

\$POLY (Polymath): The Bear Case

By Andrew Bakst

Polymath seeks to create a new token standard, called ST20, that allows for the tokenization of securities. Throughout the article, ST20 tokens will also be referred to as security tokens. Security tokens provide numerous benefits for both investors and corporations. These benefits depend on whether the security is already publicly traded or not:

Benefits for Securities Already Publicly Traded

Polymath allows these securities to become much easier, faster, and cheaper for investors to trade internationally, like all other tokens on a public blockchain.

An example of improvement:

A friend in Cambodia has called me and said that she's convinced of Elon Musk's vision and wants to buy Tesla's stock. Today, it is very difficult for her to access the U.S. equities market. However, security tokens would likely make cross-border equities investing as borderless as all other cryptocurrencies. If Tesla moved off the NASDAQ and instead listed an ST20 token, she could hypothetically make her investment with little barrier to entry.

Benefits for Securities Still Privately Owned

Polymath makes it much easier, faster, and cheaper for private companies to create a market where their securities can be legally purchased and traded. Traditional methods for selling securities, such as an IPO or venture round, require significant capital and time, primarily because of the need for regulatory compliance. Polymath can combine the [benefits of an ICO](#) with the regulatory compliance of accurately listing a security as a security.

An example of improvement:

A toxicologist in Finland has just discovered a concoction that allows people to perfectly time their sleep. Today, she would be faced with the steep compliance task of venture funding, which includes the hassle of finding enough accredited investors to raise her seed round. She might have no connections to any accredited investors, and consequently it could take her months to find enough of them to fund her company. All the while, her company is in debt from the legal costs required to properly issue securities. Using Polymath, she can create an ST20 token for her company. She can then list her ST20 token in the appropriate Polymath market of accredited investors, and can receive the funding needed to realize her vision at a much cheaper capital and time cost.

But POLY is not Polymath...

The Polymath network could be successful because of its benefits for both publicly traded and privately owned companies. However, the POLY utility token, as outlined in their most updated [white paper](#), will likely not rise in value as the Polymath network grows.

The POLY utility token has three primary uses:

- Payments from investors to KYC (Know Your Customer) providers to achieve proper investor accreditation.
Quoting the white paper: "This marketplace matches up individuals with KYC providers who offer validation and accreditation services in their jurisdictions. KYC providers post the cost to use their services."
- Payments from companies to legal delegates to achieve proper regulatory compliance.
Quoting the white paper: "All securities must go through the legal delegate process. Legal delegates help issuers (go through the compliance) process and complete the steps for an issuance. For each new potential security token, delegates bid on the cost of representing that issuer during the process. The platform assumes no knowledge about the delegates, and it is up to the issuer to do their own due diligence about the legal delegate's claims and credentials."
- Payments from companies to smart contract developers to receive third-party reviews.
Quoting the white paper, "Issuers may wish to have their Security Token Offering (STO) Contract created or reviewed by one or more smart contract developers. Developers are able to bid on these jobs."

Neither of these three payment receivers (KYC providers, legal delegates, or smart contract developers) will want to hold the POLY token for a significant period of time. Neither will the businesses who are paying them. All four of these parties engaging in POLY payments will quickly seek to move into a stable store-of-value that they can readily report on their bottom line, such as the dollar or a stablecoin. After all, who wants to be paid \$10k, and then potentially lose half of it because they left it in POLY?

POLY's high velocity (Velocity is the number of times a currency changes hands in a fixed time period.) signals that its price is likely to not rise at nearly the same pace as the demand for the Polymath network, based on the [equation of exchange](#) $MV = PQ$ ($M = PQ/V$). [Valuation models for cryptocurrencies](#) are nascent, but the equation of exchange is currently agreed to be one of the best ways to value utility tokens. More on this equation later.

So How Can We Value POLY?

In their whitepaper, Polymath states that when a company files for an IPO, the costs related to compliance are about 5-10% of the total money raised. Let's make a few generous assumptions to arrive at a generous valuation for the POLY network. I think it's important to make generous assumptions in a bear argument, as I'd prefer to overproject a coin's value when making a bear argument:

- Achieving legal compliance for a private company to sell its securities (whether it's an IPO, venture round, etc.) costs 10% of the total money raised.
- The payments to KYC providers and smart contract developers account for 10% of the POLY network's transaction volume, while the payments to legal delegates account for the other 90%. The reasoning for this is:

KYC providers will only be able to charge investors somewhere in the cents to dollars range. Smart contract developers can maximally charge an hourly rate of \$50-100, for tasks that won't take more than a week's work. Compared to the billions in legal fees that legal delegates will bring in, KYC providers and smart contract developers should be expected to only bring in a small fraction of POLY transaction volume.

- POLY is able to onboard companies worth \$100bn USD annually.
- Polymath provides no financial benefits over the current system for legal compliance. This is very generous to the valuation of POLY, as it would be unlikely that they could onboard securities worth \$100bn USD annually without significant financial improvements over the current system. Prominent venture capitalists generally tell startups that they need to offer at least one order of magnitude (10x) improvement over the status-quo to become successful.

\$100bn USD per year (value of companies onboarded) * 10% (current system's fees) gives the Polymath network an annual throughput of \$10bn USD from Polymath's legal delegates. When including the last 10% of network throughput from KYC providers and smart contract developers, we arrive at an \$11bn USD of transaction value for the network.

Back to our earlier equation of $M = PQ/V$.

M = Money Supply (the value of all the POLY coins in circulation)

P = Price Level Index (price per service on the Polymath network)

Q = Index of Real Expenditures (the number of services on the Polymath network)

V = Velocity (the number of times a POLY coin changes hands over one year)

We can find a reasonable valuation of the Polymath network (all the POLY coins in circulation) if we can find a reasonable value for M.

This is because $P * Q$ equals the total value of all transactions on the Polymath network, which we just found to be \$11bn USD per year. But how can we estimate V?

The [V of the USD M1](#) is currently 5.5. Before the 2008 recession, M1's velocity was approximately 10.5.

M1 includes all USD in circulation (bills, coins, checkable deposits, and traveler's checks--all extremely liquid and spendable). We already established that POLY will have an extremely high velocity. Intuition would lead us to believe it would be much higher than the USD M1 money supply. Think about how long it takes for us to spend our cash/checks, versus how quickly the users of the Polymath network will be getting out of POLY. However, we cannot assume that POLY's velocity will approach infinity, because the smart contracts required to execute the services on the Polymath network will hold POLY until the contract's completion.

Thus, let's assume that POLY has a V of 5-10x M1's current velocity. This is again being fairly generous to POLY, as M1 velocity is currently at a 40 year low. This range of multiples gives POLY a V of approximately 30-50.

\$11bn USD/(30--50) renders a valuation of \$220mn to \$350mn USD for all POLY in circulation. Today, POLY's valuation is just under \$350mn USD, without nearly the level of traction to prove our extremely generous assumptions correct. Hence, from a fundamental valuation perspective, I am bearish on the POLY token long-term.

Is there hope? Are there ways this could change?

Should Polymath's ST20 standard become the de-facto for security tokens, which it very well could be, there is a possibility that exchanges use POLY as their primary trading pair for ST20 tokens. It is undeniable that Ethereum (ETH) and Bitcoin (BTC) have benefitted from becoming the de-facto trading pair for other cryptocurrencies, as becoming a trading pair has helped these tokens become stores of value and consequently slowed down their respective velocities.

Due to POLY's late arrival (ETH and BTC were here years prior), the chances are very small that POLY becomes a significant trading pair for ST20 tokens. Given the strong development of cross-protocol value exchange, I would speculate that by the time ST20 tokens are in existence, investors would be able to trade ST20 tokens between their choice of BTC, ETH, a fiat currency, a stablecoin, or POLY. I would expect POLY to finish in last place in terms of trade volume when compared to these other currencies, by a large margin.

Another aspect of hope is a supply sink in POLY tokens. A supply sink is when the number of tokens in circulation decreases, thereby making tokens that are still in circulation more valuable, should the network retain the same overall throughput. There is one instance of a possible supply sink for POLY.

Quoting the white paper:

"...Legal delegates can post a bond in POLY. This bond indicates to the issuer that the legal delegate is willing to ensure the quality of its work up to some limit. The legal delegate would set an amount of POLY, how long the bond would be in force (from the time the security sales begin), and a 'burn' threshold. In order to destroy the legal delegate's bond, a percentage of the total security tokens greater than this threshold would have to vote to burn the delegate's tokens. If the votes to burn exceed the threshold within the bond period, all POLY tokens in the bond are destroyed. If not, the POLY is moved back into the delegates main account and can be used for any other purpose."

To summarize the above paragraph, a legal delegate can put up a bond in POLY to ensure a certain quality of work. If enough POLY token holders agree that the quality of work was not what was promised, the delegate's bond in POLY will be burned. This will drop the supply of POLY, and make other POLY coins more valuable as long as the value of the network remains constant.

However, it is not reasonable to expect a significant supply sink from this process. There are two plausible scenarios needed for there to be a significant supply sink in POLY tokens:

1. Enough legal delegates would have to fail to meet the quality of work they ensured. This outcome is unlikely given that any legal delegate who posts a bond would be heavily incentivized economically to make sure it keeps its promise. Bad legal delegates would be extremely unlikely to post bonds.
2. POLY token holders decide to burn the bonds of legal delegates who do meet the quality of work they ensured. However, that would cause good legal delegates to be less likely to either post bonds or join the network. This would consequently cause the value of the network to decline along with the decline of circulating tokens, not rendering any additional value to POLY tokens. In fact, it would probably decrease the value of the circulating tokens, even as tokens are burned.

Further Troubles

Thus far, I've been very generous in assuming that the Polymath network (not to be confused with the POLY token) will be successful. This is extremely unlikely, as is the case with most startups' success. The Polymath network's potential shortcomings include:

- A lack of technological innovation:
Polymath isn't creating anything new technologically. They are copying Ethereum's token generator and attempting to merge it with proper regulatory compliance.
- A high barrier to entry:
Stock exchanges won't move to the Polymath network. They are much, much more likely to create security tokens on their internal private blockchains.
- Unhappy workers:
Lawyers will hesitate to expose themselves to potential scams on the platform. Smart contract developers can find more meaningful, better-paid work than reviewing the work of companies who didn't want to hire their own developers.

Yet Still Sort of Bullish in the Near-Term

While those who buy POLY tokens today are doing so with little room for rational long-term price growth, there is much to be excited about in the near-term.

The crypto market is not based on fundamental valuations. There is the potential to make money in the crypto market on hype, pumps, and other unpredictable behaviors. Today, most holders of POLY are doing so because they believe that the token will rise in value, which will

significantly lower POLY's velocity in the short-term. Our valuation only applies for the long-term, assuming no speculators.

POLY also did not have a public presale, and therefore likely has many investors locked in for longer time frames than most ICOs, further lowering velocity.

Lastly, POLY is not yet listed on most major exchanges, and those listings, if they should happen, would open POLY to new markets and likely drive the price upward. Thus, I would not be surprised if the value of POLY rose far beyond what is rational in the near-term.

Conclusion

Even though POLY will likely maintain a low velocity in the near-term, the usage of POLY will subject it to extremely high velocities in the long-term. Consequently, POLY will likely fail to capture the value of the Polymath network, if the Polymath network is successful. It would seem that a stablecoin would be the most efficient form of POLY, given the current vision for POLY in the Polymath whitepaper.

However, Polymath is a start-up, and the Polymath team can try to alter their model for their network over time so that POLY does capture value. One possible way could be to change POLY from a utility token to a token that powers a [token-curated registry](#) for legal delegates, KYC providers, and/or smart contract developers. There could be other features or models that would be more beneficial to the long-term price growth of POLY as well.

I welcome your feedback on new features or models that Polymath could use, as well as any feedback you have regarding what you agree and disagree with in the article.

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***This article is in no way investment advice from Andrew Bakst or Crusoe Capital, only the opinions of Andrew Bakst. Your investment decisions should be made by you, and you alone.**