Eternal White Paper: Introduction to Gages

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Abstract

This paper proposes a new class of long-term financial instruments as a solution to the long-standing problem faced in both traditional and decentralized markets, short-termism.

Contents

1 Introduction

An estimated $79.1 billion in firms' earnings were lost annually over the past 22 years as a consequence of a trend ubiquitous in modern finance. Short-termism: the habit of focusing on short-term results at the expense of long-term gain. With the total $1.7 trillion that firms stood to gain from solving this issue, short-termism has significantly harmed the economy over the last three decades (Orsagh, Allen, & Schacht, 2020; Barton, York, Manyika, & Francisco, 2017). Often associated with unemployment, lower growth, decreased profits, and a lack of R&D in traditional markets, short-termism proves itself damaging to both the capital taker (firms) and the capital giver (investors). Moreover, this practice has become widespread within the cryptocurrency community, as observed through rug-pulls[1], vaporware, extended downtrends and extreme volatility. Public proposals for solving these issues have generally come in the form of changes in earnings guidance, incentives or protective mechanisms (Bolton & Samama, 2013; Orsagh et al., 2020). Though these have demonstrated some success with regards to preventing some aspects of the problem, they have failed to tackle the source: an imbalance of short-term versus long-term strategies caused by an overall lack of long-term culture. The CFA Institute estimates addressing the problem could increase shareholder value by some $200 million (Orsagh et al., 2020). This paper presents a long-term oriented solution to the problem of corporate short-termism, introducing a novel branch of financial tools offering a strong potential to crystallize as a safer and more lucrative addition to modern finance.

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[1]A rug pull is a maneuver most prevalent in decentralized markets wherein developers of a project abscond with all of the investor's funds.

1.1 Short-termism
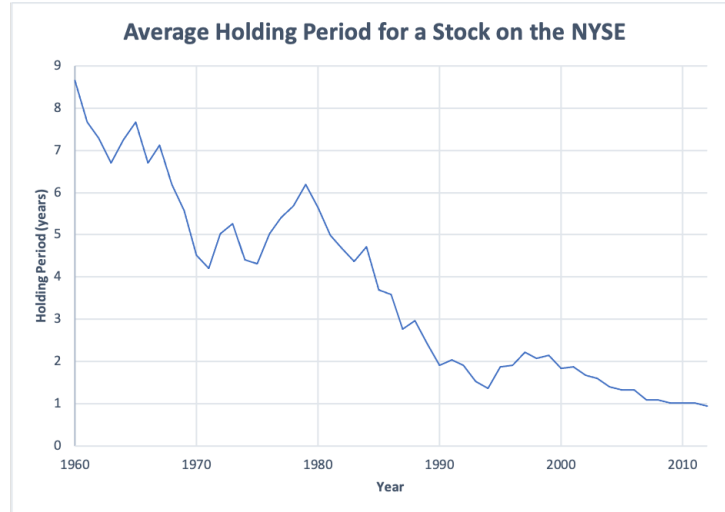

Average Holding Period for a Stock on the NYSE

Figure 1: Average Holding period for a stock on the NYSE (1960 - 2013)
Source: Bolton & Samama, 2013

From a short-term perspective–2009 to the present–the outlook conveyed in Figure 1 seems optimistic. A report by the Focusing Capital on the Long Term initiative (FCLT Global) showed that CEO tenures, the average holding period for S&P 500 shares, and the average duration of corporate bonds are all increasing. However, a longer historical view conveys a rather somber image. U.S business investment in fixed assets are at an all-time low and the share of net income spent on buybacks by S&P 500 companies represents nearly 30 times the data seen in 1981, with a high of 58 percent (Barton, Bailey, & Zoffer, 2016). Note that this trend is not unique to S&P 500 companies as it is applicable to others such as the NYSE. Its impact is also observed globally on most major exchanges (Bolton & Samama, 2013). These trends suggest a strong imbalance in the usage of short-term versus long-term strategies, with an overwhelming amount of investors adhering to the former. In turn, this disequilibrium is responsible for substantial limitations in both traditional and decentralized markets, which affect both the investors and firms involved. Furthermore, it creates negative externalities which are paid by uninvolved stakeholders from the same market, the retail investor and the market itself.

1.1.1 Issues in Traditional Markets

In traditional markets, short-termism results in insufficient attention being paid to a firm or an institution's strategy, fundamentals, and long-term value creation (EY, 2014). Net benefits to economies decline as companies stop pursuing

long-term strategies that are aligned with their long-term development goals (Janicka, Pieloch-Babiarz, & Sajnóg, 2020). As a result, in 2018 the European Union adopted an action plan which advocated against short-termism, considering it harmful(Commission, 2018).

This is supported by the idea that the inverse leads to better performance. A recent paper by the Mckinsey Global Institute showed that from 2001-2014, the revenue of firms that focus on long-term strategies (henceforth referred as long-term firms) grew cumulatively on average by 47 percent more than the revenue of other firms, and with less volatility. Moreover, these same firms also tend to invest more on research and development (R&D). For instance, despite starting with slightly lower R&D spending, they spent a cumulative average almost 50% greater than other companies. Most importantly, long-term companies continued to increase their R&D spending during the financial crisis while others cut R&D expenditure. In addition to this, long-term firms added nearly 12,000 more jobs on average than other firms from 2001-2015 (Barton et al., 2017). Given this potential job creation, the value unlocked by companies taking a more long-term approach is worth more than $1 trillion in forgone US GDP over the past decade, or 0.8% of GDP per year on average. If these trends continue, it could be worth nearly $3 trillion through 2025 (Barton et al., 2017).

These observations strongly support that short-term firms simply perform, behave and contribute less in comparison to long-term firms. It is worth mentioning that investors suffer from short-termism too as it renders the stock price less informative about management performance and weakens market-based incentives (Calcagno & Heider, 2007).

1.1.2 Issues in Decentralized Markets

Decentralized markets for digital commodities include Blockchain projects and any of their traded tokens on DEXs[2]. Despite the novelty of this sector, decentralized markets continue to attract and enable investors eager to obtain a quick profit due to either the abnormal volatility characteristic of cryptocurrencies or abnormally elevated APY rates in yield farming contexts. In this case, we are observing the emergence of a more extreme variant of short-termism, which sets the credibility of the common retail investor and of the industry itself at risk. Cumulatively costing affected individuals billions of dollars[3], the malpractice of rug-pulling is one of the main methods by which many have fled with investors' funds in decentralized markets. At the time of writing this white paper, the nature of rug-pulling remains largely undocumented. However, it is sensible to infer that in part, individuals are attracted by the idea of fast, effortless gains (O'Donnoghue & Rabin, 1999). This short-termist philosophy is further reflected in the numerous retail investors who choose to allocate money in "rug-

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[2]Decentralized Exchanges

[3]See BitConnect wiping away $1.5 billion and more recently Meerkat finance or TurtleDex ($31 million and $2.5 million, respectively).

pull" projects due to their promises of high annual percentage yield (APY). This is seen in the \$2.3 million lost to *WhaleFarm* which promised APYs of 7,217,848%.[4] In addition to affecting other stakeholders within the community, these practices also hinder the reputation of Blockchain technologies. For instance, outsiders associating this mentality with digital commodities ultimately associate these with rug-pulls or scams.

Long-term companies exhibit stronger financial performance over time. On average, their market capitalization grew \$7 billion more than that of other firms between 2001 and 2014. Although long-term firms took bigger hits to their market capitalization during the financial crisis than other firms, their share prices recovered more quickly after the crisis (Barton et al., 2017). As noted in the previous section, short-term firms exhibit higher volatility. The elevated volatility and increasingly longer downtrends witnessed in cryptocurrencies are partly suggestive of the dominance of short-termism in such markets. Overall, volatility and downtrends are natural market phenomena. The abnormal uptrends that were experienced, notably from 2014 to 2017 and 2020 to 2021, may have been beneficial in attracting a wide audience to Blockchain technology. In spite of that, they contributed to the illusion that profit is fast and effortless.

Another sign of short-termism is reflected in the issues witnessed in the liquidity provision sector present in DeFi. Analyses by Nansen AI showed that a large majority of farmers appear to exit within the first five days of entering a farm, and half of all farmers never stay beyond 15 days. Inflationary token emission promotes short-termism, as it increases sell pressure on the tokens emitted. As aforementioned, a majority of liquidity providers sell their rewards to earn back their investments. Moreover, rather than creating long-termist, healthy investors, liquidity pools are incentivized by short-termist lures: abnormally high return rates which only serve in further promoting the idea of fast short-term gain.

Surveys by FCLT global show that executives are feeling pressure from short-termism, with 55 percent of executives and directors without a strong long-term culture saying their company would delay a new project to hit quarterly targets even if it sacrificed some value (Barton et al., 2017). Quarterly reports do not have any popularity in digital commodities. Nevertheless, one analogue to these findings consists of so-called "vaporware" projects, tokens with no inherent value or use-case, which might promise future products or services but are initially deployed solely for lucrative purposes. This includes meme projects such as Dogecoin and other Shiba Inu breed coins[5], which saturated the market in the second quarter of 2021. Similarly to exaggerated volatility, these tokens have served as publicity and effectively attracted new investors to the space. Once again, this publicity furthers the proliferation of short-termist behavior and serves as grounds for Blockchain defamation. What is more, in the same light that these executives forgo long-term value in an effort of short-term gain, developers of meme coins forgo the long-term development of decentralized mar-

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[4]See WhaleFarm
[5]Read more here

kets in an effort of short-term profit.

Therefore, the following premises can be derived and are strongly supported by the current trends:

1. A significant imbalance of short-term versus long-term strategies exists.

2. There is a lack of long-term culture in the majority of investors participating in decentralized markets, mainly as there are little to no long-term financial instruments.

1.2 Current Solutions

Some relevant solutions to short-termism have been proposed in both traditional and decentralized markets. In the former these mainly include incentives, such as loyalty shares and behavioral changes such as putting an end to quarterly reports. In the latter, the best answer remains liquidity locking. However, all of these come with downsides which ultimately result in a failure to restore the aforementioned short-term/long-term disequilibrium, hence the term "band-aid" solutions.

1.2.1 Quarterly Reports

Quarterly reports have long been speculated to hold some responsibility in encouraging short-termism (Orsagh et al., 2020). From 2010 to 2016, the percentage of firms issuing these reports has decreased from 36 to 27.8% (Barton et al., 2016). However, as previously demonstrated, this has not prevented the over-time rise of short-termism. In their paper, the CFA Institute recommended issuers and investors to focus on their engagement with long-term strategies instead of stepping away from earnings guidance (Orsagh et al., 2020).

1.2.2 L-Shares

One approach to mitigate this issue is through the use of incentives. A common example is the idea of loyalty shares (L-Shares), which entails a reward for holders of a fixed time period, called a loyalty period, in the form of a right to buy additional shares at a fixed (lowered) price (Bolton & Samama, 2013). L-Shares take a step further towards fending short-termism, but fail in that they act as a one way incentive, only encouraging the investor to hold. Such a lack of engagement for both parties make the idea unattractive for firms as they stand to gain less as compared to the investor. Furthermore, as an incentive by call-warrant, loyalty shares are an application of a concept, in turn introducing little room for further applications. L-Shares have the potential of promoting long-term culture. However, they do not catalyze a range of derivatives which would eventually lead to a new class of long-term financial instruments. This places the idea under a category of "short-term fixes" for what is a "long-term problem".

1.2.3 Liquidity Locking

At present time, locking liquidity is the go-to solution in the arsenal of rug-pull prevention. This consists of locking part or all of the ownership tokens one receives as a result of adding liquidity to a pool on a decentralized exchange. Tokens are locked on a time-lock contract, either self-designed or provided by a third-party service such as Unicrypt. Similar variants of liquidity locking holding the same purpose exist, wherein the owners of a token lock part of the total supply by the same means. In spite of its effectiveness, liquidity locking fails in deterring short-termism. Rather, it targets a consequence of the overarching issue, serving only as a protective mechanism. Moreover, as the most basic of rug-pull prevention methods, there remains significant improvements to liquidity locking. This includes making it more engaging and thus more attractive for both parties[6] involved.

1.2.4 Main Problem with Current Solutions

Short-termism is a complex problem inherent to human nature, exacerbated by nowadays' technology and market conditions such as the existence of quarterly reports (O'Donnoghue & Rabin, 1999). There is strong evidence suggesting a lack of long-term-oriented behavior in traditional markets and a more pronounced lack thereof in decentralized markets. The most prominent solutions tend to tackle one of the consequences of short-termism. This generally consists of a tangible action observable only in the short-term, also known as a band-aid method. Such methods are only efficient in delaying problems rather than fixing them. However, not a single one of the presented solutions addresses the issue by long-term means. Some factors responsible for short-termism, such as present bias, are abstract by nature (O'Donnoghue & Rabin, 1999). Consequently, rather than influencing short-termism in the short-term, such factors create carryover effects visible only in the long-term. As a result, the aforementioned short-term solutions are ineffective in truly solving the problem at hand. This suggests the necessity for likewise abstract solutions that will produce a long-termist carryover effect of their own. Therefore, what is needed is a synthesis of short-term incentives and protective mechanisms, that will attract an initial population. This would work synergistically with the progressive creation of long-term culture resulting from the usage of said incentives. Such a solution has a strong potential of restoring the short-term/long-term balance to a better degree and ultimately contends the position of an all-in-one answer to short-termism.

2 Gages

The key to the solution: the gage (pronounced [geɪdʒ], gāj). Gages are a new class of financial instruments we define as **a contract between two or more**

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[6]Stakeholders in this case are the token users (traders, investors and users of the project) and token developers

stakeholders who promise to pay a percentage of a given deposit to the last stakeholder who breaks a predetermined condition. Some characteristics of gages include:

- The given condition does not need to be universal, it may also be individually different for each holder.

- With as little as 6 holders, the gage offers greater risk/reward ratios than any other financial instrument

Created with the issue of short-termism in mind, the gage's very own nature tends towards long-term interactions. This long-termist tendency is responsible for significantly reducing risk whilst ensuring high reward at the cost of time. Its versatility suggests the potential to catalyze the creation of an entire long-term philosophy of its own. Here we present an example of a standard gage contract as well as some other applications in both traditional and decentralized markets.

2.1 Example of a Gage

The most basic use of a gage consists of a multi-user interaction that encourages long-termism in a context akin to a trade. This can be seen in the following two-holder gage:

Alice and Bob each individually own 10 AVAX. They decide to enter a gage contract with a risk percentage of 10% and deposit of 10 AVAX. Both Alice and Bob agree on their gage-condition to reward the last stakeholder whose funds remain in the contract. After a period of time, Bob decides to leave the contract and withdraws his funds. Since Alice is the last remaining stakeholder, Bob pays the risk percentage of his deposit, equal to $0.1 \times 10 = 1$ AVAX to her. Alice and Bob now own 11 and 9 AVAX, respectively. Note that in n-holder gages where n is greater than 2, neither Alice nor Bob know the number of remaining users until they are the last holder in the gage.

One characteristic of the gage worth mentioning is its ability to have greater risk to reward than any other financial instrument as the reward scales linearly with the number of users, but risk does not. Therefore, a gage with n users, risk percentage γ and deposit x offers a risk/reward ratio, R, of:

$$R = \frac{(n-1)\gamma x}{\gamma x}$$
$$R = n - 1 \tag{1}$$

2.2 Game Theory

Looking at the earlier example, we can see that the gage's propensity leading to long-term holding scenarios is explained by its Nash equilibrium.

Alice, Bob	Holds	Opts-out
Holds	0.5, 0.5	1, 0
Opts-out	0, 1	undefined, undefined

In any given situation, a stakeholder is presented with the binary choice of either holding and staying in the gage, or opting-out and leaving. In the case that both Alice and Bob choose to hold, the achieved utility state is higher than 0 as neither loses, but also less than 1 as neither wins. Therefore we attribute such a state a value of 0.5. In the event that both players choose to opt-out, the outcome of the state is undefined as it is impossible to know who wins or loses without knowing the dimension of time. Finally, in the event that one player leaves and the other stays, then the state value of the departer is 0 and that of the remainder is 1.

With each player maximizing their utility at 0.5, we see that the Nash equilibrium occurs when both players choose to hold. We can also see that in any given case, holding will on average either yield a payoff of 0.5 or 1. Omitting undefined cases due to their complicated and void nature, we can also conclude that giving up only holds a utility value of 0. Therefore, in any given case or scenario pertaining to standard gages, the optimal strategy lies in holding.

2.3   Uses in Traditional Markets

In traditional markets, an intermediary can introduce n-holder gages likewise presented in the aforementioned example, or offer customized gages capable of creating a symbiotic relationship between investors and firms. For instance, in a more sophisticated variation of loyalty shares, called the loyalty gage, a company could offer discounted shares to investors on the condition they are put in gages between the firm and the investor. Loyalty gages reward long-term investors who do not sell their shares by granting them an additional percentage of shares on the condition that the company re-issues more shares to the public. On the other hand, short-term investors who sell their shares and thus exit the gage before any new shares are re-issued, will pay their risk percentage back to the company.

2.3.1   Loyalty Gage: Example and Analysis

A firm wants to offer an arbitrary number of shares to the public, or to private investors. Carol buys 100 shares for 100USD, Alice is long 100 shares with a 1.7x leverage, while Bob buys 100 shares offered at a 5% discount for 95USD on the condition the initial amount is used in a gage with a risk percentage of 10.53%. Thus, this entails that 5 shares are instantly available to Bob as only the initial 95 are put on the gage. If Bob wishes to sell the remainder (95) of his shares before the gage is settled, he will withdraw 85 shares and give the company 10 shares. On the other hand, if while Bob holds, the company reissues more shares, he earns an additional 10 shares.

Factoring price fluctuation in this model, there are two possible scenarios each time: price increases or decreases. In each scenario, Carol, Alice and Bob can either hold or sell, totaling four possible courses of action and thus four outcomes. Assuming a 1:1 risk/reward ratio, where price will either increase or decrease by 10% and that when Bob holds he holds indefinitely, we calculate percentage gain for each outcome (hold/sell). The table below depicts the average gains (rounded to 3 s.f.) for each individual's action in the event that price increases or decreases.

Individual	Carol	Alice	Bob
Average Gain if Price Increases	0.000%	5.000%	15.789%
Average Gain if Price Decreases	0.000%	-5.000%	-5.263%
Average Gain	0.000%	0.000%	5.263%

As we can see, the average percentage gain for both regular and margin trading is 0. On the other hand, it is shown that Bob earns an average of 5.263% regardless of whether price goes up or down. In fact, we also see that whilst Carol and Alice's average gain reflects the 1:1 risk/reward ratio, Bob's is of 1:3. We can in fact prove that for all loyalty gages, as long as there is a non-zero discount, the average gain is positive, regardless of price direction (see Section 2.3.2). If in addition to Bob the company had issued 99 other loyalty gages with the same discount and risk percentage, and half had opted-out whilst half held until re-issuance of shares, the company could use their earned gage rewards to pay those of the holders. In a more realistic context, with the average holding period of stocks greatly decreasing in the long-term (see Section 1.1), the company is more likely to win more than 50% of the gages. In this case, the company could use the net leftover shares to raise funds, without having to reissue new shares, ultimately avoiding dilution. Thus, we see that loyalty gages offer positives for both the investor in terms of increased risk/reward and for the firm as a superior form of fund-raising with decreased share dilution and increased long-term holders.

2.3.2   Proof of Positive Average Profit

Let γ be the risk percentage ranging between 0 and 1, x the initial amount of money in monetary units, p the initial price in monetary units, d the discount in terms of the initial price, and i the long-term price change in monetary units. Then:

$$(Mean\ percentage\ change)\ \overline{\Delta\%} = \frac{1}{n}\sum_{i=1}^{n}(\Delta\%_n) \quad (2)$$

$$(Percentage\ change)\ \Delta\% = \frac{New\ share\ value - old\ share\ value}{old\ share\ value} \quad (3)$$

$$Initial\ number\ of\ shares = \frac{x}{p-d} \quad (4)$$

There are four long-term scenarios for a gage:

1. price increases, person holds

2. price decreases, person holds

3. price increases, person sells

4. price decreases, person sells

From (3), compute the percentage change for the first scenario, $\uparrow h$ as:

$$
\begin{aligned}
\Delta\%_{\uparrow h} &= \frac{(\frac{x}{p-d})(1+\gamma)(p+i) - x}{x} \\
&= (\frac{1}{p-d})(1+\gamma)(p+i) - 1 \\
&= (\frac{1+\gamma}{p-d})(p+i) - 1 \\
&= \frac{p+\gamma p + i + \gamma i}{p-d} - 1
\end{aligned}
\tag{5}
$$

Apply (5) to the other scenarios in their respective order:

$$
\Delta\%_{\uparrow s} = \frac{p - \gamma p + i - \gamma i}{p-d} - 1 \tag{6}
$$

$$
\Delta\%_{\downarrow h} = \frac{p + \gamma p - i - \gamma i}{p-d} - 1 \tag{7}
$$

$$
\Delta\%_{\downarrow s} = \frac{p - \gamma p - i + \gamma i}{p-d} - 1 \tag{8}
$$

Compute the mean percentage change if price increases using (2), (5) and (6):

$$
\begin{aligned}
\overline{\Delta\% \uparrow} &= \frac{(\frac{p+\gamma p + i + \gamma i}{p-d} - 1) + \frac{p - \gamma p + i - \gamma i}{p-d} - 1)}{2} \\
&= \frac{\frac{2p+2i}{p-d} - 2}{2} = \frac{p+i}{p-d} - 1 = \frac{p+i-p+d}{p-d} \\
&= \frac{i+d}{p-d}
\end{aligned}
\tag{9}
$$

Apply (9) to the mean percentage change if price decreases using (7) and (8):

$$
\overline{\Delta\% \downarrow} = \frac{-i+d}{p-d} \tag{10}
$$

Compute the total mean percentage change from (9) and (10):

$$
\begin{aligned}
&= \frac{\frac{i+d}{p-d} + \frac{-i+d}{p-d}}{2} \\
&= \frac{d}{p-d}
\end{aligned}
\tag{11}
$$

11

Compute the minimum parameters for the average percentage change in value to be positive. Note that p can not be equal to d, as d is always a percentage of p:

$$\frac{d}{p-d} > 0$$
$$d > 0 \tag{12}$$

This demonstrates that on average, regardless of price or the investor's actions, as long as the discount in a loyalty gage is non-zero, a profit is earned.

2.4   Uses in Decentralized Markets

The aforementioned examples are enhanced in decentralized markets. Not only could gaging platforms exist on Blockchain, barring the necessity for a broker and their associated fees, creators of a project who would like to promote the long-term development of their token could also employ the usage of a loyalty gage or some variant of it. Additionally, gages can also find their place in reducing initial sell-offs of a token first launching on an exchange. This would be achieved by performing initial coin offerings (ICO) or initial DEX offerings (IDO) where the purchased tokens are sent to a gage contract rather than to the user's wallets or time-lock contracts.

2.4.1   Rug-Pull Prevention

Another particular use of gages lies in rug-pull prevention. Rather than simply locking their funds or liquidity tokens, developers could engage with their community by programming a gage contract with them. In this case, community users who would join would make either a small deposit with their own share of tokens to lock or no deposit at all. The developers would deposit part or all of the funds/ownership tokens. The condition could reward users with a relatively small percentage of the deposit in the event that developers opted out by either removing too much liquidity in too little time or withdrawing the deposit (funds). Alternatively, it could reward the developers with either the user's risked percentage of their deposit or more withdrawal rights in the event users withdrew their deposit.

2.4.2   Liquidity Provision

Gages can also find their place in tackling the issue of liquidity provision. In new application of a gage, named the liquidity gage, the individuals' deposits would be used to provide liquidity to any given pair. Building on this, the Eternal ecosystem, exchanges or any other platform wishing to incentivize the long-term health of their systems could offer loyalty liquidity gages, which would instantaneously reward users with a given token on the condition they enter such a gage. As previously shown, loyalty gages benefit both parties regardless

of price movement. Thus, this poses a clear superiority to the currently available solutions to the liquidity provision issue.

2.4.3 Yield Gages and Further Versatility

A further extension on the liquidity gage and use of gages consists of a direct improvement to the process of yield farming. The deposit of a gage can be put to use for the period of time it is locked. In the concept of a yield gage, this deposit would be allocated by the gage contract to one or more yield farming strategies, allowing users to not only profit through gaging, but additionally through yield farming. In turn, this adds another layer of profit to yield farming, making it the most profitable manner by which Decentralized Finance (DeFi) users can earn money. What is more, not only would yield gaging improve long-term culture of investors, it also simultaneously improves the issue of short-term reward sell-offs. Individuals participating in yield farming would be both discouraged from exiting the gages and incentivized to stay in them, essentially alleviating the need to sell rewards. In the event another DeFi tool offering capital management rises to popularity, it can be included in a gage too so long as it does not require a given definite lockup period. This would essentially give rise to a new type of gage superior to the tool by itself. Thus, in the same way gages improve yield farming revenue, the earning potential of any new DeFi service with either an indefinite or nonexistent lockup period can be improved with gages. These scenarios provide strong evidence towards the versatility of the gage across diverse use-cases.

2.4.4 Long-Term Benefits

The Blockchain ecosystem stands to benefit the most from long-term philosophy as previously expressed. The most valuable benefit of the usage of gages in the long-term would be reflected in healthier volatility, with shorter downtrends and stronger growth of digital commodities sold in decentralized markets.

3 Conclusion

This paper conveyed the surplus of short-termist mentalities present across all industries. We have also introduced the gage, a new financial instrument, alongside a small fraction of its possible applications. The gage is more than a means of safely earning money, increasing long-term growth, or reducing rug-pulls. Gages are the beginning to a solution to short-termism, with the significant incentive they propose to any user wishing to earn money with lowered risk at the cost of time. Such an incentive allows the gage to compete with current short-termist strategies such as trading, resulting in an ability to create and promote long-term culture. The illustrated benefits of gages show an unprecedented potential to reequilibrate the short-term/long-term balance within our markets, ensuring a positive outlook on the future of decentralized markets. However,

more than that, gages have a significant potential in their ability to solve short-termist issues by establishing symbiotic relationships between any two given entities. Worthy of mention but not covered for the sake of this paper's lengths are the applications of gages particularly relevant to other short-termist industries such as in the health, education, environmental, and lending sectors. Note however, that short-termism continues to harm nearly every industry in one way or another as a result of it sourcing itself from present bias (O'Donnoghue & Rabin, 1999).

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