Usage of FX Fixing Transactions During the Asian Time-Zone for Market Participants in Asia

Disclaimer

This report and its contents are made available on an "as-is" basis without warranties of any kind. The content in this report does not constitute regulatory, financial, legal or any other professional advice and should not be acted on as such.

The Singapore Foreign Exchange Market Committee ("SFEMC"), Financial Markets Association of Singapore ("FMAS") or any person or entity acting on its behalf, does not give any warranty or representation concerning any data and information contained in this report, and shall not be liable for any damage or loss of any kind howsoever caused as a result of the use of the information contained or referenced in this report.

Version	Date	Note
1.0	02 July 2025	Initial publication

Contents

1. Preamble

1.1 **Foreign Exchange (FX) fixing transactions are used widely by financial institutions, corporates, and asset managers to exchange currencies with reference to FX benchmark rates at specific times of the day.** FX fixing transactions rely on widely recognised FX benchmarks, as such benchmarks provide transparency for standardised performance measurement and risk management. This whitepaper seeks to contribute to existing literature[1] by assessing the benefits and challenges of using FX benchmarks set during the Asian time-zone for FX fixing transactions involving regional currencies.

1.2 **Over the years, FX markets in the Asian time-zone have grown large and liquid, and could potentially serve as viable venues for a segment of FX fixing transactions to serve corporates and investors in Asia.** Based on survey data published by local FX committees, the four largest FX centres in the Asia-Pacific (APAC) time-zone (Singapore, Hong Kong, Japan, and Australia) have an average daily trading volume of US$2.4 trillion compared to US$1.4 trillion in the North America time-zone (United States and Canada) and US$3.2 trillion in the European time-zone (United Kingdom).[2] This in turn expands the potential for the use of FX fixing transactions during the Asian time-zone to enhance risk management and operational efficiency for FX market participants in Asia.

1.3 **An FX Workgroup (FWG) was convened to study the merits and feasibility of executing FX fixing transactions in the Asian time-zone.** The workgroup consisted of nine members,[3] including three buy-side and six sell-side members.

- The workgroup conducted two surveys – one with workgroup members, and another with the top 18 asset managers that managed close to 40% of total APAC underlying exposures (FX, fixed income, equities and commodities) in Singapore.[4]

- The surveys collected data on FX benchmarks that market participants used as reference for FX fixing transactions involving selected deliverable Asian currencies.[5] Views were also sought on whether using an FX benchmark in the Asian time-zone would be helpful in enhancing risk management.

[1] Norges Bank published "The WMR Fix and its Impact on Currency Markets" (2017), and the UK Financial Conduct Authority (FCA) published "Fixing the Fix? Assessing the Effectiveness of the 4pm Fix" (2018).

[2] Based on the October 2024 semi-annual FX turnover surveys published by the respective local FX Committees.

[3] The FWG comprises representatives from the following institutions: BlackRock, BNP Paribas, Citibank, DBS, Deutsche Bank, Eastspring Investments, GIC, Standard Chartered, UBS.

[4] This is based on Singapore's Asset Management AUM in 2023.

[5] The surveys focused on FX spot fixings for deliverable Asian currencies (AUDUSD, USDCNH, USDHKD, USDJPY, NZDUSD, USDSGD, USDTHB).

1.4 **The FWG found through the survey that there are benefits to executing FX fixing transactions in the Asian time-zone.** In particular, executing FX fixing transactions referencing existing intraday FX spot benchmarks during the Asian time-zone[6] can be as efficient as doing so in time-zones like London 4pm, and can offer greater operational resilience for financial institutions with a significant Asian footprint. This whitepaper also sets out implementation considerations for wider execution of FX fixing transactions during the Asian time-zone for market participants in Asia, and lays out selected case studies for market participants' reference.

2. Overview of FX Benchmarks and Usage of Fixing Transactions

2.1 **FX benchmarks represent the relative value of one currency against another at a particular point in time, and serve various purposes including performance measurement, risk management, and facilitating investment decision-making.** FX benchmarks are also referenced in financial contracts, and used in the construction of global bond and equity market indices to aggregate and value underlying multi-currency markets into a single index rate. Table 1 below provides an overview of the various uses of FX benchmarks by different types of market participants.

***Table 1**: Use of FX Benchmarks by Market Participants*

	Market Participant	Use of FX Benchmark
1.	Index Providers	Valuation price for the construction and maintenance of investment indices.
2.	Corporates	Settlement price for financial contracts and derivatives. Other uses include internal accounting, as auditors accept that these FX benchmarks are independently calculated and administered.
3.	Asset Managers	Valuation of net asset value of portfolios using a consistent exchange rate, which allows investors to easily compare their holdings across multiple funds.
4.	Banks	Hedging risks by executing fixing orders before, during, and after the fixing window. Delta hedging for options, settlement of derivative contracts and to translate USD denominated assets/liabilities into local currency terms or vice-versa.

2.2 **The role of FX benchmarks can be traced back to 1994, when, in the absence of an official closing price for the FX market, WM Reuters (WMR) began publishing the "London**

[6] Existing FX benchmark administrators publish intraday FX spot benchmarks throughout the trading day, usually at every hourly or half-hourly mark.

4pm fix". [7] This provided market participants with a standard and transparent set of currency exchange rates that enabled portfolio valuations to be compared with each other, and for investment performance to be measured against designated benchmarks. These rates were initially adopted by various entities including index providers, asset managers, banks, and corporates. Over time, intraday spot FX benchmarks were introduced to provide hourly spot and half-hourly benchmarks.[8]

2.3 **Progressively, the WMR London 4pm fix[9] became the de facto standard for global closing spot rates and has become the most widely used FX benchmark across various types of market participants and currencies.** As global financial markets became more interconnected, the use of FX benchmarks grew alongside an increase in the number of FX benchmark providers and their offerings to cater to different market needs. This included the ECB reference rates by the European Central Bank, Bloomberg FX Fixings by Bloomberg, and CNY CFETS fix by the People's Bank of China.

2.4 **Against this context, financial and non-financial corporates have found it useful to transact in the FX spot market against specified FX benchmark rates via what is commonly termed as "FX fixing transactions".** In such an arrangement, FX dealers commit to transact certain currency pairs at, or by reference to specified FX benchmarks, and charge a pre-agreed spread or service fee to their end-client. The choice of FX benchmarks to use and the specific timing depends on the end-client's internal mandate and practices. Market participants may choose FX benchmarks that align with the most liquid trading periods for their preferred currency pairs. For instance, a firm involved in trading CNY or JPY may use the CNY CFETS fix or Tokyo fix respectively to transact at prices that better reflect local market conditions and liquidity.

2.5 **While market participants transact against various FX benchmarks throughout the trading day, the majority of FX fixing transactions have continued to use the London 4pm fix.** Doing so at the close of the London trading day has allowed market participants to benefit from the overlap between US and UK trading hours. This has also enabled dealers to aggregate their orders over the course of the day, to take advantage of internal netting opportunities. The WMR fix is also seen to be transparent and easily replicable, while offering liquidity benefits since sizeable amounts of fixing orders tend to concentrate around that time.

[7] The WMR Spot Rates is administered by FTSE International Limited which is owned by the London Stock Exchange Group (LSEG)'s FTSE Russell.

[8] For instance, the WMR Intraday Spot Rates service provides half-hourly benchmark for trade currencies. Other WMR Spot Rate products include the Tokyo Spot Rates, 11am UK Intraday Spot Rates, 2pm CET Intraday Spot Rates, and 12pm EST Intraday Spot Rates.

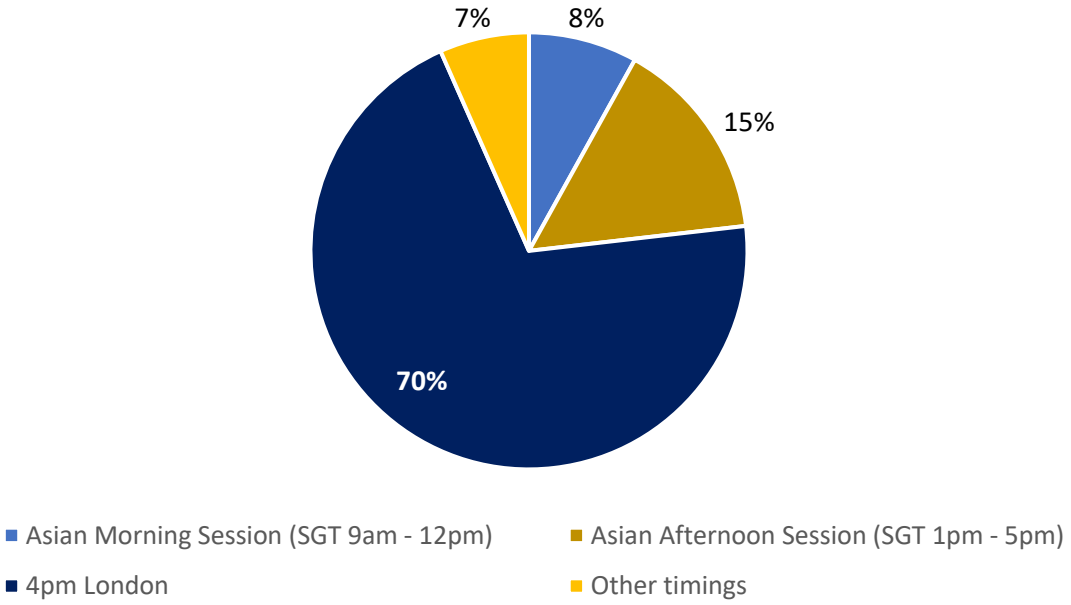
[9] The WMR FX Benchmark methodology provides that during a five-minute calculation window, snapshots of the actual trades and bid and offer rates are taken every second from 2 minutes 30 seconds on either side of the London 4pm. A mid-rate is then calculated from the median trade bid and trade offer rates.

Nevertheless, some risks associated with over-reliance on this benchmark have been identified, including concentration risks.[10]

- Among the FWG dealer banks, the London 4pm fix was the most widely used FX fixing timing, comprising more than 70% of all fixing transactions for selected regional currencies.[11] Approximately 8% of fixing transactions were undertaken during the Asian morning session, while 15% was transacted in the Asian afternoon session (see Chart 1).

- By counterparty types, approximately 51% of the FWG dealer banks' London 4pm fixing transactions were transacted against other banks, 36% against non-bank financial institutions (NBFIs), and 12% against corporates. (see Chart 2).

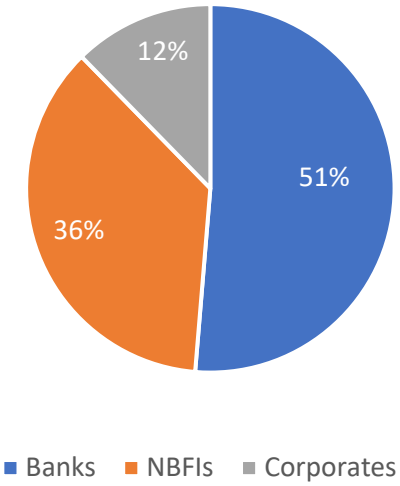
***Chart 1**: % Breakdown of Fixing Transactions by ADTV*



[10] While the London 4pm is a high-volume period, there could be occasions when large orders create temporary imbalances in demand and supply that make it challenging to execute trades at desired prices. This prompts market-makers to quote wider bid-offer spreads to account for potential volatility arising from risks of large one-sided order flows.

[11] Based on a survey of dealer banks' FX volumes in 2023 - AUDUSD, USDCNH, USDHKD, USDJPY, USDKRW, NZDUSD, USDSGD, and USDTHB.

***Chart 2**: % Breakdown of Fixing Transactions by Counterparty Types*



3. Broadening Usage of Regional FX Fixing Transactions in the Asian Time-zone

Key Benefits of Adopting Fixes in the Asian Time-zone

3.1 **With increasing depth and liquidity of FX markets in Asia, the use of existing FX benchmarks during the Asian time-zone has emerged as a viable alternative for market participants.** The FWG has identified three key benefits for regional market participants to adopt regional FX fixing transactions within the Asian time-zone, namely – reducing headline market risks; enhancing operational efficiency; and accessing comparable or better trading liquidity.

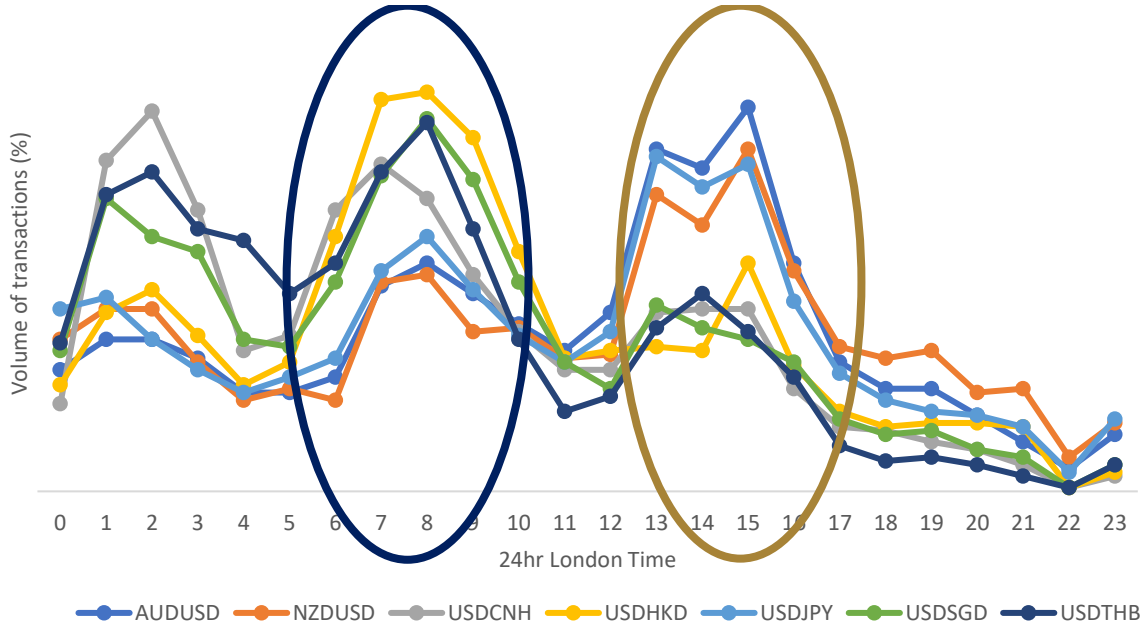
3.2 **Reducing headline market risks:** Both buy- and sell-side market participants cited the reduction of headline market risks as a key benefit. Due to the time gap between the close of the underlying asset classes (e.g. Asian equity and fixed income markets) relative to the London 4pm fixing timing, market-moving events and/or data releases that occur during the intervening period would expose market participants to significant FX slippage risks. This headline market risk is mitigated by swiftly completing FX transactions during the Asian time-zone, immediately or shortly after completing trades in the underlying asset classes.

3.3 **Enhancing operational efficiency**: Regional market participants can improve their operational efficiency by carrying out FX execution during Asian hours. Executing FX fixing transactions in the Asian time-zone can reduce the need for dealing room and settlement resources to cover across multiple time-zones and simplify operational processes. This allows for earlier confirmation, trade matching, pre-settlement procedures, and reduced risk of settlement failures, while allowing for shorter FX valuation turn-around time to mark-to-market portfolios and transactions within the Asian trading day.

3.4 **Accessing comparable or deeper trading liquidity**: Executing FX fixing transactions in the Asian time-zone for Asian currencies allows market participants the option to tap into the Asian liquidity peak that typically occurs during a 24-hour trading day. The growth and expansion of FX market activity during Asian hours arising from increased institutional investor flows, the cash management needs of local/regional corporates and global MNCs, and retail trading interest, has resulted in comparable or deeper liquidity for certain Asian currencies during the Asian trading day.

- **Chart 3 illustrates the intraday profile of a typical trading day, with two intraday liquidity peaks for selected regional currencies**.[12] The first peak tends to occur at the intersection between the close of the Asian trading session (i.e. SGT/HKT 4pm) and the opening of London trading hours (i.e. London 8am). In general, liquidity during the first peak tends to be deeper for non-G10 regional currencies (USDCNH, USDHKD, USDSGD, and USDTHB), while liquidity for G-10 regional currencies (USDJPY, NZDUSD and AUDUSD) tends to be deeper at the second peak (i.e. London 4pm). With the growth of Asian economies and deepening of financial and capital markets, liquidity in the Asian afternoon session is sufficiently deep to support market participants' transactions with minimal price slippage.

Chart 3: *Twin liquidity peaks for intraday trading volumes of selected currency pairs*



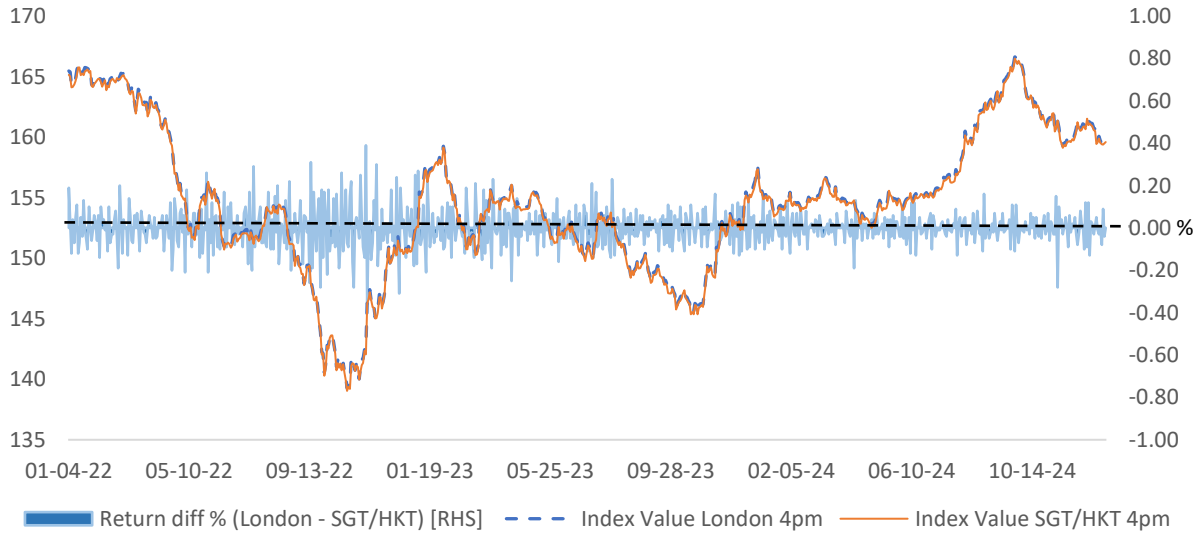
3.5 **A majority of buy- and sell-side market participants surveyed by the FWG indicated that SGT/HKT 4pm (i.e. London 8am or 9am during daylight saving time) would be a suitable**

[12] Source: FWG member actual intraday trading volumes. Based on a 24-hour snapshot of a typical trading session with no significant market moving events.

time for executing FX fixing transactions during the Asian time-zone. This timing would aggregate the end-of-day flows in the APAC region, as well as trading interest from the start of the London trading session.[13] Based on typical intraday liquidity profiles, USDSGD, USDTHB, USDCNH and USDHKD were considered the most suitable currency pairs to start promoting the usage of FX fixing transactions during Asian hours. Executing FX fixing transactions for such currency pairs at SGT/HKT 4pm[14] better aligns with the closing timing of regional equity and fixed income markets, and reflects actual trade and capital flows in the region. This makes it a more representative FX rate for dealers and end-clients managing FX risk.

3.6 **Adoption of an SGT/HKT 4pm fixing rate is not expected to impose a material tracking error difference against indices which typically use the WMR London 4pm rate in its computation.** A historical back-test of the FTSE Asia Pacific Government Bond Index (APGBI) [15] (see Chart 4) indicated that on a USD returns basis, the daily returns of the APGBI at London 4pm vs SGT/HKT 4pm were highly correlated, and the distribution of positive/negative differences between the two were randomly distributed. For asset managers/owners, this means that the adoption of the SGT/HKT 4pm FX fixing rate for rebalancing and portfolio management flows would not negatively impact investment performance or skew tracking error over time.

***Chart 4**: Differences in % Daily Returns for FTSE Asian Pacific Government Bond Index based on different FX fixing timings*



[13] Other possible timings included SGT/HKT 10am, 11am, 3pm, and 5pm for market participants in Asia to carry out fixing transactions. For instance, for USDSGD, a number of end-clients use the 11am USDSGD fixing provided by the Association of Banks in Singapore; for USDCNH, some corporate end-clients prefer either 10am or 11am, post-CFETS CNY fixing when trading liquidity picks up.

[14] SGT/HKT 4pm is referenced instead of London 8am to avoid issues arising from UK daylight saving time which can cause the timing to shift around during Asian hours over the course of a year.

[15] Source: FTSE Russell and WMR FX Benchmarks for period Jan 2022 to Dec 2024.

Correlation between daily returns at London 4 pm vs SGT/HKT 4pm	0.97
#days Return USD London 4PM > Return USD SGT/HKT 4pm	351
#days Return USD SGT/HKT 4pm > Return USD London 4PM	372
#days Return USD London 4PM = Return USD SGT/HKT 4pm	53

Challenges to Broadening Adoption of Fixes in the Asian Time-zone

3.7 **Notwithstanding the above-mentioned benefits of executing FX fixing transactions for Asian currencies during the Asian time-zone, the FWG recognises that there are some challenges that may impede near-term adoption.**

- **Legacy operational practices and documentation**: Many market participants default towards legacy operational practices of executing FX fixing transactions for Asian currencies at London 4pm, due to familiarity and convenience. Coupled with existing documentation and contractual terms that reference a specific FX fixing rate, this makes it difficult for firms to shift practices without the necessary due diligence to revise existing documentation.

- **Preference for status quo among passive funds**: Passive funds tend to use the same FX fixing timing as referenced in the index methodology, so as to avoid tracking error. Passive funds have hence been reluctant to adopt changes to their current process.

- **Liquidity challenges for certain currency crosses against Asian currencies**: For instance, liquidity for Nordic currencies/Asian crosses tends to be better later in the trading day, making it less practical to execute these transactions during Asian hours. This would pose an issue for end-clients whose base currency are not USD-denominated.

Recommendation and Case Studies

3.8 **Given the above findings, there is scope for market participants to consider availing themselves of the option of executing FX fixing transactions during Asian trading hours to benefit from deep and liquid FX markets in Asia.** This can enhance firms' FX risk management and operational efficiency and support broader adoption of Asian time-zone FX fixing transactions for regional currencies.

- **Raising awareness and understanding**: Market participants should consider the pros and cons of executing FX fixing transactions during the Asian hours. Asian sell-side dealers should also proactively provide an option for executing FX fixing transactions at SGT/HKT 4pm. Sell-side dealers could play a useful role in educating and raising awareness to their end-clients (e.g. asset managers, corporate clients, real money

investors) on the trade-offs and potential use-cases for executing FX fixing transactions for regional currencies earlier, where it meets their end-clients' needs.

- **Amending legacy contractual documentation**: Market participants that consider it suitable to shift FX fixing execution for regional currencies to earlier in the trading day during the Asia time-zone, should review their internal operating guidelines and contractual agreements with counterparties to assess if amendments are needed to the designated FX fixing rates referenced by these documentation.

- **Reviewing APAC-focused asset class indices**: Over the medium-term, index providers for APAC equity and fixed income benchmarks could consider reviewing their current index methodologies to use FX fixing timings that are better aligned with the market closing timing of the underlying asset markets. Alternatively, index providers could create new APAC indices that do so. By aligning the indices with trading hours of the local market closing times, index providers can offer benchmarks that more accurately represent the performance of the underlying assets including the FX components.

3.9 **Overall, there are merits for asset owners, active fund managers, and corporates based in Asia to consider adopting the use of fixing transactions in the Asian time-zone to tap on the region's deep and liquid FX markets.** The following case studies illustrate the advantages and demonstrate how regional market participants could integrate the use of regional fixing transactions into their process workflows.

Case Study 1:
Asian Asset Owner's Enhanced Approach for Rebalancing Global Fixed Income Portfolios

- **A prominent Asian asset owner with over USD 300 billion in financial assets managed against customised global benchmarks**. This asset owner is headquartered in Asia, where the middle-office and back-office support functions are housed and supported by smaller offices in London and New York with limited portfolio management capabilities. The currencies in the investment portfolios are marked to WMR London 4pm prices. To minimise tracking error, rebalancing transactions are executed at or close to their respective market closing times, while FX transactions are executed near London 4pm.

- **To enhance operational efficiency, the asset manager now executes G10 currency trades during the Asian time-zone for portfolio rebalancing.** Given the large asset size, commencing rebalancing operations earlier in the Asian time-zone where the operations are better staffed reduces burden on overseas offices and exposure to unexpected events later in the trading day. This creates buffers to resolve unanticipated operational issues and improves overall operational resilience. These

benefits arise without noticeable increase in transaction cost as there is sufficient FX market liquidity in Asian time for most G10 currencies apart from Nordic currencies (i.e. Norwegian Krone and Swedish Krona).

- **The asset owner is also considering adopting the SGT/HKT 4pm as an alternative benchmark price**. This change anticipates greater liquidity in Asian FX centres and a wider adoption of Asian fixing times. As peers follow suit, trading volume and market liquidity for G10 currencies should improve further at this Asian fixing time, driven by increased trading activity and market participation, as well as the growing asset management industry in Asia. Through this shift in approach, the Asian asset owner optimises its own operational efficiency, liquidity, and risk management, while supporting industry-wide shifts to a more optimal fixing timing.

Case Study 2:
Singapore-based Asset Manager's Enhanced Approach for Month-end Rebalancing

- A Singapore-based asset manager usually executes fixing transactions for USDSGD and USDHKD via eFX platforms (e.g. FX Connect/FXGO) and would execute FX fixing transactions in the Asian hours during month-end rebalancing and hedging on the back of underlying trades done.

- Given FX levels can vary widely across time-zones intraday, by executing trades during Asian hours, end-clients can benefit from a fixing level that aligns more closely with prevailing market conditions, leading to more accurate and representative transaction pricing. Executing FX fixing transactions in the Asian hours where the asset manager is based in also allows the asset manager to have immediate visibility on the costs/entry/exit points, instead of waiting hours later, especially if the price/cost of their underlying asset has already been determined.

- From a settlements point of view, executing FX fixing transactions during Asian hours simplifies operational coordination with other transaction counterparties. This leads to smoother execution and fewer operational challenges. Other benefits include enhancing the efficiency, accuracy, and cost-effectiveness of the asset manager's currency transactions.

4. Conclusion

4.1 **There is scope to see broader adoption of regional FX fixing transactions to tap on deep and liquid FX markets during the Asian time-zone.** By utilising FX benchmarks set during Asian trading hours, market participants can better mitigate headline market risks, improve operational efficiency, while accessing comparable or better liquidity. While the transition

towards broader use of FX benchmarks in Asian time-zone requires adjustments in operational practices and documentation, the potential benefits make a case for market participants to consider making a change. Widening the use of regional FX fixing transactions during the Asian time-zone would complement the current London 4pm fix, providing market participants with a practical alternative to execute their FX fixing transactions for Asian currencies, ultimately fostering a more resilient and efficient market environment.