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Relationship between VC Reputation and Portfolio Company's Post-IPO Long-Run Performance in the Age of Social Media.

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Abstract

This paper studied the effect of a venture capital (VC) firm's reputation and social media presence on the portfolio company's post-IPO long-run performance based in the US between the years 2005 to 2019; The research conducted four different case studies to examine the relationship between these variables, with the use of netnography and financial analysis. According to previous studies, a VC firm's reputation, based on the success of past ventures, has a positive correlation with a portfolio company's post-IPO long-run performance based in the US, but they don't consider social media as a factor since it was not prevalent during the time of their study, which is something this paper took into account while examining the relationship between VC reputation and a portfolio company's post-IPO performance. The research found that VC reputation does have a positive correlation with the post-IPO performance of a company; however, the research also found that a VC firm's social media activity also has a positive relation to the performance of a portfolio company, mostly in the short run, but also lingers temporarily in the post-IPO long run. The implications of these findings suggested that previous assumptions about VC reputation and a portfolio company's post-IPO performance have slightly, and ultimately, VC firms could leverage their social media presence to boost the portfolio company's short-run performance, while also giving entrepreneurs an additional factor to consider when finding the VC firm to back their company.

Keywords: Venture capital, Post-IPO, Reputation, Startup, Long-Run performance

1. Introduction

According to the Bureau of Labor Statistics, roughly 90 percent of startups fail before making a successful exit, either through Merger and Acquisition (M&A) or an initial public offering (IPO) (Howarth, J., (2022, January 7)). Even for the small percentages of startups that make a successful exit, specifically going public, there are still a plethora of adversities lying ahead, such as going bankrupt, delisted, or hostile takeovers. However, past studies have shown that by having a venture capital firm (VC firm) back the startup, the chances of success in the post-IPO long-run performance increases (Brav, A. and Gompers, P, 1997). After this revelation, more studies were conducted that showed that more reputable VC firms are more likely to facilitate a superior post-IPO long-run performance for their portfolio companies (Krishnan, C.N.V., et al., 2011).

These studies were all found in the late 1900s to early 2000s when the internet was just being created. However, in recent years, social media has become extremely prevalent in the financial sector, and it is seen that prominent individual investor's social media presence greatly influences the activity of the stock market (McGurk, Z., Nowak, A., & Hall, J. C. (2019)). These past studies about VC reputation fail to consider social media as a variable for VC reputation as social media was not as relevant amid their times, with only 5% of US adults using social media in 2015, while in 2019, roughly 79% of US adults use social media (Ortiz-Ospina, E., & Roser, M. (2023, November 23)). Due

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to the recent social media boom, it is necessary to reevaluate the VC's reputation's effect on post-IPO performance, considering a VC's social media presence. This ultimately raises the question of how social media affects the conventional belief that a VC's reputation will be the indicator of a portfolio company's post-IPO long-run performance, which is what this paper explores, while focusing on how a VC firm's social media presence, along with other conventional VC reputation metrics, will affect a portfolio company's post-IPO performance.

The rest of the paper will proceed as follows. Section 1 will include literature reviews from other VC reputation's effect on post-IPO performance and my hypothesis. Section 2 will describe the variables and the methodology of my case study and netnography. Section 3 will analyze the effect of VC reputation on the different companies in the case studies. Lastly, Section 4 will conclude the paper with a discussion of the results that were found.

2. Theory

Nahata (2008) studies the VC reputation's effect on investment performance by determining the amounts of successful and unsuccessful exits, either through merger and acquisition (M&A) or going public. Nahata's two primary measures of VC reputation are the cumulative market capitalization of IPOs backed by VC firms in the IPO market and the VC's total share of investment in the VC industry. Nahata primarily focuses on US-based VC firms, and the companies he focused on received their first round of VC funding between 1991 and 2001 and tracked the performance of the companies up until 2006. Nahata's results showed that companies whose lead VC is more reputable tend to have more successful exits, go public faster, etc.

Following Nahata's study, Shu, P. G., et al. (2011), studied the difference between VC-backed companies and non-VC backed companies in terms of post-IPO performance of 267 Taiwanese IPO firms between the periods 1994-2007, using ex-post equity market-to-book ratio, ROA and R&D expenditure ratio as metrics for a firms post-IPO performance. Shu, P. G., et al. (2011) found that VC-backed IPO firms significantly outperformed non-VC backed IPO firms; however, beyond that, they also found that IPO firms with more reputable VCs backing them outperformed their peers with less reputable VC backings, which is congruent to Nahata's findings.

Another similar study revolving VC reputation and a company's post-IPO performance was Krishnan, C.N.V., et al. (2011), which focused on the relationship between VC reputation and a company's post-IPO performance. Krishnan, C.N.V., et al's measurement for VC reputation is based on the VC's past IPO market share with the assumption that an IPO exit yields a higher premium than an exit through M&A -- around 22% -- and the fact that IPO is a much more visible indicator of a VC's performance. As for post-IPO performance measures, Krishnan et al. use return on assets, market-to-book equity ratio, and listing survival --whether the stock is listed on any of the major stock exchanges for 3 years after the IPO date.

Another topic Krishnan, C.N.V., et al. explores is the impacts a reputable VC has on a company's internal structures -- i.e., corporate governance, financials, etc. -- and whether they are more likely to retain their investment or hold seats on the company board. The results of Krishnan et al's research showed that a VC's reputation -- based on IPO market shares -- and post-IPO performance have a positive relationship, and it is ultimately the more reputable VCs that will provide more support for the company in the long run through board directorships being a shareholder of the company.

This paper further explores the VC reputation's effect on post-IPO and the impact of the investment in the long run. More specifically, it will examine the effect of VC reputation on companies in recent years, from 2010 to 2023, to find out whether Krishnan, C.N.V., et al.'s' findings are still relevant in the modern era where social media, known to have a positive correlation with IPO price when used by the company itself when entering IPO-phase (McGurk, Z., Nowak, A., & Hall, J. C. (2019)), is used by the majority of the world. Knowing that prominent investors' social media posts play a pivotal role in the company's post-IPO performance in terms of share price and potentially a company's long-run performance, this paper will explore whether the same holds true for VC firms' social media activity on a company's post-IPO and run long performance or if VC firms do not have the same impacts of an individual investor.

The hypothesis of this study is that with the emergence of social media, a VC firm's reputation will not have as much of an impact on an IPO's long-run performance as past findings suggest due to the recent rise of individual investors, who are most likely to be influenced by social media. This means that VC firm's can utilize social media to

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reach a larger audience about their portfolio companies that is equal to a renown VC firm announcing their portfolio company through the newspapers, which became less popular due to social media (Bull, E., & Dews, F. (2014, October 23)). This large audience base through social media could lead to the VC firm's portfolio companies receiving increased investments through the primary and secondary markets, which would thus increase the likelihood of success in the portfolio companies' post-IPO performance. This study will implement case studies and netnography to determine the relationship between VC reputation and a company's post-IPO performance in recent years.

3. Methods

For VC reputation, this study will use Krishnan, C.N.V., et al. (2011)'s past 3-year IPO market share of the VC firm as the measurement. The VC's IPO market share will be calculated by the dollar amount of the IPOs backed by the specific VC firm by the cumulative VC-backed IPO market share in the US market of said year, and this measurement will be applied to the VC firm 3-years before their investment of the company that will be reviewed in the case study. Calculations of the mean and median VC firm IPO market share will be then be made to determine its level of reputation. The IPO market share will range from 0 to 1. An IPO market share of 1 indicates extremely reputable and controlling the entire IPO market share, while a market share of 0 indicates no influence over the IPO market, and thus not a reputable VC firm.

There will be two main measurements considered for a company's post-IPO long-run performance: the return on asset (ROA) and survival listing, which were some of the metrics used in Krishnan, C. N. V. et. al.'s study. In this study, ROA will be defined as net income divided by the book value of a company's total assets, and calculations for the ROA of the portfolio company will be made for the 5 years after initially being public, as this should be an ample amount of time for a portfolio company to mature post-IPO. ROA will be used to show a company's post-IPO performance as it underscores how effective the company is in converting the VC firm's investment into net income, and this measurement will test whether or not companies backed by more reputable VC firms will yield a higher ROA than companies with less reputable VC firms, thus answering the question of whether or not more reputable VC firms' portfolio company perform better than less reputable VC firms' portfolio company in the post-IPO phase. Survival listing is an indicator variable that will determine the whereabouts of the portfolio company. The value of the survival listing indicator will range from 0-1. A survival listing of 0 will indicate companies that become bankrupt, are liquidated, or go private (which includes post-IPO mergers), while a value of 1 will indicate that the company has been in one or more of the major stock exchanges -- NYSE, AMEX, or NASDAQ -- for 3 or more years. The survivability of a company in the post-IPO phase is used as a metric for post-IPO performance as it demonstrates whether the company and the VC firm can overcome adverse situations and manage the company properly after going public and is also an indicator of whether the company is thriving or not.

All the VC firms selected for the case study are the lead investors of the company, with all the data coming from Crunchbase. Lead investors typically remain active in the portfolio company during the post-IPO period, the period focused on for the majority of the study on, as they are shareholders or directors of the company, and will make it easier to weigh the impact VC firms' reputations will have on the company's post-IPO performance.

In addition, all IPOs in the case study will have gotten their VC investments before going public and will be tracked from the first investment to 3 years after going public, and the time period of the VC's pre-IPO investment will be between 2005 and 2019, the time period when social media became popularized (Ortiz-Ospina, E., & Roser, M. (2023, November 23)). It is also important to note that the companies and VC firms tracked will all be US-based in order to maintain a constant and avoid unnecessary confounding variables, such as domestic policies, tax laws, etc. Furthermore, this study will keep the underwriter for the IPO a constant in order to prevent the underwriter's reputation from affecting the performance, as there have been many studies that proved a positive correlation between IPO performance and underwriter reputation (Carter, R., & Manaster, S. (1990)).

In order to measure the effect that VC reputation has on a company's post-IPO long-run performance, there will be four different case studies and also the implementation the use of netnography. For these case studies, there will be four different VC firms of different VC reputations, based on IPO market share, and portfolio companies that will fit the conditions mentioned previously. The study will briefly analyze the VC firm's pre-IPO activity with the company,

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then focus the rest of the case study on the impacts of VC reputation on the company from IPO to post-IPO. For the netnography of the case study, the study will be specifically focusing on the VC firm's Twitter activity that has to do with their portfolio company and will use Internet Archive's WayBack Machine to determine the numbers of followers and likes the VC firm's Twitter page has amid a specific time period – preferably between the first investment to post-IPO period. The study will then examine the relationship between a VC firm's social activity on the company's financial and business performances pre- and post-IPO long-run performances.

4. Results

4.1 Sequoia Capital and Dropbox

The first VC firm examined was Sequoia Capital, which is an investment firm based in Menlo Park, California, United States on November 1, 1972, and the firm's portfolio company explored will be Dropbox Inc., a file hosting service based in San Francisco, California. Sequoia Capital mainly focuses on early and late-stage venture capital in the energy, financial, enterprise, healthcare, internet, and mobile industry startups. The employee size of Sequoia Capital ranges from 101 to 250 employees and has invested in 1,909 companies, being the lead investor of 630 of them, and has raised over $294 billion. Sequoia Capital made its first investment in Dropbox on September 4, 2007. The VC firm backed 4 IPOs from 2004 to 2006, with a mean IPO market share of 0.093 and a median of 0.02, and the calculations for the IPO market share of Sequoia Capital each year are shown below in Table 1.

Table 1: Sequoia Capital IPO Market Shares from 2004-2006 (Crunchbase. (2024))

Panel A: Sequoia Capital IPO Market Share (2004)

Sequoia Capital backed IPOs	IPO Size/Issue Size ($)	Total VC-Backed IPO Market Size	VC Firm IPO Market Share
Google	1,666,429,420		
PlanetOut, Inc.	41,850,000		
Total	1,708,279,420	7,183,000,000	0.24

Panel B: Sequoia Capital IPO Market Share (2005)

Sequoia Capital backed IPOs	IPO Size/Issue Size ($)	Total VC-Backed IPO Market Size	VC Firm IPO Market Share
Ikanos	76,800,000		
Total	76,800,000	3,458,000,000	0.02

Panel C: Sequoia Capital IPO Market Share (2006)

Sequoia Capital backed IPOs	IPO Size/Issue Size ($)	Total VC-Backed IPO Market Size	VC Firm IPO Market Share
Isilon Systems	108,000,000		
Total	108,000,000	4,860,000,000	0.02

Crunchbase was used to find the data for the portfolio company's IPO market size and accumulated data for VC-backed IPO market size each year from the University of Florida's *Initial Public Offerings: VC-backed IPO Statistics Through 2022* (Ritter, J., 2023).

Sequoia Capital was already reputable before it invested in Dropbox Inc., yielding only an average of about 9.3% of the VC-backed IPO market share. The VC firm made three pre-IPO investments in Dropbox, with the first during Dropbox's seed round with $1.2 million in 2007 as mentioned previously, the second during Series A with $6 million in 2008, and the third during Series B with $250 million in 2011. With these three investments, Sequoia Capital had a 25% equity stake in Dropbox, also being one of Dropbox's first VC investors.

Dropbox officially went public, entering NASDAQ with an IPO valuation of $21 on March 23, 2018, and by three full calendar years, the stock price went up to $26.59. One of the main investment banks that were the main underwriter for Dropbox was Goldman Sachs & Co. The following section will now be the analysis of Sequoia

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Capital's social media activities related to Dropbox a couple of months before going public and ultimately post-IPO, which will be any Twitter activity of the VC firms after 2018.

As of January 28, 2018, Sequoia Capital's Twitter account had around 474 thousand followers and made 4,910 tweets, joining the social media app in March of 2009; this shows that the VC firm has been rather successful in running its social media account and accumulating a large follower base that will view its posts. Sequoia Capital made two tweets about Dropbox in 2018 on the day of Dropbox going public, March 23, 2018. The first tweet was a reminiscent tweet about the origins of Dropbox and had a link to Dropbox's Sequoia Capital pitch deck for the seeding round; the other tweet thanked Dropbox for committing to a great cause, showing the altruistic side of the company and promoting the image of the company to the potential investors that follow Sequoia Capital's Twitter page.

The two tweets cumulatively garnered 94 reposts, 20 quotes, 355 likes, and 13 bookmarks. Although these numbers might seem small, it does not account for the number of views or impressions a post has gotten, and according to Rockcontent, the average impression rate of a Twitter post is 20-25% of their account follower base (Barbara, 2021), which the study will assume also applies to Sequoia Capital's Twitter account. This means that each of Sequoia Capital's Twitter posts would get around 94,800 to 118,500 views, which is significantly more than what the engagement on the tweet suggests, and now, this paper will explore the financial and business implications that these tweets from a not-as-reputable VC firm, compared to the VC firms previously analyzed.

After the Twitter post by Sequoia Capital and Dropbox became publicly traded, the market price soared from $21 to $28.48 on the same day and peaked at $39.60 in June of 2018, and ever since then, the company's market price has remained relatively stable at around $27. Sequoia Capital continues its Dropbox campaign on Twitter by posting another post on April 2, 2019, that underscores the "self-aware and empathetic" work culture, boasting the company's ESG (Environmental, Social, and Governance), which is the non-financial that many investors use to evaluate a stock. The rapid rise of Dropbox's market price could have potentially been influenced by social media posts by the VC firm, as the market price of a company has a positive correlation with investor demand for the stock -- the more demand and lower supply, results in an increase in the market price of stock. This means that as more people become aware of Dropbox going public from the VC firms, the more likely the demand for Dropbox stocks will increase, from casual investors, thus, raising the price of the stock, which in turn increases the dollar amount raised by Dropbox through the stock market.

Beyond the stock market, there is also a correlation between Sequoia Capital's Twitter posts about Dropbox and a rise in Dropbox's revenue, which will be shown below.

Table 2: Dropbox Revenue from 2018-2020 (Dropbox Revenue 2016-2024 | DBX. (2016))

	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q1	2020 Q2	2020 Q3	2020 Q4
Revenue ($ millions)	316.3	339.2	360.3	375.9	385.6	401.5	428.2	446	455	467.4	487.4	504.1
Revenue Growth (%)	N/A	7.24	6.22	4.33	2.58	4.12	6.65	4.16	2.02	2.73	4.28	3.43

As can be seen in Table 2, Dropbox's revenue grew 7.24% from 2018 Q1 to 2018 Q2, which was around Sequoia Capital made a tweet about Dropbox on March 23, 2018 -- right at the end of Q1 and entering Q2. This dramatic increase in revenue growth could be attributed to the social media activities of Sequoia Capital about Dropbox, similar to the relationship between the market price of Dropbox stocks and the VC firm's Twitter activity. This trend of revenue growth and VC Firm social media activity does not stop there, as in 2019, a similar trend occurred yet again. Dropbox's revenue growth rate steadily declined from 2018 Q2 all the way to 2019 Q1 (7.24% to 2.58% revenue growth rate). However, as mentioned above, Sequoia Capital posted another tweet about Dropbox in April of 2019 (Q2), and following the trend, Dropbox's revenue growth rate immediately rose in 2019 Q2 from 2.58% to 4.12%, nearly doubling the revenue growth rate of 2019 Q1. Another trend that seems to appear from Table 2 is that the trend between the increase in revenue growth rate and a VC firm's social media activity only lasts for two fiscal quarters since Sequoia Capital's tweet in 2018 Q1 increased revenue growth for 2018 Q1 and Q2, and yet again, an increase in revenue growth in 2019 Q2 and Q3, but precedes to decrease. This suggests that a VC firm's social media posts about the portfolio company might only have a short-run effect on the portfolio company's post-IPO performance. To

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better understand the VC firm's reputation on the portfolio company's post-IPO long-run performances, the portfolio company's post-IPO performance measurements as mentioned previously will be analyzed.

In March of 2018, Dropbox's ROA was at -0.88, and that is when Dropbox went public. The first year after going public, 2019, Dropbox's ROA went up to -0.016. The following year, the ROA becomes -0.0023, but then in 2021, the ROA falls back to -0.087, which could be attributed to less demand for Dropbox's solutions and services post-pandemic, when digital usage dropped down to just above pre-pandemic levels. The average ROA of Dropbox from 2018 to 2021 is -0.25, meaning that Dropbox is experiencing a financial loss and Sequoia Capital is also experiencing a loss in their investment value compared to previous years. This ultimately shows that Dropbox's post-IPO performance based on ROA measurements is quite poor as it is losing more than it is gaining financially; however, it is worth noting Dropbox's ROA rapidly increased post-IPO, besides 2021, which seems to be an outlier in the data.

As for survival listing, Dropbox will receive a 1 value, as it remained listed in NASDAQ for more than three years and has even increased its market value. A portfolio company's ability to survive on the market can typically be attributed to corporate governance, which is heavily influenced by the VC firm's reputation, which allows for greater connections and recruitments of corporate managers (Krishnan, C.N.V., et al., 2011). However, in Dropbox's case, the company was able to survive and not go bankrupt despite the negative ROA is highly attributed to the investments it received from institutional and casual investors of the stock market, which, as mentioned previously, does seem to have a positive correlation with VC firm's social media activity.

4.2 Kleiner Perkins and Block

The next VC firm examined will be Kleiner Perkins, formerly known as Kleiner Perkins Caufield & Byers, another VC firm that is based in Menlo Park, California, United States, and was founded on March 1, 1972. The size of the VC firm ranges from 251 to 500 employees. Kleiner Perkins is a VC firm that mostly focuses on early and late-stage ventures, having been the lead of investor 391 portfolio companies out of 1,386. The portfolio company of Kleiner Perkins focused on will be Block, formerly known as Square, a financial service company that was founded in 2009 in San Francisco, California, United States; in addition, Block is a conglomerate of technology companies, including Square, CashApp, Spiral, TIDAL, and TBD. Kleiner Perkins made its first investment in Block on Jun 28, 2011, during its Series C funding round for $100 million.

Kleiner Perkins had 7 portfolio companies that went public between 2008 to 2010. In 2008, there was only one portfolio company that went public, with an IPO market share of 7%.

Table 3: Kleiner Perkins IPO Market Share in 2008 (Crunchbase. (2024))

Panel A: Kleiner Perkins IPO Market Share (2008)

Kleiner Perkins backed IPOs	IPO Size/Issue Size ($)	Total VC-Backed IPO Market Size	VC Firm IPO Market Share
ArcSight	61,750,000		
Total	61,750,000	863,000,000	0.07

Although in 2009 Kleiner Perkins had one portfolio company that went public, the VC firm's 2009 IPO market share will be considered null since AOL, the portfolio company, split their stock, thus having another IPO.

Table 4: Kleiner Perkins IPO Market Share in 2009 (Crunchbase. (2024))

Panel B: Kleiner Perkins IPO Market Share (2009)

Kleiner Perkins backed IPOs	IPO Size/Issue Size ($)	Total VC-Backed IPO Market Size	VC Firm IPO Market Share
AOL	N/A		
Total	N/A	1,697,000,000	N/A

As for 2010, Kleiner Perkin's market share was rather large with 27% after five of their portfolio companies went public.

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Table 5: Kleiner Perkins IPO Market Share in 2010 (Crunchbase. (2024)

Panel C: Kleiner Perkins IPO Market Share (2010)

Kleiner Perkins backed IPOs	IPO Size/Issue Size ($)	Total VC-Backed IPO Market Size	VC Firm IPO Market Share
AutoNavi	107,812,500		
Venustech	46,000,000		
Amyris	84,800,000		
PacBio	200,000,000		
Kingnet	15,000,000		
Total	453,612,500	1,697,000,000	0.27

The average and median IPO market share of Kleiner Perkins from 2008-2010 was around 0.17, making it one of the most reputable VC firms during that time and contributing to roughly 17% of all VC-backed IPOs on the market. Furthermore, in the year preceding the investment in Block, Kleiner Perkins's IPO market share was 27%, backing over a quarter of all VC-backed IPOs. As for the IPO date, Block went public in November 2015, entering the New York Stock Exchange at $9 per share, and in three years, the portfolio company's stock is valued at $63.47. The primary IPO underwriter for Block was Goldman Sachs & Co., which valued the company at $2.1 billion.

This section of the case study will now track Kleiner Perkins's Twitter activities about Block, including all of its subsidiary companies. The VC firm first created its Twitter account in September 2010. As of April 7, 2019, Kleiner Perkin's Twitter account had 220 thousand followers, 7,861 tweets, and 4,630 likes, making it less popular than Sequoia Capital's Twitter page, the numbers mentioned above. Despite not making any posts about Block or its subsidiaries post-IPO, Kleiner Perkins did make one post about Square in 2013 that had a link to a Wall Street Journal article about Square's latest product, the Business in a Box cash drawer, alluding the viewers of the post to Square's as an innovative nature. The post garnered little to no Twitter engagement with only one repost and one like; even when accounting for the number of views on the tweet, using the average impression rate per post as mentioned above, the VC firm's tweet would have only reached about 44,000 to 55,000 viewers. However, since the post was made before the IPO of Slack, financial implications of the VC firm's social media activity on the portfolio company couldn't be found due to Block not needing to be obliged to SEC rules. This suggests that Kleiner Perkin's didn't rely much on social media to promote its portfolio companies, and it rather leverages its reputation to improve the portfolio company's post-IPO performance.

As Krishnan, C.N.V., et al. (2011) mention in their study, more reputable VC firms will have more accessibility to finding corporate managers. This trend proves to be true in this case study as around the time Kleiner Perkins invested in Square, Mary Meeker -- a Kleiner Perkins partner and long-time internet stock analyst -- joined Square's board and helped with the executive decision-making of the portfolio company (Frommer, D, 2011), which could have attributed to the portfolio company's 10-year revenue compound annual growth rate (CAGR) is 46.16%.

The average ROA of Block from 2015 to 2018 is -0.25, meaning that the company has negative cash flow while the VC firm is losing value from its investment. At the end of 2015, Block's ROA was -0.80 but increased dramatically to -0.17 the following year, which tends to happen after a company goes public. By the end of 2016, the portfolio company's ROA went up to -0.03, and finally, in 2017, the ROA slightly increased to -0.015. Although Block's ROA is never positive within the 3-year post-IPO timeframe set, it is important to note that Block's ROA rapidly increased throughout the period; in addition, by 2019, the portfolio company had a positive ROA of 0.09.

The survival listing score given to Block will be a 1 because it remains listed in the NYSE after 3 years of turning public. Kleiner Perkins ultimately takes the rather conservative route of leveraging the VC firm's reputation to have an influence over the portfolio company's board, which results in overall better corporate management, thus increasing the chances of surviving longer in the stock market. This shows that even in an era heavily influenced by social media, having a reputable VC firm, despite the firm not promoting the portfolio company on social media, is still an indicator of the likelihood of the portfolio company's success in the post-IPO period.

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4.3 Social Capital and Slack

The next case study will be about Social Capital and Slack Technologies (Slack). Social Capital, formerly known as Social + Capital Partnership, is a VC firm that focuses on early and late-stage ventures, secondary markets, and seed funds. The VC firm was founded in 2011 in Menlo Park, California, United States. The VC size is roughly 11-50 employees and is the lead investor for 106 of the 430 portfolio companies it is backing, funding a total of $28.5 billion. Slack is a cloud-based cross-platform messaging service run on a freemium revenue model based in San Francisco, California, United States. Social Capital's first investments in Slack were on Apr 27, 2014, during Slack's Series C funding period. Social Capital made its first investments on Slack during its Series C, for $42.8 million, making Social Capital the lead investor. After the initial investment, Social Capital proceeds to make two more investments during Slack's Series D for $110.8 million and Series E for $172.2 million.

Social Capital had no portfolio companies that went public from 2011 to 2013. This means that before making its first investments in Slack, the VC firm had an IPO market share of 0, meaning that it had no influence or reputation, based on my indicator for measuring VC reputation. Because the VC firm has no reputation prior to the investment in the portfolio company, an assumption was made that the VC had less influence over corporate management and large funding compared to the more reputable VC firms, and thus, the case study will focus more on Social Capital's social media activities regarding Slack in order to improve the success of Slack's post-IPO long-run performance based on the measurements mentioned previously. On June 20, 2019, Slack became public to the market, listed on the NYSE with a starting IPO price of $38.50. One of the primary investment banks Slack worked with to determine its IPO price was Goldman Sachs & Co. with a valuation of $23 billion.

As of July 2, 2019, Social Capital amassed a total of 34 thousand followers and posted 1,261 times. Despite a smaller follower base than that of Sequoia Capital and Kleiner Perkins, Social Capital posts receive a much higher engagement rate than the other two VC firms, suggesting that a larger percentage of Social Capital's follower base will view its posts. Leading up to the IPO date, beginning in 2015, Social Capital went on a Twitter campaign for Slack, posting over 24 tweets about the portfolio company's successes and altruistic actions -- i.e., helping coordinate food for hurricanes or hosting humanitarian conferences, etc. -- which in total garnered hundreds of likes and retweets. These positive sentiments from Social Capital ultimately frame Slack as a prosperous company that seeks to help the community, which makes the viewers of the VC firm's post believe that Slack will be a safe investment once it goes public and that using its services will indirectly let the customers help improve the community. Now this case study will explore the financial and business trends that occur with the VC firm's Twitter post.

Table 6: Slack Revenue (Business of Apps. (2020, September 9)

	2014	2015	2016	2017	2018	2019	2020	2021
Revenue ($ millions)	12	30	100	200	221	401	630	902
Revenue Growth (%)	N/A	150.00	233.33	100.00	10.50	81.45	57.11	43.17

As Table 6 shows, Slack's revenue immediately increased by 150% in 2015 when Social Capital began the social media campaign for the portfolio company. By 2019, Slack's revenue was more than $401 million, which is roughly 3,241% more than Slack's annual revenue in 2014, which was the same time Social Capital became the lead investor of Slack. The correlation between the VC firm's social media activity about the portfolio company's pre and post-IPO performance seems to be positive, as throughout Social Capital's Slack social media campaign, the revenue of Slack rapidly increased by more than 80% in the pre-IPO period, discounting the revenue in 2018 which is an outlier. The rapid increase in revenue occurs even post-IPO; although, the revenue growth rate steadily begins to slow down after Social Capital stopped making Tweets about Slack. This suggests a VC firm's social media activity doesn't only affect immediate financial impacts in the short-run, but the impacts also linger in the long-run performance of the company temporarily. Now the analysis of Slacks post-IPO long-run performance measures will be made to determine how successful the company was post-IPO with a less reputable VC firm.

This case study will only be able to analyze the ROA of Slack from 2019 to 2020, as the portfolio company becomes acquired by Salesforce Inc. as of 2021. The average ROA of Slack between 2019 to 2020 was 0.235, indicating that the company is performing well and its investors are profiting from the investment. In 2019, Slack's ROA was 0.10 after entering the market due to the rapid increase in revenue during the pre-IPO period. In 2020, the ROA increased to 0.37, which is an extremely satisfactory ratio even among the top companies. As for survival listing, Slack will be receiving a value of 0 as the company becomes delisted from the NYSE after the acquisition as mentioned previously, and this acquisition occurred due to Slack's need for a larger enterprise sales team, which Social Capital couldn't have provided due to it having no reputation and having trouble with connecting the portfolio company with a more qualified sales team without being acquired.

4.4 Accel and PagerDuty

The last VC firm explored will be Accel, which is based in Palo Alto, California, United States, and founded in 1983. The size of the VC firm is 501-1000 employees. The VC firm focuses on early and late-stage ventures and seed rounds, being the lead investor of 766 out of its 1,952 portfolio companies, funding over $177.9 billion. The portfolio company focused on in this case study is PagerDuty, which is a cloud computing company based in San Francisco, California, United States. Accel made its first investment in PagerDuty on April 13, 2017, during PagerDuty's Series C for $43.8 million, making Accel the lead investor during that round.

Prior to Accel's investment in PagerDuty, Accel had 11 portfolio companies that went public between 2014 to 2016.

Table 7: Accel IPO Market Share 2014 (Crunchbase. (2024))

Panel A: Accel IPO Market Share (2014)

Accel backed IPOs	IPO Size/Issue Size ($)	Total VC-Backed IPO Market Size	VC Firm IPO Market Share
Varnois Systems	105,600,000		
Opower	115,900,000		
Arista Network	225,800,000		
migme	6,200,000		
Yodlee	75,000,000		
Hortonworks	100,000,000		
Total	628,500,000	18,542,000,000	0.03

In 2016, Accel backed six IPO's, with a collective IPO size per issue size of $628,500,000, which was roughly 3% of the total VC firm IPO market share, which was relatively small compared to how many of Accel's portfolio companies went public in 2014.

In 2015, Accel had five portfolio companies go public, this time taking a total of 13% VC Firm IPO market share, making it one of the leading VC firms in 2015.

Table 8: Accel IPO Market Share from 2015 (Crunchbase. (2024))

Panel B: Accel IPO Market Share (2015)

Accel backed IPOs	IPO Size/Issue Size ($)	Total VC-Backed IPO Market Size	VC Firm IPO Market Share
Animoca Brands	1,974,000		
Etsy	266,700,000		
Sunrun	250,600,000		
Showroomprive	307,200,000		
Atlassian	462,000,000		
Total	1,288,474,000	9,890,000,000	0.1303

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However, in 2016, none of Accel's portfolio companies went public, thus giving them an IPO market share of 0%.

The average IPO market share of Accel is 0.05, while the median is 0.03, meaning that the VC firm is somewhat reputable, having contributed to 5% of all VC-backed IPOs between 2014-2016. On April 10, 2019, PagerDuty officially announced going public and being listed on the NYSE with an IPO price of $24. One of the lead underwriters for the portfolio company was Goldman Sachs with a starting valuation of $1.8 billion

Accel is the most active on social media out of all the VC firms examined in the case studies. As of April 13, 2019, Accel's Twitter page had 225 thousand followers, with 6,904 tweets and 4,346 likes. Accel made 8 posts about PagerDuty between the periods 2017 to 2019, leading up to the IPO date of the portfolio company, receiving hundreds of likes and dozens of reposts. Accel's first post in 2017 about PagerDuty was to announce their backing of the portfolio company, and the preceding posts attest to PagerDuty's success and selfless deeds, which seems to be a trend among all VC firm's Twitter posts about the respective portfolio company. As mentioned previously, these positive sentiments from the VC firm's Twitter posts present a favorable narrative about the company to the viewers of the Tweet, which would increase the chances of the viewers investing and purchasing the portfolio company's services and products. Now the study will look at the company's pre and post-IPO revenue in order to see the correlation between the VC firm's Twitter activity and the performance of the portfolio company.

Table 9: PagerDuty Revenue from 2018 to 2023 (PagerDuty Revenue 2019-2024 | PD. (2019))

	2018	2019	2020	2021	2022	2023
Revenue ($ millions)	79.63	117.82	166.35	213.56	281.4	370.79
Revenue Growth (%)	N/A	47.96	41.19	28.38	31.77	31.77

Yet again, the Twitter posts of the VC firm seem to have a strong relationship with the portfolio company's performance, even in the long run. During Accel's Twitter campaign for PagerDuty, which ranged from 2017 to 2019, the revenue growth rate of Pager increased by almost 50%, and the effects of the Twitter campaign on the portfolio company's revenue seemed to linger for a while after Accel stopped making posts about PagerDuty in the post-IPO phase.

Finally, there will now be an examination of the portfolio company's post-IPO long-run performance measurements between the years 2019-2022. In April of 2019, the ROA of PagerDuty was -0.31 and the following year, the ROA jumped up to -0.11, which typically happens the year after a company goes public. However, the ROA stagnates at -0.11 in 2021, and in 2022, PagerDuty's ROA falls down to -0.15. The average ROA of PagerDuty for the three preceding years after the IPO date was -0.17, meaning that the VC firm is not retaining its investment post-IPO and the company is experiencing a net loss in terms of net sales and total assets. This poor ROA by PagerDuty in the post-IPO period is most likely attributed to the poor management of the company's corporate finances. Since Accel is only somewhat reputable based on the aforementioned measurements, the study will assume that Accel doesn't have the connections to send high-quality financier to its portfolio companies or has as much influence in the portfolio company's corporate decisions, as Krishnan, C.N.V., et al. (2011) states that more reputable VC firms will have more influence over their portfolio company's corporate management.

As for survival listing, PagerDuty will receive a value of 1, as it managed to be listed in the NYSE for more than 3 years after IPO, even increasing to $34.22 per share on April 1, 2022. In this scenario, the ability of PagerDuty to survive on the market for over three years could have been more impacted by the VC firm's social media presence rather than its reputation as Accel, based on IPO market shares, was not too reputable before investing in PagerDuty. However, Accel leveraged its social media presence by sharing its positive sentiments about the company with the public, which most likely increased the likelihood of the public investing in the company.

5. Conclusion

This study examined how much VC reputation impacts the post-IPO performance of the portfolio company in the long run, while also exploring the implications social media brings to the equation from the periods 2005-2019 in four separate case studies, with each VC firm having different varying levels of reputability based on IPO market shares.

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The previous literature about VC reputation focused solely on the VC reputation's effect on post-IPO performance without considering social media as a variable that could influence a portfolio company's post-IPO performance, as it was not as popular before. However, because of the sudden rise of social media, the factor of the VC firm's social media presence was added in the study, while also keeping similar metrics as the previous literatures to measure the level of a VC's reputation and its effect on a portfolio company's post-IPO performance. The study helped determine whether the results found in the previous literature about VC reputation and post-IPO performance holds true in the modern age as the U.S. market has changed drastically in the past few decades.

The findings suggested that VC reputation played an integral role in the portfolio company's post-IPO performance. It was seen that a more reputable VC would increase the chances of success that the portfolio company would have in the post-IPO long-run performance, based on the measurements mentioned previously, especially when the portfolio company lacks sound corporate governance and financial management when the company goes public. However, that is not to say that a VC's social media presence doesn't affect the outcome at all since the VC firm, as there seemed to be a positive correlation between a VC's positive posts about the portfolio company and an increase in the portfolio company's performances, which lingered for a bit after the initial post, typically amid the post-IPO period, but then typically petered out in the long run.

The practical implications of these findings could help future entrepreneurs in choosing potential VCs and investors, depending on their situation. In addition, these findings could also help inform VC firms about the limitations of social media presence, in terms of duration of efficacy, and underscore the importance of corporate governance when being a lead investor in their portfolio company. Ultimately, these findings offer benefits to both sides of the party that were previously overlooked, giving them new insights into how they should approach the public markets.

6. Limitations & Future Studies

Although the correlations found in this study seemed strong, it is important to note that this study only tracked four VC firms and their portfolio companies, so there could be a possibility that these findings could just be anomalies. Future studies could fabricate models with hundreds of VC firms and their portfolio company media presence of the VC firms in order to fully understand the true implications social media has on a portfolio company's post-IPO performance, such as tracking the viewer's sentiments of the post or using more than one social media platform to track VC social media presence.

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