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INVESTMENT RISKS IN STARTUP FINANCING AND METHODS FOR THEIR ASSESSMENT

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Abstract: This article systematically examines the economic substance of investment risks inherent in the startup financing process, their primary typologies, valuation methodologies, and management mechanisms. The study aims to analyze the uncertainties specific to startup investments, synthesize risk assessment approaches employed in venture capital practice, and propose an adaptive valuation model for startups. By integrating traditional and contemporary frameworks, the research provides a comprehensive overview of how risk mitigation strategies influence the overall efficiency of venture deals in high-uncertainty environments.

Key words: startup, investment risk, venture capital, startup valuation, due diligence, venture capital method, First Chicago method, real options, financing, innovative enterprise, uncertainty.

INTRODUCTION

In the modern economy, startup financing has emerged as a key driver for commercialising innovations, supporting high-growth firms, and fostering the development of new markets. Venture capital is particularly regarded as a critical funding source for early-stage startups that possess rapid expansion potential but lack sufficient collateral or stable cash flows required for traditional bank lending.

However, startup financing involves substantially higher risks compared with traditional investments. This is primarily because startups often secure investment based on ambiguous business models, limited operational histories, unproven technologies, and anticipated market acceptance. Consequently, the challenge of “return on investment” (ROI) estimation is inextricably linked to risk assessment within the context of startup investing. Research further indicates that startups operate under conditions of “great uncertainty” —a factor that significantly complicates their valuation.

From this perspective, it is essential to delineate the structure of investment risks in startup financing, synthesise the scientific and methodological foundations of their assessment, and develop an integrated valuation model for practical application. This necessitates a classification of investment risk types, an analysis of valuation approaches within venture capital practice, an elucidation of the role of the due diligence process, and the formulation of risk-assessment mechanisms tailored specifically to startups.

LITERATURE REVIEW

The literature review reveals that scientific approaches to startup financing have primarily evolved along three distinct directions. The first direction focuses on the institutional frameworks for financing startups and innovative firms, examining the venture capital market, government support, private equity, and quasi-equity instruments. World Bank reports interpret risk capital for startups as a fundamental element of the innovation ecosystem. Simultaneously, it is noted that financing gaps remain a significant challenge due to the exceptionally high risks associated with early-stage development.

The second direction focuses on startup valuation methodologies. In this context, alongside the traditional discounted cash flow (DCF) approach, the Venture Capital Method, the First Chicago Method, multiplier-based valuation, the milestone-based approach, and, in certain instances, the real options approach are employed. Scholarly sources emphasise that purely traditional approaches are often inadequate for startups, as projected cash flows tend to be highly uncertain and the estimation of terminal value is subject to significant subjectivity. Consequently, approaches that incorporate scenario analysis and qualitative factors are considered more appropriate.

The third direction focuses on investors’ due diligence practices. Contemporary research indicates that due diligence should encompass not only financial standing but also team quality, technological reliability, market

size, legal risks, and, in certain instances, socio-environmental impact. In startup-specific valuations, factors such as founder quality, execution capacity, and scaling potential play a pivotal role.

Empirical studies in recent years indicate that, when valuing startups, venture capitalists prioritise not only financial indicators but also the management team, innovative resources, market potential, technological differentiation, and exit opportunities. The 2024 study titled “Startup Valuation by Venture Capital Investors” further confirms that qualitative factors hold central importance in valuation from an investor’s perspective. Consequently, the scholarly literature suggests that there is no single universal formula for evaluating startup investments; instead, a multi-criteria and phased assessment approach is essential. This article aims to systematise precisely this point within the context of startup financing.

RESEARCH METHODOLOGY

This study is theoretical and analytical in nature, employing methods such as content analysis, comparative analysis, conceptual modelling, and the synthesis of approaches.

In the first stage, authoritative institutional sources such as the World Bank, IMF, and IPEV, along with scholarly articles on startup valuation, were analysed. This stage served to identify the external financing context of startup investment and the practices of professional investors.

In the second stage, startup investment risks were categorized into the following blocks: team risk, product-technology risk, market risk, financing risk, legal risk, exit risk, and valuation risk. This classification was developed by synthesizing the key determinants identified in venture due diligence and startup valuation research.

In the third stage, a comparative analysis of valuation methods was conducted. The DCF, Venture Capital Method, First Chicago Method, and real options logic were compared based on their degree of adaptability to startups, ability to reflect uncertainty, data requirements, and practical feasibility. Furthermore, due diligence was incorporated as a distinct module for assessing qualitative factors, as a significant portion of risk in startups is manifested not in financial statements but in the business model and execution capacity.

In the fourth stage, an integrated model was developed based on the chain of “startup stage – risk identification – due diligence – scenario valuation – investment terms and structure – monitoring – revaluation”. This model reflects that startup investment is not a one-time valuation event, but rather a phased and iterative process.

ANALYSIS AND RESULTS

Investment risks in startup financing are substantially more complex and multi-layered than those associated with traditional business investments.

The primary and most central risk is team risk. At the initial stage of a startup, the most critical question for an investor is often not “what is the current revenue?” but rather “can this team bring the product to market?” Empirical studies on venture investors indicate that the management team is a crucial factor in early-stage valuation. The 2025 KPMG analysis of Central Asia also highlights the team as one of the most fundamental criteria in evaluating early-stage startups.

The second primary risk is product and technology risk. A startup’s solution must be technically functional, scalable, and capable of addressing a genuine market need. This is particularly critical for deep-tech, AI, biotech, or platform-based startups, as the success of a prototype does not guarantee commercial success. Consequently, during the due diligence process, the technical status of the product, intellectual property (IP) protection, and the development roadmap are scrutinized. IPEV guidelines and venture due diligence literature also emphasise that technology and its monetisation potential must not be overlooked when determining fair value or making investment decisions.

The third risk is market risk. While a startup may be innovative, investor returns decrease if the market size is inaccurately assessed, customer adoption is slow, or competition proves more intense than anticipated. 2024 valuation research indicates that investors view market size, growth potential, and venture scalability as central factors in assessment. Market risk is particularly pronounced in early-stage startups, as they often have not yet fully achieved product-market fit.

The fourth risk is financing and runway risk. Startups are typically financed in stages, and the interval between funding rounds is sustained by the runway. If revenue growth is slower than anticipated, the subsequent investment round is delayed, or capital markets tighten, the startup faces significant operational distress. This, in turn, exacerbates the follow-on financing risk for startups.

The fifth risk is valuation risk. Inaccurate valuation of a startup is hazardous for both parties: overvaluation diminishes investor returns and heightens the risk of a ‘down round’ in subsequent funding cycles, while

undervaluation leads to excessive dilution for founders, thereby undermining incentive systems. The IPEV Guidelines recommend mechanisms such as calibration, backtesting, and the determination of attributable enterprise value to determine fair value; such practices help mitigate valuation subjectivity in startup investments.

The sixth risk is exit risk. Venture capital logic predominantly links a startup's valuation to a future exit event-such as an IPO, M&A, or secondary sale. If the exit market experiences stagnation, realizing the true value of the investment becomes challenging. IMF sources indicate that the venture capital market is highly sensitive to interest rates, investor appetite, and overall conditions in capital markets. Consequently, it can be argued that exit risk is inextricably linked to the macro-financial environment.

Based on the analysis of these risks, the primary methods employed in valuing startup investments have been synthesised as follows:

Firstly, the Discounted Cash Flow (DCF) method. Its primary advantage lies in its theoretical capacity to express fundamental value through cash flows. However, due to the limited historical data of startups, prolonged periods of negative earnings, and excessive reliance on terminal value, the DCF method often yields sensitive and volatile results. Consequently, for startups, the DCF is generally more appropriate as a supplementary verification tool rather than a standalone valuation method.

Secondly, the Venture Capital (VC) Method. In this approach, the investor forecasts the future exit value, discounts it back using a target rate of return, and calculates the required equity stake. This methodology aligns with the startup-specific, exit-oriented logic and is widely prevalent among venture investors. However, it remains highly sensitive to assumptions regarding exit multiples and target returns. Nevertheless, the VC Method continues to be one of the most practical and convenient approaches for early-stage investment valuation.

Thirdly, the First Chicago Method. This approach independently evaluates optimistic, base, and pessimistic scenarios, weighting them by their respective probabilities. Given the high degree of startup uncertainty, this method is significantly more realistic than a single-point estimate. Particularly for startups with alternative paths regarding market acceptance, monetisation, and exit strategies, this approach is considered more robust.

Fourthly, the real options approach. A key characteristic of startup investment is that investors and founders make decisions incrementally: options exist to wait, proceed to the next round, pivot, expand, or terminate. The real options method attempts to capture precisely this value of flexibility. However, due to its practical computational complexity, this approach is primarily applied to analytical and sophisticated projects.

Fifthly, due diligence and multi-criteria qualitative analysis. A pivotal aspect of startup investment is that valuation is not derived solely from a formula; it is determined by multifaceted factors such as the team, technology, traction, governance, legal compliance, and scaling capability. Consequently, in practice, financial modelling, legal scrutiny, commercial due diligence, and technological due diligence are conducted concurrently. Contemporary research confirms that professional venture capital managers make informed investment decisions by relying heavily on rigorous due diligence and continuous monitoring.

CONCLUSION AND RECOMMENDATIONS.

Based on the conducted research, it can be concluded that investment risks in startup financing fundamentally differ from traditional corporate investments due to high levels of uncertainty, limited historical data, and the fact that a vast majority of future value is contingent upon unrealized growth potential. Consequently, investment decisions for startups rely more on evaluating "future execution capacity and scaling potential" rather than "current financial performance". This conclusion aligns with contemporary scholarly work on venture capital and startup valuation.

The primary scientific conclusion of this research is that an effective risk assessment model for startup investments must rely on a combination of methodologies rather than a single approach. The Discounted Cash Flow (DCF) method has limited applicability in startups; the Venture Capital Method serves as a convenient, exit-oriented practical tool; the First Chicago Method more accurately reflects scenario-based uncertainty; and the real options approach elucidates the value of strategic flexibility. Ultimately, the quality of due diligence serves as the overarching determinant for the reliability of the entire valuation process.

From a practical perspective, the following recommendations are proposed for startup investors. First, in early-stage startups, the quality of the founder and the management team should be evaluated as a distinct and primary assessment block. Second, valuation should ideally be represented as a range of potential scenarios rather than a single point estimate. Third, investment terms should be structured to align with risk profiles through mechanisms such as tranching and milestone-based financing. Fourth, to mitigate portfolio risk, investors should prioritise diversification and enhance post-investment monitoring. Fifth, the probability of subsequent funding rounds and potential exit events must be assessed independently, as any decrease in the availability of follow-on financing significantly escalates the risk associated with the current investment.

Crucial recommendations are also provided for founders and startup teams. First, before seeking investment, startups must organize their data room, legal documentation, cap table, and traction metrics. Second, a “high valuation” should not be an end in itself; rather, a sustainable and healthy capital structure for subsequent funding rounds is of greater importance. Thirdly, startups should operate on the same information plane as their investors regarding core risks; namely, they should regularly monitor metrics such as product-market fit, churn, burn rate, runway, and unit economics.

The final conclusion is that investment risk assessment in startup financing is not an isolated calculative exercise; rather, it is a complex management process comprising the synthesis of strategic choices, scenario-based thinking, staged financing, and multi-criteria qualitative due diligence. Investors and startup teams who perceive risk not merely as a threat, but as a framework for “information processing and decision-structuring”, are better positioned to make substantially more informed and robust decisions under conditions of high uncertainty.

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