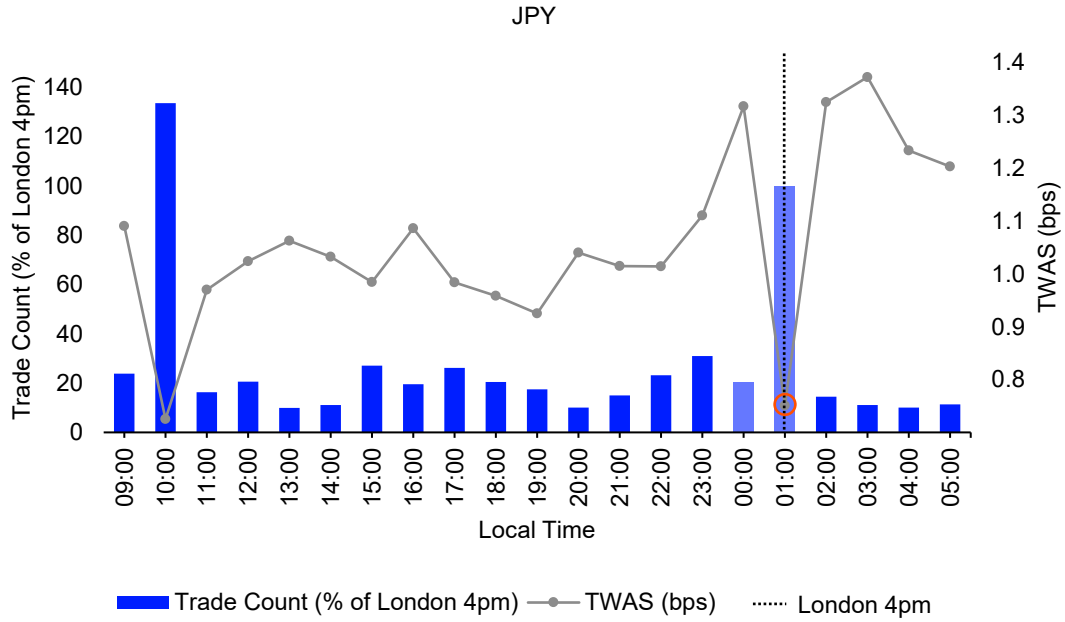
A: AUD/USD



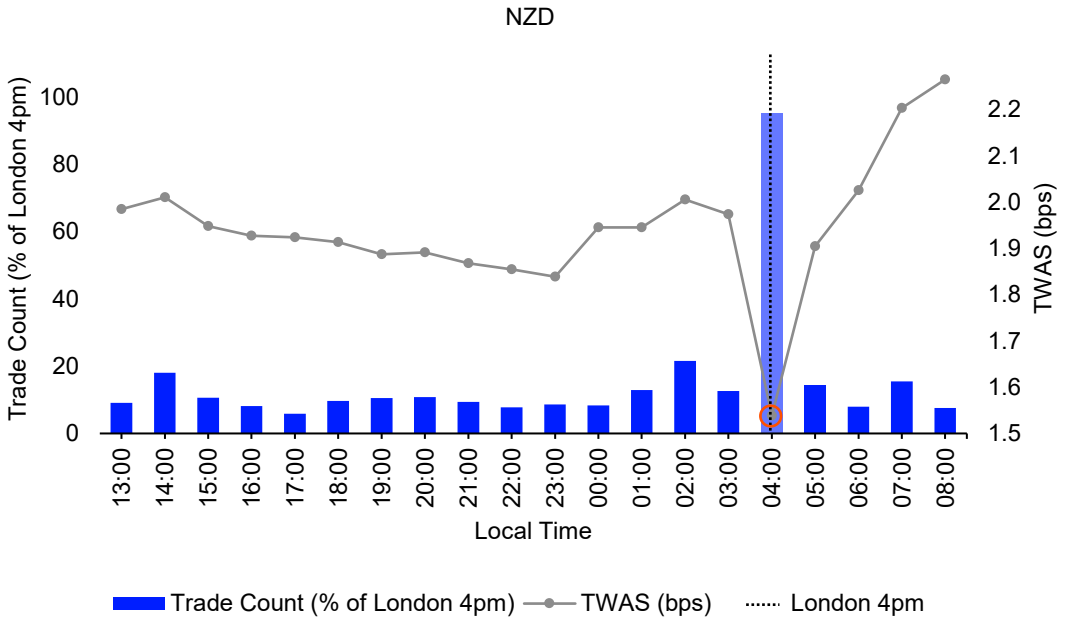
B: USD/CNH



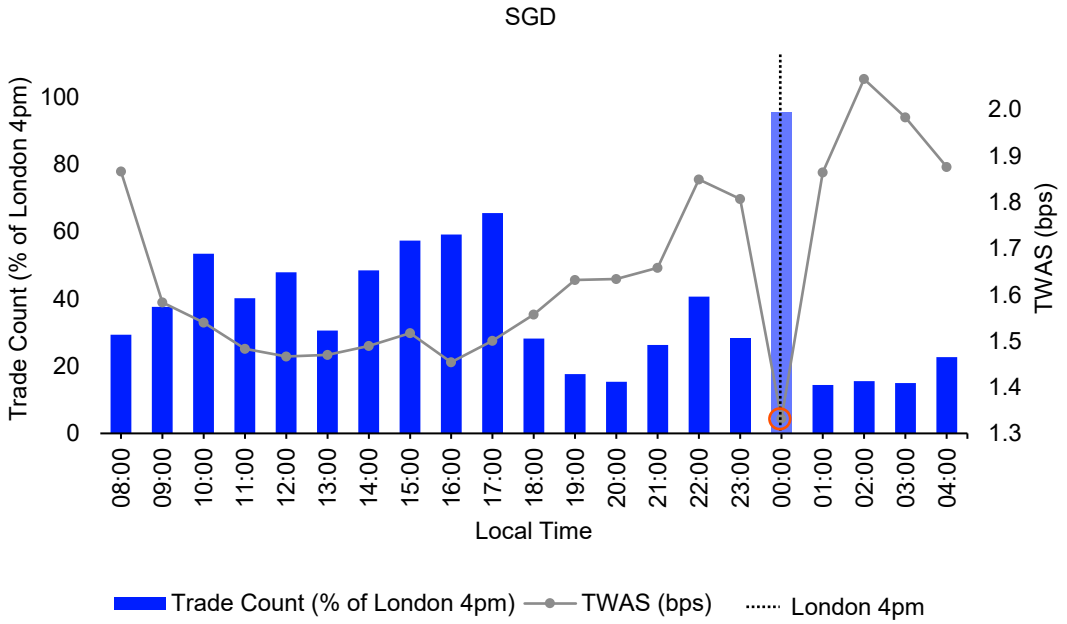
C: USD/JPY



D: NZD/USD



E: USD/SGD



Source: LSEG Tick History.

For USD/CNH and USD/SGD, the picture is more balanced. In USD/SGD, benchmark windows at 3pm, 4pm, and 5pm local time each exhibit average trade activity exceeding 60% of that observed at London 4pm. For USD/CNH, benchmark windows at 2pm, 3pm, and 4pm local time display a similar level of activity. Bid-ask spreads tell a comparable story. Average spreads at Singapore 4pm are within 0.1 basis points of those observed at London 4pm, while spreads at China 4pm are within 0.02 basis points on average.

Figure 2 reinforces these findings. Price impact per trade is lowest at the London 4pm benchmark and broadly comparable to local afternoon levels for USD/CNH and USD/SGD. This suggests that a given trade has a larger price impact outside the London 4pm window for AUD/USD, NZD/USD, and USD/JPY, whereas price impact remains similar across benchmark times for USD/CNH and USD/SGD.

One possible explanation for the lower price impact per trade at the London 4pm benchmark is the concentration of liquidity around the fixing window. This is supported by relatively price-insensitive demand from funds managing FX exposures that are valued or hedged against the WMR Closing Rates at London 4pm. A similar concentration of liquidity is observed around equity market closes, although the underlying drivers can differ.[3]

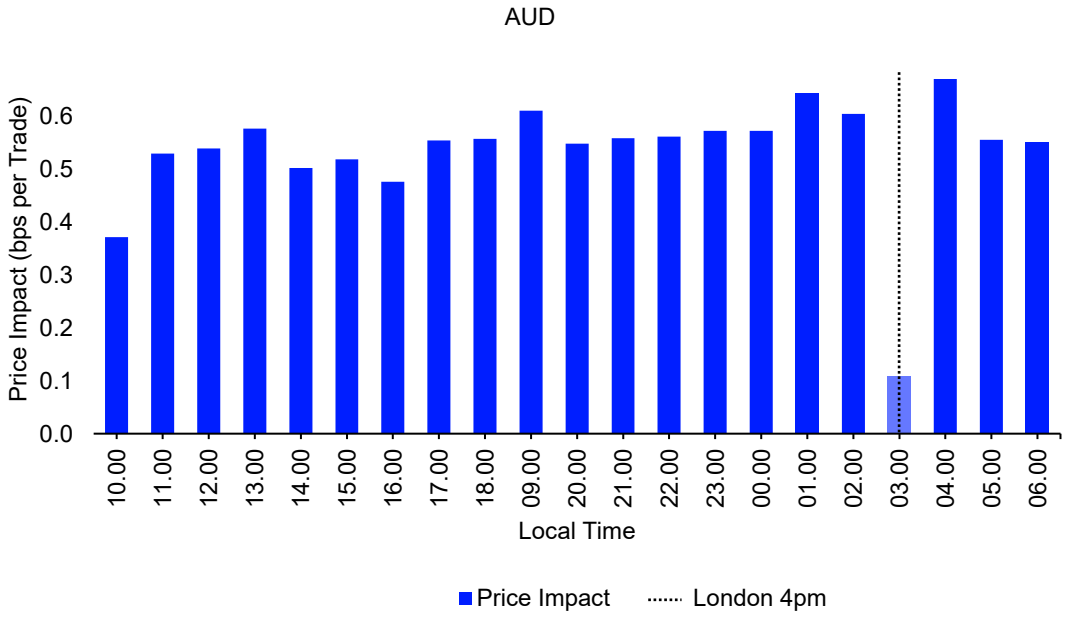
For AUD/USD, the estimated price impact is approximately 0.1 bps per trade at London 4pm, compared with more than 0.3 bps at other times of day. For NZD/USD, the estimated impact is around 0.3 bps at London 4pm and exceeds 0.6 bps elsewhere. In contrast, USD/CNH and USD/SGD exhibit impacts of roughly 0.25 bps at London 4pm and only slightly higher levels, around 0.3 bps, throughout the local afternoon. For USD/JPY, price impact is 0.12 bps per trade at London 4pm, 0.1 bps per trade at 10am JST, and above 0.3 bps per trade at all other hourly WMR fixes.

These findings suggest that, despite the time-zone misalignment, London 4pm remains institutionally important for APAC currencies. However, they also indicate that meaningful liquidity exists during local trading hours, particularly for USD/CNH and USD/SGD, and USD/JPY around the 10am JST WMR fix. While London 4pm generally offers the deepest liquidity, the differences relative to local benchmark windows are often modest for these currencies.

Figure 2: Price impact at different times of the day

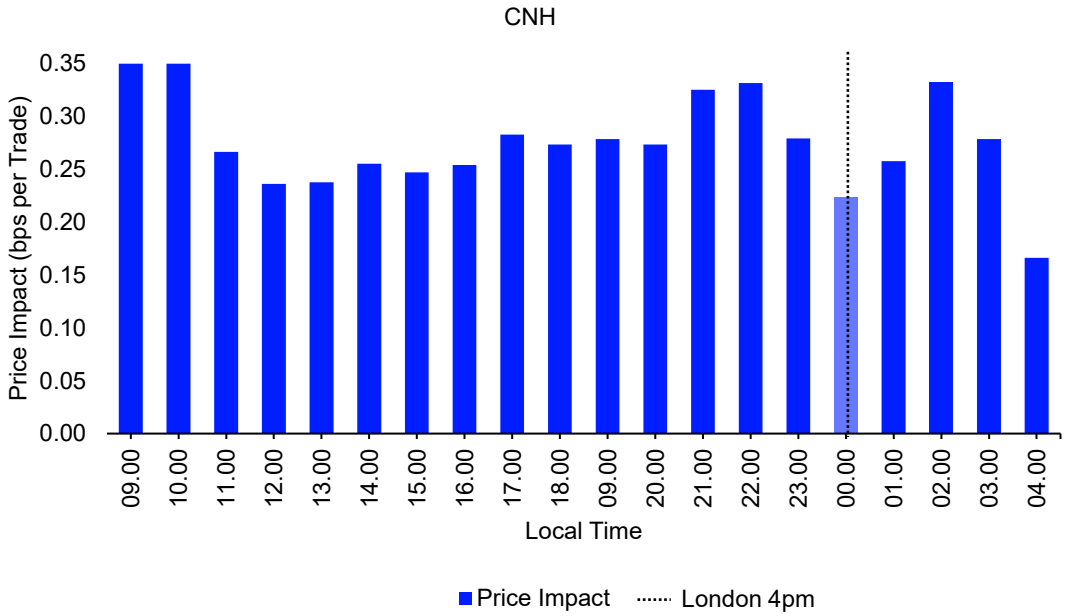
Notes: These figures plot the average price impact (in bps) per trade within each 5-minute benchmark window time for each currency over the period 2 January 2024 to 27 February 2026. The x-axis is shown in local time. London 4pm observations are aligned to a fixed non-BST time slot across the sample. During BST and other daylight-saving mismatches, London 4pm remains in the same bin while the corresponding local times shift to adjacent bins, enabling consistent comparison between local trading hours and the London 4pm benchmark.

A: AUD/USD

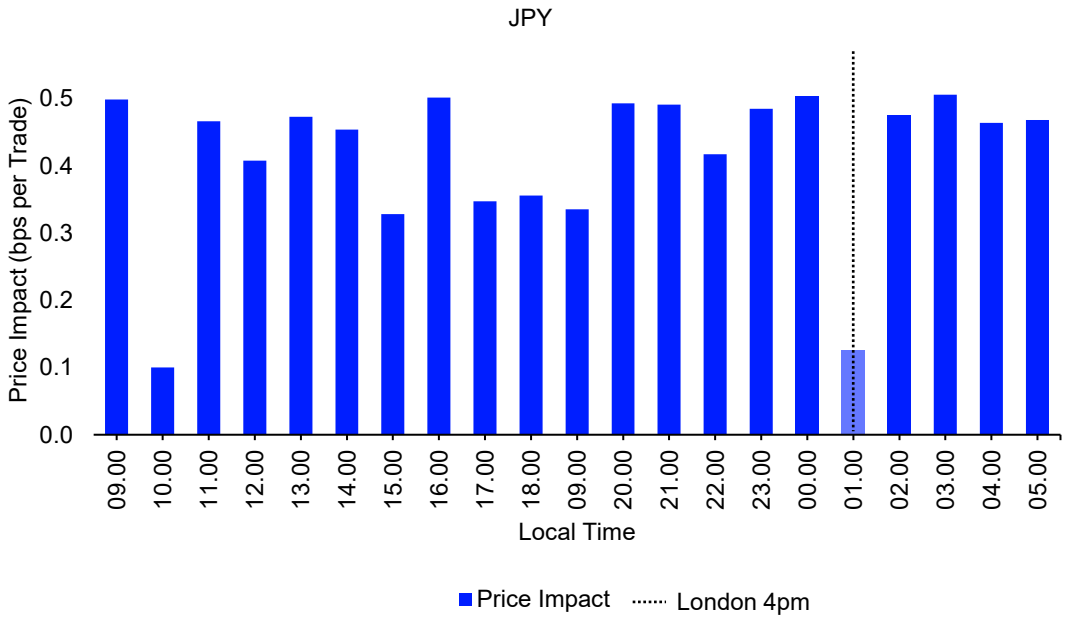


[3] For an in-depth analysis of the mechanisms through which market closures can coordinate and concentrate liquidity, see Blonien and Ober (2026). Ultimately, these effects are driven by price insensitive trading demand, which carries over to the WMR Closing Rates (London 4pm).

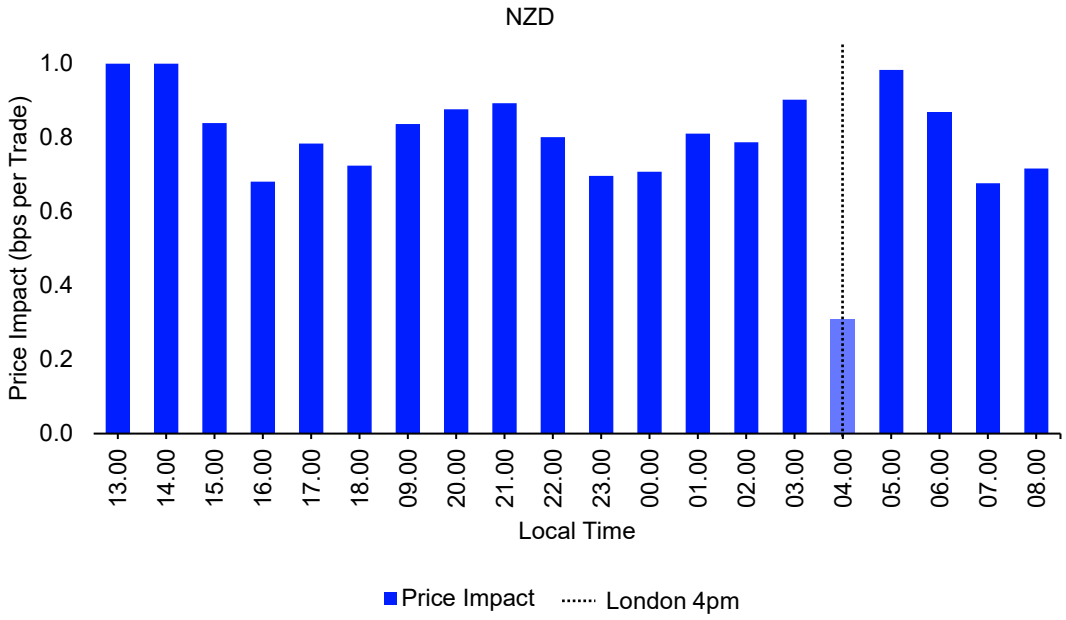
B: USD/CNH



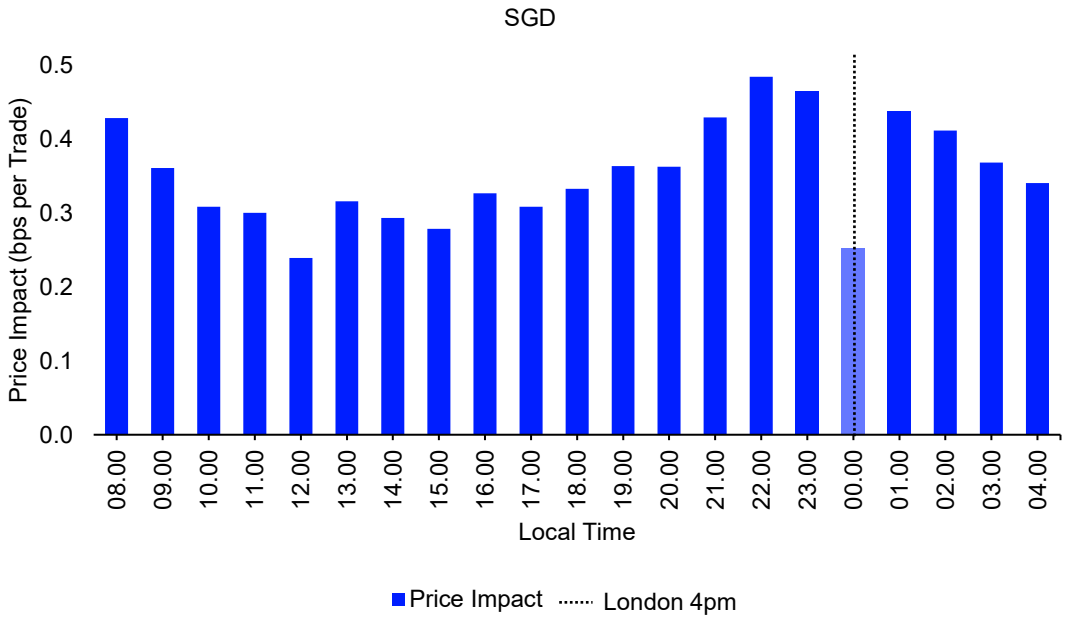
C: USD/JPY



D: NZD/USD



E: USD/SGD



Source: LSEG Tick History.

4. Liquidity Differences over time

Figures 3 and 4 examine how liquidity differences between local benchmark windows and London 4pm evolve through time. Figure 3 plots the difference in trade activity between a local benchmark window and London 4pm using a 30-day rolling average, while Figure 4 presents the corresponding comparison for time-weighted bid-ask spreads. To align with recent industry discussions around Asian time-zone benchmarks, the local benchmark window is defined as 4pm local time for AUD/USD, NZD/USD, USD/CNH, and USD/SGD. For Japan, the local benchmark is the USD/JPY Tokyo benchmark calculated from 9:52:30am to 9:57:30am JST. The underlying trade count differences are not reported due to data sharing restrictions; the figures focus on relative trends through time.

Three findings emerge. First, there is little evidence of a time trend in relative liquidity over the sample period for four of the five currencies. London 4pm consistently exhibits higher trade activity and narrower bid-ask spreads than local benchmark windows for AUD/USD and NZD/USD. While there are occasional periods in which local liquidity approaches London 4pm levels, the relative ranking remains broadly stable through time. For USD/JPY, trade counts at the 10am WMR Tokyo benchmark have exceeded London 4pm levels since around 2022, alongside a relative tightening in bid-ask spreads.

Second, the results for USD/CNH and USD/SGD are more balanced. Relative liquidity fluctuates considerably, with local benchmark windows often matching or exceeding London 4pm in both trade activity and bid-ask spreads. This is consistent with the evidence in Figure 1 that local afternoon trading sessions in China and Singapore provide meaningful liquidity.

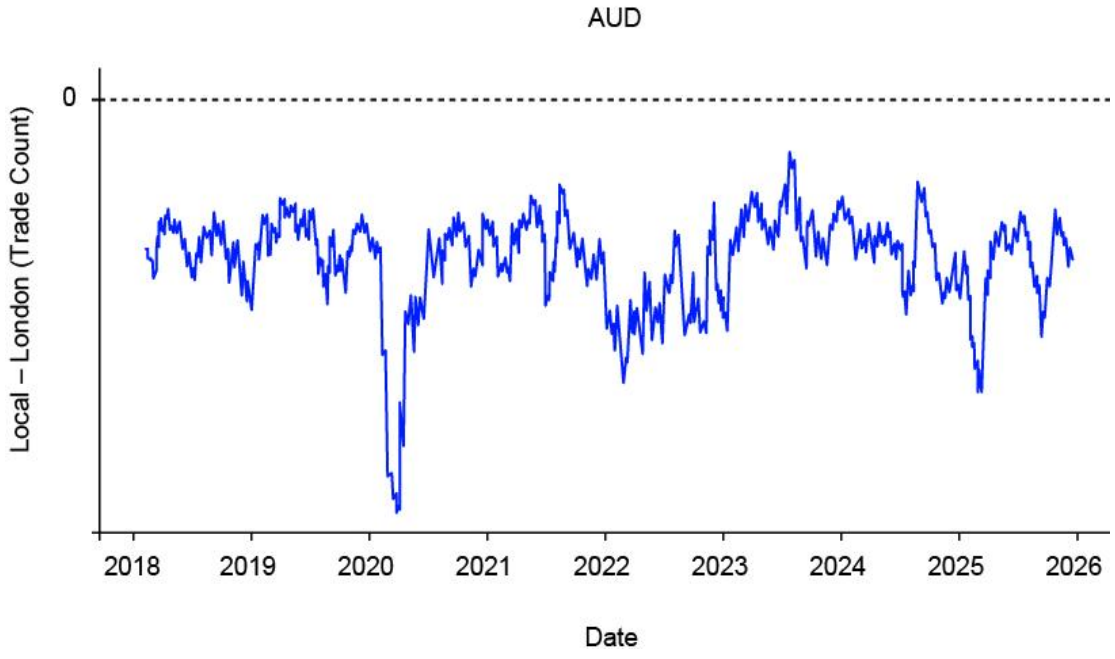
Third, several episodes stand out in which liquidity differentials between local benchmark windows and London 4pm widen sharply. The clearest example is the Covid market stress period, when the gap in trading activity increased materially for AUD/USD, NZD/USD, and USD/JPY, alongside larger bid-ask spread differentials for AUD/USD and USD/JPY. A similar decline in local trading activity was observed for AUD/USD and NZD/USD in early 2025 amid elevated political uncertainty and tariff risks. USD/CNH also experienced a temporary widening in local bid-ask spreads relative to London 4pm in Q4 2022 (Figure 4), potentially reflecting China-specific policy and economic uncertainty, including developments around the zero-Covid policy and rising US-China tensions.

Taken together, these episodes suggest that the relative importance of London 4pm may increase during periods of market stress.

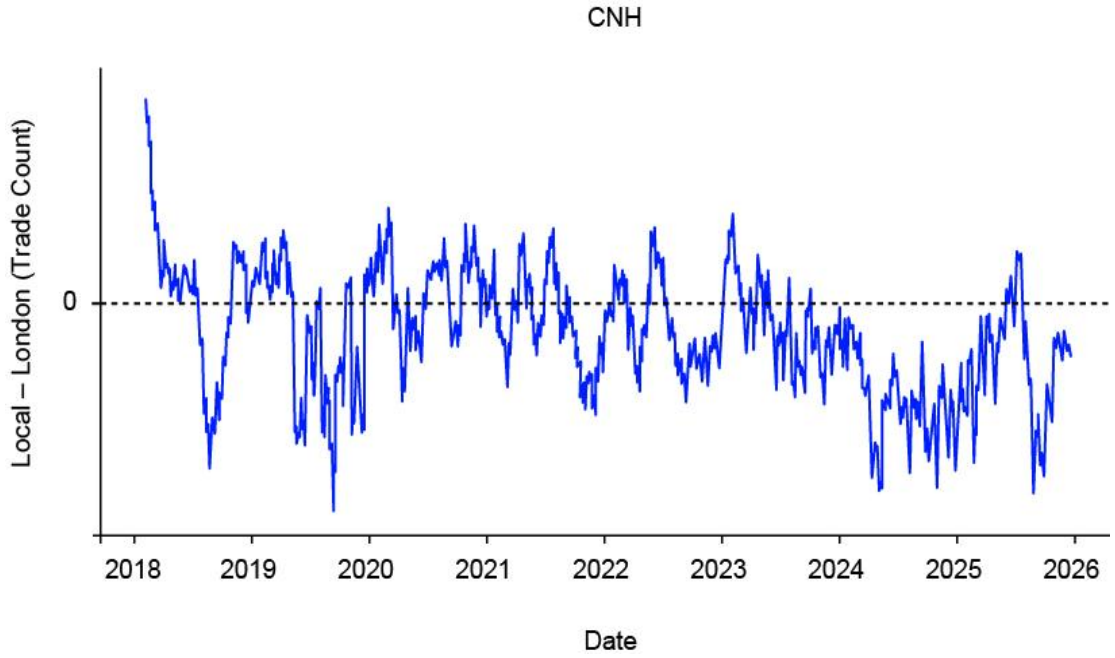
Figure 3: Time series of local vs London trade counts

Notes: These figures plot the 30-day rolling average time series of the difference in trade frequency during a local fixing time and the London 4pm fixing time. The local time window considered is 4pm for Singapore, China, Australia, and New Zealand. For Japan, the local benchmark is the USD/JPY Tokyo benchmark calculated from 9:52:30am to 9:57:30am JST. The values on the y-axis are omitted due to data sharing restrictions, with the dotted black line representing the point where London 4pm trade count is equal to the local time trade count.

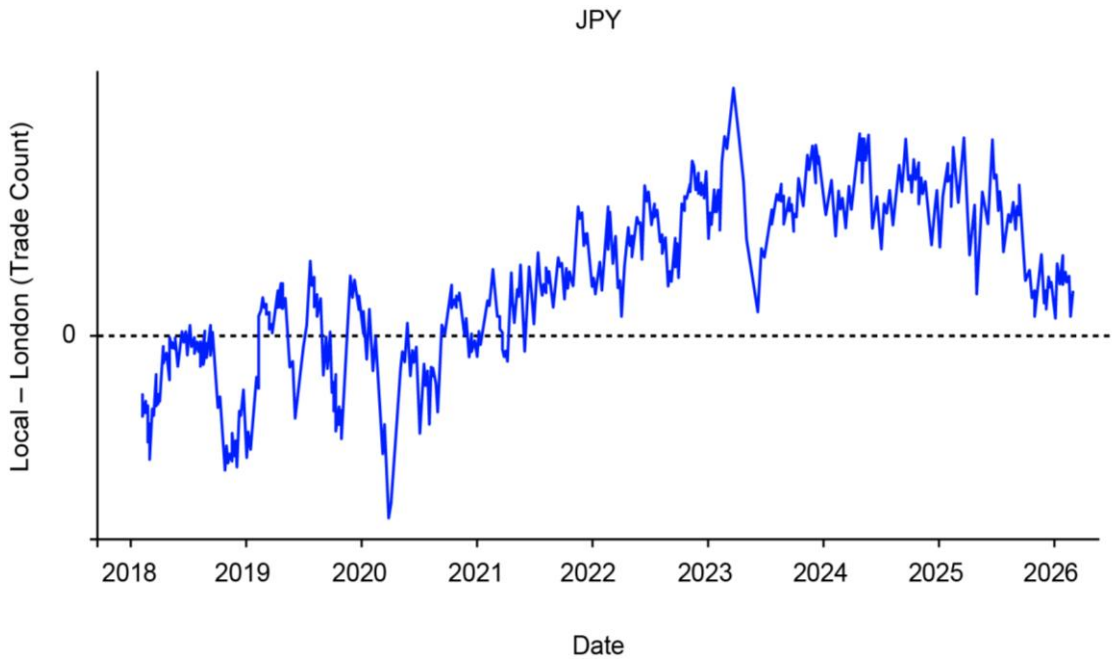
A: AUD/USD



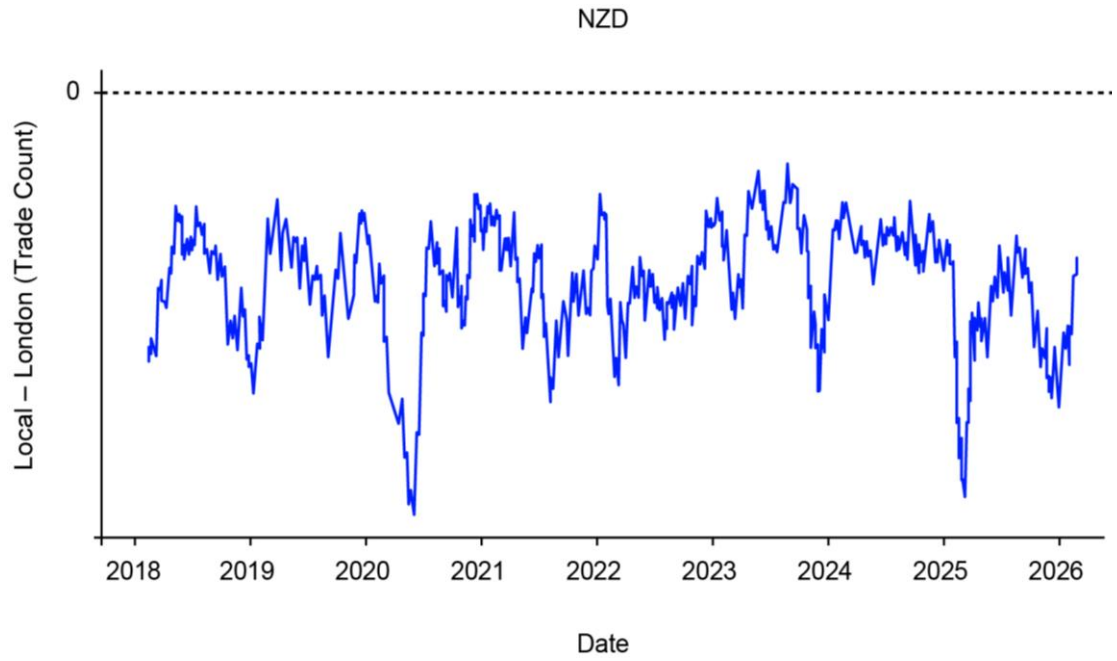
B: USD/CNH



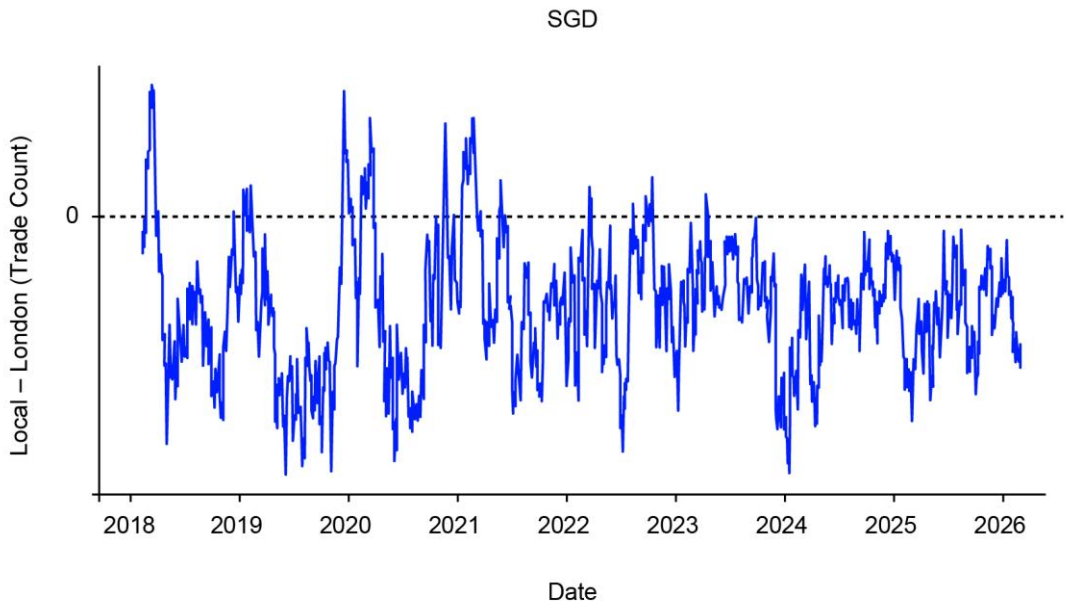
C: USD/JPY



D: NZD/USD



E: USD/SGD

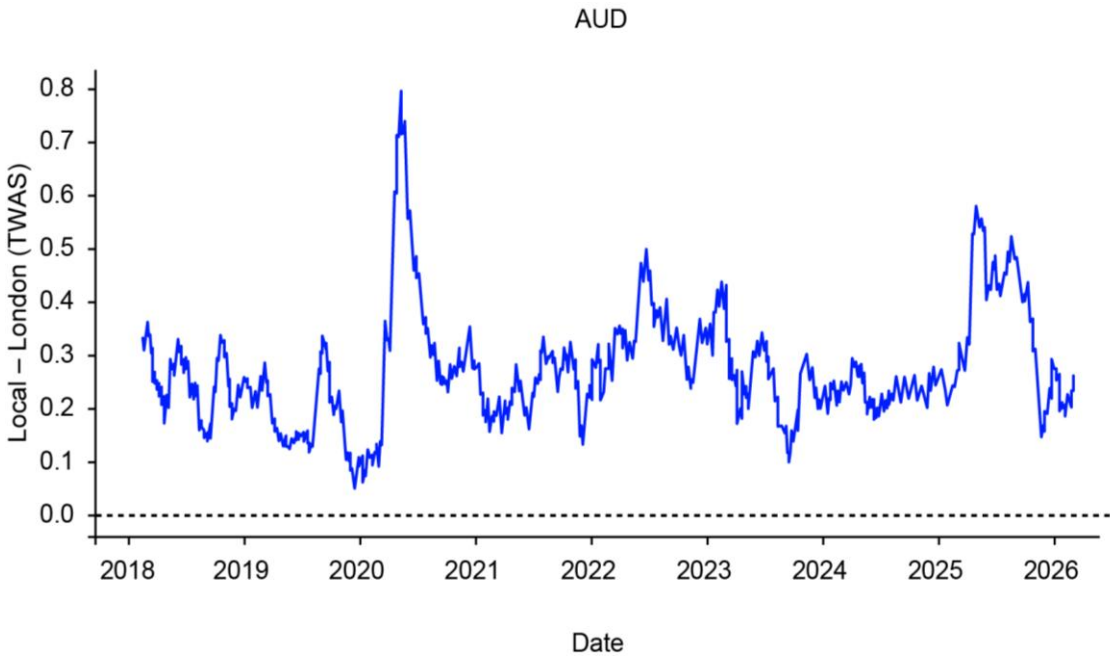


Source: LSEG Tick History.

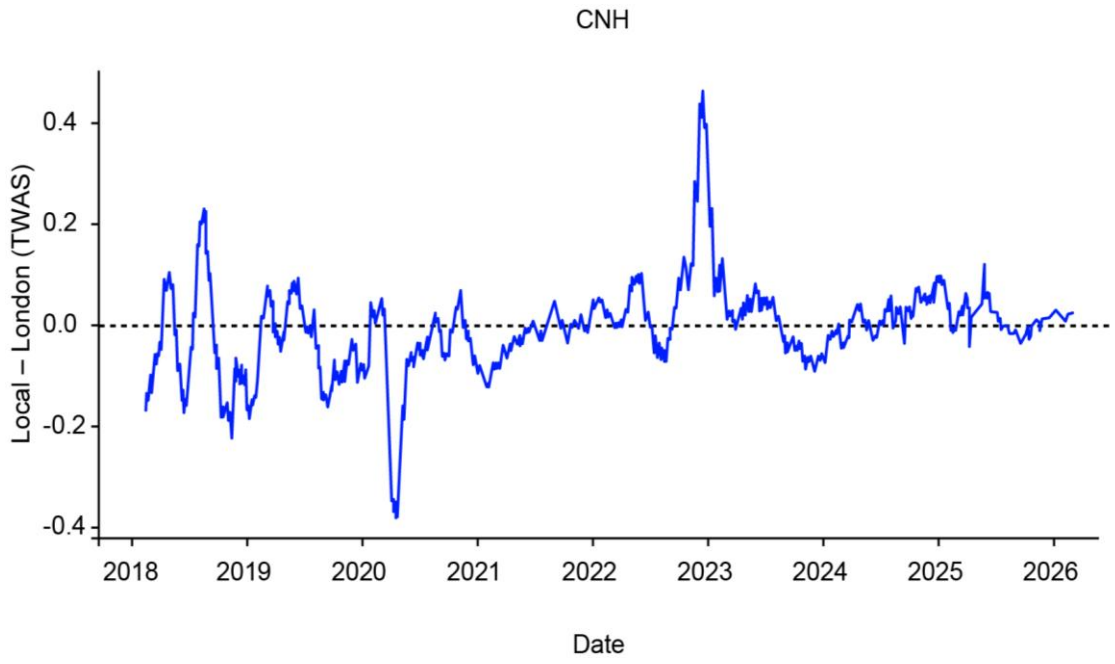
Figure 4: Time series of local vs London TWAS

Notes: These figures plot the 30-day rolling average time series of the difference in time weighted bid-ask spreads (in bps) during a local fixing time and the London 4pm fixing time. The local time window considered is 4pm for Singapore, China, Australia, and New Zealand. For Japan, the local benchmark is the USD/JPY Tokyo benchmark calculated from 9:52:30am to 9:57:30am JST.

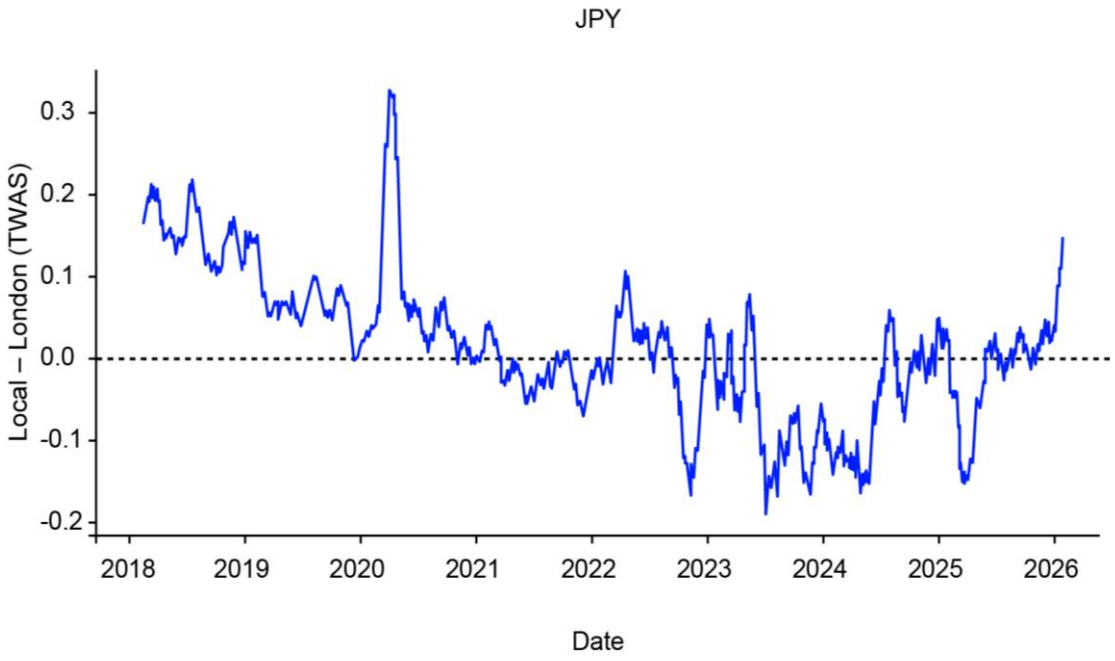
A: AUD/USD



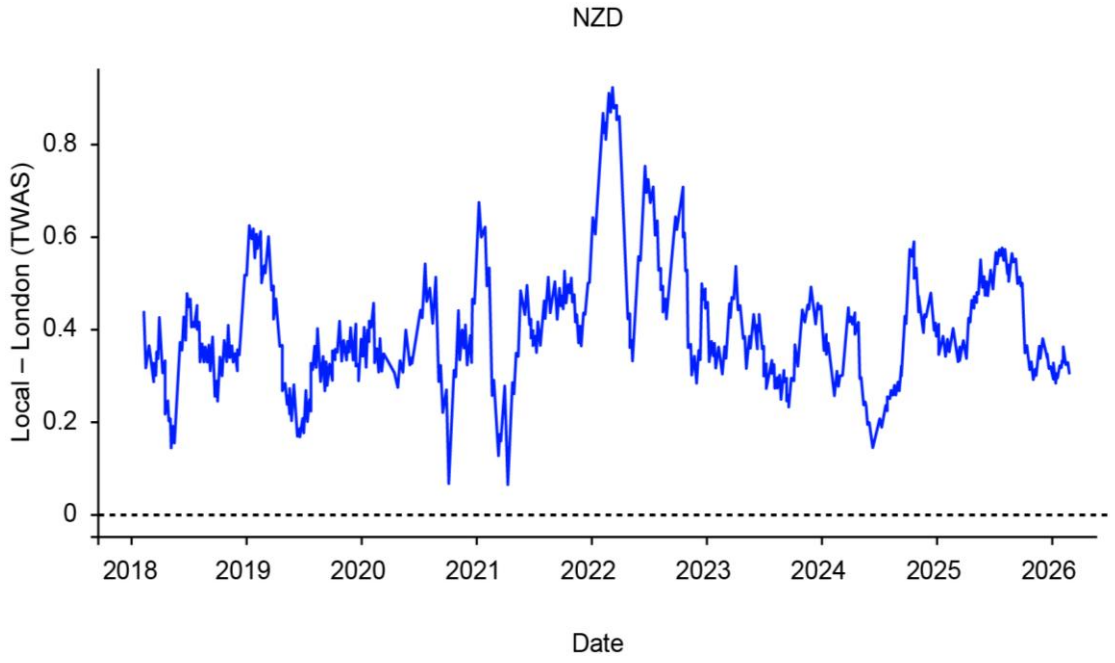
B: USD/CNH



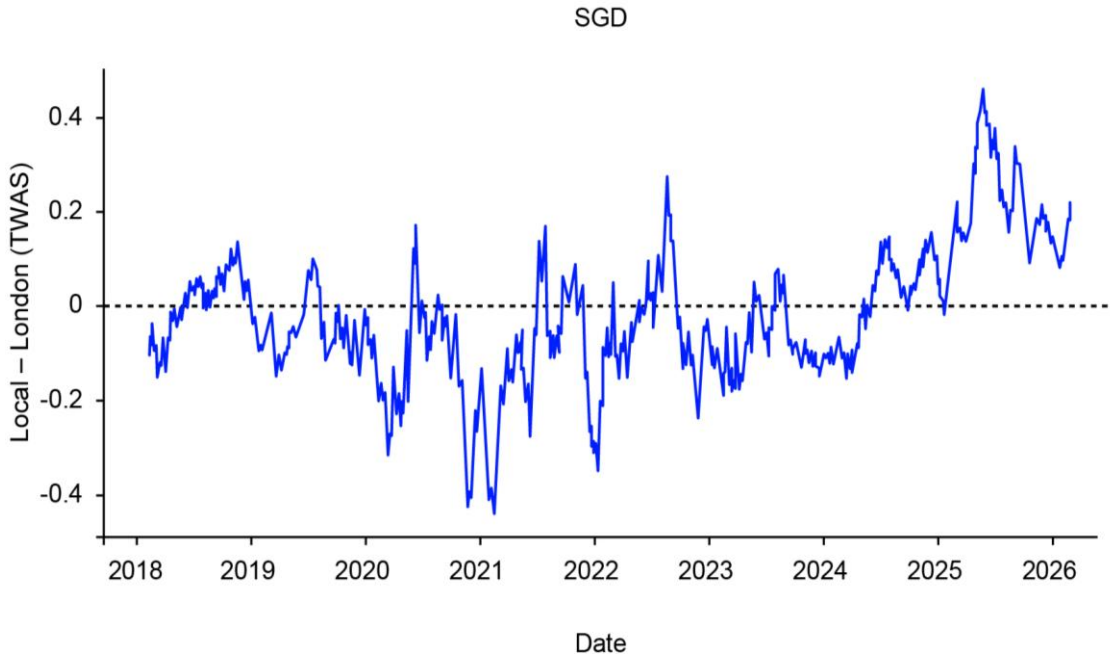
C: USD/JPY



D: NZD/USD



E: USD/SGD



Source: LSEG Tick History.

These observations motivate a more formal examination of whether London 4pm becomes relatively more liquid during periods of elevated market-wide uncertainty and at month end, when benchmark-related portfolio rebalancing activity is typically highest. To investigate this, we estimate the following regression model:

$$Liquidity_{it} = \beta_1 EoM_t + \beta_2 VIX_t + \alpha_i + \tau_{t\epsilon T} + \epsilon_{it}$$

where *i* indexes currencies, *t* indexes days, *T* indexes years, α denotes currency fixed effects, and τ_T denotes year fixed effects. EoM is a dummy variable equal to one on end-of-month days, and VIX is the CBOE VIX volatility index.

Table 1 reports the estimated coefficients and corresponding t-statistics using the difference between local benchmark liquidity and London 4pm liquidity as the dependent variable. Trade activity is measured as local trade count minus London 4pm trade count, spread liquidity is measured as local TWAS minus London 4pm TWAS, while price impact is measured as the local price impact per trade minus the London 4pm price impact per trade.

The results indicate that London 4pm becomes relatively more liquid both at month end and during periods of elevated market uncertainty. The coefficients on both the month-end indicator and the VIX are negative for trade activity while positive for bid-ask spreads and price impact, implying that London 4pm attracts relatively more trading activity and exhibits relatively tighter spreads and lower price impact under these conditions.

The economic magnitudes are meaningful. On end-of-month days, the percentage of trading in local benchmark windows relative to London 4pm reduces by over 50%, on average, across the currencies studied. At the same time, bid-ask spreads at London 4pm tighten by around 0.07 basis points relative to local benchmark windows, and price impact per trade is reduced by 0.09 basis points. Similarly, a 10-point increase in the VIX is associated with an approximately 13% reduction in local benchmark window trading relative to London 4pm, a further 0.05 basis point spread advantage for the London fix, with price impact reduced by 0.074 basis points per trade.

These results capture the average effects of market uncertainty and month-end activity on liquidity at London 4pm relative to local benchmark windows across the five currencies studied. When the model is estimated separately by currency, the direction of the effects is generally consistent with the pooled results. A notable exception is USD/CNH, for which higher VIX is associated with tighter bid–ask spreads

during local hours relative to London 4pm. This pattern is also visible in Figure 4: while local spreads for most currencies widen relative to London 4pm during the elevated-VIX period in 2020, USD/CNH exhibits the opposite response.

One possible explanation is the segmentation between the onshore CNY and offshore CNH markets. During periods of heightened uncertainty, greater CNY-CNH basis risk may increase the value of access to the onshore market and its role as a reference price during Asian trading hours, limiting the relative widening of local CNH spreads (Funke et al., 2015). Evidence that the onshore market can lead renminbi price discovery during periods of stress is consistent with this interpretation (Wang et al., 2023). The USD/CNH result also highlights that currency-specific market structures can produce different responses, so the pooled estimates should be generalised to the wider FX market with caution.

Overall, the findings suggest that the relative liquidity advantage of London 4pm is greatest when benchmark-related portfolio rebalancing and market uncertainty are elevated. This is consistent with participants concentrating activity around an established global fixing window when execution certainty and access to liquidity are particularly valuable.

Table 1: Impact of VIX and month-end on liquidity at local times and London 4pm

	Trades 100 * (Local/London)	TWAS (bps) (Local – London)	Impact (bps) (Local – London)
VIX	-1.34%* (-2.78)	0.0025* (2.59)	0.0037* (4.08)
Month end	-54.64%* (-7.66)	0.07* (4.80)	0.09* (4.05)
R-Squared (%)	10.3%	25.0%	15.7%
Controls	Currency fixed effects, time trend, year fixed effects, SEs adjusted for heteroscedasticity and autocorrelation		

Notes: This table reports the estimated change in each variable in response to a 1-unit change in the VIX and on end-of-month days (Month End). T-statistics are included in parentheses, reflecting whether the coefficient estimates are statistically different from zero. Values above (below) 2 (-2) are generally indicative of statistical significance. The dependent variable is the percentage number of trades executed at a local fixing time relative to London 4pm (Column 1), the TWAS (bps) at a local fixing time minus London 4pm (Column 2), and the price impact (bps) at a local fixing time minus London 4pm (Column 3).
** denotes statistical significance at the 5% level; there is 95% confidence the true coefficient is different from zero.*

Source: LSEG Tick History, VIX data from LSEG Workspace.

5. Conclusion

This paper examines intraday liquidity during WMR benchmark windows for five APAC currency pairs: AUD/USD, USD/CNH, USD/JPY, NZD/USD, and USD/SGD. The results show that, although liquidity improves during local trading hours on trading venue inputs, the WMR London 4pm benchmark reflects the deepest point of liquidity overall, with the highest trade activity, among the tightest bid-ask spreads, and reduced price impact per trade.

The improved liquidity of London 4pm is strongest for AUD/USD and NZD/USD, and also evident for USD/JPY, despite the domestic importance of the 10am WMR Tokyo fix. For USD/CNH and USD/SGD, the evidence is more mixed: local afternoon benchmark windows show substantial liquidity, with trade counts, spreads, and price impact often close to London 4pm levels.

The time-series and regression results indicate that input trading venues at London 4pm become relatively more liquid at month end and during periods of elevated market uncertainty, as measured by the VIX. This is consistent with liquidity concentrating around established global benchmark times when portfolio rebalancing needs are high or market conditions are more stressed.

Overall, trading venue inputs during local benchmark windows are relatively liquid for several APAC currencies, particularly USD/CNH, USD/SGD, and USD/JPY, highlighting the integrity of WMR Intraday benchmarks. Nevertheless, the London 4pm benchmark remains a key global liquidity time and underpins the continued relevance of the WMR Closing Spot rate benchmarks. These observations indicate that the WMR benchmarks are supported by liquid underlying market activity, with any expansion in the use of local WMR benchmarks appropriately guided by observed liquidity patterns and relevant market characteristics.

References

Amihud, Y. (2002). Illiquidity and stock returns: cross-section and time-series effects. *Journal of Financial Markets*, 5(1), 31-56.

Blonien, P., & Ober, A. (2024). Is 24/7 trading better?. *Available at SSRN 4942934*.

Financial Markets Association of Singapore. (2025). Usage of Fixing Transactions During the Asian Time-Zone for Market Participants in Asia. https://fmasg.org.sg/wp-content/uploads/2025/07/Whitepaper-on-FX-Fixing-Transactions-in-the-Asian-Time-zone.pdf

Funke, M., Shu, C., Cheng, X., & Eraslan, S. (2015). Assessing the CNH–CNY pricing differential: Role of fundamentals, contagion and policy. *Journal of International Money and Finance, 59*, 245-262.

Ito, T., and Yamada, M. (2017). Puzzles in the Tokyo fixing in the forex market: Order imbalances and bank pricing. *Journal of International Economics, 109*, 214-234.

QIC. (2021). Trading at London 4pm and the Illusory Benefits of Maximum Liquidity. https://edge.sitecorecloud.io/giclimited1-qiccom-prod-94af/media/Project/QIC/QIC/Knowledge-Centre/Thought-Leadership_PDFs/Trading-at-London-4pm-and-the-illusory-benefits-of-maximum-liquidity.pdf

Ranaldo, A., and de Magistris, P. S. (2022). Liquidity in the global currency market. *Journal of Financial Economics, 146*(3), 859-883.

Wang, L., Xiong, X., & Cao, Z. (2023). Time-frequency volatility spillovers between Chinese renminbi onshore and offshore markets during the COVID-19 crisis. *Humanities and Social Sciences Communications, 10*(1), 462.

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