IN THE GENERAL DIVISION OF
THE HIGH COURT OF THE REPUBLIC OF SINGAPORE

[2024] SGHC 173

Originating Claim No 621 of 2023 (Assessment of Damages No 2 of 2024)

Between

Fantom Foundation Ltd

… *Claimant*

And

(1) Multichain Foundation Ltd
(2) Multichain Pte Ltd

… *Defendants*

JUDGMENT

[Damages — Assessment]

TABLE OF CONTENTS

Fantom Foundation Ltd
v
Multichain Foundation Ltd and another

[2024] SGHC 173

General Division of the High Court — Originating Claim No 621 of 2023
(Assessment of Damages No 2 of 2024)
Mohamed Faizal JC
3 June 2024

8 July 2024 Judgment reserved.

Mohamed Faizal JC:

1 The issue before me relates to the assessment of damages arising from a default judgment ("the default judgment") obtained by Fantom Foundation Ltd ("the Claimant") against the two defendants, Multichain Foundation Ltd ("the First Defendant") and Multichain Pte Ltd ("the Second Defendant"). For context, on 30 January 2024, the Claimant obtained default judgment that, among other things, granted the following orders:

(a) damages to be assessed ("the damages claim"); and

(b) that the Defendants deliver to the Claimant movable property of 4.175m FTM or, in the alternative, the value of the said FTM ("the FTM claim").

2 For completeness, the default judgment also dealt with other ancillary issues, including the issue of costs and payment of interest. However, those issues are not germane to the matter before me, and I therefore do not propose to make any further reference to them.

3 For the reasons set out in this judgment, having heard the Claimant, I grant the Claimant the sum of US$58,620.55 in relation to the damages claim, and US$2,129,250 in relation to the FTM claim. As will be explained below, these were the sums that were sought by the Claimant before me.

4 It appears that the decision of the High Court in relation to the default judgment (as set out at [1] above) has garnered quite a bit of attention in the cryptocurrency world. For instance, it has been suggested on a website that FTM reached a new-2024 peak when the default judgment was announced.[1] There is thus some potential for not insignificant market movements upon the issuance of this decision. In the face of such volatility, it is important that the relevant market players gain a holistic understanding of the decision of this court in the assessment of damages. Hence, I decided to issue this judgment in the interest of transparency, with a view to setting out the full facts of this case and the considerations that were had in arriving at my decision on the assessment of damages. In passing, I also thought it sensible to make some remarks about the inherent challenges pertaining to the valuation of cryptocurrencies in general.

5 I should emphasise, for completeness, that since the Defendants did not participate in these proceedings, the facts as set out in this judgment (where it

[1] See, for example, https://www.fxstreet.com/cryptocurrencies/news/fantom-price-rallies-after-ftm-foundations-legal-win-against-multichain-foundation-202403051219

relates to the dispute at hand) are primarily as asserted by the Claimant.

Background

6 The Claimant is an exempted foundation company limited by guarantee incorporated in the Cayman Islands. The Claimant developed and operates "Fantom Opera Chain", an open-source smart contract platform for cryptocurrencies and decentralised applications. Cryptocurrencies are, simply put, digital assets, though the financial value of such digital assets can vary widely depending on the type and form of cryptocurrency. In layman parlance, cryptocurrencies are forms of digital currency that are not backed, as conventional currencies would typically be, by a reserve bank or central government, but that exist online and that are verified and recorded on a blockchain. A blockchain is a decentralised, (ostensibly) tamper-proof encrypted digital ledger system.

7 There are many variants of cryptocurrencies in the online space, but of especial significance for present purposes are the following four forms:

(a) Native coins are any cryptocurrency that operate natively on a standalone independent blockchain. Well-known examples include Bitcoin (BTC) and Ethereum (ETH). Fantom, or "FTM", is the Claimant's native coin as issued on the Fantom Opera Chain, which enables its holders to pay transaction fees, participate in the governance of the Fantom Opera Chain, and to 'stake' on validators that act to verify transactions and secure the network.

(b) Tokens (sometimes also described as "non-native tokens") are any cryptocurrency that do not operate natively on a standalone independent blockchain but do so on another network where they can be

traded. "FTM (ERC-20)" is the Claimant's token as issued and tradeable on the Ethereum network, which enables its holders to swap it for an FTM.

(c) Stablecoins are a particular type of cryptocurrency whose value is conventionally pegged to another fixed or conventional asset, *eg*, the US Dollar or gold. In theory, they ought to be less volatile in so far as the pegging of such assets with more conventional assets should moderate the price movements, since they are supposed to be redeemable with the value of the asset they are pegged to. However, reality does not always align neatly with theory on this, as evidenced by the mid-2022 collapse of the terraUSD stablecoin ("UST") and its companion token (LUNA), which quite famously wiped out many billions of dollars overnight.

(d) Wrapped tokens, also known as "wrapped assets", are digital assets backed by a locked original asset on another blockchain and are thus (supposedly) worth the value of that collateralised asset. For instance, Wrapped Bitcoin ("WBTC") is available as ERC-20 or TRC-20 tokens, which means it can be used and traded on the Ethereum and Tron blockchains, respectively. One WBTC should theoretically always equal one BTC (but as this case will show, there may be a big gap between theory and reality). In this sense, wrapped tokens are similar to stablecoins, in that stablecoins are pegged to conventional assets while wrapped tokens are pegged to crypto assets.

8 The First Defendant, Multichain Foundation Ltd, is a company limited by guarantee incorporated in Singapore. Part of its business involves allowing its users to create and redeem wrapped tokens – it operates a cross-chain bridge

and router protocol that serves as a bridge that facilitates interoperability between discrete blockchain networks ("Multichain Bridge"). Broadly speaking, the Multichain Bridge serves as a platform that allows one to trade across blockchains that would otherwise comprise relatively illiquid cryptocurrencies. It does this by locking the cryptocurrency put in on one side of the bridge ("the source assets") and releasing the value-equivalent of the first currency (*ie*, a wrapped token) on another blockchain for use and trading. The source assets essentially serve as collateral for the value of the digital equivalent of the second cryptocurrency that would then, in theory, circulate freely and, consequently, be traded in a liquid manner on another blockchain. The cryptocurrency security is eventually released when the digital equivalent is returned. To describe this ecosystem in slightly more accessible terms, and perhaps at the risk of oversimplifying, the process operates akin to an IOU. As the Claimant's legal counsel (and one of the Claimant's witnesses), Mr Eliahu Bernstein, puts it, one party puts their assets on one blockchain into the Multichain Bridge and these are locked up, and on another blockchain, the Multichain Bridge disburses assets of equivalent value, whereupon they can be traded as wrapped assets (effectively the IOU). The lock to the original assets can only be unlocked (in theory at least) when the IOU is returned.

9 The Second Defendant, Multichain Pte Ltd, is a company limited by guarantee incorporated in Singapore. The significance of the role of the Second Defendant will be discussed later (see [17] below).

10 The damages sought by the Claimant essentially arise from the loss of several cryptocurrency assets pursuant to three discrete agreements (collectively, "the agreements") it had with the First Defendant. Only the first two of these are written agreements – the last agreement is one that the Clamant

asserts can be inferred from a course of conduct.

11 The first agreement is an agreement for the integration of the Claimant's blockchain to the First Defendant's platform, *ie*, the Multichain Bridge ("the Integration Agreement"). The Integration Agreement allowed various cryptocurrencies to be integrated with the First Defendant's networks including three stablecoins, namely USDC, USDT, DAI, and two wrapped tokens involving well-known cryptocurrencies, namely WEth (Wrapped Ethereum) and WBTC (Wrapped Bitcoin). It is unnecessary to go into further specifics of this arrangement as it is not germane to the issues at hand, though I note that this tie-up was announced by the First Defendant in a Medium.com post on 11 November 2020.[2]

12 The Integration Agreement is complemented by a User Agreement ("the User Agreement"). The User Agreement comprises the terms and conditions for the use of the Multichain bridge. The Claimant contends that key conditions of the User Agreement include the following:[3]

(a) that the Multichain Bridge was controlled by decentralised safe and secure multi-party computation ("MPC") nodes that are incapable of one-person control;

(b) that the Multichain Bridge will hold source assets safely as collateral custodian on a 1:1 basis in a "decentralised management account" for the single purpose of transfer upon redemption of Wrapped Assets; and

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2 See https://medium.com/multichainorg/anyswap-will-go-live-on-fantom-mainnet-on-november-11th-3e5a4fb8ddf0.

3 Statement of Claim at para 29.

(c) that any bearer presenting a validly encrypted "wrapped asset" is entitled to unwrap and collect the source asset as locked on their bridge.

13 Pursuant to the two agreements set out above, as of 6 July 2023, the Claimant put deposits of source assets into the Multichain Bridge to create, or mint, the value-equivalent of wrapped assets on the other side. At that time, these deposits amounted to the equivalent of about US$61,829.70. The precise breakdown of these deposits (that were then locked up, as collateral, in order to release the wrapped assets of supposed equivalent value on the other end) as at that date are set out below:

Cryptocurrency / Coin	**Value (in USD $)**
USDT	9991.40
USDC	28.80
DAI	51809.50
Total	61,829.70

14 At some point during their business relationship, the Claimant and the First Defendant also engaged in a course of dealing in which the Claimant regularly provided liquidity to the First Defendant in tranches upon request ("the liquidity facility"). In short, this was a commercial arrangement in which the First Defendant (through their representatives) would occasionally request the Claimant to provide FTM on the Fantom Opera Chain's side of the Multichain Bridge. In return, the First Defendant was supposed to give the Claimant the equivalent FTM (ERC-20) on the Ethereum blockchain side. This arrangement aimed to enhance liquidity for transactions involving FTM and FTM (ERC-20) on the Multichain Bridge. Consequently, on 14 April 2023, the Claimant transferred 4.175m FTM onto the Multichain Bridge pursuant to the liquidity

facility. To date, contrary to the understood arrangements *vis-à-vis* the liquidation facility, the 4.175m FTM have not been returned to the Claimant.

15 On 7 July 2023, in an internationally publicised security breach ("the security breach"), over US$127 million worth of assets were moved out of the multichain bridge wallet (including the "source assets" of the form described at [8] above) into various other cryptocurrency wallets. According to Mr Eliahu Bernstein, the amount of assets taken out were even greater than I have described above, but the main point is that as a result of the siphoning of these assets, the First Defendant was effectively left without any significant assets of value. Numerous other secondary transfers of some of these assets were made subsequently in the next few days, essentially rendering the assets difficult to trace. These transfers resulted, the Claimant asserts, in the loss of the assets set out at [13] above. The Claimant's position is that the breach was possible because the CEO of the First Defendant had ultimate privileges and control over the cryptocurrency assets stored in the Multichain Bridge. The First Defendant had admitted as much in a public posting on Twitter (or X, as it is now known). This contravened what the Claimant contends to be the key term in the User Agreement, which stated that the Multichain Bridge was controlled by decentralised safe and secure MPC nodes that are incapable of one-person control.

The default judgment

16 As a result of the above alleged circumstances, the Claimant filed HC/OC 621/2023 on 18 September 2023 ("the filing date"). On 30 January 2024, the Claimant obtained default judgment for the damages claim and the FTM claim.

17 While there were many alternative causes of action set out in the Statement of Claim, the main plank advanced by the Claimant was that the First Defendant had breached the User Agreement, in particular, by failing to ensure that the Multichain Bridge was of a decentralised and safe nature incapable of one-person capture and had fraudulently misrepresented the same. The Claimant also included the Second Defendant in the action on the following premises: its sudden incorporation just before the security breach on 7 July 2023; the apparent links between the Second Defendant and the First Defendant by way of having the same director and shareholder (*ie*, one He Xiaokun); and the Claimant's belief that the siphoned assets could have been illegally diverted to the Second Defendant. I reiterate that I am *not making any finding on the merits of these assertions of the involvement of the First and Second Defendant*. The merits of these assertions are *not* before me; nonetheless, the Defendants are liable to the Claimant by virtue of the default judgment ordered in HC/OC 621/2023 on 30 January 2024. I highlight the above only to set out the relevant context of the matter before me.

Assessment of damages

18 It is against the above backdrop that this matter comes before me for an assessment of damages. As I have noted at [1] above, the assessment encompasses two facets: the damages claim and the FTM claim. In assessing the quantum of damages, I note that our courts have indicated that the issue of whether the Courts accept any valuation ascribed to cryptocurrency must, as is the case with any type of asset, conventional or otherwise, turn on the evidence presented before it: see *In the matter of Hodlnaut Pte Ltd* [2023] SGHC 323 at [11]. With this in mind, I now deal with the two claims in turn.

The damages claim

19 The damages claim arises from the Claimant's holding of deposits as set out in the table at [13] above. Essentially, the Claimant seeks damages arising from the difference between the value of the source assets secured on one end of the Multichain on 6 July 2023 (*ie*, immediately before the security breach described at [15] above) and the *current* value of the wrapped assets in its possession (*ie*, the IOUs in the bank analogy set out at [8] above). As discussed at [8] earlier, the value of the wrapped assets is determined by the value of the source assets. However, since the First Defendant had dissipated the source assets on 7 July 2023, the value of the wrapped assets has been severely compromised. The Claimant asserts that the value of the wrapped assets as at 18 September 2023 can be broken down as follows:

Cryptocurrency / Coin	**Value on 6 July 2023 (in USD $)**	**Value on 18 September 2023 (in USD $)**
USDT	9991.40	703.77
USDC	28.80	3.38
DAI	51809.50	2501.97
Total paper value	61,829.70	3209.12

One might legitimately query as to why the wrapped assets still possessed a residual value of US$3209.12 as of 18 September 2023, given that the source assets (which provided the underlying value of the wrapped assets) were hollowed out completely. When asked this question during the hearing before me, Mr Eliahu Bernstein testified that while the wrapped assets were technically worthless, the market continued to confer a speculative residual value upon them due to the market pricing in the off chance that some of the losses can be

recovered.[4]

20 Strictly speaking, the difference in paper value between the two reference points set out in the table above is US$58,620.55. This sum is lower than that initially sought by the Claimant, as the initial pleaded sum had to be appropriately reduced to account for, among other things, fees and the cost of exchange from cryptocurrency to conventional currency. The Claimant readily accepted this reduction during the hearing before me.[5] During the same hearing, there was also a discussion as to whether the actual claim should have been US$58,620.58 (as a result of a calculation issue comprising one of the entries in the table at [19] above) as opposed to US$58,620.55, but I have decided to proceed on the basis of the smaller quantum as it would not be meaningful, in my view, to dwell on a difference of 3 US cents.

21 The Claimant contends that awarding damages in the sum of US$58,620.55 for the damages claim is justified because, as alluded to earlier, the general principle in assessing compensatory damages is that the latter should return the Claimant to the position it was in *as if the breach had not occurred*. On the facts, the Claimant asserts that this would entail putting it in a position as if the underlying source assets had not been dissipated on 7 July 2023. Put another way, the claim would be for the value of the wrapped assets on 6 July 2023, less any residual value on 18 September 2023.

22 I agree with the Claimant's position on the law. I note that the Claimant essentially invites the court to assess the loss of value with reference to the date of the breach, which is the general position on valuing compensatory damages

4 Minute Sheet for 3 June 2024 at pp 7 and 15.

5 Minute Sheet for 3 June 2024 at p 6.

for breach of contract in Singapore: see *iVenture Card Ltd v Big Bus Singapore City Sightseeing Pte Ltd and other* [2022] 1 SLR 302 ("*iVenture*") at [133]. I also accept the Claimant's submission that it was unable to mitigate its losses pertaining to the damages claim, since the First Defendant had siphoned out the source assets which the Claimant had put into the Multichain bridge, leaving the Claimant helpless as to the depletion of its cryptocurrency assets held by the Multichain Bridge pursuant to the User Agreement.[6]

23 I now turn to the evidence as to the appropriate quantum of loss. The Claimant adduced evidence from one Mr Gu Miao ("the Claimant's expert") on the proper valuation methodology for the cryptocurrencies in this case. Given the somewhat technical nature of the valuation exercise on the present facts, the Claimant's expert's background in valuation more broadly, and his experience with dealing with valuation of cryptocurrency matters in the past, I accepted that he should be allowed to offer such evidence under s 47(1) of the Evidence Act 1893 (2020 Rev Ed).

24 The evidence led by the Claimant's expert supported the Claimant's position. When the Claimant's expert testified during the hearing before me, he explained how he arrived at the respective values of the wrapped assets on 6 July 2023 and 18 September 2023. Essentially, what the Claimant's expert did was to use data sets from CoinMarketCap, apparently "a leading cryptocurrency price-monitoring platform",[7] and SpookySwap, a "decentralised exchange built on the Fantom blockchain network that dynamically calculates the rate at which a token can be swapped for another based on the amount of each token available

6 Claimant's AD submissions at para 31.

7 Claimant's AD submissions at para 24.

in its liquidity pool".[8] In doing so, he relied on the data set provided by the Claimant on the respective values as at 6 July 2023 and 18 September 2023. The Claimant arrived at these values as follows:

(a) The assessment of the paper value of the investment as at 6 July 2023 (of USD $61,829.70) was derived from the values set out in CoinMarketCap. It is unnecessary for me to go into further details on this, since the valuation exercise was really nothing more than compiling the various valuations across the different cryptocurrencies as of 6 July 2023. The use of CoinMarket in such a valuation exercise is unproblematic; indeed, I note that other jurisdictions have similarly considered CoinMarket to be a "reliable cryptocurrency valuation tool" (see *Diamond Fortress Technologies Inc v EverID Inc* 274 A.3d 287 ("*Diamond Fortress*") at *306).

(b) As for the paper value of the wrapped assets on 18 September 2023, this was adopted from the valuation provided from Spookyswap. The use of Spookyswap as a valuation tool admittedly raises the spectre of a possible conflict of interests. This is because the valuation of such wrapped tokens can only be undertaken meaningfully on a blockchain owned by the Claimant (given how blockchains operate as I alluded to earlier), and Spookyswap is the main platform that would be able to facilitate such valuation. Nonetheless, I was satisfied from the evidence provided by Mr Eliahu Bernstein that there would be no feasible way for the Claimant to influence the price of the compromised assets. I also note that if the Claimant sought to maximise its gains, it could have easily argued that it should value the wrapped assets at zero, which is

[8] Claimant's AD submissions at para 24.

> their technical value in light of the lack of source assets backing them. The circumstances therefore gave me no reason to believe that the valuation from Spookyswap was in any way manipulated or inaccurate.

25 It appears that the Claimant's method is the closest possible proxy to the meaningful valuation of the wrapped assets. Given the absence of any better evidence, it would seem appropriate to accept that the valuation provided by SpookySwap represents the closest estimate of what the assets were worth on 18 September 2023.

26 For completeness, I note that there is also the question of whether the more appropriate date to price the "post-breach" value would be 8 July 2023 (the date immediately after the breach was reported), rather than 18 September 2023. This was a matter that came up as well during the hearing before me. That said, I accepted Mr Eliahu Bernstein's evidence that on 8 July 2023, the price of the assets would have been so volatile that it would not likely be of any significant utility as a sensible reference price point to accurately assess the Claimant's loss. As such, I am willing to accept that the methodology proposed by the Claimant was the fairest way to apprise the damages *vis-à-vis* the damages claim.

27 I therefore accept that the damages claim should be valued at US$58,620.55.

The FTM claim

28 As regards the FTM claim, the Claimant's expert testified that based on data from CoinGecko, which is purportedly the world's largest independent

cryptocurrency data aggregator,[9] FTM is most liquidly traded against USDT in Binance, the largest cryptocurrency exchange by trading volume in the world. On that basis, the appropriate approach to valuing the FTM claim appears to be to assess the price of 4.175m FTM through the lens of what it would cost to trade 4.175m FTM in terms of USDT on Binance. USDT is a stablecoin and 1 USDT had a value of US$1 on 14 April 2023 on Binance.

29 The Claimant's expert showed how, on an analysis of the transfer of over 120 million FTM on that day on Binance, the average price of 1 FTM was about 0.5160 USDT that day. Accordingly, the value of the shares 4.175m FTM would be worth slightly over US$2.154m. Interestingly, as noted at [4] above, the Claimant seeks only US$2,129,250, a sum less than that assessed by the Claimant's expert by about US$25,000. This was apparently because the Claimant's valuation of the FTM shares were undertaken at spot value (*ie*, the value at a specific point of time) while the Claimant's expert valuation was premised on determining the volume-weighted average price across the entirety of 14 April 2023 (the weighted average price across a day). Since the Claimant ended up seeking the lesser of the two possible amounts it could claim, I had no issue with considering the merits of the case on that basis.

30 It is apt to briefly explain why 14 April 2023 represents an appropriate date upon which to assess the value of the FTM. This is because 14 April 2023 could be considered the notional date on which the First Defendant breached the liquidity facility. As I noted earlier, the Claimant had transferred the 4.175m FTM on that day, under the liquidity facility that the Claimant asserts exists by virtue of parties' course of dealing. Pursuant to this course of dealing, the understanding was that the First Defendant would repay the equivalent within a

9 Gu Miao's affidavit of evidence in chief ("AEIC") at p 13 at para 3.6.

day or two, and in any event, no later than a week.[10] According to the Claimant, from 30 August 2021 to 13 April 2023, a total of over 250m FTM had been transacted in such a manner between the parties,[11] with the transaction involving 4.175m FTM serving as the last transaction (and the only one that was unsatisfied pursuant to these arrangements). Based on those parameters, it was strictly speaking, plausible that the reference point for the price of FTM, based on the date of the breach of the liquidity facility, be any date between 14 April 2023 and 20 April 2023 (since the First Defendant was very much within its rights to deposit within a week under the course of dealing that was had between the Claimant and the First Defendant). However, given that there is a certain arbitrariness to picking any *particular* date within the timeframe of 14 April 2023 and 20 April 2023 as the reference point for this analysis, I accept that 14 April 2023 was an acceptable date for the Claimant to pick. To be fair to the Claimant, there was no evidence that, in doing so, it was cherry-picking the date on which FTM was valued the highest in order to accentuate the value of the claim – indeed, the value of 1 FTM was higher than 0.5160 USDT on some days and lower than that on other days within the period of 14 April 2023 to 20 April 2023.

31 I agree with the methodology of the Claimant's expert and of the Claimant in relation to the FTM claim. Once again, the Claimant elected to assess the loss of value with reference to the market value of FTM at the date of the breach. On the facts, I found that no injustice would result from adopting the date of the breach as the reference point for assessing damages, although, as I note later in this judgment, assessing damages with reference to the date of

10 Statement of Claim at para 36c.

11 Statement of Claim at para 35b.

breach in this manner may not always be just or even reflective of reality in some cases. I had also no reason, on the evidence before me, to dispute the valuation approach adopted by the Claimant and the Claimant's experts. Nonetheless, as I did not have the benefit of opposing arguments regarding the method of valuation, I should not be taken to suggest that the approach by the Claimant's expert and the Claimant as being the optimal or definitive method of valuation in all cases.

32 I further accepted the Claimant expert's evidence that any attempted disposal of 4.175m FTM on Binance was not likely to have significantly reduced any possible sale price (in the same way that an immediate dumping of millions of shares in a company might) such that a discount to the price of 0.5160 USDT per FTM should be effected. First, 4.175m FTM represents a relatively small quantum compared to the overall trading volume of about 120m FTM on 14 April 2023. Second, even when trading volumes were heavy on that day, the price shifts appeared to be modest, or minimal. For example, based on the data provided by the Claimant, it would appear that over the course of an hour from 0900 hrs to 1000 hrs, one of the more-heavy trading periods that day for FTM, over 10m FTM switched hands, but the price only crept up from 0.5209 FTM/USDT to 0.5218 FTM/USDT. It was therefore not appropriate to discount the value of the 4.175m FTM any further on that basis.

33 For completeness, and just to underscore the volatility of FTM and cryptocurrencies, the expert report also showed that, as of 26 March 2024 (which was the date the valuation assessment was undertaken for the purposes of the expert report), the very same 4.175m FTM would be worth over US$4,500,000 (*ie*, more than doubling in value within a relatively short time

period of just nine months).[12] There was also evidence that on the date of the hearing before me on 3 June 2024, even as the hearing was ongoing, the value of 1 FTM shifted by about 2.5% within the space of about a half hour.[13]

34 I therefore accept that the FTM claim should be valued at US$2,129,250.

The unique nature of cryptocurrency and the valuation conundrum

35 During the assessment process, and in considering what was just and equitable on the facts, I had to consider some additional issues relating to the challenges of assessing the value of cryptocurrencies, given their inherently volatile nature. While these issues were mercifully not ultimately dispositive in this case, given how the Claimants elected to plead and argue their case, I thought it prudent to set out some of these considerations. These considerations appear to me to be issues that courts, both in Singapore and around the world, would have to grapple with in future. This is especially so in light of the meteoric ascent of cryptocurrencies as an investment modality, and the unfortunate reality that, for all of the oft-cited claims of cryptocurrencies being a secure and impenetrable form of investment, and as this case makes clear, the theory of the immutability of blockchains and distributed systems such that they lack a single point of failure is not always borne out in reality (see Kelvin Low and Eliza Mik, "Pause the Blockchain Legal Revolution" (2020) 69(1) *International and Comparative Law Quarterly* 135 at 143–145). The prevalence of such backdoors in cryptocurrency, coupled with other forms of slippery behaviour in that landscape, has led some to conclude that "corporate

12 See Gu Miao's AEIC at p 13, footnote 16.

13 Minute Sheet for 3 June 2024 at p 9.

malfeasance may be as common in crypto as impounded Lamborghinis".[14]

36 The unique nature of cryptocurrency, to my mind, gives rise to two related challenges: first, how to ascertain the *market value* of cryptocurrency at any given point of time; and second, how to determine the date of assessment of damages, or the reference point for computing the losses.

Ascertaining the market value of cryptocurrency at any one point in time

37 I turn first to the challenge of ascertaining the market value of cryptocurrency at any one point in time. It seems that the assessment of the value of any cryptocurrency can never be forensically precise, as there is no inherently objective value of cryptocurrency. Different online exchanges price each type of cryptocurrency somewhat differently as a result of a myriad of factors. The Claimant's expert testified before me that the way to understand the different prices is not that there is no objective price for cryptocurrency, but that each of the different prices set out are objective, save that the different spreads (*ie*, the gap between the bid and the ask prices of assets) on each platform lead to different prices.[15] He further noted that other forms of assets with value, *eg*, shares, do not generally suffer from such an absence of an objective price in the form of a single source of truth as they are typically traded on only one platform (*ie*, the stock market in which the said share is listed). To make the point in more concrete terms, the price of an Amazon share is whatever the New York Stock Exchange says it is; the price of a Bitcoin is what an aggregate sampling of many different cryptocurrency platforms say it is, with each platform possibly

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14 https://fortune.com/crypto/2024/06/06/shima-capital-vc-ackman-galaxy-yida-gao/. For ease of understanding the cultural reference, it should be noted that Lamborghinis have, in recent times, served as the status brand, or symbol, defining success amongst crypto investors and operators.

15 Minute Sheet for 3 June 2024 at p 14.

providing a slightly different price from the next. All of this is then exacerbated somewhat by the fact that cryptocurrencies are conventionally traded using other cryptocurrencies. I highlight this to show that the act of understanding the spot value in valuing cryptocurrency may *seem* uncontroversial but in reality, necessitates the use of educated guesses.

38 Such educated guesses take place against the backdrop of massive volatility fuelled by the existence of a disconnect, almost to the point of decoupling, between economic value and perceived value. It is often said that value is, by its nature, a function of perception. To state a simple example, a new Apple iPhone might be valued at, say, $1,500, not because it costs that amount to source for its parts or assemble those parts, but because the market perceives its value to be $1,500. This is how the free market works. However, an iPhone confers the user some inherent value: it gives the user the ability to communicate via online messaging apps, to access the Internet and social media, and (ironically perhaps less frequently nowadays) to make calls. The point is that the iPhone itself grants the user some form of value other than merely the potential value to be reaped from selling the iPhone.

39 This is not the case for cryptocurrencies. In the realm of cryptocurrencies, value is a (crypto) coin toss between belief and demand – its value lies not so much in its physical state or economic value, but in the faith that the market collectively places in it (*ie*, perceived value): see *ByBit FinTech Limited v Ho Kai Xin & Others* [2023] 5 SLR 1748 ("*ByBit*") at [32]. It has no real intrinsic value otherwise. While cryptocurrencies are ostensibly a form of incorporeal property (*ie*, they don't take on physical form but confer rights that are not physically perceived: see *ByBit* at [31]), they are similarly not akin to conventional incorporeal property as those tend to confer some collateral

benefits to its owner (*eg*, the publishing of books pursuant to such copyright, or the right to use a popular trademark), from which it derives its value. By way of an example: Disney's copyrights and trademarks of Mickey Mouse are not *inherently* valuable but derives its value from its ability to stop others from unauthorised copying of such an iconic character and to create products that leverage on such trademarks. Cryptocurrencies confer no such associated advantages. In some ways, just as how some celebrities who are famous for no clearly identifiable reason are sometimes pejoratively said to be "famous for being famous", many cryptocurrencies are "valuable for being valuable". In theory, much of these considerations do not apply to more structured cryptocurrencies which are engineered to be less volatile, such as stablecoins, as these are typically pegged to conventional currencies or assets. That said, as I mentioned at the outset, the spectacular collapse of UST and LUNA in May 2022 illustrates that such purported stability can, at times, be merely illusory.

40 This aspect of cryptocurrencies is relevant because the seismic gap between economic value and perceived value leads to an extremely unstable pricing environment where prices may dramatically move up and down in an extremely short period of time for rather indiscernible reasons. Quite apart from the issues raised at ([33] and [37] above), the wild movement of the value of cryptocurrencies may, in the future, raise difficult questions on what the most appropriate methodology would be for valuing such inherently volatile assets. This then brings us to the associated question of the appropriate date to use to value cryptocurrencies, which thankfully is not of much significance here given how the Claimant presented its case (see above at [31] and [32]).

Which point in time should one use to value cryptocurrencies?

41 In more traditional breach of contract situations involving conventional

assets, the general compensatory principle is to allow for a party to be put in as good a position as if the contract had been performed, subject to the limiting doctrines of causation and remoteness: see *iVenture* at [103]. In such cases, as I had alluded to above at [22] and [30]–[31], the assessment of damages is generally assessed by reference to the date of the breach, although this is but a general rule from which the court may depart if following it would give rise to injustice: *iVenture* at [133]. Citing *Hooper v Oats* [2014] Ch 287 at [38], the court in *iVenture* at [133] noted that the breach date rule does not apply in cases where there is no immediately available market for sale of the relevant asset or for the purchase of an equivalent asset. In assessing the value of assets when undertaking this analysis, the court places reliance on market value: see *Toh Tiong Huat v P M Gunasaykaran (personal representative of the estate of Mayandi s/o Sinnathevar, deceased) and another* [1995] 3 SLR(R) 627 at [30].

42 Given the volatility of cryptocurrencies, the breach date rule may not *always* represent the best assessment methodology to value cryptocurrencies in all circumstances. There is the question of whether the facts are exceptional enough for the court to measure the quantum of compensatory damages by reference to the defendant's gains or profits rather than the claimant's own loss: see *MFM Restaurants Pte Ltd and another v Fish & Co Restaurants Pte Ltd and another appeal* [2011] 1 SLR 150 ("*MFM Restaurants*") at [66]. Utilising the former reference point (of a defendant's gains) for damages arising from cryptocurrencies, however, itself creates its own unique set of problems in the cryptocurrency context, since it can sometimes be difficult to ascertain when or where precisely the cryptocurrencies were transferred given the difficulty of tracing assets across its many movements on the blockchain. This can make any meaningful measurement of gains from any wrongful gain near-impossible.

43 But *even* where the court elects to assess a claim through the lenses of a claimant's *own loss*, the court is still faced with the question of *when* (*ie*, which date or time) to assess the quantum of loss caused by a breach of contract. This becomes particularly relevant in the situation where the value of an asset increases (or decreases) dramatically after the date of breach, as such volatile assets are wont to do. To illustrate, imagine a situation where a defendant misappropriates a Bitcoin at the end of 2018, when the price of one Bitcoin would be just under US$4,000, and the claimant files a suit a year later, when the value of one Bitcoin is just north of US$7,000. By the time the matter comes up for trial, it may very well be another year later, by which time the Bitcoin would be worth just below US$27,000. If the judgment date is end-June 2024, that same Bitcoin would be worth around US$60,000. Valuing the quantum of loss at the date of the breach not only seems manifestly unfair, but it could also arguably fail to reflect the actual loss which the claimant suffered, or the loss which the claimant would be taken to have suffered if it had mitigated its losses.

44 To be sure, the issue of choosing the date of valuation of loss is relevant not just to cryptocurrency but also to other assets, such as shares, stocks, or even some volatile-priced conventional assets, though the volatility inherent in cryptocurrencies renders it a much more challenging conundrum. Other jurisdictions have grappled with this issue in various contexts. In the United States ("the US"), the Delaware Superior Court considered this issue in the context of valuing cryptocurrencies. In *Diamond Fortress* at *306, the Delaware Superior Court calculated the value of cryptocurrency by referring to the "highest market price of the security within a reasonable time of the plaintiff's discovery of the breach". This approach finds its provenance from securities jurisprudence in the same jurisdiction. The duration of the reasonable period of time is established "by resort to a 'constructive replacement' purchase by the

plaintiff, *ie*, how long it would have taken the plaintiff to replace the securities on the open market": *Diamond Fortress* at *307. As a general rule, a period two or three months is generally accepted as a reasonable period of time to replace an asset on the market: *Diamond Fortress* at *308. The "highest market price of the security within a reasonable time of the plaintiff's discovery of the breach" standard is also used in New York for stock and securities generally: see, *eg*, the United States Supreme Court decision of *Gallagher v Jones* 9 S.Ct. 335 at *338. Indeed, this standard originated from the New York courts and has been termed the "New York rule".

45 Not all jurisdictions in the US adopt the New York rule in relation to all cases of breach of contract. The Utah courts, for instance, apply the New York rule only in the context of claims for the conversion of shares, but do not apply that rule in usual breach of contract claims, including those involving non-delivery of shares: see *H&P Investments v Ilux Capital Management LLC* 500 P.3d 906 at [41]–[42]. I do not propose to delve deeper into the valuation method of these other jurisdictions – I raise this simply to highlight the many different valuation methods being utilised by courts in different jurisdictions. In an appropriate case, our courts would have to consider which of these different methods of valuation ought to be adopted. Indeed, given the example I gave above about how Bitcoin has dramatically risen in price (see [43] above), it may be that even the approach undertaken in *Diamond Fortress* may result in an assessment that significantly underprices the loss (or in a case where the cryptocurrency crashes overnight, possibly significantly overstates the loss).

46 The UK courts have not had occasion to consider the issue in the context of cryptocurrency. However, they have had the opportunity to consider the application of the breach date rule in general. On this matter, the UK's position

is similar to Singapore's in that the breach date rule does not always apply to every case, albeit that the UK courts appear to have rejected the notion that the breach date rule represents a general rule. In *Stanford International Bank Ltd (in liquidation) v HSBC Bank plc* [2023] AC 761, Lord Leggatt JSC opined that there is no such rule of law as the breach date rule:

> 43 The error lies in the premise that loss caused by a breach of duty is generally to be assessed as at the date of the breach. ***There is no such rule of law***. Losses caused by breach of a contractual or common law duty routinely occur after the date of the breach and are generally to be assessed at whichever is the earlier of the date when the loss occurred and the date when damages are awarded. Sometimes—for example, in many personal injury cases—this requires the court to quantify losses which have not yet occurred but are likely to occur in future. The reason why in some types of case—for example, cases involving loss of or damage to goods—it is often appropriate to take a valuation date at or near to the date of breach is the effect of a rule which I will call the market mitigation rule. This rule is that, *where there is an* ***available market*** *in which an adequate substitute can be obtained for goods or services of which the defendant's breach of duty deprived the claimant, damages are to be assessed* ***as if the claimant entered the market and obtained such a substitute at the earliest reasonable opportunity*** *whether or not the claimant in fact did so*. So where, for example, a seller wrongfully fails to deliver goods, *the market mitigation rule generally means that the measure of damages is the difference between the contract price and the market price of the goods at (or shortly after) the date when the goods should have been delivered*: hence the *prima facie* measure of damages stated in section 51 of the Sale of Goods Act 1979. But where the market mitigation rule does not yield this result—as, for example, where the claimant is not aware of the defendant's breach until some time later or where there is no available market in which an adequate substitute for the lost performance can be obtained—the relevant loss will occur, and the damages will therefore be measured, at a different date. …
>
> [emphasis in italics and bold italics added]

47 In Radford *v De Froberville* [1977] 1 WLR 1262 at 1285, the court opined as follows:

> … It is sometimes said that the ordinary rule is that damages for breach of contract fall to be assessed at the date of the breach. That, however, is not a universal principle and the rationale behind it appears to me to lie in the inquiry – at what date could the plaintiff reasonably have been expected to mitigate the damages by seeking an alternative to performance of the contractual obligation? In contracts for the sale of goods, for instance, where there is an available market, the date of non-delivery is generally the appropriate date because it is open to the plaintiff to mitigate by going into the market immediately. Where there is no readily available market a later date may be appropriate. …

In other words, the majority of references to the breach date rule can be explained by mitigation: see Andrew Dyson and Adam Kramer, "There is No 'Breach Date Rule'" (2014) 130 LQR 259.

48 These two challenges – namely, that of ascertaining the market value of cryptocurrency at any one point in time (given the absence of any objective marker) as well as that of choosing the date and time of valuing the quantum of compensation – are not merely esoteric academic issues. Indeed, as I noted earlier, these two issues are engaged on the present facts, even if they were thankfully not critical issues that necessitated definitive resolution here. For instance, as the positions of the Claimant and the Claimant's expert show (see [29] above), the choice between taking a spot value and calculating the volume-weighted average value of a cryptocurrency are both seemingly viable valuation options – it is likely that our courts would face further arguments as to which method is more appropriate in a future case, especially where there are significant price shifts over the course of a day, as is common with cryptocurrencies. Along similar lines, as I noted above at [33], the value of the FTM tokens today (by way of US dollar or USDT value) is considerably higher than the value at the time the claim was filed. In between these two points, the value of FTM tokens fluctuated constantly; including, as I noted at [33], a price movement of some 2.5% in half an hour during the hearing itself. While the

Claimant has essentially elected to predicate the FTM claim on the basis of the date of the breach, which on the facts of this case did not create injustice (in so far as it served as the more conservative modality for valuation), it is perhaps arguable that an aggrieved party should not be prevented from picking a higher price at some other point of time within a reasonable time frame post-breach (as per the approach in *Diamond Fortress*, or indeed, some other novel approach that the Courts may have to develop to deal with these sort of challenges).

49 Nonetheless, as the Claimant had elected to pursue valuation of the FTM claim on the conversative basis of the breach date rule, it is unnecessary to resolve these complex issues here, and I would therefore say no more on this. Instead, I would only observe that given the increasingly prevalent ownership of cryptocurrencies globally, it is only a matter of time before the courts may have to grapple with the complex questions I have discussed above (see [35] to [48] above) of how best to value losses arising from cryptocurrency. This is particularly challenging in an environment where there is often no objective value of the assets, where the value of the assets often dramatically fluctuates in a very short period of time, and where asset tracing would, in many cases, be a frustrating attempt to square the circle. It would therefore seem that the final chapter on the law on the valuation of cryptocurrencies has yet to be written.

Conclusion

50 For the reasons I have given, I accepted the Claimant's submissions and order as follows:

(a) that the Defendants pay the Claimant damages in the sum of US$58,620.55; and

(b) that the Defendants pay the Claimant damages in the sum of

US$2,129,250, namely the equivalent value of the 4.175m FTM.

51 I will consider the issue of costs separately.

Mohamed Faizal
Judicial Commissioner

Nicolas Tang Tze Hao, Ashviniy Narenthiren (Farallon Law Corporation) for the claimant;
The first defendant and second defendant unrepresented and absent.