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Management from the Nova School of Business and Economics.

**Venture capital funding in periods of economic
uncertainty: A multi-facet analysis of success
factors of early-stage German ventures –
Perspective on business model & company**

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Abstract

Uncertain economic conditions increasingly pressurize venture capital performance and require a revised approach to funding decisions. This study develops a comprehensive model for investment target assessment tailored to a changed risk profile and low liquidity. Incorporating business model, company, financial, structural, and transactional factors as well as evolving industry standards, analyses based on the study's findings provide potential for successful deployment of capital despite unfavorable circumstances. By building upon qualitative insights of experienced industry professionals from a variety of German investment firms supplemented by a substantial foundation from preceding literature, this research strengthens existing research with a differentiated perspective.

Keywords

Entrepreneurship – Corporate Finance – Funding – Growth Equity – Private Equity – Start-Ups
– Venture Capital

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1 Introduction

In the aftermath of the COVID-19 pandemic and international conflicts, historically high economic growth rates and investments into novel ventures have come to a halt. Investors and entrepreneurs alike must acknowledge an ever-changing environment and adapt their strategies accordingly to ensure the continuous exploitation of financial and societal benefits from early-stage ventures.

ESVs generally fulfill an important role in a national economy primarily through diversification where they can transform innovative ideas into small, self-sustaining businesses, thereby altering the economic landscape before attaining critical mass (Ilmari 2021). Simultaneously, they promote economic resilience, growth, innovation, and job creation with high flexibility due to their smaller size and quick decision-making. Since ESVs are typically strapped for resources, they require external sources of financing to refine the sustainability of the company. Numerous studies have shown that venture capital (VC) has a substantial positive impact on the performance of these ventures by fostering innovation, growth, and international expansion (Dams, Sarria Allende, and Murcia 2021; Lerer 2009). Equity financing enables companies to grow, create jobs, and mature their operations through capital contribution, funding facilities, and regulatory governance support (Bottazzi and Da Rin 2002). Under uncertain economic conditions, these funding processes are put under significant scrutiny. The subpar outlook alters the risk appetite and success expectations of investors, complicating fundraising for ESVs. These conditions are observable again in the tense economic context emerging from wars, supply chain disruptions, inflation, and interest rate hikes. Overall, investors shifted their fund usage to support existing portfolios rather than novel investments and valuations have been normalized to account for the uncertain outlook (TrueBridge Capital Partners 2023). Subsequently, Series A and B fundraising has been prolonged considerably in fear of plummeting valuations and a minuscule pool of interested investors (Glasner 2023). Therefore,

analyzing ESV funding dynamics in this disruptive environment provides an attractive opportunity.

Research on entrepreneurial venture financing, especially under uncertain economic conditions, remains an underdeveloped discipline. Recent studies have mainly concentrated on the period after the financial crisis of 2008 and the pre-covid global economy shaped by low interest rates (Conti et al. 2019; Block and Sandner 2009; Mason 2020). Funding under these circumstances is especially important to promote ESV-driven innovation, social change, and economic contribution (Cho and Lee 2018). Therefore, an analysis of the topic becomes highly appealing. The paper's primary research objective is to portray the success factors for ESV fundraising in uncertain economic periods in the German market. The following research questions will be answered throughout the thesis.

- Which factors of assessment in business model and company have seen the most significant change under economic conditions of uncertainty?
- Which business model and company factors rule the assessment of investment opportunities by VC/GE firms under economic uncertainty?
- Which financial, structural, and transactional factors have seen the most significant change under economic conditions of uncertainty?
- Which financial, structural, and transactional factors rule the assessment of investment opportunities by VC/GE firms under economic uncertainty?
- Which general industry developments in Germany do VC/GE perceive under economic uncertainty?

Following this research objective, valuable insights for the academic landscape of entrepreneurial finance can be derived. This enables a nuanced perspective to the research landscape to contribute to the theoretical foundation of ESV funding. The regional focus on

German ventures offers a comparative perspective on a regional ecosystem with specific VC dynamics, that both enriches the global discourse and provides a foundation for similar studies in other markets. Apart from the scientific contribution, the nature of the research project provides valuable insights that could apply to the daily activities of ventures in pursuit of funding and investors alike. Through the identification of success factors in a well-rounded analysis and subsequent adoption, funding strategies and ESV operations could become more resilient against funding declines during uncertain economic conditions and a high-interest environment. The results could potentially contribute to a benchmark for all stakeholders in the VC ecosystem to evaluate their funding strategies and offer practical insights for informed decision-making. On a broader scale, understanding the success factors could contribute to accelerated economic recovery and growth by improving the sustainability and resilience of emerging businesses.

This research paper approaches the delineated topic along the following structure. The literature review provides a comprehensive overview of the current state of academic research on the topic as a basis for subsequent analysis. A foundation is created by explaining the characteristics and interactions of relevant players within the funding ecosystem, shedding light on the particularities of the German market, and defining the economic conditions of uncertainty. Additionally, an overview of relevant success factors for funding processes is derived from the literature and structurally summarized in a conceptual model. The subsequent methodology section explains the procedure of obtaining and analyzing the insights while the findings section provides a thorough explanation of the results along with our hypotheses. Finally, the discussion and conclusion sections put the results in a broader academic context and provide a perspective on the future application of the insights.

2 Literature review

2.1 Early-stage ventures

Entrepreneurship is widely acknowledged as a crucial driver for innovation, growth, and job creation (Schumpeter 1934). It also acts as a major conduit for sustainable change and many new ventures are viewed as an answer to societal issues (Bocken 2015). Those emerging businesses simultaneously act as investment opportunities for private capital and can be differentiated based on certain characteristics, challenges, stages, and options for fundraising.

In general, ESVs have exceeded the conceptual stage and operate based on a tested prototype, refined service models, as well as detailed business plans while not yet being profitable (Volta Ventures 2021). Analysis of businesses in this stage is intriguing in the realm of economic uncertainty because they have already developed relevant capabilities but cannot yet sustain themselves and require external financing. In general, ESVs can leverage funding to accelerate growth up to a more mature stage characterized by an economically sustainable business model (BM) (Engel and Keilbach 2007; Smolarski and Kut 2011; Hochberg, Ljungqvist, and Lu 2007). Companies in this stage typically face challenges with transforming their vision and entrepreneurial passion into a long-term sustainable BM (Cardon et al. 2009). Simultaneously, they need to focus on meeting the expectations of their investors while convincing new partners to provide them with additional growth capital by demonstrating credibility, viability, and long-term success (Volta Ventures 2021). In this period, strategic decision-making is tightly connected to the financing strategy where the direction is geared towards appealing to banks, equity investors, or business angels (Mason and Stark 2004). For this analysis, our view on ESVs is limited to businesses in Series A and B funding rounds to ensure a more extensive analysis of potential characteristics and therefore more thorough and focused results that improve day-to-day applicability.

Series A funding has a pivotal role in financing team expansion and building capabilities to enhance the current prototype or monetize the existing product in the growth phase (M13 2020). At this stage, ventures demonstrate promising top-line growth and transition from an idea to a business with an established track record of capital usage (Chuck Pettid 2022). Most investments are based on a thorough due diligence process, and comprehensive term sheets, and typically result in the acquisition of preferred stock holdings where between 10% to 30% of the shares are sold off at a price representing the expected earnings potential (M13 2020; Digital Ocean n.d.). During Series B funding, investors typically demand development towards continuous revenue generation and preparation for further growth through scaling up production and expanding their market reach (M13 2020; Chuck Pettid 2022). Early-stage risks have been mitigated and valuations are higher, so investors receive a smaller share of the company per dollar compared to previous rounds, seeing median capital raised at \$25 million compared to \$10 million in Series A funding rounds (Digital Ocean n.d.).

2.2 Funding ecosystem

The success of ESV endeavors is highly dependent on the local funding ecosystem, wherein the interests of limited partners (LP), VC/GE, and the government have to be aligned. Despite the government's role in setting market ground rules, a significant dependency on private capital provision and financial expertise prevails (Lee 2022). Healthy VC markets are highly dependent on the activities of public markets whereas predominantly bank-loan-based financing systems hamper industry perception of exit options (Black and Gilson 1998). Simultaneously, ESV valuations are the outcome of available capital and the external environment, underlying the vital role of funding success factors (Köhn 2018).

In the ESV funding process, LPs act as providers of capital as investors with limited involvement in day-to-day activities. Investments are based on a profit-sharing model and

liability is typically limited to the investment amount (Black and Gilson 1998; Bottazzi, Da Rin, and Hellmann 2008). LPs include a variety of institutional investors such as pension funds, family offices, insurance companies, endowments, and foundations looking for alternative investments for portfolio diversification, attractive risk-return ratios, and significant returns around 15% internal rate of return (IRR) (Dornseifer, Bunnenberg, and Kaiser 2022). LPs exert significant power over VC and GE in controlling their behavior through restrictions and covenants to protect their investment (P. Gompers and Lerner 2001). Even though LP investment activity is oftentimes cyclical, difficult financial market situations can provide an opportunity for institutional investors to enter the private equity (PE) asset class (Dornseifer, Bunnenberg, and Kaiser 2022).

The VC and GE general partners are the acting entity that identifies promising entrepreneurial companies and trades their funds' equity in return for ownership in a company compensated by success participation and portfolio management fees (Drover et al. 2017; Gupta and Sapienza 1992; Bygrave and Timmons 1992). They are typically small, geographically focused companies that can be further differentiated based on their vertical focus, strategic targets, day-to-day involvement, investment stage, or funding amounts (ibid.). Traditionally, equity investors play a vital role in providing capital to overcome growth barriers where traditional forms of financing through debt are unavailable (Böttger 2006; P. Gompers and Lerner 2001; Davila, Foster, and Gupta 2003). Simultaneously, major investors provide their portfolio companies with an increase in credibility and reduce agency costs through relationships with relevant institutions, access to networks, and governance control (R. Becker and Hellmann 2005; Block and Sandner 2009). Non-financial support has recently increased in importance to distinguish investors in their potential contribution towards a sustainable competitive advantage (Conti et al. 2019; Hellmann and Puri 2002; Davila, Foster, and Gupta 2003). VCs are credited for providing supportive and control actions increasing the firm value at the cost of

entrepreneurial utility (Hellmann and Puri 2002), where significant proportions of companies that received funding, state, they would not have been established or ceased to exist without the investment (Böttger 2006). Nevertheless, equity investments are criticized based on limited impact on profitability, questionable selection processes, and a lack of significant average returns veiled by outliers (Drover et al. 2017).

Governmental entities support the creation of investment networks and provide the ground rules for funding activities by facilitating financing and business mentoring through the optimization of regulations (Park and Luo 2001). Potential interventions include the establishment of legal and tax frameworks as boundaries for funding activities (Snieska and Venckuvienė 2011), where targeted incentives supporting the private capital market can foster ESV growth and innovation (Drover et al. 2017; Lerner 2000). Additionally, government subsidies can act as a secondary financing option through subsidies to reduce company default risk by limiting loan interest rates and financing constraints (Liu et al. 2022). Many VC firms view government-backed funds (e.g. EIF) as a good approach for policymakers to support the VC industry (Kraemer-Eis et al. 2023). Most of these players and characteristics are also prevalent in the German market but certain particularities must be understood.

2.3 Venture capital landscape Germany

Long-lasting economic success in Germany has been built predominantly on a combination of multi-national corporations and family-owned businesses where equity financing has traditionally been underutilized (Klagge and Martin 2005). More recently, there has been an increase in activity where most institutional investors in Germany intend to maintain or increase their investments in VC and corporate PE (Dornseifer, Bunnenberg, and Kaiser 2022). Germany has become an attractive destination for venture capital investments driven by its market size,

public investments in innovation and infrastructure, a resilient ecosystem, and sufficient governmental support (Metzger 2020; Nelson 2023).

Limited partners in Germany are predominantly credit institutions, insurance companies, and public state funds where venture capital investment accounts for around 30% of the total capital employed by both, private and (quasi-) public VCs (Böttger 2006; Bender 2011). German VC companies typically operate within both the early-stage market for entrepreneurs without proven economic viability as well as non-venture PE with capital requirements for growth and structural purposes, typically only assuming minority equity positions with limited influence compared to US funds (R. Becker and Hellmann 2005). VC and GE account for around 50% of the German PE market in terms of funding and investments with the growing relevance of later-stage VC while traditional buy-out accounts for the majority of other investments (see Appendix Figure 1 to 3) (Attila Dahmann 2022). Overall, a continuous trend of capital concentration into larger funds pertains as LPs strive to participate in attractive returns, forcing investors to invest in later-stage companies and pursue timely returns (TrueBridge Capital Partners 2023; P. A. Gompers et al. 1998; Drover et al. 2017; R. Becker and Hellmann 2005).

Despite the attractiveness of the economic landscape, German venture capital is still facing hurdles compared to other markets, resulting in subpar performance compared to the US or UK (Metzger 2020). Initial efforts for venture financing failed due to interests diverging from shareholder wealth maximization, namely commercialization of novel technologies, reputational risk minimization, little investor protection as well as inappropriate contracting and governance structures (R. Becker and Hellmann 2005). While no special regulatory burdens prevent successful German VC funds compared to other markets, the suboptimal taxation of management fees continues to be a significant disadvantage (Dahmann et al. 2023). Therefore, the German VC market struggles to attract sufficient investors for later stage rounds to develop ventures into unicorns, resulting in a 1.5 times higher likelihood of becoming a unicorn in the

US, thus struggling to incentivize ESVs to continue operation (Dörner et al. 2021; Schweickhardt 2020).

Start-up ecosystem clusters in Germany exist primarily in Berlin (3rd place) and Munich (5th place) among the leading start-up cities in Europe based on funding (Attila Dahmann 2022; Dealroom.co 2023). Most Seed and Series A/B deals are done in Health, Fintech, Enterprise Software, Energy, and Food. Especially Energy and Food are driven by increasing investor interest, contrary, the Fintech and Enterprise Software sector experienced a downturn in deal share (Steffen Viete and Georg Metzger 2023). In contrast to the US market, European VCs tend to be deal makers with less active monitoring and lack the resources to select and add value to their portfolio companies (Hege, Palomino, and Schwienbacher 2003) whereas US firms exhibit sharper screening and effective management of financing relationships. This outperformance is manifested in the global split of VC investments indicating a diminishing importance of European VC markets (Figure 4). The German PE and VC market continues to be highly fragmented, with more than 400 relevant active investment firms (Attila Dahmann 2022). Different sources disagree on the composition of the most important players, but a consensus has been created based on several investments and assets under management as a foundation for reaching out to potential interview partners (see Table 1).

2.4 Economic conditions of uncertainty

Successful funding processes are highly dependent on external determinants, this study focuses on economic conditions of uncertainty characterized by factors impairing predictability and stability arising from political, financial, and societal crises (Baker, Bloom, and Davis 2016). Relevant factors encompass GDP growth, interest rates, inflation, and consumer spending. Fluctuating interest rates heavily impact borrowing costs and plannability for businesses and investors, significantly influencing overall economic activity and investment decisions

(Bernanke and Gertler 1995; Mishkin 1996). Hence, LPs are expected to shift their investment preference away from VC to bonds or alternative investments which offer better Sharpe ratios and are less sensitive to changes in interest rates (Kraemer-Eis et al. 2023; Aragon 2022). Uncertain interest rate outlooks and increasing rates can arise from global economic and political crises as well as changes in monetary policies as a reaction to emerging inflation where governments lack awareness of the wider economic impact (Forbes and Rigobon 2002; Reinhart and Rogoff 2009). Inflation generally leads to economic uncertainty since long-term financial planning becomes more difficult due to the eroding purchasing power of potential customers and potential job loss (Mishkin 2007). This can be caused by excessive money supply, governmental policy developments, and supply chain issues. Subsequently, economic uncertainty reduces the revenue potential and growth perspective of emerging businesses (Blanchard 2009). The situation of immense pressure on European markets prevalent in 2023 is comparable to previous crises like the global financial crisis in 2008 (Gourinchas 2023).

Conditions of economic uncertainty influence entrepreneurial financing across all primary stages of the lifecycle, namely fundraising, investment activities, and divestment potential. Driven by the higher risk aversion of LPs, fundraising results in lower overall amounts as well as subsequently lower company valuation and long-term financing in environments of rising interest rates (“EIF Annual Report 2022” 2023; Kraemer-Eis et al. 2023). Precedent from the 2008 financial crisis shows a >20% decrease in average funding as well as a significant reduction in the number of funding rounds (Block and Sandner 2009) and VCs perceive fundraising to be one of the three biggest challenges of 2023 (Kraemer-Eis et al. 2023). Yet, sudden liquidity supply shocks can indicate positive future market momentum with future GDP growth thus indicating attractive opportunities to raise funds and prepare exits once interest rates normalize (Conti et al. 2019; P. A. Gompers et al. 1998; Koellinger and Thurik 2012).

Despite lower capital availability, LPs expect VCs to continue the successful deployment of funds throughout the economic downturn (Rosenbloom 2022). Even though investors are observing significantly worse performance of their portfolios (Kraemer-Eis et al. 2023), they need to retain a positive perspective, adjust their screening criteria, and minimize risk by doubling down on financial resilience such as profitability and cash flow generation (“EIF Annual Report 2022” 2023). In contrast, supply and demand for VC financing will continue to diverge and the imbalance creates new market dynamics (ibid.). As a result, funds shift back to their core sectors and domestic markets to focus on proprietary experience and mitigate risk (Browne 2023; Conti et al. 2019). This expands onto a preference for refinancing of later-stage companies rather than risky investments into early-stage businesses due to increased uncertainty and higher cost of selection (Paik and Woo 2014). Simultaneously, later-stage funding endeavors are faced with a significant dilemma where businesses can typically not postpone funding and must endure a deduction in value (Block and Sandner 2009). To realize returns, funds need to liquidate their stakes in private companies through sales on the secondary market or public share issuance (P. Gompers and Lerner 2001). Under economic uncertainty, interest in IPO candidates diminishes because of lower share performance expectations and funds typically try to postpone public listings (Levingston, Hammond, and Kinder 2023). In 2023, more than 70% of VCs perceive the exit environment and exit prices to have deteriorated since the previous year, a trend continuing since 2020 (Kraemer-Eis et al. 2023). This is additionally reinforced by auditors pushing VCs to revalue their investments with comparable public companies that tanked amid rising interest rates (Temkin 2023). Simultaneous with the decrease in IPO activity, target standalone and potential synergy values are corrected, leading to decreasing exit options from strategic buyers as secondary market M&A activity diminishes (Bonaime, Gulen, and Ion 2018; Nguyen and Phan 2017). Funds therefore try to influence deal

terms to include more favorable conditions such as earnouts to reduce risk (Barbopoulos, Prencipe, and Viarengo 2023) as well as trying to find targets with ideal characteristics.

2.5 Investment target characteristics

Defining characteristics of attractive investment targets is at the core of understanding the success factors for venture funding in times of economic uncertainty. Ventures at early stages in their life cycle are faced with high risk, high cash burn rates, and information asymmetry – resulting in difficulties in realistically assessing their value (Köhn 2018; Montani, Gervasio, and Pulcini 2020). Therefore, VC must seek alternative decision-making criteria that fall within the scope of the BM concept, with vastly diverging perspectives on the most appropriate proxies depending on the personal preferences of the investor (P. A. Gompers et al. 2020). A literature-based model of investment target assessment criteria has been developed and will be further explained in the following (Figure 6).

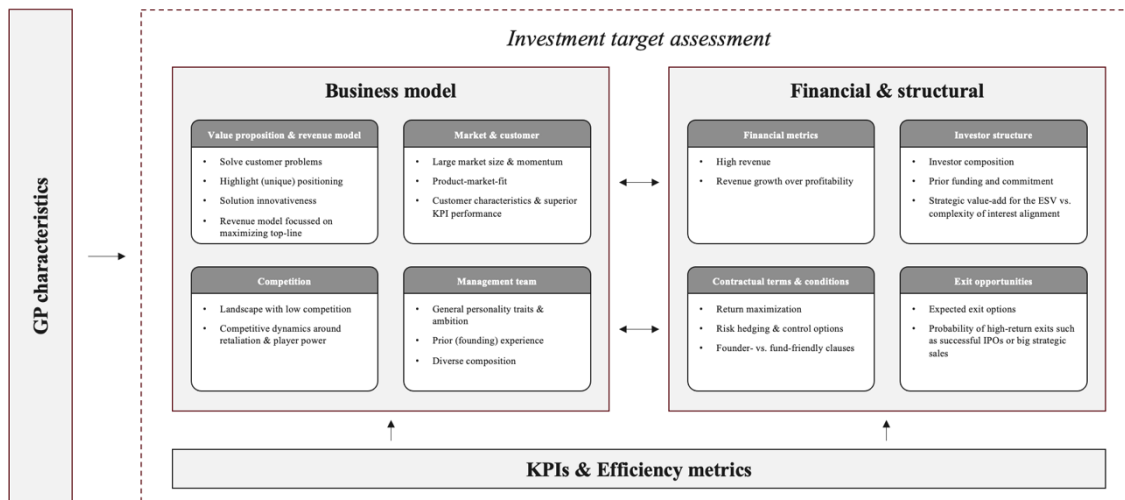


Figure 6: Literature based model of investment target assessment for Series A & B funding under regular conditions

2.5.1 Business Model

The term BM is a composition of business, creating value and capturing returns, and model, building a simplified representation of reality (Shafer, Smith, and Linder 2005) and encompasses everything from design and manufacturing to customer acquisition and distribution (Magretta 2002; Osterwalder, Pigneur, and Tucci 2005). It is therefore suitable to act as a proxy for the core activities of a company that might be of interest to potential investors in trying to understand the core activities of the target and act as a proof of concept for future success (Mason and Stark 2004; CFO Hub 2021).

In general, all BMs within a certain industry could be described as a variation of the generic value chain with alterable configurations that companies take to excel in the market (Baden-Fuller and Mangematin 2013), meaning that common themes with differentiation based on revenue model, customer segment, or value proposition emerge (Gassmann, Frankenberger, and Csik 2017). Essentially, the BM acts as a reflection of the company's strategy in implementation as day-to-day activities (Burkhart et al. 2011; Casadesus and Ricart 2011), which oftentimes culminates in being a facilitator of the opportunity-creation process (George and Bock 2011). Even though there is an ongoing discussion about the role and value of the business model as a concept (DaSilva and Trkman 2014; Porter and Gibbs 2001), it provides a qualitative, high-level description of a company suitable for this analysis along a variety of relevant dimensions assessed by VCs (J. Becker et al. 2004).

2.5.2 Value proposition & revenue model

The value proposition acts as the initial assessment dimension for any venture and founders need to demonstrate a convincing story and appropriate information on the superior offering that justifies additional investment (Mason and Stark 2004; Kraemer-Eis et al. 2023). In general, the value proposition describes how a company serves its customers by solving significant

issues and what differentiates it from the competition to be communicated to the prospective audience (Cote 2020; Block et al. 2019). Looking at the offering, most VC firms rate based on concept, uniqueness, innovativeness, sustainability of competitive advantages, function, and flexibility (Mason and Stark 2004; Muzyka, Birley, and Leleux 1996; Khanin et al. 2008). Naturally, innovativeness is not a means-end but needs to be supported by demonstrated market acceptance and functioning prototypes (Nunes, Félix, and Pires 2014). Simultaneously, creating lock-in mechanisms that ensure continuous interaction with the customer and additional revenue streams through complementary offerings is essential (Block et al. 2019). Due to the nature of early-stage investments, many companies cannot present a fully elaborated value proposition, meaning that the assessment becomes more important for later-stage investors (P. A. Gompers et al. 2020).

Simultaneously, the revenue model is significant to the investor to understand how pricing, income streams, and payment periods result in attractive financial prospects (Townshend and Poyar 2022; CFO Hub 2021). This part of the business description provides a framework for how the company generates financial income by prioritizing the most effective way to charge the customer, e.g., by one-off sales, advertising, recurring revenues, etc. (Needle 2021).

2.5.3 Market & Customers

To put the venture's offering into a broader context, investors undergo a thorough analysis of the market environment. In general, markets with substantial volume and growth momentum are preferred as they act as a proxy for established customer demand (Kollmann and Kuckertz 2010; Kraemer-Eis et al. 2023), which ensures future performance and increases the chance of profitability (Khanin et al. 2008). The stability of the market is oftentimes further differentiated to include assessment criteria such as seasonality of returns and economic cycle sensitivity (Muzyka, Birley, and Leleux 1996). Apart from the general market characteristics, assessments involve the business scalability potential in the market, potentially via international expansion

(Block et al. 2019; Kraemer-Eis et al. 2023). Across these assessments, VCs typically favor markets in which they have previously operated and thereby possess superior information and access to complementary resources (Nunes, Félix, and Pires 2014).

Special emphasis is typically put upon the market acceptance of the product and the growth potential demonstrated by a market need (Mason and Stark 2004). Ventures need to thoroughly understand the customer's perspective, stimulate existing or new demands, and subsequently, the likeliness of customers to endorse a specific product (Khanin et al. 2008). The related costs of attracting new customers and preserving their revenues is a major assessment criterion. Investors assess customer acquisition costs against fixed thresholds to determine the company's operational health, e.g., a 14-month payback period in SaaS Series A ESVs (Townshend and Poyar 2022). Recent years have shown investor preferences for B2B investments due to flexibility in reacting to market developments as well as superior exit opportunities to strategic investors (Kirchleitner 2021). Overall, market aspects are perceived to entail moderate importance compared to other assessment criteria, with less requirement towards the existing market size compared to the offerings that fit customer demands (Nunes, Félix, and Pires 2014).

2.5.4 Competition

Assessments of the competitive landscape are an integral part of ESV assessments. The degree of competitive threat as the number and relative strength of competitors has been cited as a relevant assessment criterion in a variety of studies on the subject (Khanin et al. 2008). This also extends to an analysis of the likelihood of immediate retaliation from existing businesses in the industry during the early years of operation and existing barriers of entry for additional competitors to overcome (Nunes, Félix, and Pires 2014). In addition to direct competitors, assessments also cover the strength and structure of potential suppliers and distributors (Muzyka, Birley, and Leleux 1996).

Once having established a thorough understanding of the industry's competitive landscape, investors create barriers to establish a sustainable competitive positioning (Khanin et al. 2008). Despite an undisputed relevance stated in a variety of scientific analyses, competitive threats are typically less influential for the investment decision since markets are typically underdeveloped and VCs bet on superior value propositions of their portfolio companies (Nunes, Félix, and Pires 2014).

2.5.5 Management team and employee experience

The management team is perceived as a key attractiveness indicator of ESV targets due to the limited availability of information and the integral role of individuals in the early years of a venture (P. A. Gompers et al. 2020; Macmillan, Siegel, and Narasimha 1985). Several other studies found the track record and ambition of the management team to be one of the most important criteria for the assessment of investment targets starting from very early-stage up until late-stage funding (Block et al. 2019; Kraemer-Eis et al. 2023). GE thereby expects a strong executive track record across the entirety of the management team (Block et al. 2019). Apart from track record, successful investors state human capital as well as specific founder personality traits as key decision criteria (Bernstein, Korteweg, and Laws 2017; Macmillan, Siegel, and Narasimha 1985). One reason for significance is that founders often remain the CEOs or important directors of the company for a longer period and, therefore, have a strong impact on the company's prosperity (Kaplan, Sensoy, and Strömberg 2009).

Relevant personality traits are honesty and integrity, long-term vision, capacity of reaction and risk assessment, ability to perform a continuous and intense effort, ability to raise empathy of the VC, attention to detail, desire to earn money, favorability to suggestions and critics (Nunes, Félix, and Pires 2014; Khanin et al. 2008). Moreover, passion for the product and communication with employees as well as stakeholders add to the demanded personality of the management teams (CFO Hub 2021). A good track record consists of technical and business

qualifications, resulting from the educational record, leadership experience, and industry expertise, as well as committed capital (Kollmann and Kuckertz 2010; Muzyka, Birley, and Leleux 1996; Nunes, Félix, and Pires 2014). Management teams with shared university backgrounds oftentimes identify opportunities from research projects and possess a strong knowledge base but lack the business experience of founders with more diverse backgrounds (Ensley and Hmieleski 2005). The benefits and positive perception of diverse experience extend to the entire venture's human capital (Muzyka, Birley, and Leleux 1996). Novice VCs tend to focus on the qualifications of individual venture team members, while more experienced VCs emphasize broader team cohesion (Franke et al. 2008)

3 Research design & methodology

3.1 Qualitative research design

The individualistic nature of the analyzed phenomenon endorses a qualitative research design based on semi-structured interviews. Qualitative research enables the investigation of topics within their natural surroundings as they are perceived and interpreted by affected individuals (Lincoln and Denzin 2000). With a complex set of interpretive practices, qualitative research attempts to structure and visualize underlying processes of day-to-day human interaction (ibid.), such as seen in the evaluation of investment opportunities in ESVs.

Therein, semi-structured interviews allow for the capturing, interpretation, and analysis of phenomena as they are perceived by individuals (DiCicco-Bloom and Crabtree 2006). Simultaneously, they provide flexibility to diverge from guiding questions to expand on the information provided by the interviewee to reveal insights previously not anticipated (Adhabi and Anozie 2017; Gill et al. 2008). Even though findings are dependent on the truthfulness of interviewees due to the self-reporting nature of this research approach (Appleton 2006), distortion of the results is mediated through alignment with existing theory and abstraction of subjective statements (Suddaby 2006). The guidelines followed the topics of business model, financial metrics, as well as the transaction process and have been developed following the recommendations of Qu and Dumay (2011) as well as Kallio et al. (2016) to ensure meaningful results (see *Appendix 2 – Interview guideline*).

To mitigate the non-conformity with traditional criteria for scientific rigor associated with qualitative research (due to subjectivity and absence of facts), alternative evaluation criteria have been thoroughly applied within this study. The project should fulfill the aspiration of *credibility* (through data triangulation and the truthfulness of the data), *transferability* (a certain degree of generalization and replicability), *confirmability* (results are comparable for other

researchers in another context), and *dependability* (results are identical for the same researchers in the same context) (Lincoln and Guba 1986).

3.2 Interview participants & data collection

The composition of the research participants ensures valuable insights from investors with different priorities in their strategy in terms of investment stage and sector focus. Therefore, a comprehensive review of assessment dimensions with varying emphasis per interviewee was possible. By incorporating representatives from different investors, the research avoids being absorbed by the organization and assumes its interests as its own (Macdonald and Hellgren 2004). Potential participants were contacted via a standardized mailing reach out, resulting in a total of 11 interviewees from both market-leading and niche general partners. Combined, the companies reflected in this study account for a total portfolio value of around \$ 110 billion. The goal therein was to reach a state of adequacy where the information attained appears relevant and sufficient to provide a discussion basis in an underdeveloped research field (Neergaard 2007; Hennink, Hutter, and Bailey 2020).

The success of the study relied on access to a sufficient sample of representatives with a high level of funding experience. The selection criteria across interviewees were similar, where GPs were required to have a presence in Series A and B funding rounds as well as possessing a relevant footprint in the German market. Further elimination was not undergone to minimize researcher bias. The participants were diverse in age and gender, as well as varying in terms of their experience in the industry. Primarily fund representatives on the Investment Manager and Principal level were contacted to ensure their relevance and participation in the investment strategy and decision-making (see Table 2).

To allow the highest degree of data validity in the analysis process, all interviews were recorded with the interviewees' consent. This procedure also helped to ease the lack of trust created

through the absence of a personal relationship between the participants while talking about a sensitive topic (Myers and Newman 2007). To ensure maximum efficiency of the interviews, they were conducted in the interviewee's mother tongue German.

3.3 Data analysis

To generate valuable results grounded in systemically generated data, our research project has been based on a grounded theory approach (Corbin and Strauss 1990). Therein, the analysis assesses the information and abstracts through a coding process following open and axial coding to gain insights into the phenomenon of interest (ibid.). Allowing for systematic analysis, the recordings of the interviews were transcribed based on a denaturalized transcription approach by omitting pauses, and accents, as well as the incorrect syntax, and *“attempts a verbatim depiction of speech”* (Oliver, Serovich, and Mason 2005, 1277). The following analysis was based on a combination of the first two stages of evolutionary coding, commonly employed as part of qualitative research methodology (Mayring 2016), and a qualitative analysis of the derived axial codes. Thereby, principles and relations within the data could emerge and theory grounded within the insights was developed.

The initial coding round of open coding entails the interpretive process of analytical decomposition of the data by assigning conceptual labels (ibid.). Through multiple peruse rounds, codes for a couple of words up to a few sentences were allocated. Applying the simultaneous coding method, multiple codes were assigned to the same sentence of passage if the content exhibited different facets that could not be sufficiently described by one code (Saldaña 2021). The stage of open coding is necessary to abstract the data and stimulate *“generative and comparative questions to guide the upon return to the field”* (Corbin and Strauss 1990, 13) in the process of theory development. Following the initial coding, open codes

were consolidated and refined to be homogenous across data sources through an iterative process. In the end, a total of 917 unique open codes were assigned to the interviews.

The second step in the coding procedure is axial coding, primarily focused on condensing the individual codes into subcategories and relating them to overarching categories (ibid.). In total, 14 categories were determined: A comprehensive, qualitative description of the categories can be found within the Appendix in *Table 3*. Categories were developed based on the generated insights while referring to prior research on the topic. The underlying paradigms of the axial coding process are “*conditions, context, strategies (action/interaction), and consequences*” (ibid., p. 13). Within this stage, the subcategories and categories are commonly revisited, and poorly developed categories are refined or discarded, to ensure conceptual density and maximize the explanatory power (ibid.). The iterative process of theory development encompassed by data triangulation ensured a solid foundation in the data while remaining seeded in the broader realm of the research.

The content analysis was rooted within the harmonized categories and the underlying themes are an outcome of qualitative critical reflection. An overview of the content analysis can be found in *Table 4*. Based on those joint statements, multiple overarching themes were exposed and woven into central propositions that yield a comprehensive resolution to the five core research questions of the study.

<i>Category Name</i>	<i>Occurrence</i>	<i>Proportion</i>
Financial projections & profitability	122	11.95%
Market environment	120	11.75%
Understanding of general partner characteristics	118	11.56%
Management team	98	9,60%

Product & technology	70	6.86%
Market & Scalability	67	6.56%
Exit possibilities	65	6.37%
Value proposition & revenue model	62	6.07%
Investor structure	61	5.97%
KPIs	57	5.58%
Contractual clauses & legal structure	51	5.00%
Customers	43	4.21%
Competition	42	4.11%
Investor environment	28	2.74%
Additional remarks	17	1.67%

Table 5: Overview of coding categories (Source: Depiction by the authors)

4 Findings

The following section presents the key findings derived from the interviews in five subsections around our research questions. It is structured along both the significant changes and core assessment criteria under conditions of economic uncertainty for both “*business model & company*” as well as “*financial, structural, and transactional factors*”. These insights substantiate a thorough understanding of investment opportunity analysis processes under conditions of economic uncertainty and combine the diverse perspectives of our interviewees into a homogenous picture. The foundation for the analysis consists of the comprehensive coding analysis presented in Table 3 - 5. Based on these results, a revised version of the model of investment target assessment criteria under economic conditions of uncertainty has been developed and will be further explained in the following (Figure 7).

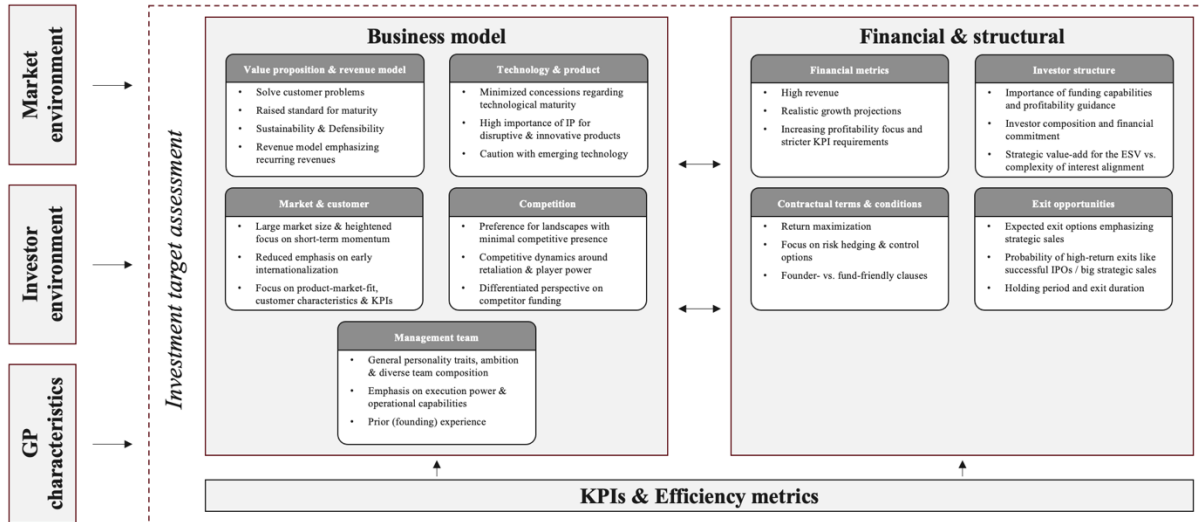


Figure 7: Revised model of investment target assessment for Series A & B funding under uncertain economic conditions

4.1 Significant changes in business model & company assessments

Venture characteristics around the business model diverge only slightly under conditions of uncertainty and continue to provide valuable insights with varying emphasis depending on investor preference (P. A. Gompers et al. 2020). Nevertheless, interesting insights and adaptations to the investment assessment emerged during the analysis, creating a more nuanced and comprehensive perspective on the particularities of the investment decisions. While these changes emerged under economically uncertain conditions, many are expected to remain (J, l. 167-169).

Due to its importance for the business overall, value proposition and the connected revenue model remain important dimensions of analysis under economic conditions of uncertainty. Overall, interviewees agree that there is little change to what constitutes an attractive value proposition compared to periods of high liquidity, where “[...] *a good idea was a good idea before and is hopefully a good idea now*” (A, l. 30-31). Founding teams are still required to demonstrate an attractive story surrounding the proposition to convince investors to commit capital (Kraemer-Eis et al. 2023) and GPs tend to remain within the boundaries of their philosophy for investments. Adaptions mentioned by interviewees are subdivisible into the topical focus of the proposition as well as its implementation with certain characteristics becoming more attractive to investors. Firstly, recurring revenues turn more favorable since they provide a stable foundation and plannability. Simultaneously, investments are gradually trending towards highly sustainable propositions proven by a certain degree of maturity in the business as well as value propositions favored by the surrounding conditions such as businesses focusing on cost savings (C, l. 93-96). Both of those analyses are in line with previous studies undertaken, solidifying the importance of choosing appropriate value propositions in line with the macroeconomic environment (Khanin et al. 2008). Furthermore, investments into first-mover ventures emphasizing speed as a competitive advantage are less appealing due to the

associated reliance on financial resources and significant cash burn (B, l. 235-239). Investors are also more critical about the implementation of the value proposition in day-to-day business activities. Expectations previously held by later-stage investors regarding the maturity of operations and clearly defined growth plans have been more widely adapted (P. A. Gompers et al. 2020).

Compared to widespread literature, more significant emphasis has been put on assessments of technology leadership and the product during our interviews. It has been stated that while the technological foundation is of tremendous importance independent of the economic conditions, the overall perspective has changed and investors tend to make fewer compromises (K, l. 81-88). Due diligence processes have become increasingly thorough and disruptive technologies, while still sought after, are handled with increased care to prevent excessive valuations (I, l. 304-307, A, l. 66-70). This internal conflict is mostly solved by emphasizing the development stage of the product (H, l. 46-47). Ideally, the technology should be more mature and provide customer testimonials that support the value provided by the product, potentially also underlined with relevant KPIs. If no technology leadership is substantiated by sturdy metrics, assessment thresholds for other dimensions become stricter.

Since the business model of VC and GE is based upon significant growth of single companies within the portfolio, investors are forced into consistency for their market expectations even under uncertain economic conditions. To be considered a viable VC case, total market size and growth momentum need to meet a certain threshold to enable growth as expected (D, l. 93-95). Nevertheless, certain tendencies towards more conservative assumptions and adjusted growth ambitions are prevalent, creating a paradox of expectations (A, l. 135-140). Founders need to portray confidence in the potential of their business while demonstrating awareness about external influences on their endeavors. Especially mature investors with a successful track record are now more skeptical (G, l. 111-113). To improve trust in assumptions, GPs

continuously try to verify their founder theses with internal and expert assessments to “*assume that what they assume for their business plan is not completely made up out of thin air*” (I, l. 118-121). On the other hand, investors appear more lenient on less aggressive growth targets as well as changing their perception of requiring internationalization. Under uncertain economic conditions, investors tend to favor penetration of the home market rather than early internationalization driven by an increased awareness of the associated risks (F, l. 140-142). Contrasting results under normal conditions, international expansion is limited to the availability of market-specific knowledge and sufficient funding (Kraemer-Eis et al. 2023). There is thus a sustained focus on markets known to the investor due to the associated unfair advantage (Nunes, Félix, and Pires 2014).

Dissimilar to the agreed-upon importance of market assessments, competitive analysis has been given less emphasis with only little changes to the process described by interviewees. As with all other dimensions, the overall thresholds for ESVs to overcome have become more demanding and GPs are encompassing additional potential competitors with their respective retaliation capabilities into the assessment (ibid.). While competitor funding remains an important indicator of market attractiveness and potential barriers for the ESV, the perception of high competitor funding has changed. It could become an opportunity under uncertain conditions since they might struggle with raising additional funds, making market share available (K, l. 151-162).

Putting other factors into context, customer opinion and insights provide valuable insights for all due diligence processes, becoming even more relevant under economic conditions of uncertainty with recognized changes across several dimensions. Analysis scopes are widening, and interviewees described analyses to have become more common overall and start much earlier to improve confidence in the investment (A, l. 331-337). Less competitive funding processes and increased time for assessments enable a more comprehensive analysis for

investors at all stages. Therein, investors ask a variety of questions regarding the sales process, decision-making, responsiveness, and product value-add among others (E, l. 62-66). In order to create a comprehensive perspective on customer topics, investors include quantitative analyses such as (long-term) contracts, customer stickiness, or sales cycle duration (F, l. 290-292). This extends to expecting ESVs to set forth a path to successfully increase their share of wallet with existing and prospective customers for sustainable growth. A major issue for investment targets under economic uncertainty is dependency on a small number of customers with precarious economic outlooks themselves (C, l. 155-157). This acts as a contrary tendency to general preferences for B2B ventures due to their favorable exit perspective (Kirchleitner 2021).

As widely recognized in the literature, the management team and key employee experience are of utmost importance for any investor's analysis. While this importance has not changed overall, changes in aspects to consider and the analysis scope have emerged. Generally, there appears to be a fundamental skill set sought after by investors that does not change under any circumstances (J, l. 214-215). Nevertheless, GPs recognize changing environments and actively pursue founders with appropriate skills to manage those situations, as well as a balanced combination of realism and ambition (B, l. 196-202, F, l. 149-151, A, l. 136-139). Further increasingly important analysis dimensions include soft-team factors, culture, and ESG perspectives. In line with those additional analysis dimensions, investors increasingly incorporate key roles within the company apart from the management team in their assessments, with Interviewees primarily emphasizing the CFO (K, l. 320-325) as well as go-to-market positions (J, l. 220-225) to counteract unfavorable economic conditions. As a foundation, good companies are able *"to build up additional functions and these are usually not from the core founding team"* (H, l. 179-181). Nevertheless, the main focus of the analysis remains on the founders and top-level management team (A, l. 169-172; F, l. 160-162), since they oftentimes

hold a number of company positions and are responsible for the long-term prosperity (Kaplan, Sensoy, and Strömberg 2009).

4.2 Business model & company factors relevant for assessments under economic uncertainty

Based on the changes previously delineated, the model describing the investment target assessment criteria needs to be adjusted with regard to the business model & company factors. Independent of the macroeconomic conditions, investors should pursue a thorough assessment of the value proposition and revenue model with a reinforced focus on long-term defensibility. Naturally, investors should continue to ensure that the target's value proposition solves a customer issue currently unmet by competitor offerings (G, l. 82-86). The perfect target replaces the status quo for a new generation and provides significant improvements compared to existing solutions (Block et al. 2019; Teece 2010; Magretta 2002). Transforming ideas into viable businesses under economic conditions of uncertainty requires a collection of hygienic criteria derived from both literature and interviewee input, including technological competitive advantages, product-market-fit, lock-in mechanisms, and go-to-market strategies among others. Most importantly, the idea needs to provide "*potential for commercialization*" through monetization (H, l. 59-60). Looking at monetization, most VCs stated recurring revenues to be more attractive during low liquidity since they provide stable and plannable outlooks (G, l. 59-61). In rare cases, a combination of different revenue models is possible but in general, the monetization approach must be aligned with the specific customer demands for the value proposition. Most of the time, differences in the attractiveness of different revenue models are already priced into the asset, thus directly affecting the valuation (A, l. 55-59). Equally vital as monetization is the defensibility of the value proposition, where companies need to assess alternative developments to tackle the natural diminishment over time (F, l. 174-178). Overall, the combination of value proposition and revenue model must fit the specific profile of the

investor to make sure they can provide additional value apart from money and can adequately assess the ESV's value.

In addition to the pure value proposition, the underlying technology can provide a significant competitive advantage but requires a more thorough analysis. Generally, technology can create long-term competitive advantages regardless of the economic conditions and investors recognize technology leadership as an important part of generating a defensible positioning (J, l. 106-109). Even if a certain market for a product already exists, many investors favor businesses with a disruptive potential to improve future valuations since economic conditions of uncertainty minimize potential alternatives for differentiation (K, l- 67-75). Especially under those conditions, technology is by no means of itself but rather has to be monetizable and scalable with investors being less willing to take risks (G, l. 79-80). While this has been true for some investors beforehand, it needs to be clearly demonstrated by market acceptance and functioning prototypes (Nunes, Félix, and Pires 2014). Ideally, the technology is protected by intellectual property rights and patents rather than capitalizing on publicly available knowledge as a sign of a substantiated edge (I, l. 75-81). Creating a differentiated understanding of an ESVs technology, many investors dedicate a significant amount of time on creating a holistic perspective of the product-market-fit during due diligence processes, incorporating internal and external perspectives even though customer perspectives might not yet be available.

As already established, a deep understanding of the market and remaining scalability potential have become even more important. Due to the associated uncertainty, a comprehensive analysis of market trends and drivers becomes increasingly relevant to understand future demand developments and volumes (K, l. 99-105). Generally, these tendencies are even more important than the actual market size, especially in series A fundings where the focus is primarily put upon scaling the business (Kollmann and Kuckertz 2010). Within this analysis, there is a variety of factors to consider, primarily influential long- and short-term trends, growth drivers,

stability, risks, and underlying customer needs (K, l. 113-115). In trying to generate this market understanding, investors choose a variety of approaches. Most smaller VCs tend to subsidize their existing capabilities with experts and customer interviews on the specific market – ideally trying to match founder expectations with market insights (C, l. 109-112). Not being an exact science, market sizing is oftentimes realized based on comparable markets or other companies within the portfolio – ideally focused on the accessible rather than the total market (K, l. 108-111).

Similarly to times of high liquidity, competitive assessments remain part of every comprehensive market analysis but are subordinate to other analysis lenses (K, l. 147-151), since they can never provide a comprehensive understanding of the market given the restrictions VCs face (Nunes, Félix, and Pires 2014). When undergoing a competitive analysis, it is important that VCs cover a variety of potential competitors apart from other ventures, including large corporations or scientific projects that are becoming more competitive under those macroeconomic conditions (H, l. 78-80; B, l. 128-133). Assessments typically focus on trends affecting competitive positionings, challenges to be expected in the future, ability to sustainably differentiate, barriers, offerings, and pricing – ideally tailored to the characteristics of the target (E, l. 116-120). Whereas competition is oftentimes cited as a risk (Khanin et al. 2008), a lack of competition has been described as a bad sign, especially under uncertain economic. This is especially true for more innovative solutions, where VCs think about *“if you are really the only one building it, you should ask yourself why you are the only one building it”* (D, l. 88-90). The underlying implied market demand and potential competitor base are of utmost importance to the investor.

Under deteriorating economic conditions with a lack of information availability, customer insights increase in importance as they provide a reliable source of information for core assumptions around the investment. This is especially relevant due to the direct impact of

customer sentiment on revenue expectations by providing concrete proof for product-market-fit (Khanin et al. 2008). While this is consistent across economic conditions, the customer interviews have been stated as even more important as a reliable source of information despite potential issues with highly disruptive solutions that customers find “*difficult for them to emphasize with*” (H, l. 65). Within these interviews, the focus is primarily laid upon qualitative insights into the decision-making process, the relationship with the business, as well as the specific value added by the solution (I, l. 127-132). Ideally, customer assessments are conducted with both the existing as well as potential customers to prevent blinkers whenever possible.

Even under uncertain economic conditions, investors emphasize the management team as the most important assessment factor (D, l. 43-44). This is in line with previous literature and is mainly driven by the integral role obtained by the founders in the early stages of a business (P. A. Gompers et al. 2020; Block et al. 2019). Nevertheless, there was an agreement between interviewees that different venture stages require different skill sets and characteristics of the management team that are subject to change under uncertain economic conditions. Overall, most investors develop a unique perspective on the founder characteristics they perceive to be most important based on an underlying subset of common skills to achieve optimal alignment and fit of the skillset with the targeted value proposition that translates into a founder-product-market-fit (J, l. 115-117). One of the most important skills stated by interviewees was the combination of ambition and execution ability to scale (K, l. 332-335). Next to an increasing focus on leadership in uncertainty, the general skillset sought after remains in line with the literature, composing of vision, execution, market knowledge, technological skills, and discipline (Nunes, Félix, and Pires 2014; Khanin et al. 2008). Supplementing the skillset, many investors look at the previous experience as a proxy with an increasing risk aversion leading to the dismissal of unproven founders. Ideally, the founder can show a successful track record of previous ESVs but experience in consulting or senior industry roles is seen as valuable as well

(G, l. 172-175). One factor of increasing importance induced by times of low liquidity is the composition of the management team. Ideally, investors look for a balanced and diverse founders' team that combines a variety of skill sets and consists of a minimum of three people to mitigate associated risks. *"In fact, there's another thing: the more people, the better, actually. So solo founders don't work, duo founders work, but it's not ideal, and then I think trio or quad founder teams are actually the best and the most promising because ideally, you can distribute the roles very well and elegantly."* (G, l. 178-181). In contrast to contemporary literature, this tendency has emerged across investors rather than only among very experienced investors (Franke et al. 2008). All those factors are mostly assessed through personal interviews and impressions, supported by talking to previous colleagues and acquaintances at times.

5 Discussion

5.1 Scientific contribution

This paper aims to contribute to the research landscape by investigating the particularities of ESV funding under conditions of economic uncertainty. The study substantiates our theory on assessment criteria in entrepreneurial funding processes by incorporating the impact of unfavorable macroeconomic conditions. This provides further depth to existing research undertaken after the 2008 financial crisis and helps to redefine existing models of investment decision-making.

On a more general level, the study enhances our understanding of entrepreneurship under economic uncertainty. Through an analysis of changes in the assessment criteria from a business model, structural, and financial perspective, the research contributes to a broader understanding of the impacts of macroeconomic conditions on venture financing. By limiting the scope to the German market, the study possesses a unique regional perspective that can serve as a benchmark for comparative studies in other relevant VC markets.

5.2 Practical contribution

Focusing on insights derived from interviews with major German investors, this study attempts to bridge the gap between day-to-day business activities and academic research. Therein, it provides practical contributions that could nurture successful investment endeavors.

First and foremost, the model and portrayal create guidance in times of economic uncertainty for ventures and investors alike. The identified assessment criteria for funding processes for ESVs under uncertain economic conditions can be used as actionable guidelines to formulate more resilient funding strategies. Founders can revise their strategy and business model to make sure it fulfills heightened expectations for capital efficiency and sustainability of investors. Simultaneously, the GPs could use the insights to benchmark their funding strategies and refine

them to maximize returns. The study thereby contributes to aligning expectations between stakeholders and improving the competitiveness of the German VC and GE industry.

Secondly, the study informs policymakers about the dynamics of venture financing under economic conditions of uncertainty. Thereby, the study supports an organic economic recovery by improving the resilience of emerging businesses and assisting in the efficient usage of capital.

5.3 Limitations

Despite adhering to the highest scientific standards throughout the research process, like any qualitative research study, the procedure possesses certain limitations that require attention to put the results into perspective.

Predominantly, the research is limited by the small sample size of interviews compared to the width of the industry landscape. Even though numerous potential interview candidates were contacted, tight schedules oftentimes did not allow for an interview. While the final participants still represented a meaningful proportion of the German venture capital market, the results should nevertheless not be perceived as fully representative. The focus on Germany may also constrain international transferability. In general, the decision criteria presented within this paper were derived and assessed based on the individual opinions of the participants, meaning that despite conducting continuous cross-checks with existing academic research, they continue to provide a skewed, partially subjective picture.

While academic rigor has been applied during all phases of the project, a certain interpretative nature still prevails in the data analysis. Even though we undertook extensive validation through the interconnection of insights with existing literature to minimize the impact of personal perspectives and improve the study's credibility, the influence of prior knowledge and potential personal biases cannot be fully precluded (Lincoln and Guba 1986). Nevertheless, the processes

yielded valuable insights and fulfilled the aspiration towards transferability to the biggest extent.

5.4 Future research

Within the overall context of the research landscape, the project provides a plethora of opportunities for fruitful future research. Firstly, comparable analyses in other markets could deepen the understanding of regional differences as well as an overarching theme applicable everywhere. Simultaneously, future interviews could be conducted with a broader variety of actors in the ecosystem to include the perspective of founders, policymakers, and LPs alike. These interviews could focus on the perception of additional issues with funding under uncertain economic conditions such as response behavior, term sheet attractiveness, or impact on daily business. Thereby a more differentiated perspective on requirements as well as interests could be derived. Furthermore, increasing the sample size of participants would strengthen the applicability and external validity of the results.

To build a stronger foundation for the topic of interest, additional studies with different perspectives and methodologies could be deployed. A longitudinal study on the performance of funded ventures in combination with the derived characteristics could highlight success and resilience within the ecosystem. Thereby, the application of the concept in the assessment of potential ventures could refine the day-to-day applicability as well as provide a bridge between science and business.

Alongside those additional qualitative studies, quantitative analyses could yield additional insights that complement the derived theory and underline the importance of those factors. These could be based on standardized questionnaires to include a broader range of potential participants as well as conducting regression analyses on the success and failure rates of ESVs

with VC funding. All in all, the topic continues to provide several interesting opportunities for research that bridge gaps between the academic and the business community.

6 Conclusion

This research project examines a contemporary approach to fund deployment by German VC and GE companies in ESVs. The underlying proposition was that investment target assessment criteria in Series A & B funding processes vary based on underlying economic conditions due to the available capital and economic outlook. Combining business model, company, financial, contractual, and external factors, this study strives to develop a comprehensive model future for application based on qualitative perspectives provided by representatives of significantly sized funds.

Across dimensions, assessment processes and decision making are becoming more thorough and careful under precarious economic conditions. Investors are generally aware of the impact the medium- to long-term economic outlook will have on their return expectations and adapt their criteria accordingly. By prioritizing economic sustainability, and profitability over growth, internationalization, and speed, a significant shift in the perception of attractive investment opportunities can be observed. Simultaneously, by emphasizing the importance of KPIs and dedicating increased efforts to due diligence processes, investors capitalize on the power shift towards the financiers compared to periods of high liquidity. Management teams need to be aware of those changes and adapt their organizational design, behavior, and expectations to continue their contribution to economic and societal prosperity.

By developing a comprehensive model combining proven scientific knowledge with contemporary insights from active investors, this study provides relevant adaptations to established industry conduct in the specific context of uncertain economic conditions.

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List of abbreviations

BM	Business model
ESV	Early-stage venture
GE	Growth equity
IPO	Initial public offering
IRR	Internal rate of return
LBO	Leveraged buyout
LP	Limited partner
M&A	Mergers & Acquisitions
PE	Private equity
VC	Venture capital

1 – Tables & Figures

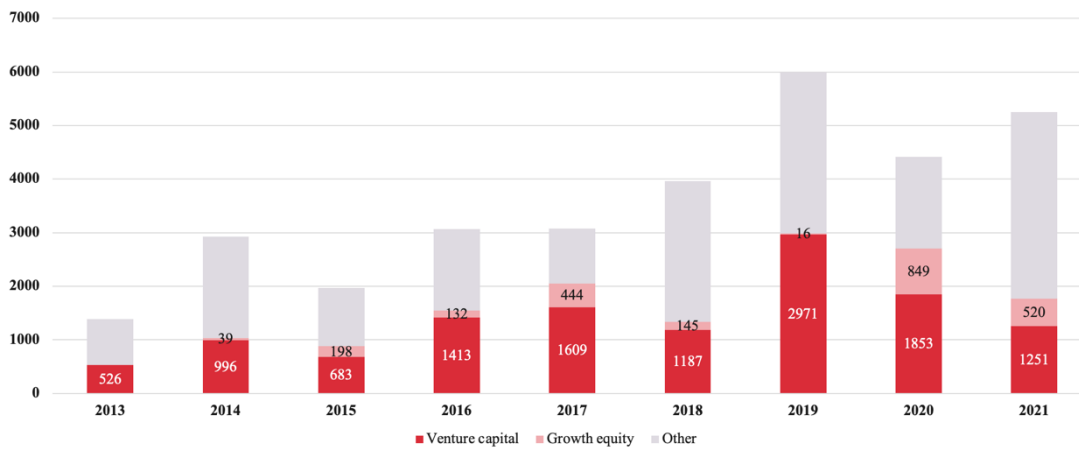


Figure 1: Fundraising of German private equity companies by investment focus, in EURm (Source: BVK Halbjahresbericht 2022)

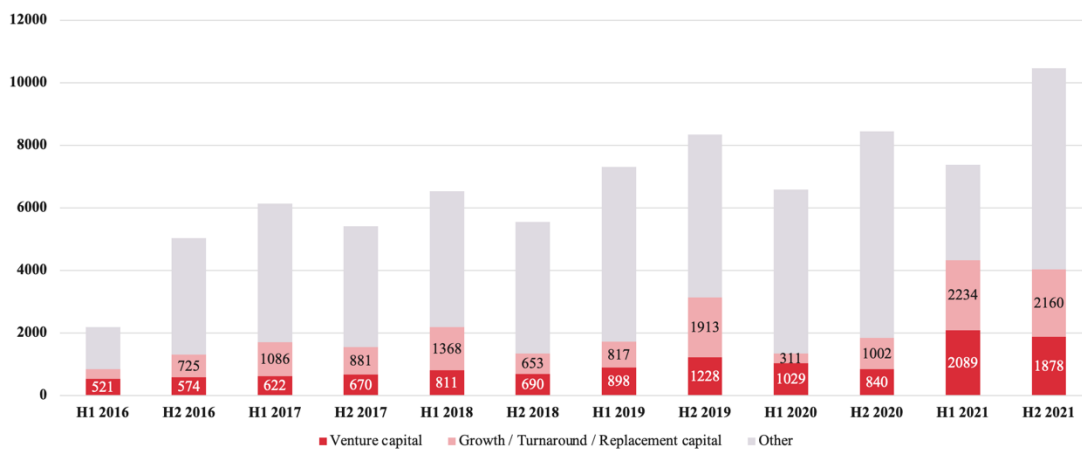


Figure 2: Investments of German private equity companies by investment focus, in EURm (Source: BVK Halbjahresbericht 2022)

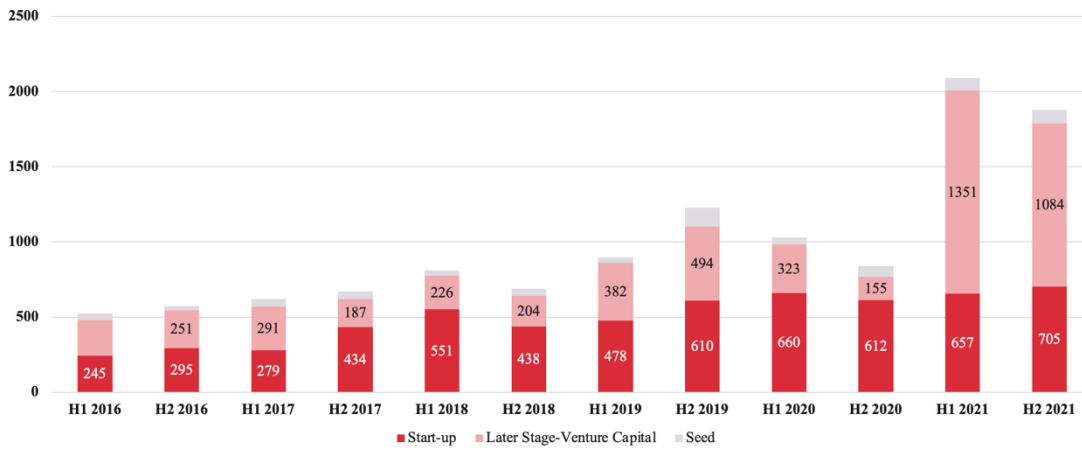


Figure 3: Investments of German private equity companies by company stage, in EURm (Source: BVK Halbjahresbericht 2022)

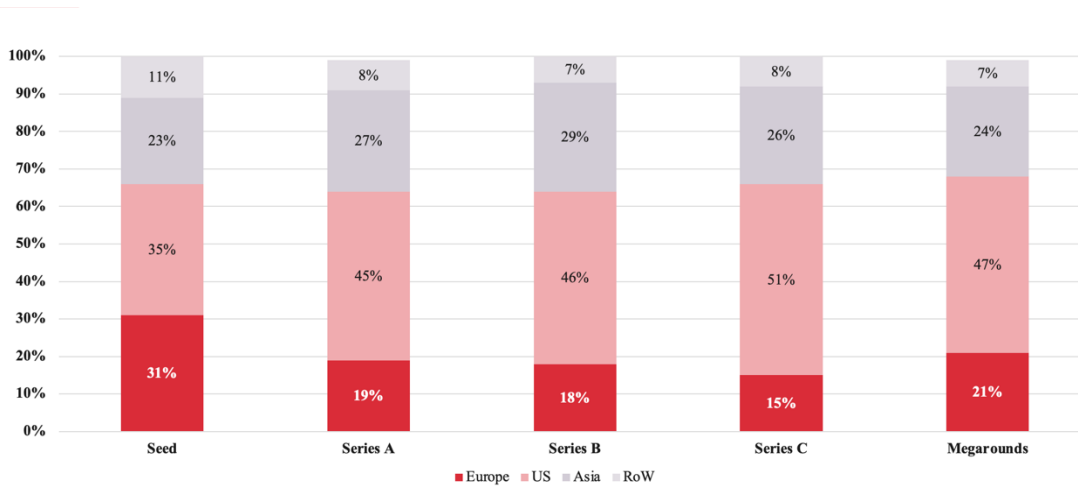


Figure 4: Venture capital by destination and stage, in USDb (2020 - Q3'2023; Source: Dealroom)

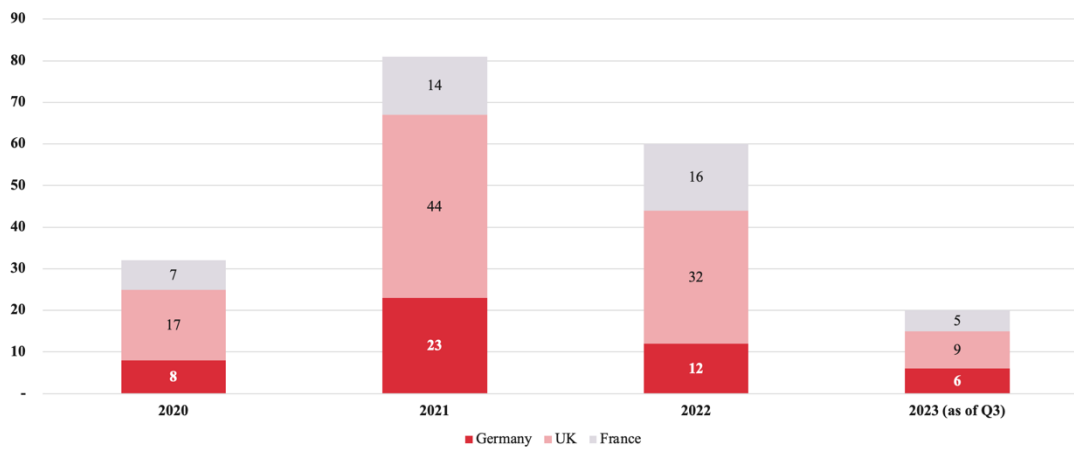


Figure 5: Venture capital investments in Europe's top 3 countries (2020 - Q3 2023; Source: Dealroom)

#	Company name	#	Company name
01	10x Group	15	Join Capital
02	Acton Capital	16	MIG Capital
03	Armira Growth	17	Peak Capital
04	b2venture	18	Picus Capital
05	Capnamic Ventures	19	Point Nine
06	Cherry Ventures	20	Project A Ventures
07	Creandum	21	Revent Ventures
08	CommerzVentures	22	Signals VC
09	Earlybird Ventures	23	Speedinvest
10	Fundamental	24	Target Global
11	Global Founders Capital	25	UVC Partners
12	GR Capital	26	Vsquared Ventures
13	High Tech Gründerfonds	27	Wellington Partners
14	HV Capital	28	Yttrium

Table 1: Overview of relevant VCs and GEs (Source: Depiction by the authors)

<i>Interviewee</i>	<i>Position</i>	<i>Investment focus</i>
A	Principle	Seed & Series A
B	Principle	Seed & Series A
C	Associate	Seed & Series A
D	Principle	(Pre-) Seed
E	Investment manager	(Pre-)Seed & Series A
F	Investment manager	Series B & Series C
G	Investment manager	(Pre-) Seed
H	Investment manager	All
I	Investment manager	Seed & Series A
J	Principle	Seed & Series A
K	Associate	Series B & Series C

Table 2: Anonymized overview of interview partners (Source: Depiction by the authors)

<i>(Sub-) Code Name</i>	<i>Description</i>
Financial projections & profitability	Perspectives on the financial side of venture assessments based on a differentiation between the importance of key financial KPIs.
<i>Perception of the importance of revenue</i>	<i>Opinions on the sustained importance of revenue incl. certain thresholds for growth & new investment rounds.</i>
<i>Perception of the importance of profitability</i>	<i>Discussion of increased importance of profitability compared to growth under uncertain economic conditions.</i>
<i>Changes in Multiples & Valuations</i>	<i>Named changes in multiples & valuations incl. the connected impact on the venture capital business model.</i>
<i>Perception of the importance of capital efficiency</i>	<i>Mentioned aspects around capital efficiency as an increasingly important assessment dimension under conditions of economic uncertainty.</i>
<i>Venture capital return expectations</i>	<i>Insights into limited impact of changing economic conditions on the return expectations in a low liquidity environment as well as investor approach to fulfill these targets.</i>
<i>Requirement of a plan how to achieve profitability</i>	<i>Stated novel prerequisite for ventures to present a clear roadmap to achieve profitability if market conditions change.</i>
<i>Issues with revenue targets & perceptions</i>	<i>Critical statements around the purpose & value of revenue targets under uncertainty economic conditions.</i>
Market environment	Diverging perspectives on the current & upcoming market environment to provide context to other categories.
<i>Negative market perspective & outlook</i>	<i>Negative opinions around the current market situation & the outlook with emphasis on fund deployment issues, limited fundraising & decreasing valuations.</i>
<i>Opportunities of low liquidity environments</i>	<i>Mentioned opportunities of strategic add-on acquisitions, regained investor control & increased time for due diligence arising from low liquidity.</i>
<i>Negative commentary on high-liquidity times</i>	<i>Raised aspects around issues of high-liquidity due to the significant competition, hype investments & overheated valuations.</i>
<i>Positive market perspective & outlook</i>	<i>Positive opinions around the current market situation & the outlook with emphasis on certain industries as well as recovery expectations.</i>
<i>Downsides of low liquidity environments</i>	<i>Critical perspective on low liquidity focused primarily on fund availability & increased uncertainty.</i>
<i>Difficult position & changes of market actors</i>	<i>Comments around the issues of German GPs in the current market environment.</i>
<i>Positive commentary on high-liquidity times</i>	<i>Raised points around positive aspects of high liquidity like increased growth & capital availability</i>

Understanding of general partner characteristics

Approach to deal success evaluation

General partner perspective on investments

Changes of general partner behavior

General partner characteristics

Tasks of the general partner

Perspectives on opinion, nature & tasks of the general partner to establish a foundation for understanding the assessment criteria.

Various underlying guidelines for general partner assessment to provide understanding around the decision-making process.

Insights into interviewee perspective on investment characteristics & behavior to better understand decision making.

Various underlying changes in general partner behavior under economic uncertainty apart from the overarching categories.

Mentions of general partner characteristics that might influence decision making & guide relationships between actors.

Description of the tasks of general partners in the investment process & active investor relationship.

Management team

Characteristics of the management team

No change in importance of the management team

Composition of the management team

Previous experience of the management team

Scope of the assessment beyond management team

Assessment of soft factors

Assessment purely focused on founders

Increased importance of the management team

Perspectives on the importance & analysis dimensions of the management team as a core factor for venture assessment.

Mentioned aspects to consider when analyzing characteristics & skill sets of the management team to assess their capabilities under economic conditions of uncertainty

Broad agreement of a sustained importance of the management team as a key indicator of ESV potential due to the key role of the founders in success.

Mentioned management team composition diversity prerequisites & associated benefits as a key indicator for attractive investment propositions.

Specific focus laid upon the previous experience in terms of employment & founding history as a quality indicator of management teams.

Underlined personnel assessed beyond C-level management to cover important functions within the company required for the business case.

Opinions on inclusion of interpersonal & cultural soft factors into the management team assessment process.

Certain mentions of management team analysis being solely focused on the top-level managers & founders.

Limited mentions of increasing importance of management team assessments under uncertain economic conditions.

Product & Technology

Aspects of product assessment

Perspectives on the value of technology leadership as a competitive advantage under uncertain economic conditions.

Mentioned aspects for successful product assessment to guarantee valuable exploitation of technology as well as product-market-fit.

Importance of technology leadership

Underlined importance of technology leadership as a factor for differentiation while providing a competitive advantage.

Critical assessment of product & technology

Critical perspectives on the value of technology as a valuable stand-alone factor of analysis.

Market & Scalability

Perspectives on changes of market assessments under economic uncertainty as well as connected challenges & the ideal approach.

Approach to market assessments

Description of potential approaches to market size & trend assessments through internal & external capacities.

Aspects of market assessments

Aspects to include in a market assessment to create a viable foundation including size, trends & risks to provide a differentiation future perspective.

Perspective on importance of market size

Prioritizing market size as it provides the foundation for growth and returns as well as acting as a sign for demand.

Perspectives on internationalization outlook

Decreased importance of internationalization & refocus on exploiting home markets under economic conditions of uncertainty.

Perspective on importance of scalability potential

Prioritizing scalability potential as an important characteristic to differentiated investment opportunities as a venture capital case.

Perspective on growth importance has changed

Understanding of decreased significance of growth prospects as a factor for analysis during economic uncertainty favoring different aspects.

Perspective on growth importance has not changed

Opinion of retained importance of growth potential as a foundation for the general venture capital business case.

Challenges of internationalization

Reported challenges & issues with internationalization focused on delusion of priorities.

Importance of market assessments

Underlined relevance of a comprehensive analysis of the market environment for potential investments under uncertain economic conditions.

Exit possibilities

Perspectives on the exit landscape & the role of different exit paths under uncertain economic conditions.

Changes in exit options under economic uncertainty

Explained deal flow cooldown with high multiples exit multiples, high acquisition multiples in the past, and pessimistic investor expectations for 2023/2024.

Challenges with exits under economic uncertainty

Raised concerns around high exit expectations because of limited impact of early investors and required buyer-match timing.

Perspective on exits via private equity under uncertainty

Underlined attractiveness as secondary exits to PEs because of efficient transaction processes and technology interest. Raised concerns about the LBO business model in a high-risk environment with a stagnation outlook.

Perspective on exits via IPO under uncertainty

Low perceived attractiveness of IPOs due to high preparation effort and missing investors interest of newly issued company shares.

Perspective on exits via strategic investors under uncertainty

Mentioned rising interest of strategic investors to buy portfolio companies because of lower exit multiples and remaining cash reserves.

Importance of pre-deal exit options assessment

Brought up necessity to assess exit options early on without giving it too much weight in the due diligence.

Value proposition & revenue model

Perspectives on the role of value proposition & revenue model in the perception of the business model as well as underlying trends in preferences.

Understanding of value proposition

Detailed definition & delineation of the value proposition for a common understanding of the term during subsequent analyses.

Aspects of value proposition assessment

Named aspects to include in a thorough assessment of the value proposition to ensure a valuable investment during uncertain economic conditions.

Importance of value proposition & revenue model

Stated importance of the value proposition & revenue model as fundamental building blocks of the business model thus being central to assessment processes.

Perspectives on recurring revenue models

Opinions on the attractiveness of recurring revenue models as a foundation for plannability & a solid revenue base.

Perspective on value-proposition & revenue model has changed

Raised perspectives on changes in the perception of certain value propositions & revenue models as well as the general importance.

Understanding of revenue model

Detailed definition & delineation of the revenue model for a common understanding of the term during subsequent analyses.

Perspective on value-proposition & revenue model hasn't changed

Critical assessment on a sustained opinion on value-proposition & revenue model in their importance for the due diligence process.

Perspectives on one-off revenue models

Comments on venture capital perception of one-off revenue models as generally subpar, especially during times of low liquidity.

Investor structure

Perspectives on handling co-investors & existing investor structures to successfully close a funding round.

Critical assessment of investors

Highlighted concerns about preferring big investors only because track record and capital. Underlined advantages of case- and round-specific investor fits.

Previous investors as a quality indicator

Mentioned importance of a proven investors as a quality indicator in terms of investment capital, resources, and network.

Non-monetary value-add of co-investors

Mentioned benefits of other investors in the company around network, industry and sector experience, strategic guidance, and governance.

Monetary value-add of co-investors

Raised importance of financial resources of other funds in order to finance follow-up rounds.

Investor relationship

Comments around trust and aligned interests for every single investment case.

KPIs

Perspectives on the usage of KPIs for later-stage investment decisions focused on the importance for sound analysis while including critical perspectives.

Importance of KPIs in assessment

Stated importance of the inclusion of KPIs in the assessment process for thorough due diligence processes.

Change in importance of KPIs in assessment

Description of increasing importance of KPIs for assessments under economic uncertainty to increase trust in the investment decision

Important revenue & profitability KPIs

Mentions of revenue & profitability KPIs (e.g. net dollar retention, burn multiples) to be covered in a thorough due diligence in later-stage funding rounds.

Important customer KPIs

Mentions of customer KPIs (e.g. customer retention, churn rates) to be covered in a thorough due diligence in later-stage funding rounds.

Critical assessment of KPIs

Critical perspectives on the value of KPIs as well as the approach of funds to analyze KPIs in funding assessments.

Industry benchmarks for KPIs

Agreement on the value of applying industry benchmarks for KPIs rather than developing fund specific thresholds.

Contractual clauses & legal structure

Perspectives on the usage of contractual clauses & terms to mitigate a changing economic landscape.

Importance & role of liquidation preferences

Stated liquidation preferences as the most common element in the term sheet and underlined the increased usage within a struggling venture capital market.

Contractual clauses have changed

Named emergence of stricter contractual clauses and terms.

Importance of contractual clauses & legal structure

Underlined adverse effects of strict term sheets on trust and term negotiations in following rounds.

Contractual clauses have not changed

Mentioned not changing contract clauses and elements in an environment of economic uncertainty and high interest rates.

Market standard contractual clauses

Referred to market standard clauses and terms when being asked about applied terms and conditions for new investment rounds.

Customers

Perspectives on the scope & approach to capture customer opinions in the assessment process under uncertain economic conditions.

Important aspects of customer assessment

Aspects to include in a customer assessment to validate market & business model assumptions as well as ensuring sustained demand.

Approach to customer assessment

Description of viable approaches to conduct customer assessments primarily through active conversation during due diligence.

No-change in importance of customer perspective

Opinions on a sustained importance of the customer perspective independent from external environments due to its fundamentality to the assessment process.

Change in importance of customer perspective

Limited perception of increased importance of customer opinions under changed liquidity & economic outlooks.

Competition

Perspectives on the importance, scope, content & approach to competitive assessments in analyzing potential investment opportunities.

Aspects of competitive assessment

Aspects to include in a competitive assessment to rate whether or not an investment opportunity is attractive both focused on competitor characteristics & landscape trends.

Importance of competitive assessments

Underlined relevance of a positive competitive assessment on the attractiveness of an investment target.

Types of competitive threats

Comprehensive perspective on which actors & types of companies constitute a potential competitor to an investment proposition.

Guidelines for competitive assessments

Mentioned quality checkmarks & guidelines to successfully conduct competitive assessments resulting in valuable insights.

Approach to competitive assessments

Description of potential approaches to conduct competitive assessments in unknown markets under uncertain economic conditions.

Investor environment

Perspectives on LP perception of venture capital as an investment option under economic uncertainty.

Unchanged investor expectations under uncertain conditions

The investor's high risk/high return investment thesis is unchanged and sets high pressure on general partners to deliver returns as promised during fundraising.

Decreasing attractiveness of venture capital as an asset class

Named concerns about the attractiveness of venture capital compared to other asset classes which offer better Sharpe ratios at the moment.

Changed investor expectations under uncertain conditions

Reported doubts of limited partners around the viability of investments in certain industries or of the venture capital business model in general.

High attractiveness of venture capital as an asset class

Raised points around the ongoing attractiveness of venture capital for limited partners due to a long-term focus and high return expectations.

Table 3: Description of sub-codes (Source: Depiction by the authors)

<i>Category Name</i>	<i>Occurrence</i>	<i>Proportion</i>
Financial projections & profitability	122	11.95%
<i>Perception of the importance of revenue</i>	27	22.13%
<i>Perception of the importance of profitability</i>	25	20.49%
<i>Changes in Multiples & Valuations</i>	19	15.57%
<i>Perception of the importance of capital efficiency</i>	18	14.75%
<i>Venture capital return expectations</i>	13	10.66%
<i>Requirement of a plan how to achieve profitability</i>	12	9.84%
<i>Issues with revenue targets & perceptions</i>	8	6.56%
Market environment	120	11.75%
<i>Negative market perspective & outlook</i>	31	25.83%
<i>Opportunities of low liquidity environments</i>	24	20.00%
<i>Negative commentary on high-liquidity times</i>	20	16.67%
<i>Positive market perspective & outlook</i>	18	15.00%
<i>Downsides of low liquidity environments</i>	15	12.50%
<i>Difficult position & changes of market actors</i>	7	5.83%
<i>Positive commentary on high-liquidity times</i>	5	4.17%
Understanding of general partner characteristics	118	11.56%
<i>Approach to deal success evaluation</i>	31	26.27%
<i>General partner perspective on investments</i>	29	24.58%
<i>Changes of general partner behavior</i>	26	22.03%
<i>General partner characteristics</i>	17	14.41%
<i>Tasks of the general partner</i>	15	12.71%
Management team	98	9.60%
<i>Characteristics of the management team</i>	41	41.84%
<i>No change in importance of the management team</i>	14	14.29%
<i>Composition of the management team</i>	13	13.27%
<i>Previous experience of the management team</i>	12	12.24%
<i>Scope of the assessment beyond management team</i>	8	8.16%
<i>Assessment of soft factors</i>	5	5.10%
<i>Assessment purely focused on founders</i>	3	3.06%
<i>Increased importance of the management team</i>	2	2.04%
Product & technology	70	6.86%
<i>Aspects of product assessment</i>	25	35.71%
<i>Importance of technology leadership</i>	25	35.71%

<i>Critical assessment of product & technology</i>	20	28.57%
Market & Scalability	67	6.56%
<i>Approach to market assessments</i>	13	19.40%
<i>Aspects of market assessments</i>	10	14.93%
<i>Perspective on importance of market size</i>	9	13.43%
<i>Perspectives on internationalization outlook</i>	8	11.94%
<i>Perspective on importance of scalability potential</i>	8	11.94%
<i>Perspective on growth importance has changed</i>	7	10.45%
<i>Perspective on growth importance has not changed</i>	5	7.46%
<i>Challenges of internationalization</i>	4	5.97%
<i>Importance of market assessments</i>	3	4.48%
Exit possibilities	65	6.37%
<i>Changes in exit options under economic uncertainty</i>	20	30.77%
<i>Challenges with exits under economic uncertainty</i>	12	18.46%
<i>Perspective on exits via private equity under uncertainty</i>	11	16.92%
<i>Perspective on exits via IPO under uncertainty</i>	10	15.38%
<i>Perspective on exits via strategic investors under uncertainty</i>	8	12.31%
<i>Importance of pre-deal exit options assessment</i>	4	6.15%
Value proposition & revenue model	62	6.07%
<i>Understanding of value proposition</i>	14	22.58%
<i>Aspects of value proposition assessment</i>	13	20.97%
<i>Importance of value proposition & revenue model</i>	9	14.52%
<i>Perspectives on recurring revenue models</i>	7	11.29%
<i>Perspective on value-proposition & revenue model has changed</i>	6	9.68%
<i>Understanding of revenue model</i>	6	9.68%
<i>Perspective on value-proposition & revenue model hasn't changed</i>	5	8.06%
<i>Perspectives on one-off revenue models</i>	2	3.23%
Investor structure	61	5.97%
<i>Critical assessment of investors</i>	20	32.97%
<i>Previous investors as a quality indicator</i>	15	24.59%
<i>Non-monetary value-add of co-investors</i>	12	19.67%
<i>Monetary value-add of co-investors</i>	8	13.11%
<i>Investor relationship</i>	6	9.84%
KPIs	57	5.58%
<i>Importance of KPIs in assessment</i>	14	24.56%

<i>Change in importance of KPIs in assessment</i>	12	21.05%
<i>Important revenue & profitability KPIs</i>	11	19.30%
<i>Important customer KPIs</i>	8	14.04%
<i>Critical assessment of KPIs</i>	7	12.28%
<i>Industry benchmarks for KPIs</i>	5	8.77%
Contractual clauses & legal structure	51	5.00%
<i>Importance & role of liquidation preferences</i>	14	27.45%
<i>Contractual clauses have changed</i>	12	23.53%
<i>Importance of contractual clauses & legal structure</i>	10	19.61%
<i>Contractual clauses have not changed</i>	9	17.65%
<i>Market standard contractual clauses</i>	6	11.76%
Customers	43	4.21%
<i>Important aspects of customer assessment</i>	19	44.19%
<i>Approach to customer assessment</i>	11	25.58%
<i>No-change in importance of customer perspective</i>	9	20.93%
<i>Change in importance of customer perspective</i>	4	9.30%
Competition	42	4.11%
<i>Aspects of competitive assessment</i>	12	28.57%
<i>Importance of competitive assessments</i>	11	26.19%
<i>Types of competitive threats</i>	9	21.43%
<i>Guidelines for competitive assessments</i>	6	14.29%
<i>Approach to competitive assessments</i>	4	9.52%
Investor environment	28	2.74%
<i>Unchanged investor expectations under uncertain conditions</i>	9	32.14%
<i>Decreasing attractiveness of venture capital as an asset class</i>	7	25.00%
<i>Changed investor expectations under uncertain conditions</i>	6	21.43%
<i>High attractiveness of venture capital as an asset class</i>	6	21.43%
Additional remarks	17	1.67%

Table 4: Overview of sub-codes (Source: Depiction by the authors)

2 – Interview guideline

– General –

01. Please tell me a little bit about your **company and your position**, what is it that you do?

– *Business model & company*–

02. In times of economic uncertainty, what are you looking for in terms of **value proposition and revenue model** when evaluating a potential investment target (e.g., are you shifting into different verticals)? How does it differ from more favorable economic conditions?

03. What are you looking for in terms of **technology leadership and product** when evaluating potential investment targets? Does your assessment change under conditions of economic uncertainty?

04. How do you evaluate the **market and scalability** potential of an investment target? Does the focus change in times of economic uncertainty, especially with regards to the short and medium perspective?

05. What are you looking for in terms of **competition** when evaluating potential investment targets? How is the analysis affected by general economic uncertainty?

06. How do you assess **customers** and corresponding KPIs such as customer acquisition costs or churn in times of economic uncertainty?

07. What are you looking for in the **management team and the experience of employees** in the assessment of an investment target? Would you rate the importance differently in times of economic uncertainty?

– *Financials* –

08. Do you have any specific targets to be reached in terms of **top-line growth and profitability** when evaluating potential investment targets? Do they change in uncertain times?

09. How did your expectations for the **multiple of money** change under the current investment environment? Do you change your timing when exiting?

– Transaction process & terms –

10. Do **prior funding and the current investor structure** affect your decision making when evaluating potential investment targets? Does the assessment change under conditions of economic uncertainty? Do VC/GE partnerships become more important?

11. In general, are you more **risk averse** in an environment of economic uncertainty? What are the reasons (e.g., pressure from LPs)? If yes, are you looking for more government support for the investment or the target?

12. How do you evaluate **exit options** in the assessment of an investment target? Would you rate the importance differently in times of economic uncertainty?

13. Are you introducing more **complex contractual structures** to hedge your investment than before? If yes, which contractual elements are used more often, or which terms get stricter?

14. Are there **any other factors** of particular importance under uncertain economic conditions we are yet to talk about?