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UNCERTAINTY AND RESILIENCE IN STRATEGIC MANAGEMENT: PROFILE OF A ROBUST COMPANY

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Abstract

Strategic management should take the uncertainty into account when developing business strategies to ensure companies adequate crisis resilience. The strategic management concept of a "robust company" outlined in this article is an integrative approach that combines findings from the areas of risk management, strategic management, rating, and insolvency research as well as empirical capital market research. Robustness is the ability of a system to survive (negative) shocks while maintaining a defined minimum level of success (performance) in the long term. Robust companies exhibit the following three key characteristics: high financial sustainability (stable rating, low earnings risk), a robust strategy with stable strategic success potential as a driver of future financial performance and company value, and a high level of competence in dealing with risk, especially in preparing business decisions.

I. Introduction

The future is uncertain. Strategic management should take this uncertainty into account when developing business strategies and making decisions about the "right" type of strategy. The profile of a "robust company" offers a concrete starting point for improving resilience, financial sustainability and sound strategy. It is not just about improving the probability of avoiding insolvency in the foreseeable future, which can be estimated using traditional financial ratio ratings. It is also about the ability to survive for longer, e.g., five or ten years or even longer.

Thus, the capacity for robustness derives from research and the further development of earlier concepts (cf. e.g. Günther and Günther, 2017; Gleißner, 2017b, Behringer, 2020; Schäffer, 2021 and in particular the basic idea from Gleißner, 2021b, that was sketched without derivation and research context). It goes beyond studies on resilience, which focus almost solely on organization and the supply chain (cf. Rampling, 2020; Ayyub, 2014). The concept is derived from research on business administration, as well as on risk and crisis management, strategic management, capital markets, rating and insolvency forecasting procedures.

The aim of the strategy is to select a strategic position in such a way that it can counter a broad field of possible risks, especially those that could lead to a crisis. Defensible core competencies and a high-risk coverage potential (equity and liquidity reserve), for example, are "passive" elements of risk management that are effective against many risks, although not necessarily known in detail in advance. In particular, a robust company is able to survive even if overlooked risks from the environment lead to an economic crisis (such as the COVID-19 pandemic or the Ukraine war, cf. Gleißner, 2021a).

This article is structured as follows: Section II outlines the essential principles for the development of the concept and discusses findings of current research studies. Particular attention is paid to capital market research, risk management and strategic management, which have, only recently, begun to include research on uncertainty. In Section III, the requirements and essential building blocks for strategic management facing uncertainty are outlined. These findings are again presented in Section IV in a condensed form representing a model of a robust company. Section V briefly summarizes the concept and the implications for future research.

II. Classification

II.1 The basic concepts and classification

After a clarification of the central terms, namely uncertainty, risk and robustness, the essential lines of development and concepts of strategic management (II.2) are briefly ex-

plained, showing, in particular, how uncertainty is associated with opportunities and threats that are inherent in every business activity. The topic of opportunities and threats, i.e., risks, is then considered from the perspective of risk management and, specifically, research on insolvency risk and rating (II.3).

The intensive concern about opportunities and threats in terms of strategic management under conditions of uncertainty can be easily understood. In a world of planning certainty, all business decisions would be easy and any deviations from plan in terms of losses or insolvencies would not be possible. Insolvencies that are a threat to company survival always come from the unavoidable risks in an unpredictable future, which can trigger random deviations from the plan. Under conditions of uncertainty, strategic management should focus on factors relevant to success, for example, company value, and identify those risks that threaten the potential for success and lead to losses that put the survival of the company in danger. A strategic management concept for a real world where the future is uncertain must include methods for analysing existing risks and devising adequate protection against them. It cannot be overstated that the greatest challenge to the success and survival of a company is risk, because risks cause plan deviations, a generic term encompassing both opportunities and threats (cf. Holton, 2004; Gleißner, 2017a; Hunziker, 2019; Vanini and Rieg, 2021).

Contrary to Knight's (2021) earlier classification, no conceptual distinction is made between forms of uncertainty, i.e., uncertainty and risk. Based on a Bayesian understanding of probability and risk, Sinn (1980), Holton (2004) and Gleißner (2019) regard every risk as quantifiable, and the literature is replete with methods to quantify them, even when information is imperfect (for instance, using subjective but transparent expert estimates). The ability of a system, especially a company, to withstand risks and thus ensure its existence is referred to as 'resilience' or 'robustness'. Hillmann and Günther (2021) define organizational resilience as:

> *… the ability of an organization to maintain functions and recover quickly from adversity by mobilizing and accessing the resources needed. An organization's resilient behavior, resilience resources and resilience capabilities enable and determine organizational resilience. The result of an organization's response to adversity is growth and learning.*

Resilience means that, after a negative shock, a system, such as a company, can return to the level that existed before the shock (e.g., cash flows). Brunnermeier (2021, pp. 29-30) sees resilience as a necessary but not sufficient condition for sustainability, thus assuming a narrower understanding of the term robustness. He distinguishes it from resilience as follows:

> *If resilience is about bouncing back after shocks, the term robustness describes withstanding without adapting. It is the ability to resist. (Brunnermeier, 2021, pp. 28 – 29)*

According to Brunnermeier (2021), robustness and resilience have many similarities, e.g., the safety buffer and redundancies in the system, whereas company risk resilience emphasizes the functionality of the organization and supply chain. In this text, we broadly define the term robustness as:

> *It is the ability of a system to survive (negative) shocks while maintaining a defined minimum level of success (performance) in the long term.*

Such shocks are the result of risks that have an adverse or positive impact at a random time and at a random (uncertain) level. Robustness, which requires the ability to survive, can also be described as "future viability". A robust company pursues a strategy that is highly likely to ensure at least a sufficient minimum rating, even in view of the future, which cannot be predicted in its specifics.

II.2 Corporate success, strategic management with an uncertain future

Strategic management aims to ensure long-term success and, first and foremost, the survival of a company. It became a scientific discipline during the 60s and 70s, and Penrose's

and Chandler's publications heavily influenced the concepts at that time. Penrose (1959) showed that a company's success is dependent on its uniqueness and the quality of its own resources. Chandler (1962) emphasized the supremacy of corporate strategy in comparison to other corporate activities summarized in the "Structure-follows-Strategy"-thesis (Bain, 1956). Ansoff (1965) published a theory of strategic management, that contains many concepts still relevant today, e.g., the "Ansoff-matrix" and the concept of "weak signals", which often indicate existing risks. The Property-Right-Theory, the Principle-Agent-Theory and the Transaction-Costs-Theory of Coase (1937) and Williamson (1985) shaped the theory of strategic management. The main subject of the theory of transaction costs is the efficiency of coordination mechanisms (both inside and outside the company). An additional theoretical principal for strategic management is the "Structure-Conduct-Performance"-hypothesis which emphasized the importance of specific industry characteristics which determine success. Porter (1998) stresses the relevance of competitive advantage as well as market attractiveness ("5-Forces-Concept").

Mintzberg (2008) recommends structuring the schools of strategic management, differentiating them within ten approaches, of which the most important are illustrated here with reference to the consideration of risks.

- The Design Approach from the 60s understands strategy development as a conscious process of building internal strengths as well as reducing internal weaknesses to be able to respond to external opportunities and threats. However, methods to quantify risks and determine the implications for the strategy were not yet available.
- The "Planning Approach" (esp. Harvard Business School), established at the same time, treats issues similarly while insisting on the fact that strategy development is a strict methodical process. The approach describes strategic management as a decision problem where the top management chooses the optimal strategy for achieving company targets based on a broad but sound knowledge of the basic principles of decision theory, although without a systematic consideration of risk ("decisions under uncertainty").
- The "Positioning Approach", first appearing in the 80s, and strongly influenced by the industrial economy, refers to Porter's concept of "5 forces" and to insights of the PIMS Study (cf. Buzzell and Gale, 1987). The key tenets of this approach are its scientific basis, an emphasis on the relevance of the market environment, and a concentration on relatively common norm strategies (e.g., cost leadership, differentiation strategy, focus strategy), but without including a "risk strategy" in the sense of risk management (cf. II.3).
- During the 1990s the "Resource Based View" gained relevance (cf. Hamel and Prahalad, 1990). According to this approach, building the core competencies had to be one of the main aspects of strategic management.1 Achieving future competitive advantage and internal strength means that important, unique and sustainable skills, i.e., core competencies, should be foundational. They stem from employee skills and expertise, proprietary rights (e.g., for a brand), and unique data.

Only in recent years has the challenge of strategic management in dealing with risk been seriously considered. The key challenge for developing and implementing a strategy, according to Schwenker (2017, pp. 23-26) is dealing with an unpredictable future, e.g., uncertainty caused by risk. Despite the advantages of such strategies, doubts remain: every good strategy needs assumptions about future developments. Such assumptions are full of insecurity, which implies the existence of risk (Gleißner, 2017b). Schwenker (2017) summarizes his thoughts about the insecurity of a strategy in the following concept (figure 1).

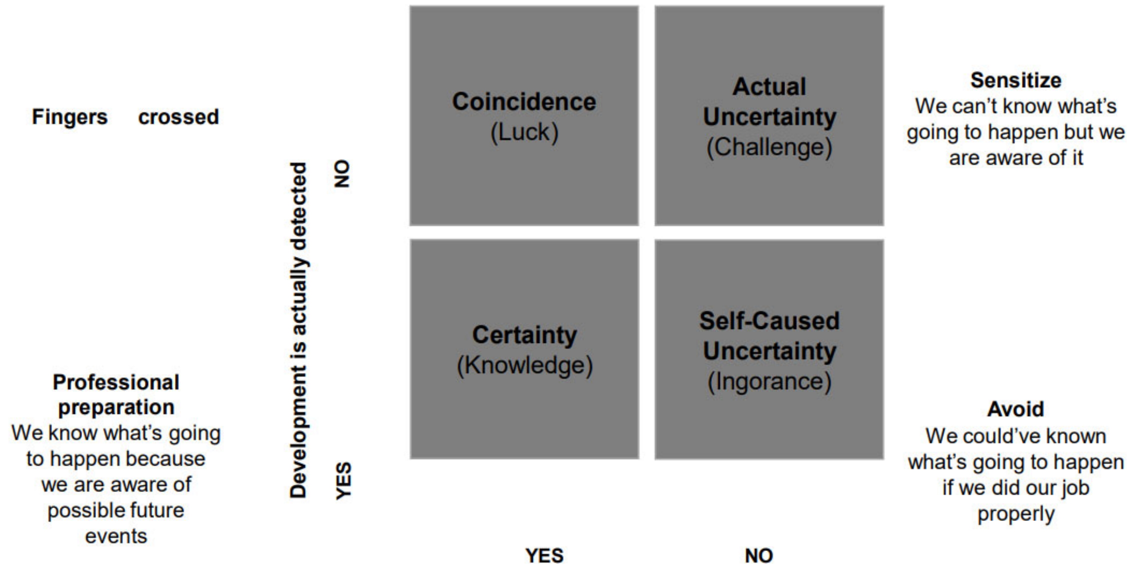

Figure 1: *A concept on how to deal with risk (source: Schwenker, 2017, p. 27)*

The "Capability Based View" (for basic idea cf. Teece et al., 1997) supplements and further develops the resource-based view with special consideration of the uncertainty of the future and thus the relevance of risks in terms of success (cf. Fainshmidt et al., 2016 and summarizing Richter, 2019). This approach attempts to capture what makes the difference between a company surviving due to its skills and characteristics and other companies that become insolvent. From a strategic point of view, one could say that it collects reasons for "financial sustainability" (cf. Gleißner et al., 2022), resilience, robustness and the insolvency risk of companies. These reasons make such considerations relevant when it comes to strategic risk management, as (exogenous) risks, particularly, are due to changes in the environment. Continuing with the "Resource Based View", the first step differentiates between the "ordinary skills" and the "dynamic skills" of a company. Dynamic skills can represent a core competency where they are a high positive characteristic. Ordinary skills are needed to attend to the basis chores for a company, such as distribution, production, and procurement efficiency. Dynamic skills, on the other hand, combine all the attributes a company requires to adapt its skills (especially ordinary skills) to respond to changes in its environment, which are mostly to be understood as the result of long-standing risk.

Dynamic skills are conceptualized as sensing, seizing and reconfiguring (see figure 2).

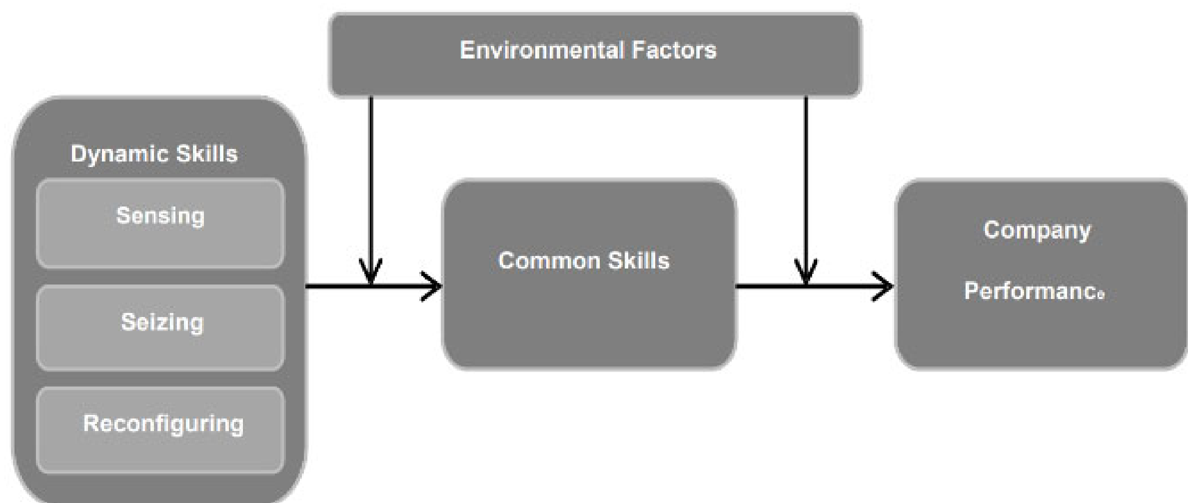

Figure 2: *Capability Based View (source: Richter, 2019, p. 43)*

Sensing includes all those skills necessary to detect changes (e.g., regarding customer interests, technological) in the environment. From a risk management perspective, this also includes the ability to identify strategic risks and threats at an early stage (cf. II.3) (cf. Gleißner, 2017a to regarding the corresponding concepts of strategic risk management). Seizing signifies the ability to assess and procure existing and newly-acquired resources. Lastly, reconfiguring describes the ability to adapt the company (including its organizational structure) to existent opportunities and threats from environmental change, which implies organizational resilience (cf. II).

Owners want to see a sustained improvement in the performance of their company. However, the risks associated with any entrepreneurial activity can lead to crises that impair performance or, in the worst case, result in insolvency. A strategic risk analysis is needed, and based on this, a further development of the corporate strategy, considering existing opportunities and threats (risks). A fundamental improvement in the stability of a company, and thus a reduction in the risk of insolvency, can only occur if the strategy is adapted accordingly (see III and IV).

The aim should be to systematically increase the robustness of the strategy (see definition in II.1). The analysis and management of risk has traditionally been seen as a task for risk management and is explained below (on the basis of Froot et al.,1993; Kaplan and Mikes, 2016; Gleißner, 2017a; Hunziker, 2019; Vanini and Rieg, 2021 and Nocco and Stulz, 2022).

II.3 Capital market research and study of risk management and rating

Risk management includes all activities related to the identification, quantification, aggregation, monitoring, and control of risk. The aim is not to avoid all risks, but to optimize the risk-return profile, while taking account of specified safety targets as constraints on the acceptable level of risk. The assumption of a perfect capital market would obviate the need for risk management, as it would not be able to contribute positively to enterprise value (Kürsten, 2006).

Reducing the volatility of the cash flow is a task for risk management, to boost planning security and to improve the risk-return profile (Amit and Wernerfelt, 1990). This value contribution of risk management can result from accounting for capital market imperfections, such as taxes and financing restrictions (Froot et al., 1993; Chen and King, 2014) and agency costs (Jensen and Meckling, 1976). Due to imperfections in capital markets and imperfect diversification among investors, reductions in idiosyncratic risks can generate value (cf. Nocco and Stulz, 2022). Entrepreneurs in small- and medium-sized companies, which invest much of their assets into their own company, clearly gain an advantage by taking company-specific risks into account (Kerins et al., 2004). Predictable cash flow trends reduce the probability of having to rely on expensive external sources of financing or breaching covenants (Myers and Majluf, 1984). Campbell et al. (2008) found that not even the stock market takes adequate account of ratings and the probability of default (“distress risk anomaly”). A higher risk of insolvency, expressed by a higher probability of insolvency (p), also leads, ceteris paribus, to lower stock returns.

Joyce and Mayer (2012) indicate that low cash flow volatility (“fundamental risk”) causes higher stock returns. This corresponds to the risk-return paradox, well known in the field of strategic management research (Bowman, 1980; Arrfelt et al., 2018). Even very profitable companies (“quality companies”; cf. Asness et al., 2019) achieve above-average stock market returns.

Based on the risk-return paradox of strategic management, several studies have been undertaken on publicly-traded companies, with the help of suitable financial indicators to assess “Quality” derived from the companies themselves (cf. Piotroski, 2000; Walkshäusl, 2020). While in earlier studies such factors were derived primarily econometrically, the measurement concept, with four key measures for “financial sustainability” (Gleißner et al., 2022), is theoretically based (cf. IV.1). The empirical study of the European stock market indicates that companies with high financial sustainability (FS) are not only

less at risk, but also generate higher risk-adjusted stock market returns (0.46% per month). A supplementary study has shown that companies with high financial sustainability behave particularly robustly in an economic crisis (cf. Günther et al., 2020).

We conclude that, only in an ideal, but unrealistic, model, such as that set out in neo-classical capital market models, do company-related risks not need to be addressed. In real companies, risk management significantly contributes to corporate success and survivability. Greater risk leads to higher cash flow fluctuation risk and a greater need for scarce and expensive equity capital, resulting in a higher cost of capital. Krause and Tse's (2016) literature review confirms the importance of risk management for company value (cf. also Krause and Tse, 2016, S. 56; McShane et al., 2011). Buchner et al. (2021) show the special resilience of family companies, e.g., by focusing on long-term goals.

The probability of insolvency is an important factor influencing the value of a company. This value is a benchmark for success (Saha and Malkiel, 2012; Gleißner, 2019) and depends on the risks and thus risk management. Research on insolvency forecasting methods and ratings shows that the probability of insolvency (p) of a company can be estimated using financial indicators, such as equity ratio and return on assets or interest coverage ratio (cf. Ohlson, 1980; Altman, 1984; Weber et al., 1998; Bemmann, 2007). An assessment of the risk of insolvency is relevant for the evaluation of a company and its ability to survive because a company that does not survive the next two years, for example, can no longer achieve the earnings it could expect from its potential success in the future. However, a rating based on financial indicators, as used by rating agencies or banks, has limitations that must be considered when assessing long-term viability and thus robustness:

1. The calibration of the rating systems means that the probability of insolvency is good in the short term, especially one year (the validity of the rating forecasts is poorer for years in the distant future).
2. Due to the focus on key financial data derived from annual financial statements (and supplementary qualitative criteria, cf. e.g., Büschgen/Everling, 2007), only those risks are considered to have materialized in the last annual financial statements, but not in future ones, i.e., risks that can only be included with the help of simulation-based risk aggregation, i.e., risk management methods (cf. Blum et al., 2005; Bemmann, 2007; Berger and Kamarás, 2021).

II.4 Intermediate Results

In a real, imperfect capital market with rating and financing restrictions, it is clear that risks can jeopardize the continued existence of companies. Findings that are essential for strategic management do not only result from strategic management research, but also from other business disciplines. Important findings from research into risk management, insolvency forecasts and ratings, as well as economic crisis research are briefly presented. The facets outlined here, based on a brief description of the literature in the following Section II, provide the basis for deriving a model for strategic management, aimed at securing the long-term viability of companies.

III. Assumptions and derivation of the profile of a robust company

The aim is to create a robust company that is sufficiently flexible and agile to adapt to unforeseen developments caused by risk. Its risks are backed by equity and liquidity as risk coverage potential to ensure an appropriate rating, even if serious risks materialize. Potential changes in risk are assessed using the company value as a measure of success, with risk management influencing the value drivers of the cost of capital and probability of insolvency (cf. Gleißner, 2019).

From the studies outlined in Section II, an integrative approach to strategic management under conditions of uncertainty can now be derived, which condenses research findings into a model of the robust company. The basic assumptions and conceptual requirements on which this concept is based are first outlined

before the overall concept is explained in more detail in Section IV.

The concept of the robust company is initially based on the following well-established central assumptions:

A1: There are many investors and owners of companies who are interested in the longest possible expected lifespan, i.e., high survivability, of a company (assuming a periodinvariant insolvency probability p in the simplest case, the expected value of the lifespan L corresponds to 1/p, cf. Franken et al., 2020).

Investors are accordingly risk-averse and may have a “sustainability preference” (cf. to the term Gleißner et al., 2022). Their assessment and decision-making calculus can be assigned to safety-first concepts, i.e., they regard upper limits as secondary conditions for the accepted level of risk (risk of insolvency; volatility of cash flows). They therefore forego higher than expected income/returns if these can only be achieved with a risk level that is above what they accept as a maximum.

A2: Imperfect capital markets (Shleifer and Vishny, 1997; Gromb and Vayanos, 2010) with rating and funding constraints assumed.

The limitation of the financing options, e.g., through limited equity as risk coverage potential, means that:

- Insolvencies ending the existence of the company are possible if the equity shows possible losses due to risk or if the minimum requirements of lenders for the rating are no longer met, and
- the aggregated total risk scope of a company, which can be expressed e.g., by a value-at-risk, should not exceed the limited risk coverage potential (equity and liquidity reserve) (Vanini and Rieg, 2021).

A3: The corporate strategy, with its success factors, such as “dynamic skills”, determines the cash flow to be expected in the future and the extent of the risks that can lead to plan deviations, losses or even insolvency.

From these assumptions, together with the research situation outlined in Section II, several framework conditions and requirements can be derived that are essential for the strategic positioning of the company:

1. To avoid insolvency, the company must first ensure that it meets the rating requirements specified by (potential) creditors and, particularly, that the probability of insolvency (p) that can be derived from financial indicators does not become too high (i.e., is less than 2% per year, corresponding to a BB-rating). In addition, the company should be “financially sustainable” overall in the manner outlined above, i.e., the earnings risk must be acceptable from the perspective of the owners (cf. A1), the company should grow in real terms and be economically attractive from the perspective of the owners. This implies a return on capital above the risk-adequate cost of capital. In summary, a robust company must guarantee the “financial sustainability” already outlined (cf. IV.1).

2. Strategic management theory indicates that the sustainable financial success of a company depends on certain characteristics of the company and its environment, which are collectively referred to as “success factors”, whereas e.g., “dynamic skills” are particularly important. Only an adequate strategic alignment with success factors that are valid today and in the foreseeable future enables the generation of those cash flows that ensure future financial sustainability (see 1.). Strategic management research and the findings from strategic risk management show that core competencies that lead to competitive advantages and pricing power are important, and that critical dependencies, e.g., from a few customers or suppliers that represent risks that threaten the potential for success, should be avoided (cf. IV.2).

3. High financial sustainability and a robust strategy that is implemented in day-to-day operations (provision of services) ensure the company's success and survival, at least until there are no fundamental changes in the general conditions. The capability-based view of strategic management already indicates that companies need the ability to identify risk and to adapt. Changes in the environment, e. g., due to social or technological changes (such as digitization), lead to changes in the framework conditions that manifest themselves in the form of new opportunities and threats (risks). To achieve success and survival, it is

therefore essential for companies to recognize such opportunities and threats in good time. This requires efficient risk management that systematically determines changes in the risks relevant to the company and the resulting overall scope of risk, e.g., the equity requirement, particularly methods to identify, quantify and aggregate risks and to manage risk (cf. IV.3).

Fundamental changes occur in a company not only related to changes in the environment. It is precisely the management decisions of the executive board, e.g., regarding investments or acquisitions, that result in intended changes in the future orientation, which are often associated with significant changes in the risk profile. Entrepreneurial decisions have uncertain effects. Thus, it is necessary for the risks associated with such decisions to be adequately assessed, even before an entrepreneurial decision is made, to prevent the scarce risk coverage potential being overstrained by additional risks that could endanger the survival of the company (see assumption A2).

Consequently, it can be stated that a model for strategic management under conditions of uncertainty must consider (1) financial sustainability, (2) robustness of the strategy, and (3) strong skills in dealing with opportunities and threats. From these conceptual building blocks, the model of a "robust company" with these exact characteristics can be specified. The model is outlined in more detail in Section IV.

IV. The Profile of a robust Company

IV.1 Financial sustainability

A company's robustness first requires financial sustainability, which can be interpreted as a complex measure of risk (II.2; Gleißner et al., 2022 and, complementary, Behringer, 2020 and Günther and Günther, 2017). It means that the risks associated with any entrepreneurial activity can be managed by adequate risk coverage potential (equity). The

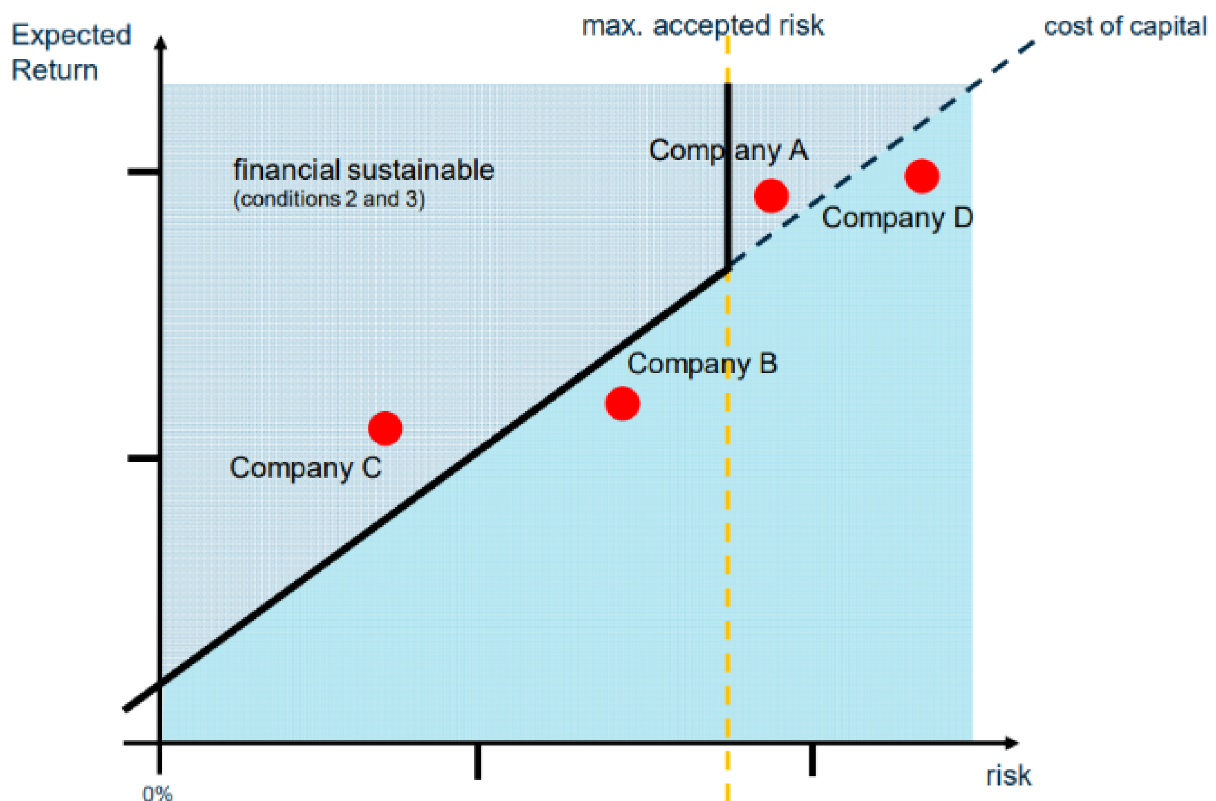

Figure 3: *Prerequisite for a robust company: risk-return profiles and financial sustainability (exemplary, based on Gleißner et al., 2022)*

company therefore has a good and stable rating, even in possible stress scenarios, such as an economic crisis (e.g. caused by a pandemic or an energy crisis). It has an above-average risk-return profile, making it an attractive investment for its owners. Gleißner, Günther and Walkshäusl, 2020 show, that four conditions must be met for financial sustainability:

1. the company does not shrink in real terms in the long term (and the return on equity is greater than the growth rate in the medium term to secure the equity ratio),
2. the risk-dependent probability of insolvency (p) is low ($\rho < 1\%$ p.a.),
3. the earnings risk, expressed by the coefficient of variation V of profits, is low ($V < 40\%$), and
4. the return on capital is higher than the cost of capital (derived from V) (cf. for calculation Gleißner, 2019 and Ernst, 2022).

Ensuring high financial sustainability is a secondary condition of owners who want to limit their entrepreneurial risk ("safety-first concept", see figure 3; cf. Roy, 1952; Telser, 1955). Empirical evidence shows that companies with high financial sustainability also generate high riskadjusted excess returns on the stock markets (Gleißner et al., 2022). Financial sustainability, measured by financial ratios sustainability, is primarily a reflection of the financial impact of the company's strategy to safeguard the financial situation in the long-term financial environment. Robust companies therefore have a robust corporate strategy.

IV.2 Robust strategy and organisational resilience

In the long run, only a "robust" strategy can ensure success, financial sustainability and increase the value of a company (cf. II.2 and assumption A3). The corporate strategy defines the basic statements on the long-term orientation and success of the company, which serve as a guideline for the future development of the company (cf. Hill and Jones, 2001; Schwenker, 2017 and Weissman and Barreuther, 2022).

A decision is first made as part of the portfolio strategy as to the strategic business units (SBU) in which a company can operate in a fundamentally promising manner. This is assessed based on market attractiveness, that

Description of a business area strategy (business model)

Core competences	Fundamental strategic approach
• What competence and resources do we have? • What expertise and resources do we need? • What makes our core competence scalable? • What safeguards our core competence?	• What are our primary goals? • Which secondary conditions (e.g. regarding rating and equity financing) should be considered? • Which value drivers (growth, return, risk) should be changed and how? • What are our growth drivers? • What are our return drivers? • What are our risk drivers?
Business areas (BA) and competitive advantages	**Value chain (Supply chain)**
• Which BAs (product-target-region) exist that are (a) attractive and (b) fit our core competences? • What benefit/problem solution do we offer (value proposition)? • With regard to which purchasing criteria do we have verifiable competitive advantages? • What should the customer pay for and how (revenue model)?	• Which value creation activities are covered in the enterprise? • What investments and variable and fixed costs does it generate? • How do we reach the customers of the target group? • Which key suppliers (and partners) cover the other value creation activities?

Figure 4: *Description of a business area strategy (business model) as a basis for assessing robustness*

also determines risk (Budd, 1998), and the potential for success that can be achieved by the company, relative to its competitors. A business strategy is then drawn up for the strategic business areas in which a company is active or intends to become active. It contains statements on the core competencies, on the competitive advantages in the individual business areas within the SBU and on the design of the value chain (see figure 4 and Gleißner, 2021a).

A robust strategy focuses on core competencies that are valuable in the long term, difficult to copy and can be used in a variety of ways (Gleißner, 2017b; Schäffer, 2021). According to the Capability Based View “dynamic skills”, such as adaptability, are essential competencies (cf. II.2). Such core competencies allow the realization of new business models to defend against or exploit disruptive innovations (Weissman and Barreuther, 2022). It builds competitive advantage on this basis, geared to customer requirements, which help to differentiate the company from its competitors and to retain customers in the long term. This leads to "pricing power" and the ability to pass on cost fluctuations to business partners. Risky and unattractive fields of activity or customer groups are avoided, as are critical dependencies. Adequate diversification is therefore ensured. The value chain is designed in such a way that only activities that cannot be better bought in are performed within the company. The company designs its work processes to be as uncomplicated as possible. In addition, redundancies and reserves ensure organizational resilience (see II on the basic concept and Hillmann and Günther, 2021 and Ayyub, 2014). Conditions are created for self-organizing, agile structures to give employees the freedom and incentive to act flexibly and on their own initiative as far as possible. Sufficiently broad diversification as well as loss and liability limitation should ensure that even unexpected extreme negative events, like an economic crisis, do not endanger the company.

The possibilities of strategic decisions to reduce risk and to improve robustness are exemplified by currency risks (cf. IV.3). Whereas transaction-related exchange rate risks (transaction exposure) are mainly managed using financial risk management instruments, economic exchange rate risks are mainly managed by adjusting the strategy, such as (cf. IV.3 and Gleißner, 2017a):

1. regional diversification to reduce dependence on changes in individual currencies,
2. synchronization of the currency structure of sales and costs (natural hedge),
3. pronounced product differentiation to create pricing power.

IV.3 Ability to deal with risk

To ensure the protection of the company, risk management must systematically address existing risks (opportunities and threats), to be able to adapt and react as early as possible (cf. Capability Based View; Teece et al., 1997 and Gleißner, 2021a). Risks lead to negative deviations from the plan, which endanger the financial stability, especially the rating, of a company and can trigger crises. A robust company needs strong skills in dealing with opportunities and threats. In particular, it must be able to:

1. systematically identify, quantify, and aggregate risk,
2. initiate adequate risk mitigation measures at an early stage, and
3. take appropriate account of the risks associated with every business decision.

The company thus needs an efficient risk management system Firstly, procedures for risk analysis are required. Such strategic risks arise from:

1. a threat to success potentials,
2. a change in competitive forces in the industry environment (e.g., increasing dependence on suppliers or threats caused by substitute products), and
3. severe economic crises triggered by economic risks (e.g., financial crises or supply crises, which also include a pandemic, an energy crisis or a war).

These main areas of strategic risk should be analyzed in turn in a structured manner, with

particular attention being paid to economic risks, which can lead to an economic crisis (such as geopolitical crises, a pandemic or raw material supply crises (cf. Gleißner and Kamarás, 2020).

In addition to the uncertain premises for operational planning, which always represent risks, a specific analysis of strategic risk is required (cf. Gleißner, 2017a and Kaplan and Mikes, 2016).

To this end, the main risks are first quantified, i.e., described by a suitable probability distribution (e.g., by probabilities of occurrence supplemented and by a distribution of possible effects, Vose, 2008; Gleißner, 2017a; Vanini and Rieg, 2021). Only in this way can risks be prioritized, the usefulness of risk management measures assessed, and the equity and liquidity requirements needed to cover the risks calculated.

Robust companies need adequate procedures for risk aggregation. Only with the results of risk aggregation is it possible to make a well-founded assessment of financial sustainability, the need for equity and liquidity, and thus the threat situation of the company overall. The aggregation of risk requires the use of stochastic simulation methods (Monte Carlo Simulation) (cf. Gleißner, 2017a; Vanini and Rieg, 2021; Berger and Kamarás, 2020). This involves analyzing a large representative number of risk-related possible future scenarios. In this way, a realistic range of future earnings and liquidity developments can be shown. The probability that covenants will be breached or that a target rating can no longer be achieved can be derived directly (“probability of insolvency”).

Based on this information, the aim is to improve the risk-return profile and make the company robust, e.g., by risk mitigation. An important starting point for reducing strategic risks is, for example, to reduce dependencies (e.g., from individual suppliers, cf. IV.3).

A company crisis can arise when major risks are taken as a result of a management decision. It is therefore necessary for a robust company to ensure organisationally that the risks associated with every management decision are analyzed and taken into account in the decision calculation (cf. RMA, 2019). The strategic decisions required for the further development of the corporate strategy are fundamentally entrepreneurial decisions and therefore require decision templates with which changes from the risk-return profile can be assessed (Hunziker, 2019). An increase in corporate risk leads to higher negative deviations from the plan, higher potential losses, and thus a higher need for equity. This, in turn, leads to rising costs of capital and thus the company value as a measure of success (Berger/Gleißner, 2018; Gleißner, 2019; Ernst, 2022).

V. Conclusion, implications and further research

The strategic management concept of a “robust company” outlined in this article is an integrative approach that combines findings from the areas of risk management, strategic management, rating, and insolvency research as well as empirical capital market research. It is useful in particular to survive severe crises such as the COVID-19 pandemic.

The long-term success of a company requires strategic management that considers uncertainty arising from opportunities and threats (risks). The concept of the robust company is a guideline for strategic management under conditions of uncertainty. Robust companies exhibit the following three key characteristics (see figure 5):

a. high financial sustainability,
b. a robust strategy with stable strategic success potential and “dynamic skills” as a driver of future financial performance and company value, and
c. a high level of competence in dealing with risk, especially in preparing business decisions (to safeguard a and b).

There is not only good theoretical justification for many of the central conceptual building blocks, but there is also clear empirical evidence (e.g., on the importance of financial sustainability measured by four indicators, cf. IV.2). Even if measurement concepts for other constructs exist (cf. e.g., Gleißner and Weissman, 2021 on indicators for the robustness of a strategy), there are still no empirical

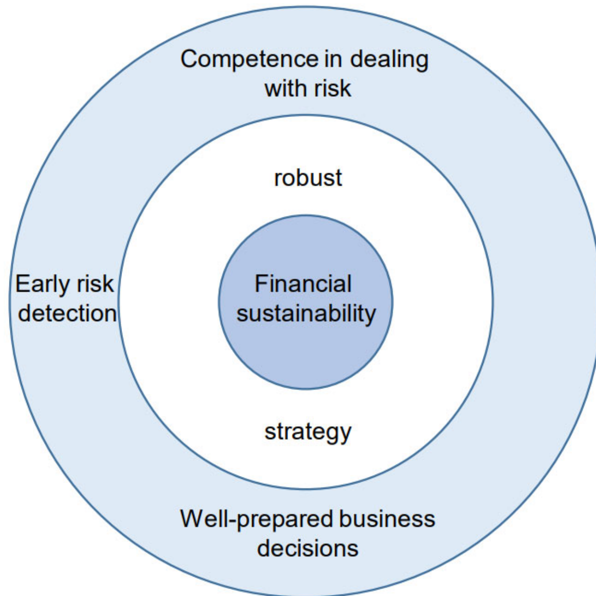

Figure 5: *Profile of a robust company*

studies that examine in detail the interdependencies and the interaction of the essential characteristics of a robust company (see a, b, c above). The relative importance of individual elements of the concept, considering existing stochastic dependencies, cannot be assessed now. It is a task of future research to examine to what extent and, if necessary, with what time delay, e.g., the robustness of the strategy promotes the financial performance and sustainability of the company. Another issue for future research is the investigation of the relationship between a company's ability to deal with opportunities and threats (risks) on the one hand, and financial sustainability on the other. So far, research has clearly shown that an improvement in "fundamental risk", the risk-return profile and financial sustainability, and tendentially the maturity of risk management itself, has a positive influence on the success of a company. However, to what extent a strengthening of robustness of the strategy and of the risk management system contributes to an improvement in the expected value of earnings on the one hand, or the volatility of earnings (and cost of capital) on the other, is the subject of future research. ■

VI. Literature

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