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EXECUTIVE SUMMARY

The United States finds itself in an extraordinary economic environment, where recession indicators continue to flash red, interest rates are at their highest point in 16 years, inflation remains a persistent concern, yet the services sector of the economy and the job market continue to demonstrate a surprising level of resilience.

The S&P Global Flash Composite PMI saw its sharpest increase since April 2022, as consumer spending continued unabated. US GDP for the first quarter also saw a significant upward revision, and the latest weekly job market report showed lower-than-expected jobless claims as strong demand for workers persists.

It remains surprising how US consumers continue to sustain the economy and stave off a recession despite persistent inflationary pressures. The latest Personal Consumption Expenditures (PCE) report, the Federal Reserve's preferred inflation metric, showed just how challenging the policy environment is as consumers continue to spend on travel, leisure and other service sectors of the economy.

Reading the minutes from the May meeting of the Federal Open Market Committee, it is clear that opinions over how to tackle inflation are divided. Some policy-makers have clearly indicated that rates should pause; others are not so sure and have emphasised the need to thoroughly assess all economic data, acknowledging that uncertainties will persist until they reconvene.

Against this macro backdrop, the crypto options market has been providing an interesting picture of how traders - particularly institutions - have been positioning themselves.

Despite a major $2.3 billion expiry of Bitcoin options for May, amounting to 26 percent of all open interest on Deribit, the underlying market was largely unperturbed, with volatility being seen as muted in the near term. However, this is not expected to continue and events such as the Bitcoin halving next year or the 2024 US Presidential elections are expected to inject renewed volatility into the market.

Traders are keenly monitoring the June options expiry, anticipating potential turbulence in the market. Even as we approach the expiry, the options market already seems to have influenced market sentiments, as evidenced by the shift in the Put/Call ratio and skew. The net put/call ratio for Bitcoin options has increased to almost 0.5, indicating that more options traders are becoming bearish.

There are equally interesting dynamics taking place in Ethereum, where the introduction of proto-danksharding is a potential game-changer that could slash Layer 2 (L2) transaction costs by a factor of ten. This breakthrough, set to augment the adoption of L2s, could inject new vigour into the currently subdued Ether markets.

On the crypto news agenda, there is, as usual, some good news and less good news.

On the positive side, Hong Kong has positioned itself as a new digital asset hub by reopening trading to retail investors, in contrast to the rest of China.

FTX is also looking to potentially revive itself with the launch of FTX 2.0, and CEO, John Ray has been working on a reboot plan in meetings with creditors and debtors.

Less positively, it appears that Digital Currency Group (DCG) has missed a $630 million loan repayment to its subsidiary, Genesis, which has, in turn, heightened the financial dispute that DCG has with Gemini, who used Genesis for its 'Earn' product. The resolution of the dispute remains uncertain, but Gemini and other parties have proposed an amended reorganisation plan with Genesis that doesn't require DCG's approval.

Hotbit Exchange also announced that due to cash flow issues, it is halting operations, and after a tumultuous launch of Ledger Recover, the self-custody solution provider Ledger has postponed the release of its Ledger Recover feature after facing criticism from the community regarding the potential sharing of seed phrases and the currently closed-source nature of the code. Ledger has committed to open-source the code before releasing the feature.

Have a good trading week!

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GENERAL MARKET UPDATE

S&P Global Survey: US Economy Grew Faster in May

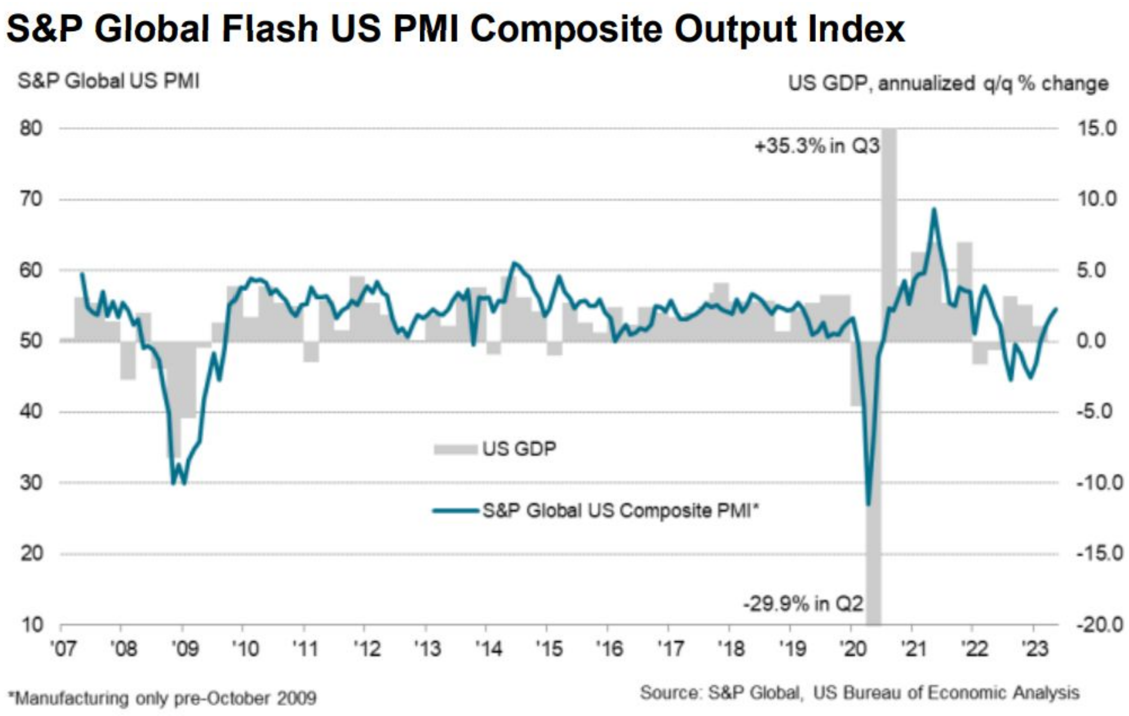


Figure 1: S&P Global Flash PMI Output Index. (source: US BEA)

In our last issue of *Bitfinex Alpha*, we demonstrated how various economic indicators can collectively indicate how resilient an economy is. This was reinforced this week by the S&P Flash survey, which, based on data collected between the 12th and 22nd of May, provided an insight into just how strong the US business sector currently is.

While the inversion of the yield curve traditionally signals an impending recession, our assessment, as elaborated in our previous analysis featuring the Chauvet-Piger model, indicates that a recession may not be imminent. Even though there is increasing probability a recession will take place, the cooling of inflation is proceeding at only a gradual pace. We seem to have more time before a potential recession scenario materialises.

The headline US Flash Composite Purchasing Managers' Output Index (PMI), which tracks business activities in both the services and the manufacturing sectors, rose to 54.5 in May (refer Figure 1) - the highest level since April 2022, and the fourth straight month that PMI remained above 50. Last month's reading was 53.4, and the latest number represents the sharpest increase since April 2022.

Figure 2. S&P Global US PMI Indices (Source: S&P Global)

The PMI is an indicator of economic health for the manufacturing and service sectors. The flash composite PMI is a preliminary version that includes both sectors and is based on about 85 percent of the usual monthly responses. In this indicator, any number above 50 indicates an overall expansion of the industry, and a number below 50 indicates a contraction. A number exactly at 50 indicates no change.

Interpreting the PMI involves not only looking at the headline number, but also understanding the changes in the components. For instance, if the PMI is above 50 but new orders and employment are falling, it might suggest that expansion could slow in the future. Similarly, if the PMI is below 50 but new orders are rising, it might suggest that a recovery could be on the horizon.

In May, total new orders increased for the third consecutive month, with the rate of growth reaching its highest level in a year. The service sector drove the latest increase in new business (or new orders), but manufacturers experienced a decline in sales.

This recent data further supports the thesis of ongoing economic resilience. The S&P Flash US Service-Sector Business Activity Index is now at a 13-month high of 55.1 in May, up from 53.6 in April. This uptick in service-sector activity underscores the current robustness of the economy, pushing back the expected arrival of the widely-anticipated recession.
For the service sector, new orders rose at the fastest pace for 13 months, a clear sign of sustained demand. This has made businesses optimistic, and has likely led to more hiring. The increase in demand, however, increases inflationary pressures, specifically in the cost of labour. Moreover, the service sector also saw a rise in employment, with job creation the fastest for ten months.

Conversely, the S&P Global Flash Manufacturing Output Index experienced a downturn, falling from 52.4 in April to 51 in May. Nevertheless, it remains above 50, a critical threshold number. Any figure above 50 signals that economic expansion is still taking place despite the slight contraction in manufacturing output. The S&P Global Flash US Manufacturing PMI, a more comprehensive assessment of the sector's overall performance, was also down - and below 50 - posting 48.5 in May, down from 50.2 in the previous month, suggesting a renewed yet marginal deterioration in manufacturing operations.

During the pandemic, prices in the manufacturing sector surged due to supply chain stresses and robust demand. However, currently, we are observing a notable rise in the service sector as consumer behaviour and preferences undergo a shift. In fact, the contraction in new orders for manufactured goods was the most significant since February, with firms reporting challenges in securing new sales. This indicates a shift in economic momentum from goods to services, suggesting that consumer spending is starting to lean towards experiences and services over physical products.

This shift in consumer behaviour was brought about by the Covid 19 pandemic and the economy's recovery from it. The pandemic has acted as a catalyst for significantly accelerating the adoption of e-commerce, food delivery services, telemedicine, remote learning, and various other digital services. These changes are likely to be long-lasting as consumers have adapted to the convenience and flexibility these services provide.

The S&P Global survey showed a significant shift in the US economy. The shift of consumer spending from goods to services has led the service sector to experience a surge in demand, particularly for travel and leisure (refer to Figure 3), while manufacturers are struggling with overstocked warehouses and a dearth of new orders.

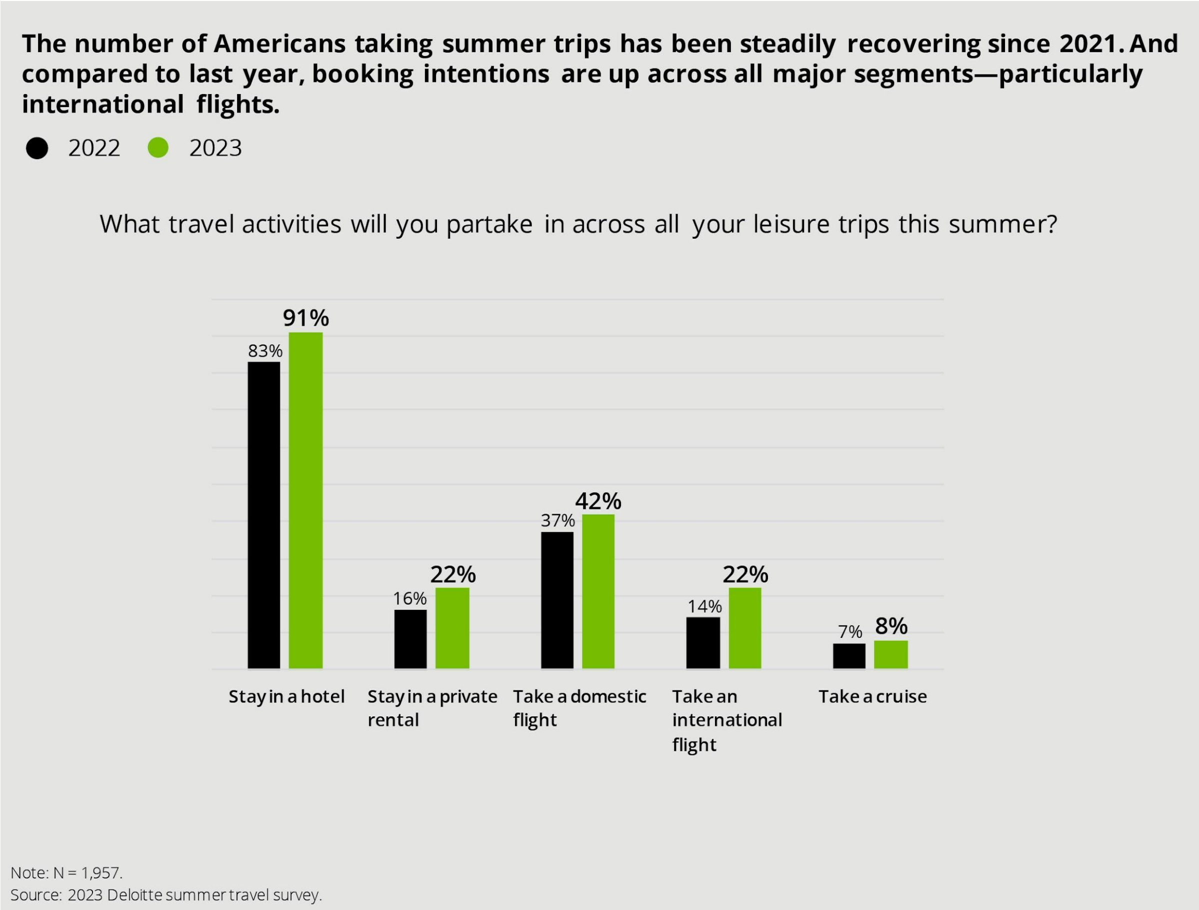


Figure 3. Recovery of Americans taking summer trips, or spending on leisure and travel (Source: 2023 Deloitte Summer Travel Survey).

Indeed, the inflation landscape is undergoing significant changes. During the height of the pandemic, we observed skyrocketing prices within the manufacturing sector, attributed to a robust demand coupled with disrupted supply chains. Now, we're witnessing a similar inflationary trend in the service sector. As pandemic restrictions ease and consumer demand rises, service providers are experiencing difficulty managing surging order inflows, primarily due to capacity constraints.

To meet this demand, service providers have been accelerating their rate of hiring. This is why the job market has remained one of the most stable aspects of the economy even with mass layoffs, especially from tech companies. Inflation, being a double-edged sword, can be both a sign of economic recovery and a potential threat if it spirals out of control. Therefore, policymakers and economists will need to monitor these developments closely.

May FOMC Minutes: Fed Officials are Less Confident on the Need for More Hikes

In the recently released minutes of the Federal Reserve's May 3rd policy meeting, it is evident that officials were divided on the way forward. However, the committee members agreed that the language in the post-meeting statement should not be interpreted as signalling either that there will be decreases in the target range for rates or that further increases in the target range had been ruled out.

During the May FOMC meeting, the Fed decided to raise its benchmark interest rate by 0.25 percentage points, bringing it to a range of five to 5.25 percent. The Fed funds futures rates still suggest that the markets are still pricing in a pause at the next FOMC meeting in June. (refer Figure 4 below)

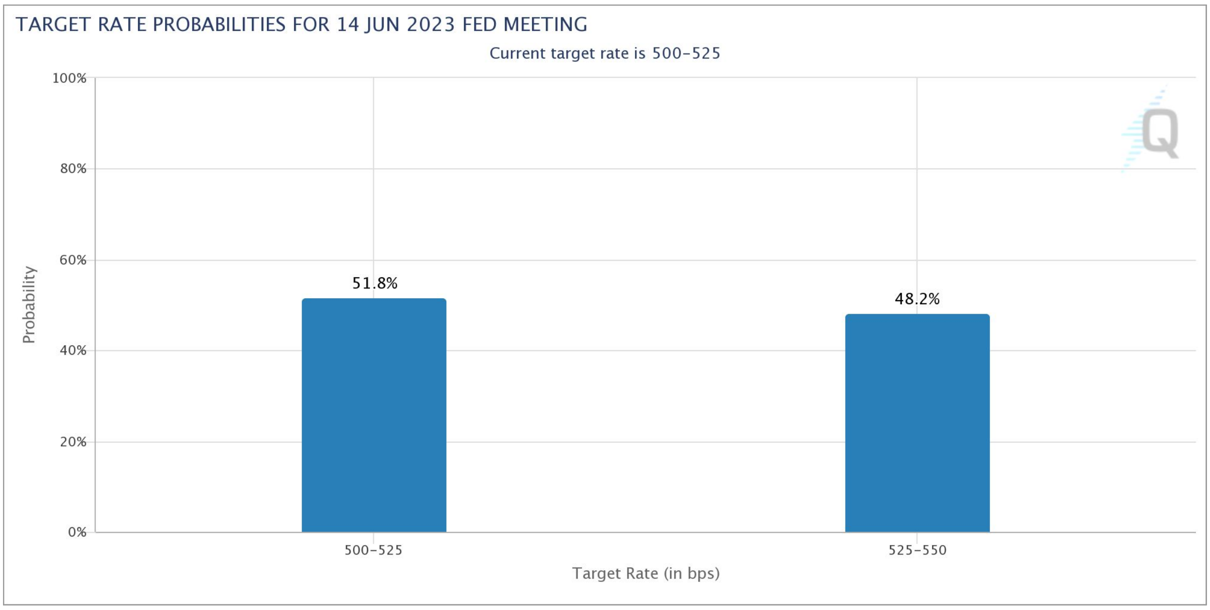


Figure 4. Target Probabilities for June FOMC Meeting (Source: CME FedWatch Tool)

The minutes note that the market's expectations for the path of the Federal Funds Rate in 2023 have increased modestly, as the probability of a pause in June has decreased from 64.4 percent, just a week ago to only 51.8 percent currently. This implies that market participants might now be expecting a higher likelihood of interest rate hikes by the Federal Reserve later in 2023.

For 2024 and 2025, the minutes note that the implied policy path fluctuates amid mixed economic data releases, with an overall slight decline being priced in. This suggests some uncertainty in the market about the direction of interest rates in the longer term, with a bias to an overall slight decrease.

Here are some key takeaways from the minutes:

A Data-Dependent Approach: The Fed is still taking a data-dependent approach in which myriad factors will determine if the rate-hiking cycle continues. Financial market developments are the key here. Financial conditions improved somewhat during the intermeeting period. Treasury yields fell, equity markets gained, credit spreads tightened, and the U.S. dollar depreciated. However, liquidity in the Treasury market, while improved, remained a challenge. Market participants are generally expressing uncertainty on how much tightening in monetary policy is most appropriate and are retaining optionality.

Fed Staff Saw Improvement in Market Sentiment

During the intermeeting period, the Fed saw an improvement in market sentiment as concerns about a sharp economic slowdown decreased and stress in the banking sector was reduced. Higher borrowing costs and market volatility remain a challenge however.

Divided Opinions on Further Rate Hikes: Several Fed officials expressed the view that additional rate hikes might not be necessary. They indicated that if the economy progressed as anticipated, further policy tightening after the May meeting might be unnecessary. However, some officials still believed that more tightening would likely be required later in the year.

Emphasis on Clear Communication: Certain Fed officials stressed the importance of effectively communicating that interest rate cuts were unlikely to occur within the year while also acknowledging that further rate hikes had not been ruled out.

Foreign Economic Activity: There was a rebound in foreign economic activity, especially due to the reopening of China's economy and the resilience of Europe's economy despite the energy price shock from Russia's war on Ukraine.

Fed Staff Forecasts Mild Recession: Fed staff predicted a mild recession to commence in the fourth quarter. This recession was attributed to a decline in bank lending coupled with already tight financial conditions. Staff projected a subsequent recovery that would proceed at a moderate pace. The forecast was influenced by recent regional U.S. bank failures, which contributed to stress within the banking system. The unemployment rate was expected to increase this year, then peak next year, and then start declining gradually in 2025.

Overall Solid Credit Quality: According to Fed staff, credit quality remained robust for most businesses and households. While there was some deterioration observed on the margins, the majority of businesses and households maintained strong credit quality. Banks, however, expressed concerns about the potential deterioration of their loan portfolios in the future.

Downside Risks to Growth and Upside Risks to Inflation: The minutes painted a somewhat gloomy picture of the economic outlook. Nearly all Fed officials acknowledged that downside risks to economic growth had increased, while inflation posed higher upside risks. Officials noted that progress in core inflation had been slower than expected.

Since the May meeting, Fed officials have grouped into three camps regarding future rate hikes: those in favour of hiking rates again in June, those suggesting a skip in the next meeting before resuming hikes, and those advocating for a steady approach. Several officials have refrained from providing forecasts in recent weeks, emphasising the need to assess all economic data before the June meeting. Uncertainty may persist until the Fed reconvenes on June 13th-14th, as the release of May's consumer price data on the first day of the meeting will play a significant role in shaping the Fed's decisions.

US Economy Continues to Show Resilience with GDP Growth and Strong Job Market

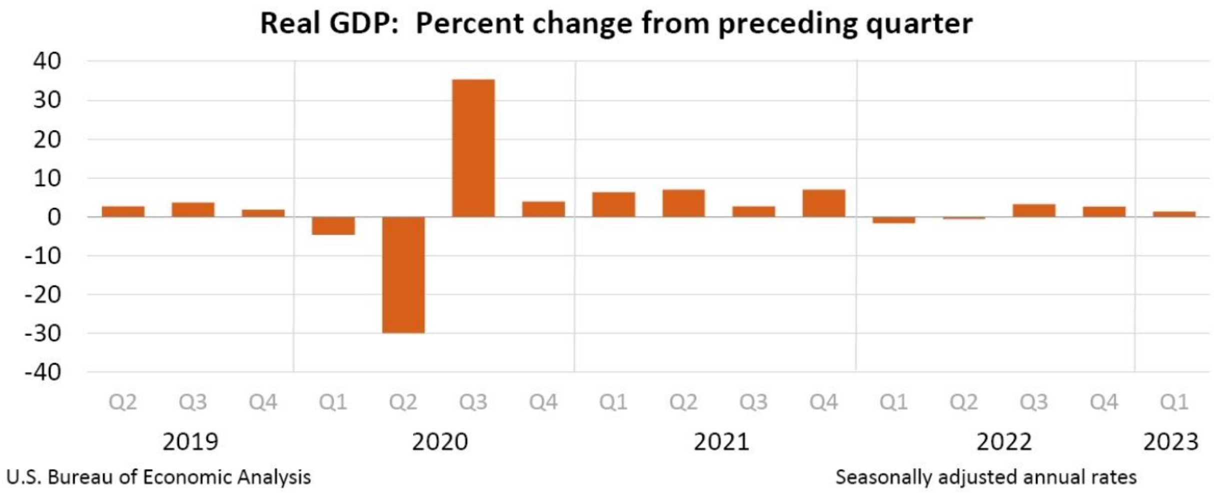


Figure 5. Real GDP: Percent Change from Preceding Quarter (Source: Bureau of Economic Analysis)

The latest estimate from the Bureau of Economic Analysis revealed that the US economy expanded 1.3 percent in the first quarter of the year, surpassing the consensus forecast of a 1.1 percent increase.

The revised GDP figures, released last Thursday, May 25th, revealed that consumer spending played a crucial role in driving growth, which exceeded expectations. Revised GDP counts are significant, as some of the metrics regarding the monetary values of goods aren't available immediately after a quarter ends. Thus, this revised figure is a more accurate representation of the current state of the economy.

Outlays or government spending rose by a solid 3.8 percent versus an initial 3.7 percent reading. The upward revision of inventories, or unsold goods, also drive the upward revision of the GDP. The first quarter of 2023 saw a decrease in unsold goods, which was revised to $129.6 billion from the first reported value of $138 billion. If unsold inventory shrinks, it means more goods have been sold during the first quarter, which has a positive effect on the GDP.

Compared to the fourth quarter of 2022, GDP growth was slower in the first-quarter due to a decrease in business investment, particularly in the housing and goods-producing sectors. This decline can be attributed to the shift in consumer spending, higher input material prices and worries over a looming recession. Americans are spending a more significant proportion of their income on services, such as travel and recreation, and less on commodities, such as appliances and furniture. Moreover, the higher input material is caused by inflation, which saw a notable increase, rising at an annual pace of 4.2 percent in the first quarter compared to the previous quarter's 3.7 percent rise.

GDP estimates are subject to further revisions, with one more update expected next month to incorporate additional data.

In another report by the Labor Department, it was revealed that new unemployment benefit applications only saw a modest increase, rising to 229,000 for the period ending on May 20th, which was lower than the consensus forecast of 245,000. These data points suggest that the job market remains strong despite concerns about economic headwinds.

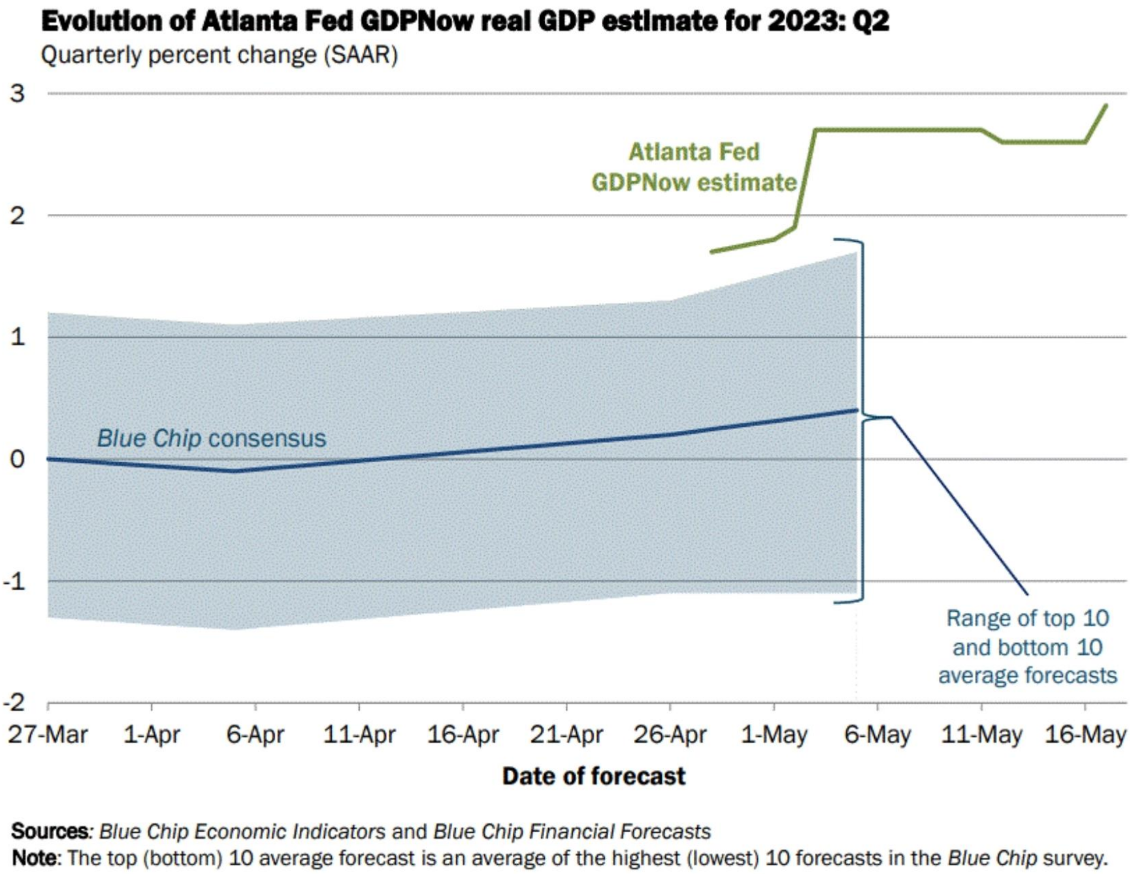


Figure 6. Atlanta Fed GDP Now Forecasting Tool (Source: Atlantafed.org)

The *Atlanta's GDPNow* forecasting tool indicates a 2.9 percent growth rate. The *GDPNow* forecast incorporates more recent data and may capture economic trends that have not yet been fully reflected in the official GDP release. The tool suggests that the momentum gained in the first quarter of the year is likely to continue into the second quarter.

The US economy continues to defy a widely anticipated recession, as seen in the positive revision in the first-quarter GDP and the lower-than-anticipated jobless claims. Despite concerns over regional bank failures impacting credit conditions, growth prospects for the US economy remain solid.

US Inflation Exceeds Expectations, Raises Concerns for Federal Reserve

The US economy is grappling with rising inflationary pressures, as indicated by the latest Personal Consumption Expenditures (PCE) Price Index, which showed a 0.4 percent increase in April compared to 0.1 percent in the previous month. The figures surpassed market expectations, posing challenges for the Federal Reserve's monetary policy decisions

PCE measures the total spending by individuals and households on goods and services in an economy over a specific period. The latest data from the US Bureau of Economic Analysis on Friday, May 26, revealed that inflation in the United States, as measured by PCE, rose to 4.4 percent on a year-on-year basis in April. This marked an increase from the previous month's reading of 4.2 percent and surpassed the consensus forecast of 3.9 percent.

	Current	Forecast	Previous
PCE index month-over-month	0.4 percent	–	0.1 percent
Core PCE index month-over-month	0.4 percent	0.3 percent	0.3 percent
PCE year-over-year	4.4 percent	3.9 percent	4.2 percent
Core PCE year-over-year	4.7 percent	4.6 percent	4.6 percent

Figure 7. Summary Personal Consumption Expenditure Price Indices (Source: Bureau of Economic Analysis)

The Core PCE Price Index also experienced a slight uptick, reaching 4.7 percent in the same period compared to 4.6 percent previously. The consensus forecast was for a 4.6 percent increase (refer to Figure 7). On a monthly basis, both Core PCE inflation and PCE inflation rose by 0.4 percent. Prices for goods increased by 0.3 percent, and prices for services increased by 0.4 percent (refer to Figure 8).

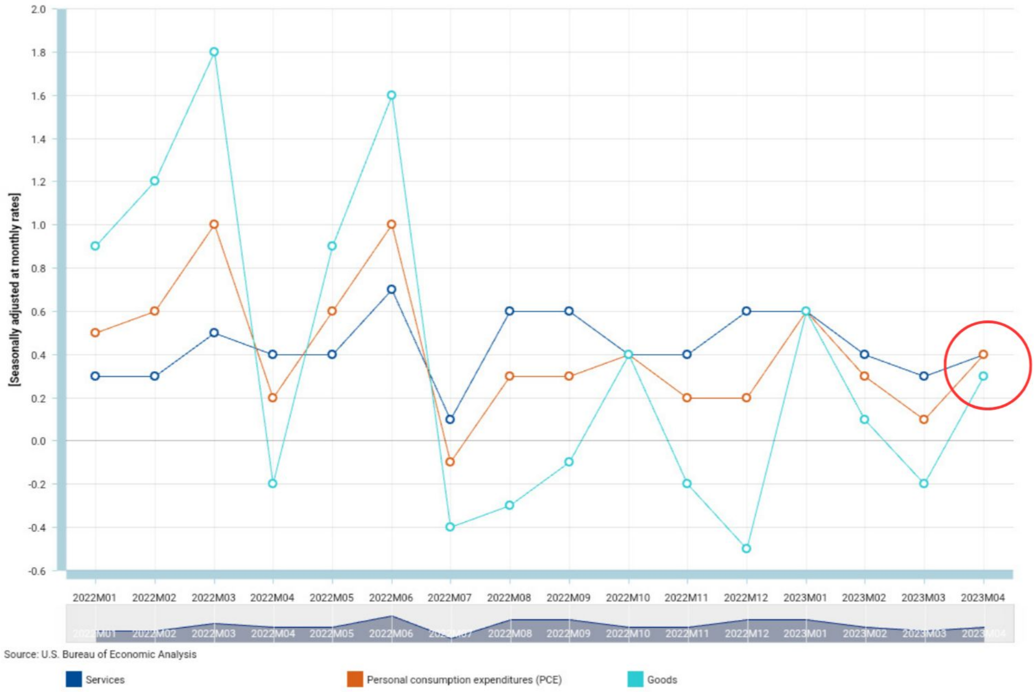


Figure 8. Summary Personal Consumption Expenditure Price Indices (Source Bureau of Economic Analysis)

Real spending, also known as real PCE, refers to the PCE adjusted for inflation. It takes into account changes in prices to provide a more accurate measure of the actual quantity of goods and services consumed by individuals and households.

Real spending showed a 0.5 increase in April, surpassing the consensus estimate of 0.3 percent rise. Goods spending saw a rise of 0.8 percent month-on-month, while services increased by 0.3 percent. This growth in real consumer spending in April exceeded market expectations, indicating a positive start to the second quarter after a relatively weaker performance in the previous two months.

The recent surge in core Personal Consumption Expenditures (PCE) inflation is proving incongruent with the Federal Reserve's aspirations, presenting a challenge to policymakers. Historically, the Federal Reserve has managed inflation by modifying interest rates, among other tools. Under normal circumstances, ongoing inflationary pressures coupled with a robust labour market would constitute a strong case for the Fed to consider raising interest rates to mitigate inflation.

However, the current financial landscape is clouded by a multitude of uncertainties. These include the recent stresses on regional banks, which has threatened the stability of the financial system, as well as contentious negotiations over the debt ceiling, which could impact the government's ability to finance its operations. Both of these factors introduce considerable volatility and risk into the economy.

In response, as indicated earlier in this week's report, market odds have increased for another 25-basis point rate hike at the Federal Reserve's upcoming meeting in June. Odds of a rate hike increased after the release of the PCE report from 51.7 percent on Thursday to 64.2 percent on Friday (refer to Figure 9).

TARGET RATE (BPS)	Probability (%)	
	NOW *	1 DAY 25 MAY 2023
475-500	0.0%	0.0%
500-525 (Current)	35.8%	48.3%
525-550	64.2%	51.7%

Figure 9. Percent Probability of Target Rates in the coming June Fed meeting (Source: CME FedWatch tool)

The PCE, collected from business data, is considered the Federal Reserve's favoured measure of inflation. Whether the Fed will continue to raise rates or potentially cut them later this year depends on the prospects for inflation. Consumer Price Index (CPI) and the PCE are the two main measures of consumer price inflation. The CPI measures prices of goods and services directly purchased by typical urban households, while the PCE accounts for a broader range of consumer purchases, including those made by businesses, government entities, and nonprofits on behalf of households.

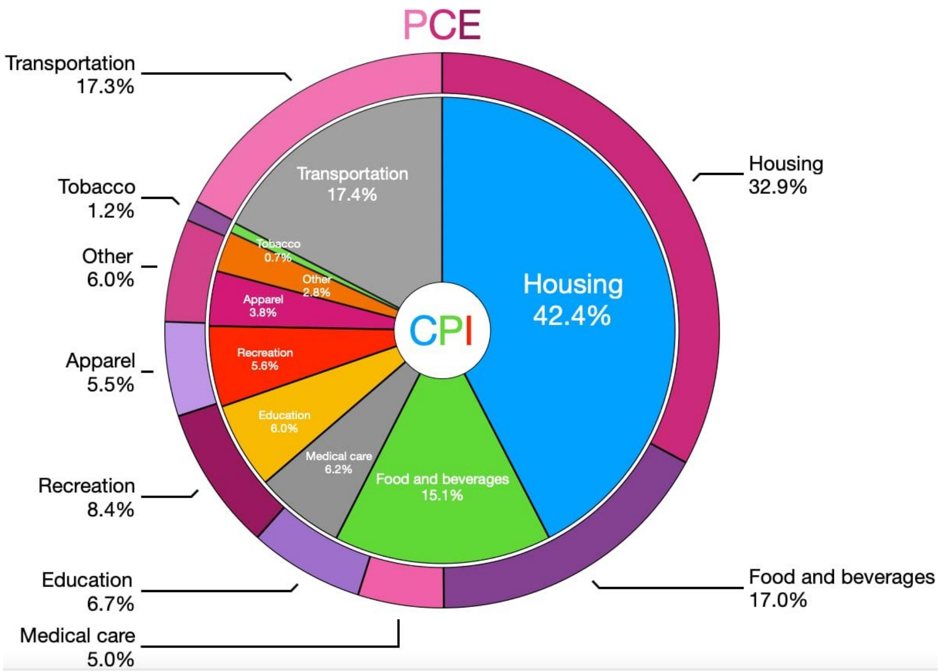


Figure 10. Components of Consumer Price Index and Personal Consumption Expenditures (Bureau of Economic Analysis)

The CPI and PCE measures often differ in their underlying components. Generally, the PCE measure tends to report lower inflation rates compared to the CPI. In April, CPI inflation over the previous twelve months stood at five percent, while PCE inflation was reported at 4.4 percent. The difference in weightings between the two measures primarily stems from the calculation of shelter costs, particularly housing costs for owner-occupants. The CPI estimates housing costs based on "imputed costs" or "imputed rents" reported by households, which tend to be relatively high. On the other hand, the PCE approach assumes that an owner-occupied unit with the same value as a renter-occupied unit will have the same rental value. Consequently, the PCE estimates for housing costs are significantly lower, resulting in a smaller share of household spending on shelter compared to the CPI (Refer to Figure 10).

Moreover, the contribution of the “other services” category (everything except housing and utilities) is larger for PCE measures than it is for the CPI (See Figure 11)..

	CPI, %	PCE, %
Goods	38	39
Gasoline, Energy	4	3
Other goods	34	36
Services	62	62
Housing and non-energy utilities	33	14
Other services	29	48
of which, health care	7	16

Figure 11. Relative importance of categories in CPI and PCE and measurement

Given that the Federal Reserve considers the PCE measure as a more accurate representation of inflation, it relies on it when making decisions regarding interest rates. The central bank has been particularly concerned about the "other services" category. According to the PCE measure, services remain a significant driver of ongoing inflation without showing signs of slowing down. If this trend persists, the Fed is likely to maintain higher interest rates for an extended period or even consider additional rate hikes in the future.

The recent inflation readings have posed a challenge for Fed officials as they prepare for their upcoming meeting in June. Inflation levels remain high and are not declining at a satisfactory rate. The increases in the PCE indices are expected to add to their concerns. The focus will now shift to the next employment (to be released on June 1) and consumer price index reports (to be released on June 12), which will play a crucial role in determining whether the Federal Reserve can afford to pause on June 14.

WHAT'S ON-CHAIN THIS WEEK?

Major Bitcoin Options Market Expiry Amidst Low Volatility

Last Friday, May 26th, the options market witnessed a significant event with a staggering 26 percent of *Deribit* Open Interest (OI) expiring. This corresponded to a total of $2.3 billion in USD terms. This massive expiry, comprising approximately 85,000 Bitcoin (BTC) contracts and 700,000 Ethereum (Ether) contracts, was a significant market event for traders.

While the net options expiry data for crypto markets is not accurately documented, as per *Coinglass* data, the open interest for the options market has been in an uptrend since the beginning of 2023, currently at close to $8 billion for BTC options (refer Figure below), it rose to over $14 billion in March. This is a major increase from 2022, when open interest was between $5-8 billion, and there was very little volatility and spot selling dominated the market. We can expect this increase in average options open interest to have a growing impact on price fluctuations. Moreover, this also suggests that more institutional traders are actively trading crypto assets.

Figure 12. Total BTC Options Open Interest. (source: coinglass)

The expired contracts maintained a balanced Put/Call ratio of 0.38 for BTC and 0.50 for Ether, with a 'max pain' level (the price at which the highest number of options contracts would expire worthless) of $27,000 for Bitcoin and $1,800 for Ethereum.

The put/call ratio is a popular tool used by traders and investors for gauging market sentiment. It's calculated as the trading volume of put options divided by the trading volume of call options. Post-expiry, the net put/call ratio for Bitcoin options had increased to almost 0.5. This may indicate more options traders becoming bearish. The max pain level for the June 2023 options expiry for BTC is around $24,000 currently and $1600 for Ether. The max pain levels are the lines in the sand which can potentially act as magnets before the price reaches those points and as support or resistance once the price reaches that point. Thus, the two most significant price points from an options market perspective are currently $27,000 and $24,000.

Despite the large expiry, crypto markets remained relatively calm. The DVOL index, which represents the market's expectation of 30-day future implied Bitcoin volatility, was trading at 50 for both BTC and Ether before the expiry, with shorter-dated metrics slightly lower but on an upward trend. After the expiry, this metric fell even further to 45 suggesting that the market is not expecting significant volatility in the near term. (refer Figure below)

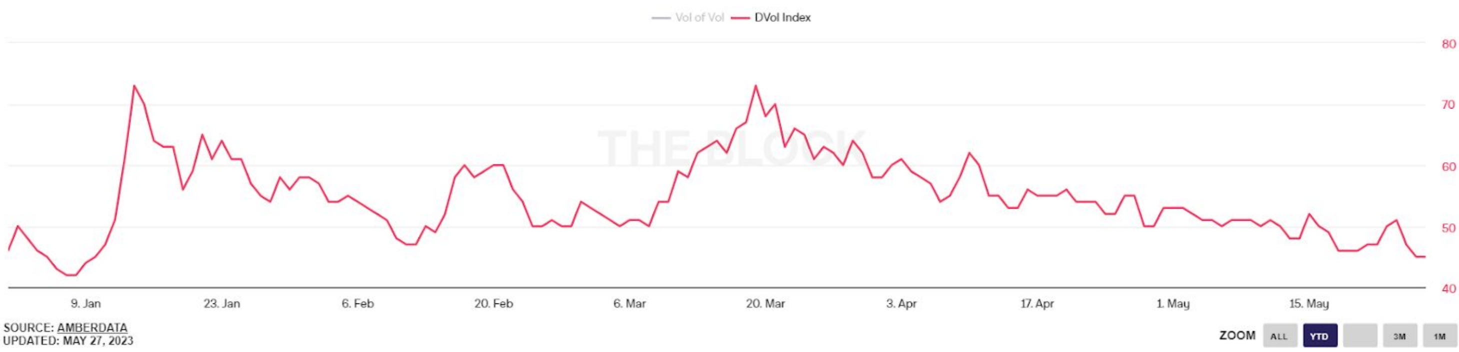


Figure 13. BTC DVOL index. (source: The Block, Amberdata)

However, when considering a slightly longer time horizon, the market does expect volatility to kick in before the Bitcoin halving or some other fundamental event during that period.

Largest ETH and BTC trades

	Amount	Notional
ETH-30JUN23-2200-C ETH29SEP23-2200-C	12,000	$21,810,000
ETH-26MAY23-1800-P ETH-26MAY23-1650-P	8,000	$14,220,000
BTC-5MAY23-29500-C BTC-5MAY23-29500-P	480	$14,151,360
ETH-26MMAY23-1800-C ETH-30JUNE23-1800-C	6,000	$10,838,000
ETH-26MAY23-1800-C ETH-30JUNE23-1800C	6,000	$10,617,600

Figure 14. Largest BTC and Ether trades in decreasing order of USD notional value. (source: GreeksLive, Premia)

Long periods of low implied volatility show price compression and can indicate a big incoming move in terms of price. However, whale options traders are currently expecting price to remain stable in the short-term. In the long-term, they are positioning in order to capitalise on volatility. (refer Figure 14 above)
A notable Short Calendar Spread transaction was executed as the largest options trade in May, leveraging the current low volatility levels. This spread involved a $21 million notional trade in Ether using June and September 2200 call options.

In this scenario, the trader bought the June option and sold the September 2200 call. This strategy could be interpreted as the trader anticipating that ETH will remain under 2200 by September, yet also wanting some protection in the event that the ETH price significantly increases by June. The second largest trade in May was a $14 million dollar bet that the Ether price would be below $1800 but above $1650.

In essence, these large traders are capitalising on the time decay of options, expecting the longer-dated September option (which they sold) to lose value faster than the shorter-dated June option (which they bought). This approach is often utilised when the trader believes the underlying asset will remain relatively stable in the short term but may experience a price increase in the long term.

Options Market Positioning ahead for June

Although May 2023 saw a very large options expiry amounting to a $2.3 billion open interest wipeout, the underlying price did not fluctuate much due to implied volatility being at historical lows and low liquidity. This is expected to change in June which already has $3.2 billion in options open interest set to expire by then. (refer Figure 15 below)

Figure 15. Deribit Options Open Interest With Expiry Set At June 30th. (source: TheBlock)

The current OI size does not mean that this is the amount that will expire at June 30th, as traders could close positions earlier, but it is a good gauge of how traders are currently positioned ahead of the monthly open.

The crypto market has been experiencing a period of low implied volatility since the FTX decline and subsequent volatility spike in November. Seven-day implied volatility has decreased to under 40 percent, after peaking at 76.23 percent in March. (refer Figure 16 below)

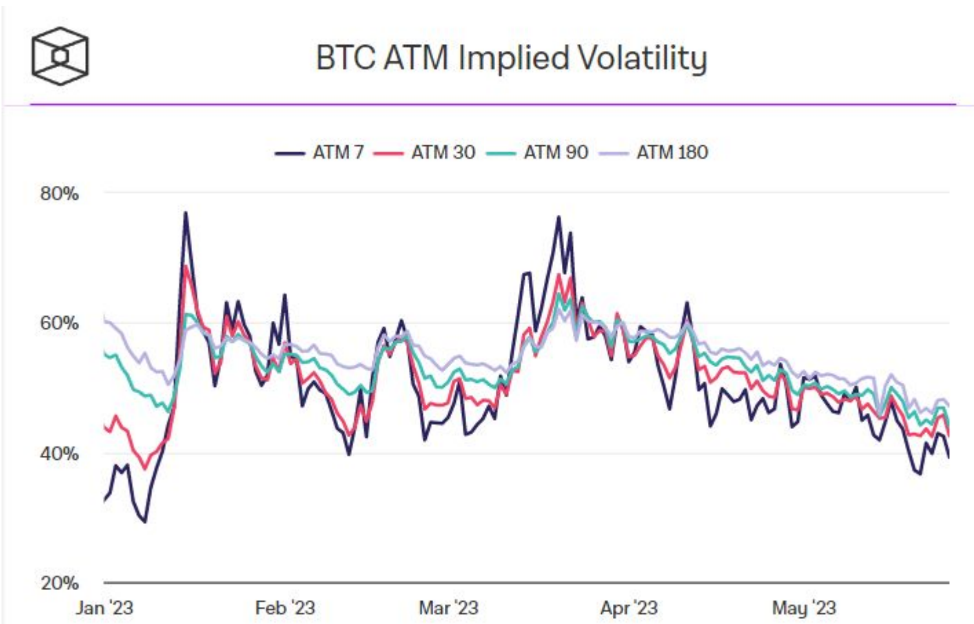


Figure 16. BTC At-The-Money Implied Volatility. (source: TheBlock)

While implied volatility has not shown any signs of stabilisation, when contrasting this with realised volatility, we get better insights.

Historical Volatility or realized volatility refers to the actual volatility demonstrated by a asset in the past over a specific period. Higher values indicate that the price has been changing rapidly, while lower values suggest that the price has been relatively stable. Implied Volatility is a metric that captures the market's expectation of future volatility. It's not based on historical price changes of the asset itself but rather derived from the prices of options on that asset. Higher implied volatility increases the price of options because it suggests a greater range of potential outcomes for the price of the underlying asset.

Currently, the IV is much higher than the HV. The realised volatility has decreased at a much faster rate than the implied volatility over the past couple of weeks.

Figure 17. Bitcoin Realised Volatility. (source: Coinglass)

The relative values of HV and IV can provide information about market sentiment and expectations:

IV > HV: If implied volatility is higher than historical volatility as it is currently, it suggests that the market expects the asset to be more volatile in the future than it has been in the past. This could be due to upcoming events that are expected to move the market or it could simply due to increased uncertainty or risk aversion among market participants.

Looking ahead, several events have the potential to organically stimulate volatility. For instance, the Bitcoin Halving set to occur in the first half of 2024 and the 2024 US Presidential Elections at the year's end could both serve to increase volatility. Regardless, it's essential to approach these projections with caution, as market movements can be unpredictable and often influenced by unforeseen events.

Even though the May expiry did not cause large price fluctuations in the market, the options expiry did have some impact. The 25 percent-delta skew, which was positive for the entirety of the week before the expiry, has collapsed as spot markets failed to instigate a rally and put demand flowed into the market as we neared the close. This has nudged the skew back towards a slight put premium, especially in the 30-day delta skew. (refer Figure below)

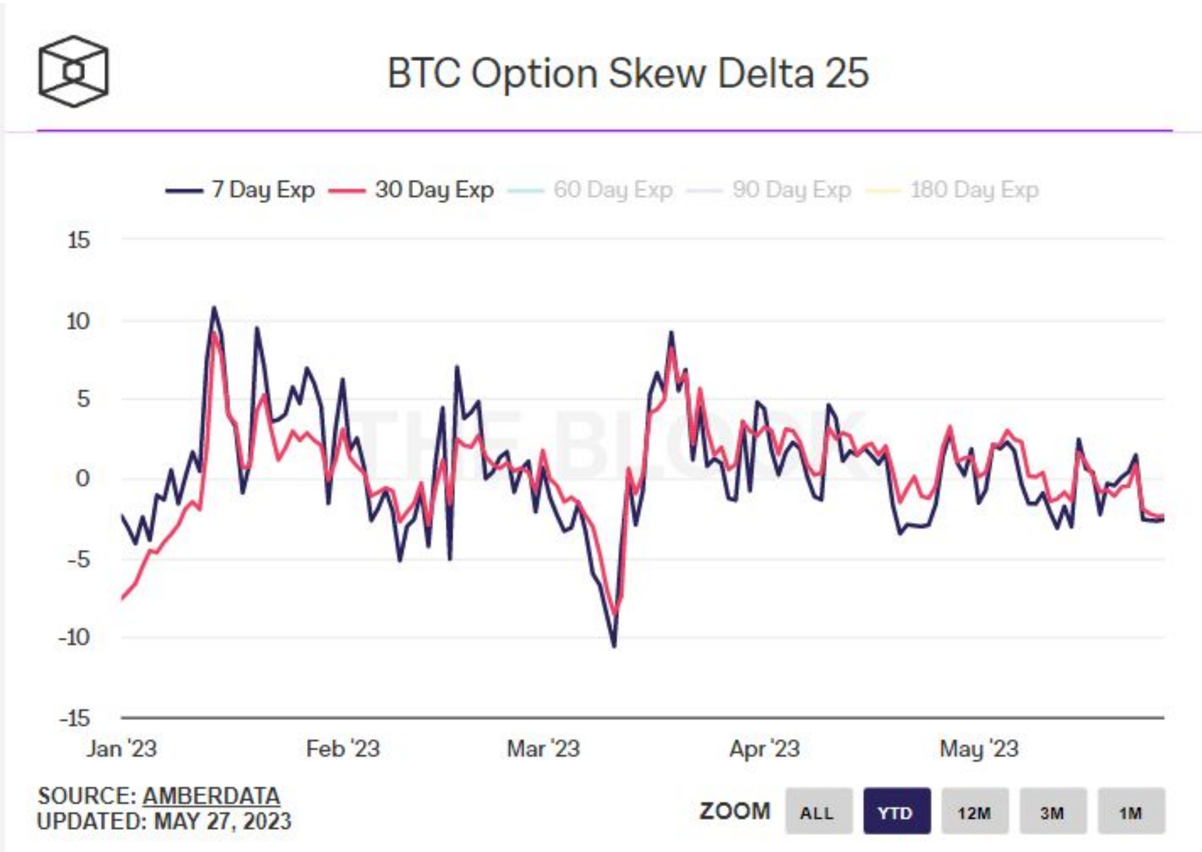


Figure 18. BTC 25-percent delta skew for seven-day and 30-day expiries. (source: TheBlock)

A 25 percent delta skew of below zero means that bearish Bitcoin put options expiring in seven days are trading at a premium versus equivalent bullish call options, suggesting investors disproportionately demand the former. This is typically associated with bearish market sentiment. The current values for the 25-percent delta skew for options expiring in seven and 30 days, respectively are -2.6 and -2.36.

As we move towards the June options expiry, potential near-term market turbulence can be expected. These expirations can cause short-term price fluctuations with broader implications for the entire ,market. In conclusion, the May options expiry had a significant impact on the crypto market, causing shifts in the Put/Call ratio and skew. As we approach the June options expiry, traders should be prepared for potential market turbulence and short-term price fluctuations in the second half of the month, with the relevant levels being the max pain prices for both months.

Proto-Danksharding: Ethereum's Next Catalyst And On-chain Update

The cryptocurrency market has been experiencing a quieter phase since the meme token frenzy in early May subsided. Metrics such as network fees, active addresses, and transactions have seen a decrease for both Bitcoin and Ethereum in the past few weeks, while price movements have remained relatively stable.

Network fees, which represent the total sum of fees paid to use a particular blockchain, are a good indicator of activity. Both Bitcoin and Ethereum have seen their network fees drop by 32 percent and 24 percent respectively, as the fervour for speculative activity has dampened.

Exchange Netflows, representing the net difference between inflows and outflows of a specific crypto-asset moving into or out of centralised exchanges, have also shown exciting dynamics.

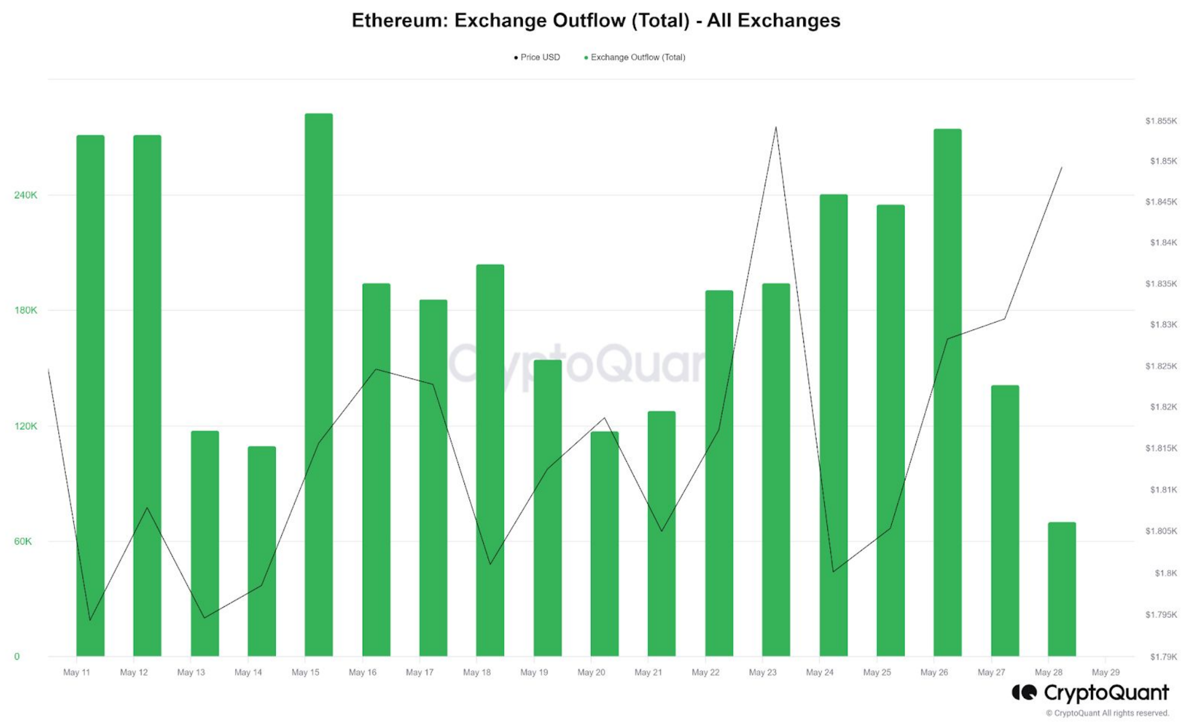


Figure 19. Ether Net Exchange Outflows. (source: CryptoQuant)

Bitcoin registered negligible outflows over the week, while Ether saw around half a billion dollars leave centralised exchanges. (refer Figure above) This might indicate a shift in the market sentiment, where investors may be holding onto their Ether, expecting future price increases.

Ether 30-day volatility descended to an unprecedented low last week, while the price stabilised around the $1,800 mark. Its annualised volatility predicated on the preceding 30 days' data indicates an approximate 20.36 percent fluctuation in price.

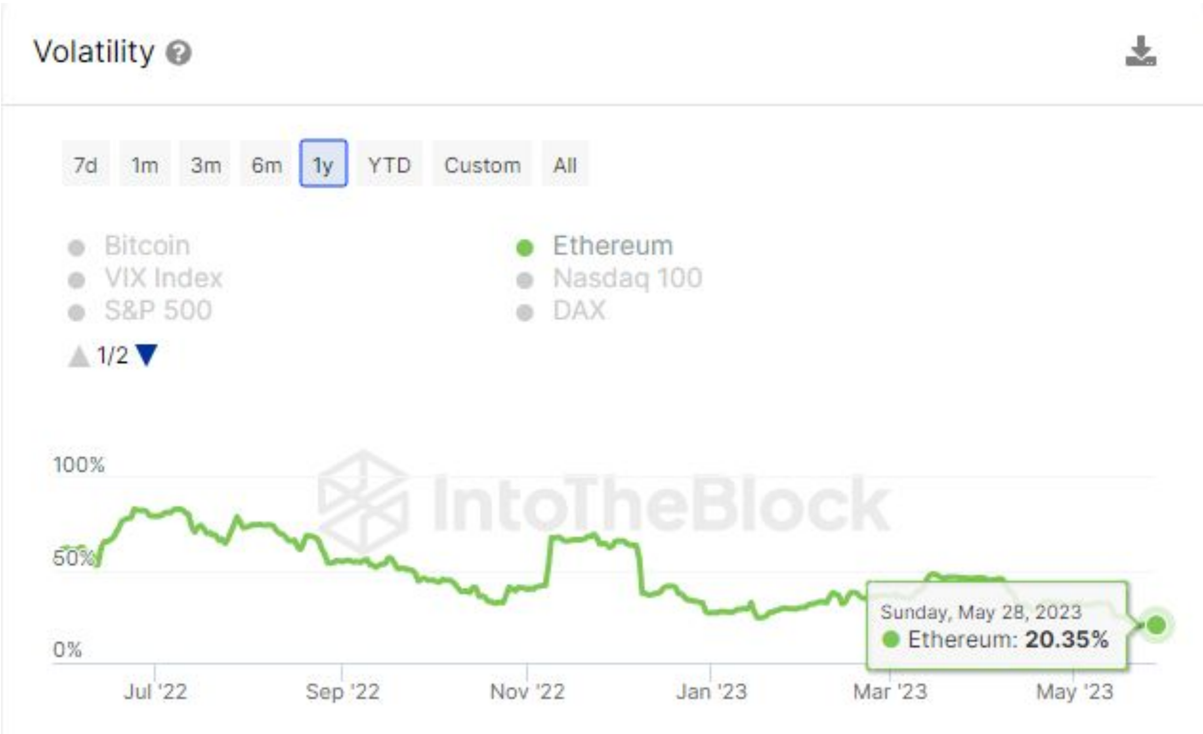


Figure 20. Ethereum Volatility Over The Past One Year. (source: IntoTheBlock, ITB)

For comparison, the Nasdaq's 30-day volatility has maintained an average level of 20 percent throughout the entirety of 2023, as per data from *ITB Capital* Markets. Despite Ether's stagnant price action, it has outperformed a majority of large-cap crypto-assets, including Bitcoin, over the last 30 days.

A noteworthy development poised to spur Layer 2 (L2) adoption is the advent of proto-danksharding. This is forecasted to mitigate transaction costs for users by introducing "data blobs," a mechanism designed to provisionally store data on L2 transactions until they are validated by Layer 1 (L1), supplanting the incumbent "CALLDATA" system where data is perpetually stored on the mainnet. Given that more than 90 percent of the cost of L2 transactions is allocated to L1 data storage, the implementation of data blobs under Ethereum Improvement Proposal (EIP) 4844 is projected to curtail L2 fees by at least 10X.

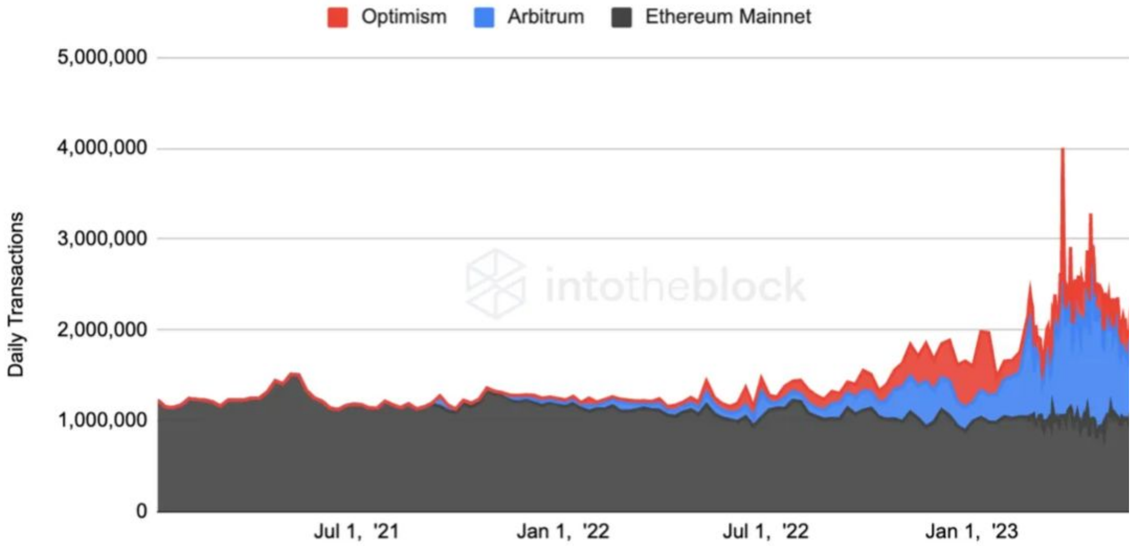


Figure 21. Current Daily Transactions On Popular L1 Protocols. (source: IntoTheBlock)

Whilst this constitutes a profoundly technical deployment, the implications for users will be transparent: L2 transactions will incur a tenth of their current cost, rendering them more accessible to a more extensive audience.

Optimistic roll-ups alone currently account for a transaction volume equivalent to that of the Ethereum mainnet. Following the implementation of proto-danksharding, transactions bridging Zero-Knowledge (ZK) roll-ups and optimistic ones are anticipated to experience a tenfold surge.

Whilst the reduction in fees on L2s may precipitate less ETH being incinerated in the short term, the expansion of the total economic activity being settled on Ethereum is anticipated to yield greater value accumulation over the medium-term.

The deployment of Ethereum's proto-danksharding is poised to rekindle interest in the currently placid market. Given the uncertainty surrounding the specific date of implementation, it is likely that markets will begin to shift their focus on the upgrade as more details emerge. This enhancement is projected to bring the crypto arena one stride closer to mainstream adoption, and as such, it warrants constant monitoring.

NEWS FROM THE CRYPTO-SPHERE

Digital Currency Group Misses $630 Million Loan Repayment, Says Gemini

Figure 22. Digital Currency Group Misses $630 Million Loan Repayment

- **Gemini is involved in a financial dispute with Digital Currency Group (DCG) and Genesis over a $630 million missed payment owed by DCG to Genesis.**
- **Gemini and other parties have proposed an amended reorganisation plan with Genesis that does not require DCG's approval.**
- **The consideration of the proposed plan depends on DCG's willingness to engage in good faith negotiations for a consensual agreement, says Gemini.**

Gemini has continued to be embroiled in a financial dispute with DCG and its subsidiary, Genesis. The latest disagreement stems from a missed payment of $630 million that DCG allegedly owes to Genesis.

In response Gemini and other concerned parties have put forth an amended reorganisation plan with Genesis, which, if accepted, would not require DCG's approval, Gemini said.

Gemini emphasised that the consideration of this plan would be contingent upon DCG's willingness to engage in good-faith negotiations for a consensual agreement.

DCG owns a number of cryptocurrency-related businesses, including Genesis, Grayscale Investments, and *CoinDesk*.

Cameron Winklevoss, the co-founder of Gemini, has previously stated in a letter that he believes that DCG CEO, Barry Silbert, is the primary instigator of the DCG's financial problems and holds DCG responsible for the debts owed to Genesis.

Genesis, meanwhile, has recently requested an extension from the Bankruptcy Court of the Southern District of New York to allow for more time to file a Chapter 11 plan and solicit acceptances. If approved, the deadline for filing the plan would be extended to August 27th, with Gemini having until October 26th to accept it.

As the proceedings continue, the future of DCG, Genesis, and their relationship with Gemini and other creditors hangs in the balance.

Hotbit Exchange Halts Operations and Urges Users to Withdraw Funds

Figure 23. Hotbit Exchange Halts Operations

- **Hotbit exchange will halt operations from May 22nd and users are urged to withdraw funds by June 21st to avoid any disruption.**
- **The investigation of a former “management” employee in August 2022 resulted in Hotbit suspending operations.**
- **Hotbit cites incidents such as the FTX collapse and USD Coin (USDC) de-pegging as factors negatively impacting its cash flow.**
- **The Hotbit team expresses concerns about the complexities of centralised exchanges and highlights the need for decentralisation or regulatory compliance.**

Hotbit has announced that it has ceased its operations starting from May 22nd. The exchange has urged its users to withdraw their funds before June 21st, at 4:00 a.m. UTC, and emphasised the importance of taking timely action.

Hotbit revealed that its decision to halt operations stems from deteriorating operating conditions it has faced since a former “management employee” became subject to an investigation in August 2022. This investigation compelled the exchange to suspend its business activities for several weeks, ultimately impacting its overall functionality.

Furthermore, Hotbit pointed out various incidents that have transpired within the cryptocurrency space, which have also contributed to its decline. The exchange specifically referenced the collapse of FTX and the subsequent banking crises that resulted in the de-pegging of USD Coin (USDC). These events led to a sharp outflow of funds from centralised exchanges, thereby affecting Hotbit's cash flow.

The Hotbit team expressed concern regarding the increasing complexities associated with centralised exchanges. They assert that such exchanges are "unlikely to meet long-term trends," implying that a fundamental shift in approach is necessary. Hotbit suggests that the only viable options are to either embrace decentralisation or for regulatory frameworks to be proactively adapted.

Moreover, Hotbit attributed its downfall to repeated cyberattacks and the exploitation of security flaws by malicious users. These security breaches and manipulations posed additional significant challenges for the exchange, undermining its reputation and trust among users.

FTX 2.0: Court Filing Reveals Reboot Plan for Struggling Crypto Exchange

Figure 24. The US House Committee publishes a new stablecoin draft bill

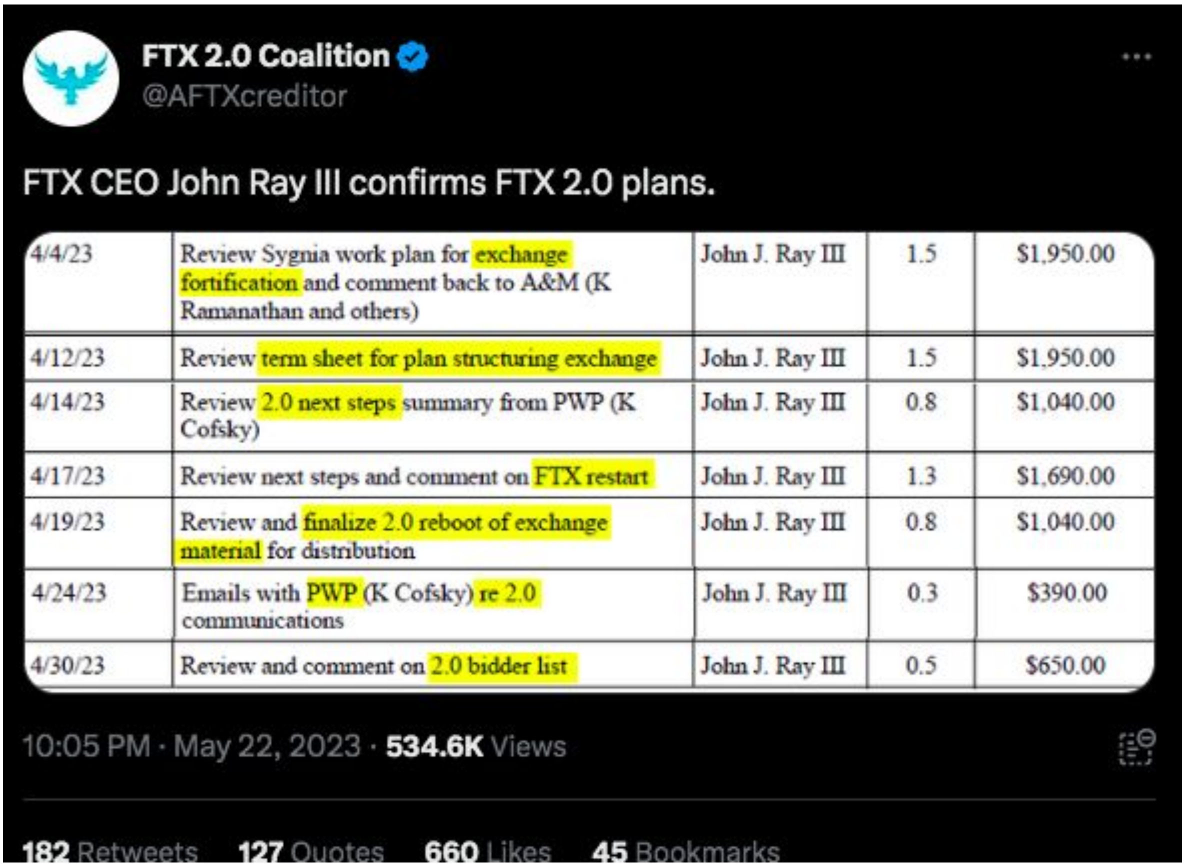
- **FTX is undergoing a potential revival with the launch of FTX 2.0, according to a recent court filing.**
- **The new CEO John Ray has been actively engaged in meetings over the past month, working towards relaunching the failed exchange through a bidding process.**
- **The court filing confirms the existence of a reboot plan, highlighting meetings with creditors and debtors to structure the exchange, review relaunch plans, and finalise materials for FTX 2.0.**

FTX may soon see a revival with the launch of FTX 2.0, as revealed in recent court filings. FTX CEO, John Ray, has been actively engaged in a series of meetings over the past month, working towards relaunching the failed exchange through a bidding process.

A court filing, dated May 22nd and shared by the @AFTXcreditor Twitter account, provides insights into the progress made by Ray during the Chapter 11 bankruptcy proceedings. A compensation report included in the filing outlines the efforts undertaken by Ray to safeguard the interests of the debtor. However, it was the mention of FTX's potential reboot that captured the attention of the cryptocurrency community.

Ray initially expressed intentions to revive the struggling crypto exchange in January. Reports at the time indicated that FTX had discovered $5.5 billion in liquid assets, and that Ray was collaborating with creditors on a revival plan. Subsequently, in April, it was reported that the exchange had recovered $7.3 billion in assets, with plans to relaunch FTX by the second quarter of 2024.

The recent court filing further solidifies the existence of a reboot plan. It reveals that the new CEO has scheduled a series of meetings with both creditors and debtors over the past month. These meetings have been focused on various crucial aspects, such as structuring the exchange, reviewing plans for relaunching it, and finalising the necessary materials for the reboot, which is expected to take shape as FTX 2.0. According to the document, it seems that FTX will be participating in a bidding process. (Refer to Figure below)



FTX 2.0 Coalition
@AFTXcreditor

FTX CEO John Ray III confirms FTX 2.0 plans.

4/4/23	Review Sygnia work plan for exchange fortification and comment back to A&M (K Ramanathan and others)	John J. Ray III	1.5	$1,950.00
4/12/23	Review term sheet for plan structuring exchange	John J. Ray III	1.5	$1,950.00
4/14/23	Review 2.0 next steps summary from PWP (K Cofsky)	John J. Ray III	0.8	$1,040.00
4/17/23	Review next steps and comment on FTX restart	John J. Ray III	1.3	$1,690.00
4/19/23	Review and finalize 2.0 reboot of exchange material for distribution	John J. Ray III	0.8	$1,040.00
4/24/23	Emails with PWP (K Cofsky) re 2.0 communications	John J. Ray III	0.3	$390.00
4/30/23	Review and comment on 2.0 bidder list	John J. Ray III	0.5	$650.00

10:05 PM · May 22, 2023 · 534.6K Views

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Figure 25. FTX CEO John Ray plans for FTX 2.0 (Source: @FTXcreditor)

The potential relaunch of FTX as FTX 2.0 represents a pivotal moment in the exchange's history. If successful, it could signify a remarkable turnaround story and would bring a huge amount of relief to FTX creditors and mark a significant milestone for the cryptocurrency industry.

Hong Kong Positions Itself as Crypto Hub, Opening Retail Investor Trading

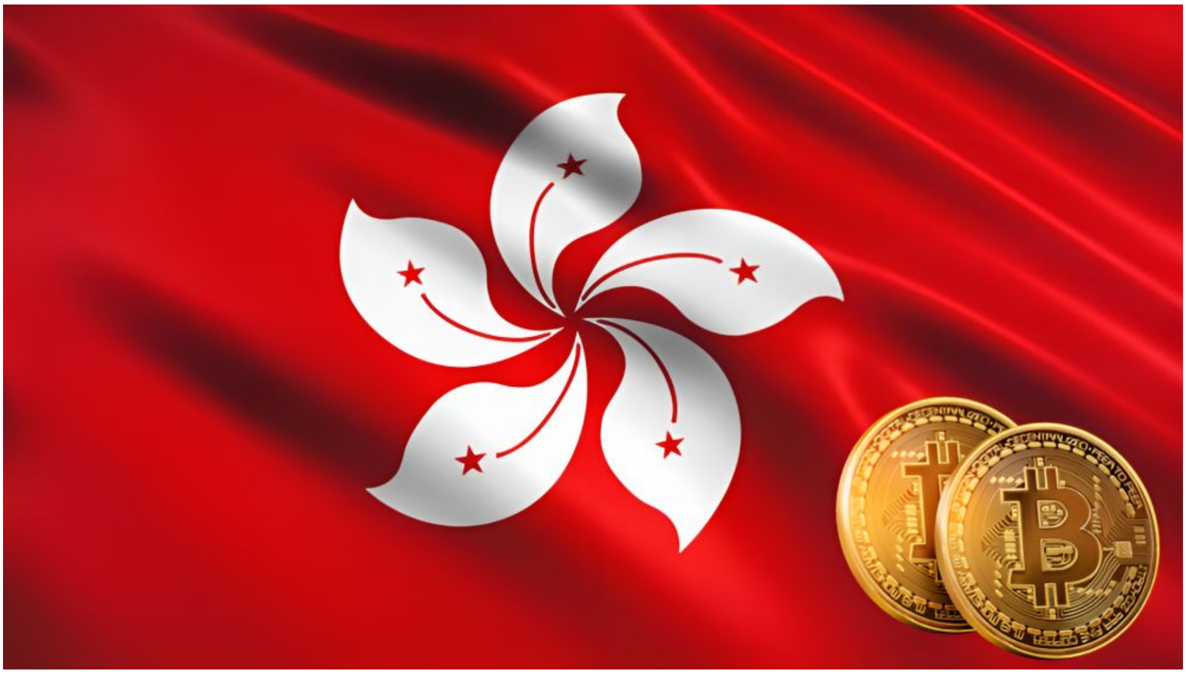


Figure 26. Hong Kong Positions Itself as Crypto Hub, Opening Retail Investor Trading

- **Hong Kong is positioning itself as a digital asset hub by reopening trading to retail investors.**
- **The Securities and Futures Commission (SFC) in Hong Kong has introduced a regulatory framework allowing individual investors to trade larger tokens on licenced virtual-asset platforms, with investor protection measures in place.**
- **Unlicensed exchanges targeting Hong Kong investors will be in violation of the law after June 1st, as the SFC plans to monitor the situation closely.**

Hong Kong is looking to reposition itself to become a digital asset hub as it reopens trading to retail investors, in contrast to the anti-crypto stance historically upheld by China. As a special administrative region of China, some commentators have suggested that Hong Kong's new crypto regulations could serve as a model for adoption in the PRC.

The Securities and Futures Commission (SFC) in Hong Kong recently announced its regulatory framework for retail participation in the crypto sector. Starting from June 1st, 2023, individual investors will be allowed to trade larger tokens such as Bitcoin and Ethereum on licenced virtual-asset platforms.

To safeguard investors, the SFC's framework includes measures such as knowledge tests, risk profiling, and reasonable exposure limits. The tokens available for trading must meet specific criteria, including being included in at least two acceptable, investible indexes provided by experienced entities in the traditional financial sector.

According to the SFC, licenced platforms must comply with robust investor protection measures related to onboarding, governance, disclosure, and token due diligence. The aim is to strike a balance between financial stability and financial innovation.

Keith Choy, the interim head of intermediaries at the SFC, emphasised that unlicensed exchanges, including those from overseas actively targeting Hong Kong investors, will be in violation of the law after June 1st. The SFC plans to monitor the situation closely.

The new regulations come as Hong Kong seeks to reclaim its position as a cutting-edge financial centre and reinvent itself as a digital-asset hub. Despite facing the controversies and bankruptcies that have afflicted the crypto industry in the aftermath of the 2022 market rout, Hong Kong is taking a pragmatic approach by cautiously embracing digital assets while prioritising financial stability.

Hong Kong's move toward becoming a crypto hub could also have implications for mainland China and could serve as a blueprint for the reintroduction of cryptocurrencies in China. In 2017, China had effectively banned cryptocurrencies.

While Hong Kong establishes itself as a crypto-friendly jurisdiction, regulators worldwide are grappling with the challenges of managing the crypto industry. Dubai and Singapore are also attempting to attract crypto-related investments, while South Korea is on the verge of passing its first standalone crypto legislation. The United States, on the other hand, has taken a stricter stance on the sector, cracking down on various aspects of crypto activities.

Ledger Delays Key Recovery Feature After Community Backlash, Commits to Open-Sourcing Code

Figure 27. Ledger Delays Key Recovery Feature After Community Backlash

- **Ledger has postponed the release of its Ledger Recover feature in response to criticism from the cryptocurrency community.**
- **The announcement of Ledger Recover drew backlash from users who expressed concerns about sharing seed phrases with third-party custodians and the closed-source nature of the code.**
- **Ledger CEO Pascal Gauthier addressed the concerns, promising to release the feature only after the code is open-sourced.**

In response to significant criticism from the cryptocurrency community, Ledger, a leading hardware wallet provider, has decided to postpone the release of a key recovery feature. The move comes after Ledger faced a backlash for its announcement of the Ledger Recover service, which would allow users to store encrypted backups of their seed phrases with custodians and restore private keys if needed.

Ledger CEO Pascal Gauthier addressed the concerns in a letter to users, stating that the feature would not be introduced until the code for it is released. Furthermore, Ledger held a Twitter Spaces session to engage in a discussion about the issue and gather community feedback.

The initial announcement of Ledger Recover drew criticism from cryptocurrency enthusiasts who expressed concern about the idea of sharing seed phrases with third-party custodians. Critics voiced their discontent on various social media platforms and one particular point of contention was the closed-source nature of the code, leaving no means to verify the safety of the custody mechanism proposed.

Acknowledging the concerns raised, Gauthier emphasised that the company had learned a valuable lesson. He revealed plans to accelerate the open-sourcing roadmap, intending to make as much of the Ledger operating system code available as possible. The process would start with core components of the operating system and include the Ledger Recover feature, which would only be released once this work is complete.

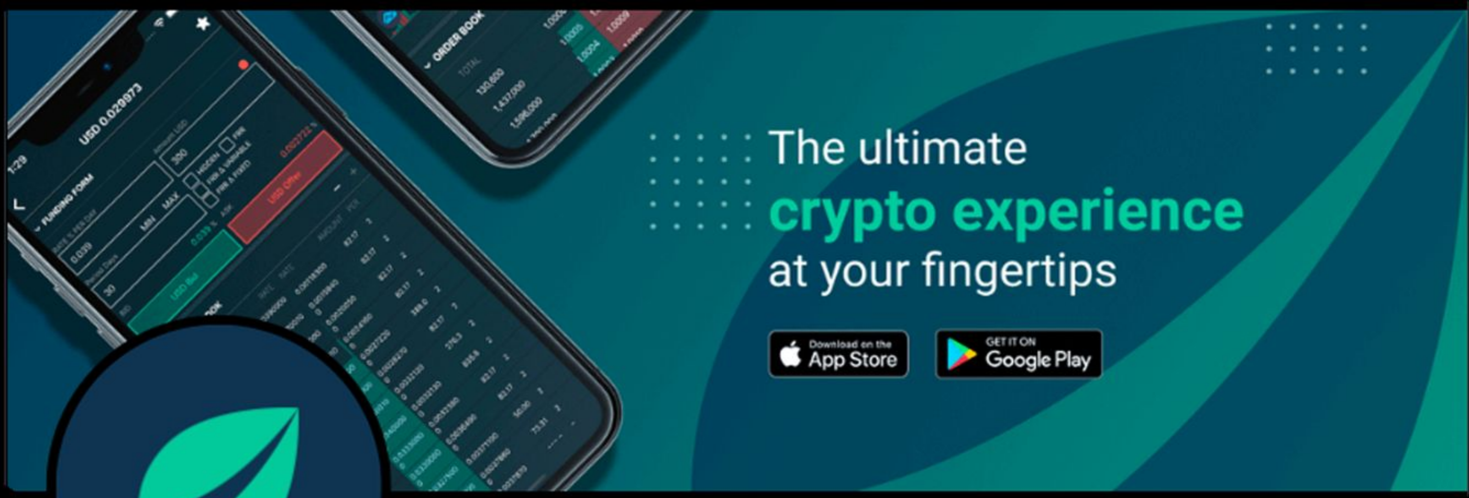
While Ledger aims to enhance verifiability through open-sourcing, certain portions of the codebase, particularly those related to the secure element chip used for added security, cannot be made open-source. Former CEO and co-founder Eric Larchevêque explained that these chips are essential for an extra layer of security, even though "security by obscurity" is not the ideal approach.

During Ledger’s Twitter Spaces session, questions were raised about building a completely new product for Ledger Recover. But this was deemed as impractical and contrary to best practices, referring to it as "security theatre."

Concerns were also raised regarding the possibility of personal information on Ledger Recover being shared, in the event of a government subpoena. Gauthier assured listeners that the company would always support its customers but stated that if users have reasonable doubts, they should refrain from using the service.

Gauthier, emphasising the need for increased security measures in the crypto industry, expressed concern over the relatively small number of users with hardware wallets compared to the overall crypto user base. He viewed the Ledger Recover announcement and subsequent postponement as a humbling experience that would guide the company's future decision-making process in collaboration with the community.

Ledger's commitment to open-sourcing its code and engaging in constructive dialogue demonstrates a willingness to address the concerns of its user base and prioritise transparency and security in the evolving landscape of cryptocurrency storage solutions.



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BITFINEX Alpha