Regression Towards the Mean? Valuations and Investor Returns When Unicorn Platforms Go Public or Are Acquired

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ABSTRACT

In this paper, we investigate how investors value American-based unicorn platform companies versus non-platform companies. We analyze companies that were worth $1 billion or more when privately held and exited either through a merger and acquisition (M&A) or an initial public offering (IPO). To conduct this study, we performed two primary analyses: one using cross-sectional data, and a second utilizing panel data. We find that "platformness" is associated with higher valuations at the 1-year benchmark as well as in the 2019-2023 analysis. However, on average in our sample, platformness does not have a statistically significant positive impact on investor returns, either in the short term or long term (6 months, 1 year, or during 2019-2023). Rather, revenue growth appears to have a more significant impact on investor returns than platformness. This implies that platforms may attract more investment and higher valuations, but they do not necessarily perform better than non-platforms operationally or from investors' points of view.

1. Introduction

Since the diffusion of the personal computer, the Internet, and smartphones, "platformness" or platform business models have drawn increasing attention from academic researchers, entrepreneurs, investors, and government regulators (*Gawer & Cusumano, 2002; Rochet & Tirole, 2003, 2006; Eisenmann, Parker, & Van Alstyne, 2006; Rysman, 2009; Evans & Schmalensee, 2016; Parker, Van Alstyne, & Choudary, 2016; Khan, 2017; Jia, Cusumano, & Chen, 2021).* Some of the most valuable companies in the world, and the majority of companies valued at over one trillion dollars (Microsoft, Apple, Nvidia, Alphabet/Google, Amazon, and Meta/Facebook), have strong industry-level platform elements in their business models. Platforms enhance basic products or services through connections to external networks of users and complementors. As shown in Cusumano et. al (2024), there was also a dramatic rise between 2013 and 2022 in the number of unicorns (private firms with a valuation of at least $1 billion) exhibiting some elements of a platform strategy or business model. As we find in this paper, however, the growth of platforms began to slow around 2022-2023, with many cases of valuations falling after IPOs.

Our definition of a platform strategy or business model involves connecting users with each other or with two or more key market sides or participants (e.g., buyer to seller, or end user to innovator) with the potential to generate same-side (e.g., user to user) or cross-side (e.g., buyer to

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seller) network effects. Network effects are positive feedback loops whereby the platform increases in value or utility with each additional participant or complementor, such as more buyers, more sellers, or more third-party innovations, such as applications for a smartphone or personal computer. By contrast, non-platform businesses sell "standalone" products or services to one side of the market (buyers) and do not have the potential benefit of same-side or cross-side network effects. It follows that platform businesses with strong network effects have the potential to generate significant value for large numbers of platform participants and complementors.

To improve our understanding of how exits affect valuations as well as investor returns for platform unicorns compared to non-platforms, we focused on several questions that we will outline later in this paper. To summarize our results, we found find that valuations are higher for platform unicorns on the day of IPO and when there is an M&A. However, the difference in valuations between platforms and non-platforms becomes statistically insignificant 6 months after the initial exit, although it becomes significant again, albeit small, around the 1-year benchmark. The effect of platformness on valuations is larger and statistically significant during 2019-2023, but, surprisingly, investor returns are not higher for platforms versus non-platforms. Over longer periods, factors such as revenue growth, age, and EBITDA growth appear to have a stronger impact on investor returns than platformness. This finding suggests that platform valuations benefit from a certain degree of enhanced expectations or "hype" rather than superior operational performance.

2. Literature Review

Existing research has explored how platforms operate, how they are valued, and what happens when a highly valuable private company exits. However, there has been little systematic quantitative analysis of how platforms compare to more traditional companies (Cusumano, 2022). Conventional wisdom has been that platforms exhibited network effects, which in turn had an opportunity to create a winner-take-all or winner-take-most outcome. The mere possibility of a winner-take-all outcome has led many investors to value private platforms higher than non-platform businesses.

One small-scale study is an analysis by Cusumano, Gawer, and Yoffie (2019) that used the Forbes Global 2000 list of companies to identify 43 public firms in 2015 that derived approximately 20 percent or more of their revenues from businesses driven by multisided market business models. The focus was on businesses related to the personal computer, the Internet, or mobile devices. The authors compared the performance of these platforms between 1995 and 2015 to a control sample of 100 non-platforms in the same set of businesses. The platforms and control sample had roughly the same level of median annual revenues (about $4.5 billion). Notably, compared to the control sample, the platform companies achieved these sales with half the number of employees, were twice as profitable, were growing twice as fast, and were more than twice as valuable. The authors attributed these differences to network effects and the ability to leverage third-party complementary innovations and other external resources, such as non-employee "gig" workers.

Cusumano et al. (2024) also studied the impact of platform business models on unicorn valuations. The authors found that North American platforms experienced higher valuations

relative to other regions of the world, and innovation platforms (platforms with third-party ecosystems of complementary innovations) were on average more valuable than transaction platforms.[1] Other authors also have described platform business models as "inverting" the firm and creating value by leveraging assets outside traditional organizational boundaries (Benzell, et. al 2023, Parker et. al, 2017). However, Lapierre-Berger et al. (2022) argue that, when platforms transition to private to public, they tend to increase their perceived valuation to investors by using short-term tactics such as "strategically lower[ing] [their] access standards and admit[ting] users who might otherwise have been deemed unqualified."[2]

Regarding IPOs and valuations, Chen et. al (2019) studied the effect of press coverage and found that, overall, greater amounts of media coverage before an IPO results in lower initial returns. However, this was not the case for countries with "better financial reporting quality, greater shareholder rights protection, and more stringent media censorship, and for IPOs 'certified' by reputable intermediaries."[3] Regarding IPOs and unicorns, Zhou et. al (2023) analyzed the relation between certain financial line items and their impact on unicorns' growth and financial flexibility in a small-sample analysis. They found that EBITDA had a negative impact on unicorn growth pre-IPO, which changed to a positive impact post-IPO. Additionally, cash or debt had a negative impact post-IPO, indicating that unicorn growth "is significantly influenced by capital expenditures and current liabilities affected by their management policies."[4]

Fiesenig et. al (2024) focused on whether investors accurately assessed unicorn valuations from 2004-2019. The authors found that these former unicorns were undervalued by capital markets but that "the accuracy of firm valuations increases with the amount of public information."[5] Somaya and You (2024) analyzed the relationship between scalable firms and VC availability, finding that "higher VC availability is not associated with higher startup IPO valuations in general, but only for more scalable ventures," such as unicorns. Additionally, scalability had no significant correlation with IPO timing and "the availability of VC financing positively moderates the association between scalability and IPO valuations."[6]

3. Research Questions and Data – Cross-Sectional Analysis

The literature indicates that there are many unanswered questions regarding platforms and unicorn valuations and performance. However, we were able to examine several questions, though we had to separate them based on the timing of the analyses: before and up to 1 year after the exit and during 2019-2023. For simplicity, we focus on questions 1-3 in this "Cross-Sectional Analysis" section of the paper and questions 4-5 in the "Panel Data Analysis" section. Our three sets of questions for the cross-sectional analysis were as follows:

Q1. Do investors see a higher valuation for newly exited platforms compared to non-platforms?

Q2. Six months after exiting via IPO, do platforms have a higher valuation compared to non-platforms, and do they have higher investor returns on average?

Q3. One year after exiting, do platforms have a higher valuation compared to non-platforms, and do they have higher average investor returns?

3.1 Data Description

We used four primary sources for constructing our dataset: Crunchbase for the complete list of exited unicorns, CRSP/Compustat for IPO exit dates, Capital IQ and Pitchbook for market cap data, and news articles for classifying business characteristics such as platformness and platform type. According to Crunchbase, as of December 2024, 436 unicorns exited since the first unicorn exit. Of these, 26 were based in the United States,155 exited via an IPO, and 71 exited via an M&A. (We dropped 3 from this initial sample because they did not have pre-exit firm valuations.) From this list, we categorized whether the company exited through an IPO or an M&A. While Crunchbase already provided this information, we verified the data through news articles and Pitchbook cross-references. If a company experienced both an M&A and an IPO during its history, we chose the *first* event, and classified the unicorn based on this first event.

To collect exit dates for M&As, we used three sources: Crunchbase, Pitchbook, and news articles/PR releases. For IPOs, we gathered the exit dates from the CRSP/Compustat combined dataset in WRDS and verified this information with Capital IQ. If there was a discrepancy between the datasets, we extracted historical press releases and news articles surrounding the IPO to confirm the IPO date. For the few companies whose IPO dates we could not identify in the CRSP dataset, we utilized news articles and PR releases to manually code the remaining exit dates.

For the investor return calculations, we collected the exit-day valuation for a unicorn until the company exited through an M&A or IPO. We collected this financial data from Pitchbook, which provided the last private valuations. Here forward, we define this as the investors' price. For simplicity, our analysis does not account for profits, possible dividends, or other benefits to investors, such as tax deductions.

To measure unicorn value for both valuations and investor-return calculations, we used one of two measures: the amount paid for a unicorn by the acquiring company in an M&A, or the market cap on the close of the first IPO day for a unicorn that went public. One reason we chose the exit day valuation for IPOs is because this is the closest equivalent to the M&A value. Therefore, to have a balanced comparison, we utilized the immediate post-exit value for both an M&A and IPO.

We included *business*, *product*, *age*, and *industry* as primary independent variables, to assess whether the varying business model types had an additional impact on exited unicorns' valuations. *Business* indicated whether an exited unicorn was B2B or B2C. *Product* identified whether an exited unicorn was primarily product-oriented or service-oriented (specifically, in the parts of the company which were revenue generating). *Industry* was manually coded by analyzing the companies' websites, and refers to Crunchbase's industry classifications for each company. The deciding factor was the companies' published materials (such as the website, press releases, etc.). After reviewing these materials, we categorized the companies into eight industry categories: Artificial Intelligence, Internet Software and Services, Social Media & Communications, Biotech & Healthcare, E-commerce & Retail, FinTech, Manufacturing & Supply Chain, and Other. If a unicorn qualified for more than one category, we assigned it to the industry that appeared to describe the main revenue source of the company. For example, if a company was a social-media platform that also allowed users to sell products or services but the platform did not receive a

commission, we would classify the company under Social Media & Communications, even though it could also be described as an E-commerce & Retail unicorn.

In Questions, 2-3, we also included revenue growth, identified as *rev*_g, as an independent variable. This was excluded from Question 1 because of a lack of consistent pre-exit revenue data available. *rev_g* was the exited unicorn's annual revenue growth rate, measured as

$$rev\_g_{it} = \left(\frac{revenue_{it} - revenue_{i,t-1}}{revenue_{i,t-1}}\right), \quad (3)$$

where revenue from year *t* was subtracted from revenue in the prior year, and divided by the prior year's revenue. We manually calculated this information using data from each company's annual 10-K reports. We used the same formula structure to calculate operating income growth, with the same year structure as revenue growth. We extracted this data from each company's 10-Ks, as well.

For the second question, we also include a market condition variable, indicating whether the market was comparatively up or down. Our binary variable is derived from the Russell 2000 index, which measures 2,000 of the smaller publicly traded companies in the United States. We utilized this measure because the Russell 2000 is often seen as a good indicator of the U.S. economy, since it focuses on the performance of smaller companies rather than larger ones, which can act as performance outliers. Since the data for this hypothesis starts in 2011, we utilize the Russell 2000 rate in 2010 as the first data point. We then derived two variations of the Russell variable. The first was the actual Russell value change, resulting in both positive and negative values. The formula used to derive this rate of change was:

$$russell_t = \left(\frac{russell_t - russell_{t-1}}{russell_{t-1}}\right), \quad (1)$$

where $russell_t$ is the Russell 2000 value in a specific year, and $russell_{t-1}$is the Russell 2000 value for the prior year. The $russell_t$ values were tied to the exit year. For example, if a company IPO'd in 2019, then the associated Russell 2000 value would be calculated as:

$$russell_{2019} = \left(\frac{russell_{2019} - russell_{2018}}{russell_{2018}}\right)$$

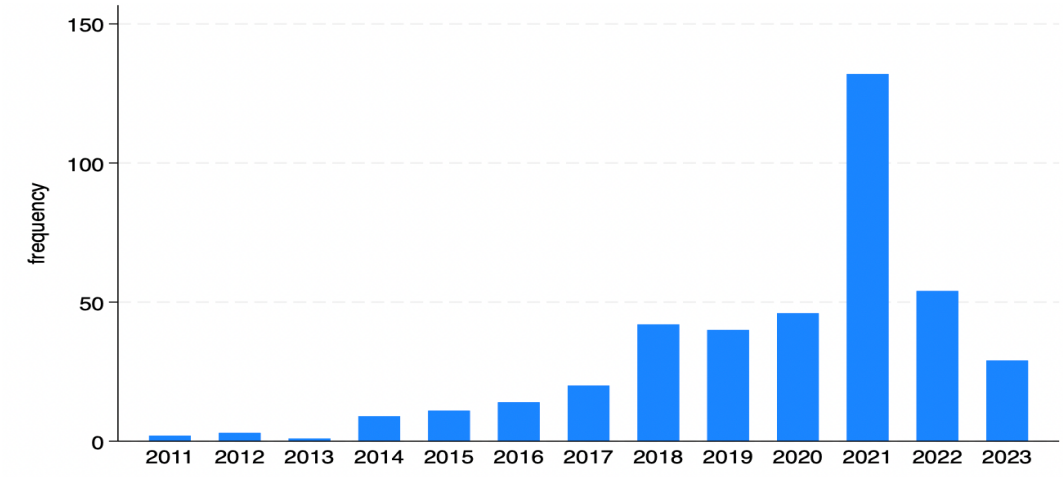
If the value of $russell\_roc_t$ was positive, our binary Russell variable $russell_t$was equal to 1. If it was 0 or negative, $russell\_roc_t$ was equal to 0 (see **Table 1** for variable descriptions).

3.2 Summary Statistics

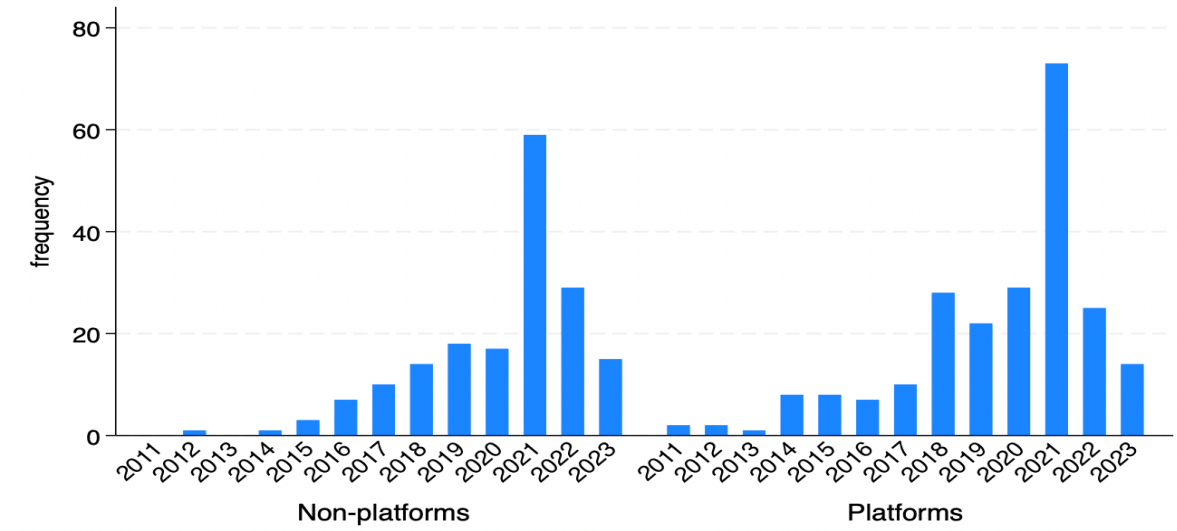
We focused only on exited unicorns headquartered in the United States since several of the firms outside of the United States presented issues with data reliability. As mentioned previously, there were 226 exited unicorns, with 155 IPOs (69%) and 71 M&As (31%). Of these 226 exited unicorns, 97 (43%) were non-platforms while 129 (57%) were platforms. For customer orientation, 96 unicorns (42%) were B2C and 130 (58%) were B2B. Additionally, 96 unicorns (42%) were product-oriented unicorns, while 130 (58%) were service-oriented. For platform unicorns specifically, 87 platforms (67%) exited through an IPO, and 42 (33%) were acquired. Interestingly, non-platform unicorns exited through IPOs and M&As at similar ratios as platform unicorns. Sixty eight non-platform unicorns (70%) had IPOs, and 29 (30%) were acquired (see **Figure 2** and **Tables 3a-3e** for more details).

The graph below shows the number of unicorn exits per year (both platforms and non-platforms). The highest number of exits was in 2021, the year following the Covid-19 pandemic shutdowns. While we see a decline in exits for the following two years, they appear to return to pre-pandemic levels. The next graph also shows unicorn exits, with an additional categorization of platforms or non-platforms.

Number of Unicorns by Exit Year, 2011-2023



Number of Platforms and Non-Platforms by Exit Year



3.3 Examples of Companies in our Sample

In this subsection, we briefly describe two companies in our dataset as illustrative examples of platform and non-platform unicorns. For the platform case, we discuss Airbnb, and for the non-platform, we discuss Snowflake.

Airbnb Brian Chesky, Nathan Blecharczyk, and Joe Gebbia founded Airbnb in 2007. As the company describes, the business was born "when two hosts welcomed three guests to their San Francisco home."[7] By March 2009, the company had rebranded from Airbed and Breakfast to Airbnb, and began offering apartments and homes, in addition to their original mainstay of only offering rooms.[8] Over the next two decades, Airbnb "[grew] to over 5 million hosts who have welcomed over 2.5 billion guest arrivals in almost every country around the globe."[9]

Airbnb's IPO occurred on December 10th, 2020, with a post-valuation estimate of $40.63 billion. However, the share price on opening day almost doubled in comparison to the day before ($68 per share on the night of December 9th, compared to $146 opening price on the morning of December 10th). This led to an IPO day market cap valuation of $86.46 billion at closing.[10] In Airbnb's first post-IPO 10K report, the firm listed a jump in total assets of approximately 38% from 2019-2021, with revenue increasing from $4.8B in 2019 to $6B in 2021.[11] By December 10th, 2021 (a year after its IPO), Airbnb's market cap had risen to $114.6B.

Snowflake Benoit Dageville, Thierry Cruanes, and Marcin Zukowski founded Snowflake in 2012. As the company describes, it "consolidates data hosted on different public clouds for centralized analytics and governance…[Snowflake lets users] independently scale the compute and storage layers," and hosts a data lake and data warehouse which can be used across business applications.[12] The company was built with the goal of being "a data-warehousing solution for the cloud, aka, a database that lives in the cloud that could hold vast volumes of data," at a time when most companies stored data on-site.[13]

Snowflake's IPO was on September 16, 2020, in what was at the time the largest software IPO in history. Originally valued at $12.4 billion in February 2020, with a post-valuation of $33.7 billion, Snowflake's IPO closing day market cap was $71.33B.[14] In Snowflake's first post-IPO

10K report, revenue had risen from $264M in FY2020 (pre-IPO) to $1.22B in FY 2022. However, the company's net loss doubled from $348M to $677M in the same time period.[15] On the 1-year anniversary of Snowflake's IPO, the company's market cap had risen to $97.1 billion.

4. Methodology – Cross-Sectional Analysis

Since the questions above required different datasets for their analyses, we separated their methodology descriptions according to the research question. For question 1, our exited-unicorn sample includes companies from 2011 (the first time a company exited as a unicorn) to 2024. This time frame also overlaps the excitement around investing in platform companies driven by many VC firms. We defined *return* as the value of the company on the exit day minus the valuation at which the last-stage investor invested. For IPO companies, the exit day valuation is the value of the at the end of the IPO day. For M&A unicorns, this was the valuation at which the acquiring company purchased the unicorn.

In questions 2 and 3, from the sample used for Question 1, we selected only the companies that used an IPO to exit, rather than an M&A. We were interested in valuations and investor returns 6 months and 1 year after the company underwent an IPO. Similar to question 1, we defined *return* as the value of the company on the exit day minus the valuation at which the investor invested. (We provide additional definitions and descriptions of our variables in the Methodology section.)

Q1. Do investors see a higher valuation for newly exited platforms compared to non-platforms?

From our Crunchbase dataset, including adding market cap valuations for IPOs and any available M&A acquisition prices, we dropped companies that did not have exit valuation data. Additionally, we analyzed two dependent variables: the natural log of valuations, and market returns. For valuations, we collected the market cap valuation at the end of first day of the IPO, or the acquisition price/valuation for M&As. Because there were several outliers, or extremely high values that could have biased the regression results, we translated each valuation into a natural log to mitigate the effect of outliers in our data. We performed this transformation on both IPO valuations and M&A prices. To ensure the results were not biased towards higher or lower valuations, we Winsorized the results at the 1%/99% and 5%/95% thresholds, and ran the same regressions again to verify the results were similar. Since the 1%/99% thresholds only eliminated 2 firms, we also ran the 5%/95% thresholds to ensure similar results to the non-winsorized sample. (In this case, we removed the top 9 and bottom 9 firms by valuation.)

Since our data for this question was cross-sectional, we started with a two-stage least-squares (2SLS) model. We had two dependent variables: the natural log of valuation, and investor returns, as mentioned above. We also decided to split the analysis based on the two exit types, IPO and M&A, to assess whether a platform's potential impact on valuations and investor returns varied by exit type. We tested both the IPO and M&A regressions for endogeneity, using Wooldridge's test (1995). For both valuations and returns, we found evidence of endogeneity in IPO exits, while M&A exits showed exogeneity. Because the IPOs showed evidence of endogeneity, we utilized 2SLS with the instruments $business$, $product$, and *articles,* since these variables were the most

likely to affect how investors valued unicorns, especially if they were platforms, following the methodology of Cusumano et al. (2025).

We utilized the following equations for the exit-day valuation regressions in the IPO case:

$$\ln(val)_i = \beta_0 + \beta_1 \widehat{platformness}_i + \beta_2 age_i + \beta_3 ind_i + \varepsilon_i \qquad (1)$$

$$\widehat{platformness}_i = \gamma_0 + \gamma_1 business_i + \gamma_2 product_i + \gamma_3 articles_i + u_i \qquad (2)$$

and the following regression for the M&A cases:

$$\ln(val)_i = \beta_0 + \beta_1 platformness_i + \beta_2 age_i + \beta_3 ind_i + \beta_4 business_i + \beta_5 product_i + \varepsilon_i \qquad (3)$$

In these regressions, we did not include revenue growth or operating income growth as a variable. In many cases, revenue information was not available for when the companies were privately held and therefore we could not calculate the revenue growth for this specific time frame (e.g. right before and right after the exit). Additionally, we did not include the articles variable in the M&A regression because, based on conversations with practitioners who worked with unicorns exits during our sample's time frame, firms acquiring unicorns did not rely on articles to value the companies, but rather on factors such as how the firm's characteristics would help the acquirer's strategic and financial goals. Therefore, we removed the *articles* variable from the M&A regression.

Q2: Six months after exiting via IPO, do platforms have a higher valuation compared to non-platforms, and do they have higher investor returns on average?

Q3: One year after, do platforms have a higher valuation compared to non-platforms, and do they have higher average investor returns?

To answer these questions, we utilized a repeated cross-sectional dataset for the analysis. We collected a panel dataset of market cap valuations at three points in time: the end of the exit day (closing valuation), 6 months after the IPO, and 1 year after a unicorn's exit. Using Capital IQ, we collected this market cap data using end-of-day valuations for each point in time. Similar to the regressions in Question 1, we had two dependent variables: the natural log of valuations, and investor returns in levels. Additionally, we ran the same regressions for both the 6-month and 1-year time frames, giving us 4 regressions.

As mentioned, we also analyzed investor returns, which is the current day valuation minus the exit valuation (shown in equation (2)). The investors' price is the exit day valuation, capturing the effect for investors who joined on the first day that the unicorn went public. The formula for this calculation is:

$$investor\ returns_{it} = current\ valuation_{it} - exit\_valuation_{it} \qquad (2)$$

Unlike valuations, we did not take the natural log of investor returns because several of the results were negative, due to investors paying a higher unicorn valuation than the acquisition price/IPO market cap.

For question 2, we analyzed only IPOs, since M&As did not have valuation information 6 months and 1 year after their exits (a.k.a. their acquisitions). Although we had 158 IPOs in the data for Question 1, this fell to 150 after we dropped 18 IPO companies due to a lack of data, including valuation information/attrition 1 year ahead. We also included three new variables: revenue growth and the Russell variable, both of which we defined in the Data section, and an interaction term between the Russell variable and the platform variable. We designed this variable to identify if platforms had a higher valuation or investor return over non-platforms in a positive Russell year.

Again, we tested for endogeneity, and found no evidence in the 6-month and 1-year time periods. Therefore, we utilized OLS with robust errors to control for potential heterogeneity in the error terms.

For the 6-month time period, we utilized the following regressions:

$$6\_mos\_val_i = \beta_0 + \beta_1 platformness_i + \beta_2 rev\_g_i + \beta_3 business_i + \beta_4 product_i + \beta_5 ind_i + \beta_6 articles_i + \beta_7 age_{it} + \varepsilon_i \quad (7)$$

and

$$1\_year\_val_i = \beta_0 + \beta_1 platformness_i + \beta_2 rev\_g_i + \beta_3 business_i + \beta_4 product_i + \beta_5 ind_i + \beta_6 articles_i + \beta_7 age_{it} + \varepsilon_i \quad (8)$$

where $6\_mos\_val_i$ and $1\_year\_val_i$ were the natural log of valuations 6 months and 1 year after the IPO, and op_income_g was the growth of operating income from the year of the IPO (at time *t)* to one year later (in year *t+1*). Similarly, for investor returns, we utilized the following regressions:

$$6\_mos\_ret_i = \beta_0 + \beta_1 platformness_i + \beta_2 rev\_g_i + \beta_3 business_i + \beta_4 product_i + \beta_5 ind_i + \beta_6 articles_i + \beta_7 age_{it} + \varepsilon_i \quad (9)$$

and

$$1\_year\_ret_i = \beta_0 + \beta_1 platformness_i + \beta_2 rev\_g_i + \beta_3 business_i + \beta_4 product_i + \beta_5 ind_i + \beta_6 articles_i + \beta_7 age_{it} + \varepsilon_i \quad (10)$$

where $6\_mos\_ret_i$ and $1\_year\_ret_i$ were investor returns 6 months and 1 year after the IPO, respectively.

5. Results – Cross-Sectional

Q1. Do investors see a higher valuation for newly exited platforms compared to non-platforms?

In our first set of regressions, we analyzed the effects of exits on platform over non-platform unicorn valuations and investor returns. For IPO exits, we identified a 321% difference in platform unicorn valuations over non-platform unicorn valuations at a significance of 1.4%. For M&A exits, platform unicorns had a 77% higher valuation than non-platform unicorns (see **Table 4**). In both cases, we see evidence that post-exit buyers on average place higher value on platform companies. However, the indication that there is a significantly higher premium for platforms that experienced IPOs indicates a potential additional effect, such as hype, which frequently surrounds highly-publicized platform IPOs.

Q2: Six months after exiting via IPO, do platforms have a higher valuation compared to non-platforms, and do they have higher investor returns on average?

Q3: One year after exiting, do platforms have a higher valuation compared to non-platforms, and do they have higher investor returns on average?

Valuations Our next set of regressions focused on longer-term valuation differences. Platformness alone was not correlated with higher valuations 6 months after the IPO, with a significance level of 5.4% on a positive coefficient. However, platformness was correlated with a 23% increase 1 year after a unicorn's IPO, though the coefficient was smaller than on the IPO day (see **Table 5** for the results).

Investor Returns For investor returns at 6 months and 1 year, we again found that platformness was not statistically significant, indicating that platformness alone did not have an effect on investor returns in the 6 month or 1 year time frame (see **Table 5**) .

*6. **Research Questions and Data – Panel Data***

To provide additional context for these results, we performed a third analysis. This utilized a panel dataset from 2019-2023 and allowed us to examine whether platform unicorns had a higher valuation or investor returns on average when compared to non-platforms.

Q4: Do platforms have a higher valuation compared to non-platform unicorns during the 2019-2023 investment time frame?

Q5: Do platforms have higher investor returns compared to non-platforms during the 2019-2023 time frame?

In this question, we analyzed a specific time frame of 5 years. Notably, these were the 2 years before and 2 years after the 2021 "pandemic valuation bump" in the IPO market. We specifically chose 2019-2023 to analyze if the higher platform valuations seen in 2021 were also present before and after 2021, or whether there was a bubble effect due to the pandemic. All of the data in this panel dataset was post-IPO, and excluded unicorns that exited via M&A.

Since this hypothesis analyzes valuation data across 5 years and all exited unicorns in our sample that exited in an IPO, we constructed a panel dataset containing daily market cap valuations. To maintain a balanced time panel, we proxied weekend valuations with the previous Friday's valuations. For example, in January 2023, the 6th through the 9th was a Friday through Monday period. In this case, we would substitute the 7th's and 8th's valuations with the end-of-day market cap valuation from Friday the 6th. Also, many unicorns exited during 2021, so the number of companies in the sample increased over the 5-year period.

Our independent variable of interest was the platformness variable. Here, we use the same definition of platformness as Cusumano, et. al (2024), where a platform company connects two or more sides of a market, and has the potential to generate cross-side network effects.[16] Similarly to Questions 1 and 2, the two dependent variables were the natural log of valuations and investor returns. Since this question only analyzed IPOs, as M&A data does not allow for the construction of a panel dataset, we used the natural log of the end-of-day market cap as the definition for valuations. For investor returns, we did not take the natural log of investor returns since several values were negative.

7. Results – Panel Data

We first checked for endogeneity in our dataset. After conducting Wooldridge's test (1995), we identified that the data was exogenous over the 5-year period and utilized panel OLS. We also utilized Hausman's test to determine whether to use fixed effects or random effects, and identified that random effects were the correct specification.

The equation for the valuations regression was:

$$\ln(valuation)_i = \beta_0 + \beta_1 platformness_{it} + \beta_2 russell_{it} + \beta_3 platformness * russell_{it} + \beta_4 age_{it} + \beta_5 ind_i + \beta_6 rev\_g_{it} + \beta_7 product_i + \beta_8 business_i + \beta_9 ebitda\_g_{it} + \varepsilon_{it} \quad (11)$$

and for investor returns, the regression was:

$$investor\_returns_{it} = \beta_0 + \beta_1 platformness_{it} + \beta_2 russell_{it} + \beta_3 platformness * russell_{it} + \beta_4 age_{it} + \beta_5 ind_i + \beta_6 rev\_g_{it} + \beta_7 product_i + \beta_8 business_i + \beta_9 ebitda\_g_{it} + \varepsilon_{it} \quad (12)$$

Here, we have included both revenue growth and EBITDA growth (EBITDA growth is measured using the same formula as revenue growth, with EBITDA in the place of revenue). Additionally, we included an interaction term between platformness and the Russell 2000 variable

to capture a potential effect from being a platform in a positive Russell year, compared to non-platforms in a negative Russell year.

In the valuation regressions, we found that being a platform increased the average market cap valuation by 51% compared to non-platform unicorns. Our platformness variable is significant at 5%. We also find a positive coefficient of 58% on platform valuations in a positive Russell year compared to non-platform valuations in a positive Russell year, indicating that the interaction effect between firms' valuation and a good Russell year is larger for platforms compared to non-platforms. Age is also positively correlated with higher valuations, regardless of platformness (see **Table 6**).

For investor returns, we find that platformness, the Russell variable, and the interaction term for these two variables are not statistically significant. Additionally, we find that revenue growth and age are positively correlated with investor returns, highlighting the long-term significance of financially-healthy and stable companies for investors. Crucially, this result is independent of platform status, and suggests that investing in platforms shortly before IPOs does not guarantee long-term positive returns. It also highlights that being a platform is not as important as longevity and being a financially stable business (see **Table 6**).

Based on the results in our valuation panel data regressions, we also measured whether revenue growth or EBITDA growth would be higher in platforms compared to non-platforms. Utilizing t-tests, we identified that neither revenue growth nor EBITDA growth were higher for platforms versus non-platforms in our 2019-2023 sample.

8. Conclusion

In this paper, we addressed five questions surrounding the impact of platformness on short-term and longer-term unicorn valuation and investor returns. With regard to valuations, we found that investors pay more for unicorn platforms over non-platforms that experienced an IPO or an M&A. However, for unicorn valuations measured 6 months after IPO exits, platformness alone was not associated with higher valuations. This finding suggests that higher valuations seen for platforms on the IPO date were more likely caused by short-term factors such as hype and publicity, which would diminish relatively soon after the IPO. Nonetheless, we start to see a reversal of this trend around the 1-year mark, indicating that platformness and other factors do contribute to higher company valuations.

When we looked at investor returns, however, we get a different picture. We analyzed results over 6-month and 1-year horizons, and found that investor returns were not higher for platforms over non-platforms. Instead, factors such as industry and publications about the firm, regardless of platform status, were correlated with higher investor returns. When we analyzed results over a 5-year horizon, we did find that platformness is associated with higher valuations, but it is not statistically significant for investor returns. Similarly, positive Russell years for platforms, higher revenue growth, and increased EBITDA growth all positively impacted valuations, while platformness and positive Russell years did not significantly impact investor returns. By contrast, factors such as revenue growth and firm age more positively affected investor returns. In other words, investors who buy shares in platform companies on the IPO day will likely

not see profits on the basis of platformness alone. Investor returns are more impacted by factors such as the financial health of the company and its longer-term viability (age).

In sum, our sample of unicorns that went public do support the intuition that platform businesses should have higher valuations than non-platform businesses. However, we also found that higher valuations do not necessarily translate into higher investor returns. For investors that purchase platform unicorns on their IPO day, their returns are lower on average than non-platforms, suggesting overly high valuations for unicorn platform companies. Investor returns for M&A are also dependent on the acquisition price, and the evidence suggests that unicorn platform businesses may be over-valued in M&A markets as well. This is not to say that platform businesses do not perform as well as non-platform businesses but, clearly, there are many factors that influence company valuations and investor returns.

Exhibits

Table 1. Variable Descriptions

Variable	Description
Name	The name of each company included in our sample
Ln(val)	Natural log of valuations
Returns	Investor returns
Platformness	Whether a unicorn is a platform. We coded this as a binary variable, equal to 0 if the unicorn was not a platform, or 1 if the unicorn was a platform.
Business	Whether the company is primarily B2B or B2C oriented
Product	Whether the company is primarily product or service oriented
Age	The age of the firm (current year – founding year)
Industry	The industry of the firm
Num-Russell	Binary variable which identifies whether a firm is in a high or low Russell Index 2000 year. This variable equals 0 if it decreased in the Russell index compared to the prior year, and 1 if it increased.
Rev-growth	The percentage of revenue growth (or loss) from one year to the next. This was calculated using $\frac{rev,current\ year - rev,previous\ year}{rev,previous\ year}$.
EBITDA-growth	The percentage of revenue growth (or loss) from one year to the next. This was calculated using $\frac{ebitda,current\ year - ebitda,previous\ year}{ebitda,previous\ year}$.

Figure 2. Description of the Sample Data

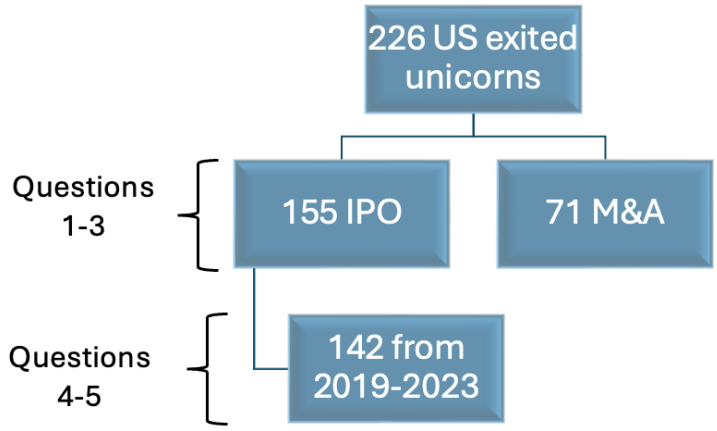


Table 3a. Summary of M&A and IPO Cross-Sectional Data

Variable	Count	Mean	Min	Max	Std. Dev
Total	229	n/a	n/a	n/a	n/a
M&A	71	n/a	n/a	n/a	n/a
IPO	158	n/a	n/a	n/a	n/a
Valuation at Exit	229	$6.6B	$20M	$81.3B	$11B
M&A	71	$3.1B	$20M	$19B	$3.4B
IPO	158	$8.1B	$524M	$81.3B	$12.8B
Ln(val)	229	21.8	16.8	25.1	1.3
M&A	71	20.9	1.45	16.8	23.7
IPO	158	22.2	20.1	25.1	1.01
Diff	229	$1.1B	-$8.1B	$37B	$3.2B
M&A	71	$1.03B	$3.1B	-$6.4B	$17.4B
IPO	158	$1.1B	-$8.1B	$30.7B	$3.2B

Table 3b. Summary for IPO-only companies

Variable	Count	Mean	Min	Max	Std. Dev
Number of Firms	155	n/a	n/a	n/a	n/a
ln(val)	155	22.2	20.1	25.1	1.01
Diff	155	$1.1B	-$8.1B	$30.7B	$3.2B
Revenue	155	$977MM	$95MM	$13B	$1.68B

Table 3c. Summary of the Binary Variables

Variable	Count
Platformness	
Platform	87
Non-platform	68
Total	**155**
Business	
B2B	68
B2C	87
Total	**155**
Product	
Product-oriented	68
Service-oriented	87
Total	**155**

Table 3d. Summary of the IPO panel data (2019-2023)

Variable	Count	Mean	Min	Max	Std. Dev
Name	142	n/a	n/a	n/a	n/a
Dates	220,213	June 30, 2021	Jan. 1, 2019	Dec. 31, 2023	497 days
Year	220,213	2021	2019	2023	1.32 years
Ln(val)	220,213	22.2	20.1	25.1	1.04
Diff	220,213	$1.84B	-$8.1B	$101B	$8.83B
Revenue	220,213	$1.06B	$0.095B	$1.3B	$1.8B
Revenue growth	220,213	68.1%	-1338%	-1334.4%	142.3%
EBITDA growth	220,213	-$308M	-$8.15B	$1.33B	$925M

Table 3e. Top 10 Firms based on Exit-Day Valuation

Name	Position in Sample	Market Cap, End of IPO Day
Meta	1	81,250,000,000.00
Uber	2	75,710,000,000.00
Rivian	3	67,730,000,000.00
Coinbase	4	65,340,000,000.00
Airbnb	5	40,630,000,000.00
Roblox	6	38,300,000,000.00
Snowflake	7	33,200,000,000.00
DoorDash	8	32,400,000,000.00
Robinhood	9	32,010,000,000.00
UiPath	10	29,070,000,000.00

Note: Data was sourced from Capital IQ and Pitchbook.

Table 4. Cross-Sectional OLS Results, Day of the IPO or M&A (Question 1)

	(1) IPO	(2) M&A
Variables		
Dependent		
ln(valuation)	x	x
Independent		
Platformness	3.21*	0.77*
Revenue growth	0.22	-
Age	-0.16**	-0.03
Industry	0.05	0.0003
Business	IV	0.43
Product	IV	-0.24
Articles	IV	-
Cons.	20.7***	20.7***

Note: * is significant at 5%, ** is significant at 1%, and *** is significant at 0.01%. Business, product, and number of articles are included as instruments in the IPO regression. Revenue growth is not included in the M&A regressions due to a lack of data for revenue growth in these firms.

Table 5. Cross-Sectional OLS Results, 6 months and 1 year (Questions 2 and 3)

Variables	(1)	(2)	(3)	(4)
Timeline				
6 months	x		x	
1 year		x		x
Dependent				
ln(valuation)	x	x		
Investor Returns			x	x
Independent				
Platformness	2.78[a]	0.23*	$678M	$1.56B
Revenue growth	0.21	0.1	-$158M	$232M
Age	-0.09	-0.04**	$451M	$391M
Industry	-0.04	-0.12	-$601M	-$995M*
Business	-	-0.37	$566M	$1.33B
Product	-	0.09	$1.2B	$1.05B
Articles	-	0.00008***	-$481,999***	-$220,035
Cons.	20.8***	20.7***	-$1.82B	-$1.73B

Note: For footnote a, this coefficient is significant at 5.4%. Regression (1) is endogenous at 5%, not 1%.

Table 6. Panel OLS Regression Results (Questions 4 and 5)

Variables	(1)	(2)
Dependent		
ln(valuation)	x	
Investor Returns		x
Independent		
Platformness	0.51*	-$4.6B
Russel	-2.47***	-$5.3B
Platform x Russel	0.58***	$61B
Revenue growth	-0.007***	$193M***
EBITDA growth	0.0008*	$41.1M
Age	0.14***	$7.6B
Industry	-0.08	-$872M
Business	-0.43	$10.2B
Product	0.07	$7.3B
Cons.	20.7***	-$32.7B*

Endnotes

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