



WM/REFINITIV FX BENCHMARKS (WMR)

FOCUS: WM/REFINITIV SPOT RATES

Q: What is WMR?

A: The FX Benchmark solution for the industry

From 1994...

WM/Reuters (WMR) was launched in 1994 with the objective of providing a solution of FX transparency and standardisation for the investment community.

Due to the absence of an official close rate/time for FX, there had been several instances where the fluctuation in FX pricing, led to different FX rates, of differing accuracy, being used by market participants. This resulted in erroneous investment fund valuations and index calculations, significantly impacting financial returns and presenting misleading comparisons across peers and funds in the industry and indices.

The World Markets Company, at the time a key industry provider of performance measurement data, recognised the confusion and challenge so set a course to assist with accuracy and clarity around FX rates through providing a consistent and transparent FX benchmark for users.

... to 2022

WM/Refinitiv (as it is now) continues to be dedicated to providing a solution for FX standardisation for the investment community.

Although a lot has changed over the last two decades, the FX market, the biggest market in the world, is still constantly evolving and WMR has grown and evolved to provide a more robust and enhanced range of FX benchmarks which can be used broadly across financial segments. However, the core objective of providing FX rates which are reflective of a point in time to drive accuracy, consistency and transparency for users across the financial industry has not wavered.

Recognising the importance of such a benchmark whilst driving market stability and integrity, WMR has been committed to the IOSCO Principles for Financial Benchmarks since their introduction and has been a regulated benchmark since 2015 (under EU BMR and then UK BMR) increasing transparency, resilience and credibility of the benchmarks as a solution for the industry.

How does WMR do this?

WMR provides users with FX benchmarks that they can trust and use with confidence; ensuring they are an accurate representation of the currency markets and are underpinned by a clear and robust methodology to protect the integrity of the rates.

The provision of WMR is anchored in key principles of:

- **Quality Data Inputs**
 - o Transparent and verifiable sources of FX data as noted within the methodology, so users are informed on what data is being used and from which source
 - o World-class primary execution platforms provide transaction data, representing broad market participation
 - o Data from multiple, independent, global FX platforms is selected objectively, driven by liquidity and accessibility by currency
 - o Prioritising the use of trade/transaction data where available and sufficiently liquid to be representative of the currency markets
 - o Sources are added and coverage can be extended as appropriate, providing liquidity and quality are assured
- **Data Sufficiency & Integrity**
 - o A 5-minute calculation window with robust liquidity and market depth to produce reliable and representative benchmarks
 - o Time-sliced capture to reflect the market whilst protecting against potential manipulative practices
 - o Median calculation to provide both accuracy and robustness, to protect the integrity of the rates
 - o Dedicated and segregated Monitoring & Surveillance team

- **Tailored Methodology**
 - o Versatile waterfall approach that adapts to the different characteristics of currency markets and their pricing
 - o Methodology built upon global and local market practices and policies
 - o Calculation characteristics and validation checks to align with each currency
 - o Constant, 24-hour view of the currency markets and movements
- **Currency coverage**
 - o The most comprehensive coverage with developed, emerging and frontier currencies
 - o Supports all investment choices and strategies
 - o Provides benchmark solutions in response to challenging market conditions and/or market/currency events
- **Accessibility, Simplicity & Equality**
 - o Systems and commercial models designed to enable all users to access and derive value from WMR
 - o Data available directly and through a wide network of data vendors
 - o WMR can be integrated into multiple workflows throughout an organisation's business areas to drive performance and decisions
 - o Users can be confident that they are treated equally amongst peers
- **Direct Client Service and Engagement**
 - o Direct access to WMR team for knowledge and expertise on WMR
 - o User engagement to provide market insight and drive innovation

The full and detailed methodology document is maintained on the WMR website:

<https://www.refinitiv.com/en/financial-data/financial-benchmarks/wm-refinitiv-fx-benchmarks>

The website also offers access to the range of policy information and further insights to the WMR benchmarks.

Why Use WMR?

1.WMR does exactly what it intends to do

– it represents FX rates at a point in time and drives transparency and consistency across the industry.

The WMR benchmarks originated for use in fund/portfolio valuations, mark-to-market, performance measurement, & index calculations. As the WMR benchmarks have evolved and been enhanced over time, they are now suitable for a diverse range of financial purposes – such as in conjunction with investable products, derivatives, financial contracts, reporting, auditing, analysis and research, FX trade execution. Any financial activity which requires an FX rate as at a particular time of day or a time-range can benefit from using WMR.

Enabling the use of the WMR benchmarks across different use cases creates a connected ecosystem which drives value creation and ensures transparency in FX across all transactions. Further, as intended, using WMR results in consistency within workflows from beginning to end and delivering simplicity, cost benefits, economies of scale, uniformity across systems, transaction efficiencies, netting opportunities, regulatory compliance, global application all whilst users are fully supported by a dedicated operations team and client focussed team, directly accessible to users.

The WMR team does not provide advice on when to use any particular WMR benchmark rate for any given requirement but does provide information to enable users to make their own informed choice.

2.Choice - WMR provides a choice of benchmarks (it's not all about 4pm!)

The WMR Closing Spot rates, as at 4pm UK time, are the most widely used FX benchmarks, often adopted by middle and back offices to remove the potential of performance impact driven using inconsistent FX rates.

However, in response to the need for FX benchmarks at other times, the WMR Intraday Spot rates were launched and now give users up to **47 alternative fix times**. This comprehensive range of FX benchmarks, which are regulated and produced to the same standard as the WM/R Closing Spot rates provides users with transparency, consistency, flexibility and **choice** in FX rates across the global day. As with the Closing Spot rates the Intraday Spot rates can be used with confidence in valuations, trade execution, pricing and settlement of financial instruments, analysis etc.

We encourage all users of WMR to assess the plethora of choice and timings to ensure appropriateness of using WMR 4pm or if an alternative time would be appropriate.

3.WMR provides an accurate representation of the markets

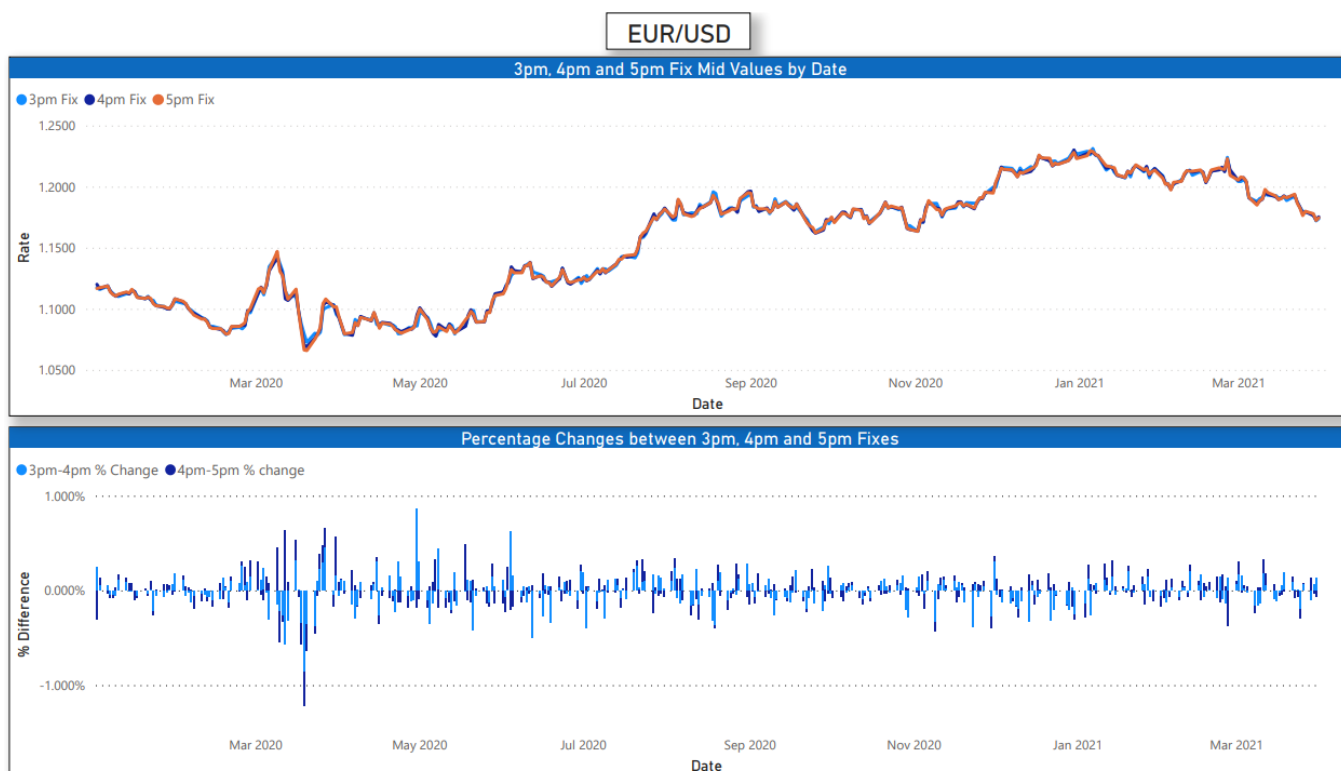
From adopting the principles as highlighted above – quality inputs, data sufficiency, integrity, key methodology characteristics, currency differentiators - together with a dedicated but segregated monitoring and surveillance program ensures WMR is fit for purpose and provides users with FX benchmarks which are an accurate representation across currency markets and different times.

As part of our unwavering objective to ensure the WMR benchmarks remain representative, continue to evolve and provide an effective solution for the global FX industry, we undertook a range of in-depth data analysis to gain further insight to FX rate movements and dynamics around the WMR Closing Spot rates. Aligned with our commitment on transparency and providing greater information on the WMR benchmarks some of the key insights are shared below, with an initial focus around 4pm.

4pm Spotlight:

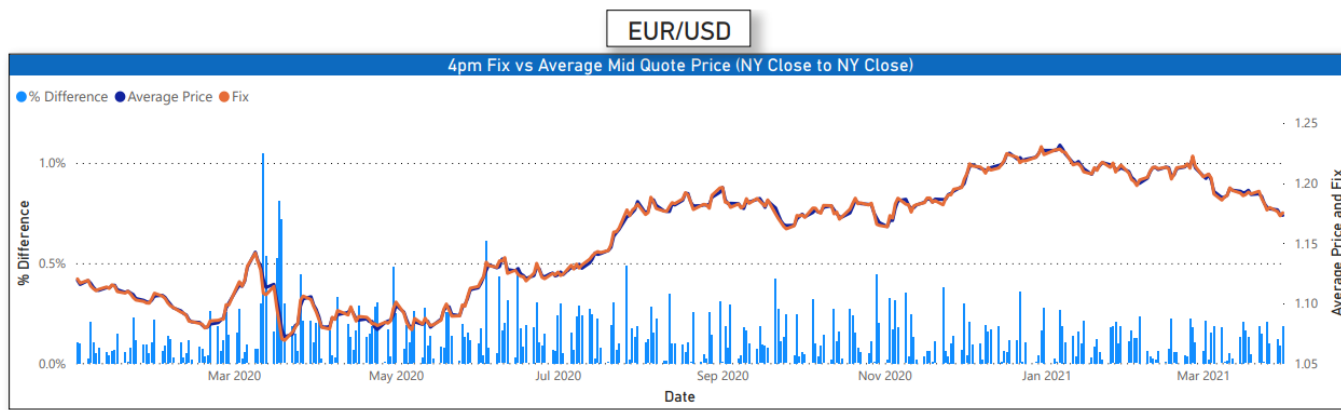
This data analysis charts the published WMR Spot rates as at 3pm, 4pm and 5pm UK time and the changes in % terms between these publication times. It then extends the comparison of 4pm to a 24-hour period (NY close – NY close).

EUR/USD Fix Comparison (Chart below shows % price movements from 3pm to 4pm and from 4pm to 5pm from Q1 2020 to Q1 2021)



From Q1 2020 to Q1 2021, the average daily % move in absolute terms from 3pm to 4pm is 0.1209%. Due to volatility observed in connection with the COVID pandemic, peaks are observed in Q1 2020 and Q2 2020. Q1 2021 is significantly less volatile with an average daily move of 0.0853%. The movements observed from 4pm to 5pm are lower than those movements observed from 3pm to 4pm with an average daily % move in absolute terms from Q1 2020 to Q1 2021 of 0.0810%. Similar peaks are observed in Q1 2020 and Q2 2020.

Comparison of 4pm Fix vs Average Mid Quote Price (from NY Close to NY Close)

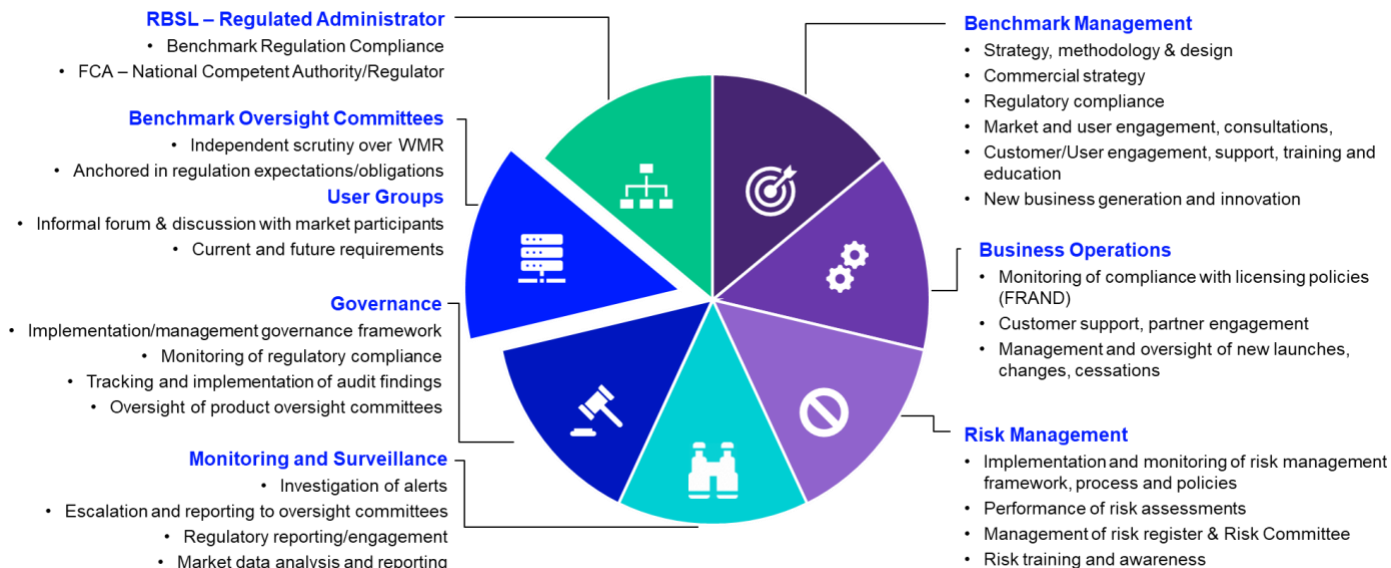


From Q1 2020 to Q1 2021, the average daily difference between the WMR 4pm Spot rates and a straight average of mid-price updates taken over a 24-hour period (from NY Close to NY Close) was 0.1438%. Again, peaks are observed in all currencies in March and April 2020 following the COVID pandemic outbreak.

4. Benchmark Integrity

Benchmark Administration & Regulatory Compliance

We deliver WMR through a high-quality benchmark administration framework, with resources keenly focussed on ensuring regulatory compliance throughout all aspects of WMR:



Monitoring & Surveillance – Detecting Market Manipulation

WMR has significantly invested to deliver market leading Monitoring and Surveillance capabilities, which is maintained by a dedicated, experienced and independent team who work to identify market behaviours that are suspicious and/or indicative of potential or actual manipulation.

The Monitoring & Surveillance application scrutinises tick data across the global trading day, applying concentrated focus on a time horizon around the benchmark calculation times and applies bespoke algorithms, designed in partnership with leading experts, to detect market abuse.

In addition to providing users with confidence in the veracity of the data inputs, this delivers assurance around the integrity of the calculated benchmark rates and is separate to other design and quality control features used within the methodology. Importantly the monitoring and surveillance application is flexible and can be enhanced to remain compatible with any future changes.

5. Independent Assurance

WMR is committed to engaging with regulators, authorities, working groups and FX committees across jurisdictions such as FCA, FSB, IOSCO, GFXC, Bank of England and others and welcome their insight and expertise. Where appropriate WMR has responded to recommendations, such as the FSB in 2014 which resulted in WMR endorsing some suggested improvements and making enhancements to the methodology.

Independent oversight is continuous through the dedicated WMR Oversight Committee, which meets every 6 weeks to scrutinise and challenge the WMR processes, quality, production metrics, monitoring and surveillance and methodology – the minutes from which are published on the WMR website.

Further oversight is provided monthly via the RBSL Board which includes independent representation and senior management representation from Refinitiv/LSEG. This is supplemented with a Risk Committee chaired by an independent RBSL Board member and an independent ISAE3000 limited assurance review will be performed in 2022.

6. Operational Resilience

WMR understands how important it is for users to be able to rely on the provision of the WMR FX benchmarks under normal market conditions and over periods of market stress. Consequently, WMR is focussed on operational resilience and has a robust infrastructure and business continuity program across all processes from data collection to publication. Further we support clients' continuity requirements through making the WMR benchmarks available directly and across a wide network of data providers, enabling users to connect with their preferred partner and build their own resilience using different feed options.

At the core of this operational resilience is also the prioritisation of accuracy, especially during periods of extreme volatility or market disruption. This has been demonstrated during periods of stress when, for example, during March 2020 there were no republished benchmarks although the publication timeframes were longer than usual to allow for the extra quality assurance checks which were implemented.

1 st Jan 2015 to 31 st Dec 2020		
Key Metrics	All Fixes (Intraday/Closing/Half Hourly)	Closing Only (4pm UK)
Republications	0.03%	0.26%
Published within 8 mins	98.80%	99.40%
Published Fixes	100%	100%

Benchmarks for FX Execution

The above provides insight into the comprehensive framework of WMR with a focus on using a transparent, accurate and robust methodology based on the most appropriate data inputs and transaction data where possible, to produce representative benchmarks.

Providing users with confidence and trust in the benchmarks is a key objective and enables the use of WMR benchmarks across a diverse range of financial purposes/contracts/instruments, including FX execution purposes.

Where using WMR as a benchmark, there are commonly two execution strategies for FX which are used by the buy-side: (i) leaving WMR orders with banks to execute, (ii) executing directly in the market aiming to obtain best execution through their own trading strategies. WMR does not directly engage or advise users on FX execution or the process of determining which FX strategy is most appropriate

WMR's role is to remain focussed on providing the best possible benchmark for users.

WMR – User Engagement and Request for Feedback

User Group Engagement

Over 2020-2021, we really stepped up the engagement with the WMR User Groups and have had much debate over key aspects of the WMR methodology. What is important though is we share the outcomes of these discussions more broadly and as such we intend to place the meeting notes onto the WMR website for public review and would welcome any requests for agenda points/discussion items going forward.

What has been evident when discussing key themes is the challenge of achieving consensus across the spectrum of stakeholders. This is understandable considering the diverse use cases for WMR; the diverse practices; the range of objectives...and as such confirms there are different ways to produce benchmarks but what is critical is that we need to stay true to the primary objectives of WMR which are aligned with all expectations.

What was also resounding clear – **the focus on doing the right thing**; the dedication on managing practices for good outcomes; the recognition of how different firms, individuals have adapted different methods to achieve their objectives and the ability to be agile and flex to different circumstances is inherent across all users and market participants.

This is a summary of the themes and discussion areas:

Calculation Window

- Should it be longer than 5 minutes?
- Would it reduce market impact around 4pm?
- How frequent/significant is the market impact around 4pm?

Median Calculation

- Median vs Mean
- Why Median and characteristics
- Hedging impact for sell side
- Data analysis
- Impact of calculation window

Forwards & NDFs

- Regulated under EU BMR
- Different to spot rates
- Methodology enhancements
- Data Sourcing & challenges for transaction data

Broadening the Engagement

We anticipate that the discussion topics above, resonate with all our users and as such we wish to engage all our users on some key aspects of the WMR Methodology.

As we have evolved over the years, it has always been with users at the centre of these changes to make sure that any change is the **RIGHT CHANGE** and will produce **POSITIVE and EXPECTED OUTCOMES** for all our user base.

Therefore, please provide your feedback on the following areas. **This is your opportunity to help inform us of what is important and help identify further development areas for WMR.**

Request for Feedback - https://lseg.fra1.qualtrics.com/jfe/form/SV_bBHSAmchV0uCoWW

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