Thoughts on Net Asset Value – With Crypto in Mind

Since we published A Quick Look at GBTC there has been a number of fascinating conversations about Net Asset Value. It **dovetails well with discussions about the recent FTX bankruptcy filing.**

This is going to be a tricky piece, as I know where I want to end up, but I am struggling to find a coherent path to get there. Please bear with me.

We will call into question the concept of NAV and how it is used in the crypto space. The objective is to get us all thinking better about what NAV means (or should mean in crypto). I think that we can get there and while it will be somewhat circuitous, this is the path we will follow.

- **NAV as a rough benchmark versus NAV as an executable level.**
  - Can you execute a trade anywhere close to NAV?
- **Issues related to size.**
  - Relatively obvious but worth discussing to set the stage.
- **Issues related to underlying liquidity.**
  - Reasonably obvious, but important to continue building the foundation.
- **A personal anecdote.**
  - Weird, but ideally thought provoking enough to consider before the main task.
- **How far off could crypto NAVs be from reality?**
  - With the groundwork laid, we will identify even bigger issues with crypto, which we need to be thinking about to make money in this space.

This is the gameplan, so let's see if we can bring this idea to an interesting and useful conclusion!

What is NAV?

Is NAV meant to be some **useful "thumb in the air metric" or an executable level?**

I think collectively we tend to view NAV as something that is executable.

- **Mutual funds** are basically obligated to allow buying and selling at the closing NAV (there are some exceptions, but those aren't important at the moment). So, for those of us who grew up with mutual funds this concept is burned into our brains, and it continues to be how mutual funds operate.
- For many **ETFs** (especially equity ones) we can trade in and out all day long, typically close enough to NAV that it acts like an executable level. Sure, there are algos that try to capture tiny deviations in ETF values, but for mere mortals NAV is more or less an executable level.

The fact that our brains are wired to treat NAV as an executable level is a potential liability.

As the "calculated" NAV differs from a realistic expectation of a trading level, there are risks and we are not necessarily good at identifying those risks because they go against the grain of how we think about NAV.

Size Matters

The first issue that creates gaps between NAV and tradeable levels is size.

If NAV is calculated based on where 100 shares or $1 million worth of bonds are traded it might reflect executable levels for similar sizes, but as the size needed to trade increases (say to $100 million or a $1 billion worth of bonds), the "validity" of that NAV decreases. It isn't a "liquidation" value, it is merely a reflection of the "here and now" in small size.

Another "size" issue is linked to how big a holding is relative to daily trading (or the float). If you hold a negligible amount of an asset relative to its daily trading volume, then the NAV is probably reflective of where you could sell it. As your holding increases as a percentage of the total, the NAV becomes more unrealistic as your trading would impact the price. **This is even "worse" if someone is a "thought leader" in the space (and their selling is public) because that knowledge will impact the price.** This will tie back to what has happened in crypto recently.

These concepts played a key role in Noah's ARKK published on February 23, 2021 and A Man Named Jed published on February 28, 2021. Bitcoin was at $47,000 at the time and ARKK was at $150.

Size, percentage of outstanding, and thought leadership were critical parts of the analysis and we leaned on what we'd seen in a commodity-centric equity fund just prior to the GFC. I won't completely rehash the story as you can read it in the link above but thinking about it is relevant in the crypto space right now (and besides, the Beverly Hillbillies theme song is one of the better ones, so at least I've planted that in your head).

So, the "basic" issues around size matter, but there are nuances that matter even more!

Liquidity Matters

Size and liquidity can go hand in hand, but there are some markets that are inherently less liquid than others.

Stocks close at 4pm ET and we get a closing price. Good enough.

However, here is a bond example to consider. At 4 pm ET, a high yield bond that hasn't traded in a week is quoted at 81/83 better buyer at one place, 82/84 better seller at another dealer, and 85/86 by someone who hasn't updated their levels in days and whose only goal is to get someone to inquire on their price so they can try and get an order. What is the price of that bond? One level is irrelevant (but may get taken into account) and the seller is clearly hoping that the bond is higher while the buyer is hoping that it is lower. You aren't going to get the 82/84 better seller to buy bonds at 82 and the 81/83 better buyer isn't going to sell you bonds at 83. However, if you ask them, all you will do is move the market against you (unless bond trading has changed so much since I used to do it for a living). So, what is that level? **There is clearly a range of levels that are reasonable for a NAV calculation, which as a rough benchmark is ok, but don't think of it as executable.**

This is one reason why bond funds tend to trade at discounts or premiums to NAV (basically the ETF is a better reflection of value than the NAV). This statement will be revisited in the crypto segment.

Discount or premium to NAV is something that I pay attention to and it was something that we highlighted very aggressively in early March 2020 in 5 Scariest ETF Charts. There was carnage in the front end of the credit market and NAV was all over the place. **I still think one of the best things that**

the Fed and Treasury did in response to COVID was to set up the mechanism to buy bond ETFs! Trading relative to NAV creates very large feedback loops (which is what I call the **ETF Spiral™)**.

One issue (partly mentioned in the size section) deserves a mention in the liquidity section as well. **If only a small portion of an asset is tradable, how liquid is it?** If someone has a chunk locked up, the "free float" may in fact be smaller than you realize, making the asset far less liquid (also making any position larger than it looks on paper). This would create an "overhang" issue. What would the price be if those "locked up" assets became free and were sold? **Okay, hopefully this is now starting to point (with big flashing arrows) to the crypto space!**

I'm Going to Sue Your Butt!

As far as I know this is the only time in my career that someone threatened to sue me. I only tell the story because it is weirdly relevant here and the threat lasted less than an hour.

At the time, one of my responsibilities at Bankers Trust was running the Total Return Swap business (TRS). Basically, we financed leveraged loan positions for hedge funds. Part of the risk management from the bank's perspective was ensuring that the underlying leveraged loans were marked at realistic levels. Back in the late 1990's this was as much art as science and often led to some heated exchanges as the bank liked lower marks (for collateral purposes) and the hedge funds liked higher marks (for collateral and more importantly P&L purposes). This experience taught me a lot about marking to market in illiquid spaces.

This story took a particularly interesting turn. It was with a now famous (or infamous) client on what would probably be described as a "hung" deal in today's parlance. The tension between the bank and the client was palpable. The bank was scared of the client going under and what they would do with this big block of a loan (which had limited buying interest). The bank was also worried that word would get out (and it would) that the selling was due to the largest holder being liquidated. The fund, on the other hand, had collateral issues and certainly every mark to market loss was increasing the risk that they would go under (for the record this was the 1990s and no one named Sam was involved, but maybe there are parallels). In any case the conversation went something like this.

> **Fund Trader** – Dude, what did you mark that loan at? It has to be a mistake.
>
> **Me** – No, that is where we are marking the loan.
>
> **Fund Trader** – Are you marking everyone there?
>
> **Me** – Not necessarily.
>
> **Fund Trader** – We are going to sue your butt! [I don't think butt was the word used].
>
> **Me** – Have your lawyer call our lawyer.

I took the elevator down to the legal department and went to the office of the lawyer we were working with. This reaction was not unexpected and we waited for the call. To be honest, the lawyer at the fund wasn't much more polite than the trader had been, but they were under a lot of stress, and this was probably the last thing they needed to deal with.

> **BT Lawyer** – Hold on. Do you have a copy of our ISDA? [The ISDA Master Agreement is the governing document for the relationship between the bank and the fund].

Fund Lawyer – Give me a sec……Ok, got it.

BT Lawyer – Please turn to section X, item Y (I cannot remember the exact section, but it was regarding mark to market valuations).

Fund Lawyer – Possible sigh, but hard to tell.

BT Lawyer – See where it says that mark to market should be a price that occurs only in the event that the position is being unwound due to the bankruptcy of one party?

Me – (Let's be honest, I was enjoying this). Given the size of your fund, the daily headlines surrounding it, and the size of the position, we priced this loan differently than where we are pricing this loan for other clients. We believe that if we had to sell this position due to your bankruptcy the price would be significantly lower than the current market price.

Fund Lawyer – (Long pause as we're put on mute). Ok, we've been changing that with most of our other counterparties and don't think it should be followed as it isn't our current standard (or something to that effect).

BT Lawyer – Sorry, but it is in our document, and we cannot deviate from it. Happy to discuss amending our document at your convenience, but that is run by a different department.

Fund Trader – Pete, we will talk when I'm back on the desk! (It did not sound like it was going to be a friendly conversation).

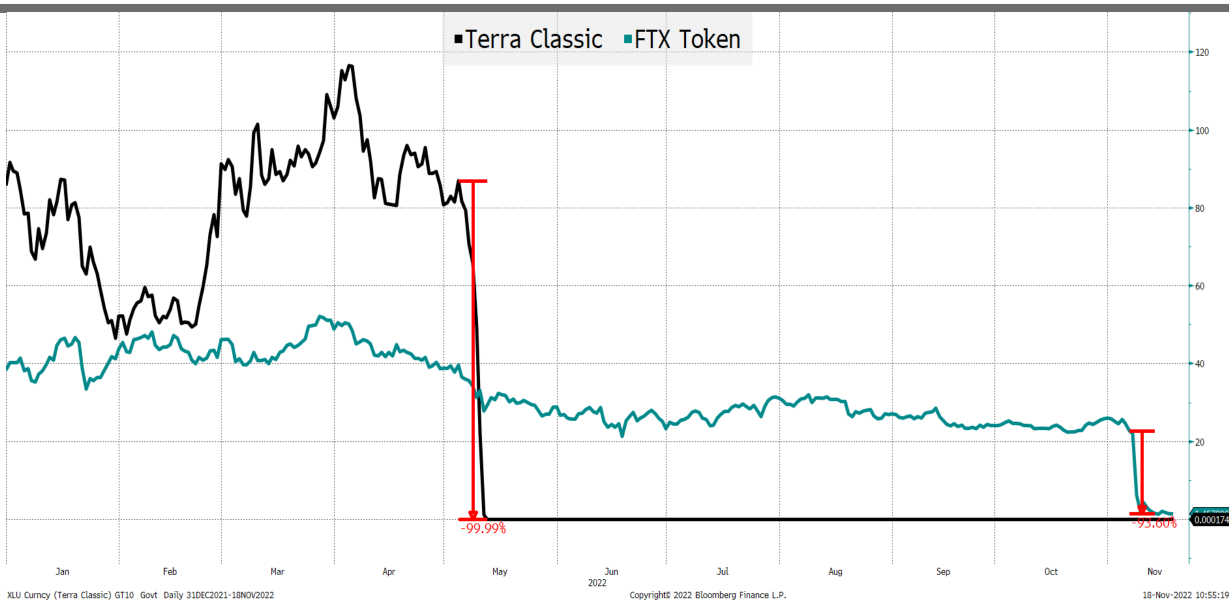
I waited about 5 minutes for the call and then got out of dodge! I never heard more on the subject as their situation as an entity got resolved in the next day or two.

I wanted to share this story and it is probably a good reminder that in times of stress, entities may spend a lot more time discussing "simple" things like NAV because they are far from simple and can even be mission critical.

NAV in Crypto

As we move from simple stocks and bonds to crypto, all of these issues are at play. A few have likely played very important roles in what is going on in the industry (and what will likely happen in the near-future). However, crypto has some additional issues and concerns. Let's highlight a few things:

- **Rapid demise**. This hasn't been mentioned before, but crypto seems far more likely to experience rapid crashes than other assets. In credit, we talk about "jump to default" risk a lot, often incessantly, despite the fact that I think in 25 years I've only seen one "jump to default" and that was for a company that made glass for a phone and their only customer decided to change suppliers. Terra/Luna and FTT Token are just two recent crypto crashes.



One was allegedly a "stable" coin and the other was a token. **When this level of volatility can occur, current NAV is far less useful than in an "ordinary" asset.** At least in the case of FTT, you have the highly visible large holder in trouble which made things worse and is a special case that demonstrates why NAV is less useful as an indicator of unwind value.

- **Serum**. Quite possibly my new favorite website CoinMarketCap has Serum with a current price of $0.25 and **a market cap of $65 million, with a fully diluted market cap of $2.5 billion!** Serum will come up in discussions about the FTX bankruptcy (and it already has). Apparently one of the "assets" in the FTX empire (I don't know which entity) was their holding of Serum! **It was trading as high as $0.87 this month. Does that mean it was worth close to $8 billion?**
    - **If you are analyzing the "value" of a company's holdings, you better take a long hard look at the float versus the outstanding.** It seems particularly absurd that anyone would even think of attributing the full market cap to something where only ~2.5% is available to trade (even where the holder of the residual was so respected). This seems insane (and maybe this is just an outlier), but I fear that many naive people in the space do just that.
- **Best execution!** Most of us live in a world where best execution is not only expected, but it is also a documented rule to be followed. If, hypothetically, you were trying to manipulate a price higher, would you use best execution? Or would you use execution techniques most likely to drive the prices higher especially if execution was unregulated? Even if it was regulated in some jurisdictions, there are plenty of places to do it without worrying about any serious consequences. Not saying this happens, but my **Third Rule of Bitcoin is There Are No Rules**, so I certainly want to be extra cautious around things that seem too good to be true. In theory, it could also be used to create downdrafts, so take any price action, especially inexplicable gaps, as something to be wary of.
- **The Second Way to Lose Money.** In Two Ways to Lose Money we discuss the risk of loss due to the counterparty failing to live up to its responsibilities. Suspensions of withdrawals will impact valuations (even those that are limited to certain services or are resolved relatively quickly).

I fear that I've just scratched the surface on this subject, but we will likely come back to this. In the meantime, let's focus on some trading.

Discounts on GBTC and ETHE

I wouldn't have bothered writing this piece today, except that I wanted to get to this point. GBTC and ETHE (both Grayscale Trusts) are trading around a 40% discount to NAV. There are many reasons for this, and I unfortunately only touched on a few in Wednesday's piece. My thoughts on why the discount is so large are:

- **Retail wants out and is selling and since there is no "arbitrage" the discount can become large and stay large for extended periods.** Largely innocuous and even without arbitrage the gap should eventually shrink.
- **The 2% fee is the main reason.** This does NOT hold water for me! There are plenty of trusts and closed end funds with high fees. Yes, people tend to discount those fees for a period of time, but a 40% discount seems far too high to be related to just fees. You could convince me of a 10% discount due to high fees, but 40%? No way, there is more going on.
- **Smart money unwinds.** This was described in Wednesday's report and it is playing some role in the trading. Like retail selling, this should eventually resolve itself and help shrink the discount.
- **What if the NAV is wrong? This is what I largely missed and spent no time on in Wednesday's report.**

If you have made it this far in the report, you've got a good idea of where this is headed.

Why Could the NAV Be "Inaccurate"

The least bad scenario is that investors have realized that if Grayscale dissolved the trust, they would presumably sell large amounts of bitcoin (or Ethereum).

- GBTC's website says that it holds 0.00091507 bitcoin per share outstanding. At a bitcoin price of $16,500 that is a NAV of $15.10. With a price of $8.60 GBTC is trading at 57% of the value, or at a 43% discount.
- Liquidating the trust would cause GBTC to sell 633,567 bitcoin (approximately $10.5 billion). According to CoinMarketCap, bitcoin has a market cap of $320 billion, so they'd be selling just over 3% of the entire market cap. **Certainly that would trade at a discount, but how much?** This is a perfect reason for there to be some discount. Any unwind, which would drive the discount to 0 (which is "good") wouldn't achieve current market valuations because the selling of bitcoin by the trust would reduce the market value.
- I don't have a good sense for what that discount should be. I don't understand the depth of the market (I'm suspicious that there is a lot of spurious activity that drives volumes making the market look more robust than it really is). I don't know how much leverage is left in the system and another down leg should likely trigger more forced selling.

To the extent that part of the discount is related to this, then it is reasonable and would be persistent (though it would also argue against discounting the fees).

What if they don't have access to the bitcoin (or Ethereum)?

- I've only spent a few minutes perusing their website (I will save reading the prospectus for some light Saturday morning reading), **but what if investors are questioning their holdings?**
- **Could investors be concerned that some of their crypto has been hacked?** Some was **held at places they cannot access.** The holdings per share (that I used) were calculated per their website by CoinDesk (which is owned by the same group that owns Grayscale). Nothing is wrong with that, but I do want to read a little more about how the number of bitcoin they hold is verified and confirm that they have full access at the moment. It may will be the case, I have not seen any evidence to the contrary, but I **am hearing that there is fear that their current holdings (or future holdings) could be hit by hackers and that is part of the discount.**

This is a risk that I didn't really contemplate, at least not as a serious risk, but until I read the prospectus, I could see why it is a risk. The risk of "hacking" is real and even if everything is owned and secure today (presumably the case) the holders of shares could be surprised one day by a loss and that could be increasing the discount to NAV. **Very adult behavior if true, but this should also be eye opening regarding the safety of the industry if this is really pressuring NAV.**

Bottom Line

A lot of brain power and energy spent on such a "simple" topic as NAV, but I suspect that we will hear a lot more conversations on the subject as we all try to figure out where this business is headed and what opportunities there are.

If you like crypto here, cold storage or a more regulated custodian could be the way to go, but the discount to NAV is interesting. However, a lot of the discount is explainable and potentially won't go away (though if the discount is attributed to selling due to close out, that will hit crypto holders as well).

Nothing is simple and I'm almost as confused as when I started, but we now have a better framework for thinking about this industry as we prepare for regulation and what will come out of it!

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