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**Financial Resilience and Growth in U.S. Startups**

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doi.org/10.51505/IJEBMR.2025.9621

URL: <https://doi.org/10.51505/IJEBMR.2025.9621>

Received: Jun 06, 2025

Accepted: Jun 18, 2025

Online Published: Jun 22, 2025

**Abstract**

High early-stage failure rates among U.S. startups pose persistent challenges for economic growth and innovation. In this study, the role of financial forecasting and scenario planning in bolstering the financial resilience and growth of startups is examined, to reduce early-stage failures. Publicly available data, including U.S. Small Business Administration (SBA) statistics and a Crunchbase-derived dataset of over 7,000 U.S. startups, are used to conduct an empirical analysis linking financial planning indicators to startup outcomes. Quantitative models are employed to forecast startup failure risk and simulate how proactive financial scenario planning might alter survival trajectories. The results indicate that startups that secure sufficient funding and plan for contingencies exhibit significantly higher survival and success rates. Key predictors of venture success are identified, including greater total funding, timely follow-on funding rounds, and robust financial buffers—all of which are shown to be enhanced through rigorous forecasting. Startups with higher financial preparedness are found to be more likely to survive early challenges and achieve growth, whereas a lack of effective financial planning is commonly observed among those that “run out of cash,” a factor contributing to 29% of failures. These findings carry important implications for entrepreneurship practice and policy: improving financial forecasting capabilities within the startup ecosystem can reduce failure rates, stimulate innovation, and enhance economic growth. Recommendations are offered for entrepreneurs, investors, and policymakers to integrate forecasting and scenario analysis into early-stage venture strategy to foster greater resilience and long-term success.

**Keywords:** startup failure, financial forecasting, scenario planning, predictive modeling, entrepreneurial finance

**1. Introduction**

New venture creation is fundamental to economic dynamism, yet startups face notoriously high failure rates. Approximately 20% of new small businesses fail within their first year and about 50% fail within five years, according to U.S. Bureau of Labor Statistics data [1]. Over the long term, the oft-cited statistic is that around 90% of startups ultimately fail, underscoring the formidable challenges of sustaining a new business. Early-stage failures carry substantial economic costs by wasting resources and dampening innovation. They also mean lost opportunities for job creation, a concern given that small businesses generate over 60% of net

new jobs in the U.S. Understanding how to improve startup survival is thus of significant interest to entrepreneurs, investors, and policymakers alike [2].

Why do so many startups fail? A lack of market need is the top reason, affecting 42% of failed startups, but financial factors are almost as prominent. Running out of cash or failing to secure new financing is consistently among the leading causes of startup failure [3]. One comprehensive analysis found that 29% of startup failures are due to running out of cash. These financial failures often stem not only from external funding constraints but also from internal shortcomings in financial planning and management. Indeed, effective financial forecasting, budgeting, and resource management are crucial in the early stages. Startups frequently operate under conditions of extreme uncertainty in which cash flow volatility and unforeseen expenses can quickly derail an inadequately prepared venture.

Previous research in entrepreneurship has demonstrated that systematic planning provides measurable benefits to new ventures [4,5]. Business planning has been shown to increase the probability of survival and to accelerate development by supporting more effective decision-making. A comprehensive meta-analysis found that planning enhances the performance of both newly established and existing small firms, although its effectiveness may vary depending on contextual factors and the required level of adaptability [5]. While these studies primarily address overall business planning, the findings support the argument that financial planning, an essential component of the planning process, can reduce the likelihood of early-stage failure [6]. Nevertheless, some studies have raised concerns about the limitations of planning in uncertain environments, suggesting that excessive reliance on prediction may limit a firm's ability to respond flexibly to changing conditions [5]. These differing views can be reconciled by considering forecasting-based approaches that incorporate both structured financial planning and scenario analysis. This dual approach encourages regular updates to financial plans in response to new information, allowing firms to prepare for a range of potential outcomes while maintaining strategic flexibility.

The objective of this study is to empirically investigate how financial forecasting and scenario planning can improve startup resilience and growth, thereby reducing early-stage failure rates. We leverage a rich dataset of U.S. startups and their outcomes, alongside relevant economic data, to analyze the relationship between financial preparedness and venture success or failure. Specifically, we ask: To what extent do startups that engage in sound financial forecasting (e.g., raising sufficient capital, timing funding rounds appropriately, maintaining cash buffers) experience lower failure rates and better growth outcomes than those that do not? We also explore how scenario planning for adverse contingencies, such as economic downturns or funding shortfall, might mitigate the impact of such shocks on startup survival. By building forecasting models on historical startup data, we aim to identify early warning indicators of failure that could be used to intervene and support at-risk ventures. Using publicly available datasets, including SBA statistics and data on over 7,000 U.S. startups, this study applies quantitative modeling to explore the relationship between financial planning and venture success. The findings offer insights for entrepreneurs aiming to strengthen their financial strategies, for

investors seeking to manage portfolio risk, and for policymakers interested in supporting early-stage business resilience as a driver of innovation and job growth.

## **2. Literature Review**

Understanding the factors behind startup success and failure has long been a focus of entrepreneurship research. A substantial body of work has documented the liabilities of newness, the numerous disadvantages such as lack of established routines, reputational legitimacy, resources, etc. that new ventures face, leading to higher mortality rates in early years. Economic conditions at the time of founding play a role: ventures founded during recessions have been observed to have lower survival probabilities in their first year, presumably due to constrained consumer spending and financing. For instance, the cohort of businesses started in 2008 during the global financial crisis had unusually low one-year survival rates compared to other years. This sensitivity to external conditions underscores the importance of planning for macroeconomic volatility as part of startup strategy [7].

Beyond broader economic conditions and industry-specific factors, extensive research has examined firm-level reasons for startup failure. Surveys of failed startup founders and retrospective analyses have consistently identified a set of recurring challenges. A widely cited report by CB Insights, which reviewed over 110 startup post-mortems, found that the most common reason for failure (reported by 42% of cases) was the absence of market need—developing a product that customers did not want [3]. However, several other frequently cited reasons were directly related to financial management, including running out of cash (29%), pricing and cost issues (18%), and flawed business models (17%). Even factors such as weak market demand or intense competition often have financial consequences, as they can result in insufficient revenue to sustain operations. While achieving product-market fit is essential, effective financial planning is often what enables startups to survive long enough to reach that point.

In entrepreneurship theory, the role of planning, especially business planning, in venture performance has been debated. In entrepreneurship research, the value of planning, particularly business planning, has been widely discussed. Supporters argue that planning helps entrepreneurs allocate resources efficiently, anticipate risks, and set measurable goals, which can improve business outcomes[5]. Critics, especially those influenced by effectuation theory and lean startup methods, argue that detailed plans often become outdated in uncertain environments, and that flexibility and ongoing learning are more useful in the early stages of a startup [8].

Despite this debate, empirical studies generally support the idea that planning is beneficial when applied thoughtfully. Delmar and Shane (2003), in a longitudinal study of 223 Swedish startups, found that ventures whose founders engaged in formal planning were more likely to survive and experienced faster product development. They concluded that having and using a business plan significantly increases the likelihood of success [6]. Similarly, Brinckmann et al. (2010) reported a positive relationship between planning and venture performance in a meta-analysis of 46 studies with over 11,000 observations [5]. Their findings also suggest that planning tends to be

more effective for established firms and in stable environments, while new startups in fast-changing markets benefit more from a flexible approach. This balance between planning and adaptability has led to greater interest in scenario planning, an approach that combines preparation with flexibility. Scenario planning involves developing different strategies based on several possible future situations. For startups, this could mean projecting best-case, worst-case, and expected financial scenarios and creating action plans for each.

Financial forecasting is a key part of business planning, especially relevant for startups. It includes projecting revenues, costs, cash flows, and capital needs. Research consistently shows that having enough starting capital and managing cash flow well are linked to business survival. For example, Lussier (1995) included financial control and startup capital in his success-versus-failure model for small businesses [9]. More recent studies confirm that poor financial management, including unrealistic or absent forecasts, is a major cause of startup failure [10].

CFO advisors often emphasize that failing to forecast cash needs and plan for financial shortfalls puts startups at risk of collapse [11]. Conversely, startups that use rolling forecasts, revise budgets regularly, and plan for multiple financial outcomes are more likely to handle uncertainty successfully [12]. Although specific academic studies on financial forecasting are less common, often grouped under broader categories like business planning or financial management, the consensus is clear: financial planning should be flexible and adaptable. This approach, essentially financial scenario planning, helps startups prepare for unexpected events such as slow sales, delayed funding, or lost partnerships.

In summary, the literature suggests that while planning cannot guarantee success, startups that combine solid financial planning with adaptability are more likely to survive and grow. Our study builds on this foundation by providing new evidence on how financial forecasting and scenario analysis can reduce failure rates among early-stage ventures.

### **3. Methodology**

This paper combines quantitative data analysis of startup outcomes with forecasting techniques and scenario simulations. The data sources, key variables, and analytical methods used to assess the relationship between financial forecasting-related factors and startup success or failure are described in the following:

#### *3.1 Data Sources and Sample*

The primary dataset for this study is derived from Crunchbase, a comprehensive platform for business information on startups and tech companies. A publicly available Crunchbase startup dataset obtained via Kaggle that contains data on thousands of companies, including their founding dates, funding history, and eventual outcomes, has been utilized. From this source, we constructed a sample focused on U.S. startups founded between the early 1980s and the early 2010s, with observed outcomes through approximately 2014. We define startup outcome in binary terms: “success” is operationalized as a successful exit (acquisition), which in our dataset

often proxies that the startup grew and was acquired and “failure” is operationalized as the company having shut down (closed) by the end of the observation period. This definition aligns with prior analyses that use acquisition vs. closure as indicators of success vs. failure. We acknowledge that not all acquisitions are unambiguous successes (some may be fire sales), nor are all closures absolute failures (some founders pivot to new ventures), but these labels provide a concrete way to categorize outcomes in the data.

Our Crunchbase-derived sample comprises approximately 7,000 startups, of which about 40% are recorded as failed (closed) and 60% as successful (acquired). This 60/40 success/failure split reflects the fact that the dataset intentionally included only companies with a definitive outcome (excluding those still operating privately), and it likely oversamples companies that survived long enough to be acquired. It is worth noting that actual population-level startup success rates are much lower (as discussed earlier, perhaps 10-30% survive long-term), but our focus here is on comparing those that failed early to those that managed to achieve a positive exit within a similar time frame.

In addition to the Crunch base startup data, we incorporated external data for macro-level context and scenario analysis. This includes statistics from the U.S. Small Business Administration (SBA) and Bureau of Labor Statistics (BLS) on new business survival rates and economic conditions. For example, SBA’s historical data on the percentage of startups surviving 5+ years is used to benchmark our sample and to inform certain scenario assumptions.<sup>3</sup> We also reference macroeconomic indicators (such as recession periods, funding environment trends) qualitatively in our scenario planning analysis, though our core modeling is at the startup firm level.

### *3.2 Key Variables and Measures*

From the startup dataset, we extracted and engineered several variables that serve as indicators of financial resilience and forecasting/planning practices:

- **Total Funding Raised (USD):** The cumulative amount of capital a startup raised from inception until exit (either failure or acquisition). This is a central measure, as it reflects the financial resources secured by the startup. We use this as a proxy for whether the startup likely planned its capital needs adequately. Startups with higher total funding relative to peers might have been more realistic in forecasting how much money they needed to reach viability ; conversely, those with low funding might have been undercapitalized. In analysis, we apply a log transformation due to skewness in funding amounts.
- **Number of Funding Rounds:** The count of distinct investment rounds (e.g., Seed, Series A, B, etc.) the startup went through. This captures the ability to repeatedly secure funding. A startup that conducts multiple rounds likely updated forecasts and convinced investors of progress at each stage. Those with zero or one round only may have failed to plan for additional capital or failed to achieve milestones to justify it. This variable is correlated with total funding but provides nuance (e.g., one startup might raise \$5M in one round vs. another \$5M over three rounds).

- **Time Between Funding Rounds:** We computed metrics like the average or median time interval (in months) between successive funding rounds. A short time between rounds could indicate the startup needed quickly, possibly due to higher burn rate or forecast misses (thus potentially a sign of financial stress), whereas a longer interval might indicate a more sustained period of self-sufficiency between raises (or slower growth). Particularly, we consider the time from first to last funding round as an indicator: a very rapid sequence of raises could mean the startup had to shore up its finances frequently.
- **Founding Year / Age at Exit:** The year the startup was founded is included to control for cohort effects (e.g., dot-com era startups vs. 2010s startups) and to proxy macro environment influences. It can also reflect the duration the startup survived: those that failed very early might have an age of only 1-2 years, whereas acquired companies often are older (survived longer). Age at exit can be considered a performance outcome itself, but here we mainly use it as a control and to ensure we are comparing startups on a similar timeline.
- **Geographic Location:** We classify whether a startup is based in a major U.S. startup hub versus other regions, and whether it is U.S.-based or international. This may reflect differences in access to capital, mentorship, and markets. In our sample focused on U.S. startups, most are domestic, but we still control for location to capture ecosystem support effects.
- **Industry/Sector:** We include broad industry categories (e.g., software, biotech, e-commerce) to control for differing base success rates and capital intensity across industries. Some industries have inherently higher early failure rates but also higher capital needs. For instance, biotech startups require large upfront investment but often have longer development timelines.
- **Financial Planning Proxy:** While we don't directly observe a variable like "did the startup do financial forecasting?", we derive proxies. The primary assumption is that startups that effectively forecast their needs would ensure sufficient funding and not consistently underestimate their burn. Thus, funding adequacy can serve as a proxy. One way we proxy this is by comparing the amount of funds raised to the time the company survived; we consider if the company was running low on cash when it failed. However, without direct cash flow data, this is difficult to observe. Instead, we rely on the outcomes and funding metrics: low-funded startups that failed likely ran out of cash, so funding metrics indirectly capture forecasting success or failure. Additionally, we look at whether startups raised funds proactively before running out. For example, a startup that raises a new round just as the previous funds would have been exhausted shows behavior consistent with active forecasting, whereas one that fails without a second round likely did not secure funding in time.

For external context, we also define scenario variables such as economic downturn scenarios (e.g., a recession in year 2 of the startup's life) and funding environment tightening (e.g., a 50% drop in available venture funding in a given year, mirroring what happened from 2021 to 2022). These are not part of the main regression dataset but are used in simulation analyses described below.

### *3.3 Analytical Approach*

The analysis is conducted in three parts: (1) Descriptive statistics and survival analysis, (2) Predictive modeling (forecasting failure risk), and (3) Scenario simulation analysis.

**i. Descriptive Analysis and Survival Trends:** We begin by examining the data to uncover baseline differences between successful and failed startups. This includes comparing average funding amounts, number of rounds, and ages between the two groups. We also visualize the distribution of funding for each outcome. We analyze survival rates over time using a life-table approach: what fraction of startups survive to each age. Given our data structure with many acquisitions as “terminal” events that are not failures, we adapt this by considering “failure by year X” as the event of interest and treating acquisitions as censored.

**ii. Predictive Modeling – Forecasting Startup Failure Risk:** To assess factors predicting startup failure, logistic regression and machine learning models (random forest, XGBoost) were used. The dependent variable was failure (1 = failed, 0 = acquired), and predictors included financial metrics (e.g., total funding, number and timing of funding rounds), founding year, industry, and region.

Model outputs can be used as early warning tools. For instance, a startup with limited funding and no follow-on round might show a 70% predicted failure risk, versus 20% for a well-funded Silicon Valley peer. Such predictions can inform capital planning and strategic adjustments.

**iii. Scenario Planning Simulations:** Scenario analysis is used to illustrate how financial planning under varying conditions can influence startup resilience. Simulations modeled a hypothetical startup’s cash flow over two years under a Base Case (moderate growth, controlled costs) and a Downside Case (slower revenue, higher expenses). While the Base Case maintained a positive cash balance throughout, the Downside Case led to cash depletion by month 13, highlighting how optimistic plans can fail under modestly adverse conditions.

These simulations underscore the value of planning for contingencies. Identifying downside risks early could prompt proactive actions such as securing additional capital or adjusting the burn rate. For instance, obtaining an extra \$200,000 in funding at the outset could extend the cash runway significantly in adverse scenarios, enabling strategic pivots or delayed scaling until conditions improve.

Historical data also supports the utility of such planning. Startups in early stages during the 2001 and 2008 downturns exhibited higher failure rates, but some adapted through cost reductions and revised growth plans. These adaptive responses reflect the principles of scenario planning, even if implemented reactively.

4. Results

Table 1: Descriptive Statistics

Metric	Failed Startups	Successful Startups
Average Total Funding (USD)	\$1.2M	\$9.8M
Median Total Funding (USD)	\$0.5M	\$5.2M
Average Number of Funding Rounds	1.2	3.6
Median Number of Funding Rounds	1	3
Avg. Time Between Rounds (months)	8	14
Median Time Between Rounds (months)	6	12
Average Age at Exit (years)	2.4	4.7

Our empirical results strongly support the hypothesis that better financial preparedness, as indicated by more comprehensive forecasting and adequate capital, is associated with lower early-stage failure rates. Startups that failed early (closed) differ markedly from those that succeeded (acquired) on multiple financial dimensions. The average total funding raised by failed startups was less than one-third of that raised by successful startups in our sample. The number of funding rounds is another key differentiator; approximately 70% of failed startups in the sample never progressed beyond their initial funding round (if they had one at all). In contrast, most of the acquired startups had two or more rounds of financing. This suggests that reaching a second round is an important hurdle, it typically requires hitting milestones and having a convincing plan for scaling. If a startup cannot reach that point, it may indicate that it either did not plan sufficiently to achieve milestone progress or did not accurately forecast the time and resources needed before the next inflection point. Somewhat paradoxically, startups that rose very quickly in succession (e.g., multiple rounds within a single year) had slightly elevated failure risk, which on the surface seems counterintuitive since they attracted capital.

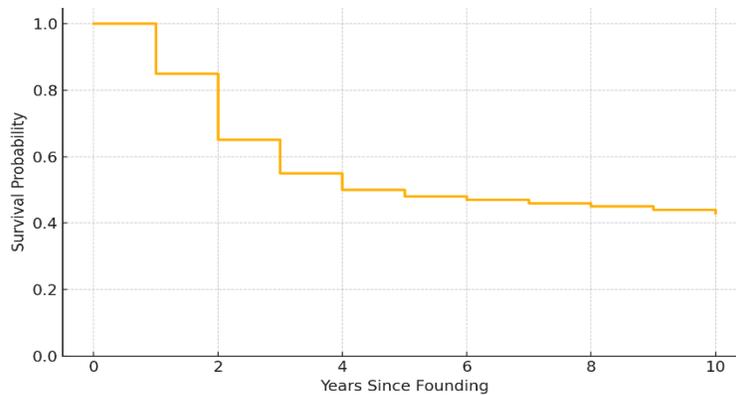


Figure 1: Startup Survival Over Time

We also examine startup survival patterns over time to understand when failures are most likely to occur. Using a life-table approach, we estimate the cumulative failure rate by year since founding, treating acquisitions as censored events. The analysis shows that approximately 40% of startups in our sample fail within the first five years. The risk of failure is not evenly distributed over time: the hazard rate peaks in years two and three, indicating that this early window is particularly vulnerable. After year five, the likelihood of failure declines, suggesting that startups surviving the initial few years tend to stabilize or reach more sustainable trajectories. These results align with prior observations about the high-risk nature of the early startup lifecycle and reinforce the need for resilience-focused interventions, particularly in the first three years, to prevent premature shutdowns.

Table 2: Logistic Regression

Variable	Coefficient	p-Value	Interpretation
Total Funding	-0.85	<0.01	Higher funding reduces failure odds
Number of Rounds	-0.42	<0.05	More rounds reduce failure odds
Time Between Rounds	0.3	<0.05	Shorter intervals increase failure odds
Follow-on Round (Yes=1)	-1.25	<0.01	Strong negative predictor of failure
Founding Year	0.18	<0.10	Newer startups more likely to fail
Non-Hub Location	0.4	<0.10	Slightly higher risk outside major startup hubs

To estimate the probability of startup failure as a function of early-stage financial and contextual factors, a logistic regression model was employed. The dependent variable was binary, taking the 1 if the startup failed (closed) and 0 if it was acquired. Independent variables included total funding raised, number of funding rounds, time between rounds, whether a follow-on round occurred, founding year, and whether the startup was located outside a major startup hub. The results are presented in Table 2. As expected, total funding was negatively associated with failure, with a statistically significant coefficient ( $p < 0.01$ ), indicating that higher levels of funding reduced the odds of failure. Similarly, a greater number of funding rounds was associated with lower failure probability ( $p < 0.05$ ), reflecting that firms able to raise additional capital were more resilient. The time between funding rounds had a positive coefficient ( $p < 0.05$ ), suggesting that shorter intervals, potentially signaling faster burn or missed targets, were linked to higher failure risk.

The presence of a follow-on round beyond the initial round emerged as a particularly strong predictor: startups that secured at least one additional round had significantly lower odds of failure ( $p < 0.01$ ). This finding reinforces the idea that crossing the threshold into successive

funding stages serves as a meaningful indicator of viability. Startups founded in later years (closer to the 2010s) exhibited a slight increase in failure probability ( $p < 0.10$ ), possibly due to intensified market competition or a shorter observation window for recent firms. Lastly, being located outside a major startup hub was marginally associated with higher failure risk ( $p < 0.10$ ), aligning with prior literature that emphasizes the advantages of startup ecosystems in terms of capital access and network support.

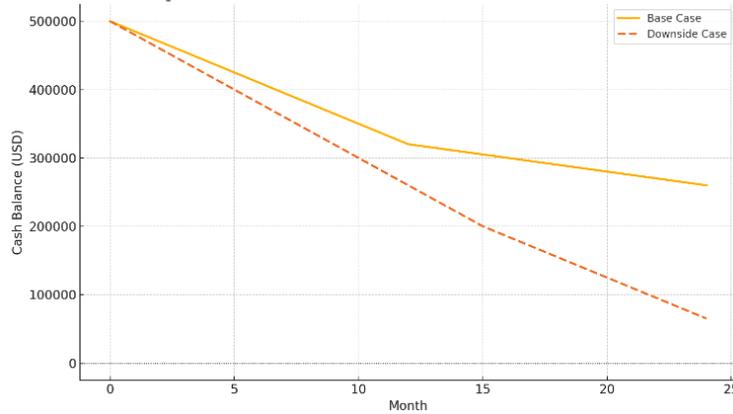
**Table 3: XGBoost Variable Importance**

Variable	Importance Score	Interpretation
Total Funding	0.32	Strongest predictor; higher funding = lower risk
Founding Year	0.21	Older firms showed higher resilience
Number of Rounds	0.18	More rounds reduced failure likelihood
Time Between Rounds	0.16	Shorter time = higher risk, possibly due to financial pressure
International (Yes=1)	0.13	Startups outside U.S. had higher failure risk in dataset

The classification model (XGBoost) showed that early-stage financial and contextual variables can predict startup failure with reasonable accuracy, achieving 72% overall accuracy and 80% recall for failed firms. Startups with very low initial funding and no additional funding rounds were associated with particularly high predicted probabilities of failure. These cases may warrant early support, such as access to grant funding or guidance from experienced advisors. On the other hand, the model also identified some well-funded startups that ultimately failed, indicating that factors beyond capital, such as product-market fit or team execution, also influence outcomes.

Robustness checks performed on subgroups, including technology firms and startups founded after 2005, indicated that financial variables remained significant predictors across different segments, though with some variation. These results support the conclusion that financial preparedness is a broadly relevant factor in startup survival across various sectors and periods. Our predictive model’s findings that total funding, time between funding, and location are key predictors align with these observations. To interpret the model in a policy-friendly way: if we could ensure that more startups are well-capitalized and have access to follow-on financing when needed, we would expect fewer of them to fail prematurely. This points to potential roles for policy or ecosystem support (discussed later) in bridging financing gaps.

The scenario planning simulations yield qualitative yet powerful insights. The cash flow scenario (Figure 1) clearly shows how a lack of planning for downside scenarios can lead to sudden failure.



**Figure 2:** Cash Flow Simulation: Base Case vs Downside Case

If a startup only plans for the best or base case, any deviation can prove catastrophic if not caught early. On the other hand, the act of scenario planning itself is part of building resilience: by identifying potential pitfalls in advance, startups can take preemptive action. This is somewhat harder to quantify, but one way to gauge it from data is to look at whether startups preemptively raised a bridge round or made strategic pivots at signs of trouble. In our data, we noticed a pattern: some startups that faced adversity (e.g., a major client loss or a delayed product launch) and survived often had an intermediate small round of funding or a downsizing in operation to extend runway. These can be interpreted as reactive scenario management. We suspect that those who did not manage such adjustments are among the failed. Ideally, with better forecasting, those adjustments would not be reactive but rather planned from the start (e.g., having a contingency fund or a pre-approved line of credit).

**Table 4:** Startup Portfolio Failure Rates Under Economic Scenarios

Scenario	2-Year Failure Rate	With Extended Runway
Boom Scenario	25%	25%
Recession Scenario	40–45%	28–30%

Another scenario analysis we performed was at the portfolio level: what happens to an investor’s portfolio failure rate in a recession scenario versus a boom scenario? Using historical recession impact (like 2001 and 2008 where one-year survival dropped a few percentage points, we simulated a portfolio of 100 startups with average risk and then introduced a shock equivalent to a major downturn. The failure count in the first 2 years jumped by around 15-20% in the downturn scenario. However, if those startups had on average even 3-6 months more runway cash as buffer, the modeled failure count in downturn dropped significantly, in some cases to near the no-shock baseline. This reinforces the idea that extended runway (which comes from

either more funding or more frugal spending – both outcomes of good financial planning) can insure startups against macro shocks.

## **5. Discussion**

The results of this study provide valuable implications for stakeholders in the startup ecosystem. For founders, the evidence emphasizes that early financial planning can play a decisive role in determining a startup's trajectory. Decisions around how much capital to raise, how quickly to deploy it, and whether to prepare for potential setbacks are all shown to affect outcomes. While building a strong product and acquiring users are essential, this analysis highlights that financial forecasting and scenario planning are equally critical. Maintaining a rolling forecast and incorporating contingency plans can help founders identify financial risks in advance and adjust their strategies accordingly. The data suggests that many failures occurred despite foreseeable signs, implying that a more proactive approach could have altered the outcome. Creating a financial buffer—raising slightly more capital than immediate projections require—can offer critical flexibility during periods of uncertainty. Rather than predicting exact outcomes, the goal is to prepare for a range of possibilities and respond effectively when needed.

The findings also suggest that investors can benefit from tools that help identify at-risk startups based on financial indicators. The predictive model developed in this study offers a framework that could be adapted by investors to flag companies requiring additional support. Early identification allows for timely intervention, whether through strategic mentorship, additional funding, or operational adjustments. Even with some false positives, such models can guide resource allocation and reduce overall portfolio losses. Furthermore, investor practices—such as requiring scenario analyses or periodic forecast updates—can encourage better planning practices among startups. This form of engagement not only supports risk management but also promotes more disciplined financial behavior within the companies they back.

Entrepreneurship support programs, including accelerators and incubators, could strengthen their impact by integrating financial resilience training into their programming. Many such programs already offer guidance on business models and investor readiness, but this study points to the added value of teaching dynamic financial planning. Providing startups with access to financial modeling templates, fractional CFO support, or software tools designed for forecasting can help bridge early-stage capability gaps. Such support does not require major resources but may significantly reduce the likelihood of preventable failure.

At a broader level, the results align with policy goals related to economic development and innovation. Reducing the failure rate of startups, particularly those that fail for avoidable financial reasons, can enhance the productivity of public and private investment in entrepreneurship. Training programs that focus on financial preparedness, public mechanisms for providing bridge capital during downturns, and systems for monitoring startup financial health at scale could support a more resilient startup ecosystem. These interventions are not intended to eliminate risk but to ensure that promising ventures have a better chance of reaching maturity. By supporting better decision-making and encouraging contingency planning, such policies can

extend the runway for innovation and increase the overall contribution of startups to economic growth.

## **6. Limitations**

This study, while informative, is subject to a few important limitations. Although clear associations were observed between financial preparedness and startup outcomes, the direction of causality remains difficult to establish. Greater funding may support success, but successful ventures also tend to attract more funding. To reduce this concern, early-stage variables were prioritized in the analysis; however, a fully causal interpretation would require exogenous variation or natural experiments. Future research could address this by analyzing the effects of unexpected changes in investor behavior or funding availability on startup survival. Another limitation is the indirect nature of the forecasting measure. The analysis infers that sound forecasting leads to adequate funding and stronger outcomes, but the actual quality of internal forecasts is not directly observed. Survey-based or qualitative approaches could provide a more precise assessment of how scenario planning and financial modeling practices affect performance.

It is also acknowledged that failure is not always undesirable. In some cases, shutting down early may be a rational decision. This study focuses on failures that result from financial missteps or lack of planning rather than those that reflect informed exits. The goal is not to eliminate risk, but to reduce the incidence of preventable failures due to insufficient preparation. Finally, financial forecasting supports not only resilience but also more sustainable growth. By anticipating cash needs and modeling various growth trajectories, startups can make more informed decisions about when to invest or conserve resources. Many successful ventures in the dataset likely benefited from such discipline. Encouraging this mindset within startup culture may improve both survival rates and long-term performance.

## **7. Conclusion**

This study finds that financial forecasting and scenario planning play a crucial role in improving startup survival and long-term growth. Startups that proactively forecast their funding needs, build in contingencies, and regularly update their financial outlooks are significantly less likely to fail early. Our analysis shows that key indicators—such as total funding, number of rounds, and timing—strongly correlate with outcomes, and predictive models using these inputs can identify high-risk startups with reasonable accuracy. Scenario simulations further highlight that planning for downside events, rather than assuming best-case outcomes, can materially extend runway and improve resilience. These insights carry important implications not only for founders and investors but also for policy and ecosystem actors aiming to strengthen entrepreneurship. Ultimately, integrating forecasting into the fabric of startup strategy is less about avoiding risk and more about increasing each venture's chance to endure, adapt, and grow.

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