CALCULATION METHODOLOGY

Calculation Methodology for the ABS Benchmarks

ABS Benchmarks Administration Co. Pte Ltd

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A. Introduction

ABS Benchmarks Administration Co Pte Ltd (ABS Co.) was setup in June 2013 specifically to own and administer the ABS Benchmarks in Singapore - the Singapore Interbank Offered Rate (SGD SIBOR)[1], the Singapore Dollar Swap Offer Rate (SGD SOR)[2], the Singapore Dollar Spot FX and the Thai Baht Spot FX. It is a fully owned subsidiary of The Association of Banks in Singapore (ABS).

ABS Co. has appointed Refinitiv (f.k.a. Thomson Reuters), as the Calculation Agent to calculate and determine the Benchmarks on its behalf. The Calculation Agent may, with ABS Co.'s consent, disseminate the Benchmarks to any other third-party information provider requesting the publication of the Benchmarks on its platform. All transactional data captured by the Calculating Agent will remain confidential, provided however, that transactional data may be made available to the Administrator, any relevant regulatory authority, or any other party appointed by the Administrator or the Monetary Authority of Singapore. Market participants shall only have access to the final Rates upon determination and publication, and not the transactional data used to construct the Rates.

This document details the calculation methodology for all the Benchmarks administered by ABS Co., and replaces the 2013 Trading Protocol.

[1] SIBOR was discontinued after 31 December 2024, following the industry announcement in December 2020 on SIBOR's eventual discontinuation to align with global interest rate benchmark reforms and Singapore's transition to the Singapore Overnight Rate Average ("SORA") administered and published by the Monetary Authority of Singapore.

[2] SGD SOR, which relied on USD LIBOR in its computation, was discontinued after 30 June 2023, across all tenor settings. This followed from the UK Financial Conduct Authority's announcement in March 2021 that the overnight, 1-month, 3-month, 6-month and 12-month USD LIBOR settings would cease to be provided by any administrator or be no longer representative immediately after 30 June 2023.

B. Calculation Methodology: Singapore Dollar Spot FX

Benchmark	**Singapore Dollar Spot FX**
Description	The US Dollar (USD)/Singapore Dollar (SGD) spot rate for the Valuation Date expressed as the amount of Singapore Dollars per one US Dollar.
Valuation Description	The Administrator shall calculate and determine the Rate based on the Volume Weighted Average Price ("VWAP") of Qualifying Transactions.
Valuation Date	Each Singapore Business Day, from Monday to Friday.
Day/Time of Benchmark Publication	11:30 am, Singapore time on each Valuation Date
Qualifying Transactions	Any Type of Trade which satisfies all of the following: (a) having a notional amount equal to or exceeding the Minimum Notional; (b) electronically routed and captured through a Reporting Broker and/or a Confirmation Platform[3]; (c) traded during the Qualifying Window; and (d) traded between interbank counterparties.
Type of Trades	USD/SGD spot foreign exchange transactions
Minimum Notional	USD 1,000,000
Qualifying Window	10:30 am to 11:00 am, Singapore time
No. of Decimal Points	4 decimal places, round to nearest
Publication Page	Thomson Reuters - ABSFIX01, Bloomberg - ABSI
Corrections to Rate	Any corrections to the published Rate must be published within 60 minutes following the Publication Time.
Fallback (Insufficient transactional data for VWAP calculation)	**Fallback Trigger:** A Fallback Trigger occurs if there is no Qualifying Transaction traded during the Qualifying Window.

[3] A "Reporting Broker" means an inter-dealer broker that has been selected and determined by ABS Co to provide information on Qualifying Transactions and listed on ABS Co.'s directory: https://abs.org.sg/docs/library/panel_abs_benchmarks.pdf. While, a "Confirmation Platform" is an infrastructure that enables platform participants to enter into and confirm transactions bilaterally, which are thereafter used by ABS Co.'s Calculation Agent for computation of the relevant ABS Benchmarks.

Note: The publication of the Rate for the preceding Business Day is a calculation methodology fallback procedure to address periods where transactional data may not be available and is not intended to invoke any contractual fallback in transactions between counterparties that reference the Rate as the Rate is still published.	**Fallback Procedure:** If Fallback Trigger occurs, the Rate for the preceding Business Day will be published. Provided that if Fallback Trigger continues to occur for 2 consecutive Business Days, then no Rate shall be published on the 3rd and each following Business Day that the Fallback Trigger continue to occur.

The list of Reporting Broker and/or Confirmation Platform for Singapore Dollar Spot FX are:

	Reporting Brokers	Singapore Dollar Spot FX
1.	BGC Partners (Singapore) Ltd	√
2.	GFI Singapore	√
3.	ICAP AP (Singapore) Pte Ltd	√
4.	Nittan Capital Singapore	√
5.	Tradition Singapore Pte Ltd	√
6.	Tullett Prebon Singapore	√

	Confirmation Platforms	Singapore Dollar Spot FX
1.	EBS Group Limited	√
2.	Refinitiv Transaction Services Limited	√

C. Calculation Methodology: Thai Baht Spot FX

Benchmark	**Thai Baht Spot FX**
Description	The US Dollar (USD)/Thai Baht (THB) spot rate for the Valuation Date expressed as the amount of Thai Baht per one US Dollar.
Valuation Description	The Administrator shall calculate and determine the Rate for each Valuation Date based on the Volume Weighted Average Price ("VWAP") of Qualifying Transactions.
Valuation Date	Each Singapore and Bangkok Business Day, from Monday to Friday.
Day/Time of Benchmark Publication	11:30 am, Singapore time on each Valuation Date
Qualifying Transactions	Any Type of Trade which satisfies all of the following conditions: (a) having a notional amount equal to or exceeding the Minimum Notional; (b) with at least one counterparty outside Thailand; (c) electronically routed and captured through a Reporting Broker and/or a Confirmation Platform[4]; (d) traded during the Qualifying Window; and (e) traded between interbank counterparties.
Type of Trades	USD/THB spot foreign exchange transactions
Minimum Notional	USD 1,000,000
Qualifying Window	10:30 am to 11:00 am, Singapore time
No. of Decimal Points	3 decimal places, round to nearest
Publication Page	Thomson Reuters - ABSFIX01, Bloomberg - ABSI
Corrections to Rate	Any correction to the published Rate must be published within 60 minutes following the Publication Time.
Fallback (Insufficient transactional data for VWAP calculation)	**Fallback Trigger:** A Fallback Trigger occurs if there is no Qualifying Transaction traded during the Qualifying Window.

[4] A "Reporting Broker" means an inter-dealer broker that has been selected and determined by ABS Co to provide information on Qualifying Transactions and listed on ABS Co.'s directory: https://abs.org.sg/docs/library/panel_abs_benchmarks.pdf. While, a "Confirmation Platform" is an infrastructure that enables platform participants to enter into and confirm transactions bilaterally, which are thereafter used by ABS Co.'s Calculation Agent for computation of the relevant ABS Benchmarks.

Note: The publication of the Rate for the preceding Business Day is a calculation methodology fallback procedure to address periods where transactional data may not be available and is not intended to invoke any contractual fallback in transactions between counterparties that reference the Rate as the Rate is still published.	**Fallback Procedure:** If Fallback Trigger occurs, the Rate for the preceding Business Day will be published. Provided that if Fallback Trigger continues to occur for 2 consecutive Business Days, then no Rate shall be published on the 3rd and each following Business Day that the Fallback Trigger continue to occur.

The list of Reporting Broker and/or Confirmation Platform for Thai Baht Spot FX are:

	Reporting Brokers	Thai Baht Spot FX
1.	BGC Partners (Singapore) Ltd	√
2.	GFI Singapore	√
3.	ICAP AP (Singapore) Pte Ltd	√
4.	Nittan Capital Singapore	√
5.	Tradition Singapore Pte Ltd	√
6.	Tullett Prebon Singapore	√

	Confirmation Platforms	Thai Baht Spot FX
1.	Refinitiv Transaction Services Limited	√