Master Thesis

Corporate Governance In ICOs: Evidence From Anti-Flipping Mechanism

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Abstract

Today, new forms of early-stage funding such as Initial Coin Offerings (ICOs) are providing blockchain technology start-ups new ways to get their business going. Unfortunately, many ICOs are subject to scam, casting doubt on this new innovative tool for acquiring funding (Sapkota et al., 2021). Governance mechanisms in corporate governance systems are able to prevent moral hazard problems and subsequently prevent losses due to scams in traditional markets (Alon & Paul, 2016). This research tries to understand the effectiveness of anti-flipping as a governance mechanism in the ICO market. Doing this, the following research question has been formulated: "What does anti-flipping mechanism reveal about corporate governance in ICOs?". Using 306 ICO cases, I first investigated whether corporate governance proxies are able to determine a high probability of team token lockups in ICOs. I found that there is less flipping probability when the ICO has its financial advisor disclosed, has a high-quality advisory team, has its business model available and has a KYC/AML procedure. Further, I found that the anti-flipping mechanism increases fundraising. In summary, this research suggests that anti-flipping mechanism acts as a good corporate governance practice in the ICO market.

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Chapter 1. Introduction

Nerantzidis et al. (2012) have analysed the many definitions that exist of the concept "corporate governance", showing the fuzziness of it. A popular definition, constructed by Claessens (2006), defines corporate governance as "the set that concerns with the normative framework: that is, the rules under which firms are operating – with the rules coming from such sources as the legal system, the judicial system, the financial markets, and the factor (labor) markets". Another popular simplified definition that is used in literature of corporate governance is formulated as follows: "the system by which companies are directed and controlled"(OECD, 1999).

Today, new forms of early-stage funding such as Initial Coin Offerings (ICOs) are providing start-ups new ways to get their business going. With the rise of blockchain technology, ICOs have become the prevalent source of financing for start-up companies that use blockchain technology (Fahlenbrach & Frattaroli, 2020). In ICOs, ordinary investors as well as angel investors and venture capitalist can invest in projects by buying tokens, thereby providing the project with new funds. Unfortunately, many ICOs are subject to scam, casting doubt on this new innovative tool for acquiring funding (Sapkota et al., 2021). A prior study that has investigated 1014 ICOs found that 576 of them turned out to be scam projects, the cumulative losses due to ICO scams amounted to over 10 billion dollars in 2020 (Sapkota et al., 2021).

In flipping, the shares acquired in an IPO are sold by the investor within a short period after the listing, profiting at the expense of the investor (Bayley et al., 2006). In traditional IPO markets, this problem is combatted by employing the anti-flipping corporate governance mechanism of locking up the shares of founders (Alon & Paul, 2016). In the ICO market, this is done likewise by locking up founders ICO tokens.

Governance mechanisms in corporate governance systems are able to prevent moral hazard problems and subsequently prevent losses due to flipping activity (Alon & Paul, 2016). Literature is now debating what role corporate governance plays in ICOs, and whether this can be employed effectively. In this paper, I investigate this gap in the literature. I will investigate the effectiveness of anti-flipping as a governance mechanism in the ICO market. Doing so, I will get a better understanding of the role of corporate governance in the ICO market. Hence, the following research question has been formulated:

RQ: "What does anti-flipping mechanism reveal about corporate governance in ICOs?"

Appealing to a dataset of Fahlenbrach & Frattaroli (2020) which consists of 306 ICOs, the determinants of a high probability of team token lockups in ICOs will first be explored. Appealing to theory on asymmetric information, I will get a better understanding of which proxies of governance are able to decrease the probability of flipping. Further, I will investigate the effect of team token lockups on the fundraising of the project.

By answering these questions, I am able to give insight into whether anti-flipping mechanism can act as a good corporate governance practice in ICOs. I will be able to give founders and investors a better understanding of the anti-flipping corporate governance mechanism in the ICO market.

Chapter 2. Context setting

2.1 Traditional funding methods

Traditionally, many start-ups have been funded by venture capitalists and angel investors. These investors, with a relatively high-risk profile, provide the start-up with the necessary capital to further develop their business. In return, they hope to get a reward after a few years often in terms of capital gains from their shares in the start-up.

The term angel investor describes wealthy individuals who provide capital for start-up companies (Morrissette, 2007). The provider is a wealthy individual who invests his private equity in a start-up business, often after a the start-up has exhausted all its family and friends' money, but before it approaches formal venture capital partnerships (Prowse, 1998). The angel investor usually has an entrepreneurial background, which the angel may use to be actively advising companies in which it has a substantial ownership stake (Prowse, 1998).

Next to angel investors, venture capitalists also play an important role in financing start-up firms. Venture capital is understood as offering financial means to young (often high-tech) enterprises in combination with management support for these enterprises by an experienced intermediary, the venture capitalist (Paper & Germany, 2001). Venture capitalists are particular active in second and third stage financing (Fried & Hisrich, 1988), thus coming into play after angel investors have been involved in the company.

2.2 Cryptocurrency project funding methods

Due to new significant technological developments, new ways of funding have been introduced. With the introduction of decentralized systems operating within a blockchain, which is an open and distributed ledger that continuously expands, a new mechanism of start-up funding has been born, the ICO (Karimov & Wójcik, 2021). While back in time early-stage companies were often funded by angel investors or venture capitalists, ICOs have become a prevalent source of financing for start-up companies that use blockchain technology (Lyandres and Palazzo 2020). In ICOs, ordinary investors as well as angel investors and venture capitalists are able to invest in projects by acquiring tokens of the respective ICO.

Because of the decentralized nature of many innovative ventures, the funding of digital assets does not need to go through all the traditional processes, but can rather raise funds through an ICO (Chohan, 2017). In an ICO, a start-up raises funds by selling tokens to a pool of investors. Due to the absence of regulatory constraints and procedures, the digital based process instead of paperwork and the simple reporting requirements of the process, the process of an ICO is substantially less expensive than that of an IPO (Kaal & Dell'Erba, 2017). Because of this, large amounts of funding can be raised with minimal effort, avoiding compliance and intermediary costs. For this reason, ICOs have said to be able to provide unprecedented efficiency for capital formation in start-ups (Kaal & Dell'Erba, 2017).

Although ICOs have been presented as highly cost efficient and convenient in terms of the process requirements, the ICO investor does face problems because of it (Kaal & Dell'Erba, 2017). As Shifflet & Jones (2018) pointed out, the amount of objective information surrounding ICOs is very few. This introduces the problem of asymmetric information in funding methods.

3.3 The process of an ICO

To get a better understanding of the parties involved in ICOs, the process of an ICO will be discussed. Lipusch et al. (2019) have investigated the process of an ICO and have summarized this in the following model (see figure 1):

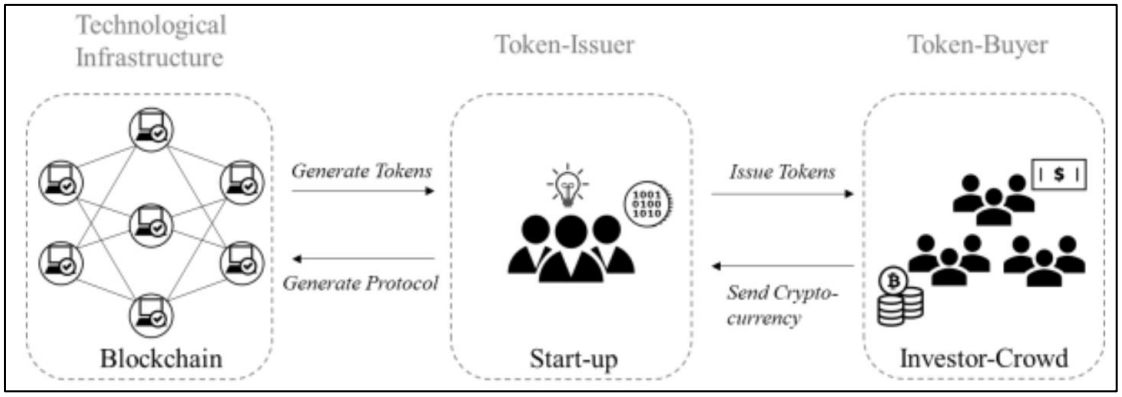

Figure 1. The process of an ICO (Lipusch et al., 2019).

The regular process of an ICO consist out of transactions between two parties and the underlying blockchain technology (Lipusch et al., 2019). The process begins with the start-up having the ambition to raise funds. The start-up will generate a protocal that they will implement in the blockchain. The blockchain will then generate the tokens according to the protocol of the start-up, providing the start-up with tokens that will enable it to raise funds. After the tokens have been generated, they will be issued by the start-up to the investors. The investor-crowd is able to acquire these tokens by sending cryptocurrency, or using a different payment method, in exchange. So after the process of the ICO, the start-up has raised funds by issueing generated tokens to investors (Lipusch et al., 2019).

Looking at the model, it becomes clear why ICO processes have said to be able to provide unprecedented efficiency for capital formation (Kaal & Dell'Erba, 2017). The model displays that a direct transaction between the start-up and investors can take place. Due to the absence of regulatory constraints and procedures, the process of an ICO is not subjected to obligated intermediary parties (Kaal & Dell'Erba, 2017). Also, the fundraising start-up has no obligation to provide a certain amount of information about the start-up or fundraising to investors. As Lipusch et al. (2019) has put it: "The main advantage of this is that ICOs function in a completely decentralized way through peer-to-peer mechanisms and, hence, do not require a central intermediary that moderates the matchmaking process between project initiators and investors".

So, the absence of regulatory constraints and procedures cause the process of fundraising through ICOs to differentiate between ICO projects. It is important to notice that advisory and other intermediary parties that play a role in traditional funding methods such as IPO's, do in the regular process of an ICO play no role. However, some ICO projects do make use of advisory and intermediary parties. Fahlenbrach & Frattaroli (2020) among others have pointed out that some start-ups that use an ICO to raise funds, decide to work with financial or team advisory parties.

In conclusion, the parties involved in the process of ICOs differentiate between ICOs due to a lack of regulation. Start-ups that use ICOs to raise funds, are not obligated to work with intermediary (advisory) parties. However, literature has pointed out that some start-ups that use ICOs do work with intermediaries. This way, they try to differentiate themselves by trying to ensure a higher quality start-up and ICO process.

Chapter 3. Theoretical framework

3.1 Asymmetric information and flipping activity

Much research has been done to the concept of asymmetric information in the IPO literature. Under asymmetric information, one party has superior information over the other (Sciubba, 2005). Since the aim of this research is to investigate corporate governance using anti-flipping mechanism in ICOs, The concepts of asymmetric information, flipping and corporate governance mechanisms will be connected in this theoretical framework.

Bayley et al. (2006) have done research on the flipping of IPOs. In an IPO, a company raises capital by selling its shares for the first time on a stock exchange. After the IPO, the company is trading publicly. Many investors participate in IPOs, providing the company capital and hoping to receive capital gains on their acquired shares by underpricing and a great performance of the stock after the IPO.

In flipping, the shares acquired in an IPO are sold by the investor within a short period after the listing (Bayley et al., 2006). The study (2006) found that information asymmetry functions as one of the main determinants for flipping in IPOs. A study conducted by Krigman et al. (1999) demonstrated that large, supposedly informed, traders are able to flip IPOs more successfully than individuals do. These informed traders could be the team that is issuing the IPOs, taking advantage of the ordinary investors by flipping their shares after the listing.

IPO market literature has established various theories on the phenomenon of information asymmetry. Since Bayley et al. (2006) showed that information asymmetry functions as one of the main determinants of flipping activities, theories of asymmetric information will now be discussed.

Principal agent theory

In the principal agent theory, the effect of the information asymmetry between the IPO issuers and the IPO underwriters is described. While conducting an IPO, the underwriters have less information available than the issuer. Also, both parties have a conflict of interest, this introduces the agency problem (Loughran & Ritter, 2004). The underwriter wants to make sure that it sells all the shares during the IPO, while the issuer is interested in raising as much capital as possible. Since more asymmetric information is present in a principal-agent context, and asymmetric information is one of the main determinants of flipping in IPOs (Bayley et al., 2006), I predict that more flipping activity will occur in the ICO market in a principal-agent context.

Ex-ante uncertainty theory

Beatty & Ritter (1986) showed how IPOs are underpriced as a result of ex-ante uncertainty due to asymmetric information between the investor and the firm. In an ex-ante uncertainty context, the actual outcome of an event is uncertain. The research pointed out that information asymmetry between founders and investors exists due to ex-ante uncertainty. So, in an ex-ante uncertainty context, I predict that more flipping activity will occur in the ICO market. An overview of the theories which explain asymmetric information in the IPO market can be seen in table 1.

Asymmetric Information theory	**Reference**	**Prediction for ICO market**
Principal-agent theory	(Loughran & Ritter, 2004), (Baron, 1982)	Increase flipping activities
Ex-ante uncertainty theory	(Beatty & Ritter, 1986), (Rock, 1986), (Jamaani & Alidarous, 2019)	Increase flipping activities

Table 1. Asymmetric information theories in the IPO market increasing flipping activities.

To get a better understanding of how the level of asymmetric information in fund raising processes can be reduced, the signalling theory has been developed.

Signalling theory

Signally theory has been developed trying to explain information asymmetry. In this theory, in the context of an IPO, IPO issuers know the quality of their firm and possess private information about the true value of the firm (Jamaani & Alidarous, 2019). Since this information is not available for investors, it is hard to differentiate between high-quality and poor-quality IPOs. The signalling theory states that those with superior information can reveal the true value of the firm by the decisions they make. Rock (1986) showed that ex-ante uncertainty can be reduced by signalling valuable information to the investors. Doing so, less informed parties get to know the true value of the firm which causes a decrease in asymmetric information. Therefore, when signalling theory is used to decrease asymmetric information, I predict that there will be less flipping activity in the ICO market (see table 2).

Asymmetric Information theory	**Reference**	**Prediction for ICO market**
Signalling theory	(Jamaani & Alidarous, 2019), (Allen & Faulhaber, 1989)	Decrease flipping activities

Table 2. Asymmetric information theories in the IPO market decreasing flipping activities.

3.3 Anti-flipping corporate governance variables

To combat the problem of flipping, employing the lockup of shares in IPOs is commonly used. In share lockups, the securityholders agree that they will not, directly or indirectly, sell any shares of common stock for a pre-defined period (Alon & Paul, 2016).

Alon & Paul (2016) answered the central question of why share lockups in IPOs exist by providing evidence for share lockups serving as a commitment device to reduce moral hazard problems. The study found that this commitment device is able to answer the problem of asymmetric information regarding the actions of the insiders in the post-IPO stage. During the lockup period, signalling information about future prospects and the true value of the firm will be revealed through SEC filings, new stories and analyst reports (Alon & Paul, 2016). So, the locking up of insiders' shares provides investors protection from insiders that do not act in the best interest of shareholders, thus against moral hazard problems.

Literature has not answered the question what determines share lockups in ICOs. However, since share lockups are used as a signalling commitment device reducing information asymmetry, I predict that important governance proxies, information asymmetry reducing signalling variables, can determine share lockups. I will now discuss governance proxies of which I predict that they will be able to determine token lockups in ICOs, and thus reduce the probability of flipping.

Financial expertise

Studies conducted by Chahine & Filatotchev (2011) and Davidson et al. (2004) investigated the role of "financial expertise" as a governance mechanism for reducing asymmetric information by using signalling theory. The study conducted by Davidson et al. (2004) found significant positive stock price reaction when new members of audit committees have financial expertise. Chahine & Filatotchev (2011) found a negative association between underpricing and boards with a higher financial and accounting expertise, thereby confirming the legitimacy of financial expertise as a governance mechanism for reducing information asymmetry. Since this governance proxy is successful in reducing asymmetric information, I predict that it can function as a determinant of token lockups.

High quality advisor team
Likewise, having a high-quality advisory team could also serve as a governance mechanism for reducing the level of information asymmetry. A study conducted by Lawrence et al. (2021) found that "top-tier advisors" act as diligent advisor, increasing the probability and duration of completing an (cross-border) acquisition deal. Furthermore, literature shows that top-tier advisors deliver higher bidder returns than their non-top-tier counterparts in public acquisitions (Golubov et al., 2012). So, having an experienced or high-quality advisor team can be used as a proxy for governance, as it serves as a governance mechanism by reducing information asymmetry in IPOs. Therefore, I predict that this proxy of governance is able to determine token lockups in ICOs.

Ex-ante uncertainty reducing variables
Finally, the ex-ante uncertainty reducing variables as the availability of the business model and the presence of a Know Your Customer (KYC)/Anti Money Laundering (AML) procedure can be used as proxies for information asymmetry reducing governance mechanisms. Clarkson (1994) found evidence for a positive relation between ex-ante uncertainty and underpricing. So, by using the business model and KYC/AML procedure as signalling devices, ex-ante uncertainty, and thus information asymmetry, can be reduced. Therefore, I predict that these ex-ante reducing variables can function as determinants of token lockups.

The discussed corporate governance proxies, with a prediction for the ICO market, are summarized in table 3.

Corporate governance proxies for reducing asymmetric information	**Reference**	**Prediction for ICO market**
Financial expertise	(Chahine & Filatotchev, 2011; Davidson et al., 2004)	Determines token lockups
High quality advisor team	(Golubov et al., 2012; Lawrence et al., 2021)	Determines token lockups
Availability of business model	(Clarkson, 1994)	Determines token lockups
Presence of KYC/AML procedure	(Clarkson, 1994)	Determines token lockups

Table 3. Corporate governance insider share lockups determining proxies.

3.4 Lockups and fundraising
As established, the lockup of shares can be regarded as an important corporate governance mechanism that provides protection to investors against flipping. Since signalling with share lockups can be used to reduce asymmetric information, share lockups are expected to cause less underpricing (Alon & Paul, 2016). Hence, for the ICO market, I expect ICOs with token lockups to perform better in terms of raising funds than ICOs without token lockups (see table 4).

Flipping activity combatting mechanism	**Reference**	**Prediction for ICO market**
Insider share lockups	(Alon & Paul A, 2016)	More successful in raising funds

Table 4. Insider share lockups more successful in raising funds.

3.5 Conclusion of theoretical framework

In the theoretical framework, I started by introducing the concepts of asymmetric information and flipping. I appealed to several theories to explain information asymmetry in the IPO market. Since asymmetric information is one of the main determinants of flipping, I have been able to make a prediction for flipping activity in the ICO market. The predictions for flipping in ICOs can be found in table one and two.

After that, The mechanism to combat insider flipping activity; share lockups, has been discussed. Literature pointed out that share lockups serve as a commitment device to reduce moral hazard problems, specifically flipping activity of insiders. The lockup of shares can be regarded as an important governance mechanism which protects investors against flipping activities. Since it is uncertain what is determining token lockups in the ICO market, I have proposed four governance proxies of which I predict that they will determine token lockups in ICO, and thus reduce the probability of flipping. This is done on the basis of their information asymmetry reducing capabilities.

Next, a prediction for the effect of token lockups on fundraising has been made. Since signalling with share lockups can be used to reduce asymmetric information, share lockups are expected to cause less underpricing. Therefore, I predicted that token lockups cause more success in terms of raising funds. So, this research will focus on uncovering the determinants of token lockups in ICOs, showing what governance variables are able to reduce the probability of flipping. Also, the performance of ICOs with team token lockups in terms of fundraising will be investigated.

Chapter 4. Hypotheses development

This research will firstly investigate the determinants of lockups in ICOs. This way, I am able to get insight into what governance proxies are able to reduce the probability of flipping in ICOs. The in the theoretical framework proposed governance proxies will be used as independent variables (Chahine & Filatotchev, 2011; Clarkson, 1994; Golubov et al., 2012). So, it will be investigated whether the disclosure of a financial advisor, having a high-quality advisory team, having the business model available and having a KYC/AML procedure has a significant effect on the ICO having their team tokens locked up.

The conceptual framework that will be used to investigate the determinants of team token lock ups is as follows (see figure 2):

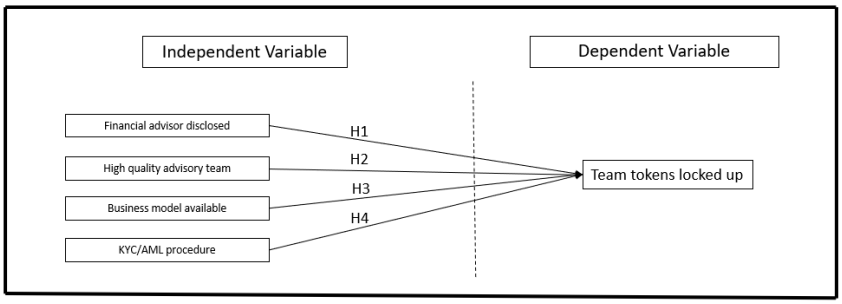

Figure 2. Conceptual framework hypotheses 1-4

Hypotheses H1-H4 are formulated as follows:

H1: The disclosure of a financial advisor does have a positive significant effect on the lockup of team tokens.
H2: Participation of a high-quality advisory team does have a positive significant effect on the lockup of team tokens.
H3: Having a business model available does have a positive significant effect on the lockup of team tokens.
H4: Having a KYC/AML procedure does have a positive significant effect on the lockup of team tokens.

After investigating the determinants of lockups in ICOs, the effect of team token lockups on the percentage of the crowdsale target raised will be investigated. Since the prediction in the theoretical framework was made that ICOs with token lockups will be more successful in fundraising (Alon & Paul A, 2016), it will be statistically tested whether the independent variable "team tokens locked up" has a significant effect on the dependent variable "percentage of crowdsale target raised". To do so, the following conceptual framework will be used (see figure 3):

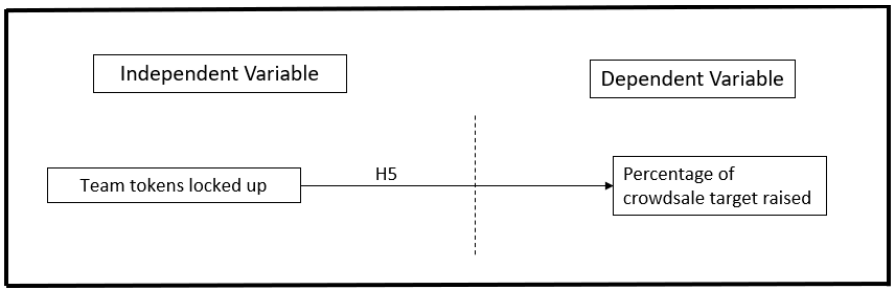

Figure 3. Conceptual framework hypothesis 5

Hypotheses H5 is formulated as follows:

H5: Team tokens locked up does have a positive significant effect on the percentage of crowdsale target raised.

Chapter 5. Data and Methodology

5.1 Data collection

A dataset of Fahlenbrach & Frattaroli (2020) is used, which consists of 306 ICOs of which most of them took place in the years of 2017 and 2018. The authors collected the data using sources such as ICO whitepapers, ICO medium, Twitter, Telegram as well as the Ethereum blockchain data. All this is hand collected. The dataset contains the necessary independent, dependent and control variables for this research. This research appeals to a dataset of Fahlenbrach & Frattaroli (2020), since this is a high-quality publicly available dataset. I have not been able to create my own dataset due to poor quality of online data on ICOs. Whitepapers and other sources tend to be deleted when an ICO fails. Therefore, I was unable to collect data on the necessary variables for this research and therefore I appeal to a dataset conducted by previous research. Now, the variables that will be used to conduct this research will be discussed by giving the definitions according to Fahlenbrach & Frattaroli (2020) and the sources that they have used to gather the data. See table 5, 6 and 7:

Independent variables:

Variable	Type	Definition	Source(s)
Financial advisor disclosed	Dichotomous	The financial/blockchain expert (either a company or an individual) who advised the company in arranging its ICO is disclosed (Fahlenbrach & Frattaroli, 2020).	Company website, ICO documentation, social media
High-quality advisory team	Dichotomous	Advisory team is of high quality, i.e. mostly composed of individuals with significant experience as entrepreneurs, executives, venture investors or academics (Fahlenbrach & Frattaroli, 2020).	Company website, ICO documentation, social media
Business model available	Dichotomous	The documentation details the market opportunity the product financed by the ICO addresses and lays out how the company will eventually earn money (Fahlenbrach & Frattaroli, 2020).	Company website, ICO documentation, social media
KYC/AML procedure available	Dichotomous	The ICO's promoter required participants to identify themselves by submitting personal documents such as a passport copy, utility bills, etc. (Fahlenbrach & Frattaroli, 2020).	Company website, ICO documentation, social media

Table 5. Independent variables

Dependent variables:

Variable	Type	Definition	Source(s)
Team tokens locked up	Dichotomous	Some fraction of the tokens held by the issuing company and/or the founding team are subject to a vesting schedule(Fahlenbrach & Frattaroli, 2020).	Company website, ICO documentation, social media
Percentage of crowdsale target raised	Continuous	The percentage of the crowdsale target raised during the ICO's crowdsale stage (Fahlenbrach & Frattaroli, 2020).	Company website, ICO documentation, social media

Table 6. Dependent variables

Control variables:

Variable	Type	Definition	Source(s)
Total amount raised	Continuous	Total amount of funds (in US dollars) raised during the ICO. Includes funds raised during crowdsale and presale. Where possible, the total is calculated by multiplying the amounts of cryptocurrencies received by their closing price on the last day of the ICO. Where amounts in cryptocurrency are unavailable, the US dollar figures disclosed by the ICO's promoter are used (Fahlenbrach & Frattaroli, 2020).	Company website, ICO documentation, social media
Has VC backing	Dichotomous	The company has received funding from a venture capitalist, in exchange for an equity stake or tokens, prior or during the ICO (Fahlenbrach & Frattaroli, 2020).	Company website, ICO documentation, social media, Crunchbase
Experienced team	Dichotomous	The founding team has an average of at least ten years of experience in technology, management or entrepreneurship (Fahlenbrach & Frattaroli, 2020).	Company website, ICO documentation, social media
Team size	Discrete	Number of full time team member at the time of the ICO, excluding advisors and contractors (Fahlenbrach & Frattaroli, 2020).	Company website, ICO documentation, social media
Decentralized platform	Dichotomous	The funds raised in the ICO are used to develop a decentralized platform on which buyers and sellers of a particular service or product engage in market based interaction, as opposed to the company conducting the ICO being or becoming the sole provider of the service or product (Fahlenbrach & Frattaroli, 2020).	Company website, ICO documentation, social media
Token supply is fixed	Dichotomous	The total number of tokens stays fixed indefinitely, as opposed to tokens that allow for inflation or the creation of additional tokens under certain circumstances (Fahlenbrach & Frattaroli, 2020).	Company website, ICO documentation, social media
Investors have governance rights	Dichotomous	Token holders have a right to vote on investment, business or governance decisions. Includes advisory votes (Fahlenbrach & Frattaroli, 2020).	Company website, ICO documentation, social media
Product or prototype developed	Dichotomous	The product for which funding is being raised or an early "alpha" or "beta" version of it has been developed (Fahlenbrach & Frattaroli, 2020).	Company website, ICO documentation, social media
Whitepaper page count	Discrete	Number of pages in the white paper document (Fahlenbrach & Frattaroli, 2020).	ICO documentation

Table 7. Control variables

5.2 Data exploration

Now, the descriptive statistics of the independent and dependent variables that will be used to answer the formulated hypotheses will be analysed. First, the descriptive statistics of the dichotomous variables that will be used in hypotheses 1-4 will be investigated (see table 8). Next, the continuous variable that will be used in hypothesis 5 will be investigated (see figure 4 and table 9).

Dichotomous variables:

Variable	Total valid cases	Value 0	Value 1
Financial advisor disclosed	306	249 (81.4%)	57 (18.6%)
High quality advisory team	306	182 (59.5%)	124 (40.5%)
Business model available	306	102 (33.3%)	204 (66.7%)
KYC/AML procedure	306	159 (52.0%)	147 (48.0%)
Team tokens locked up	306	127 (41.5%)	179 (58.5%)

Table 8. Descriptive statistics dichotomous variables

The independent variable “financial advisor disclosed” consists of 306 ICO cases and is distributed into 81,4% non-financial advisor disclosed ICOs, and 18.6% financial advisor disclosed ICOs. The independent variable “high quality advisory team” consists of 306 ICO cases and is distributed into 59.5% of ICOs without a high-quality advisory team and 40.5% of ICOs with a high-quality advisory team. The independent variable “business model available” consists of 306 ICO cases and is distributed into 33.3% of ICOs without a business model available and 66.7% of ICOs with a business model available. The independent variable “KYC/AML procedure” consists of 306 ICO cases and is distributed into 52% of ICOs without a KYC/AML and 48% of ICOs with a KYC/AML procedure. The dependent variable “team tokens locked up” consists of 306 ICO cases and is distributed into 41.5% non-team token locked up ICOs and 58.5% team token locked up ICOs.

Continuous variable:

Due to 103 missing values, the dependent variable “percentage of crowdsale target raised” consists of 203 ICO cases. The values of these cases range between 0 and 100. The histogram is shown in figure 4:

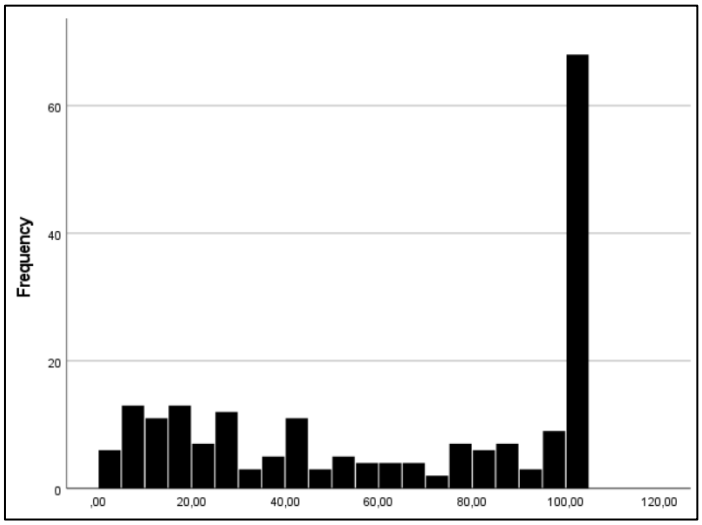

Figure 4. Percentage of crowdsale target raised histogram chart.

Variable	Total valid cases	Min.	Max.	Mean	Std. Deviation
Percentage of crowdsale target raised	203	0.48%	100%	62.3%	36.6%

Table 9. Descriptive statistics continuous variable

Looking at the descriptive statistics (see table 9), the values range between 0.48% and 100%. The mean of the variable crowdsale target raised is 62% and the standard deviation is 36.6%. I conclude stating that I do not see any problems regarding the descriptive statistics of the independent and dependent variables.

5.3 Methodology

This research will be conducted by using quantitative research methods to investigate the hypotheses. Since the developed hypotheses propose a potential causal relationship between the independent and the dependent variables, regression analysis will be used. To test hypotheses 1-4, probit regression models will be used, since the dependent variable in these hypotheses is a dichotomous variable. Since the dependent variable of hypothesis 5 is a continuous variable, ordinary least squares (OLS) regression models will be used to test this hypothesis.

Probit regression model

The probit regression model can effectively be used when dealing with a qualitative dependent variable (Vasisht, 2011).When using regular (OLS) regression models, it is assumed that the dependent variable is quantitative (continuous), whereas the independent variables are either quantitative (continuous) or qualitative (dichotomous) (Aldrich & Nelson, 1976). Since the dependent variable in hypotheses 1-4 of this research is a qualitative variable, a probit regression model will be used. For testing hypotheses 1-4, the probit model that will be used can be expressed as:

$Pr_{(\text{Team Tokens Locked Up} = 1)} = \Phi(\beta_o + \beta_1 * \text{Financial advisor disclosed} + \beta_2 * \text{High quality advisory team} + \beta_3 * \text{Business model available} + \beta_4 * \text{KYC/AML procedure} + \beta_5 * \text{Total amount raised} + \beta_6 * \text{Has VC backing} + \beta_7 * \text{Experienced team} + \beta_8 * \text{Team size} + \beta_9 * \text{Decentralised platform} + \beta_{10} * \text{Token supply is fixed} + \beta_{11} * \text{Investors have governance rights} + \beta_{12} * \text{Product or prototype developed} + \beta_{13} * \text{Whitepaper page count} + \varepsilon)$

OLS regression model

Since the dependent variable of hypothesis 5 is a quantitative variable (continuous), ordinary least squares regression models will be used (Aldrich & Nelson, 1976). For testing hypothesis 5, the ordinary least squares model that will be used can be expressed as:

$Y_{\text{Percentage of crowdsale target raised}} = \beta_0 + \beta_1 * \text{Team tokens locked up} + \beta_2 * \text{Financial advisor disclosed} + \beta_3 * \text{High quality advisory team} + \beta_4 * \text{Business model available} + \beta_5 * \text{KYC/AML procedure} + \beta_6 * \text{Total amount raised} + \beta_7 * \text{Has VC backing} + \beta_8 * \text{Experienced team} + \beta_9 * \text{Team size} + \beta_{10} * \text{Decentralised platform} + \beta_{11} * \text{Token supply is fixed} + \beta_{12} * \text{Investors have governance rights} + \beta_{13} * \text{Product or prototype developed} + \beta_{14} * \text{Whitepaper page count} + \varepsilon$

Method of hypotheses evaluation

For both regression techniques, three models will be made, each including a different amount of control variables. P-values will be calculated to make a judgement of significance of the independent variables. When the p-value of the independent variable is less than 0.05 (alpha), a significant effect of that respective independent variable in the model will be reported. When this observation occurs in all three models, which take into account a different amount of control variables, the significant effect can be reported with more reliability.

Chapter 6. Results

In this section, the various hypotheses will be statistically tested. Since the dependent variable of hypotheses 1-4, "team tokens locked up", is a dichotomous variable, probit regression models will be used for testing the respective hypotheses. For testing the hypothesis relating to the "percentage of crowdsale target raised" dependent variable, hypothesis 5, an OLS regression model will be used.

6.1 Determinants of team token lockups

First, the determinants of team token lockups will be investigated (hypotheses 1-4). Table 10 shows the probit regression models for the dependent variable "team tokens locked up":

PROBIT REGRESSION	Model 1		Model 2		Model 3	
	Coef	P-value	Coef	P-value	Coef	P-value
Constant	-0.5514	0.003	-0.6043	0.012	-0.6444	0.083
Financial advisor disclosed	0.6945	0.002*	0.6271	0.009*	0.6507	0.009*
High quality advisory team	0.4252	0.012*	0.3844	0.040*	0.3861	0.044*
Business model available	0.3897	0.023*	0.4737	0.010*	0.4408	0.026*
KYC/AML procedure	0.5081	0.002*	0.5811	0.001*	0.5684	0.002*
Total amount raised	0.0017	0.527	0.0004	0.881	0.0001	0.967
Has VC backing			0.1448	0.485	0.1764	0.407
Experienced team			-0.1902	0.301	-0.2251	0.232
Team size			-0.0118	0.207	-0.0119	0.204
Decentralised platform			0.4454	0.013*	0.4729	0.010*
Token supply is fixed					-0.0716	0.802
Investors have governance rights					0.2646	0.251
Product or prototype developed					-0.0303	0.867
Whitepaper page count					0.0033	0.575

Table 10. Probit regression models for team token lockups, * = $p<0.05$.

All three regression models for team tokens lockups show a significant effect for the independent variables "financial advisor disclosed", "high quality advisory team", "business model available" and "KYC/AML procedure". Therefore, hypotheses 1-4 are supported by the data (see table 11).

Hypothesis	Result
H1: The disclosure of a financial advisor does have a positive significant effect on the lockup of team tokens	Supported
H2: Participation of a high-quality advisory team does have a positive significant effect on the lockup of team tokens	Supported
H3: Having a business model available does have a positive significant effect on the lockup of team tokens	Supported
H4: Having a KYC/ALM procedure does have a positive significant effect on the lockup of team tokens	Supported

Table 11. Results tested hypotheses 1-4

It is interesting to see that all control variables, except for “decentralised platform”, show no significant effect in the regression models. The models reveal the determinants of team token lockups in ICOs. The in literature established corporate governance proxies which are able to reduce information asymmetry, of which I predicted that they would be able to determine lockups in ICOs, are able to determine the lockup of team tokens in ICOs. Thus, these corporate governance variables are able to reduce the probability of flipping in the ICO.

The data shows that the “total amount raised”, “venture capitalist backing”, “team experience”, “team size”, “fixed token supply”, “investors having governance rights”, “product or prototype developed” and the “whitepaper page count” have no significant effect on team token lockups in ICOs. Therefore, since I found significant effects for governance proxies that can reduce information asymmetry, I found evidence that these proxies act as good corporate governance practice in the ICO market.

6.2 Non-flipping ICOs and percentage of crowdsale target raised

Next, I will be investigated whether team token lockups have a significant positive effect on fundraising. Table 12 shows the OLS regression model for the dependent variable “percentage of crowdsale target raised”:

OLS REGRESSION	**Model 1**		**Model 2**		**Model 3**	
	Coef	**P-value**	**Coef**	**P-value**	**Coef**	**P-value**
Constant	59.2435	0.000	52.0698	0.000	59.2089	0.000
Team tokens locked up	14.1902	0.010*	13.3333	0.024*	13.5491	0.021*
Financial advisor disclosed	4.5564	0.484	5.6253	0.400	9.5274	0.160
High quality advisory team	2.5800	0.629	4.4477	0.446	5.3921	0.360
Business model available	-17.3803	0.002*	-14.0526	0.019*	-10.0823	0.103
KYC/AML procedure	-0.6417	0.905	-1.6648	0.772	-0.3865	0.947
Total amount raised	0.1947	0.044*	0.2306	0.055	0.2626	0.028*
Has VC backing			5.9873	0.325	3.7660	0.538
Experienced team			-4.5030	0.431	-4.9293	0.390
Team size			0.0831	0.772	0.0780	0.784
Decentralised platform			6.7683	0.225	7.7061	0.168
Token supply is fixed					-7.1133	0.432
Investors have governance rights					-2.1652	0.749
Product or prototype developed					10.8987	0.048*
Whitepaper page count					-0.3607	0.030*

*Table 12. OLS regression models for percentage of crowdsale target raised, , * = p<0.05.*

All three OLS regression models show that the lockup of team tokens has a significant positive effect on the percentage of crowdsale target raised. Therefore, hypothesis 5 is supported (see table 13).

Hypothesis	Result
H5: Team tokens locked up does have a positive significant effect on the percentage of crowdsale target raised	Supported

Table 13. Results tested hypothesis 5.

The data suggests that ICOs with team token lockups are likely to have a better crowdsale performance than ICOs that do not have team token lockups. So, ICO project team members can enable the project to attract more investors and funds in the crowdsale by locking up the team tokens. ICO project team members should realize that the team token lockup is considered valuable in the eyes of investors and that this governance mechanism can allow for a more successful crowdsale. This finding shows that anti-flipping mechanism acts as a good corporate governance practice in the ICO market.

Conclusions

After examining the determinants of team token lockups and the effect of team token lockups on fundraising, I can conclude that I found determinants of team token lockups and that the anti-flipping mechanism "team token lockups" in the ICO market has a significant positive effect on the fundraising performance. Thus, the evidence suggests that anti-flipping mechanism acts as a good corporate governance practice in the ICO market.

Academic implications

This research contributed to literature by presenting evidence for corporate governance proxies as determinants of team token lockups in ICOs. I found corporate governance proxies that can reduce information asymmetry are able to determine team token lockups. Specifically, I found evidence that the disclosure of a financial advisor, the participation of a high-quality advisory team, the availability of the business model and the presence of a KYC/AML procedure have a significant effect on whether the team tokens are locked up in ICOs. So, I found that there is less flipping probability when these variables are present in an ICO.

Also, I contributed to the literature by presenting evidence for a better performance in fundraising of ICOs with team token lockups than ICOs without team token lockups. I found evidence for a significant positive effect of the lockup of team tokens on the percentage of crowdsale target raised. I have seen that team token lockups can successfully be employed to ensure a better fundraising performance, thus showing this anti-flipping mechanism to act as a good corporate governance practice in the ICO market.

Practical implications

These findings also come with practical implications for the investor and founder in ICOs. Since I found that there is less flipping probability when the ICO has its financial advisor disclosed, has a high quality advisory team, has its business model available and has a KYC/AML procedure, investors who would like to protect themselves against flipping should look for these variables in ICOs.

ICO project founders, who would like to raise a high percentage of their crowdsale target, should consider locking up their team tokens. Doing so, they are able to reduce moral hazard problems and consequently attract more funds.

Discussion

Finally, the limitations and suggestions for future research will be discussed.

Limitations

The most noticeable limitation in research on cryptocurrency markets is the availability of data. Data availability and quality on the ICO market is often poor. In this study, the dataset that is used is a limitation as well. Although the quality of the data is high, as it has been hand collected by Fahlenbrach & Frattaroli (2020), the data may be subjected biases. Since the dataset consists of ICOs which took place in the years of 2017 and 2018, the data could be subject to time and sentiment bias. The cryptocurrency market in the years of 2017 and 2018 were characterized by a sentiment of heavy volatility, which may not be the same in 2023. Also, since the amount of ICO projects is very large in the market, the sample size of 306 ICOs is a limitation.

Although the data is a limitation, my results are in line with previous research. The predictions I made for the ICO market based on literature about asymmetric information and flipping in the IPO market, were found to be accurate. Since these theories were found to be accurate under new circumstances in the ICO market, I can suggest that the data is of good quality.

Future research

I suggest to conduct research on the anti-flipping mechanism in the ICO market with more recent data. This way, it can be examined whether the supported hypotheses of this research will stand under different market sentiments. Also, it is suggested to increase the amount of ICO cases in the dataset. This way, the dataset would represent the total ICO market in a better way. Finally, since the cryptocurrency market is not subjected to strict regulations, it should be investigated whether ICOs with team token lockups did not sell the team tokens during the lockup period. This will give more insight into the reliability of the anti-flipping mechanism in the ICO market.

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