

Vestnik MIRBIS. 2024; 3(39): 137–141.

Вестник МИРБИС. 2024. № 3(39): С. 137–141.

Original article

DOI: 10.25634/MIRBIS.2024.3.17

Determinants of Venture Investment Size in Indian Unicorn Companies

Andrey V. Novikov – MISIS University. Moscow, Russia.

andr.novikov1104@gmail.com, <https://orcid.org/0009-0002-0381-3894>

Abstract. The objective of this comprehensive study is to elucidate the critical factors that determine the magnitude of venture investment in Indian unicorn companies during subsequent rounds, beginning with the second. With a keen focus on a sample of 37 unicorn firms during the year 2022, the study scrutinizes a plethora of influential elements that may enhance the size of investments within the Indian economic landscape. This research is built upon an exhaustive analysis of the multifaceted elements such as industry, investor experience, initial investment quantum, and a host of other germane factors, that all work in synergy to shape the unique attributes of the Indian startup ecosystem. Moreover, the investment environment of this emerging market is evaluated and compared with global standards to understand the defining characteristics that contribute to its individuality. The study thus serves as an extensive guide for venture capital investors, stakeholders in the Indian startup ecosystem, policy-makers, and researchers by shedding light on any distinctive features of the Indian market that may have contributed to the observed results, and outlining potential future avenues for further investigation.

Key words: determinants, venture capital, Indian unicorns, investment size, follow-on rounds, investment activity, linear regression model, experienced investors, industry influence, target market growth, number of founders.

For citation: Novikov A. V. Determinants of Venture Investment Size in Indian Unicorn Companies. DOI: 10.25634/MIRBIS.2024.3.17. *Vestnik MIRBIS*. 2024; 3: 137–141 (in Russ.).

JEL: C83, G24, M13

Детерминанты размера венчурных инвестиций в индийские компании-«единороги»

Андрей Владимирович Новиков — Университет науки и технологий МИСИС. Москва, Россия.

andr.novikov1104@gmail.com, <https://orcid.org/0009-0002-0381-3894>

Аннотация. Целью данного комплексного исследования является выявление ключевых факторов, определяющих величину венчурных инвестиций в индийские компании-«единороги» на последующих раундах, начиная со второго. Особое внимание уделяется выборке из 37 компаний-«единорогов» в 2022 году, исследуются многочисленные факторы, способствующие увеличению объема инвестиций в условиях индийской экономики. Это исследование основывается на всестороннем анализе множества элементов, таких как отрасль, опыт инвесторов, начальный объем инвестиций и другие важные факторы, которые совместно формируют уникальные особенности индийской экосистемы стартапов. Кроме того, инвестиционный климат этого развивающегося рынка оценивается и сравнивается с мировыми стандартами для понимания отличительных черт, которые способствуют его индивидуальности. Таким образом, исследование служит всеобъемлющим руководством для венчурных инвесторов, участников индийской экосистемы стартапов, политиков и исследователей, освещая характерные особенности индийского рынка, которые могли повлиять на наблюдаемые результаты, а также указывая на возможные направления для дальнейшего изучения.

Ключевые слова: детерминанты, венчурный капитал, индийские компании-«единороги», размер инвестиций, последующие раунды, инвестиционная активность, модель линейной регрессии, опытные инвесторы, влияние отрасли, рост целевого рынка, количество основателей.

Для цитирования: Novikov A. V. Determinants of Venture Investment Size in Indian Unicorn Companies. DOI: 10.25634/MIRBIS.2024.3.17 // *Вестник МИРБИС*. 2024; 3: 137–141.

JEL: C83, G24, M13

Introduction

The Indian startup ecosystem has experienced significant growth in recent years, marked by a rapid expansion that is reshaping the country's economic and social landscapes. With a rise in entrepreneurial initiatives, innovative technologies, and supportive governmental policies, India has witnessed an increase in the number of homegrown unicorn companies—those valued at over \$1 billion. These once-rare "unicorns" now serve as indicators of the nation's growing technological expertise and investment appeal.

In this dynamic startup environment, understanding the mechanisms behind venture investments is of critical importance. Particularly in the context of unicorn companies, an analysis of the determinants influencing investment size provides valuable insights for a diverse range of stakeholders, including investors, entrepreneurs, and policymakers. Such an analysis can enable investors to make well-informed decisions by identifying potential opportunities and risks, assist entrepreneurs in securing funding by revealing what attracts significant investments, and support policymakers in fostering a favorable environment for the growth of these high-value companies.

This study explores the various factors that influence the size of venture investments in Indian unicorn companies, with a primary focus on follow-on rounds beginning with the second round. The research aims to offer a comprehensive understanding of these determinants and their interactions within the unique framework of the Indian startup ecosystem. It is important to note, however, that the findings are indicative rather than definitive, given the complex and multifaceted nature of venture capital investments.

Literature Review

A substantial body of academic research has focused on identifying the factors that influence the scale of venture capital investments in startup firms. Numerous studies have examined the role of macroeconomic factors in shaping this dynamic. For instance, venture capital investments tend to exhibit a positive correlation with indicators such as GDP growth rate, inflation, and stock market liquidity [Bonini 2011; Cumming 2006].

The overall conditions within the venture capital

market also significantly affect investor activity. The creation of new unicorns and the frequency of successful exits are positively associated with the volume of venture capital (VC) attracted by other firms [Negrutiu 2022]. Additionally, the founder's profile and the industry in which the startup operates are important determinants of the amount of funding raised [Chan 2018; David 2021].

However, much of the existing literature focuses on developed economies, with less attention paid to emerging markets. As emerging markets, particularly India, experience a rapid rise in the number of unicorn firms, the interest in understanding the factors driving venture capital attraction in these markets is increasing [Hsu 2004].

Alongside macroeconomic factors, higher global liquidity has been found to positively influence venture capital investments in India [Mustafa 2020]. State-level analyses within India have shown that factors such as workforce size, infrastructure development, state GDP growth, and credit availability positively impact venture capital attraction [Malik 2020].

Research in other emerging markets has also contributed valuable insights. In the Russian IT sector, the size of initial round investments and the presence of an experienced investor have been shown to play a significant role in the funds raised in subsequent investment stages [Rodionov 2018].

Despite the extensive research dedicated to venture capital dynamics, a notable gap exists in the literature when it comes to understanding the factors affecting venture capital investments in the Indian context. Furthermore, there is a marked absence of studies specifically focused on identifying the key determinants influencing venture capital attraction by Indian unicorn companies.

Thus, there is a pressing need to refine econometric models and conduct in-depth analyses of large startups to foster the future development of the venture capital industry in India. Identifying both macroeconomic and microeconomic factors that drive venture capital investments in Indian firms remains a critical area for further exploration.

Methodology

This study utilizes data from the following sources:

- Investment size in the Series A funding round
- Amount of debt financing
- Number of founders in each company
- Industry of operations

- Total amount of funding received by each company

Table 1. The descriptive statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
inv1	37	14,78	18,88	0,80	83,00
inv2	37	504,44	365,00	111,60	1700,00
ln_inv1	37	2,14	1,06	-0,22	4,42
ln_inv2	37	6,02	0,63	4,71	7,44
debt	37	23,07	44,51	0,00	159,70
founders	37	3	1	1	7

Source: compiled by the author based on the original data

The majority of the determinants analyzed in the sample were sourced from the following databases: CrunchBase, PitchBook, and AngelList [Davila 2003]. The descriptive statistics of the sample can be found in the table above (Table 1). Overall structure of the sample by the number of deals is presented below (Figure 1).

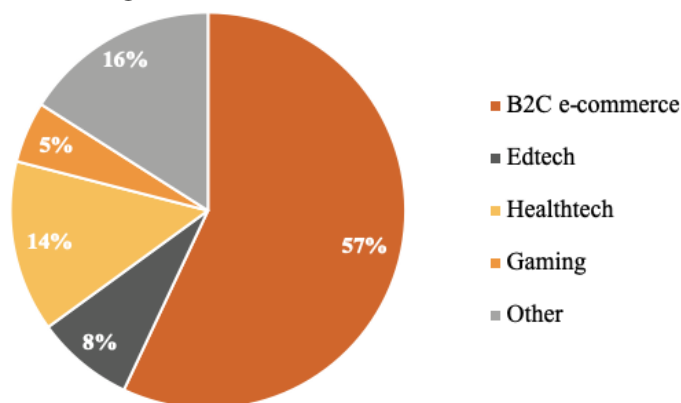


Figure 1. Indian unicorns in 2022 by industry

Source: compiled by the author based on the original data

As illustrated in the graph, the largest segments consist of B2C e-commerce (e.g., BharatPE, GlobalBees, Meesho, MyGlamm) and Healthtech (e.g., PharmEasy, Pristyn Care, Inovaccer, cure.fit). Regarding the total funding amounts, the companies in the sample were categorized accordingly (Figure 2).

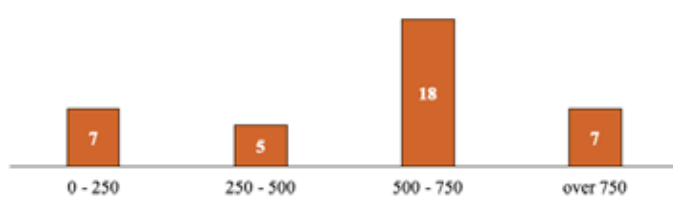


Figure 2. Distribution of companies by total funding, in millions of USD

Source: compiled by the author based on the original data

All the companies included in the sample have secured investments from professional investors, primarily venture capital or private equity funds. These investors typically have a history of successful exits from their previous investments and often possess prestigious brands or international recognition. Notable investors in the Indian startup ecosystem over the past decade include Sequoia Capital India, Accel Partners, Tiger Global Management, Matrix Partners India, Blume Ventures, SAIF Partners, and Nexus Venture Partners.

The final sample comprised 37 companies in the Indian venture capital market as of 2022. This number reflects the limited availability of data for all factors analyzed in the study. The information for the deals in this sample is the most comprehensive and reliable.

To investigate the factors influencing the total amount of funding in Indian unicorn companies during follow-on rounds, an Ordinary Least Squares (OLS) model was employed. The model is specified as follows: $ln_inv2 = a + b1 * ln_inv1 + b2 * debt + \dots + b3 * founders + b4 * industry + u$

Dependent variable:

- ln_inv2 – natural logarithm of the total funding amount for an Indian unicorn company, in millions of U.S. dollars.

Independent variables:

- ln_inv1 – natural logarithm of the investment size in the Series A round.
- $debt$ – volume of debt financing received by the unicorn company.
- $founders$ – number of founders of the company.
- $industry$ – categorical variable representing the industry in which the company operates (dummy variables may be used to represent different industries).

Results

The analysis of the critical factors influencing the size of venture capital investments in Indian unicorn companies during follow-on rounds provides several noteworthy insights (Table 2).

However, the overall explanatory power of the model remains somewhat limited. The R-squared value of 0,208 suggests that only 20,8% of the variability in the dependent variable, $ln(\text{total_funding_amount})$, is explained by the independent variables. This figure decreases to 0,133 when adjusted for the number of predictors and sample

size. The model's F-statistic of 2,794 and a Prob at the 10% level, suggesting a weak correlation (F-statistic) of 0,0561 indicate marginal significance between the dependent and independent variables.

Table 2. Main specifications results

Dependent variable	In_inv2			R2	0,208	
Number of obs	37			Adj R2	0,133	
	Coef.	Std err	t	F-statistic	2,794	
				P > t	[0.025	0.975]
Intercept	5,9815	0,367	16,298	0,000	5,234	6,727
In_inv1	-0,1025	0,098	-1,041	0,306	-0,303	0,098
debt	0,0063	0,002	2,774	0,009	0,002	0,011
founders	0,0416	0,087	0,480	0,634	-0,135	0,218

Source: results of the author's OLS model estimation based on the original data

Discussion

These findings emphasize the complex and multifaceted nature of venture capital investments, where numerous tangible and intangible factors are at play. Unicorn companies, by their very nature, are unique due to their innovation and rapid growth. Each unicorn may be influenced by different determinants during follow-on rounds, ranging from strategic positioning to innovative potential. The limited explanatory power of the model could reflect the fact that these entities are difficult to analyze using a generalized approach, as venture capital investment decisions are often driven by diverse and unpredictable factors.

Moreover, the results highlight the intricate nature of the venture capital landscape, shaped not only by company-specific attributes but also by the preferences and risk tolerances of investors. Unicorns, often market disruptors due to their innovative business models, attract varying levels of investment based on factors such as market positioning, growth prospects, leadership quality, and technological innovation. This variability introduces complexity that may not be fully captured by traditional statistical models.

Given these observations, it becomes clear that future research would benefit from considering the unique characteristics of each unicorn company and employing more sophisticated analytical tools that account for inter-company variations.

Conclusion

This investigation into the determinants of venture capital investment size in Indian unicorns

during follow-on rounds has provided valuable insights while also revealing the inherent complexity of the topic. Unicorn companies, with their unique blend of characteristics, challenge the development of a universally applicable model for predicting investment size. The venture capital landscape, especially within India's dynamic startup ecosystem, is further complicated by the diversity of investors, each with different preferences and levels of risk tolerance.

Future research should consider more targeted approaches, potentially utilizing advanced statistical models such as random effects or mixed-effects models, which are better suited to handling inter-company differences. Additionally, adopting an industry-specific focus could help uncover unique factors driving venture capital investments in particular sectors.

This study serves as a foundation for future research in this domain. It underscores the vibrant and evolving nature of the Indian startup ecosystem and the complex dynamics of venture capital investment. Further inquiry into this promising area is encouraged, with the hope that future studies will refine the understanding of the factors driving venture capital investments, thereby fostering innovation and contributing to economic growth.

Researchers are invited to build upon these findings, challenge them, and introduce new perspectives and methodologies with the ultimate goal of enriching the understanding of venture capital investment dynamics in the ever-changing startup landscape.

References

1. Bonini 2011 — Bonini S., & Alkan S. The political and legal determinants of venture capital investments around the world. DOI:10.1007/s11187-011-9323-x. *Small Business Economics*. 2011; 39:997-1016.

2. Chan 2018 — Chan C. R., Park H. D., Patel P. C., & Gomulya D. M. Reward-based crowdfunding success: decomposition of the project, product category, entrepreneur, and location effects. DOI:10.1080/13691066.2018.1480267. *Venture Capital*. 2018; 20:285–307.
3. Cumming 2006 — Cumming D. J. The determinants of venture capital portfolio size: empirical evidence. DOI: 10.1086/500670. *The Journal of Business*. 2006; 79(3):1083–1126.
4. David 2020 — David D. & Gopalan S. & Ramachandran S. The Startup Environment and Funding Activity in India. *ADB Working Paper 1145*. Tokyo : Asian Development Bank Institute, 2020.
5. Davila 2003 — Davila A., Foster G., & Gupta M. Venture capital financing and the growth of startup firms. DOI:10.1016/S0883-9026(02)00127-1. *Journal of Business Venturing*. 2003; 18(6):689–708.
6. Hsu 2004 — Hsu D. H. What do entrepreneurs pay for venture capital affiliation? *The Journal of Finance*. 2004; 59(4):1805–1844. JSTOR, <http://www.jstor.org/stable/3694879>. Accessed 2 Jun. 2024.
7. Malik 2020 — Malik S., & Kumar S. Determinants of Venture Capital Investments in India: A State Level Analysis. DOI:10.2139/ssrn.3753087. *SSRN Electronic Journal*. 2020.
8. Mustafa 2020 — Mustafa M., & Mazhar S. S. Determinants of Venture Capital Investment in India: Atime Series Analysis. DOI:10.24818/rfb.20.12.01.02. *The Review of Finance and Banking*. 2020; 12(1):19–30.
9. Negruțiu 2022 — Negruțiu C. Determinants of Venture Capital Investments in Tech Start-UPS. DOI:10.24818/REJ/2022/84/03. *The Romanian Economic Journal*. 2022; XXV(84).
10. Rodionov 2018 — Rodionov I. I., Semenov A.S., & Seleznev V. Determinants of the Venture Investment Size in Russian IT Companies. DOI:10.17323/j.jcfr.2073-0438.12.1.2018.44-49. *Journal of Corporate Finance Research*. 2018; 12(1):44–49.

Information about the author:

Novikov Andrey V. — postgraduate student, National University of Science and Technology "MISIS", Leninsky Prospekt, 4/1. Moscow, 117049, Russia.

Информация об авторе:

Новиков Андрей Владимирович — аспирант, федеральное государственное образовательное бюджетное учреждение высшего образования «Национальный исследовательский технологический университет МИСИС», Ленинский проспект, 4/1. Москва, 117049, Россия.

The article was submitted 08/28/2024; approved after reviewing 12/09/2024; accepted for publication 09/27/2024.

Статья поступила в редакцию 28.08.2024; одобрена после рецензирования 09.12.2024; принята к публикации 27.09.2024.