Vesting Report[1]

Introduction

This report provides detailed information about the vesting process in Algorand. Although more than 90% of the vesting ALGO were distributed by Oct. 5, 2021, through a public algorithm, with a small portion completed in early 2022 for technical reasons[2], we still receive several requests for more information and analysis, often referring to partial or outdated information. While the information in today's report is drawn from past communications and other publicly available sources, this report represents the most comprehensive single and synthesized document describing the vesting process and analyzing its effects. The analysis includes investigating if vesting distribution had inflationary effects, that is impact on price, either in absolute terms or relative to market benchmarks and trends. Following the transparency principle, the wallets receiving vested Algos have been public since the beginning and are listed on the Algorand Foundation website[3]. Therefore, Algo flows related to the whole vesting process remain visible through the notarization properties of the Algorand blockchain.

Initial Vesting

Vesting is the process whereby funds provided in 2018 to build the Algorand platform were rewarded over time by the distribution of tokens. In the following, we define Early Backers (EB) as the companies and institutional investors (more than 80) that provided this initial funding and were involved in the vesting process. The initial setup of the vesting schedule was agreed upon with EB in 2018 and stipulated

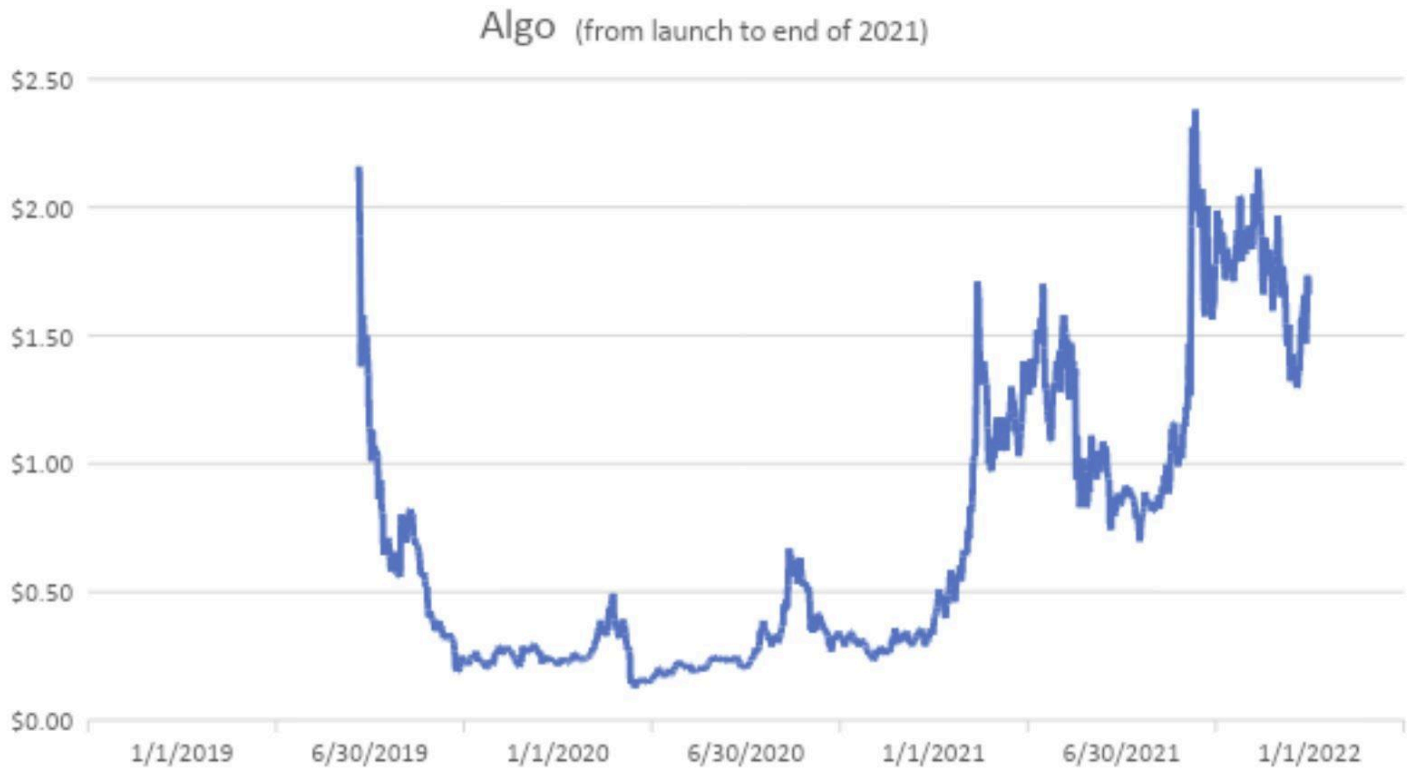
that EB would receive 2.5B Algo in return for their initial funding to the project and their commitment as initial Relay Node Runners on a 2-year schedule. The agreement implied that distribution would happen in the first 2 years after launch at an even rate of approximately 3.2M Algos distributed every day. The Algorand platform and Foundation were created the following year and, with the official launch on June 16, 2019, the vesting process was expected to be completed with the total distribution of the 2.5B Algo in equal daily installments by mid June 2021.

The debate after launch

When the Algorand protocol was launched on June 16, 2019, there was a public auction which distributed 25M Algo. Vesting commenced on June 21, 2019. After a few weeks, a debate about vesting started in the ecosystem and the community[4]. The analysis of supply and demand flows indicated that the daily increase of 3.2M in circulating supply coming from vesting was having a strong inflationary effect, due also to the very low initial supply. Indeed, the price had declined rapidly in the months after the initial auction, down from more than $2 in June to $0.56 on August 1[5]. There was a short recovery until August 13, bringing the price back to $0.80, but the decline restarted and on August 31, 2019, the price was down to $0.40. At that point, a significant portion of the community and several EB agreed with the Foundation that the schedule for vesting required review. The debate was public, and a brief recap, published September 6, 2019, remains available on the Foundation website[6].

The vesting suspension

Following the principles of transparency and decentralization, the Foundation asked the community to submit their Economic Improvement Proposals (EIP) and, in mid-September, some EB submitted their own EIP asking to suspend the entire vesting for 30 days, and to use that time to decide upon a change of schedule. The Foundation supported the proposal and on September 16, published a public update that we would put the proposal to suspend vesting for 30 days to an on-chain vote among the EB.



Feedback included both opposition and consensus, with requests to provide "some form of compensation to relay node runners for the cost of extending the vesting agreement.” During this time the price continued to go down, reaching $0.25 at the

end of September. The vesting freeze was ultimately approved by the EB's blockchain vote, and the suspension went into effect on October 1, 2019, and continued until the end of the year.

The price decline stopped. On October 15 the price was still $0.25, on November 1 it was $0.26, and on December 1 it was still $0.26. This steady behavior, when compared with the price collapse from $1.50 on June 1, 2019 to $0.25 on October 1, 2019, confirmed the relevance of the supply imbalance. It is also likely that the Foundation's ability to foster the suspension of a contract that was damaging the economy of the ecosystem, and the sense of responsibility shown by most of the EB, increased confidence.

The slowing down of vesting

After the vesting suspension, the debate with the EB regarding a new vesting schedule began. EB had contractual rights to receive more than 3.2M Algo per day for the next two years, but most supported a change in the schedule for the good of the Algorand project[7]. A preliminary agreement was reached on November 30, with the proposal coming from the Foundation Economic Advisory Committee (EAC), called EIP-11252019AF[8].

As is made clear in the document, EIP-11252019AF had the following explicit purpose: "delay vesting compared to the current schedule, giving the project room to grow." In simple terms, the proposal suggested a big slow down in vesting. The original agreement outlined 50% distribution between mid-2019 and mid-2020, and 50% distribution between mid-2020 and mid-2021, with equal daily amounts of more

than 3.2M. EIP-11252019AF instead proposed a much slower distribution: 3% (200k per day) in 2020, 8% (500k per day) in 2021, 25% (1.7M per day) in 2022, 35% (2.4M per day) in 2023, and the rest in 2024.

While most EB supported the proposal, some asked for a form of compensation to accept the additional 3-year delay in receiving the tokens they were owed. Negotiations resulted in agreement of an additional 25% (that then, as we will see below, ended up being little more than 20% for technical reasons) which would vest at the end of the schedule, and not only. An important element of this agreement noted that "the proposal also incorporates accelerated vesting under positive market conditions," The possible "accelerated vesting" cited refers not to the original vesting agreement, but to the delayed vesting proposed in EIP-11252019AF. Thus, the name "accelerated vesting," used at times throughout the EIP-11252019AF proposal and in few other communications, is quite a misnomer. In practice, vesting was strongly slowed down, with only the possibility of temporary accelerations dependent on market conditions. Algorithmic vesting would be a more correct name, because the driver of change to the vesting schedule was not speed, but timing with respect to market conditions, executed through an automatic mechanism to minimize market impact.

Making vesting algorithmic

The possibility of acceleration was based on the algorithm summarized in the following and described in detail in EIP-11252019AF. If, starting from the 0.3$ price of the day of the agreement, the 30-day moving average of the Algo price in US

dollar reached a new historical high (that, being based on a moving average, corresponds to a more smooth and persistent growth of the non-averaged price above previous highs) a quantity of Algos could be vested on top of the slow base vesting schedule. This meant no increase in total quantity, but just concentrating the distribution in favorable market conditions and reducing the likelihood of vesting in bearish market conditions. If the price average stopped going to new highs, the algorithm stopped immediately and automatically the temporary distribution, thus reverting to the slow base vesting schedule.

The amounts to be vested in case of new highs were proportional to the size of the increase of the price average, and also to the number of days elapsed from the time of the agreement. Therefore, Algo reaching a new high in 2020, for example, would have triggered a minor extra amount, one in 2021 a higher quantity, more for 2022, and so on until 2024, in which a new high would have had the maximum effect. This was consistent with the principle of putting in any case vesting further in time, “giving the project room to grow”.

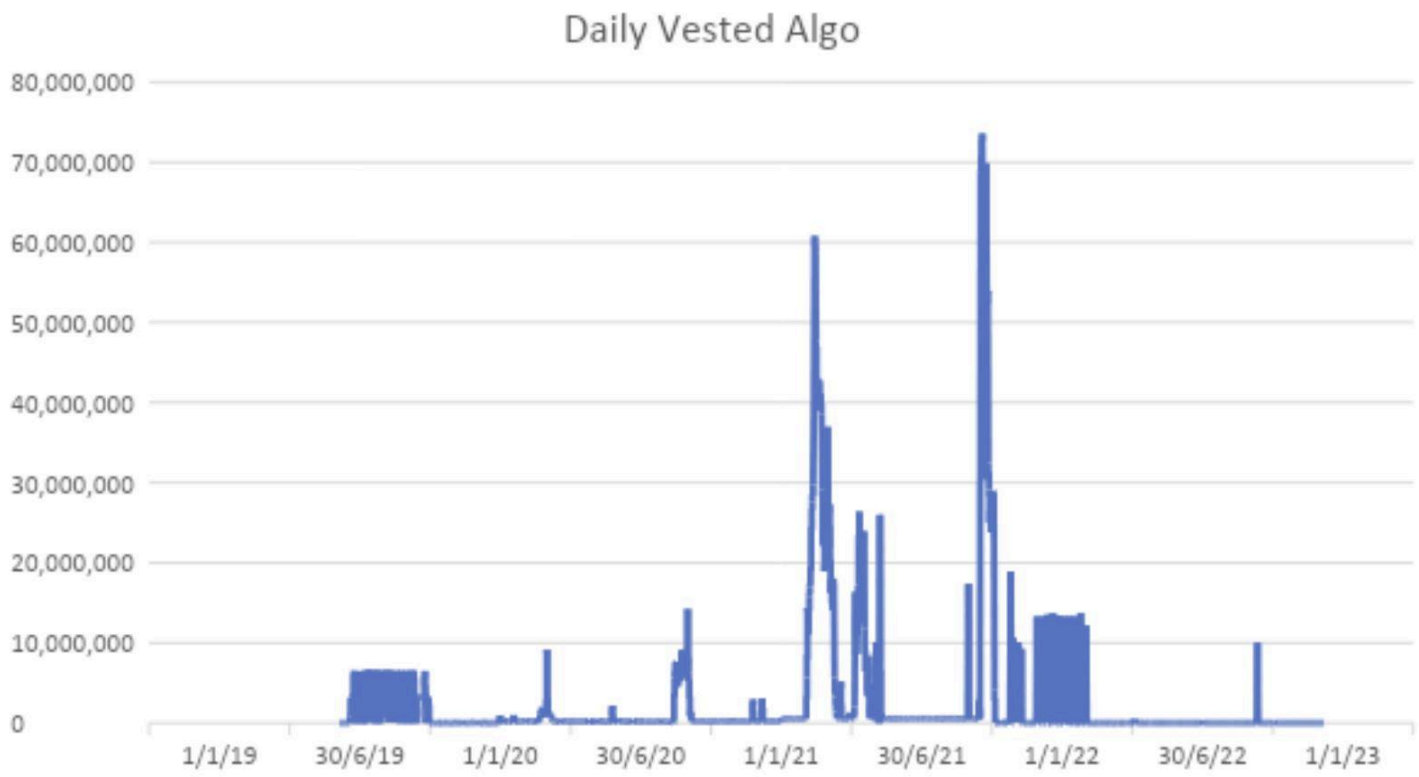
The proposal was put to vote on the blockchain from December 2 to December 4, 2019. It was passed with a majority of only **55 yes out of 81 early backers**, since many of them thought that the worsening of their contractual conditions was too strong, also relying on the opinion that significant acceleration appeared very unlikely after the prolonged price decrease. But, since the early backers had previously agreed to accept the vote result even in presence of a simple majority, the contracts were changed for the entire group of Early Backers. The response of the market to the news was rather positive[9].

How the distribution happened

We can now see retrospectively what has happened in practice. We already know that from June 20 to October 1, 2019, almost 350M Algo (around 14% of the total initial 2.5B) had been distributed under original vesting, and then vesting was suspended in October.

Based on the new agreement, vesting restarts on January 1, 2020, at a daily amount corresponding to the slow base, distributing 3% in the whole year. The acceleration algorithm kicks in for the first time at the end of February 2020, distributing 27M in a few weeks. The subsequent more significant acceleration happens from mid August to early September, distributing 141M.

Then the base schedule continues for months until February 2, 2021, when the most significant acceleration period starts, to continue until to the end of March 2021, distributing over 1B Algo. The price continues to grow, and there are episodes of acceleration during spring and summer 2021, but none of them is so significant. The other big acceleration happens in September 2021[10], and lasts until October 5, distributing 798M Algo and terminating algorithmic vesting[11].



Price Analysis

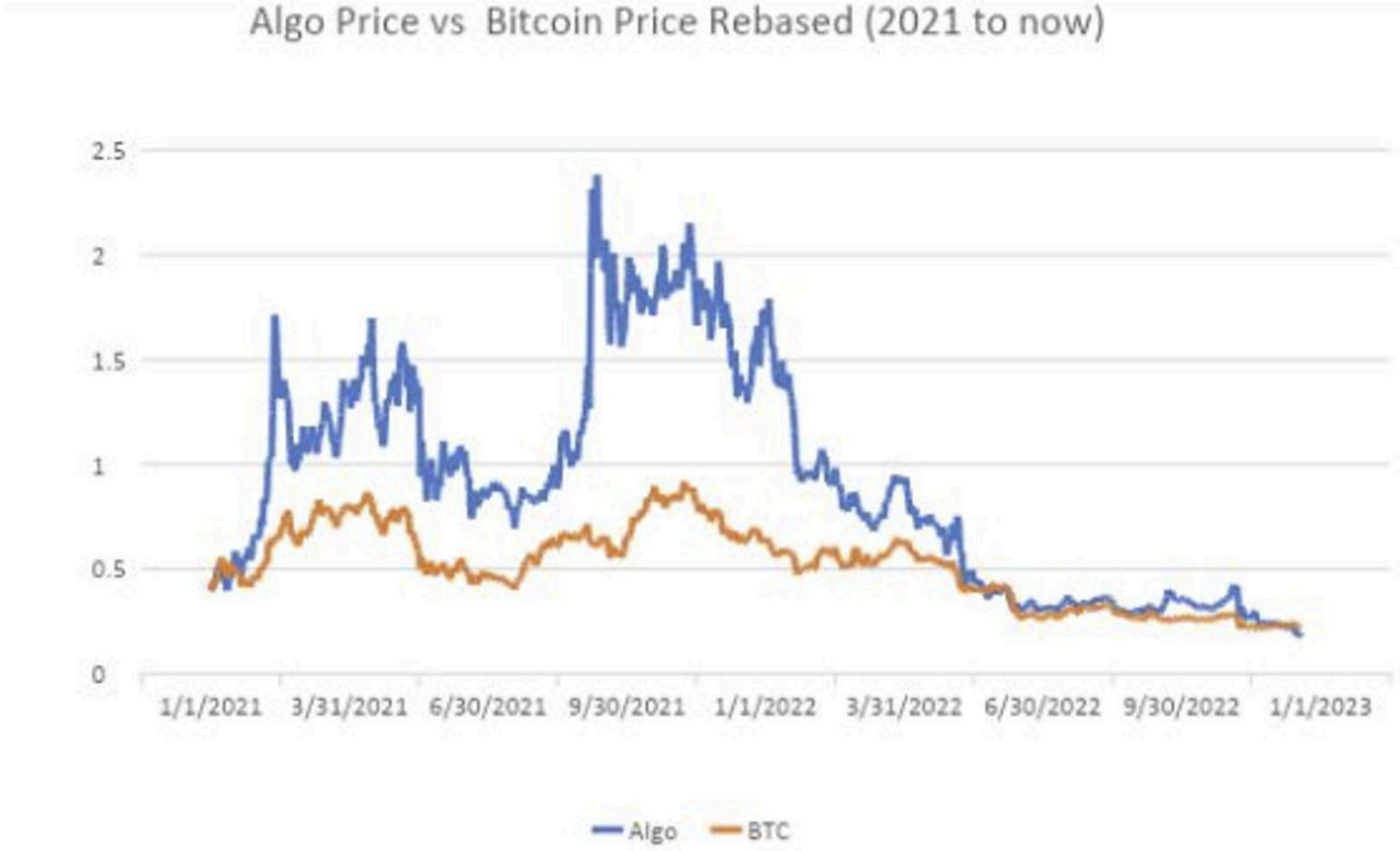
Already from the first price chart, showing ALGO against the dollar, we saw that from January 1, 2021, to the end of the most important vesting period, March 13, 2021, the price rose from $0.4 to $1.14. At the end of the second vesting period, as of May 10, 2021, the price is at $1.37. At the end of the last acceleration period, on Oct. 5, 2021, the price was at $1.95. Three months later, at the beginning of 2022, the price is still at $1.7, even though, as we will see from Bitcoin's and competitors' charts introduced below, the global bear phase for the sector had already begun some time before.

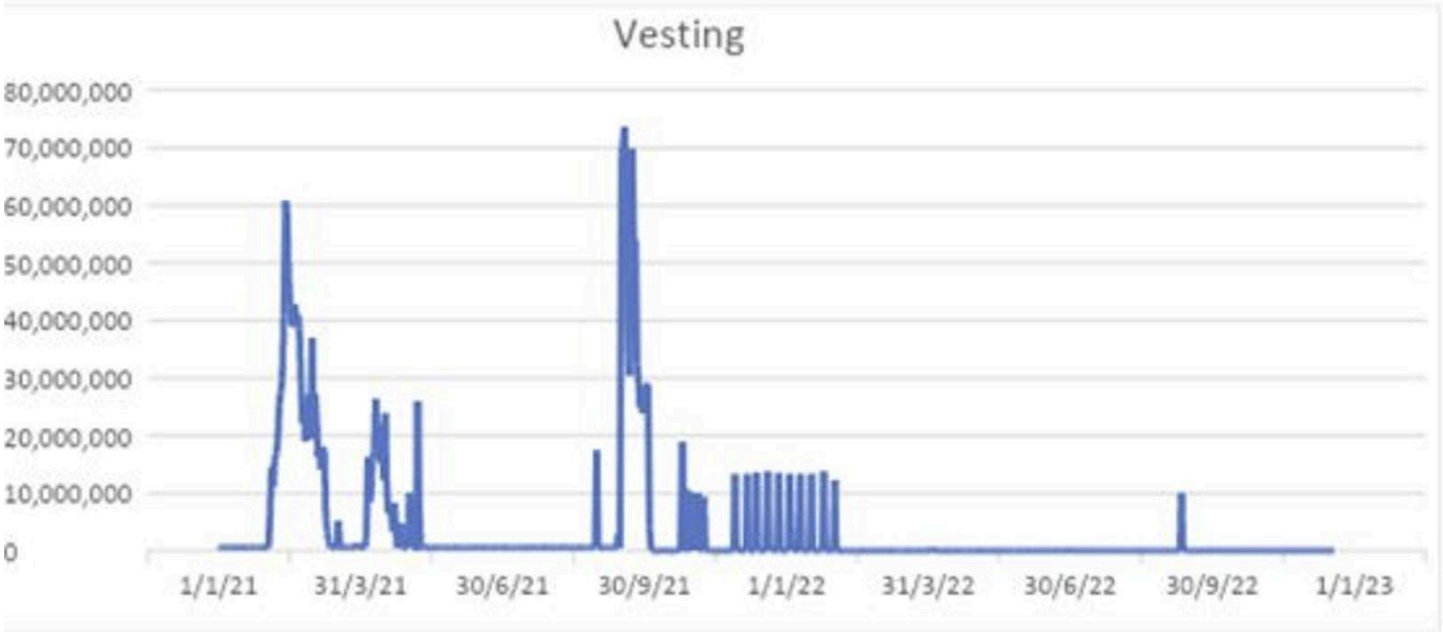
Beyond the absolute ALGO price trend against the dollar, we also analyze the ALGO trend relative to the crypto market and to L1 competitors. First we compare the ALGO price with the Bitcoin price, which best represents the core of the crypto

market bull trend. To ease comparison in the next graph, the Bitcoin price on January 1, 2021 (chosen because it is the start of the year when more than 80% of the vesting was distributed algorithmically), is rebased so that it starts at the same point as the Algo price graph.

In the subsequent graph we also show the price of a portfolio including the most relevant competitor L1s. Specifically we include those coins that were both in the top twenty in the early days of 2021 and are still in the top twenty in early 2023. These are Bitcoin (BTC), Ether (ETH), Ripple (XRP), Cardano (ADA), Litecoin (LTC), Polkadot (DOT), Tron (TRX), and Link (LNK).

These are the projects that have demonstrated both growth and resilience. The portfolio is equally weighted, i.e. 1/8 of the initial capital is allocated in each of the 8 competitors, and the price is again rebased to start at the same price as the ALGO on January 1, 2021. This helps compare the actual price performance of competitors with respect to the ALGO, and only the price, without any direct impact of the changes happening in circulating supply.

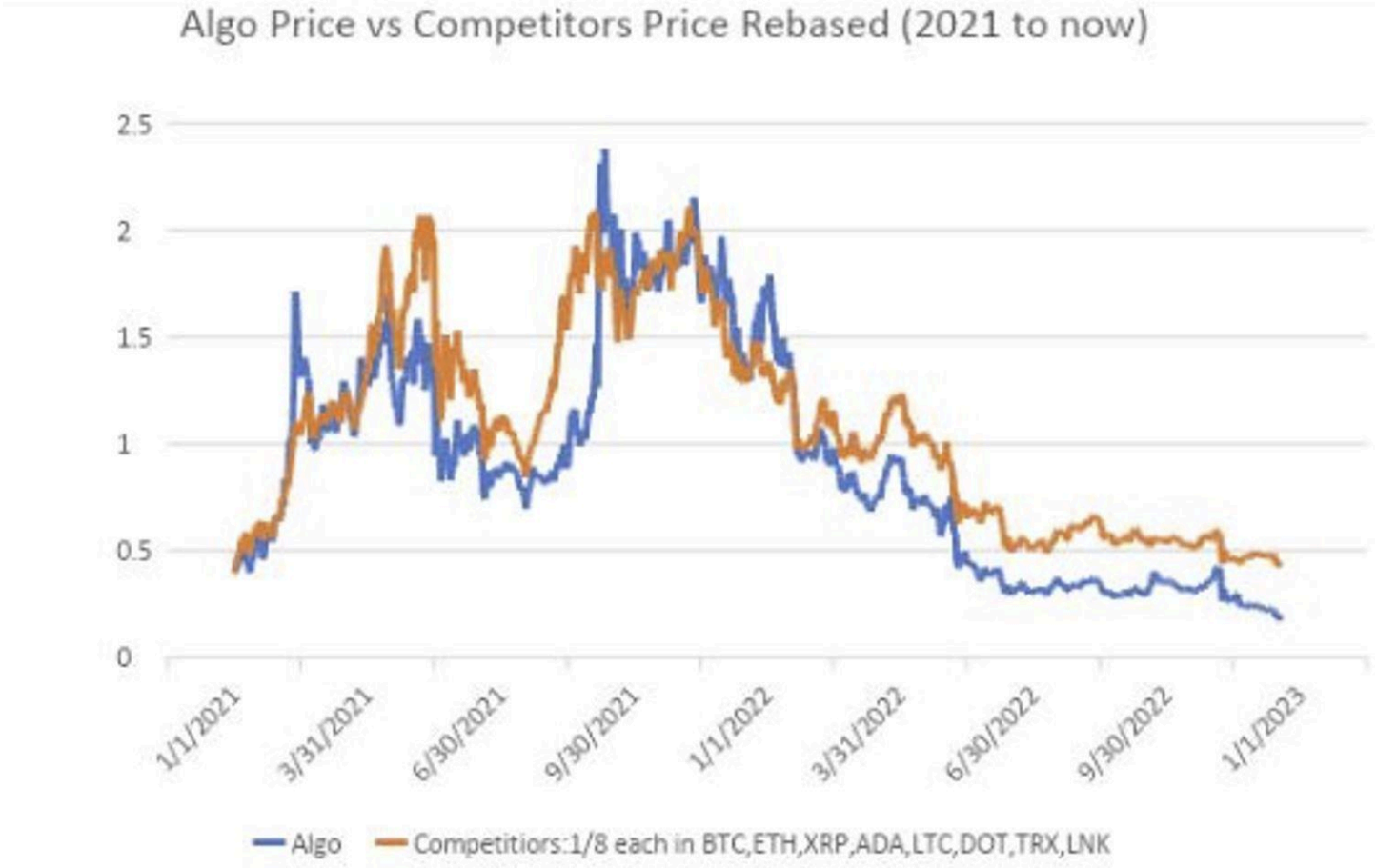


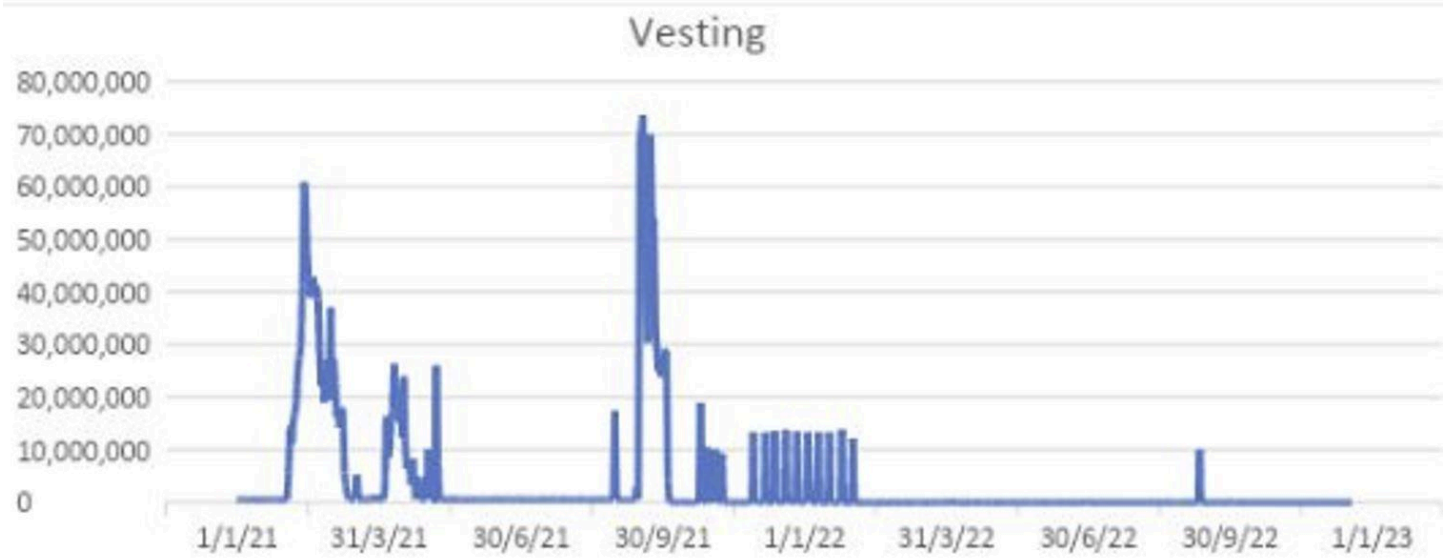


We see from the Bitcoin chart that, during 2021, ALGO outperformed Bitcoin by a staggering factor of 3X, which is of relevance especially in the light of the fact that

this chart includes the periods of larger vesting acceleration plus three months after the end of algorithmic vesting.

This result is confirmed also by the comparison in the next chart, showing the ALGO in comparison with the most successful L1 projects: the ALGO terminates 2021 still about 25 percent higher than the portfolio of the top competitors. This corroborates the fact that the algorithmic nature of the vesting, differently from initial vesting, fulfilled the original purpose of making vesting happen without depressing price growth.





The nullification of the price advantage against Bitcoin occurs only in May 2022, after a long period of no or little and non algorithmic vesting, and only around November 2022 does the ALGO fall below the ground gained after January 1, 2021.

The price advantage with respect to the portfolio of top competitors is lost in February 2022, but it consolidates again in May, and without the presence of any relevant vesting. Thus the first important loss in relative value happens several months after the end of algorithmic vesting. A further confirmation of the scarce links between vesting and price decline can be deduced by looking at the blockchain's flows from vesting wallets to public exchange wallets. This is possible thanks to the transparency of the blockchain and the information publicly available on the Foundation website. It is a nontrivial exercise to accurately identify blockchain flows, particularly over a long period of time and many transfers, since it involves several assumptions and would deserve a dedicated technical report.

Since we are interested in the bulk effect on the market dynamics, here we just highlight some straightforward evidence resulting from easy-to-identify flows from public vesting wallets to public exchange wallets. One can see a significant flow amount in 2019 during the original non-algorithmic vesting, which reduces dramatically after vesting suspension on September 30, 2019, with much of previously vested funds remaining in vesting wallets during the following months. The flows increase in August 2020, when the first acceleration happens, and then they average several millions per day until October 2021 when algorithmic vesting is completed, dropping significantly from October until the end of 2021. One can see an increase towards the end of the year and especially in the first months of 2022 when the non-algorithmic part of vesting is released, then flows drop again, and even more strongly in the second half of 2022.

This suggests a behavioral regularity by which most relevant fractions of vesting, if they are sold, are sold near the time of vesting, with the fraction being higher if the distribution is not algorithmic. Indeed, the first price decline relative to competitors is in January and February 2022, when vesting is being distributed non-algorithmically, in very few installments and when the whole market has already turned to a bearish trend. The evidence supports the conclusion that vesting in a non-algorithmic way, without regard to price trend and distribution in time, is more likely to have a negative impact, even in smaller quantities. In any case, vesting was only one component of the supply in that period, since 71M were vested out of a total increase of circulating supply of 249M in January and February 2022, including 60.5M of Governance rewards referring to the previous governance quarter and paid in a single installment.

Conclusions

The analysis confirms that both the discontinuation of the original vesting, and subsequently its reform over a longer period with possible algorithmic acceleration, lowered the impact of EB vesting on the ALGO price. Interestingly, the year that sees more than 80% of algorithmic vesting also sees the ALGO price grow many times against the Dollar, outperforms Bitcoin by a 3X factor, and does slightly better than a portfolio of the competitors which managed to stay in the top 20 coins over the last two years. This happens even if the times of significant algorithmic distribution also see the most significant transfers to exchanges. The evidence indicates that sales were likely concentrated in the most favorable periods. At that

time demand was strong, allowing ALGO ownership to decentralize towards other players, while ALGO price performance was not significantly impacted. This is also the period when several larger Algorand projects were created in the DeFi and developer space, often with large contributions from entrepreneurs who were part of the vesting distribution, suggesting resources were often spent to foster the growth of the platforms.

We also notice that vesting was longer than the two years of the original vesting schedule, but also sensibly shorter than the 4 year period it would have reached without the algorithmic part. Thanks to the algorithm, vesting was allocated strategically and automatically when price dynamics revealed stronger demand, which avoided significant distributions happening in the more bearish conditions of the whole crypto market. The end of vesting in October 2021 marked a positive moment for Algorand in a variety of aspects: the programmed distribution that had to take place was fulfilled without harming the significant growth occurring at the same time; the circulating supply finally exceeded the amount held by the Foundation, signaling the maturity of the project and thus aligning Algorand with the other L1s; and finally, a significant portion of ALGO passed into the hands of retail, likely in the process of funding the major projects that will then lead DeFi to grow. The evidence suggests that supply increases have little effect on token price when happening in strong upward trends, and this can be obtained algorithmically as done for most of the vesting process. On the contrary, the impact can be much stronger in less favorable market conditions, which further supports the possible use of automated algorithmic distribution to minimize price impact.

Note: as of June 25, 2024 the Algorand Foundation began a website migration. The links below will be updated in the weeks that follow this date to ensure all referenced materials remain accessible.

1. Authors Massimo Morini (Chief Economist, Algorand Foundation) and Michele Treccani (Head of Market Research and Analytics, Algorand Foundation)
2. See the 'Early Backers/Relay Nodes Vesting' section in https://www.algorand.foundation/transparency-report-march-2022 and subsequent reports.
3. Last section of https://www.algorand.foundation/updated-wallet-address
4. The first author remembers that, when he joined as Head of Economic Research and member of the Economic Advisory Committee at the Foundation on July 4, 2019, the debate was already ongoing.
5. This is also when the Foundation announced the auction refund program, which means that auction participants did not suffer any consequences from the price decline, and that was one main reason for the brief price recovery in the subsequent two weeks (see: https://www.algorand.foundation/news/auction-redemption-complete).
6. https://www.algorand.foundation/news/acknowledgement-of-recent-community-proposals
7. https://www.usv.com/writing/2019/11/usv-supports-extended-algorand-vesting-schedule/ https://medium.com/@jamiegoldstein/supporting-algorand-foundation-eip-11252019af-conditional-accelerated-vesting-b7d3a2c995fb
8. https://cdn.prod.website-files.com/62d96b0e9ea60fd1c96a1b50/62e43a36b209bbcc31eec1b7_EIP-11252019AF_%20Conditional%20Accelerated%20Vesting%20Nov%2030.pdf
9. see for example https://www.ar.ca/blog/crypto-market-recap-12-02-19.
10. The increase of circulating supply in September 2021 is only partially due to vesting, since at the same time main data providers such as Coinmarketcap finally applied also to Algo the usual definition of circulating supply that only excluded the Algos held by the Foundation, thus aligning with most of the blockchains, concluding a discussion that went on since the launch of the platform. That increase was an accounting change and no new Algos were released in the market, and that can be one fo the reasons why the market took the news as very positive (see: https://www.algorand.foundation/news/aligning-algo-circulating-supply-metrics-for-algorand)
11. As reported in https://www.algorand.foundation/transparency-report-september-2021, there were still 328M blocked for technical or contractual reasons reasons, that in some cases, such as key loss in multisign, remained blocked indeterminately, while more than 200M were distributed later in the first months of 2022 based on ad hoc agreements and out of any algorithmical tokenomics.