



ANZ Markets

Information Sheet
Algorithmic FX Execution

For Institutional, Professional
and Wholesale Clients only

ANZ's Foreign Exchange (FX) Execution Algorithms

What is an FX Execution Algorithm?

FX Execution Algorithms (FX Algos) are technology driven tools for accessing FX market liquidity.

FX Algos are used to minimise market impact, reduce transaction costs and optimise execution performance.

FX Algos execute trades based on parameters you define

- including start time and limit price – as well as your chosen strategy and the prevailing market conditions.

FX Algo Products

ANZ currently has five FX Algo products available:

- **TWAP:** Time Weighted Price Average
- **Dynamic:** Intelligent Implementation Shortfall
- **Peg:** Spread capturing strategy that tracks the market
- **Passive:** Market making strategy that never crosses the spread
- **Limit Participate:** Trade at the nominated rate or better in market

Connectivity

ANZ's FX Algos are accessible through the major multi-bank portals including Bloomberg, FXall, FX Connect and 360T.

TCA Reporting & Execution Consultancy

Detailed Transaction Cost Analysis (TCA) gives you the ability to evaluate and monitor execution performance.

Reporting is available through ANZ's TCA reporting.

Smart Order Router

ANZ's proprietary Smart Order Router (SOR) uses intelligent routing logic to source the most effective liquidity available across our diverse range of providers.

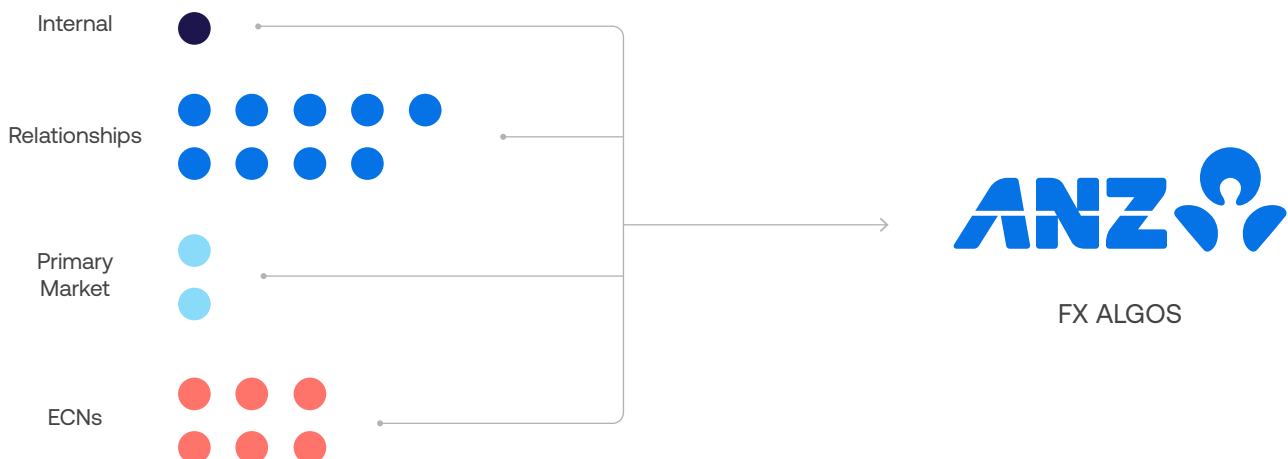
The majority of our providers are co-located with our trading engine, in a Cross-Connect data centre (LD5), giving ANZ FX Algos clients efficient access to the market with minimal latency and high reliability.

Smart Liquidity Seeking

ANZ's ability to execute cross-currency orders through their underlying currency pairs, in conjunction with the tradeable cross liquidity itself, means better access to market liquidity and improved execution prices.

Liquidity Sources

ANZ's FX Algos allow our clients to tap into a fragmented FX market, through our range of providers, emphasising ANZ's strengths particularly in AUD, NZD, and Asian FX pairs.



Time Weighted Average Price (TWAP)

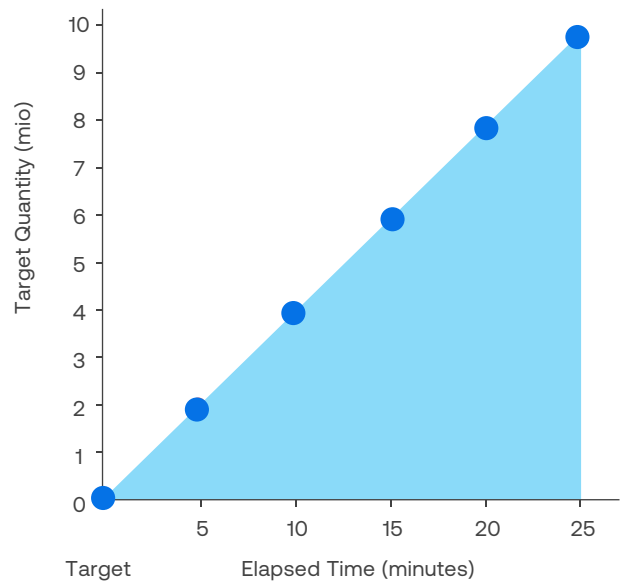
How TWAP works

TWAP executes trades at regular intervals between specified start and end times.

Options include the ability to catch up dynamically when the Algo is running behind its execution schedule or to extend the end time if the order is only partly filled.

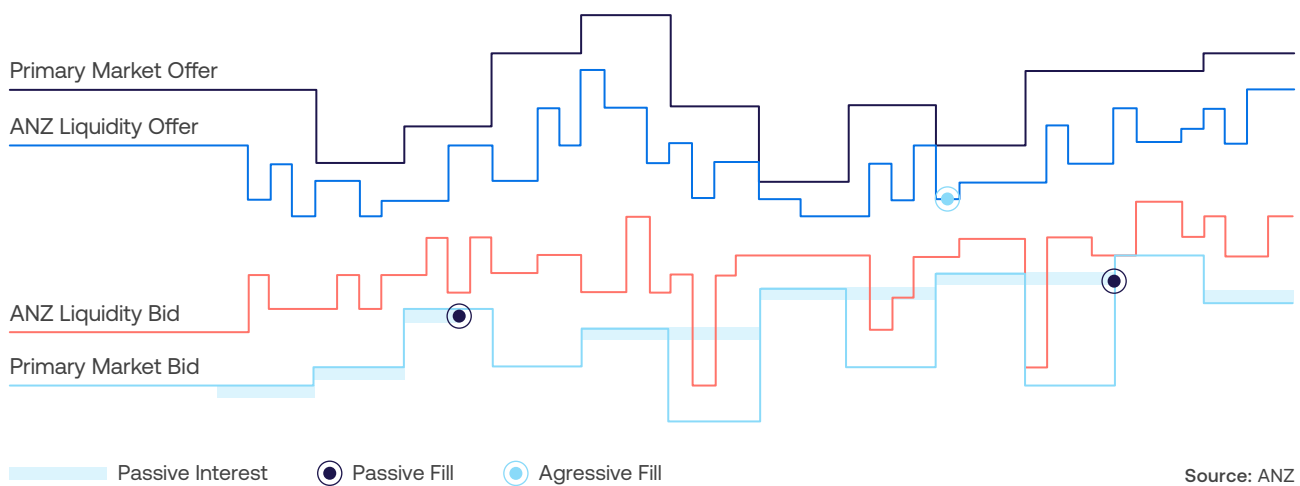
Clients will have the ability to pause (and resume) their TWAP orders as well as the ability to amend TWAP strategy parameters while the order execution is in-progress.

TWAP Execution Profile



Source: ANZ

How TWAP orders interact with our liquidity



Source: ANZ

Dynamic Intelligent Implementation Shortfall (Dynamic)

How Dynamic works

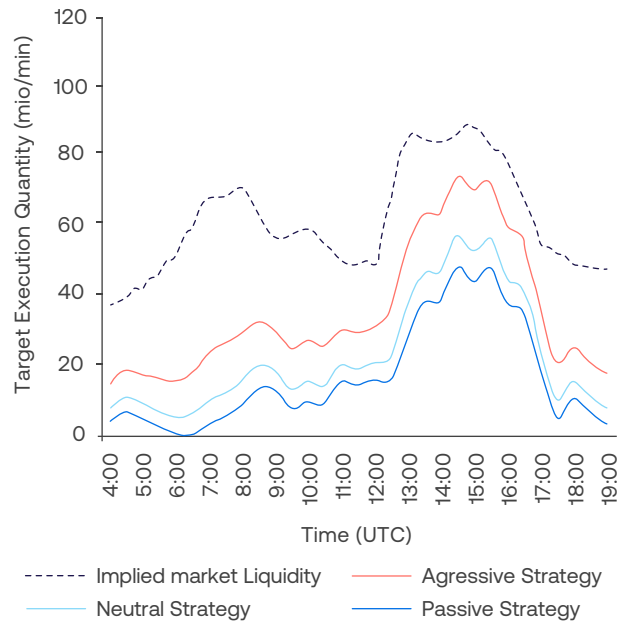
Dynamic uses a proprietary liquidity prediction model to adapt its behaviour in real time.

Order duration is decided by the algorithm based on execution goals, market volatility and liquidity conditions. It also takes into account market events and queueing dynamics.

Dynamic trades currency crosses by referencing relative market volatility of each component leg.

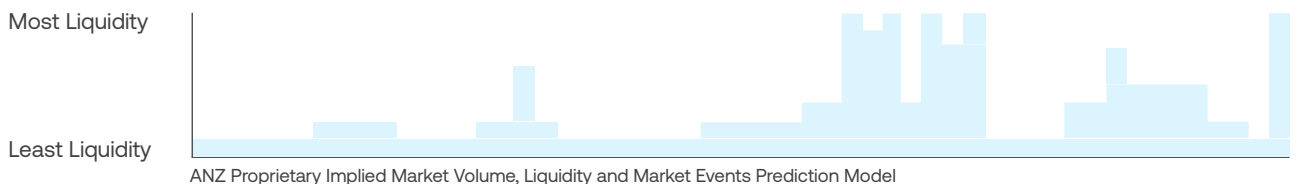
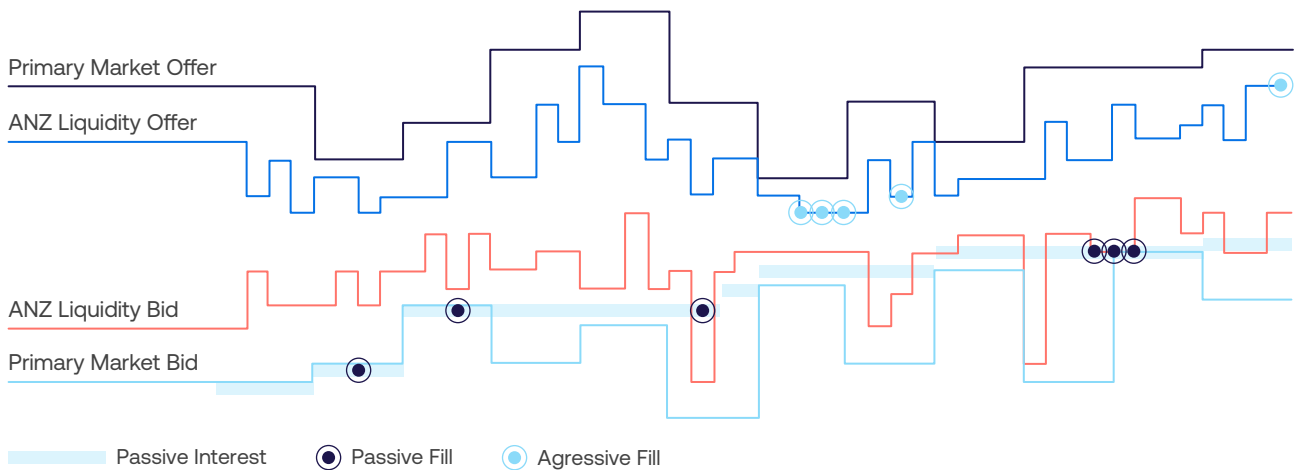
Liquidity seeking behaviour looks for liquidity interest and reacts to market conditions.

Dynamic Execution Profile



Source: ANZ

How Dynamic orders interact with our Liquidity



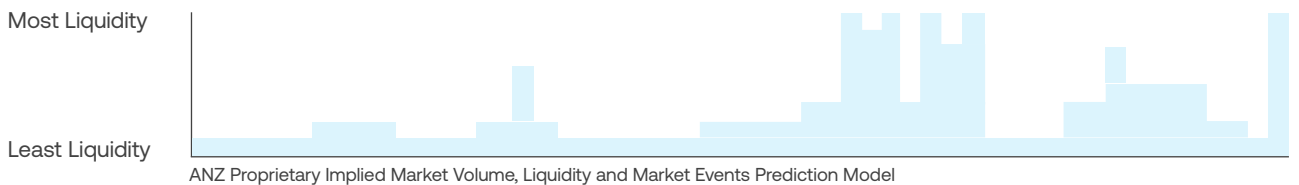
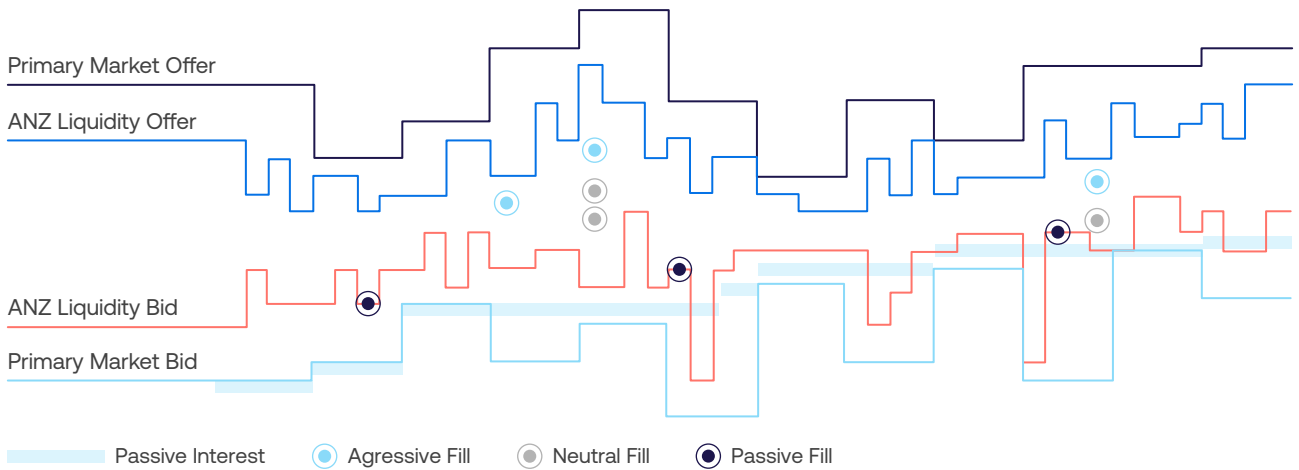
Source: ANZ

Peg

How Peg works

Peg places a moving order that targets levels within the spread of ANZ's entire liquidity sources. Options on execution include how passive the order is, balancing spread capture versus speed of execution. Peg is most appropriate for interacting in a more passive fashion with the market and spread capture over speed of execution.

How Peg orders interact with our Liquidity



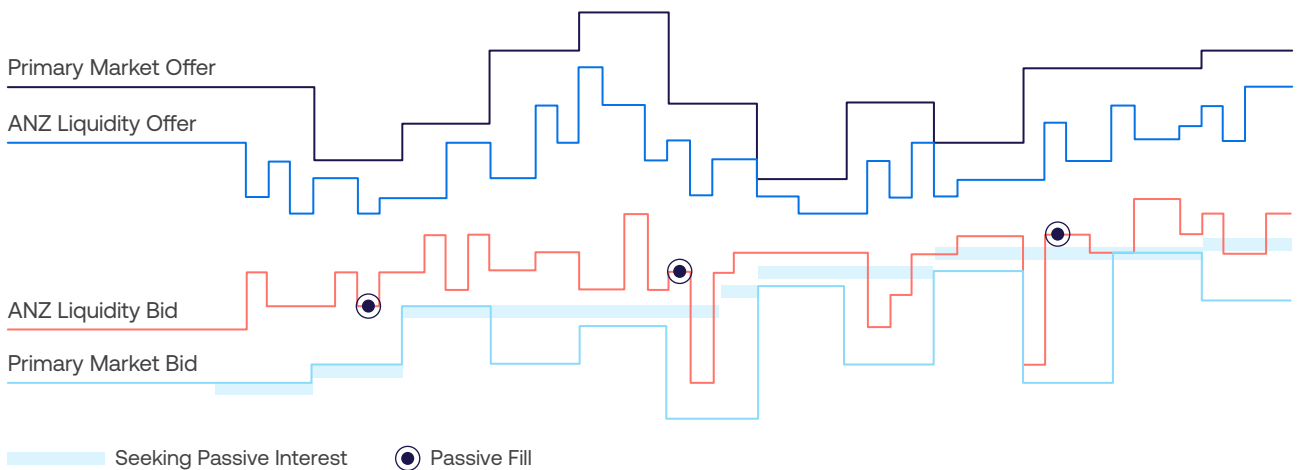
Source: ANZ

Passive

How Passive works

Passive is a market making strategy that never crosses the spread. Passive is most appropriate for execution over a longer time windows where spread capture and minimizing market impact are favoured over speed of execution. Passive interest rests against ANZ's market liquidity sources.

How Passive orders interact with our Liquidity



Source: ANZ

Key Parameters

Parameter	Description	Applicable Strategy
Start Time	Choose to start now or at a scheduled time (Note: Future dated orders are not yet supported)	All
End Time	Choose from end of day (New York), timed duration or specified end time (Note 1: Multi-dated orders are not yet supported) (Note 2: End time can be extended for TWAP)	All
Direction	Direction of trade, dealt on terms and split leg cross support	All
Limit Price	Limits the completed order execution price (average price) to a specified rate	All
Execution Style	Controls the execution velocity according to your urgency and execution goals. Dynamic/Peg - Execution styles that can be applied Aggressive Use the Aggressive option when you believe the market may move unfavourably against you and you would like your order filled as quickly as possible whilst attempting to minimise market impact. Neutral Use the Neutral option when you do not have a view on market direction and want to have your order executed with minimal market impact. Passive Use the Passive option when you believe the market may move in your favour and want your order to execute over a longer time frame with minimal market impact. TWAP - Execution styles that can be applied Market & Peg Choose to execute by waiting to be matched and crossing the spread. Market only Choose to execute by crossing the spread only.	TWAP, Dynamic, Peg
Include ANZ Liquidity	Choose whether or not to include ANZ liquidity	All
Initial Fill	Instruct the algorithm to trade a larger initial order to try to minimise possible implementation shortfall by trading more initially (Note: Initial fill is restricted to prevent market impact)	Dynamic only
Pause/Resume	All strategy parameters (except 'Direction') can be amendable during order - execution	All

Contact

ANZ Electronic Algo Team:

 eFXSupport@anz.com

 Call us on +61 2 8037 0180 or contact your ANZ Sales Representative

Disclaimer

The document (Document) has been prepared by ANZ Bank New Zealand Limited (ANZ) and is intended for ANZ's Markets clients. It should not be forwarded, copied or distributed.

Unless specifically stated otherwise, the Document is (a) provided for general information purposes only and may contain high-level factual information about certain ANZ Markets products; (b) not intended to be an invitation, solicitation or offer by ANZ to sell, buy, receive or provide any product or service, or to participate in a particular trading strategy; and (c) must be read in conjunction with the applicable disclosure documents.

Applicable disclosure documents are available, on request and free of charge, by phoning 0800 626 966. This includes the Product Disclosure Statements and any supplementary documents relating to the regulated offers by ANZ of Interest Rate Swaps and Currency Forwards, and the nature and scope of any advice that ANZ Markets may provide you (Advice Disclosure). If there is any inconsistency between the content of any applicable disclosure documents and the Document, the content of the disclosure documents will prevail.

ANZ in no way provides any legal, taxation or investment advice to you in connection with any product or service discussed in the Document. You should undertake your own independent assessment about the information in the Document having regard to your circumstances (including seeking independent financial, legal, tax and other advice) and you should not enter into any product referred to in the Document unless you understand, accept and assume the terms, conditions and risks; you are satisfied it is suitable for your objectives, financial situation and needs; and you understand foreign exchange and derivative markets and how they operate.

Whilst care has been taken in the preparation of the Document and the information contained within is believed to be accurate, ANZ does not represent or warrant the accuracy or completeness of the information, except with respect to information concerning ANZ. Further, ANZ does not accept any responsibility to inform you of any matter that subsequently comes to its notice, which may affect the accuracy of the information in the Document.

Preparation of the Document and any opinions expressed in it may involve subjective judgement and analysis. Unless specifically stated otherwise, such opinions are subject to change without notice; and, all price information is indicative only.

ANZ and/or its affiliates may from time to time take proprietary positions, undertake proprietary activities (including hedging transactions) related to the entry into or termination of a product or act as a 'market maker'. Acting as a market maker means that ANZ may offer prices to enter into transactions relating to a variety of currencies, assets and interest rates (financial instruments) and provides liquidity in those financial instruments.

In carrying out these market making activities, ANZ (a) may trade prior to or at the same time as your transaction and may modify and/or terminate its positions or otherwise take action for ANZ's own account to facilitate transactions with other counterparties, to manage risk, to source liquidity or for other reasons; (b) may be trading in the same or related financial instruments for ANZ's own account that are the same, similar or opposite to your positions; and (c) is a contributor bank through its trading activity in the New Zealand bank bills market, which market will determine payments made under some derivative transactions, including New Zealand dollar interest rate swaps.

This market making activity may adversely affect the market price, rate or other market factor(s) underlying a transaction entered into and the value of any related derivative.

Communications with ANZ Markets using certain communication channels (including communications via phone, email, Bloomberg and Microsoft Teams), are recorded to comply with the New Zealand Financial Markets Conduct Act 2013, and international financial market regulatory requirements. Information in these recordings may be disclosed to the respective relevant regulatory bodies, including but not limited to the Financial Markets Authority (FMA), the Australian Securities and Investments Commission (ASIC) and the Commodity Futures Trading Commission (CFTC). All such recordings and transcriptions are collected and held in Australia for and on behalf of Australia and New Zealand Banking Group Limited (ABN 11 005 357 522, ANZ Centre, 833 Collins Street, Docklands, Victoria, 3008, Australia) and ANZ (Ground Floor, ANZ Centre, 23-29 Albert Street, Auckland, 1010, New Zealand).

ANZ's Privacy Statement provides you with further information about how we collect, use and disclose your information (including personal information).

