ERASMUS UNIVERSITY ROTTERDAM

Erasmus School of Economics

MSc. Accounting, Auditing & Control

Audit track

Reporting Quality of SPAC-merger IPOs

Research on the effect of IPO type on the reporting quality, and the effect of the timeframe of going public on the reporting quality of SPAC-merger IPOs.

Author: L.S. de Mos

663131

Supervisor: W. Cao

Second reader: Dr. J. Zhang

Abstract

In this research I take a closer look at the reporting quality of traditional IPOs versus SPAC-merger IPOs, and the effect of the time it takes for a SPAC-merger IPO on the reporting quality in the years 2019-2022. I first compare the IPO types and find that SPAC-merger IPOs have a significantly increased chance for restatements and late filings compared to traditional IPOs, signifying a decreased reporting quality in SPAC-merger IPOs. When taking a closer look at SPAC-merger IPOs, I find that there is no significant effect the time a SPAC-merger IPO takes has on the reporting quality. While the reporting quality of SPAC-merger IPOs is significantly lower than that of traditional IPOs, the reason for it is still unclear, and may not be a cause of the previously thought shortened timeframe of going public. Policymakers, regulators, and investors benefit from this knowledge as SPAC-merger IPOs are an increased risk to investors and may need to be subject to more stringent laws/regulations to increase the reporting quality and protect stakeholders.

Keywords: IPO, special purpose acquisition companies, SPAC, financial reporting quality

Contents

1. Introduction

A lot of private companies that want to grow turn to the capital markets to access capital, traditionally via an initial public offering (IPO). Recently, a new form of going public has taken the markets by storm, the special purpose acquisition company (SPAC) merger. In a SPAC-merger, a shell company only containing cash and equity which is already public, merges with a private company. Through this type of IPO, companies which want to go public can have a shorter timeframe of going public, a fixed price, a more streamlined regulatory review process, and more available expertise (KPMG, 2021). With all the positives, no wonder that a lot of investors and companies chose for the SPAC-merger IPO route instead of the traditional IPO. However, slowly the negatives of the SPAC-merger IPOs surfaced, and research is slowly showing the characteristics of SPAC-merger IPOs. Concerns of SPAC-merger IPOs include increased risk through reduced reporting quality, laws and regulations not built for SPAC-merger IPOs, lower due diligence, and oversight and more (KPMG, 2021).

To better understand SPAC-merger IPOs characteristics and risks, I decided to research the reporting quality of the two different IPO types and try to figure out if this is caused by the reduced timeframe of SPAC-merger IPOs. As the concept itself is not measurable, I employ restatements and late filings as proxies. First, I investigate the disparity in reporting quality, and find that SPAC-merger IPOs have a significantly increased chance of having to restate their financial reports. Furthermore, SPAC-merger IPOs also have a significantly increased chance of filing their financial reports late. However, I also find that firms can partially negate this by having their financial reports being audited by a big 4 auditor (Deloitte, EY, KPMG or PWC). When further investigating SPAC-merger IPOs, I find that the timeframe of going public has no significant effect on the chance for a restatement, and thus reporting quality.

The implication of this research mostly concerns regulators, policy makers and investors. Regulators and policymakers may want to look into building better laws and regulations to control for the increased risks of a SPAC-merger IPO, and increased scrutiny might be needed until then. Investors are exposed to more risk than they may have previously presumed, and thus may want to discount the investments more to adjust for the increased risk of SPAC-merger IPOs.

The research does have some limitations though, firstly the data availability on IPOs is not great, which causes the research to have a reduced sample size. While this has no influence on the regressions regarding the effect of the type of IPO on reporting quality, the effect of the timeframe of going public on the reporting quality does run into this issue. Furthermore, the collected data only concerns data from the U.S.A., and because of that, inferences made to other countries may not be fully correct, although I have no reason to assume this wouldn't be the case. More research is needed however to confirm that the timeframe is not (one of) the reasons for the decreased reporting quality of SPAC-merger IPOs compared to traditional IPOs once more data becomes available.

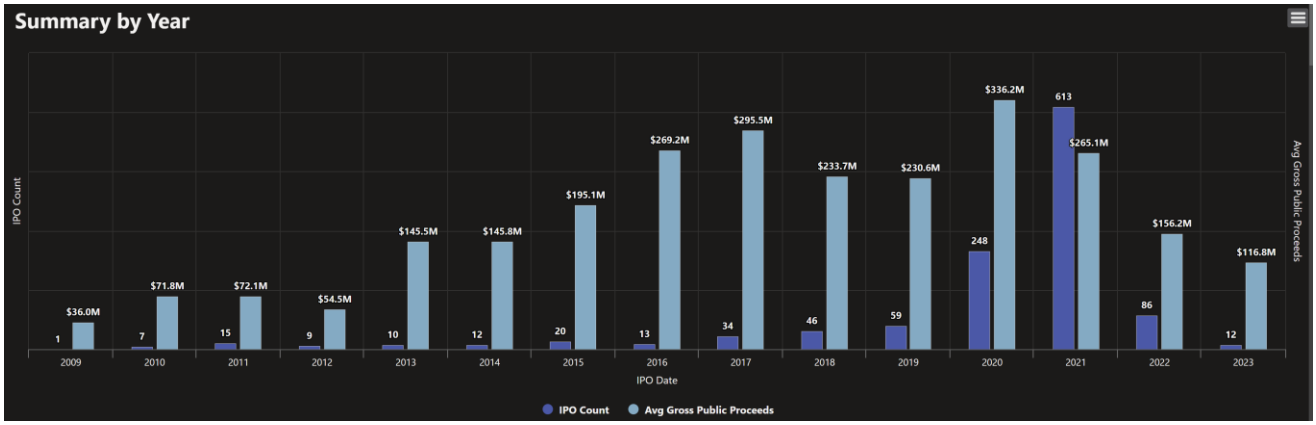
2. Literature review

2.1 Background information

Some private companies which want to go public for a variety of reasons do this via an initial public offering (hereafter IPO). An IPO is a process in which a private company offers its shares to the public for the first time. To do this the company has to meet certain requirements of the exchange and local market oversight to be allowed to offer its shared to the public. To set an initial price of the shares, and to meet the requirements to perform the IPO, companies often hire investment banks, consultants, and auditors. Usually, companies want to perform an IPO either to gain more capital to grow and/or as an exit strategy for the founders and the early investors to cash out on their investment.

Some companies however chose to go public via a newer variant of an IPO, the SPAC-IPO. Special Purpose Acquisition companies (hereafter SPAC) are empty or shell companies which have gone public via an IPO to raise capital to buy a (private) company. Until the acquisition of a company, these SPACs only hold in the balance sheet and have no operations. Once the SPACs are public, the SPACs start to look for potential acquisition targets. Companies can choose to go for a SPAC-IPO as opposed to a traditional IPO for a variety of reasons. The last few years, SPAC IPOs saw a rapid increase in interest, and afterwards a sharp decline in interest.

SPAC-merger IPO amounts and proceeds.



(SPAC Insider, 2023)

2.2 Theories affecting financial reporting quality.

2.2.1 Timeframe

One of the advantages of a SPAC-IPO is the timeframe in which the merger/IPO takes place. a SPAC merger on average takes about 3-6 months, whereas on average a traditional IPO takes 12-18 months (KPMG, 2021). When the average timeframe for the IPO is significantly shorter, the accounting side of the company which goes public has on average less time to prepare the first financial statement. This reduced time to prepare the financial statement may cause the financial reporting quality to suffer because of it (Kim, Park, Peterson, & Wilson, 2022). This may also cause the years afterwards to have reduced financial reporting quality as the base for the next year is the prior year. If the prior year financial reporting quality is of reduced quality, the next year may have reduced financial reporting quality as well. The traditional IPO on the other hand has, on average, far more time to prepare the first financial statement, which may lead to increased financial reporting quality in the first filing as well as the years afterwards (Klausner, Ohlrogge, & Ruan, 2022).

Due to having less time to prepare for going public, SPAC-IPOs may have corporate governance of lesser quality. Corporate governance mechanisms such as internal controls may greatly influence the quality of accounting in SPAC-IPOs, which in turn may lead to reduced financial reporting quality as opposed to the traditional IPOs (Kim, Park, Peterson, & Wilson, 2022).

2.2.2 Financial due diligence

SPAC mergers often involve a more streamlined regulatory review process, including reduced scrutiny by the SEC. This leniency may have allowed companies to bypass some of the rigorous disclosure requirements that apply to traditional IPOs which could lead to lower financial reporting quality (Kim, Park, Peterson, & Wilson, 2022). Due to the rapid rise of SPAC-IPOs, law and regulation frameworks are not up to speed which may result in SPAC-IPOs to get away with more than a traditional IPO. This can result in less incentive/pressure to file high quality financial reports, which can lead to reduced financial reporting quality (Gryglewicz, Hartman-Glaser, & Mayer, 2022). Furthermore, In a traditional IPO, there is an underwriter which assures that all the requirements by the local market oversight and laws/regulations are met. In SPAC mergers however, the target company does not have an underwriter as the SPAC is already public. This can lead to reduced financial reporting quality due to no underwriter being present to assure all the financial reporting requirements are met (KPMG, 2021).

2.2.3 Market/investor pressure

The pressure to complete SPAC-IPO mergers within the specified timeframe and meet/beat the investor's expectations can incentivize firms to engage in aggressive accounting practices or inadequate due diligence. This may cause the financial reporting quality of the SPAC-IPO to suffer, both in the initial filing and the years thereafter as aggressive accounting practices to meet/beat investor's expectations affect the years after it was done as well (Kim, Park, Peterson, & Wilson, 2022). Furthermore, due to the media having been overly positive, investors of the SPAC-IPO may expect more than is reasonable, which further increases the pressure from investors for SPAC-IPOs to meet/beat expectations (Gryglewicz, Hartman-Glaser, & Mayer, 2022).

2.2.4 Availability of expertise

A reason why (a part of) the theorized reduced reporting quality of the SPAC-IPO may be mitigated is through SPACs often having or being experienced in both the industry and finance, which are used to guide and improve the process of the SPAC merger. This is usually not the case for traditional IPOs as these are usually many smaller investors buying in on the IPO, as opposed to the often-bigger sponsors of the SPAC-IPOs (KPMG, 2021).

2.3 Empirical results / key findings

Kim et al. finds that SPAC-merger IPOs tend to have a lower financial reporting quality compared to traditional IPOs. This decline is evidenced by increased discretionary accruals, higher likelihood of restatements, increased chances of untimely financial statements, increased amendments on financial statements, more comment letter rounds and lower earnings quality (Kim, Park, Peterson, & Wilson, 2022). Kim et al. find that SPAC-IPOs have a reduced effectiveness of corporate governance mechanisms such as internal controls. They further find that SPAC-IPOs tend to have internal control weaknesses three times as often as traditional SPAC-IPOs. They attribute the decline in financial reporting quality to those ineffective corporate governance mechanisms in SPAC-merger IPOs. The authors link the decreased effectiveness of corporate governance to the reduced timeline of SPAC-merger IPOs compared to traditional IPOs as they have less time to set things like internal controls in place. (Kim, Park, Peterson, & Wilson, 2022)

Kim et al. further find that SPAC mergers often involve a more streamlined regulatory review process, including reduced scrutiny by the SEC. This leniency may have allowed companies to bypass some of the rigorous disclosure requirements that apply to traditional IPOs which could lead to lower financial reporting quality. (Kim, Park, Peterson, & Wilson, 2022) Moreover, Kim et al. find incentives and market pressures associated with SPAC mergers that may compromise financial reporting quality. The authors argue that the pressure to complete SPAC mergers within the specified timeframe and meet/beat the investor's expectations can incentivize firms to engage in aggressive accounting practices or inadequate due diligence, negatively affecting reporting quality. (Kim, Park, Peterson, & Wilson, 2022)

Gryglewicz et al. find that the performance of SPACs relative to traditional IPOs is reduced, further strengthening the market/investor pressure theory Kim et al. theorized. While SPACs have historically underperformed in the initial post-merger period, the authors note that recent SPACs have exhibited improved performance, suggesting increased market acceptance and better-quality sponsors. (Gryglewicz, Hartman-Glaser, & Mayer, 2022) However, Blankespoor et al. find that, on average, SPACs underperform IPOs in the long run, particularly after the merger with the target company. It suggests that the initial enthusiasm and hype surrounding SPACs may not always translate into sustained value creation for investors. (Blankespoor, Hendricks, Miller, & Stockbridge, 2021). This may further increase the meet/beat expectations, pressuring SPAC-IPOs into financial reports of reduced quality.

The studies have some limitations. Klausner et al. (2022) primarily relies on older data, which may limit the homogeneity of findings due to the rapidly evolving nature of the SPAC market. Gryglewicz et al. (2022) focus on quantitative analysis, overlooking qualitative aspects. Kim et al. (2022) theorizes the drivers of decreased reporting quality without exploring them in depth or proving the cause-and-effect relationship. Future research could address these limitations for a more comprehensive understanding of reporting quality in SPAC-merger IPOs such as finding the drivers of the risks and reduced reporting quality and the long-term effects of a SPAC-IPO as opposed to a traditional IPO.

3. Hypothesis

The previous literature has only shown that the reporting quality for the first post-IPO filing of SPAC-IPOs is worse than traditional IPOs, and that possible drivers of reduced reporting quality are generally worse on SPAC-IPOs than they are on traditional IPOs. However, it has not been proven that SPAC-IPOs have a reduced reporting quality over multiple years after the IPO, compared to traditional IPOs. Furthermore, one of the main theorized drivers of this reduced reporting quality, the decreased timeframe of SPAC-IPOs, has not been proven to affect the reporting quality.

In this paper, I will look at the difference in reporting quality of traditional IPOs compared to SPAC-mergers and try to find the causes for the difference. Furthermore, there has not been much research on the reporting quality of the last few years of SPAC-merger IPOs, which may hold and explanation for the declining interest and investments in SPACs. With lesser reporting quality, investors are at higher risk and thus will invest less or invest at a discount. If the reporting quality is still not up to par with traditional IPOs, this may be one of the reasons for investors to be less and less interested in SPACs compared to traditional IPOs.

If the reporting quality differs significantly between traditional IPOs and SPAC-mergers, this may have implications for lawmakers and financial market institutions. Furthermore, if there is a great disparity of reporting quality within the SPAC-mergers, this may have further implications for lawmakers and financial market institutions, such as a minimum timeframe in which the SPAC-merger must prepare its first financial statement. Moreover, investors may also benefit from increased insight in SPAC-mergers as they could (potentially) either be more or less at risk than they realize.

Firstly, I will test if the reporting quality of SPAC-merger IPOs still significantly differs from that of the traditional IPOs, the first hypothesis therefor is as follows.

Hypothesis 1: The financial reporting quality of SPAC-IPOs is significantly reduced compared to traditional IPOs.

Thereafter, if the reporting quality of the first post-merger financial statement of SPAC-mergers does in fact significantly differ to those of traditional IPOs, I will go on to test what I presume to cause differences within the SPAC-merger group. One of the theorized drivers of reduced reporting quality of SPAC-IPOs is the reduced timeframe. This has however not been tested directly, and therefore the second hypothesis is as follows.

Hypothesis 2: A decreased amount of time a SPAC-merger has to file the first post-merger financial statements negatively affects the reporting quality.

If the within group reporting quality of SPAC-mergers is indeed (partially) caused by the difference in timeframe to prepare the first post-merger financial statements, this can clear up (part of) the reason why the reporting quality is different from traditional IPOs, and possibly the decline of SPAC-mergers in the last few years.

4. Data and descriptive statistics

4.1 Data

In this chapter the collection of the data, how I cleaned up the data and descriptive statistics on the data will be shown/explained. Three different datasets have been used in the regressions of hypothesis 1 and 2.

4.1.1 Data collection

The process of creating the datasets for hypothesis 1 went as follows: A list of traditional IPOs and SPAC-merger IPOs were retrieved, and a dummy variable on the type of IPO was added to the datasets. For the restatements dataset, data on restatements, audits, analysts and company information was gathered for the years 2019-2022 of each company publicly registered in the U.S.A. The IPO list was then merged with the dataset on restatements, audits, analysts and company information by the ticker and (financial) year. For the late filings dataset, the same has been done, just replacing restatements with late filings in the process of the data collection. For firms which had no restatements or late filings, a 0 was filled in on the dummy variable for restatements/late filings for the IPO year.

For hypothesis 2, the SPAC-merger IPOs from the restatement dataset have been split from the rest, and combined with the timeframe from IPO to completed merger to form the dataset to be used in the regression of hypothesis 2.

4.1.2 Sample selection

For the sample selection, I have selected to use the years 2019 through 2022. The reason for this is that data before 2019 may be too old to use as rules and regulations surrounding SPAC-merger IPOs change, and have changed rapidly, and would therefore not be accurately representing the population. Moreover, before 2019 there were not a lot of SPAC-merger IPOs, 59 in the U.S. to be specific, and less for the years before (SPAC Insider, 2023). Adding in the years before 2019 would therefore not influence the results much, if anything it would make it less representative of the population.

The availability of the data on the subject has been an issue. The only feasible way to collect enough data and data of high enough quality in this case is to focus on the U.S.A., therefore I only use data collected on and from U.S.A. IPOs. The sample totals 2158 IPO firm observations.

4.1.3 Data cleaning

For some observations, one of the variables, or more, may be missing (NA). This was present mostly on company information such as assets and revenue. Some of the auditor information was also missing (NA) for some observations. To make sure this has no effect on the research, I removed all the observations with missing values (NAs) from the datasets. I also made sure there are no duplicates and removed any observations which were of the same ticket (company) and financial year. Hereafter, in the restatement dataset, I was left with 563 firm-year observations, from originally 2158 firm observations. Although this is quite a big decrease, 563 observations still are more than enough to conduct the research with reasonable confidence. For the late filings dataset, I was left with 682 firm-year observations. The difference of N in these datasets has been caused by the difference in amounts of restatements vs. late filings. Furthermore, the company info has been winsorized (1%) to reduce the effect of outliers. Without winsorizing the data, the statistics done on the dataset becomes very skewed, which negatively influences our approximation of the true population.

For Hypothesis 2, the dataset had already been cleaned except for the timeframe variable, which has been winsorized (1%) to reduce the effect of outliers on the regression.

4.2 Descriptive statistics

Below the descriptive statistics and correlation matrixes are displayed of hypothesis 1: the dataset using restatements and late filings as a reporting quality proxy, and hypothesis 2: the dataset using timeframe from IPO to completed merger as a proxy for amount of time to prepare financial statements. The variables BIG4, Restatement, late filing and Type are dummy variables, because of this their range is 0 – 1. Due to their correlation to employee amount, revenue and assets will be left out, as they are all three a marker of size. Furthermore, all applicable variables are winsorized to 99%/1%. The variable definitions can be found in the appendix named appendix A.

In the correlation tables, * signifies a significance level of 90%, ** that of 95%, and *** a significance level of 99%.

In table 1 we can see that the size of the restatement sample for hypothesis 1 is 563, of which 14,6% of the observations are a restatement. Furthermore, in this sample, 9,9% of the observations are SPAC-merger IPOs. A noteworthy observation is that the average and median IPO is making a net loss, which we continue to see in table 3 and 5.

Table 1: Descriptive Statistics Restatement Dataset

	N	Mean	Median	Std.Dev	Min	Max	Q1	Q3
Analysts	563	4.938	4.000	4.086	1.000	29.000	2.000	6.000
BIG4	563	0.712	1.000	0.453	0.000	1.000	0.000	1.000
Employees	563	5.812	5.749	1.926	2.208	10.211	4.419	7.147
Leverage	563	1.121	0.422	1.992	0.000	11.896	0.135	1.191
Restatement	563	0.146	0.000	0.353	0.000	1.000	0.000	0.000
ROA	563	-0.231	-0.150	0.350	-2.783	0.391	-0.345	-0.011
Scaled_cf	563	0.140	0.081	0.370	-1.495	0.989	-0.013	0.349
Type	563	0.099	0.000	0.300	0.000	1.000	0.000	0.000

In table 2, we can see that our variable of interest, Restatement, seems to be positively correlated to the type of IPO, which is already a good indication that the direction of hypothesis 1 might be correct. Furthermore, we see that the BIG4 dummy is negatively correlated with the type of IPO and restatement, which may indicate that there are more significant factors influencing the chance for a restatement. Beyond that, it seems that the number of analysts and the scaled cashflow may have a significant effect on the chance for a restatement. Moreover, there seems to be no highly correlated variables, which confirms the assumption that there is no multicollinearity present.

Table 2: Correlation Matrix Restatement Dataset

	Type	Restatement	BIG4	Employees	Leverage	Analysts	Scaled_cf	ROA
Type	1.000							
Restatement	0.654***	1.000						
BIG4	-0.510***	-0.449***	1.000					
Employees	0.002	0.009	0.298***	1.000				
Leverage	-0.050	-0.029	-0.009	0.268***	1.000			
Analysts	-0.219***	-0.124**	0.341***	0.456***	0.088*	1.000		
Scaled_cf	0.170***	0.103*	-0.104*	-0.129*	-0.089*	-0.157***	1.000	
ROA	-0.010	0.002	0.117**	0.400***	0.102*	0.204***	0.161***	1.000

In table 3, we can see that the hypothesis 1 dataset for the late filings contains 682 observations, of which 24,6% are late filings, and 17,6% are SPAC-merger IPOs.

Table 3: Descriptive Statistics Late Filings Dataset

	N	Mean	Median	Std.Dev	Min	Max	Q1	Q3
Analysts	682	4.638	4.000	3.981	1.000	29.000	2.000	6.000
BIG4	682	0.642	1.000	0.480	0.000	1.000	0.000	1.000
Employees	682	5.839	5.869	1.968	2.208	10.289	4.634	7.156
late_filing	682	0.246	0.000	0.431	0.000	1.000	0.000	0.000
Leverage	682	1.274	0.493	2.532	0.000	36.730	0.147	1.345
ROA	682	-0.259	-0.153	0.425	-3.298	0.486	-0.354	-0.010
Scaled_cf	682	0.129	0.061	0.376	-1.495	0.989	-0.030	0.338
Type	682	0.176	0.000	0.381	0.000	1.000	0.000	0.000

In table 4, we can see that the type of IPO seems to be positively correlated with late filings with a significance level of 99%. This is another indication that the direction of hypothesis may be correct. Furthermore, being audited by a big 4 auditor seems to be correlated to late filings as well, along with the number of following analysts and the scaled cashflow. Moreover, there seems to be no highly correlated variables, which confirms the assumption that there is no multicollinearity present.

Table 4: Correlation Matrix Late Filing Dataset

	Type	late_filing	BIG4	Employees	Leverage	Analysts	Scaled_cf	ROA
Type	1.000							
late_filing	0.594***	1.000						
BIG4	-0.603***	-0.539***	1.000					
Employees	0.054	-0.041	0.230***	1.000				
Leverage	-0.054	0.009	0.006	0.174***	1.000			
Analysts	-0.286***	-0.267***	0.369***	0.408***	0.089*	1.000		
Scaled_cf	0.132***	0.015	-0.085*	-0.135***	-0.100**	-0.126**	1.000	
ROA	-0.076*	-0.181***	0.132***	0.304***	0.094*	0.182***	0.171***	1.000

In table 5, we can see that the sample size for the dataset of hypothesis 2 is significantly smaller than that of the hypothesis 1. This is because these are only SPAC-merger IPOs (Type 1), of which the timeframe between initial IPO and the merger completion (and other company information) is known. Here we see that the average timeframe of a SPAC-IPO merger takes 217 days, and the median 153 days, which is reasonably in line with data found in articles, for example (KPMG, 2021), (SPAC Insider, 2023). The timeframe is winsorized to 99%/1%.

Table 5: Descriptive Statistics Timeframe Dataset

	N	Mean	Median	Std.Dev	Min	Max	Q1	Q3
Analysts	56	2.250	2.000	1.552	1.000	7.000	1.000	3.000
BIG4	56	0.018	0.000	0.134	0.000	1.000	0.000	0.000
Employees	56	5.822	5.774	1.129	2.564	8.630	5.020	6.481
Leverage	56	1.824	1.374	0.967	1.018	4.973	1.172	2.171
Restatement	56	0.839	1.000	0.371	0.000	1.000	1.000	1.000
ROA	56	-0.221	-0.183	0.242	-0.870	0.292	-0.360	-0.040
Scaled_cf	56	0.319	0.252	0.338	-0.277	0.978	0.041	0.644
Timeframe	56	217.338	153.000	165.076	46.000	663.900	113.000	259.500

In table 6, we see that timeframe and restatement might not be correlated and that the direction of hypothesis might not be correct. Moreover, it seems from the correlation table that the number of following analysts is highest correlated variable to restatements out of all the variables. Importantly, there are no variables which are highly correlated, and thus we can assume there is no multicollinearity in the variable of interest and control variables.

Table 6: Correlation Matrix Timeframe Dataset

	Timeframe	Restatement	BIG4	Employees	Leverage	Analysts	Scaled_cf	ROA
Timeframe	1.000							
Restatement	-0.063	1.000						
BIG4	0.291*	-0.308*	1.000					
Employees	0.058	-0.059	0.047	1.000				
Leverage	0.142	-0.287*	0.371**	0.191	1.000			
Analysts	0.185	-0.529***	0.329*	-0.033	0.321*	1.000		
Scaled_cf	-0.075	0.426**	-0.073	-0.417**	-0.094	-0.209	1.000	
ROA	-0.159	-0.046	-0.027	0.142	-0.081	0.245	-0.040	1.000

5. Research design and empirical results

5.1 Research design

In order to measure the reporting quality of firms, I have chosen to use restatements and late filings as proxies. This is in line with previous literature, e.g., (herath & Albarqi, 2017), (Hope, Thomas, & Dushyantkumar, 2013), (Kim, Park, Peterson, & Wilson, 2022). While there are more proxies for reporting quality, I found these to be the most relevant and feasible with regards to my research.

To test hypothesis 1, I will be using an ordinary least squares regression model to estimate the restatements:

$$(1): Restatements = \beta 0 + \beta 1 * Type + \gamma Controls + \varepsilon.$$

The dependent variable Restatements is the estimated chance of a restatement based on the type of IPO (traditional IPO = 0, SPAC-merger IPO = 1) and the control variables. I also made a second regression on this dependent variable using a year fixed effect.

I made a similar regression for estimating the late filings:

$$(2): Late\_filings = \beta 0 + \beta 1 * Type + \gamma Controls + \varepsilon.$$

The late_filings variable is the estimated chance of a late filing based on the type (traditional IPO = 0, SPAC-merger IPO = 1) of IPO and the control variables. I also made a second regression on this dependent variable using a year fixed effect.

I have chosen this model as other papers have used similar models and use the ordinary least squares regression model. I followed the paper paper by Kim et al (Kim, Park, Peterson, & Wilson, 2022) as a base for my empirical model.

To further test hypothesis 1, I added a cross-sectional on the Restatement and Late_filings variables using profitability as the split for the datasets. IPOs which are profitable in the financial year are put in one dataset, and IPOs which break even or made a loss are put in the other. This tests if the difference in reporting quality changes with profitability, and if the difference in reporting quality may be attributable to the difference in profitability.

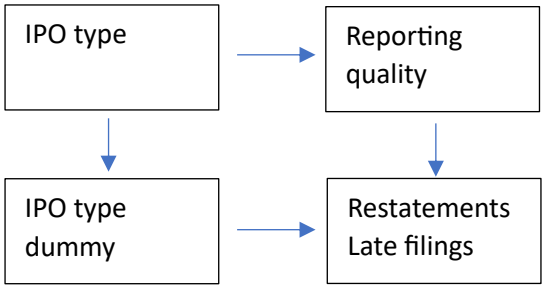
To test Hypothesis 2, I will also be using an ordinary least squares regression similar to those of hypothesis 1 to estimate the chance for a restatement:

$$(3): Restatements = \beta 0 + \beta 1 * Timeframe + \gamma Controls + \varepsilon.$$

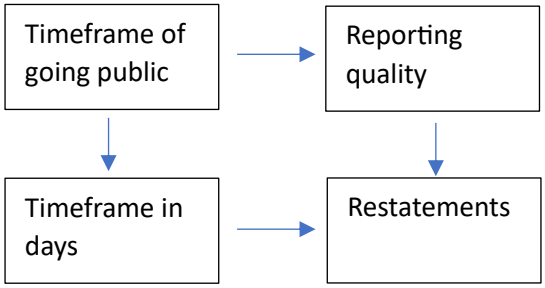
The dependent variable is the estimated chance for a restatement based on the timeframe of the IPO date to the completed merger in days, and the control variables. I also made a second regression on this dependent variable using a year fixed effect.

For clarification of the concept and how they are measured see the Libby boxes below.

Hypothesis 1:



Hypothesis 2:



5.2 control variables

Below the explanation for using each control variable are given to give insight as to why they are used in the model.

BIG4: The control variable BIG4 following (Kim, Park, Peterson, & Wilson, 2022) is used to control for the difference in restatements between companies that are audited by big 4 companies and those that are not. Prior literature has shown that the size of an auditing firm has a positive and significant effect on the audit quality (DeAngelo, 1981), and this in turn has a positive and significant effect on the financial reporting quality (Cohen, Krisnamoorthy, & Wright, 2004) , which is also the reason for audits to exist. In fact, auditor firm size is often used as a proxy for audit quality, e.g., (Francis & Schipper, 1999). A variation in reporting quality caused by the auditor would translate into a variation in restatements which are not caused by the type of IPO, which this control variable control for.

Analysts: The control variable Analysts following (Kim, Park, Peterson, & Wilson, 2022) is used to control for the difference in restatements caused by a difference in the number of analysts following the company. Prior literature has shown that an increased number of following analysts a firm has positively and significantly affects the reporting quality of the firm (Hope, Thomas, & Dushyantkumar, 2013). To combat the variation in reporting quality caused by the number of following analysts, the control variable Analysts is added.

ROA: The control variable ROA following (Blankespoor, Hendricks, Miller, & Stockbridge, 2021) is used to control for the difference in restatements caused by the profitability of the company, calculated as Net profit of financial the year / total assets of the financial year.

Employees: The control variable Employees is used to control for the difference in restatements caused by the difference in size/FTE's between companies. Prior literature has shown that the firm size has positive and significant effect on the financial reporting quality (herath & Albarqi, 2017). I have chosen to use the number of FTE employees as a measurement for firm size as there is a difference in industries in the sample which can cause a great (and partly unjust) disparity in firm size if measured with markers such as assets in capital intensive industries, which I try to circumvent.

Leverage: The control variable Leverage following (Kim, Park, Peterson, & Wilson, 2022) is used to control for the difference in restatements caused by the difference in leverage (amount of debt compared to equity). Prior literature has shown that leverage negatively and significantly affects reporting quality (Thi Hau Tran, 2022). To separate the variation in reporting quality caused by the leverage of a firm, the control variable leverage is added.

Scaled_cf: The control variable Scaled_cf following (Kim, Park, Peterson, & Wilson, 2022) is used to control for the difference in restatements caused by the difference in relative cash flow between the companies, calculated as total cash flow of the financial year / total assets of the financial year.

5.3 Fixed effects

In the empirical models I make use of year fixed effects following (Kim, Park, Peterson, & Wilson, 2022). The year fixed effects are used to control for the difference in reporting quality caused by the difference in years. Even though the dataset only includes a few different years, the environment of IPOs changes and has changed rapidly and drastically in small time periods. The changes in years include changes in laws and regulations, increased or decreased scrutiny from the SEC and other changes in regulatory/macroeconomic environments which could have influenced reporting quality or the perceived reporting quality.

5.4 Empirical results

Below the empirical results are shown of both the ordinary least squares regression with and without year fixed effect.

Table 7: The impact of the type of IPO on the reporting quality

	Restatement (1)	Restatement (1)	Late_filing (2)	Late_filing (2)
Type	0.665***	0.673***	0.467***	0.465***
	(0.045)	(0.045)	(0.044)	(0.042)
BIG4	-0.149***	-0.152***	-0.241***	-0.230***
	(0.031)	(0.031)	(0.034)	(0.036)
Analysts	0.004	0.004	-0.006	-0.008**
	(0.003)	(0.003)	(0.004)	(0.004)
ROA	0.004	0.009	-0.116***	-0.101***
	(0.036)	(0.035)	(0.032)	(0.032)
Employees	0.009	0.008	-0.0001	0.010
	(0.008)	(0.007)	(0.003)	(0.008)
Leverage	-0.004	-0.006	0.006	-0.005
	(0.006)	(0.006)	(0.005)	(0.005)
Scaled_cf	-0.003	-0.003	-0.046	-0.011
	(0.032)	(0.033)	(0.035)	(0.037)
Constant	0.120***		0.259***	
	(0.046)		(0.049)	
Year FE	No	Yes	No	Yes
Observations	563	563	682	682
R2	0.451	0.467	0.423	0.436
Adj. R2	0.444	0.457	0.417	0.428
Res. Std. Error	0.263	0.260	0.329	0.326

Note: The numbers in parenthesis are the standard error of the coefficients. 1%, 5% and 10% levels of statistical significance are indicated by ***, **, and *.

Table 8: Cross-sectional on the impact of the type of IPO on the reporting quality, based on profitability.

	Restatement Profit (1)	Restatement Loss (1)	Late_filing Profit (2)	Late_filing Loss (2)
Type	0.666***	0.643***	0.467***	0.465***
	(0.094)	(0.052)	(0.044)	(0.042)
BIG4	-0.077	-0.183***	-0.241***	-0.230***
	(0.060)	(0.037)	(0.034)	(0.036)
Analysts	-0.002	0.004	-0.006	-0.008**
	(0.006)	(0.004)	(0.004)	(0.004)
ROA	-0.281	0.007	-0.116***	-0.101***
	(0.326)	(0.041)	(0.032)	(0.032)
Employees	-0.030**	0.025***	-0.0001	0.010
	(0.013)	(0.009)	(0.003)	(0.008)
Leverage	-0.010	-0.005	0.006	-0.005
	(0.010)	(0.008)	(0.005)	(0.005)
Scaled_cf	-0.047	0.005	-0.046	-0.011
	(0.135)	(0.034)	(0.035)	(0.037)
Year FE	Yes	Yes	Yes	Yes
Observations	129	434	147	535
R2	0.458	0.491	0.402	0.455
Adj. R2	0.412	0.479	0.358	0.445
Res. Std. Error	0.247	0.261	0.297	0.331

Note: The numbers in parenthesis are the standard error of the coefficients. 1%, 5% and 10% levels of statistical significance are indicated by ***, **, and *.

Table 9: The effect of time on the reporting quality of SPAC-merger IPOs

	Restatement (3)	Restatement (3)
Timeframe	0.0002	0.0003
	(0.0003)	(0.0003)
BIG4	-0.400	-0.414
	(0.345)	(0.357)
Analysts	-0.096***	-0.095***
	(0.031)	(0.033)
ROA	0.089	0.081
	(0.184)	(0.200)
Employees	0.031	0.023
	(0.042)	(0.045)
Leverage	-0.037	-0.043
	(0.048)	(0.051)
Scaled_cf	0.407***	0.367**
	(0.137)	(0.157)
Constant	0.792***	
	(0.295)	
Year FE	No	Yes
Observations	56	56
R2	0.429	0.435
Adj. R2	0.346	0.324
Res. Std. Error	0.300	0.305

Note: The numbers in paranthesis are the standard error of the coefficients. 1%, 5% and 10% levels of statistical significance are indicated by ***, **, and *.

5.5 interpretation of the results

5.5.1 IPO type's effect on reporting quality

The empirical results are in line with hypothesis 1, the reporting quality of companies that went public via a SPAC-merger seems to be significantly lower than that of traditional IPOs. The size of this difference is also significant, by all four models the size of the effect the type of IPO has on the reporting quality proxies is at minimum 46.5%, all at a 99% confidence. This means that the reporting quality of companies that went public via a SPAC-merger is significantly lower than those that went public via a traditional IPO. The interpretation of the individual variables' effect on the dependent variables, and in turn reporting quality, is as follows:

Type: In both the non-fixed effects and fixed effects ordinary least squares regressions, the effect of the IPO type on the chance of a restatement and late filing is significant at a 99% confidence level. The size of the effect is also significant for all four regression models. All else equal, the chance for a restatement in the financial year increases by 66.5% if a company has gone public via a SPAC-merger, and an increase chance of a late filing in a financial year by 46.5%. The year fixed effect seems to not influence the significance of the effect or size of the effect, which signals that over the sample years, time has very little influence on the reporting quality proxies, and presumably reporting quality itself.

BIG4: The effect, and size of the effect, of having one of the big 4 auditors as auditor is significant for both restatements and late filings. For the restatement regression, the chance of a restatement in the financial year is estimated to decrease by 14.9% if the auditor is among the big 4. Similarly, for the late filing regression, the chance for a late filing in the financial year decreases by 23.0% if the company is being audited by a big 4 auditor. As with the IPO type, the significance and size of these effects seem to be relatively unaffected by time.

Analysts: The amount of following analysts does not seem to have a significant effect on the chance of a restatement or on the chance for a late filing. Although in the restatement regression including fixed effects it is significant to the 90% level, I consider this insignificant. This result in the late filing regressions is in line however with prior research, makes sense and would in a higher power setting most probably be significant (to a higher degree).

ROA: ROA seems to have no significant effect and size of effect on the chance for a restatement in the restatement regressions. However, in the late filings' regressions, ROA has a significant effect, and significant size of effect, on the chance for a late filing. From no net profit to a net profit equal to the total amount of assets, the chance for a late filing changes by 11.6%, which doesn't sound significant as that is a huge jump in profitability. However, translated in % change per standard deviation, this would be 4,98% change in chance for a late filing per standard deviation. This is, in my opinion, significant, but on the limit.

Employees: The effect and size of the effect of the number of employees on both the proxies for reporting quality are insignificant. This is in line with prior literature's proxies for size, e.g., (Kim, Park, Peterson, & Wilson, 2022).

Leverage: The effect of leverage on restatements and late filings seems to be insignificant both in size and effect. This is in line with prior literature, e.g., (Kim, Park, Peterson, & Wilson, 2022) (Klausner, Ohlrogge, & Ruan, 2022). However, in a higher power setting, this may change as there has been research showing that an increased financial leverage is connected to increased reporting quality (Thi Hau Tran, 2022).

Scaled_cf: The effect, and the size of the effect of cash flow, scaled to the assets, seems to be insignificant for both the chance of a restatement and the chance for a late filing. This is in line with prior literature, e.g., (Kim, Park, Peterson, & Wilson, 2022).

R2: The adjusted R squared of the regressions (FE regressions) are 0.444 (0.457) for restatement as a proxy, and 0.417 (0.428) for late filings. This means that roughly around half of the variation in restatements and late filings (and in turn reporting quality) can be explained by the model. For something as complex as reporting quality, and the reasons for why a company has a restatement and/or a late filing, I would consider this a good adjusted R2. Similar studies have either lower or similar (adjusted) R2s, for example Kim et al. (Kim, Park, Peterson, & Wilson, 2022).

Cross-sectional: The cross-sectional on profitability did not significantly change any effect or size of the effect of our variables of interest. This confirms the assumption that the disparity in reporting quality is not caused by the profitability of the IPOs as the effect the type of IPO has on the reporting quality stays relatively the same. The effect and size of the effect of employees on the reporting quality does seem to differ based on the profitability of the company. I only interpret the 99% significance safe to assume is correct here, in which the restatement loss regression predicts that in an IPO which breaks even or makes a loss, for each 1% increase in employees the chance for a restatement increases by 0.00025%. While the effect is significant to the 99% level, the size of the effect is, in my opinion, not significant.

5.5.2 Timeframe of going public's effect on reporting quality

The empirical results are not in line with Hypothesis 2, the reporting quality of SPAC-merger IPOs seems to be unrelated to the time they have to prepare for going public. The timeframe does not have a significant effect on the reporting quality, both in terms of the effect and size of the effect. This may however be caused by data artifacts or outliers due to the small size of the sample. The interpretation of the other variables is as follows:

Timeframe: As stated before, the effect and size of the effect of the timeframe on the chance of a restatement are not significant, although logically one would think that would have an obvious effect. The lack of effect may be caused by the outsourcing of the annual reports, or the size of the sample. A higher power setting may clear this up, although no effect being present may very well be the case.

BIG4: The effect of a big 4 auditor on the chance for a restatement is not significant in this sample, but the size of the effect is. With a higher power setting, I believe this would be significant both in effect and size, which would be in line with the results of hypothesis 1, and prior literature, e.g., (Kim, Park, Peterson, & Wilson, 2022).

Analysts: the number of following analysts has a significant effect, both in terms of size and significance of the effect, on the chance for a restatement, and thus reporting quality. For each additional following analyst, the chance for a restatement decreases by 9,4%. This is in line with the results of hypothesis 1 and prior literature.

Scaled_cf: The scaled cash flow has a significant (positive) effect, and size of effect on the chance for a restatement, and thus reporting quality. This changes slightly with the year fixed effect, in which it's only significant to the 95% level. One standard deviation away from the mean is an increased (higher cash flow) or decreased (lower cash flow) chance for a restatement by 12,4% (0,338 * 0,367). This however is the opposite from the inconclusive results in Hypothesis 1, and in prior literature the effect and size of the effect are not significant (e.g., (Kim, Park, Peterson, & Wilson, 2022)). This could very well be a data artifact or simply caused by outliers in the small sample size. Conversely, it could also be the case for SPAC-merger IPOs to be affected by it, and the traditional IPOs less or not at all. More research is needed to confirm this.

ROA, Employees and leverage: All three variables seem to have no significant effect and size of effect on the chance for a restatement. In hypothesis 1, these variables were also either not significant in terms of effects or size, or both. This is in line with prior data and literature e.g., (Blankespoor, Hendricks, Miller, & Stockbridge, 2021).

R2: The adjusted R2 on the hypothesis 2 regressions are 0,346 and 0,324 (year FE) which I find significant in terms of how much the model explains the variation in restatements. This means that roughly 32% of the variation in restatements can be explained by the model using the variable of interest and control variables. For something as complex of a concept as reporting quality, and measurable parameters such as restatements, I think an R2 of 0,428 and 0,434 is significant in size.

5.6 Implications and limitations

5.6.1 Implications

The research has implications for regulators and policymakers as they may want to look into more strictly regulating SPAC-merger IPOs to reduce the disparity in reporting quality. Not only to protect the investors, but also for the economy as a whole. One of the ways this could be done is by having more strict laws and regulations for what and how SPAC-merger IPOs have to disclose, and to always have an underwriter.

The research also has implications for the investors and owners of (private) companies which want to go public via a SPAC-merger IPO. Investors that want to or have invested in a SPAC-merger IPO will be more aware of the risks they are exposed to by investing in SPAC-merger IPOs and may want to discount their investments more heavily. Owners of companies that want to go public via a SPAC-merger will also be more aware of the risks they face when going the SPAC-merger route, and the increased scrutiny and/or laws and regulations they may face in the future because of it.

5.6.2 Limitations

While the number of IPOs is sufficient in the years 2019-2022, the amount of data available on these IPOs is limited, causing a part of the IPOs to be unused due to insufficient data. This decreases the sample size of the research and in turn the power of the research. While the power of the research is more than sufficient for hypothesis 1, the difference in reporting quality between SPAC-merger IPOs and traditional IPOs, this is per se the case for hypothesis 2. The sample size and power for hypothesis 2 may have caused some effects to be insignificant. In a higher power setting, the timeframe of a SPAC-merger IPO may have a significant effect on the reporting quality, but due to data availability this is not feasible at this moment in time.

Another limitation is that the data used in the research is only from the U.S.A., which may cause the results and inferences made from these to be invalid for other countries/jurisdictions, although I do not have any reason to assume this to be the case.

6. Conclusion

The sudden increase in companies going public via a SPAC (special purpose acquisition company) has left policy makers and regulators questioning how to deal with them. Furthermore, investors are not aware of all the consequences of using or investing in a SPAC. In this thesis, I researched the effect of the IPO type on the reporting quality of the firm, and the effect of the time a SPAC-merger IPO takes on the reporting quality.

I found that the IPO type has a significant effect on the reporting quality of a firm. More specifically, going public via a SPAC-merger significantly reduces the reporting quality of the firm, compared to going public via a traditional IPO. However, the time it takes a company to go public via a SPAC-merger seems to not influence the reporting quality of the firm. This may change in a higher power setting, which was not feasible for me.

These results are relevant for policy makers and regulators as the research clearly shows the decreased reporting quality of companies that go public via a SPAC-merger, and that they may have to be regulated more strictly. Furthermore, investors and owners of private companies that want to go public via a SPAC-merger may want to reconsider their choices as it poses bigger risks than they may think. While going public via a SPAC-mergers may have seemed like a better alternative to the traditional IPOs, I think any stakeholders in an IPO should seriously reconsider going down the SPAC-merger route. My research and results provide more evidence for this to be the case, and future research should be conducted on SPAC-merger IPOs with a higher power setting to clarify exactly why the disparity in reporting quality between traditional IPOs and SPAC-merger IPOs is so large.

Appendix

Appendix A. Variable Definitions

Variable	Definition
Restatement	A dependent variable for H1 which is a dummy variable signifying if a filing has had a restatement or not. No restatement = 0, restatement = 1 (Source: Audit Analytics & SEC.gov).
Late_filing	A dependent dummy variable for H1 which signifies if a company has filed (one of) their financial reports late in the financial year. No late filing = 0, late filing = 1 (source: Audit Analytics % SEC.gov).
Type	The independent dummy variable signifying if the company went public through a traditional IPO or SPAC-merger. Traditional IPO = 0, SPAC-merger = 1 (source SPAC-merger IPOs: https://stockmarketmba.com/listofcompaniesthathavemergedwithaspac.php. Source traditional IPOs: https://stockanalysis.com/ipos/).
BIG4	A dummy variable if the observation has been audited by a big 4 auditor (Deloitte, EY, PWC or KPMG).
Analysts	The number of analysts following the IPO at the time of the financial statement filing. This may influence the reporting quality while not being caused by the independent variables (Source: IBES).
NI	Net income, a variable signifying the profitability of the company (source: Compustat).
Assets	Assets of the company in the observation year which indicates the size of the company (source: Compustat fundamentals annual)
Employees	The natural log of the number of employees in the financial year, includes all employees, be it full-time, part-time, seasonal etc. (source: Compustat fundamentals annual).
Year	The financial year in which the information applies, and the financial year which had to be restated or not (source: Compustat, IBES, https://stockmarketmba.com/listofcompaniesthathavemergedwithaspac.php, https://stockanalysis.com/ipos/).
Liabilities	The amount of total liabilities on the balance sheet in the financial year, used to calculate the leverage (source: Compustat fundamentals annual).
Leverage	The financial leverage of the company in the financial year. Calculated as Total liabilities / Shareholders' equity.
Cashflow	The combined cash (financing, investing and operating cash flows) of the company in the financial year (source: Compustat fundamentals annual).
Scaled_cf	Cash flow of the company in financial year scaled by the assets of the company in the financial year. Calculated as Cashflow / Assets.
Revenue	The revenue of the company in the financial year (Source: Compustat fundamentals annual).
ROA	The return on assets in the financial year, calculated as the net profit of the financial year / the total assets of the financial year. This variable acts as a scaled variable for profitability.

Timeframe	The time between the IPO date of a SPAC-merger IPO and the completed merger date in days, calculated as completed merger date – IPO date (source: https://spactrack.io/spac-detail)

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