

FTSE DAR Reference Price

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Contents

Digit	al assets and Digital Asset Research (DAR)	3
1.	What is a digital asset?	3
2.	What is Digital Asset Research and why did LSEG partner with them?	3
3.	What are some use cases for the data?	4
4.	Who owns the intellectual property of the FTSE DAR Reference Price?	4
FTSE	DAR Reference Price	5
5.	What is the FTSE DAR Reference Price?	5
6.	What assets are included in the FTSE DAR Reference Price files?	6
7.	What fields are in the FTSE DAR Reference Price file?	6
8.	Are other licenses required for access to data in the product files?	6
9.	How are the prices calculated in the FTSE DAR Reference Price files?	7
Exch	anges and exchange vetting	8
10.	What is the DAR vetting process?	8
11.	Why would a digital exchange want to participate to the FTSE DAR Reference Price?	8
12.	What exchanges participate pricing for the FTSE DAR Reference Price?	9
13.	How often is the FTSE DAR Reference Price delivered?	9
SED	OL for digital assets	. 10
14.	Do clients need a SEDOL license to gain access to the product file?	10
15.	Can additional SEDOL codes be requested for digital assets outside of the pricing file	10
16.	Why aren't SEDOL codes created for the FX spot of the digital asset?	10
More	e information	. 11
17.	How can I get more information and stay up-to-date?	11
18.	How should I incorporate digital assets into my portfolio? Are they commodities, currencies or infrastructure?	
19.	Who do I contact for more information?	
20.	Do you have subject matter experts for conferences and media?	12



Digital assets and Digital Asset Research (DAR)

1. What is a digital asset?

The term "digital asset" refers to an asset that is issued and transferred using distributed ledger or blockchain technology, including, but not limited to, so-called "virtual currencies," "coins," and "tokens." A digital asset may or may not meet the definition of a "security" under the federal securities laws. For the purposes of this statement, a digital asset that is a security is referred to as a "digital asset security."

2. What is Digital Asset Research and why did LSEG partner with them?

Digital Asset Research (DAR) provides comprehensive digital asset market data to institutional participants. They launched in early 2017 in response to the growing need for institutional quality research in the rapidly evolving digital token and crypto space. DAR's objective is to provide unbiased research, analysis, and insights on token projects, technologies, and other topics of interest to traditional asset managers, hedge funds, family offices, regulators, custodians, tech firms, and other institutional clients entering the cryptocurrency market.

The London Stock Exchange Group and its FTSE Russell subsidiary have partnered with DAR to meet growing institutional demand for actionable digital asset data—a recent study estimates that roughly one-third of institutional investors have digital asset exposure. In 2019, FTSE Russell lanched a series of digital asset indicative indexes. This year, digital asset coverage was expanded with the addition of more than 150 digital assets to the SEDOL Masterfile and launched the FTSE DAR Reference Price, a digital asset pricing feeds providing consolidating prices from vetted/monitored digital asset exchanges. Our goal is to provide transparency and market infrastructure to digital assets. We have worked lockstep with regulators globally to ensure our offering is of the same standards of our established businesses.

3. What are some use cases for the data?

Custodians Fund Administrators	Accurately value client holdings Secondary pricing source
Consultants Asset Owners Asset Managers Academics	Benchmarking Index fund licenses Secondary pricing source Research Reporting
Traders Market Makers	Trade execution decisions
Hedge Funds Venture Capital	Investment decision making

4. Who owns the intellectual property of the FTSE DAR Reference Price?

The IP on the FTSE DAR Reference Price is jointly owned by DAR and FTSE International Limited. Indexes will be owned solely by FTSE International Limited. To learn more about about the how the two organizations work together, please refer to the *Guide to the Calculation of the FTSE DAR Digital Asset Prices and FTSE DAR Reference Prices*.



FTSE DAR Reference Price

5. What is the FTSE DAR Reference Price?

The FTSE DAR Reference Price represents real economonic activity between buyers and sellers of digital assets. We have endeavored with DAR to provide the marketplace with coverage on all digital assets in which pricing is possible. The FTSE DAR Reference Price will be available in two separate products for data licenses: Benchmark Assets and Non-Benchmark Assets. The assets in the Benchmark Assets have passed DAR's asset vetting and the assets in the Non-Benchmark Assets have not passed DAR's asset vetting. Details on DAR's asset vetting is available in the "Guide to the vetting of digital assets and digital asset exchanges."

The FTSE DAR Reference Price for Benchmark Assets is designed to provide market participants prices for digital assets that qualify for use in benchmarks. The FTSE DAR Reference Price files provide the aggregated volume weighted average price of eligible digital assets from vetted exchanges and are calculated every 15 seconds. Digital Asset Research vets the digital assets and pricing sources, calculates the derived price, and supplies FTSE the FTSE DAR Reference Price.

The FTSE DAR Reference Price for Benchmark Assets is a time weighted average of the FTSE DAR Digital Asset Price over the last 15 minutes. The file is produced and disseminated hourly, 24 times a day, seven days a week. FTSE International Limited is responsible for the calculation, production and dissemination of the FTSE DAR Reference Price for Benchmark Assets. **FTSE International Limited is the benchmark administrator and the FTSE DAR Reference Price files are designed to meet the requirements of benchmark regulation.**

The FTSE DAR Reference Price for Non-Benchmark Assets¹ is designed to provide market participants prices for digital assets that² do not qualify for use in benchmarks. The FTSE DAR Reference Price files are the aggregated volume weighted average price of eligible digital assets from

¹ The FTSE DAR Reference Price – Non-Benchmark Assets is not, and is not intended to be, used in the European Union (as "use" is set out in article 3(1)(7) of the EU Benchmark Regulation and the Council of June 8, 2016 on indexes used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds in the European Union [the "EU BMR"]) and accordingly, the EU BMR does not apply to the FTSE DAR Reference Price – Non-Benchmark Assets. Consequently, supervised entities (as "supervised entities" is set out in article 3(1)(17) of the EU BMR) within the European Union are not permitted to use the FTSE DAR Reference Price – Non-Benchmark Assets as a benchmark as set out in article 3(1)(7) of the EU BMR.

a least one watchlist exchange and are calculated every 15 seconds. Digital Asset Research vets the digital assets and pricing sources, calculates the derived price, and supplies FTSE Russell with the FTSE DAR Reference Price data.

The FTSE DAR Reference Price for Non-Benchmark Assets is a time-weighted average of the FTSE DAR Reference Price over the last 15 minutes. The file is produced and disseminated hourly, 24 times a day, seven days a week. FTSE International Limited is responsible for the calculation, production and dissemination of the FTSE DAR Reference Price for Non-Benchmark Assets. **These prices are made available for information and research analysis purposes only.**

6. What assets are included in the FTSE DAR Reference Price files?

The assets in the FTSE DAR Reference Price – Benchmark Assets files have all passed DAR's vetting process for both participating exchanges and asset vetting. This group of assets includes digital assets like Bitcoin (BTC) and Ethereum (ETH).

The assets in the FTSE DAR Reference Price – Non-Benchmark Assets file have not passed DAR's asset vetting process. These assets fall into two categories:

Tier one Non-Benchmark assets are digital assets that do not pass asset vetting but are priced only from vetted exchanges.

Tier two Non-Benchmark assets are digital assets that do not pass asset vetting and are priced from both vetted and watchlist exchanges.

7. What fields are in the FTSE DAR Reference Price file?

The file contains the Digital Asset Sybol, Name, SEDOL, Volume, DAR's Taxonomy, Calculation Time and the price in the following currencies: USD, EUR, GBP, JPY, KRW, USDT, ETH.

Symbol	SEDOL	Name	Volume	Calculation Time	Price USD	Price EUR	Price GBP	Price JPY	Price KRW	Price USDT	Price ETH	DAR Sector	DAR Super Sector	DAR Sub Sector
Btc	BMFH717	Bitcoin	57162.98	2020-07- 02T14:15:25Z	9256.058	8210.82	7402.774	995489	11106807	9256.058	2135531	General Purpose	Digital Currencies	Standard Money Protocols

8. Are other licenses required for access to data in the product files?

DAR taxonomy - Sector, Super sector, Sub sector

No, a DAR Taxonomy license is not required to access this data in the product files. However, if an enduser plans to use the taxonomy for any purposes, they must sign a license with DAR. This includes, but not limited to, evaluating risk and exposure, attribution analysis, portfolio construction around specific themes, or use by exchanges or trading platforms for categorization of supported assets.



Definitions of the DAR taxonomy supersectors, sectors and subsectors can be found on ftserussell.com/digitalasset.

SEDOL identifier

The User Licence is based on the total count of unique SEDOL codes throughout any Licensable Event. Further details can be found on Iseg.com/SEDOL.

9. How are the prices calculated in the FTSE DAR Reference Price files?

The calculation methodology is set out in the Guide to the Calculation of FTSE DAR Reference Price that can be found on ftserussell.com/digitalasset.



Exchanges and exchange vetting

10. What is the DAR vetting process?

Digital Asset Research implements a transparent strategy for vetting the digital exchanges included in the FTSE DAR Reference Price. To be included in the FTSE DAR Reference Price data, exchanges must meet "Watchlist" or "Vetted" criteria. Exchanges that do not meet these criteria are are ineligible for inclusion. Exchanges are reviewed quarterly, In circumstances where pricing fidelity is in doubt, there is a significant security breach, or some other deleterious event that questions the validity of an exchange, then the exchange may lose eligibility with immediate effect, The complete DAR vetting process is described in the "Guide to the Vetting of Digital Assets and Digital Asset Exchanges." Please refer to the Guide for a comprehensive understanding of the DAR vetting process.

11. Why would a digital exchange want to participate to the FTSE DAR Reference Price?

We refer to exchanges who pass DAR's vetting process and have agreed that FTSE International Limited may audit them to ensure they are following their AML and KYC policies, as participating exchanges. As a reminder, our price is a consolidated volume weighted price. The benefit for the participating exchanges to be a part of our derived price is:

- They have access to the FTSE DAR Reference Price file(s), at no cost. They may use an insubstantial amount of data in reports and marketing materials.
- They may utilize SEDOL on their trading platforms, at no cost.
- Finally, they may display the below logo on their exchange. The positive impact from being associated with our brand should lend credibility to these start up entities.

PARTICIPATING EXCHANGE
FTSE | DAR
REFERENCE PRICE

12. What exchanges participate pricing for the FTSE DAR Reference Price?

Digital asset exchanges are reviewed on a quarterly basis. For exchange inquiries, please contact info@digitalassetresearch.com.

A current list of participating exchanges can be found on ftserussell.com/digitalasset.

13. How often is the FTSE DAR Reference Price delivered?

The digital asset market never closes. Therefore, the files are delivered on the fifteenth minute of every hour of every day. We are also creating an notional end-of-day file to coincide with traditional markets closing time, 5 PM ET.



SEDOL for digital assets

14. Do clients need a SEDOL license to gain access to the product file?

No, SEDOL codes for digital assets do not count for license purposes until January 2022.

15. Can additional SEDOL codes be requested for digital assets outside of the pricing file

Any requests for additional digital asset SEDOL codes should be sent to smfnewissues@lseg.com along with documentation. The requests will be investigated on a case-by-case basis.

16. Why aren't SEDOL codes created for the FX spot of the digital asset?

As the price delivered in the product is a composite price, the SEDOL code represents the underlying digial asset and not the FX spot.



More information

17. How can I get more information and stay up-to-date?

Research

FTSE Russell will be working with DAR to publish new research throughout the year. Please visit ftserussell.com/digitalasset or <u>sign up to receive email updates</u> on product launches, education and new research from FTSE Russell.

Newsletters

DAR offers a number of newsletters, including a daily recap and/or a regulatory recap. Please <u>subscribe</u> to DAR newsletters.

18. How should I incorporate digital assets into my portfolio? Are they commodities, currencies or infrastructure?

Digital assets can represent a variety of different types of traditional asset. Which type of traditional asset they represent depends on the individual digital asset and is too large a topic to discuss fully here. Some are designed as a medium of exchange and act like currencies. Others are more like commodities, where the blockchain and its security is the commodity. And some are like equities being the result of capital raising activities. Digital assets, irrespective of their use case, can be incorporated into any portfolio using any of the usual portfolio construction techniques applied to other asset classes.

More information

Education: Risk-friendly ways to consider a Bitcoin Allocation

19. Who do I contact for more information?

Please contact us directly with questions or to set up a data trial.

Taxonomy and exchange vetting	Info@digitalassetresearch.com					
Pricing data inquiries	info@ftserussell.com					
Sales and data trial	info@ftserussell.com info@digitalassetresearch.com					
SEDOL	sedol@lseg.com					

20. Do you have subject matter experts for conferences and media?

Our experts at London Stock Exchange Group and Digital Asset Research are happy to participate in webinars and conferences. Please contact elizabeth.montgomery@lseg.com.

For media inquiries, please contact newsroom@lseg.com.

For more information about our indexes, please visit ftserussell.com.

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FTSE Russell is a leading global index provider creating and managing a wide range of indexes, data and analytic solutions to meet client needs across asset classes, style and strategies. Covering 98% of the investable market, FTSE Russell indexes offer a true picture of global markets, combined with the specialist knowledge gained from developing local benchmarks around the world.

FTSE Russell index expertise and products are used extensively by institutional and retail investors globally. For over 30 years, leading asset owners, asset managers, ETF providers and investment banks have chosen FTSE Russell indexes to benchmark their investment performance and create investment funds, ETFs, structured products and index-based derivatives. FTSE Russell indexes also provide clients with tools for asset allocation, investment strategy analysis and risk management.

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