GLOBAL EXPANSION OF SPECIAL PURPOSE ACQUISITION
COMPANIES AS THE ALTERNATIVE APPROACH
TO THE TRADITIONAL IPO PRACTICE:
DOES REPEAT SPONSORSHIP MATTER FOR THE DEAL
OUTCOMES?

by

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A thesis submitted in partial fulfillment of the
requirements for the degree of

MA in Business and Financial Economics

Kyiv School of Economics

2022

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ACKNOWLEDGMENTS

The author wishes to express deepest gratitude to her Thesis Supervisor Professor Elena Besedina for her wise guidance, strong support, valuable recommendations and encouragement during all the process of writing this master thesis.

I want also to express great appreciation from the bottom of my heart to all the KSE team for providing the highest standards of education and for sharing their immeasurable knowledge and experience.

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LIST OF ABBREVIATIONS

SPAC/SPACs Special Purpose Acquisition Company/Companies

IPO – Initial Public Offering

NYSE – New York Stock Exchange

NASDAQ – National Association of Securities Dealers Automated Quotation

SEC – U.S. Securities and Exchange Commission

GLOSSARY

sponsor – person who creates SPAC

target company (syn. acquisition target) – an attractive merger or acquisition option chosen by a potential acquirer

merger – a process of integration two existing companies into one new company

de-SPAC period – period after merger of SPAC with target company

CHAPTER 1. INTRODUCTION

The number of SPACs listings in general IPO has dramatically increased in 2021 and became a mainstream in investment world during recent years. According to NASDAQ, there were 613 SPAC listings in the USA collectively raising $145 billion in public offerings in 2021. This is an increase of 91% compared to the previous year and is more than in 10 years combined.

Figure 1. U.S. IPOs vs. SPACs

Source: Bain & Company, Nasdaq Economic Research
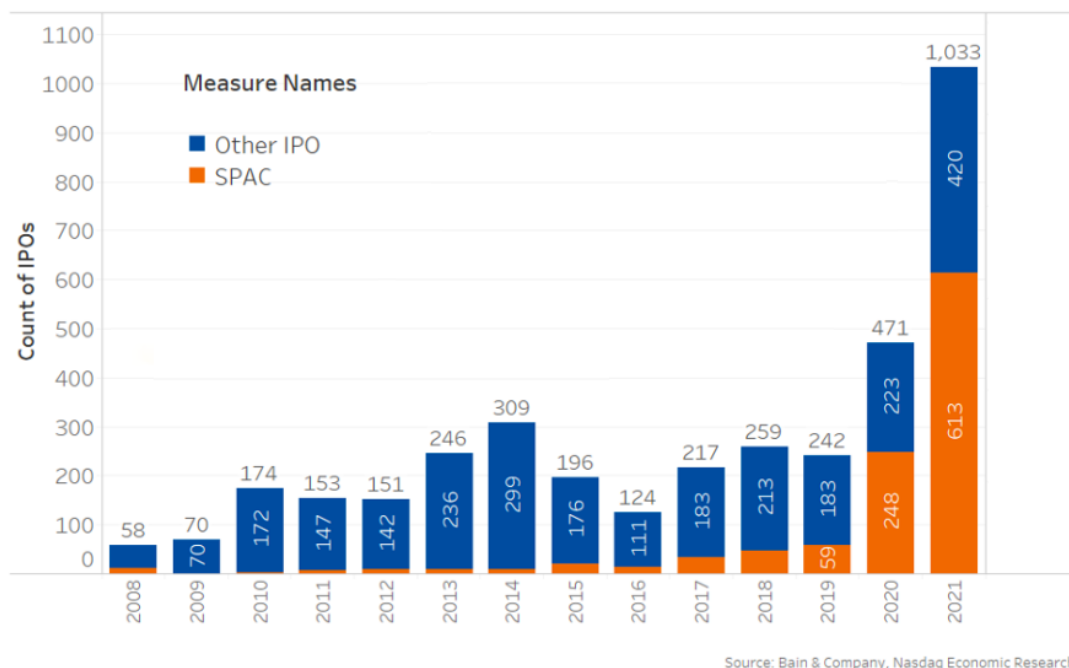
SPAC is not a new invention, but a well-known phenomenon in USA. SPACs are inheritors of blank-check companies of the 80s, which were used as an investment tool for fraudulent pump and dump schemes with "penny" stocks in USA. SPAC image was bleached by Investment banker David Nussbaum in collaboration with another investment professionals in 1993. They improved and refined SPAC with regard to past

mistakes and presented it to the public, as a new legal alternative approach to the traditional IPO for fund raising with enhanced investors protection mechanism. It successfully implemented for almost a decade until the bubble of dot-coms, since traditional IPO procedure again replaced SPAC. Since 2003 and up until recently the interest in SPACs was more than moderate but in 2020 SPAC got a new whirl in its evolution and again attracted attention of large underwriters and investors. Until 2008 SPACs securities were traded only Over-the-Counter Bulletin Board and American Stock Exchange in USA. Finally, SEC approved SPACs listings on NYSE and NASDAQ. As we can see from the past, SPAC is not something new that was just invented, but a well-known mechanism in USA, which has already been in existence for a long time. SPAC came a long way and underwent a lot of changes in the process of its evolution. In order to transform from ordinary shell company used in fraudulent schemes into a reputable investment vehicle.

SPAC procedure is a poorly researched area, which requires further analysis to assist the companies going public as well as other interested parties to be better informed about a merger with SPAC and to take more accurate investment decisions. The main problem is the availability of information and a lack of fundamental academic research in this field. In most cases, the available data provides too narrow and superficial look at SPACs. The most readily available information is presented in the form of advertisement articles written by legal and investment companies who deal with M&A and IPO listings, these articles as a rule, reflect only advantages of a merger with SPAC and do not reveal drawbacks. Many articles reflect benefits only from the point of view of main parties involved in SPAC process omitting other interested parties like ordinary retail investors, who are the main suppliers of capital for companies going public.

Before to diving into SPAC field, I would like to review the importance of going public approach, all available opportunities for that and current issues, which force fast growing markets to search another alternative ways to become public.

Raising additional capital and minimizing its cost are the most vital issues for almost every mature company, which reached valuation stage above one billion of USD. Every year hundreds of "unicorns" are faced with the choice: to remain private or to become publicly listed via traditional IPO procedure.

Following Damodaran classification, we would like to mention main arguments for and against staying private:

Pros:
- ownership concentrates in the hands of private shareholders;
- management of private company preserves a higher degree of control under company operations;
- private companies do not request public disclosure of full financial information;
- absence of requirement to file quarterly and annual specific regulatory filings;
- more confidentiality;
- avoidance of high payment costs associated with IPO procedure;

Cons:
- lack of liquidity;
- higher interest rates and higher cost of capital;
- less opportunities to raise additional capital;
- limited access to new investors and to investors' capital for the company;
- restraining company growth;

Arguments for and against becoming publicly listed company:

Pros:

- unlimited access to investors' capital;
- fundraising;
- higher level of liquidity for the investors and shareholders;
- more opportunities for growth;
- cheaper investment capital;
- lower interest rates;
- companies shares become means of payment and can also be used in employees compensation programs;
- more opportunities to hire top-rated management team;
- international recognition and brand name popularity;
- public trust and credibility;
- can be exit strategy for private shareholders;

Cons:

- high costs associated with IPO procedure and exchange fees;
- dilution of the ownership;
- complicated and time consuming procedure;
- additional financial reports filing requirements;
- requirement to submit specific regulatory filings quarterly and annually (material transactions, stocks trading by CEOs etc.);
- total financial and corporate transparency of the company before public including rivalries;
- uncertainty and probability of IPO failure due to lack of investors' interest;

The main question of this thesis: How does repeat sponsorship influence post-merger performance of SPACs?

The comparative analysis of post-merger outcomes of the sponsors who have no previous SPAC experience with those who have, was not done yet, so this research will enhance previous researches conducted by Vulanovic (2016) and other researches who analyzed post-merger survival of SPACs and will bring new insights into the role of sponsor in de-SPAC performance.

This topic was chosen, because sponsor is the key figure in SPAC process, on whom the success of all SPAC process as well as after-merger performance of a merged company is dependent to a large extent. Sponsor is a lead investor who contributes or claims to contribute special skills to the acquisition process, either because of knowledge of certain industry in which they plan to find a target or because of deal making skills in exchange for 20% equity stake in SPAC.

This study is aimed to assist different types of investors, especially retail investors to make more reasonable investment decisions and it will also be useful for private companies planning to go public in the sense of choosing the right option.

CHAPTER 2. INDUSTRY OVERVIEW AND RELATED STUDIES

We have clarified the importance of public listing for the company and now we can dive into the weeds, which options are available for the company to become publicly listed.

IPO. The most common and well-known option for the company to become publicly listed via traditional IPO procedure. According to Corporate Finance Institute's definition, an initial public offering is a procedure when a private company first sells its shares to the institutional and retail investors. After an IPO, private company becomes publicly listed on a recognized stock exchange.

In accordance with securities laws, a company may not lawfully offer or sell shares to the public unless the transaction has been registered with the Securities and Exchange Commission in USA or relevant Regulatory Authority in other countries.

The main hubs for IPO listings are:

Northern America:

- New York Stock Exchange
- NASDAQ

Asia:

- Hong Kong Stock Exchange
- Shenzhen Stock Exchange
- Stock Exchange of Thailand

Middle East:

- Saudi Stock Exchange

Europe:

- Euronext
- London Stock Exchange

- Deutsche Borse
- SIX Swiss Exchange

Traditionally, initial public listing procedure can be realized in two ways: IPO and direct listing.

IPO. The process can be divided into the following stages:

- Pre-marketing phase of the offering, when a company who made decision to go public chooses underwriter. Underwriter acts as an intermediary between issuing company and investors in order to assist the issuing company in selling initial shares.

- The next step is disclosure, due diligence, filing and submitting regulatory filings supervised and conducted by underwriter and receiving the final approval of SEC.

- After underwriting is completed, the issuing company and underwriter appoint the effective date and stipulate the share price.

- Allotment of shares.

The main advantage of involving an underwriter in IPO procedure from the point of view of a company going public is that underwriters have solid client base and can distribute most of the shares among their clients, which are institutional investors, such as different funds, insurance companies and other high net-worth individuals. The benefit for investors is that they are protected, to some extent, by careful diligence of the underwriter's company. Underwriter is also guarantor, that the information provided by the company is accurate and not misleading.

IPO procedure remained the main path for companies wishing to go public for a long time. However, during the last decade with a rapid growth of capital markets, IPO

process started to show signals of inefficiency. Let's revise the main reasons for concerns, which started to worry IPO going companies and investors.

- Inaccurate pricing of shares due to incorrect comparison with the peer companies;
- frequent underpricing of IPO shares on the offering date, which means getting less proceeds from IPO for issuing company;
- inability to provide issuing company with after-market support in case of its large capitalization;
- standardized underwriter's approach to filling IPO prospectuses;
- overpricing the fees by underwriters for the services provided;
- long time frames to become publicly listed;
- losing confidence of retail investors to underwriters' investment recommendations and forecasts;

Direct listing. The company can go public through direct listing, also known as, Direct Placement or Direct Public Offering procedure executing without assistance of underwriter.

Main differences between direct listing and traditional IPO:

- company going public via IPO, issues additional shares, meanwhile private company going public through direct listing sells existing shares;
- company is listed without participation of underwriter;
- absence of lockup period for existing shareholders, in which they are not allowed to sell their shares at public markets;
- market itself sets the price for shares;
- much lower costs associated with direct listing in comparison to IPO;

One of the main advantages of direct listing for issuing company is providing existing shareholders with "real liquidity". As in case of IPO underwriters, guiding considerations of maximum remuneration boost share price, which can finally lead to creation of "artificial liquidity". Another important benefit is avoidance of paying high underwriters fees, which compose approximately 5.5% of the offering for IPO, which is slightly higher in comparison to 2.5% on average for direct listing. This option can be very attractive for high-profile private companies with strong and recognizable brand already well known to the public, where otherwise will pose high risks associated with the lack of demand from the investors.

Referring to Klausner (2020) procedure of merger with SPAC includes the following steps:

- Sponsor with or without primary founders incorporates SPAC. As a rule, sponsor initially invests USD 25,000 in SPAC and gets 25% stake, which later in case of merger with a target company, will be converted into 20% stake of a target company.
- SPAC goes through IPO and becomes publicly listed company, that sells units
At a nominal $10 per unit, which consists from one share and warrant (document which entitles owner to buy part of share at predetermined price). The proceeds from SPAC IPO are placed in (escrow) trust account and the minimum of 80% of the proceeds can be spent only for merger with a target company.
- SPAC must exercise merger with a target company during legally set time frame, as a rule it is 24 months.
- Merger with a target company or failure to merge. In case of failure to exercise merger, all the proceeds from SPAC IPO return to its public shareholders at pro rata basis.
- Name changed to name of a merged company. Merged company is traded under its ticker on a stock exchange.

- Realizing warrants redemption rights by shareholders in case of reaching warrants strike price.

Klausner (2020) concluded that the dilution embedded in SPAC structure from the beginning, decreases value of SPAC shares. The price of SPAC share until and including the merger costs 10$, but after the merger, holders of SPAC securities are starting to exercise their redemption rights, which leads to dilution of SPAC capital. As the result, SPAC share price drops. Finally, SPAC holds cash at approximately $6.67 per share. In relation to it, the cost efficiency of SPAC reaches for the expense of target shareholders and ordinary investors, who buy SPAC shares in after – merger period. Thus, the total IPO costs, including "Hot" or Pop IPO, are roughly 20% to 22% of cash raised in IPO. This is much less than the 50.4% median cost of a SPAC. So, if target shareholders were to bear the full burden of the dilution embedded in SPACs' structure, their cost of raising funds through a SPAC would be far greater than the cost of an IPO.

As the rule, most of SPACs in after the merger have negative returns. However, separate category of SPACs labeled as "high quality" SPACs, which are sponsored by famous business figures perform much better in the short run, but in the long run they also have negative performance.

Next, I consider studies, which analyzed different aspects of SPAC. Klausner (2020) studied structure of total SPAC costs and concluded that direct listing is more attractive way for fund raising in comparison to traditional IPO or SPAC procedure, because the company bears much less costs associated with going public procedure.

Vulanovic (2016), similar to other previous researchers, found that SPAC post-merger portfolio buy and hold strategy shows substantially negative performance reaching -40%. The reason for that is high motivation of stakeholders, to collect their equity compensation and underwriting fees, even at the expense of approving the bad deals. Vulanovic (2016), also determined that SPAC has the highest previously reported in IPO literature failure rate of 58.09%, which is slightly higher in comparison to 55.10%

for general companies. Vulanovic (2016) used logistic regression in his research, where dependent variable was coded, as one for surviving SPACs and zero for SPACs that failed. The set of institutional and market characteristics were used as independent variables to determine survival likelihood of post-merger SPACs. According to Vulanovic (2016), higher one year post-merger returns, dividend payout policy and managerial upfront warrant purchases have positive impact on survival likelihood of SPAC. Higher number of executives in the team also has a positive influence on SPAC survival rate. Meanwhile bank financing of merger causes the opposite effect. Vulanovic (2016) also concluded that probability of survival is higher for those SPACs who have merged with a foreign private company.

Lin (2021) introduced a concept of SPAC sponsors network centrality to research how high or low sponsors connections in the professional network, can influence the probability of SPAC merger success and after merger performance. They took four parameters to measure the quality of SPAC sponsors network taken from graph theory: eigenvector centrality, betweenness, degree and closeness. Eigenvector centrality measures how well the sponsor is connected with other key VCs and PE managers in the network. Betweenness measures whether a sponsor lays on the shortest path between other VCs and PEs in the network. Degree is the total number of direct connections a SPAC sponsor has with all other VCs and PEs in the network. Closeness is the inverse of the sum of the shortest distances between sponsor and other members in the network.

They combined these four components into one common metric with almost equally weighted components of all four centrality variables to construct one variable called Net Aggregate. First, they measured Net Aggregate at the individual level and average Net Aggregate among managers within each SPAC to obtain Net Aggregate, a centrality measure at the company level. SPAC sponsors with higher network centrality raise more funds from IPO and PIPE investors, find targets within shorter time frame and have higher long-term stock returns in de-SPAC period in comparison to sponsors with lower network centrality. Their research confirms that professional network is one

of the major components of SPAC success, similarly to VCs and PEs funds. The most connected SPACs managers are also very outstanding business figures who have held offices in the C-suite of Fortune 500 corporations.

Research of Lin (2021) proves that quality of sponsors of a SPAC are crucial for providing its sustainable growth in many ways. Starting from financing the deal, finding the suitable target, to active involvement in post-merger management. SPAC management team can be value adding or value destroying for its investors.

According to Gang (2021), SPAC IPO investors on average have earned 12% per year, but returns for de -SPAC investors are mixed:

-7.3% in the first year on common shares and 64.4% on warrants. Investing in period of SPAC IPO can be considered as an investment in default-free underpriced convertible bond. They found that warrant investors have constantly outperformed common share investors.

According to the study of Gang (2021), sponsors play the most important economic role as the main suppliers of capital for young growing companies and also serve in the capacity of mentors for them.

Research of Gang (2021) is also in line with Klausner (2020) previous research, that costs of going public via merger with SPAC is much more costly in comparison to traditional IPO. Median costs between 2015 and 2021 were 15.1% for merging with a SPAC in comparison to only 3.3% for traditional IPO. Research of Gang (2021) states that even when SPAC has a negative return in the short run, at the same time the return of an average sponsor reaches about 400%. Gang (2021) used Fama and French (1993) three-factor regression to analyze how deSPAC period common share returns impact standard asset pricing factors and to observe stock performance of merged companies during deSPAC period. They regressed equally weighted return of a portfolio of deSPAC common shares on return on the value-weighted CRSP index, one-month T-bill rate,

difference in return of small and big firms and difference in return of high book-to-market stocks and low book-to-market stocks.

The following results were obtained: common shares underperform by 0.9% to 0.9% per month. Both equally weighted and value-weighted portfolios have a positive influence on SMB.

Summarizing previous studies, we can see that comparative analysis of post-merger outcomes of the sponsors who have no previous SPAC experience with those who have, was not done yet. So this research will enhance previous research conducted by Vulanovic (2016) and other researchers who analyzed post-merger survival of SPACS and will bring new insights into the role of sponsor in de-SPAC performance.

CHAPTER 3. METHODOLOGY

This part of thesis includes empirical approach, which was used. The main subject of this research is to observe how repeat sponsorship influences post-merger performance of SPAC and make a comparison with one-time sponsors. Based upon previous research conducted by Vulanovic (2016), similar methodology was chosen, because in his research, Vulanovic (2016) focused on the factors, which affected post-merger survival of SPAC.

All other researchers also confirm a vital role of a sponsor in the success of the whole SPAC process and its post-merger survival. This is not surprising, as mentioned before, the sponsor keeps a large 20% stake in pre-IPO company, which is later converted into 20% of the merged company. Moreover, the sponsor also is one of the main purchasers of SPAC warrants during pre-IPO stage, which can later be sold for a large profit, in case of a successful completion of a merger and upon reaching a strike price. Sponsor's negotiation skills and industry experience are also crucial for finding and negotiating good deals. Sponsor's active involvement in post-merger SPAC management, can also significantly increase probability of the company's future growth and minimize the level of redemptions.

We investigate the SPAC performance using three dependent variables: one and two years after- merger return, and dummy variable if SPAC still trades which we assigned 1 and if SPAC fails to trade which we assigned 0.

Our main variable of interest is sponsorship. We divided sponsors into two categories. Sponsors who did not have previous SPAC experience and realized only one merger with SPAC, we classified as one-time sponsors and assigned them value 0, and those who already had previous SPAC sponsorship experience and realized more than one SPAC, we classified as repeat sponsors and assigned them value 1.

In the analysis we also control for institutional and merger characteristics divided into two groups:

The first group of institutional characteristics contains pre-IPO and IPO characteristics, such as proceeds from SPAC IPO in millions of USD, total percent of proceeds from SPAC IPO in escrow account, share of warrant per unit and underwriting fee. We also control for industry classification of merged company.

The second group comprises merger characteristics, such as merger size, merger share price and number to merger days.

The first two models evaluate how institutional characteristics influence returns. Model 1 uses one year after merger return (Oneyearaftermerg) while Model 2 uses two-year after merger return (Twoyearaftermerg):

$$RETURN = \alpha + \beta_1 sing\_rep + \beta_2 prosSPACIPO + \beta_3 warperunit$$
$$+ \beta_4 as.factor(industry) + \beta_5 wstrikepr + \beta_6 mergsize$$
$$+ \beta_7 mergshpr + \beta_8 anmergdays + \beta_9 undfee + u \quad (1)$$

Where:

RETURN is dependent variable measured either as

　oneyaftmerg is the one year after merger return (model 1)

　twoyaftmerg is the two years after merger return (model (2)

sing_rep is the variable of the interest and is a dummy variable taking values 0 for one-time sponsors (base category), and 1 for repeat sponsors who realized minimum 2 and maximum 4 mergers with SPAC. We assume that repeat sponsor will have positive impact on SPAC post-merger performance because of the experience in conducting such deals.

prossSPACIPO is the amount of proceeds from SPAC IPO. Following Vulanovic (2016) and Lin (2021), we expect that proceeds from SPAC IPO will have positive impact

on SPAC post-merger performance, because larger amount of proceeds gives an opportunity to find better target, which in the long-run, can be more profitable for its investors.

warperunit is the warrant share per unit %. We expect that warperunit will have negative impact on SPAC post-merger performance because warrants contribute to dilution of company's capital in case of exercising redemption rights by its holders, which in turn decreases company's value on the market, affects ownership rights of existing shareholders and reduces earnings per share. Hence, more warrants in circulation means greater probability of dilution.

wstrikepr is the warrant strike price. We expect that wstrikepr will have positive impact on SPAC post-merger performance, because warrant's strike price is in direct ratio with the price of company shares.

mergsize is the merger size. We expect that mergsize will have positive impact on SPAC post-merger performance, because larger merger size means that the company is more attractive for the investors and they have expectations that the company has good prospective and will be profitable investment for them in the long-run.

mergshpr is the merger share price.

We expect that **mergshpr** will have negative impact on SPAC post-merger performance, because, as a practice shows, it is a momentum price jump. The price per share is more likely to drop to its previous values or even lower, right after the merger announcement.

anmergdays is the variable announcement to merger days.

We expect that anmergdays will have negative impact on SPAC post-merger performance. Following findings of previous researchers, better targets were found within shorter time frame.

undfee is the variable underwriting fee. We expect that undfee will have positive impact on SPAC post-merger performance, as underwriter fee directly depends on the amount of IPO proceeds. Larger portion of the underwriter fee means that larger amount of proceeds was raised from IPO.

The last model is estimated using logit regression since dependent variable is a binary variable:

$$\text{trade\_success} = \alpha + \beta_1 \text{sing\_rep} + \beta_2 \text{prosSPACIPO} + \beta_3 \text{warperunit}$$
$$+ \beta_4 \text{as.factor(industry)} + \beta_5 \text{wstrikepr} + \beta_6 \text{mergsize}$$
$$+ \beta_7 \text{mergshpr} + \beta_8 \text{anmergdays}$$
$$+ \beta_9 \text{oneyaftmerg} + \beta_{10} \text{twoyaftmerg} + \beta_{11} \text{undfee} + u \quad (2)$$

trade_success is the binary variable taking value 1 if company still trades and 0 if company fails to trade.

Other variables and their expected effect on the dependent variable are as outlined for the first two models.

CHAPTER 4. DATA

Following Vulanovic (2016) we collected a sample of 80 sponsors and SPAC institutional data. We have taken the data for the period from 2013 till 2021. Our sample contains data of 40 one-time sponsors, who realized only one merger with SPAC and 40 repeat sponsors, who realized a minimum of 2 and maximum of 4 mergers with SPAC together with SPAC institutional data. Our sample totally contains 139 observations and 17 variables. The data for the analysis was collected manually. We used Form S-1 to collect data for underwriting fee, warrant per unit and warrant strike price. We collected data for size of the merger deal and ticker of merged company from Form 425. We took data after-merger returns for one and two years from Yahoo Finance. We used SPAC Research Database to collect data for the amount of proceeds in escrow account, announcement to merger days, date of SPAC IPO and industry of target company. Sample also contains column **trade_success** with binary variable taking values 1 if SPAC still trades and 0 if SPAC fails to trade.

The graph below shows heterogeneity across industries among companies of one-time and repeat sponsors. We can observe that some heterogeneity is present among one-time and repeat sponsors. Among repeat sponsors heterogeneity is slightly higher.

Figure 2. Heterogeneity among repeat and one-time sponsors.

Heterogeineity across repeated and singles
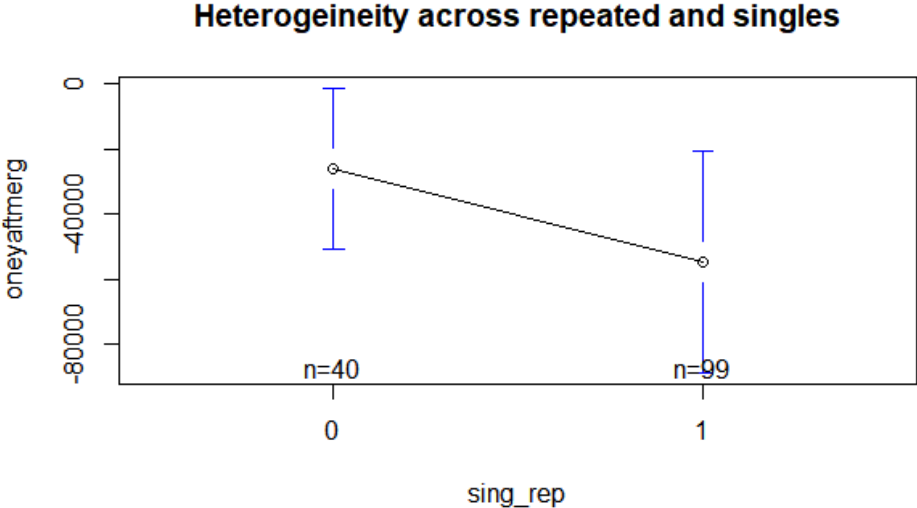
Figure 3. Pie chart industry classification
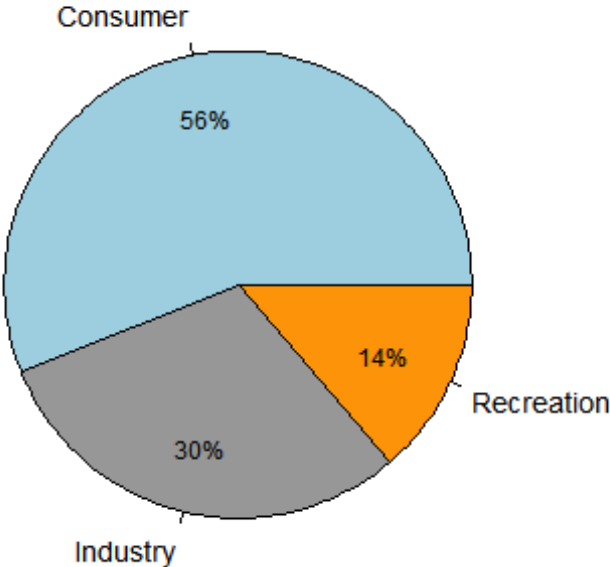
As we can observe, industry composition is diversified, the largest number of companies (56%) belongs to technology industry, 30% companies are from the

manufacture sector. The least popular merger with SPAC is among companies from recreation industry - only 14%.

Table 1. Trade or fail

	trade_success	
sing_rep	0	1
0	0.130	0.160
1	0.058	0.650

Among merged companies, the share of companies, which fail to trade is slightly higher 13% for of one-time sponsors in comparison to 5.8% for repeat sponsors companies. Share of repeat sponsor companies is still trading much higher 65% in comparisson to only 16% for one-time sponsor companies.

Table 2. Summary statistics of sponsors

Statistic	N	Mean	St. Dev.	Min	Max
data_spac.prosSPACIPO	139	322.09	275.33	40.00	2,070.00
data_spac.warperunit	139	0.51	0.32	0.00	1.00
data_spac.mergsize	139	2,130.54	2,917.42	53.00	19,591.00
data_spac.anmergdays	139	326.84	206.20	45	1,090
data_spac.mergshpr	139	12.37	6.27	0.00	57.37
data_spac.oneyaftmerg	139	-46,390.71	149,428.60	-1,157,332.00	415,057.00
data_spac.twoyaftmerg	139	-35,824.90	337,636.80	-1,099,914.00	3,382,510.00

Average proceeds from SPAC IPO is 322 million, the highest proceeds from SPAC IPO is 2 billion. Average share of warrant per unit is 51%. Average merger size is 2.1 billion, comparing this figure with the proceeds from SPAC IPO we can assume that sponsors are highly interested in successful merger with the target company and on average attract 6 times more additional capital from PIPE investors to exercise the merger. Average

share price on the date of announcement of merger is 12, which is slightly higher than usual share price, which is 10. The maximum share price on this date is 57. Average merger time is around one year. Average one year after-merger performance is -46,390.71 million. Second year after-merger performance still remains negative -35,824.90 million, but shows positive increasing trend.

CHAPTER 5. RESULTS

Table 3 presents results for Model 1, where one-year after merger return is used as dependent variable:

Table 3. Results of Model 1

```
================================
           Dependent variable:
           --------------------------
                 oneyaftmerg
-------------------------------------------------------
  prosSPACIPO        -156.227**
                      (73.380)


  sing_rep          -13,793.950
                    (33,261.620)


  warperunit         41,083.840
                    (58,303.300)


  Industrial         35,547.000
                    (30,147.240)


  recreation         23,746.790
                    (38,899.890)


  prosescrow         -1,183.001
                    (22,579.560)
```

Table 3. Results of Model 1

```
=================================
                Dependent variable:
                --------------------------
                     oneyaftmerg
--------------------------------------------------------


undfee                -6,649.291
                      (10,319.210)


wstrikepr             -2,914.778
                       (5,350.640)


mergsize                 9.837
                        (6.594)


mergshpr              -2,300.915
                       (2,349.446)


anmergdays               2.781
                        (73.687)


Constant              167,468.600
                      (2,279,948.000)


----------------------------------------------------------------
Observations              139
R2                       0.094
Adjusted R2              0.015
=================================
Note:            *p<0.1; **p<0.05; ***p<0.01
```

We can observe that one-time or repeat sponsor does not have influence one-year after post-merger performance. We got opposite to expected negative effect from proceeds from SPAC IPO, which has negative impact on one year after-merger return on 5% level of significance. The reason for that can be future after-merger redemptions. We have evidence to assume that other variables in our model do not impact one year post-merger performance.

We conducted Breusch-Pagan test for OLS regression to test for heteroscedasticity.

Table 4. Results studentized Breusch-Pagan test

_____

BP = 4.0716

df = 9

p-value = 0.9066

the p-value is about 0.90,

H0: Homoscedasticity is present (the residuals are distributed with equal variance)

Ha: Heteroscedasticity is present (the residuals are not distributed with equal variance).

We fail to reject H0. According to the results of Breusch-Pagan test, we do not suspect great heteroscedasticity among data.

Table 5 presents results for Model 2, where two-year after merger return is used as dependent variable.

Table 5. Results of Model 2

```
=================================
                Dependent variable:
                --------------------------
                      twoyaftmerg
----------------------------------------------------------
prosSPACIPO          -420.004***
                      (144.298)


sing_rep             -13,127.420
                      (64,313.790)


warperunit           -42,671.970
                      (112,877.500)


industrial           -52,677.140
                      (58,570.460)


recreation           -25,910.220
                      (75,275.120)


undfee               -11,494.820
                      (19,972.030)


prosescrow           -24,160.110
                      (43,630.170)
```

Table 5. Results of Model 2

```
=====================================
                    Dependent variable:
                    -------------------------
                         twoyaftmerg
-----------------------------------------------------------

wstrikepr               8,319.742
                       (10,350.930)



mergsize                 65.499***
                        (12.852)


mergshpr               -15,031.420***
                       (4,556.864)


anmergdays               36.088
                        (142.383)


oneyaftmerg              0.739***
                         (0.171)


Constant              2,604,767.000
                      (4,405,558.000)


-----------------------------------------------------------
Observations              139
R2                       0.342
Adjusted R2              0.280
=====================================
Note:                *p<0.1; **p<0.05; ***p<0.01
```

One-time or repeat sponsor also has no impact on two-years after merger performance. Proceeds from SPAC IPO also have negative influence for two years after-merger return on 1% level of significance, which again, has opposite negative effect which contradicts to our previous assumptions. The reason for that can be future after-merger redemptions. Merger size, according to our assumptions, has positive influence on two years after-merger performance at the 1% level of significance. With increase merger size by one million holding other variables fixed, two years after-merger income will increase approximately by 65 million. Merger share price, according to our assumptions, has a negative impact on two years after-merger performance at the 1% level of significance. The reason for that can be, that immediately at the merger announcement date, the price artificially pumps on the wave of good news, but right after the merger announcement, price drops to its previous values. One-year after-merger performance has positive impact on two years after-merger performance at the 1% level of significance. The result of this variable was expected, as results of present performance are always highly dependent on previous financial results. If we increase one year post-merger income by 1 million holding other variables fixed, two years after-merger income will increase by approximately 0.74 million.

Table 6 presents results for Model 3 where dummy variable trade or fail is used as dependent variable.

Table 6. Results of Model 3

	Dependent variable:
	trade_success
prosSPACIPO	0.002
	(0.002)
sing_rep	1.884***
	(0.609)
warperunit	-0.339
	(1.040)
industrial	-0.288
	(0.606)
recreation	0.637
	(0.931)
wstrikepr	-0.084
	(0.202)
mergsize	0.00000
	(0.0002)
mergshpr	0.120
	(0.074)
anmergdays	-0.002
	(0.001)
oneyaftmerg	-0.00001
	(0.00001)
twoyaftmerg	0.00000
	(0.00000)
Constant	0.249
	(2.593)
Observations	139
Log Likelihood	-48.901
Akaike Inf. Crit.	121.801
Note:	*p<0.1; **p<0.05; ***p<0.0

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In Model 3 repeat sponsorship is statistically significant and seem to have an important impact on SPAC further rate of survival at the 1% level of significance. All other factors fixed, if sponsor is repeat sponsor, then the results of regression reveal odds in favor of survival being about twice as much in comparison to the base category one-time sponsor. Thus, the probability of survival if sponsor has previous SPAC experience is about 66% and the probability of fail is about 33%.

CHAPTER 6. CONCLUSIONS AND RECOMMENDATIONS

According to the results obtained in the first and second OLS models, we can assume that one-time or repeat sponsorship has no direct impact neither on the first, nor on the second year after-merger performance. Analyzing factors, which can influence SPAC first and second year performance, we can observe that another IPO and merger characteristics have matter for financial results of merged company. For the first year of post-merger performance only proceeds from SPAC IPO matter. For the second year post-merger performance, besides the proceeds from SPAC IPO, such characteristics as merger size and merger announcement share price can also influence SPAC second year post-merger performance. Merger size, as expected, has positive impact on second-year post merger performance. Increase in merger size by one million can contribute to increase in two years after-merger income by 65 million. Meanwhile proceeds from SPAC IPO and merger announcement share price have negative impact. Performance in the previous year has the greatest impact on post-merger performance of the second year. For logit model, we obtained the results which slightly differ from Vulanovic (2016), in our model only dummy variable one time or repeat sponsor is statistically significant for SPAC post-merger survival, other variables are not statistically significant. According to the results which we obtained, the probability that SPAC will survive, if its sponsor is a repeat sponsor is about 66% against 33% probability of its failure. Following Vulanovic (2016) study, other variables also have influence on SPAC post-merger survival. Announcement to merger days is statistically significant at 5% level and has negative effect on SPAC post-merger survival. Underwriter fee is also statistically significant at 1% level and has positive impact on SPAC post-merger survival. One year after merger return is also statistically significant and has negative impact on SPAC after-merger survival at 5% level of significance.

Based on the results of our research, we can conclude that repeat sponsorship is crucial for SPAC further post-merger survival. Our results indirectly prove the findings of other researchers. Research of Lin (2021) confirms that the quality of sponsors of SPAC is vital for its further growth. In addition, the quality of sponsor can only be assessed by a number of successful mergers with SPAC realized by him and positive performance of merged companies in the long run. Klausner (2021) found that SPACs which were sponsored by more skilled sponsors, members of the so-called "SPAC Mafia" had better post-merger performance.

Since there are different interested parties involved into SPAC process, our recommendations will be addressed to different participants. First of all, we would like to warn retail investors, that investing in SPAC shares bears the same risks as investing in traditional IPO companies, which itself is more risky than investing in already existing public companies. That is because investors can have only limited access to the data about previous performance of private companies and will make their decisions in uncertainty relaying as a rule mostly on positive future forecasts. Based upon results of our research, we would like to recommend retail investors to pay special attention to SPACs sponsored by repeat sponsors in their decision-making process. It does not eliminate all the risks connected with such investments, but can substantially decrease them. If they invest in de-SPAC companies, we would also like to recommend that they pay attention to post-merger performance of such companies for a minimum of several years. For the owners of private companies seeking merger with SPAC, we would also like to recommend that they concentrate more on SPACs sponsored by sponsors having previous SPAC experience, which have already realized a number of successful mergers with SPAC, their merger size and post-merger performance of such companies. The merger size is an important metric for several reasons. First, because it proves that a sponsor is able to attract the additional necessary investment from PIPE investors, in case the proceeds from SPAC IPO are not enough to exercise the merger and second, according to the

results of our research, merger size can substantially contribute to the improvement of post-merger SPAC performance.

Summarizing everything that was outlined we highly recommend all interested parties to focus on SPACs which are sponsored by repeat sponsors.

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```
library(dplyr)
library(readxl)
data_spac            <-            read_excel("C:/Users/DELL/Desktop/master
thesis/repnonrepsponsor2.xlsx")
View(data_spac)
View(data_spac)
dim(data_spac)
######################### data analysis and visualization
##############################################################
summary(data_spac)
head(data_spac,n=5)
library(stargazer)
stargazer(data_spac, type = "text")
summary(data_spac)
head(data_spac,n=5)
library(stargazer)
stargazer(data_spac, type = "text")
#library(Hmisc)
#describe(data_spac)
View(data_spac)

table(data_spac$industry)
###################################
data_spac$industry <- case_when(data_spac$industry =='industrial' ~
'Industrial',
                        data_spac$industry == 'auto' ~ 'Industrial',
```

```
                    data_spac$industry == 'energy' ~ 'Industrial',

                    data_spac$industry =='consumer' ~ 'Consumer',

                    data_spac$industry =='health' ~ 'Consumer',

                    data_spac$industry =='financial' ~ 'Consumer',

                    data_spac$industry =='technology' ~ 'Consumer',

                    data_spac$industry =='media_ent' ~ 'Recreation',

                    data_spac$industry =='travel_hosp' ~ 'Recreation',

                    data_spac$industry =='real_estate' ~ 'Recreation')



#View(data_spac)
table(data_spac$industry)
# in percents
percent<-prop.table(table(data_spac$industry))
signif(percent,digits=2)
###Pie chart:

library(lessR)
PieChart(industry, hole = 0, values = "%", data = data_spac, color = "black",
values_color = "black",
        fill = c("lightblue", "darkgrey","orange"), main = "")
table(data_spac$industry)/sum(table(data_spac$industry))
table(data_spac$trade_success)
with(data_spac, table(sing_rep, trade_success))
### Non rep: fail:18; still trade 22
### Rep:fail:8; still trade 91;

#library(Hmisc)
```

```
#describe(data_spac)


library(corrplot)
library(tidyverse)
data1<-data_spac %>% select(sing_rep, prosSPACIPO, anmergdays,
oneyaftmerg, twoyaftmerg)
corrplot(cor(data1), method = "number")


library(car)
scatterplot(oneyaftmerg~prosSPACIPO|industry,          boxplots=FALSE,
smooth=TRUE, reg.line=FALSE, data=data_spac)
scatterplot(twoyaftmerg~prosSPACIPO|industry,          boxplots=FALSE,
smooth=TRUE, reg.line=FALSE, data=data_spac)
library(gplots)
plotmeans(oneyaftmerg ~ industry, main="Heterogeneity across industry",
data=data_spac)
plotmeans(twoyaftmerg ~ industry, main="Heterogeneity across industry",
data=data_spac)



# histograms
library(ggplot2)
data_spac$industry <- as.factor(data_spac$industry)
graph1 <- ggplot(data_spac, aes(x = sing_rep)) +
  geom_bar(aes(x = sing_rep,  fill = industry))+
  theme(text = element_text(size = 8))+
  ggtitle("")+
  geom_text(aes(label = ..count..), stat = "count", vjust =-0.3, colour = "red")
```

graph1

industries present (colored be repeated/singles)
graph11 <- ggplot(data_spac, aes(x = industry)) +
  geom_bar(aes(x = industry, fill = as.factor(sing_rep)))+
  theme(text = element_text(size = 8))+
  ggtitle("")+
  geom_text(aes(label = ..count..), stat = "count", vjust =-0.3, colour = "red")
graph11

industries present (colored by still trading or not)
graph13 <- ggplot(data_spac, aes(x = industry)) +
  geom_bar(aes(x = industry, fill = as.factor(trade_success)))+
  theme(text = element_text(size = 8))+
  ggtitle("")+
  geom_text(aes(label = ..count..), stat = "count", vjust =-0.3, colour = "red")
graph13
##
######## investigate how IPO influences Return
##

plot5   <-   ggplot(data_spac,   aes(x=prosSPACIPO,   y=oneyaftmerg,
color=sing_rep))+
  geom_point(size=0.3)+
  geom_smooth(method=lm)
plot5

```r
plot6     <-     ggplot(data_spac,     aes(x=prosSPACIPO,     y=twoyaftmerg,
color=sing_rep))+
  geom_point(size=0.3)+
  geom_smooth(method=lm)
plot6
#########################################################
####### investigate how mergesize influences Return
#########################################################

plot7 <- ggplot(data_spac, aes(x=mergsize, y=oneyaftmerg))+
  geom_point(size=0.3)+
  geom_smooth(method=lm)
plot7


plot8 <- ggplot(data_spac, aes(x=mergsize, y=twoyaftmerg))+
  geom_point(size=0.3)+
  geom_smooth(method=lm)
plot8
# here dynamics is even positive

# Let's see how return after one year differs through industry
data_spac %>%
  group_by(industry) %>%
  summarise(max_return1 = max(oneyaftmerg),
        min_return1 = min(oneyaftmerg),
        median_return1 = median(oneyaftmerg))
```

```
# Let's see how return after two years differs through industry
data_spac %>%
  group_by(industry) %>%
  summarise(max_return2 = max(twoyaftmerg),
       min_return2 = min(twoyaftmerg),
       median_return2 = median(twoyaftmerg))



# Let's see how return after one year differs through nonrepeat/repeat sponsors
data_spac %>%
  group_by(sing_rep) %>%
  summarise(max_return1 = max(oneyaftmerg),
       min_return1 = min(oneyaftmerg),
       median_return1 = median(oneyaftmerg))



# Let's see how return after two years differs through nonrepeat/repeat
sponsors
data_spac %>%
  group_by(sing_rep) %>%
  summarise(max_return2 = max(twoyaftmerg),
       min_return2 = min(twoyaftmerg),
       median_return2 = median(twoyaftmerg))
####################################
################# histograms
####################################
ggplot(data_spac, aes(prosSPACIPO, fill = factor(sing_rep))) +
  geom_histogram(binwidth = 30)
```

```
ggplot(data_spac, aes(prosSPACIPO, fill = factor(trade_success))) +
  geom_histogram(binwidth = 30)
### Return in 1 year after merge
ggplot(data_spac, aes(oneyaftmerg, fill = factor(sing_rep))) +
  geom_histogram(binwidth = 70000)
### Return in 2 years after merge
ggplot(data_spac, aes(twoyaftmerg, fill = factor(sing_rep))) +
  geom_histogram(binwidth = 100000)
###5e+05=500 000
library(gplots)
plotmeans(oneyaftmerg ~ industry, main="Heterogeineity across industries",
data=data_spac)
plotmeans(twoyaftmerg ~ industry, main="Heterogeineity across industries",
data=data_spac)
## there may be some heterogeineity among industries
plotmeans(oneyaftmerg ~ sing_rep, main="Heterogeineity across repeated
and singles", data=data_spac)
plotmeans(twoyaftmerg ~ sing_rep, main="Heterogeineity across repeated
and singles", data=data_spac)
##################################################
########### OLS on OneYearReturn ##############
##################################################
model_ols=lm(data=data_spac,
oneyaftmerg~prosSPACIPO+sing_rep+warperunit
        +as.factor(industry)+
prosescrow+undfee+wstrikepr+mergsize+mergshpr+anmergdays)
summary(model_ols)
stargazer(model_ols, type="text",digits=3)
```

confidence intervals for the coefficients of regression

#Default is 95% C.I.:

confint(model_ols)

##

Breusch-Pagan test for heteroscedasticity

##

#H0: Homoscedasticity is present (the residuals are distributed with equal variance)

#Ha: Heteroscedasticity is present (the residuals are not distributed with equal variance)

library(lmtest)

bptest(model_ols)

the p-value is about 0.79,

so we cannot reject the H0 hypothesis about homoscedasticity

so, we do not suspect great heteroscedasticity among industry groups

##

########### OLS on TwoYearReturn ###############

##

model_ols2=lm(data=data_spac, twoyaftmerg~prosSPACIPO+sing_rep+warperunit

+as.factor(industry)+undfee+prosescrow+wstrikepr+mergsize+mergshpr+anmergdays+oneyaftmerg)

summary(model_ols2)

stargazer(model_ols2, type="text",digits=3)

confidence intervals for the coefficients of regression

#Default is 95% C.I.:

confint(model_ols2)

```
##########################################################
############# LOGIT on trade_success #################
##########################################################
library(foreign)
loggg1 <- glm(trade_success ~ prosSPACIPO+sing_rep+warperunit

+as.factor(industry)+prosescrow+undfee+wstrikepr+mergsize+mergshpr+anmergda
ys+oneyaftmerg+twoyaftmerg, data=data_spac,
            family=binomial(link="logit"))
summary(loggg1)
library(stargazer)
stargazer(loggg1, type="text",digits=3)
# for easier interpretation
coef(loggg1)
logit.or = exp(coef(loggg1))
logit.or
# gives result in odds ratios
library(mfx)
logitor(trade_success ~ prosSPACIPO+sing_rep+warperunit

+industry+wstrikepr+mergsize+mergshpr+anmergdays+oneyaftmerg+twoyaftmerg,
data=newdata)
#### hypothesis on significance of dummy
library(car)
(H0_reg <- linearHypothesis(loggg1,
                c("Repnonrep=0")))

# we reject the hypothesis that
```

the dummy-coef. of Repnonrep is equal to 0

So, variable Repnonrep is significant