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Attention to Global Warming and the Success of Environmental Initial Coin Offerings: Empirical Evidence

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Abstract: We analyze the effects of attention to global warming on the success of environmental initial coin offerings (ICOs) measured by the total funding amount raised in the actual ICOs and the long-term survival of the projects. Using a database featuring 324 environmental initial coin offerings between 2017 and 2019, we find that attention to global warming increases the total funding raised in an environmental ICO. Moreover, we find that environmental offerings that occur during periods of greater attention to global warming are significantly less likely to fail in the long term. Our results are consistent with the idea that investor attention as a market-discipline mechanism increases the likelihood of survival for environmental ICOs.

Keywords: initial coin offering; blockchain; global warming; climate change

1. Introduction

Sustainability is perhaps the most critical issue businesses are facing today. Over recent decades, regulators, researchers, and practitioners have participated in an in-depth debate on environmental, social, and governance issues. Attention has been focused on responsible investments, a key driver of change in the business context. Responsible investment is defined as a strategy and practice to incorporate environmental, social, and governance (ESG) factors into investment decisions and active ownership. Responsible investments enable firms to take advantage of growing opportunities and adequately manage risk regarding crucial challenges such as climate change and income inequality [1].

Investors also recognize that global warming and climate risks have financial implications for their portfolios. Survey data collected by Krueger et al. [2] showed that institutional investors believe that climate risks, especially concerning new regulations, have significant financial implications for their portfolios. The authors find that institutional investors' most common motivation for considering climate risk is the desire to protect their reputations and the belief that climate risk affects portfolio risks and returns. Ceccarelli et al. [3] confirmed that investors value climate performance. Using data on mutual fund returns, they show that funds labeled as low-carbon by Morningstar enjoyed an increase in assets under management relative to funds that were not labeled low-carbon. Baker et al. [4] found evidence that investors pay a premium for green bonds whose proceeds are used for environmentally friendly purposes such as renewable energy, clean transportation, sustainable agriculture and forestry, and energy efficiency. Overall, the results from these articles highlight the importance of sustainability to investors and fund managers.

In this paper, we analyze the effects of investors' concerns about global warming in the novel market of initial coin offerings (ICOs). In an ICO, an entrepreneurial firm creates its own cryptocurrency

(or token) and sells it to outside investors to raise capital for its project. The process is administered by smart contract through distributed ledger technology (DLT or blockchain, e.g., [5–12]). ICOBench.com, one of the top ICO rating websites, states that more than USD 27 billion was raised between 2017 and 2019 through 5700 ICOs (data retrieved from <https://icobench.com/> on 1 June 2020). This is the financial equivalent to approximately 9% of all venture capital investments in the U.S. for that same period (data on venture capital investment in the US are from the PwC/CB Insights MoneyTree™ Report Q4 2019). These figures highlight how important ICOs can be in sourcing entrepreneurial funding.

Any ICO subscriber faces a number of challenges. These include a lack of regulatory clarity and third-party oversight, which opens up both issuers and backers to significant risks [13]. The ICO market has yet to give rise to intermediaries to conduct the pertinent financial due diligence necessary to safely invest company funds. In light of such uncertainty while the popularity of cryptocurrency gathers momentum, research is beginning to fill the information gap. In particular, it investigates factors that can predict a successful ICO and whether or not an entrepreneur will behave opportunistically once they have received funding.

Most papers examining which issuer and ICO characteristics predict success have tested the effects of technological capabilities and high-quality source codes [5], the quality of information disclosures, credible commitment to the project, quality signals, token liquidity [7,14], CEO characteristics [15], and the participation of institutional investors in the ICO [11,16]. The ICO literature has also examined the timing dimensions of ICO success. For instance, Gächter et al. [12] suggested that timing is crucial in explaining the success of an ICO in terms of total amount raised. The authors showed that ICO success can be explained mostly by the public excitement surrounding an ICO as measured by Google search activity for the key word “ICO”.

Investor attention measured by Google search frequency has been widely used in finance literature. Da et al. [17] proposed using Google search frequency as a direct measure of investor attention. The authors showed that an increase in investor attention predicts higher future stock prices. They also showed that Google attention contributes to the sizeable first-day return and long-run underperformance of initial public offering (IPO) firms. Recently, Choi et al. [18] showed that stocks of carbon-intensive firms underperform compared with firms having low carbon emissions during abnormally warm weather. The authors also showed that when the local temperature is abnormally high, there is greater Google search activity on the topic of “global warming”. These results suggest that people pay more attention to climate change when experiencing abnormally warm weather, which in turn translates into an impact on financial markets as the prices of local stocks are affected by investors’ trading behavior.

The debate around climate change and its impacts is highly politicized. Despite the consensus in the scientific community, fundamental public disagreements continue. The community response to news and publicity about global warming has been to pay more attention and search for understanding and comprehension [19]. As attention is a scarce cognitive resource [20] and investors cannot remain perfectly attentive to all investment opportunities, we believe that this increased awareness of climate change creates an opportunity for environment-related entrepreneurial firms to successfully fund their projects.

This paper analyzes the effects of attention on global warming in the ICO market; an opaque, unregulated sector of entrepreneurial finance filled with informational gaps and fraud. In this study we use a database of 324 environmental initial coins offerings between 2017 and 2019. Our results are based on ordinary least squares (OLS) regressions and logistics models. First, we show that Google search activity for the topic “global warming” is positively associated with environmental ICO success measured by the total funding amount raised. This result is consistent with the notion that investor concern regarding climate change can somewhat explain the success of ICOs related to environmental projects. Second, and exploring further effects of investor attention to global warming, we find that increased investor attention to global warming significantly reduces the probability of long-term coin failure of environmental ICOs. These last results are consistent with the idea that increased investor

attention represents a specific mechanism of market discipline that leads management of environmental ICOs to be more effective in managing the entrepreneurial firm.

In what follows, we review the literature, develop our hypotheses, and then present the methodology and data. Next, we explain the variables employed to test our hypotheses, show our main results, and conclude by examining the implications of our findings.

2. Literature Review and Hypotheses Development

The body of financial literature examining the factors that determine ICO success has grown. Agency-related and moral hazard-based explanations of ICO market outcomes are most often used in empirical papers as the theoretical substructure to explain such success, meaning the obvious focus is often on information disclosure and signaling. For example, Fisch [5] looked at how a venture's technological capacity can be signaled through an ICO with the finding that technical white papers and high-quality source codes serve to boost the funding amount. Roosenboom et al. [14] showed that ICOs do a better job attracting capital the more information is disclosed to potential subscribers. Specifically, a higher cryptocurrency expert rating, pre-sales, selecting against a bonus scheme offer, breifer token sale windows, and larger project teams help raise significantly more funds. Roosenboom et al. [14] also demonstrated that the likelihood of an ICO getting listed on major exchanges goes up when investors are provided more information when the campaign is underway. Lastly, Howell et al. [7] delved into the issuer and ICO characteristics that predict successful real outcomes (increasing issuer employment and avoiding enterprise failure). They showed that information disclosure, credible project commitment, signaling quality and token or coin liquidity all lead to greater future uptake and use.

Some research shows that CEO quality and having large institutional investors on board also shape ICO success. Momtaz [15] showed that the presence of quality signals such as CEO loyalty correlate to higher ICO gross proceeds and other measures of success. Boreiko et al. [16] showed that ICOs that attract large investors also draw more funding and contributors with a greater likelihood of getting listed on a major crypto exchange. Meanwhile, Fisch et al. [11] depicted how an institutional investor's ICO participation is positively associated with the buy-and-hold abnormal returns over the first six months of trading after a token's exchange listing date.

A relevant and relatively unexplored signaling aspect that could impact an ICO's success is the project's timing. Gächter et al. [12] suggested that timing is the crucial factor in explaining ICO success in terms of the total amount raised. The authors showed that ICO success can be mainly defined by the respective public excitement regarding ICOs, as measured by Google search activity for the keyword "ICO". Investor attention measured by search frequency in Google has been widely used in finance literature. Da et al. [17] proposed using search frequency in Google as a direct measure of investor attention. The authors showed that an increase in investor attention predicts higher future stock prices. They also showed that Google attention contributes to the sizeable first-day return and long-run underperformance of initial public offering (IPO) firms. This study [17] has been cited by over a thousand scholarly articles.

Over the last decade, the terms "climate change" and "global warming" have become very visible to the public [19], as climate change is arguably one of the critical challenges of our time. Although there is broad consensus in the scientific community on human-induced climate change and its impact [21], fundamental doubts remain, and disagreements and debate continue. The community response to news and publicity about climate effects has been to pay more attention and search for understanding and comprehension [19]. The financial literature has begun providing evidence revealing how this increased attention to climate change affects economic outcomes. Recently, Choi et al. [18] showed that stocks of carbon-intensive firms underperform compared to firms with low carbon emissions in abnormally warm weather. The authors also showed that when the local temperature is unusually warm, there is greater Google search activity on the topic "global warming". These results suggest that people pay more attention to climate change when experiencing abnormally warm weather, which

translates into an impact on financial markets as the prices of local stocks are affected by investors' trading behavior. Several other papers also examine Google search volume for global warming and climate change, e.g., [19,22–25].

This study hypothesizes that the ICO timing and periods of great attention to climate change play a crucial role in ICO success. We believe that increased public interest in climate change around the time of an ICO will correlate to higher amounts raised from an environmental ICO, even after controlling for the project's quality or the ICO's characteristics. However, the positive effects of investor attention to global warming and climate change on ICO success may not increase monotonically. Social cognition research has shown that attending to an object reaches threshold levels above which it becomes taken-for-granted [26]. After this threshold, the literature suggests, additional exposure does not further increase attention (e.g., [27,28]), and redundant information leads to an attention decline [29]. These arguments lead us to the following hypotheses:

Hypothesis 1 (H1). *Greater investor attention to global warming is positively associated, at a diminishing rate, with the total funding raised in an environmentally related ICO.*

To understand the effects of investor attention to global warming on ICO success, we also need to examine its impact over the long term. Prior literature has shown that investor attention leads to significant corporate governance improvement, monitoring activities, and reducing the probability of corporate fraud. For instance, a large body of research suggests that investor attention, measured by media coverage, induces managers to take corrective action to improve performance [30–37]. Jin [38] showed that investor attention reduces earnings management. Meanwhile, Abdulmanova et al. [39] showed that greater investor attention accelerates information diffusion regarding fraud and its discovery. In general, Kahneman [20] suggested that investor attention plays a vital role in improving market efficiency by facilitating information diffusion and learning in a high information asymmetry environment. Considering the uncertainties and information gaps in the ICO market that allow for the possibility of entrepreneurs' opportunistic behavior after receiving financing, the previously discussed arguments about the benefits of increased investor attention are especially valuable in the ICO context. In particular, we expect ICO projects launched during periods of high attention to the environment to be more exposed to market discipline mechanisms, and hence, to lead managers to reduce negligent and rent-seeking behavior, fostering entrepreneurial firm financial performance. Consequently, we hypothesize that high public interest in the climate positively impacts the likelihood of a project's long-term survival. This leads us to posit the second hypothesis:

Hypothesis 2a (H2a). *Investor attention to global warming reduces the likelihood of long-term coin failure of an environmentally related ICO at a diminishing rate.*

Investor attention to broad topics such as global warming and climate change could influence investment decisions without entailing market discipline effects. Moreover, investors' increased interest could result in adverse selection problems, managerial opportunism, and periods characterized by ICO firms of lower quality and irrational investors. Considering the extensive information asymmetries and adverse selection problems in ICO firms [40], we believe that increased investor attention and sentiment could lead to entrepreneurial opportunistic behavior upon obtaining financing in the ICO market. Thus, increased attention to climate change could be associated with an average decrease in the likelihood of long-term survival of environmental ICOs. Since there are arguments in both directions regarding the effects of investor attention to global warming on the probability of long-term coin failure, the final answer is an empirical matter. We posit the next alternative second hypothesis:

Hypothesis 2b (H2b). *Investor attention to global warming increases the likelihood of long-term coin failure of an environmentally related ICO at a diminishing rate.*

3. Methods and Data

3.1. Methodology

We use a multivariate setting to examine the impact of investor attention on environmental ICO success. First, we regress the natural logarithm of total gross proceeds from the environmental ICO on a set of variables measuring public attention to global warming and control variables using the following ordinary least squares (OLS) specification:

$$\ln(\text{ICO gross proceeds})_i = \alpha + \beta_1 \times \text{Global warming}_i + \beta_2 \times \text{Global warming}_i^2 + \gamma' X_i + T_i + \epsilon_i. \quad (1)$$

Our dependent variable is $\ln(\text{ICO gross proceeds})_i$, which is the natural logarithm of total gross proceeds from the environmental ICO in U.S. dollars. Our primary dependent variable is global warming, which represents the monthly average of a weekly time series measuring the frequency of Google searches with the topic “global warming” at the worldwide level as an index variable between 0 and 100. As a robustness check, we also use the monthly search volume for the topic “climate change”. Unit root tests for our weekly time series measuring the frequency of Google searches with the topic “global warming” and “climate change” reject the null hypothesis of nonstationary. We also include the squared term of global warming to account for non-linearities in the relationship between the ICO gross proceeds and investor attention to global warming. Google search data are being increasingly utilized as a direct measure of investor attention. Similar to this paper, references [18,19,22–25] all used Google data to examine interest in global warming. One of the main advantages of Google search is that its algorithms can cover different languages and group various searches with the same meaning under a single topic [18]. An alternative source to measure general awareness of global warming is Twitter. However, Twitter is used as a platform for verbal expression of emotional responses, making it a better choice for identifying investor sentiment rather than investor attention to a topic [19].

The vector X_i contains the control variables. First, we control for an environmental ICO team’s size and gender diversity in the project using the percentage of female team members [41]. We also control for expert ratings of the environmental ICO. We include a dummy for projects that accept payment in fiat currency. Prior literature has shown that more extended fundraising periods likely indicate the project is having trouble raising the desired amount, which is a negative signal to potential investors [8]. Therefore, we control for the ICO duration. We also control for pre-ICO offers and bonuses for early investors (pre-ICO bonus). These schemes could lower the fundraising amount because early adopters can buy tokens at a lower price before the ICO. The ICO phenomenon depends on the geographic distribution and location of projects [42], so we control for the number of countries excluded from the ICO and for whether the start-up is located in the U.S. Lastly, we include year (T_i) fixed-effects in all regressions.

Next, we examine how global warming attention affects the likelihood that an environmental ICO coin will ultimately die. Our dependent variable in Equation (2) equals one if the environmental ICO i has a dead coin at the end of June 2020 and zero otherwise. We employ a logistic regression model with the following specification:

$$\text{Pr}[\text{Dead Coin}_i = 1] = \alpha + \beta_1 \times \text{Global warming}_i + \beta_2 \times \text{Global warming}_i^2 + \gamma' X_i + T_i + \epsilon_i, \quad (2)$$

where we define an environmental ICO as having a dead coin if it meets any of the following conditions: (i) the token symbol or coin name appears listed in deadcoins.com (deadcoins.com is a community forum where contributors can post information about dead or dying coins. The website classifies dead coins into four categories: (a) failed projects, (b) hacked coins, (c) scams, and (d) parodies), (ii) the coin name appears listed in coinopcy.com (coinopcy.com is also a contribution-based forum, where contributors may receive a bounty of up to 0.1 ETH (Ethereum) if the site administrators verify the information. According to coinopcy.com, a dead coin refers to a cryptocurrency that has been abandoned, used as a scam, had its website down, has no nodes, has wallet issues, doesn’t have

social updates, has low volume, or its developers have walked away from the project), and (iii) the token is not listed in CoinMarketCap as of June 2020 (since we used a sample of ICOs that ended on 31 December 2019, we allowed for a period of at least six months for ICOs to list their tokens. According to Montaz [8], once a project has raised funds, it takes 93 days on average from the end of the ICO until the first token exchange listing). The variables global warming and vector X_i are all defined as in Equation (1). We also include year-fixed (T_i) effects. We use the software Stata for all our statistical analyses.

3.2. Data

ICObench is an ICO rating platform that aggregates information on all coin offerings with the most thoroughly researched, high-quality data on ICO campaigns [14] qualifying it for use as our primary ICO data source. This decision is in line with several prior studies [8,11,14,15,42,43]. Deadcoins.com, coinopcy.com, and CoinMarketCap taken together served for measuring coin failure. Google search activity was our measure of investor attention. This index is available from a service called Google Trends (<https://trends.google.com/>).

We started with a list of 4133 ended ICO offers between January 2017 and December 2019. From this total, we removed all ICOs with incomplete information concerning our key variables and controls. After this filter, we identified 875 ICOs that ended between 2017 and 2019. Finally, we analyzed the ICO descriptions provided by ICObench and look for terms that may indicate the ICO relates to an environmental project. The list of terms is taken from the 60 environmental indicators tracked by Thomson Reuters out of a total of 293 environmental, social, and governance (ESG) indicators. It includes the following words: resource, energy, water, reduction, efficiency, sustainable, packaging, toxic, chemical, substances, reuse, reduce, report, electricity, renewable, friendly, green, recycled, controversies, emissions, biodiversity, ecosystems, species, co2, climate, flaring gases, nox, sox, voc, particulate matter, waste, non-hazardous, recycling, hazardous waste, e-waste, restoration, spills, innovation, eco-design, noise, nuclear, organic, responsible, animal testing, land, natural, oil, hydrocarbon, wood, eco designed, forest, pesticides, fungicides, and herbicides. After these filters, we identified 324 environmental ICOs between 2017 and 2019.

Table 1 provides descriptive statistics for the full final sample of environmental ICOs. The results show that the average natural logarithm of gross proceeds is 14.93 (the average, in U.S. dollars, for ICO proceeds is \$9.6 million). At the same time, about 71% of ICOs are dead in 2020, according to our definition. The monthly average search volume index for the topic “global warming” is 52.84, and the monthly average search volume for climate change is 35.02. The average team size (excluding advisors) of environmental ICO projects is ten people, of which 14% are women. The average ICO rating is 3.37 (out of 5). About 36% of environmental ICOs are restricted in the U.S, and only 6% are located in the U.S. Finally, 63% of ICOs have pre-ICO periods, 55% of which offer a discount during this pre-offer period.

Table 1. Summary of statistics.

Variable	N	Mean	Median	SD	Min	Max	P25	P75
Dependent variables:								
ICO gross proceeds (ln)	324	14.93	15.11	1.87	7.19	18.42	13.82	16.45
Dead coin (dummy)	324	0.71	1.00	0.46	0.00	1.00	0.00	1.00
Google search index:								
Global warming	324	52.84	52.60	8.59	36.20	67.50	46.40	58.75
Climate change	324	35.02	35.00	7.18	22.00	62.80	30.80	38.50

Table 1. Cont.

Variable	N	Mean	Median	SD	Min	Max	P25	P75
Control variables:								
N team members	324	9.81	8.00	6.15	1.00	50.00	6.00	12.00
Women team members (%)	324	0.14	0.13	0.14	0.00	0.67	0.00	0.25
ICO rating	324	3.37	3.45	0.62	1.60	4.70	2.90	3.90
Fiat accepted (dummy)	324	0.19	0.00	0.40	0.00	1.00	0.00	0.00
ICO duration (days)	324	59.73	39.00	56.40	0.00	388.00	27.00	87.00
N country restrictions	324	2.41	0.00	6.87	0.00	71.00	0.00	2.00
U.S. restriction (dummy)	324	0.36	0.00	0.48	0.00	1.00	0.00	1.00
Pre-ICO (dummy)	324	0.63	1.00	0.48	0.00	1.00	0.00	1.00
Bonus scheme (dummy)	324	0.55	1.00	0.50	0.00	1.00	0.00	1.00
U.S. location (dummy)	324	0.06	0.00	0.25	0.00	1.00	0.00	0.00

Note: This table reports summary statistics for the dependent, independent, and control variables used in this study. The sample is comprised of 324 environmentally related initial coin offerings (ICOs) between 2017 and 2019. See Appendix A for variable definitions.

4. Results

This section analyzes the empirical results for the effects of attention to global warming and climate change on the amount of money raised by the environmental ICOs and the likelihood of long-term coin failure. We performed OLS regressions and logistics models with robust standard errors to test these correlations.

Table 2 presents the parameters estimated from OLS regressions for the amount of money raised by the ICO with attention to global warming and climate change. Columns 1 and 2 report the results when we use Google searches for the topic “global warming”. Columns 3 and 4 present the results for the topic “climate change”. The results show that public attention to global warming has a statistically significant and positive effect, at a decreasing rate when we consider the non-linearities, on the amount raised by the ICO. The effect for the topic “climate change” is also important, but the coefficient is only statistically significant at the 10% level. These results remain even after controlling for other ICO characteristics and year fixed effects. Moreover, Appendix B shows that our results remain significant after controlling for general investor attention to the ICO market. Finally, we found no multicollinearity issues among dependent, independent, and control variables (see Appendix C).

We concluded that an environmental ICO conducted at the right time substantially benefits from increased attention on environmental concerns. Our analysis clearly reveals the crucial role of timing an ICO around periods of increased public concern regarding the environment measured by Google search activity to be a significant factor in the success of a green ICO. In addition, these results highlight advances on how environmental aspects are shaping investor decisions in line with global initiatives, such as the Principles for Responsible Investment, the Carbon Disclosure Project and the Task Force on Climate-related Financial Disclosures (TCFD). Institutional investor activism translates into more funding to critical issues under responsible investments such as global warming. Consequently, Hypothesis 1 is supported.

Table 3 shows the logistic regressions and the estimation results when we regressed the probability of coin failure (dead coin) on attention to global warming and climate change and the control variables. Google searches for the topic “global warming” had a statistically significant effect on the probability of being dead. The coefficients were highly statistically significant at the 5 and 10 percent levels. Consequently, our results support Hypothesis 2a: the likelihood of experiencing project failure (dead coin) is negatively correlated to the degree of investor attention when the ICO was conducted. However, when we consider the topic “climate change”, we find that the effect is statistically insignificant on coin failure probability. While the terms global warming and climate change are used interchangeably, Lineman et al. [19] argued that the phrase “climate change” has a more positive tone than the words “global warming”. This distinction can explain our results, as several authors suggest that financial market participants pay closer attention to negative news than positive news (e.g., [44–46]). Choi et al. [18] also preferred to report the results only for the term “global warming” and not for

“climate change”, as they found that the search traffic for the latter was much lower than that of the former.

Table 2. OLS regression for ICO gross proceeds.

Dep: ICO Gross Proceeds (ln)	(1)	(2)	(3)	(4)
Google search index:				
Global warming	0.4799 *** (3.4427)	0.3790 *** (2.7664)		
Global warming squared	−0.0047 *** (3.4315)	−0.0035 ** (2.5743)		
Climate change			0.2206 * (1.9080)	0.2056 * (1.9567)
Climate change squared			−0.0033 ** (2.1194)	−0.0027 * (1.8122)
Control variables:				
N team members		0.0619 *** (4.3646)		0.0638 *** (4.5460)
Women team members (%)		−1.2577 (1.5013)		−1.1137 (1.3129)
ICO rating		0.3175 * (1.8578)		0.2924 * (1.6831)
Fiat		−0.1517 (0.6174)		−0.1496 (0.6017)
ICO duration		−0.0011 (0.6467)		−0.0015 (0.9544)
N of country restrictions		0.0075 (0.6009)		0.0083 (0.7034)
U.S. restriction		0.4668 ** (2.1304)		0.4091 * (1.8518)
Pre-ICO offer		0.2744 (1.2129)		0.2391 (1.0426)
Pre-ICO bonus		0.0149 (0.0698)		0.0409 (0.1918)
U.S. location		0.2321 (0.5803)		0.2063 (0.5066)
Year (base: 2017)				
2018		−0.5569 * (1.8941)		−0.6109 ** (2.1443)
2019		−1.4531 *** (4.2392)		−1.4819 *** (3.7583)
Constant	3.0108 (0.8618)	3.8181 (1.1004)	11.4767 *** (5.4916)	10.1218 *** (4.9509)
Number of observations	324	324	324	324
R ²	0.0393	0.1662	0.0372	0.1525

Note: This table presents the parameter estimates from ordinary least squared regressions, with robust standard errors, for the actual amount raised in the ICO (in natural logarithm). The key independent variables are the Google search frequencies during the ICO’s initial month for the topics “global warming” and “climate change”. All control variables are defined in Appendix A. t values (in parentheses) are computed with robust standard errors. ***, **, and * indicate that the coefficient is significantly different from zero at the 1%, 5%, and 10% levels, respectively.

Table 3. Logit regressions for the likelihood of the coin being dead.

Dep: Pr (Dead Coin = 1)	(1)	(2)	(3)	(4)
Google search index:				
Global warming	−0.3374 ** (2.0428)	−0.3329 * (1.7787)		
Global warming squared	0.0032 ** (2.0157)	0.0031 * (1.6901)		
Climate change			−0.1636 (1.4578)	−0.1767 (1.6375)

Table 3. Cont.

Dep: Pr (Dead Coin = 1)	(1)	(2)	(3)	(4)
Climate change squared			0.0023 (1.4854)	0.0021 (1.4501)
Control variables:				
N team members		−0.0339 (1.4248)		−0.0355 (1.4684)
Women team members (%)		−0.4637 (0.4348)		−0.4810 (0.4508)
ICO rating		−0.3551 (1.4167)		−0.3239 (1.3059)
Fiat		0.9942 ** (2.5584)		0.9879 *** (2.5845)
ICO duration		0.0063 ** (2.0363)		0.0066 ** (2.1381)
N of country restrictions		−0.0262 (1.5580)		−0.0267 (1.5482)
U.S. restriction		−0.4464 (1.4894)		−0.3919 (1.3061)
Pre-ICO offer		0.0648 (0.2193)		0.0772 (0.2625)
Pre-ICO bonus		0.0323 (0.1172)		0.0061 (0.0225)
U.S. location		−0.1308 (0.2652)		−0.0782 (0.1561)
Year (base: 2017)				
2018		0.6592 * (1.7265)		0.6567 * (1.7700)
2019		1.0923 ** (2.2575)		1.2449 ** (2.3578)
Constant	9.5253 ** (2.2566)	10.2204 ** (2.1134)	3.7379 * (1.8190)	4.8966 ** (2.2144)
Number of observations	324	324	324	324
R ²	0.0110	0.0915	0.0051	0.0883

Note: This table presents the parameter estimates from logistic regressions, with robust standard errors, for the likelihood of coin failure as of June 2020. The key independent variables are the Google search frequency during the ICO's initial month for the topics "global warming" and "climate change". All control variables are defined in Appendix A. t values (in parentheses) are computed with robust standard errors. ***, **, and * indicate that the coefficient is significantly different from zero at the 1%, 5%, and 10% levels, respectively.

5. Discussion

We now discuss the results and how they can be interpreted from the perspective of previous studies and of the working hypotheses.

Despite the consensus regarding the harmful effects of global warming in economic and social spheres, the difficulty in estimating the time and severity of these effects makes climate change challenging in financial decision-making. Investors recognize these challenges, but also see opportunities to profit from the expected transition to a lower-carbon economy [47]; for instance, in the areas of renewable energy or energy storage [2]. Accordingly, as climate change and other sustainability issues have become a top investor focus in recent years [48], environmentally related entrepreneurial firms could seize this opportunity to attract attention and funding from investors, especially ESG-oriented ones.

Notwithstanding the growing literature examining the determinants of ICO success, the ability to time ICO fundraising has received scant attention in ICO research compared to other signaling factors such as information disclosure, technological capabilities, the commitment of the CEO, and the participation of large institutional investors. Our study examines the effects of attention paid to global warming, a highly politicized and attention-grabbing topic, in the success of environmentally related ICOs. We find that ICOs conducted in periods of increased attention to global warming benefit from a

large amount raised in the actual ICO, thus confirming our first hypothesis. This result remains robust after controlling for a set of factors that prior literature has suggested as determinants of ICO success.

We also study the possibility of entrepreneurs' opportunistic behavior after receiving financing, especially considering the pervasive uncertainties and information gaps in the ICO market. Our results suggest that ICOs conducted in periods of increased attention to global warming have a lower likelihood of failure in the long-term. Thus, we confirm Hypothesis 2a, indicating that increased awareness also works as a market-discipline mechanism.

We believe that the ICO market represents an excellent setting to test the hypotheses concerning the effects of investor attention on the efficiency of financial markets. The ICO market is filled with asymmetric information problems and opportunities for scams. Therefore, the role of investor attention in facilitating information diffusion and learning is even more critical in ICO projects. This article shows that increased concern about global warming significantly reduces the likelihood of long-term coin failure. This includes scams, hacked coins, and projects that failed to get the coin listed on major exchanges.

Finally, our results indicate that some of the underlying mechanisms in ICOs resemble those found in prior research into corporate finance, such as initial public offerings (IPOs). Perhaps to a lesser extent than in the case of ICOs, IPOs also involve a high level of ex ante uncertainty about a firm's future performance. The literature has shown that this uncertainty reduces the value of the issue and increases the underpricing level [49]. Different IPO characteristics could reduce investor perceived ex ante uncertainty affecting the level of underpricing such as corporate governance structures at the firm level [50], the existence of audit committees [51], board prestige and independence [52,53], and even the tone of IPO prospectuses [46,54].

Other studies highlight the relevance of investor attention influencing IPO underpricing. Da et al. [17] used Google searches to empirically study the impact of retail investor attention on IPO returns. The authors found that retail attention measured by search volume was related to IPO first day returns and higher stock prices in the short term. Colaco et al. [55] showed that given restrictions placed on communication with prospective investors, retail investor attention can help firms/underwriters with the task of initially valuing an IPO. Using Google search volume to proxy for retail investor attention, they showed that retail attention following initial filing and initial pricing positively impact initial valuations. Hence, investor attention plays a critical role in the early stages of both IPO and ICO valuation and helps firms get funding under better conditions from investors.

There are also some parallels between the literature on the long-term performance of IPOs and our results for ICOs. McConaughy et al. [56] showed that there is no agency cost increase after the IPO, the market disciplines entrepreneurs with incentives to maintain pre-IPO operating performance, and the observed poor post-IPO stock performance is mainly due to over-optimistic investors extrapolating current growth into the future. In the context of our study, investors' positive valuation of an environmental ICO associated with periods of increased concern about global warming could represent the entrepreneurial firm's ability to create economic value in the long term and indicate that attention disciplines ICO teams. This connection could explain the negative association between investor attention and the likelihood of experiencing project failure (dead coin) in our sample of environmental ICOs.

6. Concluding Remarks

This paper analyzes the effects of attention on global warming in the ICO market, an opaque, unregulated sector of entrepreneurial finance filled with informational gaps and fraud. Using a database of 324 environmental initial coins offerings between 2017 and 2019, we show that Google search activity for the topic "global warming" is positively associated with environmental ICO success measured by the total funding amount raised. Exploring further effects of investor attention to global warming, we find that increased investor attention to global warming significantly reduces the probability of long-term coin failure of environmental ICOs. Our findings are consistent with the

notion that investor concern regarding climate change influences investment decisions and resource allocation. Our results are also consistent with the idea that increased investor attention represents a specific mechanism of market discipline that leads an environmental ICO's administrators to more effectively manage the entrepreneurial firm.

Our results help explain another key determinant of ICO success, which can further elucidate ICO participants' understanding of these elements. In particular, we provide novel evidence for the factors that reduce the uncertainty facing investors when investing in unregulated ICOs and document a previously unknown investor attention effect in entrepreneurial finance. Our study has implications for financial practices, specifically for cryptocurrency investors and entrepreneurial firms conducting ICOs. Participants in the ICO market should be aware of the value of timing to facilitate an entrepreneurial firm's fund-raising, risk mitigation, improved project quality and long-term survival rates.

Investor attention to social and environmental issues has gained relevance and is modifying the ability of companies to get funding as well as resource allocation among entrepreneurial firms. This paper focuses on a particular aspect of social and environmental issues, but future research is needed to provide more evidence regarding this trend in corporate finance. Our results, although novel, are subject to specific limitations. For example, the recently created market for initial coin offerings (ICOs) does not let us analyze the survival of environmental ICOs over a broader time horizon.

Overall, the results are consistent with previous literature and highlight that the contribution of investor attention to increasing monitoring efforts are even more significant in unregulated ICO markets with high uncertainty and information gaps. More importantly, this article sheds light on how correct fundraising timing can play a particularly vital role in financing entrepreneurial efforts using innovative financing instruments.

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Appendix A

Table A1 defines dependent, independent, and control variables used in this study.

Table A1. Definitions of variables.

Variable Name	Definition
ICO proceeds (ln)	Natural logarithm of the total funding amount raised by the initial coin offering (ICO) in USD.
Dead coin	A dummy variable that equals 1 if the coin is dead as of June 2020 and zero otherwise. We define an ICO with a dead coin if it meets any of the following conditions: (i) the token symbol or coin name appears listed in deadcoins.com, (ii) the coin name appears listed in coinopcy.com, or (iii) the token is not listed in CoinMarketCap as of June 2020.
Global warming	Monthly average of weekly time series measuring the frequency of the Google search volume for the topic "global warming" at the worldwide level. The Google search index ranges between 0 and 100.
Climate change	Monthly average of weekly time series measuring the frequency of Google search volumes for the topic "climate change" at the worldwide level. The Google search index ranges between 0 and 100.
N team members	The total number of ICO team members (excluding advisors).
Women team members (%)	Women team members (#)/N team members (#)

Table A1. Cont.

Variable Name	Definition
ICO rating	A rating based on surveys among cryptocurrency experts which takes into account the quality of the management team, the experience of external consultants advising the project, the vision of the project, and the product maturity level. The rating scale ranges from 0 (weak) to 5 (strong).
Fiat	A dummy variable that equals 1 if the project accepted fiat currencies during the ICO and zero otherwise.
ICO duration	The duration of the ICO campaign in days.
N of country restrictions	The number of countries that were excluded from the ICO.
U.S. restriction	A dummy variable that equals 1 if U.S. investors were not admitted to take part in the ICO and zero otherwise.
Pre-ICO offer	A dummy variable that equals 1 if a pre-ICO took place before the actual ICO and zero otherwise.
Pre-ICO bonus	A dummy variable that equals 1 if the founders offered price discounts to earlier investors and zero otherwise.
U.S. location	A dummy variable that equals 1 if the start-up is headquartered in the U.S. and zero otherwise.

Appendix B

This appendix provides a robustness check for the strength of the effect of attention to global warming on total gross proceeds after controlling for general investor attention to ICOs. Bellavitis et al. [57] and Gächter et al. [12] suggested that timing is crucial in explaining an ICO's success in terms of the total amount raised. The authors showed that the success of ICO fundraising can be defined by the public excitement surrounding an ICO as measured by Google news sentiment [57] and Google search activity for the keyword "ICO" [12]. Table A2 reports the parameters estimated from OLS regressions for the amount of money raised by the ICO on Google attention to initial coin offerings, global warming, and climate change. Column 1 of Table A2 reports the results when we use Google searches for the topic "ICO". The results show that public attention to initial coin offerings has a statistically significant and positive effect at a decreasing rate on the amount raised by the ICO. These results are consistent with the findings in the study [12]. Column 2 of Table A2 reports the results when we use both Google searches for the topic "global warming" and "initial coin offerings". The results show that public attention to global warming has a statistically significant and positive effect on the amount raised by the ICO. In contrast, general attention to ICOs becomes statistically insignificant. These results suggest that, for our sample of environmental ICOs, attention to global warming is a more significant determinant of ICO fundraising than widespread investor attention to ICOs. Thus, we confirm that the effect for the topic "global warming" remains significant even after controlling for general Google attention to the ICO market, other ICO characteristics, and year fixed effects. Column 3 of Table A2 shows the impact of the topic "climate change" when controlling for the searches for the topic "initial coin offerings". As we mentioned before, the topic "climate change" does not attract the same level of attention as the key topic "global warming" since the former has a more positive tone than the latter. This distinction can explain why Google searching for climate change is insignificant and attention to ICOs remains significant at the 10% level. Overall, this robustness check reveals the crucial role of timing an ICO around periods of increased public concern regarding the environment, even after controlling for general attention to the ICO market. Consequently, Hypothesis 1 is still supported after this robustness check.

Table A2. Ordinary least squares (OLS) regression for the effects of attention to ICO and global warming on ICO gross proceeds.

Dep: ICO Gross Proceeds (ln)	(1)	(2)	(3)
Google Attention:			
ICO	0.0456 ** (2.0739)	0.0286 (1.2285)	0.0379 * (1.6747)
ICO squared	−0.0003 (1.0521)	−0.0001 (0.3767)	−0.0002 (0.7739)
Global warming		0.2763 * (1.9300)	
Global warming squared		−0.0027 * (1.9032)	
Climate change			0.1119 (1.0985)
Climate change squared			−0.0015 (1.0756)
Control variables:			
N team members	0.0627 *** (4.6680)	0.0613 *** (4.5889)	0.0629 *** (4.7084)
Women team members (%)	−1.0676 (1.2711)	−1.1026 (1.3334)	−1.0260 (1.2346)
ICO rating	0.2934 * (1.7092)	0.3219 * (1.9066)	0.3019 * (1.7722)
Fiat	0.0119 (0.0475)	−0.0372 (0.1498)	−0.0144 (0.0572)
ICO duration	−0.0012 (0.7242)	−0.0009 (0.5254)	−0.0012 (0.7555)
Number of country restrictions	0.0108 (0.9468)	0.0106 (0.8784)	0.0116 (1.0200)
U.S. restriction	0.5173 ** (2.3876)	0.5314 ** (2.4524)	0.4968 ** (2.2716)
Pre-ICO offer	0.2458 (1.0900)	0.2590 (1.1464)	0.2366 (1.0444)
Pre-ICO bonus	0.0513 (0.2427)	0.0285 (0.1337)	0.0570 (0.2706)
U.S. location	0.2420 (0.5758)	0.2728 (0.6563)	0.2397 (0.5709)
Year (base: 2017)			
2018	−0.6103 ** (2.0788)	−0.6513 ** (2.1352)	−0.6015 ** (2.0513)
2019	−0.8684 * (1.9378)	−0.9499 ** (2.0385)	−0.8905 * (1.8037)
Constant	12.9202 *** (17.3803)	6.2074 * (1.7563)	11.0085 *** (5.7059)
Number of observations	324	324	324
R ²	0.1782	0.1880	0.1822

Note: This table presents the parameter estimates from ordinary least squared regressions, with robust standard errors, for the actual amount raised in the ICO (in natural logarithm). The key independent variables are the Google search frequencies during the ICO's initial month for the topics "ICO", "global warming" and "climate change". All control variables are defined in Appendix A. t values (in parentheses) are computed with robust standard errors. ***, **, and * indicate that the coefficient is significantly different from zero at the 1%, 5%, and 10% levels, respectively.

Appendix C

This appendix examines potential multicollinearity issues among dependent, independent, and control variables used in this study. Table A3 reports variance inflation factors for the two full ordinary least squares (OLS) models in Table 2. Variance inflation factor (VIF) values greater than ten would indicate reasons for concern due to collinearity among the variables, and tolerance values lower

than 0.1 would indicate collinearity among variables. Reported results show that our values do not suffer from collinearity except for the key independent variables and their squared terms [58].

Table A3. Multicollinearity test on variables.

Variable	Model (2) Table 2		Model (4) Table 2	
	VIF	Tolerance	VIF	Tolerance
Global warming	140.07	0.01		
Global warming squared	143.81	0.01		
Climate change			41.16	0.02
Climate change squared			43.10	0.02
N team members	1.18	0.85	1.18	0.85
Women team members (%)	1.09	0.92	1.10	0.91
ICO rating	1.26	0.79	1.26	0.79
Fiat	1.06	0.94	1.06	0.94
ICO duration	1.08	0.93	1.07	0.94
Number of country restrictions	1.15	0.87	1.15	0.87
U.S. restriction	1.22	0.82	1.22	0.82
Pre-ICO offer	1.17	0.85	1.18	0.85
Pre-ICO bonus	1.12	0.89	1.12	0.89
U.S. location	1.11	0.90	1.10	0.91
ICO year: 2018	2.23	0.45	2.10	0.48
ICO year: 2019	2.24	0.45	2.77	0.36

References

- Principles for Responsible Investment. 2019. Available online: <https://www.unpri.org/download?ac=10948> (accessed on 1 October 2020).
- Krueger, P.; Sautner, Z.; Starks, L.T. The Importance of Climate Risks for Institutional Investors. *Rev. Financ. Stud.* **2020**, *33*, 1067–1111. [\[CrossRef\]](#)
- Ceccarelli, M.; Ramelli, S.; Wagner, A.F. When Investors Call for Climate Responsibility, How Do Mutual Funds Respond? 2019. Available online: <https://www.unpri.org/pri-blogs/when-investors-call-for-climate-responsibility-how-do-mutual-funds-respond/5157.article> (accessed on 1 October 2020).
- Baker, M.; Bergstresser, D.; Serafeim, G.; Wurgler, J. Financing the response to climate change: The pricing and ownership of US green bonds. *Natl. Bur. Econ. Res.* **2018**. [\[CrossRef\]](#)
- Fisch, C. Initial coin offerings (ICOs) to finance new ventures. *J. Bus. Ventur.* **2019**, *34*, 1–22. [\[CrossRef\]](#)
- Ahluwalia, S.; Mahto, R.V.; Guerrero, M. Blockchain technology and startup financing: A transaction cost economics perspective. *Technol. Forecast. Soc. Chang.* **2020**, *151*, 119854. [\[CrossRef\]](#)
- Howell, S.; Niessner, M.; Yermack, D. Initial coin offerings: Financing growth with cryptocurrency token sales. *Rev. Financ. Stud.* **2020**, *33*, 3925–3974. [\[CrossRef\]](#)
- Momtaf, P.P. Initial coin offerings. *PLoS ONE* **2020**, *15*, e0233018. [\[CrossRef\]](#)
- Adhami, S.; Giudici, G.; Martinazzi, S. Why do businesses go crypto? An empirical analysis of initial coin offerings. *J. Econ. Bus.* **2018**, *100*, 64–75. [\[CrossRef\]](#)
- Block, J.H.; Groh, A.; Hornuf, L.; Vanacker, T.; Vismara, S. The entrepreneurial finance markets of the future: A comparison of crowdfunding and initial coin offerings. *Small Bus. Econ.* **2020**. [\[CrossRef\]](#)
- Fisch, C.; Momtaf, P.P. Institutional investors and post-ICO performance: An empirical analysis of investor returns in initial coin offerings (ICOs). *J. Corp. Financ.* **2020**, *64*, 101679. [\[CrossRef\]](#)
- Gächter, I.; Gächter, M. Success factors in ICOs: Individual firm characteristics or lucky timing? *Financ. Res. Lett.* **2020**, 101715. [\[CrossRef\]](#)
- Organisation for Economic Co-operation and Development. Initial Coin Offerings (ICOs) for SME Financing. 2019. Available online: www.oecd.org/finance/initial-coin-offerings-for-sme-financing.htm (accessed on 1 October 2020).
- Roosenboom, P.; van der Kolk, T.; de Jong, A. What determines success in initial coin offerings? *Ventur. Cap.* **2020**, *22*, 161–183. [\[CrossRef\]](#)

15. Momtaz, P.P. Initial coin offerings, asymmetric information, and loyal CEOs. *Small Bus. Econ.* **2020**. [[CrossRef](#)]
16. Boreiko, D.; Risteski, D. Serial and large investors in initial coin offerings. *Small Bus. Econ.* **2020**. [[CrossRef](#)]
17. Da, Z.; Engelberg, J.; Gao, P. In search of attention. *J. Financ.* **2011**, *66*, 1461–1499. [[CrossRef](#)]
18. Choi, D.; Gao, Z.; Jiang, W. Attention to Global Warming. *Rev. Financ. Stud.* **2020**, *33*, 1112–1145. [[CrossRef](#)]
19. Lineman, M.; Do, Y.; Kim, J.Y.; Joo, G.-J. Talking about climate change and global warming. *PLoS ONE* **2015**, *10*, e0138996. [[CrossRef](#)]
20. Kahneman, D. *Attention and Effort*; Prentice-Hall: Englewood Cliffs, NJ, USA, 1973.
21. Wolfson, R.; Schneider, S.H. Understanding climate science. In *Understanding Climate Science*; Island Press: Washington, DC, USA, 2002; pp. 3–51.
22. Cavanagh, P.; Lang, C.; Li, X.; Miao, H.; Ryder, J. Searching for the determinants of climate change interest. *Geogr. J.* **2014**, *2014*, 50329. [[CrossRef](#)]
23. Herrnstadt, E.; Muehlegger, E. Weather, salience of climate change and congressional voting. *J. Environ. Econ. Manag.* **2014**, *68*, 435–448. [[CrossRef](#)]
24. Lang, C. Do weather fluctuations cause people to seek information about climate change? *Clim. Chang.* **2014**, *125*, 291–303. [[CrossRef](#)]
25. Kahn, M.; Kotchen, M. Business cycle effects on concern about climate change: The chilling effect of recession. *Clim. Chang. Econ.* **2011**, *2*, 257–273. [[CrossRef](#)]
26. Pollock, T.; Rindova, V. Media legitimization effects in the market for initial public offerings. *Acad. Manag. J.* **2003**, *46*, 631–642.
27. Fiske, S.T.; Taylor, S.E. *Social Cognition*, 2nd ed.; McGraw-Hill: New York, NY, USA, 1991.
28. Starbuck, W.; Milliken, F. Executive perceptual filters: What they notice and how they make sense. In *The Executive Effect: Concepts and Methods for Studying Top Managers*; Hambrick, D., Ed.; JAI Press: Greenwich, CT, USA, 1988; pp. 35–65.
29. Anderson, N. *Foundations of Information Integration Theory*; Academic Press: New York, NY, USA, 1981.
30. Dyck, A.; Zingales, L. The corporate governance role of the media. In *The Right to Tell: The Role of the Media in Development*; Islam, R., Ed.; World Bank: Washington, DC, USA, 2002.
31. Dyck, A.; Zingales, L. Private benefits of control: An international comparison. *J. Financ.* **2004**, *59*, 537–600. [[CrossRef](#)]
32. Dyck, A.; Volchkova, N.; Zingales, L. The corporate governance role of the media: Evidence from Russia. *J. Financ.* **2008**, *63*, 1093–1135. [[CrossRef](#)]
33. Dyck, A.; Morse, A.; Zingales, L. Who blows the whistle on corporate fraud? *J. Financ.* **2010**, *65*, 2213–2253. [[CrossRef](#)]
34. Joe, J.; Henock, L.; Robinson, D. Managers' and investors' responses to media exposure of board ineffectiveness. *J. Financ. Quant. Anal.* **2009**, *44*, 579–605. [[CrossRef](#)]
35. Bushee, B.; Core, J.; Guay, W.; Hamm, S. The role of the business press as an information intermediary. *J. Account. Res.* **2010**, *48*, 1–19. [[CrossRef](#)]
36. Miller, G. The press as a watchdog for accounting fraud. *J. Account. Res.* **2006**, *5*, 1001–1033. [[CrossRef](#)]
37. Bednar, M.; Boivie, S.; Prince, N. Burr Under the Saddle: How Media Coverage Influences Strategic Change. *Organ. Sci.* **2013**, *24*, 910–925. [[CrossRef](#)]
38. Jin, J.Y. Investor Attention and Earnings Management around the World. *Account. Perspect.* **2013**, *12*, 165–187. [[CrossRef](#)]
39. Abdulmanova, A.; Ferris, S.; Jayaraman, N.; Kothari, P. The Effect of Investor Attention on Fraud Discovery and Value Loss in Securities Class Action Litigation. *SSRN Electron. J.* **2020**. [[CrossRef](#)]
40. Chen, K. Information asymmetry in initial coin offerings (ICOs): Investigating the effects of multiple channel signals. *Electron. Commer. Res. Appl.* **2019**, *36*, 100858. [[CrossRef](#)]
41. Guzman, A.; Pinto-Gutierrez, C.; Trujillo, M. Signaling Value through Gender Diversity: Evidence from Initial Coin Offerings. 2020. Available online: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3695558 (accessed on 1 October 2020).
42. Huang, W.; Meoli, M.; Vismara, S. The geography of initial coin offerings. *Small Bus. Econ.* **2020**, *55*, 77–102. [[CrossRef](#)]
43. Momtaz, P.P. Entrepreneurial finance and moral hazard: Evidence from token offerings. *J. Bus. Ventur.* **2020**. [[CrossRef](#)]

44. Kothari, S.; Shu, S.; Wysocki, P. Do managers withhold bad news? *J. Account. Res.* **2009**, *47*, 241–276. [[CrossRef](#)]
45. Sletten, E. The effect of stock price on discretionary disclosure. *Rev. Account. Stud.* **2012**, *17*, 96–133. [[CrossRef](#)]
46. González, M.; Guzmán, A.; Tellez-Falla, D.; Trujillo, M. Governance, sentiment analysis, and initial public offering underpricing. *Corp. Gov. Int. Rev.* **2019**, *27*, 226–244. [[CrossRef](#)]
47. Task Force on Climate-Related Financial Disclosure. *Recommendations of the Task Force on Climate-Related Financial Disclosures*; Financial Stability Board: Basel, Switzerland, 2017; Available online: <https://www.fsb-tcfd.org/publications/> (accessed on 1 October 2020).
48. Ceres. *Running the Risk: How Corporate Boards Can Oversee Environmental, Social and Governance (ESG) Issues*; Ceres: San Boston, MA, USA, 2019; Available online: <https://www.ceres.org/resources/reports/running-risk-how-corporate-boards-can-oversee-environmental-social-and-governance> (accessed on 1 October 2020).
49. Beatty, R.P.; Ritter, J.R. Investment banking, reputation, and the underpricing of initial public offerings. *J. Financ. Econ.* **1986**, *15*, 213–232. [[CrossRef](#)]
50. Hartzell, J.C.; Kallberg, J.G.; Liu, C.H. The role of corporate governance in initial public offerings: Evidence from real estate investment trusts. *J. Law Econ.* **2008**, *51*, 539–562. [[CrossRef](#)]
51. Bédard, J.; Coulombe, D.; Courteau, L. Audit committee, underpricing of IPOs, and accuracy of management earnings forecasts. *Corp. Gov. Int. Rev.* **2008**, *16*, 519–535. [[CrossRef](#)]
52. Certo, S.T. Influencing initial public offering investors with prestige: Signaling with board structures. *Acad. Manag. Rev.* **2003**, *28*, 432–446. [[CrossRef](#)]
53. Filatotchev, I.; Bishop, K. Board composition, share ownership, and ‘underpricing’ of UK IPO firms. *Strateg. Manag. J.* **2002**, *23*, 941–955. [[CrossRef](#)]
54. Loughran, T.; McDonald, B. IPO first-day returns, offer price revisions, volatility, and form S-1 language. *J. Financ. Econ.* **2013**, *109*, 307–326. [[CrossRef](#)]
55. Colaco, H.M.J.; De Cesari, A.; Hegde, S.P. Retail investor attention and IPO valuation. *Eur. Financ. Manag.* **2017**, *23*, 691–727. [[CrossRef](#)]
56. McConaughy, D.L.; Dhatt, M.S.; Kim, Y.H. Agency costs, market discipline and market timing: Evidence from post-IPO operating performance. *Entrep. Theory Pract.* **1996**, *20*, 43–58. [[CrossRef](#)]
57. Bellavitis, C.; Cumming, D.; Vanacker, T. Ban, boom, and echo! Entrepreneurship and initial coin offerings. *Entrep. Theory Pract.* **2020**. [[CrossRef](#)]
58. When Can You Safely Ignore Multicollinearity? Available online: <https://statisticalhorizons.com/multicollinearity> (accessed on 24 November 2020).

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